

Scottish Health Planning Note 52

Accommodation for day care Part 2 – Endoscopy unit







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About this series

The Scottish Health Planning Note (SHPN) series is intended to give advice on the briefing and design of healthcare premises in Scotland.

These Notes are prepared in consultation with representatives of NHSScotland and appropriate professional bodies. Health Planning Notes are aimed at multidisciplinary teams engaged in:

- designing new buildings;
- adapting or extending existing buildings.

Throughout the series, particular attention is paid to the relationship between the design of a given department and its subsequent management. Since this equation will have important implications for capital and running costs, alternative solutions are sometimes proposed. The intention is to give the reader informed guidance on which to base design decisions.

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1. Scope of SHPN 52 Part 2

Introduction

- 1.1 Day care services mainly include day surgery, endoscopy*, and medical investigation and treatment. Accordingly, this Scottish Health Planning Note (SHPN) 'Accommodation for day care' is in three parts:
 - Part 1 Day surgery unit;
 - Part 2 Endoscopy unit;
 - Part 3 Medical investigation and treatment unit.
 - * Appendix 1 is a glossary which explains the meaning of the word "endoscopy" and a number of associated medical terms.
- Part 2 provides guidance for the planning and design of accommodation for an endoscopy unit in an acute general hospital. Appendix 2 describes in simple terms how Parts 1 and 2 can be used to plan and design a combined day surgery and endoscopy unit. The option of providing a stand-alone endoscopy unit, i.e. an endoscopy unit not within an acute general hospital, is recognised. Project teams planning a stand-alone unit should consider the need for facilities and support services additional to those described in Part 2. Such support services would be provided on a 'whole hospital basis' in an acute general hospital.

Range of provision

Inclusions

- 1.3 Part 2 describes a self-contained, dedicated endoscopy unit suitable for carrying out endoscopic procedures and treatments in aseptic conditions on adult and child patients and generally describes one which is part of a general hospital. It is suitable for endoscopic procedures and treatments which:
 - are routinely performed in an acute general hospital;
 - do not require the high level of "sterile" conditions provided in an operating theatre.

If a speciality requires the general design to be modified or the addition of specialised facilities, project teams will need to decide whether to accommodate the speciality in the endoscopy unit, and how that should be done, or to make alternative arrangements.





- 1.4 Part 2 assumes that most patients who attend the endoscopy unit will be discharged on the same day as they are admitted. It is recognised, however, that patients may:
 - attend the unit from another part of the hospital during an episode of inpatient treatment;
 - be admitted to the unit knowing that an overnight stay in another part of the hospital is likely to be necessary in order to complete recovery.

Overnight stay accommodation is not described in Part 2.

Exclusions

- 1.5 Part 2 excludes guidance concerning accommodation for:
 - endoscopic procedures which require to be carried out using sophisticated diagnostic imaging equipment normally found in a radiodiagnostic department, for example, endoscopic retrograde cholangiopancreatography (ERCP);
 - surgical procedures and medical investigations and treatment which can be carried out more appropriately in accommodation which is the subject of SHPN 52 Parts1 and/or 3;
 - antenatal day care assessment.

Building cost and revenue expenditure

General

- 1.6 General guidance on matters pertaining to building cost and revenue expenditure is given in Chapter 5 of SHPN 03: General design guidance.
- 1.7 When calculating the building cost of the Department described in this Note, allowance should be made for all accommodation, appropriate to the particular project, described in Chapter 3 and listed in the Schedules of Accommodation, the engineering services described in Chapter 5 and all Group 1 equipment. Primary engineering services should be costed from the boundary of the site and, where appropriate, an allowance should be made for a share of the central refrigeration plant and distribution system.

Functional unit

1.8 The functional unit used to express the functional content of an endoscopy unit is the 'endoscopy room'.





2. Service objectives

Introduction

2.1 This Chapter considers the case for endoscopy and service objectives related to the provision of an endoscopy unit, including the need for the unit to be self-contained and dedicated, children and endoscopy, the size of a unit, and relationships with whole hospital services.

Classification of hospital patients

- 2.2 Hospital patients can be classified into three main categories:
 - in-patients who stay in hospital overnight;
 - out-patients who attend for consultations, examinations, investigations and minor procedures and leave as soon as these are finished;
 - day patients who do not require an overnight stay but need a relatively short period of time after a procedure for recovery. Day patients may stay in hospital for a morning, an afternoon or for the whole of the working day.

The benefits of endoscopy as a day care service

- 2.3 A service for diagnostic and therapeutic endoscopies performed on a day basis is considered:
 - by many patients to be preferable to an in-patient service on the grounds that:
 - (i) appointments may be booked and arranged in relation to the patient's domestic and work commitments;
 - (ii) the service is programmed independently of other hospital services and, therefore, is more likely to remain free from disruption;
 - (iii) it is perceived as less threatening than an in-patient procedure, particularly by children;
 - by clinicians to provide a discrete opportunity for scheduling similar straightforward procedures;
 - by managers:
 - (i) to be a cost-effective and efficient use of resources;
 - (ii) to reduce waiting times for certain procedures and waiting lists for inpatient admissions.





The development of endoscopy

- 2.4 The number of patients treated as day cases since the publication of HBN 38 'Accommodation for adult acute day patients' has increased dramatically, and it is expected that massive growth of day care services will be one of the most significant developments of NHSScotland over the next few years.
- 2.5 Factors which have influenced the development of day care services include:
 - advances in health technology, notably in sedatives and local anaesthetics, fibre-optics, video endoscopy and the application of computers;
 - an increasing demand by patients for prompt action following consultation;
 - the drive towards the cost-effective and efficient provision of services, with reduction of waiting times and improved levels of quality.

The self-contained and dedicated endoscopy unit

- 2.6 It is possible to carry out endoscopy in different settings. The two essential requisites are an endoscopy room in which to perform the procedure and a space where patients can recover fully prior to discharge.
- 2.7 SHPN 52 Part 2 describes an endoscopy unit which:
 - is self-contained. Patients may be admitted to, treated in, and discharged from the unit. They will normally not need to attend any other department in the hospital on the day of their treatment;
 - is dedicated for endoscopy only. It is not intended that the unit should be used for:
 - (i) "parking" patients treated elsewhere in the hospital;
 - (ii) overnight stay of accident and emergency patients or "overflow" inpatients;
 - may be used for endoscopic procedures on in-patients.
- 2.8 The self-contained, dedicated endoscopy unit described here enables endoscopy to be provided more efficiently than in non-dedicated facilities (for example a dedicated day ward or endoscopy beds in in-patient acute wards, with patients treated in operating theatre facilities in the hospital's main operating department). Patients' needs, workload and speed of throughput in an endoscopy unit are different from those in a main operating department. An endoscopy unit for day patients, therefore, should not be planned as part of the main operating department nor with the intention of sharing facilities in the main operating department.
- 2.9 A self-contained, dedicated endoscopy unit is able to:
 - provide individualised care for patients;





- be organisationally independent and manage its resources and workload in a planned programme manner;
- generate its own ethos.
- 2.10 The endoscopy unit should be capable of accommodating a range of specialities and procedures, including those listed in Appendix 1. Developments in the field of endoscopy will continue to extend the types of procedures which can be carried out on a day basis.

Patients with special needs

2.11 Special arrangements will be necessary for particular groups of patients, for example, children and people with learning disabilities; this is a requirement due to the Disability Discrimination Act.

Children and endoscopy

- A main principle of the Department of Health report 'Welfare of Children and Young People in Hospital' is that "Children are admitted to hospital only if the care they require cannot be as well provided at home, in a day clinic or on a day basis in hospital." The report states that "Day care can make a valuable contribution to family-centred health care by reducing the occasions when it is necessary for a child to be admitted overnight in hospital", and advises that "the child is neither admitted nor treated alongside adult patients ... the environment is suitably laid out and furnished with easy access for people with disabilities and an area where children can play before and after treatment."
- 2.13 Endoscopy units should be designed so that carers can accompany child patients for as much as possible of their attendance.
- 2.14 Segregation of child patients and adult patients can be achieved in a number of ways: four options for consideration by project teams are described below. Options 1 and 2 ensure segregation, but whether or not they are appropriate for implementation will need to be determined locally, taking account of such factors as the numbers and case mix of children to be admitted.

Option 1 - a dedicated children's unit

2.15 A dedicated children's unit is the preferred option of the Caring for Children in the Health Service (CCHS) report 'Just for the day'. For most hospitals, a dedicated children's endoscopy unit will not be viable. Consideration may be given to the provision of a combined children's day surgery and endoscopy unit.





Option 2 - a dedicated children's session

A session may be arranged in an otherwise adult endoscopy unit for children only. For this option to be viable, a sufficient number of children will need to be treated during sessions arranged on a periodic or occasional basis, as appropriate. Areas attended by children and their carers should be temporarily converted to provide an appropriate environment. Specialist paediatric nurses may be required.

Option 3 - concurrent children's and adults' sessions

2.17 Concurrent children's and adults' sessions need to be organised with sensitivity. Visual separation of child patients and adult patients should be provided and auditory separation achieved wherever possible. Communal areas for patients will need to be carefully divided: this implies the use of movable screens or other appropriate forms of separation within main waiting and pre-discharge recovery areas.

Option 4 - limited use of unit by children

- This option involves use of the unit by children for the endoscopic procedure only. Children are admitted to the day care ward of the children's department and returned there, following endoscopy, for recovery and discharge. The endoscopy unit may need facilities to accommodate children on arrival and prior to return, and to be connected to the main hospital circulation route.
- 2.19 Medical opinion on Option 4 is polarised. It is pointed out that endoscopy for adults should be provided in an environment which is domestic, friendly and as non-clinical as possible, and that it is at least equally important to achieve this objective for children. On this basis, it is considered unacceptable to move children between the children's department and the endoscopy unit. The alternative point of view demands total visual and auditory separation of child patients and adult patients in the endoscopy unit and foresees difficulties in achieving this in Option 3; Option 4, therefore, is preferred to Option 3.

Sizing an endoscopy unit

The number of endoscopy rooms required in an endoscopy unit may be calculated as described in Chapter 7 Appendix 3.

General design considerations

2.21 An endoscopy unit should be planned and designed to provide patients and their escorts with high-quality facilities that will be easy for staff to manage and operate.





- 2.22 The design should help to assure patients that they are receiving a first-class service. To this end, particular attention should be paid to the visual aspects of the unit as well as functional and environmental needs.
- 2.23 Figure 1 illustrates key planning principles which include simple, direct flowlines, and compact routes and spaces, that:
 - progress patients and supplies forward without unnecessary looping back;
 - ensure that patients who have not been treated do not meet patients who have been treated (except perhaps at the point of entry/exit);
 - eliminate cross-over circulation points;
 - reduce double-handling of patients and supplies;
 - reduce staff travel.
- 2.24 Endoscopy units planned and designed in accordance with these principles will run effectively and efficiently. Managers of endoscopy units must ensure that patients are not allowed to feel that they are "on a conveyor belt" or are being treated as part of a production-line process.

Functional relationships

- 2.25 SHPN 52 Part 2 describes an endoscopy unit in or adjacent to an acute general hospital. Locating an endoscopy unit in or adjacent to an acute general hospital:
 - facilitates attendance of in-patients for endoscopic procedures;
 - provides direct access to the full range of support services;
 - facilitates admission of patients if necessary.





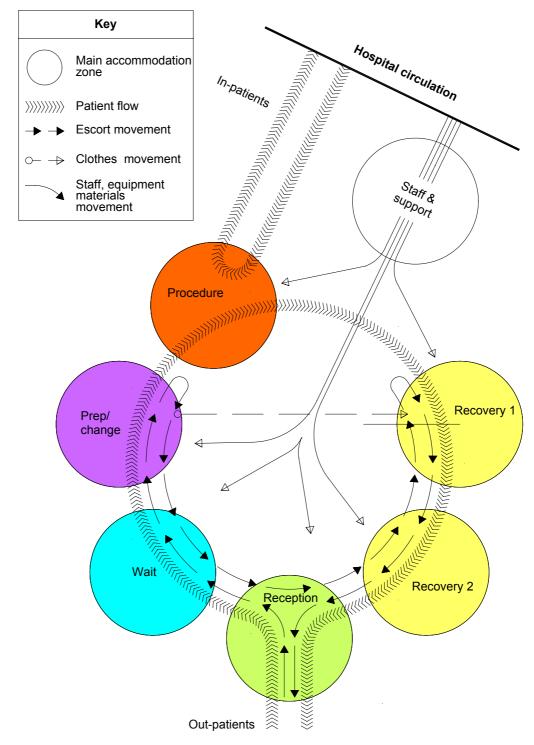


Figure 1: Planning principles of the patient cycle





Intradepartmental relationships

- 2.26 Patient-related activities in an endoscopy unit fall into four or five main groups which occur in the following sequence:
 - reception and waiting;
 - patient assessment (project option);
 - preparation before procedure;
 - procedure;
 - recovery and discharge.

Part 2 identifies the spaces which need to be provided for these groups of activities.

- 2.27 The patient management system will significantly influence the design and overall area of the unit, including the number of:
 - chairs in the main waiting area;
 - patient preparation rooms;
 - trolley positions and chairs in the recovery areas.

Project teams will need information in connection with the management of patients, including the planned throughput, the appointments system and the policy for escorts.

- The number of chairs in the main waiting area in particular is affected by the appointments system. It is recommended that patients arrive at intervals during the course of a session and not together at the beginning of a session. This may be termed "phased admission": it has the advantages both of reducing the waiting times for patients before procedures, and of reducing the size of the main waiting area.
- 2.29 The assumptions used to determine the size and/or number of the spaces referred to in paragraph 2.27 are identified in Appendix 5. Figure 4, included with the Annexe to Appendix 5, illustrates by means of a bar chart the movement of patients and escorts through an endoscopy unit during a half-day session. With the accompanying text, project teams will find the figure helpful as a basis for carrying out their own assessment of the effect of local factors on the number and/or areas of spaces required.
- 2.30 The design of the unit should facilitate uninterrupted patient movement both between and within the groups of spaces.





2.31 Account should be taken of:

- in-patients who arrive from other parts of the hospital. It is assumed that
 they will be prepared for endoscopy in an in-patient ward, attend the
 endoscopy room only in the endoscopy unit, and be transferred back to the
 in-patient ward following endoscopy;
- patients admitted to the endoscopy unit who need to be transferred to an inpatient ward for recovery which, it is assumed, will take place immediately following endoscopy.
- 2.32 Patients may move to and from the endoscopy unit on foot, in a wheelchair, or on a trolley, and may or may not be escorted by a nurse (as well as a porter) dependent on their general condition and whether or not they have been sedated.
- 2.33 Consideration should be given to the factors set out in paragraphs 2.31 and 2.32 when determining the location of the endoscopy rooms in relation to other spaces in the unit and in relation to other parts of the hospital. A link to the main hospital circulation route should be provided to facilitate the transfer of patients between the endoscopy unit and other parts of the hospital.
- 2.34 Ease of movement around the unit will also be necessary for staff and for handling materials. Principal flowlines should be planned to minimise clashes between the movement of patients and the movement of materials. A secondary entrance for staff and material-handling purposes will facilitate this and may be combined with the link to the main hospital circulation route referred to in paragraph 2.33.
- 2.35 It is essential to preserve the privacy and dignity of patients, particularly where men and women occupy adjacent areas or share certain accommodation and circulation spaces. Appropriate spaces should provide visual and auditory privacy.
- 2.36 Patients may be transferred between the endoscopy unit and other parts of the hospital before, and after, endoscopic procedures. Ease of access is important: also, ideally, the distance should be short.
- 2.37 Children should not be moved around a hospital unnecessarily. If, for endoscopy, children attend both the children's department and the endoscopy unit (see Option 4, paragraph 2.18), the two departments should be sited close to each other in order to minimise the travelling distance.
- 2.38 Patients may make their own appointments for endoscopy at the endoscopy unit immediately following an out-patient attendance. It will help patients if the endoscopy unit is located close to the out-patients department.
- 2.39 It is assumed that endoscopy patients will be assessed in the out-patients department. If not, it may be necessary to provide a second consulting/examination room in the endoscopy unit.





- 2.40 An endoscopy unit will need to draw upon other hospital departments for support services. There are no critical connections which demand that the endoscopy unit is located immediately adjacent to any of them, but short logistical links and ease of access will aid efficiency.
- 2.41 Provision of a secondary entrance from the main hospital circulation route will facilitate ease of access to and from other parts of the hospital for patients, staff and materials

Comprehensive accommodation for day care

2.42 Consideration should be given to accommodating other related day care services, such as day surgery and medical investigations and treatment, with endoscopy. (See Appendix 2 and SHPN 52 - 'Accommodation for day care', Part 1 - 'Day surgery unit' and Part 3 - 'Medical investigation and treatment unit'.)

Location

- 2.43 The main locational requirement of an endoscopy unit within an acute general hospital is the need for easy access for patients, escorts, staff and materials. Patients and escorts should be able to move directly into and out of the unit from the outside without entering other parts of the hospital complex and needing to use lifts and corridors.
- 2.44 The endoscopy unit should be sited at ground level on a single floor. It should have its own external main entrance off the hospital road system for use by patients and escorts. The endoscopy unit should have a clear, unique identity.

Planning considerations

Patients and escorts

- 2.45 The majority of patients and escorts will make their own arrangements for transport to and from the endoscopy unit, many travelling by private car. Patients and escorts should be able to locate the endoscopy unit easily from the main entrance to the hospital site.
- 2.46 Escorts may remain with adult patients for all activities except "procedure" (see paragraph 2.26). During the period of "procedure", and also during other periods of a patient's attendance, escorts of adult patients may wish to leave the unit. Provision of an escort location system (similar to a "bleep"/staff location system for members of staff) will facilitate the recall of escorts as and when appropriate. Mobile telephones should not be used and should be switched off within the endoscopy unit.





Car parking

- 2.47 Car parking facilities should be provided for patients and escorts attending the endoscopy unit. It is helpful if patients can be set down prior to endoscopy and collected following endoscopy (particularly if they have been sedated), at a point close to the main entrance to the endoscopy unit. This objective can be achieved if the car parking facilities are located:
 - close to the endoscopy unit, and an adequate number of spaces reserved for use by patients/escorts; or
 - remote from the endoscopy unit, but adequate space is provided near the main entrance where cars can be parked temporarily while escorts attend to patients.

A member of staff may have to stay with the patient until the escort returns with the car.

2.48 Car parking will also be required for staff.

Bicycle storage

2.49 Secure bicycle storage for both staff and patients may be required and should be provided in the ratio of 1 cycle space for every 8 car parking spaces. See Cycling by Design, Scottish Executive.

Provision of WCs

- 2.50 WCs are required in an endoscopy unit:
 - for men and women who are disabled as well as those who are ambulant;
 - for patients, escorts, staff and visitors, any of whom could be disabled;
 - for patients and escorts, close to the main waiting area, the patient changing rooms and the recovery areas.

In responding to these diverse needs, care should be taken to avoid the provision of an excessive number of WCs.

2.51 Single-cubicle WCs, appropriate for use by men or women, are implied. Those in patient areas should be of a sufficient area to allow staff to assist when necessary, including manoeuvring a patient on to a trolley or wheelchair. Upgrading one of these WCs to disabled standard in each of the locations noted in paragraph 2.50 would help disabled people to feel included, while making an economic provision. This WC could also be used by others. Additionally, the inclusion of a bidet in the WC associated with the recovery areas might also serve to reduce proliferation of facilities.





2.52 Individual projects will need to balance the amount of sharing of facilities to meet functional requirements while still ensuring the maintenance of privacy and dignity required in the endoscopy unit.

Hospital clinical and operational policies

2.53 General guidance on Hospital clinical and operational policies is set out in SHPN 03: General design guidance. The following paragraphs describe clinical and operational requirements specific to an endoscopy unit, and should be used in conjunction with the guidance given in SHPN 03.

Catering

- 2.54 Patients should have the opportunity to receive light refreshments, such as sandwiches or toast, and beverages, for consumption during the pre-discharge recovery period. Project teams should decide whether the service provided to patients should be extended to escorts.
- 2.55 It is assumed that staff will attend the hospital staff dining room for main meals although facilities are required in the endoscopy unit where staff can relax, and prepare and consume snacks and beverages.

Sterile services

- 2.56 An SSD may provide a service to the endoscopy unit which includes cleaning and disinfecting specific items of medical equipment and, when agreed locally, the scheduled servicing needs of the medical equipment being cleaned and disinfected in the SSD.
- 2.57 Facilities will be required in the endoscopy unit for cleaning, disinfecting and securely storing endoscopes not suitable for processing in the SSD and automatically emptying, cleaning and disinfecting suction bottles. Suction bottles should be of a design that has disposable liners, thus avoiding the risk of staff exposure to body fluids.

Clinical services

2.58 It is assumed that clinical service departments in an acute general hospital will be responsible for the provision of appropriate clinical services to the endoscopy unit.





Staff changing

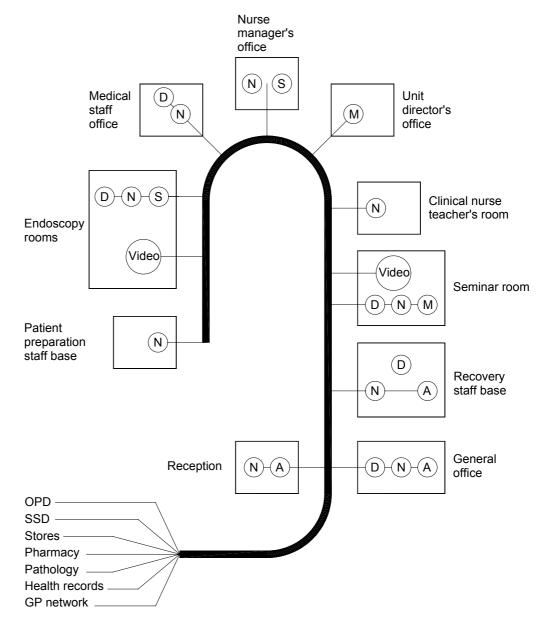
- 2.59 If changing accommodation elsewhere is used, it will be necessary to provide within the unit:
 - small lockers for secure storage of small personal items;
 - toilet facilities.
- 2.60 It is assumed that all staff who need to change will do so in the unit. This Note describes changing accommodation, including staff change/locker rooms, showers and WCs for use by staff.

Information handling

- 2.61 Information management and technology (IM&T) is fundamental to the successful operation of an endoscopy unit. Systems selected should offer a wide range of facilities, and be consistent with local and NHSSCOTLAND IM&T strategies. Further guidance is given in SHPN 03: General design guidance.
- 2.62 Figure 2 illustrates a comprehensive IM&T network for an endoscopy unit: a glossary which explains the meaning of the terms used on the Figure is included in Chapter 7 Appendix 4.







Key to IT station functions

· Health records

(D) octor (N) urse (M) anager Administration Stock Stats/activity analysis Appointments Stores Orders Patient assessment Health records Results Decision support • SSD · Care planning · Clinical coding Staff rosters Contracting · Non-clinical orders Pharmacy Word processing Orders Word processing Electronic mail Electronic mail GP contact Results Waiting lists Waiting lists · Community contact · Non-clinical orders Appointments Appointments

Figure 2: IT network diagram: Consistent with National NHS Information Management and Technology Strategy

Health records





3. Specific functional and design requirements

Introduction

3.1 This Chapter describes in greater detail the individual spaces in an endoscopy unit.

Relationships of spaces

3.2 Figure 3 identifies the relationships of spaces and groups of spaces described in this Chapter.

Description of accommodation

Main entrance canopy

- 3.3 Patients and escorts should be able to find the endoscopy unit easily on arrival at the hospital. The entrance canopy may be designed to be sufficiently conspicuous to attract attention.
- Ambulances may deliver or collect patients. The entrance canopy should therefore not only be large enough to afford adequate weather protection for patients alighting from and entering vehicles, but also be high enough to clear lights and aerials on ambulances. The space should be well lit.

Main entrance draught lobby

3.5 Access to and from the main entrance to the unit should be through a draught lobby with automatic doors. The lobby should be large enough to allow people to stand aside to permit the passage of a patient accompanied by an escort and also to allow pushchairs and wheelchairs to pass. The lobby should have a floor covering which will trap dirt carried by footwear and on wheels, and which can be easily cleaned.

Main entrance foyer

The foyer provides circulation space between the draught lobby and the main patient routes leading to the reception counter and the main waiting area, and from the recovery areas. The foyer should be large enough to allow people to move about with ease, including those in wheelchairs and those using walking aids.





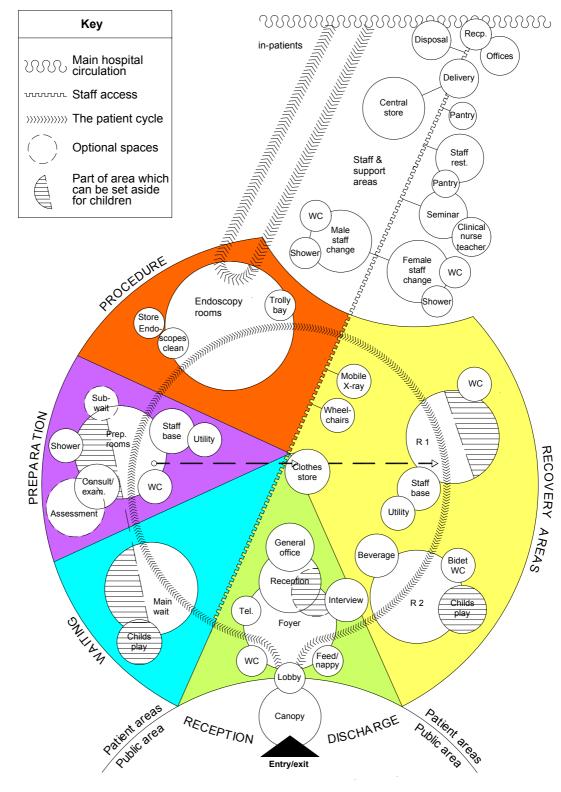


Figure 3: Functional relationship diagram





- 3.7 The WC/wash for escorts and visitors (paragraph 3.86), the baby feeding and nappy changing room (if provided/paragraph 3.87) and a public telephone (paragraph 3.88) should be located with entry direct from the foyer and be easily accessible to patients and escorts entering and leaving the unit.
- 3.8 The foyer should be large enough to allow people to move about with ease, including those who are disabled, in wheelchairs and using walking aids.

Reception counter

- The reception counter should provide a low, open, friendly facility that does not give any sense of a barrier or generate a feeling for the patient of "them and us". The overall impression must be of high-quality design that combines efficiency with elegance. Patients, escorts and staff must be able to talk and exchange information with ease.
- The main function of receptionists will be receiving and registering patients and their escorts upon arrival. The receptionists will also deal with enquiries made in person, remind escorts of arrangements for collecting patients, and provide a link with nursing staff. Information on the movement of patients and their health records through the unit may be provided by means of computer links or telephone. Space will be required at the reception counter for VDUs, a working supply of stationery and office accessories, and parking a health records trolley. Care should be taken with the initiation and receipt of telephone calls concerning patients, as telephone calls are a distraction and may be inappropriate to conduct in front of patients.
- 3.11 The reception counter should be located and designed so that:
 - there is easy access from the foyer;
 - it is obvious to patients and escorts when entering the main waiting area;
 - seated receptionists can see all patients and escorts entering the unit and in the main waiting and play areas;
 - there is direct access to the general office;
 - there are two heights to the counter top:
 - (i) for wheelchair and child patients;
 - (ii) standing height for occasional writing.

General office

An office is required immediately adjacent to, and opening off, the reception counter area to provide the administration and communication centre of the unit. Provision of Type 5 and/or Type 6 office workstations (see HBN 18 - 'Office accommodation in health buildings') is appropriate. Duties of administrative and clerical staff may include management of the patient appointment system, issue of discharge letters, liaison with other parts of the healthcare system,





preparation of reports and analysis of statistics. VDUs are required for word-processing and other computer-related activities. Consideration should be given to routing all telephone calls to and from the unit through the general office. A fax machine will be required for transmitting messages to general practitioners and other personnel. A working supply of stationery, and leaflets to hand to patients and escorts and for display, can be stored in cupboards in the general office.

Records trolley store

- 3.13 A store should be provided in the general office where trolleys used in a health records trolley exchange service can be parked. Space is required for three trolleys, that is, for holding overnight the trolley used during the current day, and for parking one trolley for each of the following two days (thereby allowing time for the final checking and preparation of health records in the unit).
- 3.14 It is assumed that a separate health records trolley is used for the health records of patients attending on one day. Accordingly, in a small endoscopy unit the trolley will hold relatively few records and in a large endoscopy unit the trolley will be full. In small to medium-size units, consideration might be given to storing records for two days on one trolley, thereby accommodating records for up to a week or more within the unit.
- 3.15 Access to health records should be limited to appropriate members of staff. It should be possible to lock the store; this is particularly important when the general office is not occupied.

Main waiting area

- 3.16 Patients and escorts will appreciate a main waiting area which has a comfortable and relaxing environment with domestic-type finishes and furnishings. Different types of seating are required and should include those suitable for elderly people and children. Parker Knoll type chairs help patients to relax. The layout should be informal. There should be space for a patient in a wheelchair and for people using walking aids. Project teams may wish to consider the provision of low-level background music and/or a TV/video system. These may help patients relax, alleviate the boredom of essential waiting, particularly for children, and mask confidential discussions. Project teams should carefully consider all aspects of such installations, including location of equipment, volume level and control, and programme content. A supply of current reading material suitable for both sexes should be available in a well-designed holder. Coffee tables and racks to display health education leaflets should also be provided.
- 3.17 The main waiting area should have direct access from the foyer, be overseen by the reception counter, and have easy access to patient preparation rooms. The main waiting area should be sized on the basis of an effective appointments system. Chapter 7, Appendix 5 identifies the assumptions made in assessing the area included in the Schedules of Accommodation.





Play area (main waiting)

- 3.18 A play area should be provided where children can play or read in safety. The play area should:
 - be "en-suite" with the main waiting area;
 - if possible, have access to an external play area (see SHPN 45 'External works for health buildings').

Supervision, especially of the external play area, may be required.

Secondary entrance

- 3.19 A secondary entrance to the endoscopy unit, preferably off the main hospital circulation route, will provide a convenient link to the hospital. Dedicating the main entrance for use by adult patients, escorts and visitors, the secondary entrance will facilitate:
 - ease of access for staff;
 - delivery of supplies and disposal of waste, etc;
 - access and admission of patients to and from in-patient wards;
 - access and return of child patients to and from the day care ward of the children's department, where necessary (see paragraph 2.18).
- 3.20 Access at a secondary entrance will need to be secure and controlled. Unless the entrance is manned or overseen by a member of staff based in an adjacent space, a door security intercommunication system will be required in order to provide an appropriate level of security. The system will prevent unauthorised entry while permitting free movement of staff. A terminal in an appropriate space in the unit will need to be connected to a terminal at the secondary entrance.

Children's reception

- The children's reception is a project option. It should be located adjacent to the secondary entrance by project teams planning an endoscopy unit where use by children is limited (see Option 4, paragraph 2.18). Children coming from the day care ward of the children's department can then enter the endoscopy unit, be received in the children's reception and follow a separate flowline from that used by adult patients. Children do not, therefore, have to enter the endoscopy unit via the main entrance, the foyer, the reception counter and the main waiting area.
- 3.22 As children will have been prepared for endoscopy in the children's day care ward, the children's reception should have convenient access to the endoscopy rooms. After endoscopy, children may be returned to the children's day care ward for recovery and discharge via the children's reception and the secondary





entrance. In this option, children will not be expected to use the patient preparation rooms or the recovery areas used by adult patients.

Patient preparation staff base

- 3.23 It is important for the staff base to oversee the patient changing rooms and the patient sub-wait area. The staff base acts as a focal point for staff who will be managing the preparation of patients prior to their procedure. Facilities needed at the staff base include:
 - a writing surface;
 - communications equipment, including a VDU and key board;
 - storage space for a working supply of clean and sterile supplies and for stationery;
 - space for holding health records of patients.
- 3.24 The staff working within the patient preparation area will collect each patient, with their health record and where appropriate an escort, from the main waiting area and will accompany them to a patient preparation room

Patient preparation rooms

- 3.25 Preparation rooms are required where a patient can, as necessary:
 - undress in privacy and put on "theatre" clothing;
 - have certain procedures undertaken prior to the endoscopic procedure;
 - hold confidential discussions, for example, taking informed consent.
 Auditory privacy should be provided as far as practicable;
 - relax and wait until it is time to be escorted to an endoscopy room;
 - use a patient/nurse call system.
- There are various ways of handling patients' clothing and personal effects. Project teams will need to work out their own method. SHPN 52 Part 2 assumes that, with the patient's permission, clothing and personal effects will be transferred to and retained in a secure clothing store for safe-keeping until required (see paragraph 3.84).
- In the interests of maintaining a non-clinical environment as far as possible, each patient preparation room might include a domestic-style vanity unit, with a hand-rinse basin, mirror, and cupboard for holding "theatre" clothing. Patient preparation rooms should not be cramped. Each requires easy chairs for the patient and for an escort. All rooms should be capable of accommodating a person in a wheelchair. Nursing staff may carry out simple clinical procedures, such as taking a patient's blood pressure. The use of a mobile





sphygmomanometer may be preferred to a wall-mounted version. Project teams may wish to consider the provision of low-level background music.

3.28 Patient preparation rooms should be adjacent to the main waiting area, with patient toilet facilities and the patient preparation staff base in close proximity. Patient flow will be assisted if there is easy access from the patient preparation rooms to the endoscopy rooms. The number of patient preparation rooms required should be determined locally. The key factor will be the patient throughput of the endoscopy rooms. Generally, one patient preparation room for each endoscopy room will suffice when the time required for an endoscopic procedure is longer than that for patient change. An additional room should be provided to cater for the endoscopy session with a fast throughput. Pressure on the number of patient preparation rooms resulting from fast throughput of patients will be further relieved by the inclusion of a sub-wait area (paragraph 3.30). Appendix 5 identifies the assumptions made in assessing the number of preparation rooms included in Chapter 6, the Schedules of Accommodation.

Colonoscopy preparation room

3.29 SHPN 52 Part 2 assumes that patients will arrive at the endoscopy unit already prepared for procedures such as colonoscopies and, therefore, that a colonoscopy preparation room is unnecessary. This would not be the case for stand-alone facilities carrying out these procedures.

Sub-wait area

3.30 It is recognised there are a number of options relating to patient movement and places where patients, once changed for endoscopy, may wait. The guidance in Chapter 2 advocates that waiting should be in comfort and mostly take place in a patient preparation room, thereby minimising the number of moves a patient is required to make before reaching an endoscopy room. Some patients, however, prefer to wait with other patients. An open sub-wait area where patients can wait together after leaving their preparation room and until it is time to be taken to an endoscopy room may be provided. It is a project option.

Consulting/examination room

3.31 A patient preparation room is inappropriate for consultation and examination purposes. A multi-purpose standard combined consulting and examination room is provided for such occasions. This room should be located with convenient access from the patient preparation rooms.





WC/wash: patient

3.32 WC facilities for male and female patients should be provided close to the patient preparation rooms.

WC/wash: disabled people

3.33 A WC with a hand-wash basin, easily accessible from the main waiting area, should be provided for use by disabled people who attend, or work in, the endoscopy unit.

Shower: patient

3.34 In localities where residential accommodation may have inadequate facilities, project teams may provide a shower for patient use. This should adjoin the patient WC facilities. It is a project option.

Endoscopy room

- Patients may move to the endoscopy room from the main waiting area, a patient changing room, a sub-wait area or an in-patient ward, and may arrive on foot, in a wheelchair or on a trolley. Patients who arrive on foot or in a wheelchair will transfer to a trolley in the endoscopy room.
- 3.36 An endoscopy room should be capable of accommodating a range of diagnostic and therapeutic endoscopic procedures (see Appendix 1), and be dedicated for single-purpose use only if fully utilised for a particular type of procedure.
- Easy access is required for the movement of trolleys into and out of the endoscopy room. During an endoscopic procedure, the trolley with the patient is located at the centre of the room, with the doctor standing at one side of the trolley and a nurse standing at one end of the trolley. The endoscope viewing monitor should be at the opposite side of the trolley to the doctor in order to provide uninterrupted views of the procedure. The room can be divided diagonally into two main areas, the doctor area and the nurse area, in accordance with the positions and activities of the doctor and the nurse, and the facilities used by them. Further information on this matter, including ergonomic drawings for an endoscopy room, is included in Appendix 6.
- 3.38 The doctor area should include clinical hand-wash facilities and a small office workstation where a doctor may sit to dictate or write notes between cases and/or use a visual display unit (VDU) for word-processing and other computer-related activities.
- 3.39 The nurse area should include a work-surface with inset sink, and units for the storage of endoscope accessories, small quantities of clean and sterile supplies and drugs, including the temporary storage of Controlled Drugs. There should





be direct access from the nurse area to the endoscope cleaning room and store to facilitate the supply and reprocessing of endoscopes.

- 3.40 Items of endoscopy equipment, including the light source, suction equipment, endoscope viewing monitor, video cassette recorder and printer, may stand on trolleys or wall-mounted shelves or in wall-mounted units. Other items of equipment should include a twin X-ray viewer and a pulse oximeter. Consideration should be given to providing appropriate services on ceilingmounted pendants and to locating the CCTV camera so that the view of appropriate activities is not obstructed.
- 3.41 Space is allowed to manoeuvre and position a mobile image intensifier. If an image intensifier is to be used, the design and construction of the endoscopy room must be approved by the local radiation protection adviser. Lead aprons worn by staff remaining with the patient during an X-ray procedure are held on racks in the mobile X-ray equipment bay.
- 3.42 The endoscopy room should be provided with piped oxygen and medical vacuum outlets and a staff emergency call system. A clinical hand-wash basin is also required.
- 3.43 Natural daylight is appreciated by patients and staff and should be supplied directly by windows. If this is not possible, consideration should be given to the provision of "borrowed" light, for example by means of windows across corridors. Patient privacy is of paramount importance and, in some situations, it may be necessary to install window blinds. Vertical-vane blinds can be adjusted to maintain privacy and still allow a good supply of natural light. Windows should not be openable and should be sealed to the external environment.
- 3.44 Project teams may wish to consider the provision of low-level background music.
- 3.45 After the endoscopic procedure, patients may move to the recovery stage 1 area, the recovery stage 2 area or an in-patient ward; they may do so on foot, in a wheelchair or on a trolley. Patients may leave the unit on foot direct from the endoscopy room; access should be via the recovery areas.

Endoscope cleaning room and store

- 3.46 An endoscope cleaning room and store is required with a "dirty" area where used equipment can be reprocessed and a separate "clean" area where reprocessed equipment can be stored. See also Figures 11 and 12 in Appendix 6.
- 3.47 Endoscopes and endoscope accessories which cannot be autoclaved should be cleaned and disinfected in the "dirty" area. Also, if local policy elects, endoscope accessories may be sterilised and suction bottles may be automatically emptied, washed and disinfected; alternatively, these items may be returned to the sterile services department (SSD) for reprocessing.





- 3.48 Dependent on local usage, the "dirty" area should be equipped with an automated endoscope washer/disinfector, an automated suction bottle washer/disinfector, a sink unit with two sinks and a double drainer, a worksurface and low-level cupboards for the storage of a working supply of consumables (such as liquid disinfectant). A source of suction will be required if tubes and cannulae are irrigated; a worktop autoclave if endoscope accessories are sterilised; and an ultrasonic cleaner for processing flexible endoscope accessories.
- 3.49 Glutaraldehyde is a hazardous substance. It is recognised to be toxic-irritant and allergenic. Care should be taken to avoid inhalation and skin and eye contact. The machine should be located in a well ventilated room with a minimum of 5 air changes per hour. More detailed guidance on its use and on safety precautions is included in paragraphs 5.6 to 5.11.
- 3.50 Storage is required for appropriate personal protective equipment such as hazardous spill kits, nitrile gloves, goggles, impermeable aprons and respiratory protection suitable for use when mixing and dispensing solutions of glutaraldehyde. This equipment should be kept near the autodisinfector but not in the same room.
- 3.51 The "clean" area of the endoscope cleaning room and store should include units for the storage of:
 - flexible endoscopes;
 - flexible accessories for endoscopes;
 - other accessories for endoscopes.
- 3.52 Clinical hand-wash facilities, and pedal-operated sack-stands for the disposal of waste, are also required.
- 3.53 The endoscope cleaning room and store should have direct access from the nurse area of the two endoscopy rooms it is assumed to serve. Care should be taken to ensure that aural and visual privacy for patients in the endoscopy rooms is maintained.

Mobile X-ray equipment bay

A space to accommodate a mobile image intensifier with TV monitor and video recorder on a trolley, and an X-ray protective apron rack, should be provided with easy access to the endoscopy rooms. Alternatively, project teams may consider providing additional space for the storage of X-ray equipment in the endoscopy room most likely to be used for endoscopic procedures which require X-ray facilities.





Recovery areas

- 3.55 Various arrangements for patient recovery are currently in operation. In Part 2, the guidance provides for recovery to take place in two stages.
- 3.56 The recovery stage 1 area includes reclining chairs for patient recovery. Each reclining chair is contained in an individual curtained space; the curtains may be partially or fully closed, or fully open. Patients may move from an endoscopy room to the recovery stage 1 area on a trolley, in a wheelchair or on foot.
- 3.57 Each curtained space should be provided with service outlets, including oxygen and medical vacuum, a patient/staff call system and a chair suitable for use by an escort. The patient may dress in privacy, when fit to do so, before moving to the recovery stage 2 area. The recovery stage 1 area should be as non-clinical in appearance as recovery functions permit. There should be easy access from the endoscopy rooms.
- 3.58 The recovery stage 2 area is a type of open lounge, furnished with informally arranged seating and occasional tables. Patients complete their recovery here and are prepared for discharge. Light refreshments and beverages should be available. An area where children can play safely, similar to that provided in the main waiting area, may be provided en-suite with the recovery stage 2 area. Toilet facilities will also be required. Project teams may wish to consider the provision of low-level background music and/or a TV/video system in the recovery stage 2 area. The recovery stage 2 area should be located close to the main entrance by which patients will leave after discharge.
- 3.59 Chapter 7, Appendix 5 identifies the assumptions made in assessing the areas of the recovery areas included in the Schedules of Accommodation.

Recovery staff base

- A staff base is required, as a focal point, within the recovery areas. It should be located in a dominant position capable of overseeing both the stage 1 and stage 2 areas. Patients and escorts should be able to easily identify the staff base. Space is required for equipment associated with computer-related activities.
- 3.61 Administrative duties associated with recovery and discharge, and communications with other spaces within the endoscopy unit, will take place at the staff base. Shelving should be provided to accommodate a working stock of sterile supply and disposable items required for procedures undertaken during recovery. Clinical hand-washing facilities are required.
- 3.62 Each patient will receive discharge instructions and may be issued with prescribed drugs or medicines. Storage facilities for medicinal products should be provided at the staff base. On discharge, the patient's health records will be placed on a parked health records trolley prior to being returned to the unit's general office.





Resuscitation trolley bay

3.63 A resuscitation trolley bay, with space for parking a resuscitation trolley (with defibrillator), a mobile suction unit and a cylinder of oxygen on a trolley, should be located adjacent to the recovery staff base and with easy access to all spaces used by patients.

Trolley bay

3.64 Space is required to park one patient's trolley per endoscopy room. The space may be provided with each room or in (a) trolley bay(s) close to two or more endoscopy rooms. Trolley parking space is required mainly in connection with endoscopic procedures carried out on in-patients.

Wheelchair park

3.65 Space should be provided to park wheelchairs. The wheelchair park should be located close to the endoscopy rooms and may be combined with the trolley bay.

Beverage bay

A beverage bay where staff and/or escorts can prepare light refreshments and beverages should be provided en-suite with the recovery areas. Facilities for storing crockery and cutlery and for washing-up, and a refrigerator, are required. Consideration may be given to installing a snack/beverage vending machine, water dispenser and ice making machine.

WC/wash: patient

3.67 WC facilities for male and female patients should be provided in association with the recovery areas. A bidet should be included with one of the WCs. Compartments should be sized to allow assistance in an emergency.

WC/wash: disabled people

3.68 A WC with a hand-wash basin, easily accessible from the recovery areas, should be provided for use by disabled people who attend, or work in, the endoscopy unit.

Dirty utility

3.69 A small dirty utility room should be provided where appropriate items of equipment (including some trolleys) may be cleaned, for the disposal of liquid and solid waste, and for temporarily holding materials to be reprocessed and for disposal.





3.70 The room should be fitted with a sluice sink, a sink-unit with drainer, a handwash basin, a work surface, cupboards and shelves. Space should be available to park trolleys and for temporarily holding bags of soiled linen, etc. Pedaloperated sack-stands are also required.

Unit director's office

This office is the administrative base for the unit director. It should be sufficiently private for confidential discussions between staff, and for interviewing patients' escorts. The office should accommodate one Type 3 office workstation with VDU and keyboard, telephone, seating for up to three other persons, and storage for books and files. If possible, the room should be located on an external wall and have a window.

Nurse manager's office

3.72 The nurse manager requires similar office facilities to those provided for the unit director.

Medical staff office

3.73 The medical staff office should include facilities for use by medical staff working in the unit for administrative work, confidential discussions and the dictation of case notes. A telephone is required. If possible, the room should be located on an external wall and have a window.

Interview room

It is expected that most confidential discussions with patients, including taking informed consent for treatment, will occur in the patient preparation rooms (see paragraph 3.25). However, an interview room may be provided where extended interviews and counselling can take place in greater privacy. It should be located convenient for use by patients as they enter and leave the endoscopy unit in order to facilitate easy access for pre-and post-procedure counselling. The walls of the interview room should be constructed so as to attenuate sound and provide an acceptable level of speech privacy. The room should be furnished with easy chairs and an occasional table. Provision of an interview room is a project option.

Staff change/locker room

- 3.75 The guidance in Part 2 assumes that:
 - all staff will change within the unit;
 - personal hospital and/or unit uniforms will be issued elsewhere in the hospital.





- 3.76 Separate staff change/locker rooms are provided for men and women. In the staff change/locker rooms, staff change from outdoor clothing to a uniform and store outdoor clothing and other personal items.
- 3.77 Personal full-length lockers for the secure storage of dry outer and middle garments, footwear and small items of personal belongings are required. Hanging rails, with security, for the storage of wet outer garments and lockers for large items of personal belongings should be provided. Used uniforms will be deposited in a soiled linen trolley.
- 3.78 Project teams should consider providing electronic security locks on access doors to staff change/locker rooms.

Staff sanitary facilities

3.79 Sanitary facilities, including WCs with hand-wash basins, and a shower, should be located adjacent to the staff change/locker room. Separate facilities are required for male and female staff.

Staff rest room

- 3.80 Rest room facilities are required where staff can relax and take beverages and snacks. Project teams may determine how the total space available should be allocated. One large common room may be preferred or, alternatively, the total space may be divided to provide two rooms.
- 3.81 Rest rooms should have windows with a pleasant outlook, be comfortably furnished and include a telephone. Rest rooms should have direct access to the pantry.

Pantry

Pantry facilities are required for the safe handling of food including the preparation of beverages and light snacks, for washing and storing crockery and cutlery, for storing a limited quantity of dry goods, and for the refrigerated storage of milk, etc. Equipment should include a stainless steel sink and drainer, a small electric water boiler, a microwave cooker, a worktop with cupboards, an automatic dishwasher and a wash-hand basin.

Seminar room

3.83 The nature of the work in an endoscopy unit is such that staff cannot easily leave the unit when it is operational. A seminar room should therefore be provided within the unit for teaching, tutorials, meetings, case conferences and clinical instruction. The room may also be used as a base for a clinical nurse teacher. Furniture and equipment should include upright stacking chairs with writing arms, a wall-mounted whiteboard, a mobile X-ray viewer, a video/TV monitor, a wall-mounted display panel and facilities for storing valuable and





fragile items. Closed-circuit television should link the seminar room with the endoscopy rooms.

Patients' clothing store

3.84 SHPN 52 Part 2 assumes that, with the patient's permission, clothing and personal effects removed during patient preparation will be transferred to and securely held in a clothing store until returned to the patient during recovery. The patients' clothing store should be easily accessible from the patient preparation rooms and from the recovery areas.

Unit cleaners' room

Space and facilities must be sufficient for parking and manoeuvring cleaning machines and for the cleansing of cleaning equipment and the disposal of fluids and used cleaning materials. Hand-washing facilities are also required. Shelving and vertical storage should not encroach on the working space or restrict access to the cleaners' sink. Not requiring a close relationship with any particular area within the unit, the cleaners' room should be located away from the principal routes used by patients. The door to the room must be lockable. A locked cupboard for the safe storage of cleaning materials etc should be provided within the room.

WC/wash: escort and visitor

3.86 Escorts and visitors to the unit should have access to toilet facilities separate from those reserved for patient use, possibly located off the main entrance foyer.

Baby feeding and nappy changing room

3.87 Provision of a baby feeding and nappy changing room, where a baby can be breast- or bottle-fed and have a nappy change in privacy, is a project option. If included, the room should have easy access from the main waiting and recovery areas, possibly located off the main entrance foyer. Seating, and facilities to dispose of soiled nappies and other waste and for hand-washing, are required.

Public telephones

3.88 Patients and escorts may need the use of a telephone. Public telephones should be located within easy access from the main waiting and recovery areas. A fixed payphone should be provided in the foyer. Payphone socket-outlets should be provided in the recovery areas for use with a telephone trolley and/or a portable telephone. Consideration should be given to use of a payphone by a person in a wheelchair and a person with impaired hearing.





General store

A general store should be provided for the storage of mobile and loose items of medical and other equipment and for general supplies. Floor space where items of mobile equipment and a linen exchange trolley can be parked, and shelving for storage, are required. Endoscope packing cases may be stored here.

Disposal hold

- 3.90 A disposal hold is required where bags of soiled linen for reprocessing, SSD returns, bags of refuse for disposal and other items, as appropriate, can await removal by portering staff. Bagged items should be identified appropriately, using a colour-code system, in accordance with local policy.
- 3.91 The floor space should be clearly sub-divided in order that the types of commodity are separate from each other. This will not only assist rapid collection but should minimise the risk of items for reprocessing being accidentally taken for disposal by incineration.
- 3.92 The hold area should be located near the exit from which collections will be made.
- 3.93 Project teams should examine the size of the hold in relation to the anticipated maximum load on the space, for example the largest number of bags of soiled linen and refuse and SSD returns likely to be held at any one time. The maximum load will be influenced mainly by the workload of the unit and the frequency of collections. If the hold appears to be inadequate in size, consideration may be given to increasing the frequency of collection as an alternative to providing a larger hold.

Switchcupboard

- 3.94 A unit switchcupboard, with lockable doors, housing the main isolators and distribution fuse switchgear should be:
 - accessible directly from a circulation area (access space may be part of the circulation area);
 - sited away from water services.
- 3.95 The switchcupboard, where possible, should be sited within the unit. There should be clear and safe access for maintenance staff and care should be taken to ensure that safety is not compromised, during maintenance, from passing traffic or the opening of adjacent doors.





4. General functional and design requirements

Introduction

There is no supplementary guidance under this heading for an endoscopy unit. For guidance on general functional and design requirements refer to SHPN 03: General design guidance, which should be implemented as appropriate for the project under consideration.





5. Engineering services

Introduction

5.1 This Chapter describes specific engineering services requirements for an endoscopy unit. It complements the general engineering services guidance given in SHPN 03: General design guidance. The combined guidance should not inhibit the design solution, but will acquaint the engineering members of the multi-disciplinary design team with the design criteria and material specification needed to meet the functional requirements.

Maximum demands

As a guide and for preliminary planning purposes only, the following table gives the estimated demands for an endoscopy unit with two endoscopy rooms.

Service	Typical max. demand	Notes
Heating/ventilation (kW)	125	
Domestic HWS (I/s) peak simultaneous demand	1.7	
Cold Water (I/s)	1.4	
Supply ventilation (m³/s)	1.9	
Extract ventilation (m³/s)	1.8	
Refrigeration, chilled water (kW)	24	
Electrical (kVA)		
Lighting	14	Includes essential 6kVA
Fixed power	12	Includes essential 6kVA
Small power	56	Includes essential 20kVA
Medical gases (I/min)		
Oxygen	184	
Vacuum	210	





Mechanical services

Heating

5.3 Heating throughout the unit should be controlled by the building management system to "set back" temperatures to 10°C during "out-of-use" hours. A manual override should restore all plant promptly to full operational status.

Ventilation

Ancillary accommodation

- 5.4 Endoscopy rooms will be comfort-cooled as described later, but some other areas will be mechanically ventilated.
- 5.5 The supply plant for ancillary accommodation, if required, should be separate from the plant serving the endoscopy rooms.

Substances hazardous to health

- The most commonly used disinfectant solution is glutaraldehyde. Where such a solution is used, "local exhaust ventilation will be required". See Safety Action Bulletin SAB(92)17.
- 5.7 To ensure compliance with the Health and Safety Commission (HSC) Occupational Standard (OES), disinfection of endoscopes with solutions of glutaraldehyde should be carried out in a cabinet which has a separate mechanical ventilation extract system which exhausts to the open air, or effectively recirculates the air using suitable absorption filtration methods. The face velocity or control velocity is the primary characterising parameter. However, the direction and stability of the air flow is as important as the quantity. Provision should be made for the front cover to be pulled down to close off the enclosure apart from a minimum opening of 25 mm across the width of the enclosure.
- 5.8 The type of endoscope washing machine used will determine the design of enclosure.
- 5.9 If a fully-automatic machine is not used, the making-up and the disposal of used glutaraldehyde solution and rinsing water should also be carried out within a local exhaust ventilation enclosure.
- 5.10 Personal protective equipment, including respirators, should be on hand to deal with spillages and also leaks on automatic cleaning machines. This equipment should not, however, be the primary control measure.
- 5.11 More comprehensive guidance is available in SHTM 2025.





Endoscopy rooms

As the type of endoscopy procedures carried out in this type of unit do not require sterile conditions, the level of control on the air paths is not an important factor. The system should be designed primarily to offset the heat gain from equipment and occupants within the room. Care should be taken to achieve good air diffusion within the room and prevent cold draughts on the occupants. Humidity levels should be assessed at the design stage in order to ascertain whether humidifiers are required to prevent humidity falling to a level which would cause discomfort, especially dry eyes, with the long-term use of VDUs.

Endoscopy room plant

- 5.13 The design and installation requirements of the endoscopy room ventilation plant should comply with SHTM 2040 'The control of legionellae in healthcare premises a code of practice' and the relevant sections of the model engineering specification.
- While it is possible to have one air handling plant (with zonal coils) serving more than one endoscopy room, consideration should be given to using independent plant. An economic and operational appraisal should be undertaken to assess the best option for each project.
- 5.15 Recirculation of air is possible but not recommended. Alternative methods of reducing energy consumption should be considered.
- 5.16 Pre- and main filters should be provided. The pre-filter should have a gravimetric efficiency of at least 80% against BS 6540 and the main filter should have a gravimetric efficiency of at least 95% against the same test.
- 5.17 Air-cooled condensers must be used for heat rejection from refrigeration plant.
- 5.18 Project teams should evaluate the alternative methods of providing steam, from central steam plant from the hospital system to local steam generators, with a view to achieving maximum cost and energy efficiency.

Plant control and indication

5.19 The ventilation system serving the endoscopy rooms may be turned off during periods of non-use. This should be taken into consideration when assessing the feasibility of providing independent ventilation plant for each endoscopy room. The design should ensure, however, that the overall supply and extract systems remain in balance when one or more endoscopy rooms are switched out of use. These systems will need to be reinstated in advance of the endoscopy session. This can be accomplished by the building management system or sensors which detect the presence of staff within the particular endoscopy room. The system should be automatically reinstated if the space temperature falls below 10°C. Under these conditions, humidification should not be provided. It is not considered necessary to set an upper temperature limit at which the ventilation should be reinstated.





Within each endoscopy room, plant status and temperature indication, together with a means of adjusting the set points, should be provided. Care should be taken to ensure that these room-mounted controls are capable of being cleaned. Ideally, they should be flush mounted with no dust-collecting recesses.

De-ionised/sterile water

The quality of water required for rinsing endoscopes which have been passed through a washer/disinfector is discussed in detail in HTM 2030, but key factors include hardness, temperature, ionic contaminants, microbial population and bacterial endotoxins. The endoscope washer/disinfector is classed as a medical device and detailed guidance on the application of medical devices legislation should be sought from the Medical Devices Agency.

Piped medical gases and vacuum

- Guidance generally on piped medical gas systems and gas storage is contained in SHTM 2022. Details of the numbers and types of terminals required for the endoscopy room and recovery areas can be found in the appropriate Activity data sheets.
- 5.23 The supply to the unit and to each endoscopy room should be capable of isolation.
- 5.24 Anaesthetic gas scavenging is not required.

Electrical services

Endoscopy rooms

- The visual environment within the endoscopy room is very important both to the staff and to the patient. With the increasing use of videoscopes and other equipment having VDUs, the design of the visual environment should prevent high-luminance reflections on VDU screens. Static and dynamic luminance imbalances need also to be minimised. General advice is contained in the CIBSE Lighting Guide LG3. To monitor patients during procedures, it is necessary that the illuminance is at an acceptable level, with clinical colour-rendering characteristics. Good lighting design will prevent these requirements compromising each other.
- Two-way switching of the luminaires should be available, with one set of switches located within the nurse area of the endoscopy room. The luminaires should be dimmable and fed from a separate circuit on the essential electrical supply in accordance with SHTM 2011. Task lighting may be necessary and should be considered, especially at the preparation worktop and over the accessories trolley.





5.27 When planning the lighting layout, consideration needs to be given to the location of all ceiling-mounted services.

Illuminated signs

The radiation protection adviser should be consulted to determine the need for illuminated signs and interlocks between equipment and doors. Where required, the sign lamp should give a clear indication in red when equipment is energised and may incorporate the legend "Do not enter", visible only when illuminated. All warning lamps should have incandescent filaments energised from a suitable power source within the room and switched via appropriate devices interlocked with the operation of the equipment.

Socket-outlets and power connections

5.29 Advice on the power supply and requirements for mobile radiodiagnostic equipment is contained in SHTM 2007.

Secondary entrance

- A door security intercommunication system is required between the secondary entrance and reception counter to prevent unauthorised entry while permitting free movement of staff. The system should provide for verbal communication with, and an electro-magnetically operated door lock to be controlled from, the reception counter.
- 5.31 An override, located inside the secondary entrance, can provide staff with a convenient exit route for normal work or in the event of fire. The lock should fail safe in the event of power failure or fire alarm activation.

Note: A relaxation of the Building Standards (Scotland) Regulations may be required.

Staff location system

5.32 The hospital staff location system should be extended to include this unit.

Patient/staff and staff/staff call systems

5.33 Patient/staff call points should be provided at each patient preparation consulting/examination area and at every trolley/bed/chair bay in the recovery stage 1 area. Call points should also be located in all patient toilets.





Wireways

Telephones

- In recovery and adjacent areas telephones should be fitted with indicating call lights, bells or buzzers of subdued tone, and muting switches.
- 5.35 Direct inward access (DIA) lines should be provided to telephone instruments located in the general office/reception for patients' appointments and the staff base. It is a local project decision as to whether direct dialling inward (DDI) lines should be provided.
- 5.36 Intercommunication between the reception counter, the general office, staff bases and other areas can be provided by the telephone system. Abbreviated dialling can be used for a range of frequently-called extension numbers.
- 5.37 Each endoscopy room should be provided with a splashproof line jack unit and a wall-mounted "hands-free" telephone with volume control.

Data links

5.38 A CCTV wireway should be provided to link the endoscopy room to the seminar room. These links should use compatible communications trunking and separate conduits to terminal positions wherever possible.

Electric clocks

5.39 Clocks should operate in conjunction with a master clock system. If such a system is not available, synchronous clocks should be installed using a common clock circuit. The circuit should be suitable for future connection to a master system. Clocks should be installed only where they can be viewed by a number of staff, patients and visitors.

Music and television

Outlets for background music should be provided in the main waiting area, patient preparation rooms, endoscopy rooms and recovery stage 2 area. Television outlets should be provided in the main waiting area and the recovery stage 2 area and may be supplied from the hospital system.





6. Schedules of accommodation

- The following schedules are based on the text in Chapter 3, and are illustrative of the acceptable accommodation for the functional units detailed.
- The Schedules include Essential Complementary Accommodation (ECA) and Optional Accommodation and Services (OAS). For a definition of these terms and for an explanation of the use of dimensions and areas and the provision of circulation space, communications space and engineering space, please refer to SHPN 03: General design guidance.





			2 endoscopy rooms		4 endoscopy rooms	
Para No	Activity space	Space area sq.m.	Qty	Total area sq.m.	Qty	Total area sq.m.
	Entrance and reception					
3.5	Draught lobby	11.0	1	11.0	1	11.0
3.6	Foyer		1	27.5	1	36.0
3.9	Reception		1	9.5	1	13.5
3.12	General office	14.0	1	14.0	1	14.0
3.13	Records trolley store	2.5	1	2.5	1	2.5
3.16	Main waiting		1	40.0	1	80.0
3.18	Play area		1	13.0	1	18.0
3.33	Disabled wc/wash – type 5	4.5	1	4.5	1	4.5
3.86	Visitors' wc/wash – type 1	2.0	1	2.0	1	2.0
	Patient preparation areas					
3.23	Patient preparation staff base	10.5	1	10.5	1	10.5
3.25	Patient preparation room	6.5	3	19.5	5	32.5
3.31	Consulting/examination room	13.5	1	13.5	1	13.5





				oscopy oms		oscopy oms
Para No	Activity space	Space area sq.m.	Qty	Total area sq.m.	Qty	Total area sq.m.
	Patient treatment rooms					
3.35	Endoscopy	22.0	2	44.0	4	88.0
	Patient pre-discharge areas					
3.56	Recovery: stage 1		1	83.0	1	145.5
3.58	Recovery: stage 2		1	22.0	1	40.0
3.60	Recovery staff base/utility	10.5	1	10.5	1	10.5
3.63	Resuscitation trolley bay	2.0	1	2.0	1	2.0
3.66	Beverage bay	8.0	1	8.0	1	8.0
3.84	Patients' clothing store	4.0	1	4.0	1	4.0
3.64	Trolley bay		1	6.0	1	6.0
3.65	Wheelchair parking bay	1.5	1	1.5	1	1.5
	Patients' sanitary facilities					
3.32	Patients' wc/wash – type 2	2.5	3	7.5	3	7.5
3.67	Patients' wc/bidet/wash – type 7	4.0	1	4.0	1	4.0
3.68	Disabled wc/wash – type 5	4.5	1	4.5	1	4.5





				oscopy oms		oscopy oms
Para No	Activity space	Space area sq.m.	Qty	Total area sq.m.	Qty	Total area sq.m.
	Staff facilities					
3.75	Male staff change/locker room		1	21.0	1	30.5
3.75	Female staff change/locker room		1	21.0	1	30.5
3.79	Staff wc/wash – type 1	2.0	2	4.0	4	8.0
3.79	Staff shower – type 4	2.5	2	5.0	2	5.0
3.80	Staff rest room		1	16.0	1	22.5
3.82	Staff pantry	7.0	1	7.0	1	7.0
3.71	Unit director's office	11.0	1	11.0	1	11.0
3.72	Nurse manager's office	9.0	1	9.0	1	9.0
3.73	Medical staff office	12.0	1	12.0	1	12.0





			2 endoscopy rooms		4 end	oscopy rooms
Para No	Activity space	Space area sq.m.	Qty	Total area sq.m.	Qty	Total area sq.m.
	Support spaces					
3.46	Endoscope cleaning room and store	19.0	1	19.0	2	38.0
3.69	Dirty utility	6.5	1	6.5	1	6.5
3.89	General store		1	12.0	1	18.0
3.54	Mobile x-ray equipment bay		1	5.5	1	5.5
3.85	Unit cleaners' room	7.0	1	7.0	1	7.0
3.90	Disposal hold		1	6.0	1	8.0
3.94	Switch cupboard		1	3.0	1	4.0
	Net total			529.5		782.0
	ADD – planning provision 5%			26.5		39.1
	Sub-Total		_	556.0		821.1
	ADD – engineering zone 3%			16.7		24.6
	ADD – circulation 27%			150.1		221.7
	Gross Total		_	723.0	_	1,067.4
	Departmental areas		72	3.0 sq.m.	1,0	68.0 sq.m.





Essential Complementary Accommodation

			5%	3%	27%	
Para No	Activity space	Space area	Planning sq.m.	Engineering sq.m.	Circulation sq.m.	Total area
		sq.m.				sq.m.
3.83	Seminar room	22.0	1.1	0.7	6.2	30.0

Optional Accommodation and Services

-			5%	3%	27%	
Para	Activity space	Space	Planning	Engineering	Circulation	Total
No		area	sq.m.	sq.m.	sq.m.	area
-		sq.m.				sq.m.
3.30	Sub-wait area (3 persons)	7.5	0.4	0.2	1.9	10.0
3.30	Sub-wait area (5 persons)	9.5	0.5	0.3	2.7	13.0
3.34	Patients' shower – type 4	2.5	0.1	0.1	8.0	4.0
3.21	Children's reception	5.0	0.3	0.2	1.6	7.0
3.83	Clinical nurse teacher	9.5	0.5	0.3	2.7	13.0
3.74	Interview room	6.0	0.3	0.2	1.5	8.0
3.58	Recovery play area (2 room unit)	12.0	0.6	0.4	3.5	16.0
3.58	Recovery play area (4 room unit)	18.0	0.9	0.6	5.0	24.0
3.87	Baby feeding and nappy changing	5.5	0.3	0.2	1.6	8.0





7. Appendices

Appendix 1 Glossary

Appendix 2 Combined day surgery and endoscopy unit

Appendix 3 A method for calculating the number of endoscopy

rooms required in an endoscopy unit

Appendix 4 Information management and technology network

diagram (Figure 2) – Glossary

Appendix 5 Numbers and areas of key spaces

Annexe to Appendix 5

Appendix 6 Ergonomic studies





Appendix 1

Glossary

Endoscopy

- 1. Endoscopy is a general term relating to examination of a body passage or organ by means of an endoscope for purposes of diagnosis or treatment. Some procedures that formerly required a surgical operation can now be performed much more simply using an endoscope.
- 2. An endoscope is an instrument inserted into the body in order to carry out endoscopic procedures. There are three main types of endoscope:
 - a rigid endoscope. This is a straight, narrow viewing tube with a light source attached;
 - a flexible endoscope. A typical flexible endoscope consists of a bundle of light-transmitting fibres (fibre optics). At one end is the head (with a viewing lens and steering device) and a power source. The other end, the tip, has a light, a lens, and an outlet for air and water. Side channels enable attachments to be passed to the tip;
 - a video endoscope. This is similar to the flexible endoscope except that electronic signals are transmitted from the tip to a high-definition picture displayed on a TV monitor.
- 3. Specific terms are used for endoscopic procedures carried out in connection with specific parts of the body and to describe endoscopes used in specific parts of the body, for example bronchoscopy and bronchoscope respectively (see paragraph 10 below).

Endoscopic procedures

- 4. The common endoscopic procedures which can be performed appropriately in the endoscopy unit described in this SHPN include:
 - bronchoscopy;
 - colonoscopy;
 - colposcopy;
 - cystoscopy;
 - gastroscopy;
 - laryngoscopy;
 - sigmoidoscopy.





Further information about these procedures, and the type of endoscopes used to perform them, is given in paragraphs 6 to 13 below.

- 5. The common endoscopic procedures which are excluded from the scope of this SHPN for the reasons described in paragraph 1.5 are:
 - arthroscopy;
 - endoscopic retrograde cholangiopancreatography (ERCP);
 - laparoscopy.

Further information about these procedures, and the type of endoscopes used to perform them, is given in paragraphs 14 to 16 below.

Procedures within scope of SHPN 52 Part 2

- 6. Gastrointestinal endoscopy endoscopy from the mouth downwards through the oesophagus and stomach to the duodenum and upwards from the anus through the colon to the end of the small intestine. Under special circumstances, the small intestine can also be examined. See also paragraphs 7, 8 and 9.
- Gastroscopy (upper gastrointestinal endoscopy) -endoscopy of the lining of the oesophagus, stomach and duodenum (first part of the small intestine) by means of a gastroscope or oesophagogastroduodeneoscope (a long, flexible, fibreoptic endoscope). See also paragraph 6.
- 8. Colonoscopy (lower gastrointestinal endoscopy) endoscopy of the lining of the colon (the major part of the large intestine) by means of a colonoscope (a long, flexible, fibre-optic endoscope). See also paragraph 6 above.
- 9. Sigmoidoscopy (lower gastrointestinal endoscopy) -endoscopy of the lining of the rectum and the sigmoid colon (last parts of the large intestine) with a rigid or flexible sigmoidoscope or proctosigmoidoscope. See also paragraph 6 above.
- 10. Bronchoscopy endoscopy of the bronchi, the main airways of the lungs, by means of a rigid or flexible bronchoscope.
- 11. Colposcopy endoscopy of the cervix (neck of the uterus) and upper part of the vagina under illuminated magnification using a colposcope, a viewing instrument using a series of lenses to give different degrees of magnification.
- 12. Cystoscopy endoscopy of the bladder by means of a rigid cystoscope inserted via the urethra. The urethra is the tube that conducts urine from the bladder to the exterior.
- 13. Laryngoscopy endoscopy of the larynx (part of the upper airway) by means of a rigid or flexible laryngoscope.





Procedures excluded from scope of SHPN 52 Part 2

- 14. Arthroscopy endoscopy of the interior of a joint by means of a rigid endoscope: it is used most frequently to inspect the inside of the knee joint. The procedure is usually performed under general anaesthesia, although sometimes a nerveblock is used.
- 15. Endoscopic retrograde cholangiopancreatography (ERCP) an X-ray procedure for examining the biliary system and the pancreatic duct which involves passing an endoscope down the oesophagus, through the stomach and into the duodenum.
- 16. Laparoscopy endoscopy of the abdominal structures by means of a rigid laparoscope passed through a small incision in the wall of the abdomen. Uses include determining the cause of pelvic pain or gynaecological symptoms. Laparoscopes are now used for female sterilisations and increasingly for other surgical procedures.





Appendix 2

Combined day surgery and endoscopy unit

Introduction

1. This appendix describes in simple terms how Scottish Health Planning Note (SHPN) 52 - 'Accommodation for day care', Part 1 - 'Day surgery unit' and this Part 2 - 'Endoscopy unit' can be used to plan and design a combined day surgery and endoscopy unit.

SHPN 52 Part 1 - 'Day surgery unit'

2. SHPN 52 Part 1 is relevant in connection with the requirements for accommodation for day surgery in a combined day surgery and endoscopy unit.

SHPN 52 Part 2 - 'Endoscopy unit'

- 3. The spaces provided in the endoscopy unit described in SHPN 52 Part 2 compare with the spaces provided in the day surgery unit described in SHPN 52 Part 1 as follows:
 - only three additional spaces are included, namely:
 - (i) the endoscopy room;
 - (ii) a resuscitation trolley bay;
 - (iii) a trolley bay;
 - spaces associated with surgical procedures which are not required in connection with endoscopic procedures are excluded;
 - the remaining spaces are identical, with the exception noted in paragraph 4 below.
- 4. The endoscopic cleaning room and store included in Part 2 fulfils similar functions to the cleansing/ disinfecting room in Part 1. Methods of cleaning and disinfecting endoscopes are being improved and the endoscope cleaning room and store in Part 2 incorporates technological developments made since the preparation of Part 1.





Combination of spaces from SHPN 52 Parts 1 and 2

Schedule of accommodation

- 5. The schedule of spaces for a combined day surgery and endoscopy unit may include the spaces described in SHPN 52 Part 1, plus two of the three additional spaces described in Part 2, that is, the endoscopy room and a trolley bay (see paragraph 3 above). Project teams may consider omitting the resuscitation trolley bay on the grounds that resuscitation equipment is included in the post-anaesthesia recovery room in the day surgery unit described in SHPN 52 Part 1.
- 6. Project teams will need to consider carefully the numbers and sizes of spaces in a combined day surgery and endoscopy unit. The schedule of accommodation for a combined unit assembled from SHPN 52 Parts 1 and 2 will be determined by:
 - the functional content of the day surgery and endoscopy components;
 - the functions of the spaces (see paragraphs 7 and 8 below);
 - the operational policy of the combined unit.
- 7. Spaces which are dedicated for a particular function, for example the operating theatre, the minor operation room, the scrub-up and gowning area, the preparation room, the utility room etc, for day surgery, and the endoscopy room for endoscopy, should be provided in accordance with the schedules of accommodation in SHPN 52.
- 8. The number and sizes of spaces which are shared by the day surgery function and the endoscopy function will need to be determined individually: a wide range of permutations is possible. A combined unit may require:
 - the same number and size of spaces as allowed in Part 1;
 - more spaces of the same, or a smaller, size;
 - the same number of, but larger, spaces.
- 9. Particular care should be taken in determining the number/size of:
 - the waiting area;
 - the patient preparation rooms;
 - the pre-discharge recovery areas(referred to as recovery areas in Part 2).
- 10. It is recommended that:
 - project teams modify, as appropriate, the content of the cleansing/ disinfecting room provided in the operating suite of the day surgery function





- to take account of technological improvements included in the endoscope cleaning room and store of the endoscopy function;
- provision of the cleansing/disinfecting room should be in accordance with the schedules of accommodation in SHPN 52 Part 1;
- provision of the endoscope cleaning room and store should be in accordance with the schedules of accommodation in SHPN 52 Part 2.

Relationships of spaces

11. Project teams should seek to ensure that the requirements for intradepartmental and interdepartmental relationships, as expressed in SHPN 52 Parts 1 and 2, are maintained in plans for a combined unit.





Appendix 3

A method for calculating the number of endoscopy rooms required in an endoscopy unit

Introduction

1. Appendix 3 provides a method which may be used to calculate the number of endoscopy rooms required in an endoscopy unit. The method is illustrated by worked examples.

Definitions

Workload per annum

2. The **workload per annum** is the number of endoscopy cases to be performed in the endoscopy rooms of the endoscopy unit.

Workload capacity of one endoscopy room

3. **The workload capacity of one endoscopy room** is the number of endoscopy cases per annum that can be accommodated in one endoscopy room.

Method

Workload per annum

- 4. The **workload per annum** must be forecast locally. In estimating the future number of endoscopy cases, account should be taken of a range of factors, including:
 - the size and content of past and present workload;
 - developments and increase in future workload;
 - the demography of the population to be served.

Workload capacity of one endoscopy room

- 5. The workload capacity of one endoscopy room is the product of:
 - the average number of cases per working day;
 - the length of the working week;
 - the length of the working year.





- 6. In identifying the average number of cases per working day, consideration should be given to the length of the working day: this may, for example, include provision for evening sessions, often preferred by patients.
- 7. The length of the working week should be at least 4.5 days.
- 8. The length of the working year would not be expected to be less than 48 weeks.
- 9. In calculating the workload capacity of one endoscopy room, account should be taken of local variations in the factors identified in paragraph 5, for example the inclusion of evening sessions (worked example 2, given in paragraphs 17 to 19, illustrates this point) and availability of medical staff to carry out the work.

The number of endoscopy rooms required

- 10. The number of endoscopy rooms required in the endoscopy unit is the workload per annum divided by the workload capacity of one endoscopy room.
- 11. The number of endoscopy rooms required will seldom be an exact whole number. The factors influencing the answer should be examined to see if the number can be reduced; for example can the working day, week or year be lengthened so as to include a higher number of cases.
- 12. If the number of endoscopy rooms is only slightly below a whole number, it will generally be necessary to round up the answer: this will introduce a small amount of spare capacity.

Worked examples

13. The method described above is illustrated by three worked examples.

Worked example 1

- 14. The following assumed figures are used in worked example 1 to illustrate the method:
 - workload per annum (number of cases) = 7000;
 - number of cases per working day = 18;
 - length of working week in days = 4.5;
 - length of working year in weeks = 48.





15. The workload capacity of one endoscopy room is

18 x 4.5 x 48 cases

- = 3888 cases.
- 16. The number of endoscopy rooms required is

7000 3888

= 1.80

Rounded up = 2.

Worked example 2

- 17. The following assumed figures are used in worked example 2 to illustrate the method:
 - workload per annum (number of cases) = 8000;
 - number of cases per working day = 16;
 - length of working week in days = 5;
 - length of working year in weeks = 50;
 - number of cases per evening session = 6;
 - number of evening sessions per week = 2
- 18. The workload capacity of one endoscopy room is

 $(16 \times 5 \times 50) + (6 \times 2 \times 50)$ cases

- = 4000 + 600 cases
- = 4600 cases
- 19. The number of endoscopy rooms required is:

8000

4600

= 1.74

Rounded up = 2.





Worked example 3

- 20. The following assumed figures are used in worked example 3 to illustrate the method:
 - workload per annum (number of cases) = 10,000;
 - number of cases per working day = 16;
 - length of working week in days = 4.5;
 - length of working year in weeks = 48.
- 21. The workload capacity of one endoscopy room is

16 x 4.5 x 48 cases

- = 3456 cases.
- 22. The number of endoscopy rooms required is

10,000 3456

= 2.89

Rounded up = 3.





Appendix 4

Information management and technology network diagram (Figure 2) - glossary

Introduction

- 1. This glossary explains the meaning of those terms used in connection with "Station functions" in Figure 2 (paragraph 2.62 of this document) that are not self-explanatory.
- The need for security and confidentiality is stressed. One of the key principles of the NHSScotland Information Management and Technology (IM&T) strategy is: "Information will be secure and confidential. Great care will be taken to ensure that the information held on computer will be available only to those who need to know it and who are authorised to know it."

Orders

- 3. Electronically placing orders for tests, for example blood tests and X-rays, and clinical services, for example physiotherapy and audiology.
- 4. This function may also include the ability to enquire on the status of orders placed previously, for example "received", "being processed" and "completed".

Results

- 5. Electronically receiving results of orders (paragraph 3), for example results of blood tests and X-rays, direct from clinical service departments.
- 6. This function may also include the ability:
 - for urgent results to be "automatically" referred for the attention of the responsible clinician;
 - to enquire on a series of results relating to a single patient.

Order communications system

7. The "orders" and "results" functions are usually combined in an order communications system.





Clinical coding

- 8. The process by which clinical information, for example diagnoses, symptoms and treatment, is entered into a computer in a coded form.
- 9. It is noted that one element of the NHSScotland IM&T strategy is the development of a thesaurus of coded clinical terms and groupings.

GP contact

- 10. A facility to exchange patient information with general practitioners, either by electronic mail or directly by means of a computerised communications network.
- This facility is also a feature of the NHSScotland IM&T strategy.

Waiting lists

12 Access to a clinician's waiting list management system.

Appointments

Maintaining, or making enquiries of, the appointments systems for the endoscopy unit and, for example, the out-patients department.

Health records

14. Access to health records held electronically as text, coded data or digitised images, for example X-rays.

Patient assessment

15. Access to a system which supports the structured assessment of a patient's requirement for clinical care and the systematic collection of data associated with the assessment.

Care planning

- 16. Access to a system which supports:
 - the systematic planning of care appropriate to a patient's assessed needs;
 - the calculation of the amount of nursing resource, and the correct skill mix, necessary to deliver the planned care.





Staff rosters

17. Maintenance of rosters for nursing staff. Computer systems can assist nurse managers in the preparation of rosters.

Nursing management system

18. The "patient assessment", "care planning" and "staff rosters" functions are usually combined in a single nursing management system.

Community contact

19. A facility to exchange patient information with community, primary care and/or other sectors or agencies, for example a social services department, either by electronic mail or directly by means of a computerised communications network.

Decision support

20. Access to a system which can present either clinical or management information in a way that assists the process of decision-making or planning. Systems typically make strong use of graphical displays and allow a level of statistical analysis or "what if" modelling.

Contracting

21. A facility which enables the activities of an endoscopy unit to be monitored against its contracts and assists with the management of extra-contractual referrals.

Non-clinical orders

- 22. Electronically placing orders for non-clinical services, for example for repairs or supplies.
- 23. This function may also include the ability to enquire on the status of orders placed previously, for example "received", "being processed" and "completed".





Appendix 5

Numbers and areas of key spaces

Introduction

- 1. A range of local factors significantly influence the numbers and/or areas of the key spaces in an endoscopy unit which are the subject of this appendix. In determining the requirements for a particular endoscopy unit, therefore, it is essential that project teams carefully examine the local factors.
- 2. The appendix is not a sizing methodology: it has been included in order to indicate assumptions made as part of the process of assessing the numbers and/or areas of the key spaces included in Chapter 6, the Schedules of Accommodation.
- 3. Project teams should challenge the assumptions by comparing them with local factors. The figure, and accompanying text, included as an annexe to this appendix will help project teams to carry out this work.

Main waiting area

- 4. The principal factor used in assessing the size of the main waiting area was the number of chairs that need to be accommodated.
- 5. In sizing the main waiting area, it was assumed that:
 - three patients per hour were treated in each endoscopy room;
 - patients had appointments at hourly intervals;
 - all patients were accompanied by one escort
- 6. On the basis of the assumptions noted in paragraph 5, the numbers of chairs required in main waiting areas in endoscopy units with one, two, three and four endoscopy rooms are shown below:
 - one endoscopy room 6 chairs;
 - two endoscopy rooms 12 chairs;
 - three endoscopy rooms 18 chairs;
 - four endoscopy rooms 24 chairs
- 7. It is considered that not all patients will be accompanied by an escort, thus creating some spare capacity.





Patient preparation rooms

- 8. In determining the number of patient preparation rooms, it was assumed that the maximum period of time which it was essential for a patient to spend in a patient preparation room would be less than the minimum period of time spent in the endoscopy room. On this basis, one patient preparation room per endoscopy room would be adequate. A "spare" patient preparation room was added as a "cushion" to help meet demand in sessions where the time spent by a patient in the endoscopy room was less than the time a patient was required to spend in a patient preparation room. Pressure on the patient preparation rooms is relieved by provision of the sub-wait area.
- 9. On the basis of the assumptions noted in paragraph 8, the numbers of preparation rooms required in endoscopy units with one, two, three and four endoscopy rooms are shown below:
 - one endoscopy room 2 preparation rooms;
 - two endoscopy rooms 3 preparation rooms;
 - three endoscopy rooms 4 preparation rooms;
 - four endoscopy rooms 5 preparation rooms.

Recovery areas

- 10. In determining the number of recovery positions, it has been assumed that:
 - three patients per endoscopy room per hour will need to be accommodated;
 - the average period of time spent by a patient in the recovery area will be two hours.
- 11. It has also been assumed that patients will spend:
 - about 80 minutes in the recovery stage 1 area;
 - about 40 minutes in the recovery stage 2 area.
- 12. On the basis of the assumptions noted in paragraphs 10 and 11, the numbers of recovery positions required in endoscopy units with one, two, three and four endoscopy rooms are shown below. The precisely calculated figure is shown in brackets: the number of positions for which space has been allowed in Chapter 6, the Schedules of Accommodation is not in brackets and includes a small addition as a "cushion":
 - one endoscopy room:
 - (i) total 8 (6) positions;
 - (ii) stage 1 5 (4) positions;





- (iii) stage 2 3 (2) positions;
- two endoscopy rooms:
 - (i) total 14 (12) positions;
 - (ii) stage 1 9 (8) positions;
 - (iii) stage 2 5 (4) positions;
- three endoscopy rooms:
 - (i) total 20 (18) positions;
 - (ii) stage 1 13 (12) positions;
 - (iii) stage 2 7 (6) positions;
- four endoscopy rooms:
 - (i) total 26 (24) positions;
 - (ii) stage 1 17 (16) positions;
 - (iii) stage 2 9 (8) positions.





Annexe to Appendix 5

Introduction

1. Figure 4 (page 71) illustrates patient movement through a theoretical session in an endoscopy unit in relation to one endoscopy room. The figure is intended to represent a "worst case scenario", with patients spending short periods of time in the endoscopy room and longer than average periods of time in the recovery area, thus creating a high demand for space in the main waiting area, patient preparation rooms and recovery areas.

Key to figure and explanatory notes

Arrival of staff

2. Staff arrive at 7.00 am.

Arrival of patients

- 3. represents the arrival of a patient.
- 4. A first group of patients arrives at 7.30 am. Further patients arrive at 45-minute intervals.
- 5. A vertical line taken down the figure at the point where any one patient enters the endoscopy room (represented by ■) shows that there are two or three other patients in the endoscopy unit either waiting, being received and registered, or preparing. This "reserve" of patients should ensure that the endoscopy room does not stand idle.
- 6. If patients arrived at 30-minute intervals, the "reserve" of patients would increase to four or five but the periods of time spent waiting by most patients would increase: for some patients the period would increase significantly.

Reception and registration of patients

- 7. represents a period of 15 minutes allowed for a patient to be received and registered.
- 8. Reception and registration includes entry of information on a computer, final preparation of health records and advising patient and escort of operational procedures.
- 9. Patients are received and registered in the sequence of their arrival.





Waiting by patients

- 10. ■ represents periods of time spent waiting by patients. A double line indicates that an escort is waiting with a patient.
- 11. A vertical line taken down the figure at 8.45 am shows that there are three people in the waiting area for this session with one endoscopy room.

Patient preparation

- 12. represents a period of ten minutes allowed for a patient to change into a procedure gown and for any "pre-med" preparation,
- 13. A patient called to a patient preparation room as the previous patient enters the endoscopy room will need to wait for a short time after the period of ten minutes allowed for preparation.

Administration of sedation/local anaesthetic

- 14. represents a period of six minutes allowed for administration of sedation/local anaesthetic.
- 15. Up to and including the administration of sedation/local anaesthetic, the periods of time required for activities are more or less the same for each patient.

Procedure time

- 16. Trepresents the period of time allowed for an endoscopic procedure.
- 17. This period of time can vary significantly. The figure illustrates a session with relatively short periods of time for endoscopic procedures, with variations arising from, say, a biopsy carried out during the procedure.
- 18. The combination of the time required for the administration of sedation/local anaesthetic and for the endoscopic procedure provides an adequate period of time for the next patient to change even in a session with relatively short periods of time for the procedures.

Preparation of endoscopy room

Recovery

- 20. Rec 1 represents periods of time considered to be on the high side of average for recovery.
- 21. The figure illustrates that:





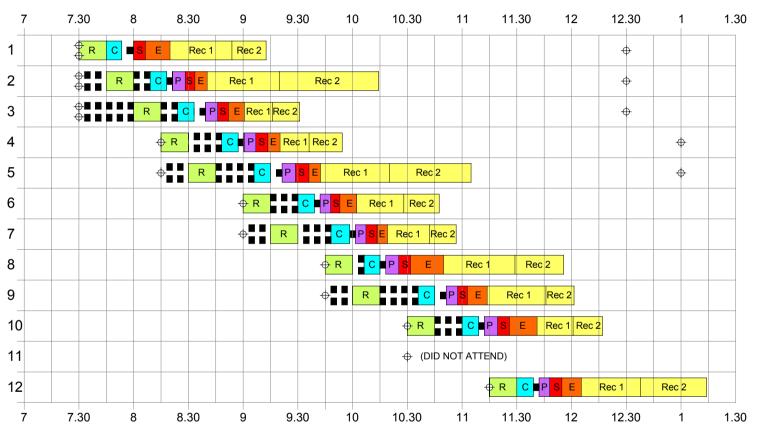
- one patient (9%) leaves within 30 minutes;
- seven patients (64%) leave within one hour;
- ten patients (91%) leave within one hour and 30 minutes;
- eleven patients (100%) leave within two hours.

It will be noted that recovery areas will be clear of patients by the time they are required for a later session.

Number of sessions

- 22. The figure illustrates a session based on a period of four hours for the endoscopic procedures.
- A second session could be arranged with a procedure period of four hours, say, from 1.00 to 5.00 pm. Last patients would leave between 6.00 and 6.30 pm.





By holding a line vertically down this chart at any time, it is possible to assess exactly how many people are in each stage at that time. Examples are given in the text with the key (on the following pages).

Figure 4 Patient movement chart for single endoscopy room clinic (4 hour session)



SHPN52 Accommodation for Day Care (Part 2): Endoscopy Unit





Appendix 6

Ergonomic studies

Figures 5 and 6

- 1. Figures 5 and 6 include three from a series of concept drawings prepared by KeyMed (Medical and Industrial Equipment) Ltd following a study of endoscopy facilities in 41 hospitals and clinics in France, Germany, Japan, the United Kingdom and the United States of America. Preparation of the drawings followed analysis of the information collected on the study tour. Key factors included:
 - activities which take place in connection with endoscopic procedures;
 - positions of people, equipment and instruments;
 - movement of people, equipment and instruments.
- 2. Figure 5 illustrates optimum positions of the patient, staff, equipment and instruments during upper and lower gastrointestinal endoscopic procedures.
- 3. Figure 6 applies principles established by Figure 5 and shows a basic layout for an endoscopy room and the locational relationship of the endoscope cleaning room and store.

Figures 7 to 10

- 4. Figures 7 to 10 are ergonomic drawings which take account of the basic layout shown in Figure 6 and illustrate a range of situations in an endoscopy room.
- 5. The endoscopy room on each figure is the same size and has identical fixtures and fittings. The variations between the figures relate to:
 - the position of staff (reflecting the type of procedure);
 - the position of mobile equipment;
 - the type of endoscopy trolley. Figures 7 and 9 show separate endoscopy and accessories trolleys. Figures 8 and 10 show an endoscopy trolley which also accommodates accessories.
- 6. The figures indicate the relationship of the endoscopy room to the alternative types of endoscope cleaning room and store shown in Figures 11 and 12.



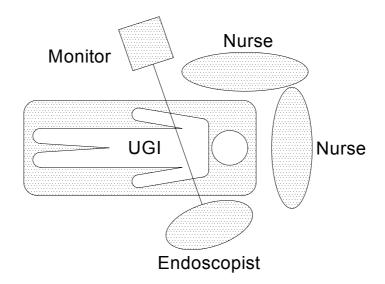


Figures 11 and 12

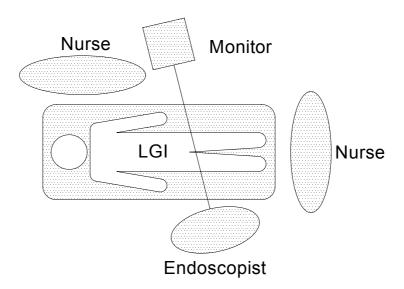
7. Figures 11 and 12 are ergonomic drawings which illustrate alternative layouts of an endoscope cleaning room and store, one with access from the short wall of two endoscopy rooms and the other with access from the long wall of two endoscopy rooms. Both layouts include the same fixtures, fittings and equipment.







Upper gastrointestinal endoscopy position



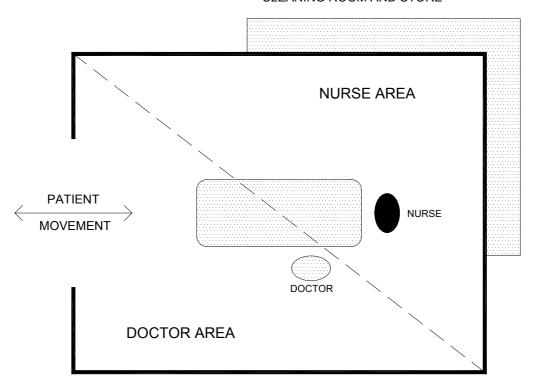
Lower gastrointestinal endoscopy position

Figure 5 Endoscopic procedures – patient, staff and equipment positions





ACCESS TO ENDOSCOPE CLEANING ROOM AND STORE



ENDOSCOPY ROOM

Figure 6: Endoscopy procedures – patient, staff and equipment positions





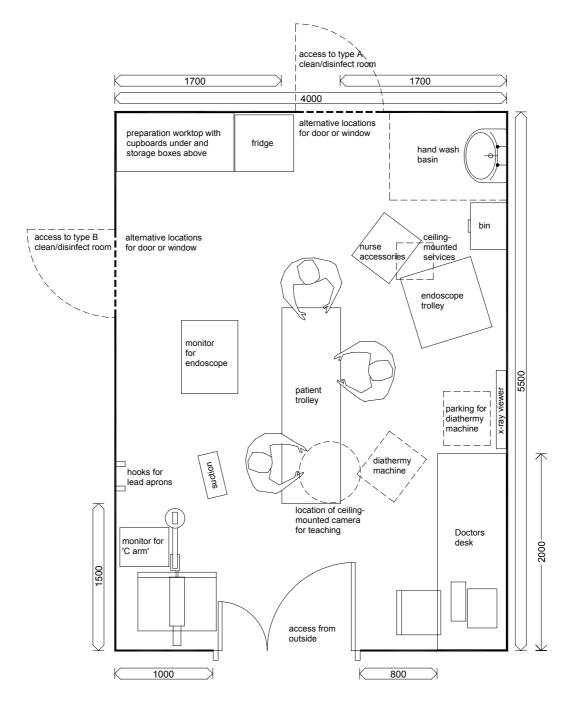


Figure 7: Lower gastrointestinal endoscopy position, with separate endoscope and accessories trolleys





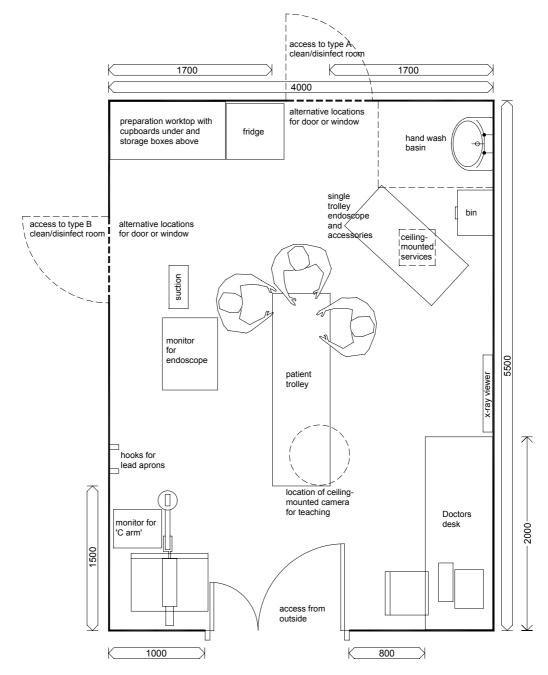


Figure 8: Upper gastrointestinal endoscopy position with single endoscope and accessories trolley





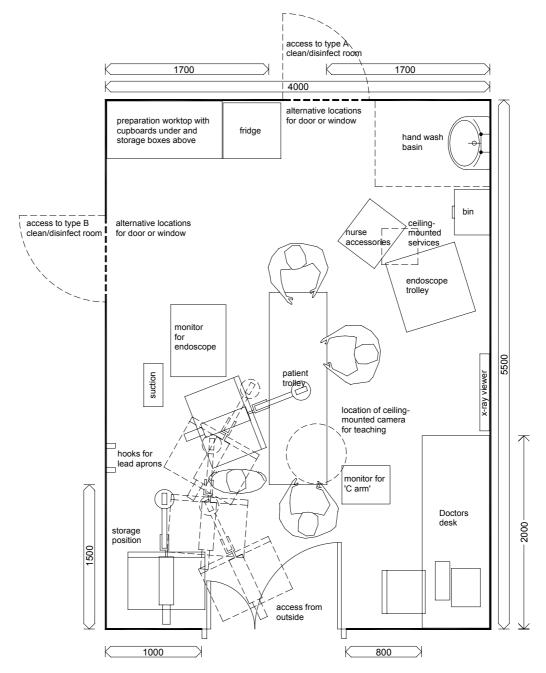


Figure 9: Lower gastrointestinal endoscopy position with separate endoscope and accessories trolleys, and with C-arm in use





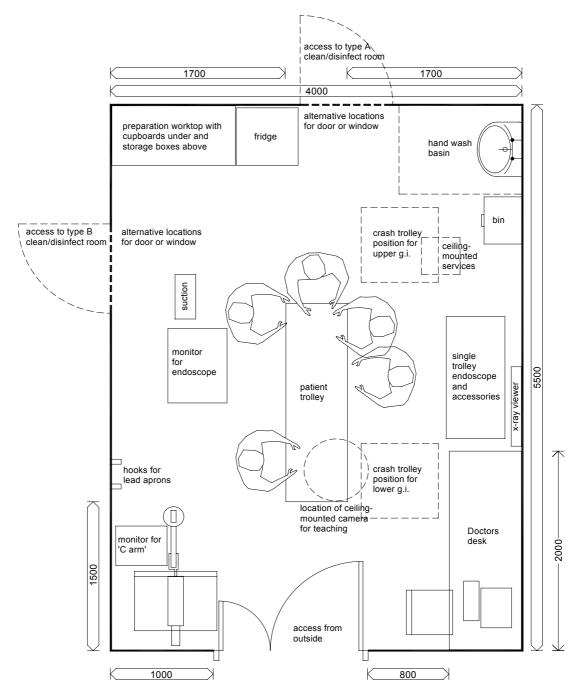


Figure 10: Upper and lower gastrointestinal endoscopy position, with single endoscope and accessories trolley, and with crash trolley in use





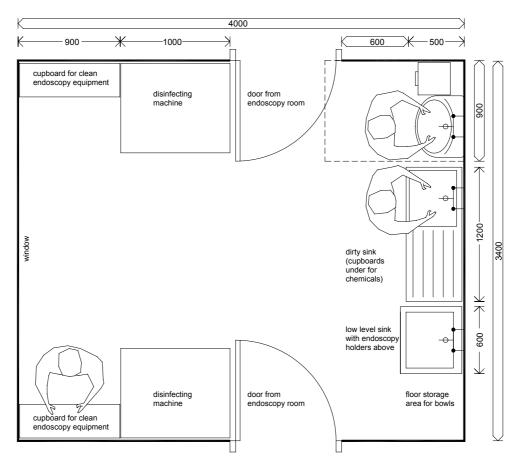


Figure 11: Type A endoscope cleaning room and store





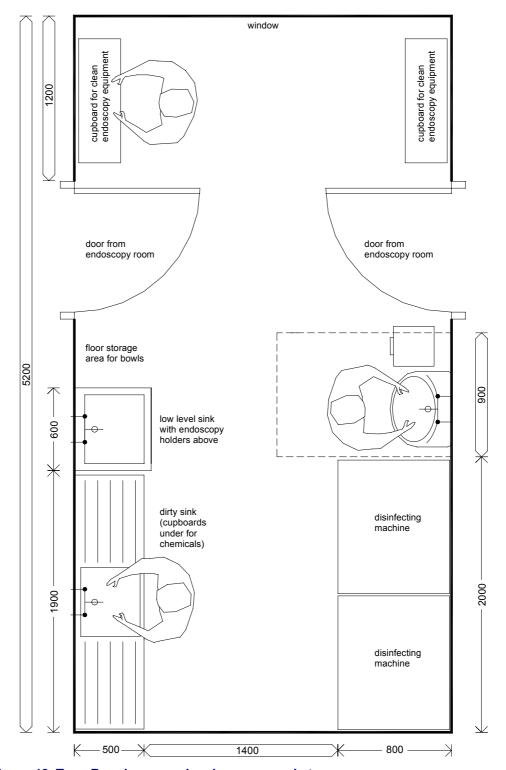


Figure 12: Type B endoscope cleaning room and store





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- Accommodation for day care Part 3 Medical investigation and treatment unit. NHSScotland Property and Environment Forum Executive 2001.





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- 12 Out-patients department Supplement A Activity space data sheets. TSO 1993.
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