# Scottish Health Planning Note 52

## Accommodation for day care

## Part 3 – Medical investigation and treatment unit

NHSScotland, P&EFEx, January 2002

# Contents

## Appendix 5 Combined day surgery, endoscopy and MI&T unit





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# About this series

The Scottish Health Planning Note 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 National Health Service Scotland 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 3

## 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 (MI&T).

1.2 Part 3 provides guidance for the planning and design of accommodation for a medical investigation and treatment (MI&T) unit in an acute general hospital. Part 2 describes how Parts 1 and 2 can be used to plan and design a combined day surgery and endoscopy unit. A unit which combines spaces attended by patients in an MI&T unit with accommodation for day surgery and/or endoscopy is not recommended (see paragraphs 2.20 to 2.22, 2.59 and Appendix 5).

1.3 Developments in the delivery of primary and community health care services should be recognised by providers planning accommodation for day care in an acute general hospital. Options for the provision of day surgery, endoscopy and medical investigation and treatment services, in less threatening and less costly environments, may include:

- a stand-alone unit, i.e. an MI&T unit not within an acute general hospital. Project teams planning a stand-alone unit should consider the need for facilities additional to those described in Part 3, for example, accommodation which in an acute general hospital would be provided on a whole hospital basis;
- primary health care centres and local health care resource centres run by general medical practitioners (see HBN 36 - 'Local healthcare facilities');

and, for medical investigation and treatment only:

- patients' own homes (see Health Facilities Note 12 – 'Acute care at home').

## Range of provision

### Inclusions

1.4 Part 3 describes a self-contained, dedicated MI&T unit suitable for performing medical investigation and treatment procedures on adult patients. It is suitable for medical investigation and treatment procedures which:

- are routinely performed in an acute general hospital;
- can be performed in a consulting/examination room, a bed space, a standard treatment room or a special treatment room.

1.5 Patients will be admitted to, recover in, and be discharged from the MI&T unit. Procedures on most patients will be performed in the unit. Some procedures, however, may be performed in another department, for example the radiology department.

1.6 Part 3 assumes that most patients who attend the MI&T 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 in-patient treatment;
- be admitted to the unit knowing that an overnight stay in another part of the hospital, perhaps in a patient hotel (see, for example, 'Patient Hotels: A Quality Alternative to Ward Care'), may be necessary in order to complete recovery.

Overnight stay accommodation is not described in this document.

### Exclusions

1.7 Part 3 excludes accommodation for:

- medical investigation and treatment procedures on children (see HBN 23 - 'Hospital accommodation for children and young people');
- day surgery procedures (see Part 1);
- endoscopic procedures (see Part 2);
- antenatal day care assessment (see SHPN 21 - 'Maternity department');
- procedures usually performed in tertiary referral/ specialist centres.

1.8 It also does not deal with accommodation for medical investigation and treatment day case procedures which is combined in a specialist unit with other elements (for example, out-patient and in-patient facilities) of hospital accommodation, although key principles will still be relevant. It is recognised,

however, that project teams may consider that a comprehensive specialist unit is most appropriate in:

- facilitating patient-focused care;
- providing convenient and easy access for staff;
- responding to local demands. For example, it may be possible to make a business case for accommodation for medical investigation and treatment day case procedures associated with a specialist unit but not possible to make a case for the type of unit described in this SHPN.

## Building cost and revenue expenditure

### General

1.9 General guidance on matters pertaining to building cost and revenue expenditure is given in Chapter 5 of SHPN 03: General design guidance.

1.10 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

1.11 The functional unit used to express the functional content of an MI&T unit is ‘the bed’.

# 2. Service objectives

## Introduction

2.1 This Chapter considers service objectives related to the provision of an MI&T unit, including the need for the unit to be self-contained and dedicated, 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.

## Medical investigation and treatment procedures

2.3 Appendix 1 lists specialities which might use an MI&T unit for day case procedures and, relative to each speciality, investigations and treatments for which patients may be admitted.

2.4 Most of the medical investigations and treatments listed in Appendix 1 can be performed by means of the following general clinical procedures:

- injection;
- intravenous infusion;
- transfusion;
- aspiration;
- biopsy;
- catheter drainage;
- venepuncture;
- venesection;
- nasogastric intubation;
- nebulisation.

2.5 Some of the medical investigations and treatments listed in Appendix 1 require special clinical procedures, such as:

- urodynamics;
- myelography;
- fluoroscopy;
- angiography.

2.6 It is recommended that medical investigation and treatment day case procedures required in relation to surgical specialities, for example, pre-operative assessment, are performed in accommodation staffed by doctors and nurses of the appropriate speciality who can deal fully with patient queries.

## The benefits of medical investigation and treatment as a day care service

2.7 A day care service for medical investigation and treatment 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) for most patients, the service is programmed independently of other hospital services and, therefore, is more likely to remain free from disruption;
  - (iii) day case procedures are perceived as less threatening than in-patient procedures;
- 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 in-patient admissions.

## The development of medical investigation and treatment services

2.8 The number of patients treated as day cases since the publication of HBN 38 - 'Accommodation for adult acute day patients' in 1982 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.

2.9 Factors which have influenced the development of day care services include:

- advances in health technology, notably in drug therapy, sedatives, anaesthetics and analgesics, medical equipment and the application of computers;
- an increasing expectation by patients for a prompt response following consultation, if required;
- the drive towards the cost effective and efficient provision of services, with reduction of waiting times and improved levels of quality.

**The purpose of an MI&T unit**

2.10 The MI&T unit described in SHPN 52 Part 3 provides the opportunity for a hospital and unit users:

- to create an environment with its own special ethos which is appropriate for its clientele;
- to install equipment and provide facilities that are 'fit-for-purpose';
- to allow adequate programmed time for good patient care.

2.11 Many patients requiring medical investigation and treatment which can be performed as day case procedures currently receive a service which may be considered inappropriate and inadequate. Patients:

- are admitted as in-patients, perhaps to a programmed investigation unit (see 'Lying in Wait: The Use of Medical Beds in Acute Hospitals');
- attend an in-patient ward;
- attend an out-patient department but:
  - (i) may disrupt a clinic timetable as some patients' needs are unpredictable;
  - (ii) need to return to the hospital for visits to other departments.

2.12 Provision of an MI&T unit, however, should not encourage work now carried out satisfactorily to be transferred from:

- primary care to secondary care;
- out-patient care to day care.

As many medical investigation and treatment procedures as possible should be performed in a patient's home or close to the home. Patients should need to attend an MI&T unit in an acute general hospital only for procedures which it is not appropriate to perform in a primary or community health care setting.

### "One-stop" clinics

2.13 The unit may be used to accommodate appropriate out-patient clinics, that is, those clinics where it is known that an adequate proportion of the patients will require further medical investigation and/or treatment which can be performed immediately following the out-patient attendance.

### Programmed investigations

2.14 The unit may be used as a programmed investigations unit for the increasing number of investigations which can be performed as day case procedures.

### Open-access assessments

2.15 In addition to patients who are referred through the normal referral process, a number of patients may come to the unit independently for immediate assessment and treatment of urgent problems. Most of these patients will have attended before and be known to staff in the unit.

2.16 The assessment and treatment process may follow the sequence of events outlined below:

- routine investigations and observations;
- diagnosis;
- further investigations, possibly in other hospital department(s);
- treatment in unit.

## The self-contained and dedicated MI&T unit

2.17 SHPN 52 Part 3 describes an MI&T unit which:

- is largely self-contained. Patients may be admitted to, treated in, and discharged from the unit. As indicated in paragraph 1.5, some patients may attend another department for a procedure;
- is dedicated for medical investigation and treatment only. It is not intended that the unit should be used for:
  (i) "parking" patients treated elsewhere in the hospital. Patients who do attend other departments for treatment are managed by the unit. They are admitted to, prepared in, recover in, and discharged from, the unit;
  (ii) overnight stay of accident and emergency patients or overflow in-patients;
- may be used for medical investigation and treatment procedures on in-patients.

2.18 The self-contained and dedicated unit described here enables medical investigation and treatment services to be provided more appropriately than in non-dedicated facilities (see paragraph 2.11). Patients' needs are different from those admitted to/attending in-patient wards and out-patient departments.

2.19 A self-contained, dedicated unit is able to:

- provide individualised care for patients;
- be organisationally independent and manage its resources and workload in a planned programmed manner;
- generate its own ethos.

2.20 The need for a unit which is separate from accommodation for in-patients and out-patients is considered in paragraphs 2.10 and 2.11. An MI&T unit should be separate from other accommodation for day care, that is, the day surgery unit and the endoscopy unit.

2.21 Patients requiring medical investigation and treatment present different demands to patients requiring day surgery and endoscopy, as illustrated by the following comparative table.

2.22 Provision of good care for patients requiring medical investigation and treatment calls for accommodation and staff, particularly nurses, separate and different from those for patients requiring day surgery and endoscopy. A relaxed and friendly environment should be developed so that regular attenders regard the unit in a familiar light.

| **Factor** | **Day surgery/ endoscopy** | **MI&T** |
|---|---|---|
| Appointment | Fixed in advance | May attend without appointment |
| Clinical procedure(s) | Pre-determined | May not be known until occasion of attendance |
| Period of time of attendance | Known for most patients | Not known for many patients |
| Number of attendances for treatment episode | Usually one | Often many over long period of time |

### Principal activity spaces in an MI&T unit

2.23 Medical investigation and treatment may be carried out in a variety of settings. The two essential requirements are an appropriate space in which to perform the procedure and a space where patients can recover prior to discharge.

2.24 SHPN 52 Part 3 is based on the assumption that:

- investigation and treatment are performed in a consulting/examination room, in a bed/trolley/reclining-chair space, or in a treatment room (in the unit or elsewhere in the hospital);
- recovery occurs in a bed/trolley/reclining-chair space and/or in a lounge.

2.25 A wide range of investigation, treatment and recovery permutations can be accommodated, for example:

- investigation, treatment and full recovery in the same space;
- preparation, investigation, treatment, initial recovery and final recovery all staged in different areas, that is, a consulting/examination room, a treatment room, a bed/trolley/reclining-chair space and a lounge.

2.26 Facilities required for initiating and/or carrying out most procedures in a consulting/examination room, a bed/ trolley/reclining-chair space or a treatment room are:

- a bed, a trolley, a reclining chair, an examination couch or an upright chair, as appropriate;
- infusion equipment;
- a dressings trolley, prepared for the procedure in the clean utility room.

2.27 A bed/trolley/reclining-chair space may be provided in a multi-bed room or in a single-bed room. A standard treatment room may be required, for example, to provide a space which is dedicated for certain clinical procedures and equipped accordingly. A special treatment room may be required for dedicated purposes or to provide a particular type of environment or to accommodate special equipment.

## Children and medical investigation and treatment

2.28 Medical investigation and treatment day case procedures on children should be performed in the day case unit in the comprehensive children's department (see HBN 23 – 'Hospital accommodation for children and young people'). Children should not need to attend the MI&T unit.

## Workload

2.29 Project teams should carefully assess the anticipated workload of the proposed MI&T unit. There are diverse views in respect of the appropriate location for carrying out medical investigation and treatment procedures, which may be influenced by the range of services provided by local primary and community health care teams.

2.30 The advances in health technology (paragraph 2.9) that are enabling patients to be treated as day patients instead of in-patients are also enabling patients to be treated outside hospital in a local setting, for example, at home or in primary and community health care premises. Provision of a dedicated unit should not discourage the devolution from secondary to primary and community care: the benefit to patients of a devolved and local service is an important consideration when planning the provision of medical investigation and treatment services.

2.31 Provision of an MI&T unit and of supplementary out-patient facilities should be justified by proof of an adequate workload.

## Sizing an MI&T unit

2.32 The functional content of an MI&T unit and of supplementary out-patient facilities may be calculated as described in Appendix 2.

## General design considerations

2.33 An MI&T 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.

2.34 The design should help to assure patients that:

- they are receiving a first-class service;
- they matter, that is, they are cared for as individuals;
- their needs for privacy and dignity are met.

To this end, particular attention should be paid to the visual aspects of the unit as well as functional and environmental needs.

2.35 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;
- eliminate cross-over circulation points;
- reduce double-handling of patients and supplies;
- reduce staff travel.

2.36 MI&T units planned and designed in accordance with these principles will run effectively and efficiently. Unit managers should 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

2.37 SHPN 52 Part 3 describes an MI&T unit in or adjacent to an acute general hospital. Locating an MI&T unit in or adjacent to an acute general hospital:

- permits referral of patients to other clinical departments for investigation and treatment;
- allows for the occasional attendance of in-patients;
- facilitates admission of patients to an in-patient ward if necessary;
- provides direct access to the full range of support services.

However, treatment in a unit in an acute general hospital of patients who could be treated in a primary or community health care setting is likely to be:

- less accessible for patients and escorts;
- less convenient for carers;
- more expensive for purchasers of health care.

## Intradepartmental relationships

2.38 Patient-related activities in an MI&T unit fall into four main groups which occur in the following sequence:

- reception and registration;
- waiting;
- consultation, examination and treatment;
- recovery and discharge.

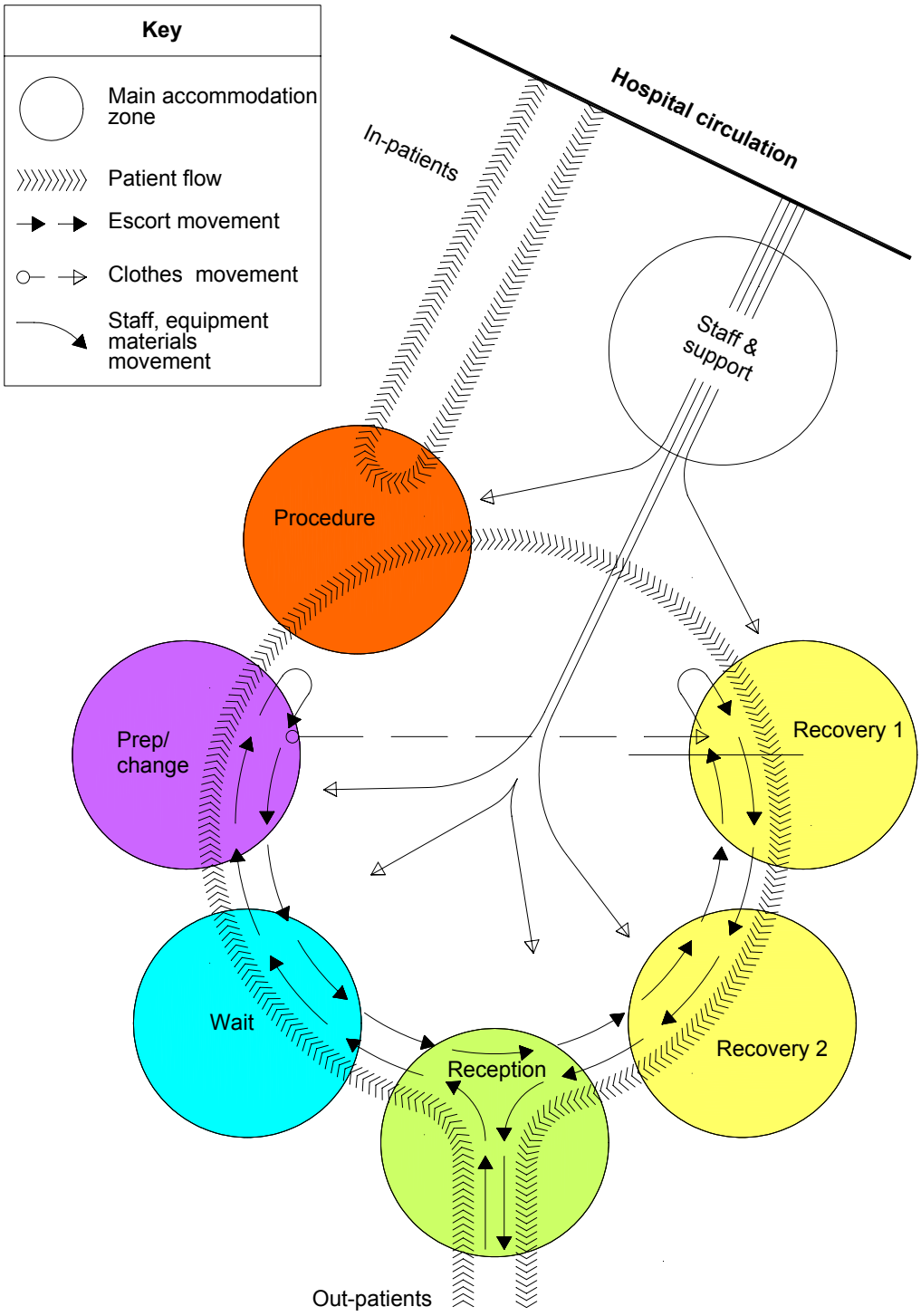



***Figure 1:*** **Planning principles of the patient cycle**

2.39 The types of procedures performed and the patient management system will significantly influence the design and overall area of the unit, in particular the number of:

- chairs in the main waiting area;
- consulting/examination rooms;
- bed/trolley/reclining chair spaces;
- treatment rooms;
- chairs in the lounge.

2.40 Project teams will need information in connection with the types of procedures and management of patients.

2.41 The time taken to perform a procedure and the time required for recovery can both vary significantly. For example, a procedure may be performed:

- in a short period of time but recovery may take hours;
- continuously for a day;
- intermittently during a day.

2.42 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 of reducing both the waiting times for patients before procedures and the size of the main waiting area.

2.43 The assumptions used to determine the areas of the main waiting area and the lounge included in the ‘Schedules of accommodation’ in Chapter 6 are identified in Appendix 4.

2.44 The design of the unit should facilitate uninterrupted patient movement between principal patient spaces.

2.45 Account should be taken of:

- day patients from the MI&T unit who need a procedure to be performed in a department elsewhere in the hospital;
- in-patients who arrive from other parts of the hospital. It is assumed that they will be prepared for the procedure in an in-patient ward, attend the treatment room only in the MI&T unit, and be transferred back to the in-patient ward following the procedure;
- patients admitted to the MI&T unit who need to be admitted to an in-patient ward.

2.46 Patients may move to and from the MI&T 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.

2.47 Consideration should be given to the factors set out in paragraphs 2.45 and 2.46 when determining the location of the treatment 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 MI&T unit and departments elsewhere in the hospital.

2.48 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 materials-handling purposes will facilitate this and may be combined with the link to the main hospital circulation route referred to in paragraph 2.47.

2.49 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.

## Assembly of functional parts

2.50 Three sizes of MI&T unit are included in the 'Schedules of accommodation' in Chapter 6. The main factor used to determine the size of a unit is the number of beds required (see Appendix 2). The single consulting/ examination and treatment rooms are provided mainly in support of the beds (although they may be used for out-patient purposes - see paragraph 2.13).

2.51 Project teams intending to supplement the MI&T unit with additional consulting/examination rooms may calculate the number required in accordance with the method outlined in Appendix 2. The same method may also be used to calculate the number of treatment rooms required. The space and area allowances for the supplementary out-patient facilities should be aggregated with those for the MI&T unit.

## Location

2.52 The main locational requirement of an MI&T 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.

2.53 The MI&T 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 MI&T unit should have a clear, unique identity. Pleasant external views from spaces occupied by patients are important.

2.54 Patients may be transferred between the MI&T unit and other parts of the hospital before and after medical investigation and treatment procedures. Ease of access is important: also, ideally the distance should be short.

2.55 Patients may make their own appointments at the MI&T unit immediately following an out-patient attendance. It will help patients if the unit is close to the out-patients department.

2.56 An MI&T unit will need to draw upon other hospital departments for support services. There are no critical connections that demand that the unit is located immediately adjacent to any other departments, but short logistical links and ease of access will aid efficiency. Near proximity to the Radiology Department would be sensible.

2.57 Consideration should be given to the need for large numbers of pathological specimens to be processed quickly and regularly, to the need for urgent transmission of results of pathological investigations and for frequent supplies of blood for transfusion. Facilities may be provided for 'near-patient testing' of appropriate pathological specimens (see paragraph 3.60). Other specimens may be taken to the pathology department by porter or sent by pneumatic conveyor system (see paragraph 5.7 and SHTM 2009 – 'Pneumatic conveyor systems'). Results may be returned by computer links and confirmed by hard copy.

2.58 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

2.59 Paragraphs 1.2 and 2.20 to 2.22 identify the need for an MI&T unit to be separate from other accommodation for day care. However, consideration should be given to consolidating appropriate other spaces with other day care accommodation, such as a day surgery unit, an endoscopy unit or a combined day surgery/endoscopy unit. Appendix 5 of Part 3 outlines how the three parts in the SHPN 52 series 'Accommodation for day care,' Part 1 - 'Day surgery unit', Part 2 - 'Endoscopy unit' and Part 3, can be used to plan and design a combined day care unit.

## Planning considerations

### Patients and escorts

2.60 The majority of patients and escorts will make their own arrangements for transport to and from the MI&T unit, many travelling by private car. Patients and escorts should be able to locate the unit easily from the main entrance to the hospital site.

2.61 The guidance in SHPN 52 Part 3 includes facilities which enable escorts to remain with patients for most activities. On occasions, however, it will not be appropriate for an escort to be present, for example, during certain procedures. On these occasions, and also during other periods of a patient's attendance, escorts of patients may wish to leave the unit. Escorts should be advised when to return or the use of an escort location system (similar to a "bleep" 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 MI&T unit.

### Car parking

2.62 Car parking facilities should be provided for patients and escorts attending the MI&T unit. It is helpful if patients can be set down prior to admission and collected following discharge (particularly if they have been sedated), at a point close to the main entrance to the unit. This objective can be achieved if the car parking facilities are located:

- close to the unit, and an adequate number of spaces can be reserved for use by patients/escorts; or
- remote from the 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.

2.63 Car parking will also be required for staff.

### Bicycle storage

2.64 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

2.65 WCs are required in an MI&T unit for male and female patients, escorts, staff and visitors, any of whom could have problems of mobility. In responding to these diverse needs, care should be taken to avoid the provision of an excessive number of WCs. This SHPN, therefore, includes unisex wheelchair accessible WCs only for all users.

## Hospital clinical and operational policies

2.66 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 MI&T unit, and should be used in conjunction with the guidance given in SHPN 03.

### Catering

2.67 Patients should have the opportunity to receive light refreshments, such as sandwiches or toast, and beverages, for consumption during the recovery period. Cold water dispensers and ice making machines should be provided. Project teams should decide whether the service provided to patients should be extended to their escorts.

2.68 It is assumed that staff will attend the hospital staff dining room for main meals but may prepare and consume snacks and beverages in the staff rest room.

### Sterile services

2.69 An SSD may provide a service to the MI&T unit which includes cleaning, disinfecting and/or sterilising specific items of medical equipment. Normally, items of medical equipment will be sent to the SSD.

2.70 Items of medical equipment should be disinfected prior to servicing. User servicing of electronic and medical engineering (EME) equipment may be carried out within the MI&T unit, but scheduled servicing should be carried out in the EME workshop (see SHPN 34 - 'Estates maintenance and works operations').

2.71 Facilities will be required in the MI&T unit for automatically emptying, cleaning and disinfecting suction bottles. Suction bottles should be of a design that uses disposable liners, thus avoiding the risk of staff exposure to body fluids.

### Clinical services

2.72 It is assumed that clinical service departments in an acute general hospital will be responsible for the provision of essential clinical services to the MI&T unit.

### Staff changing

2.73 If changing accommodation elsewhere is used, it will be necessary to provide within the unit:

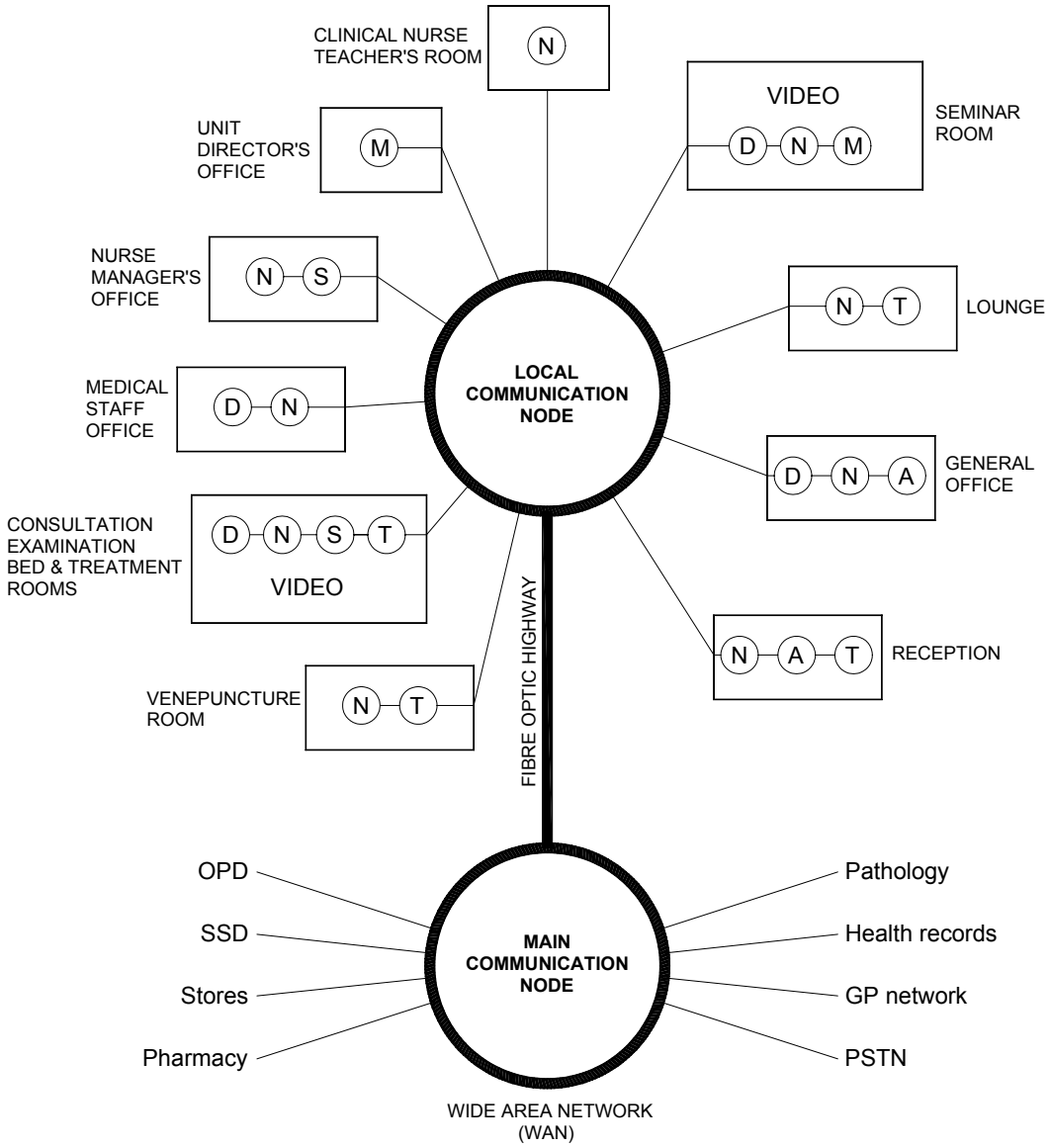
- small lockers for secure storage of small personal items;
- toilet facilities.

2.74 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

2.75 Information management and technology (IM&T) is fundamental to the successful operation of an MI&T unit. The system selected should offer a wide range of facilities, and be consistent with local and NHSS IM&T strategies. Further guidance is given in SHPN 03: General design guidance.

2.76 Figure 2 illustrates a comprehensive IM&T network for an MI&T unit: a glossary which explains the meaning of the terms used on the figure is included in Chapter 7 Appendix 3.




**Key to data and telephony station functions**

Each station will have provision for IT and telephones

**(D)octor**
- Orders
- Results
- Clinical coding
- Word processing
- GP contact
- Medical audit
- Appointments
- Health records
- Electronic mail
- Reference material

**(N)urse**
- Patient assessment
- Care planning
- Electronic mail
- Orders
- Results
- Community contact
- Appointments
- Health records

**(M)anager**
- Stats/activity analysis
- Decision support
- Contracting
- Word processing
- Electronic mail
- Non-clinical orders

**(A)dministration**
- Appointments
- Health records
- Non-clinical orders
- Electronic mail
- Word processing

**(S)tock**
- Stores
- SSD
- Pharmacy
- Patients appliances

**(T)racking patients**

***Figure 2:*** **Data and telephony network diagram: Consistent with NHS Information Management and Technology Strategy**

# 3. Specific functional and design requirements

## Introduction

3.1 This Chapter describes in greater detail the individual spaces in an MI&T 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 MI&T unit easily on arrival at the hospital. The entrance canopy may be designed to be sufficiently conspicuous to attract attention.

3.4 Ambulances may deliver and/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.

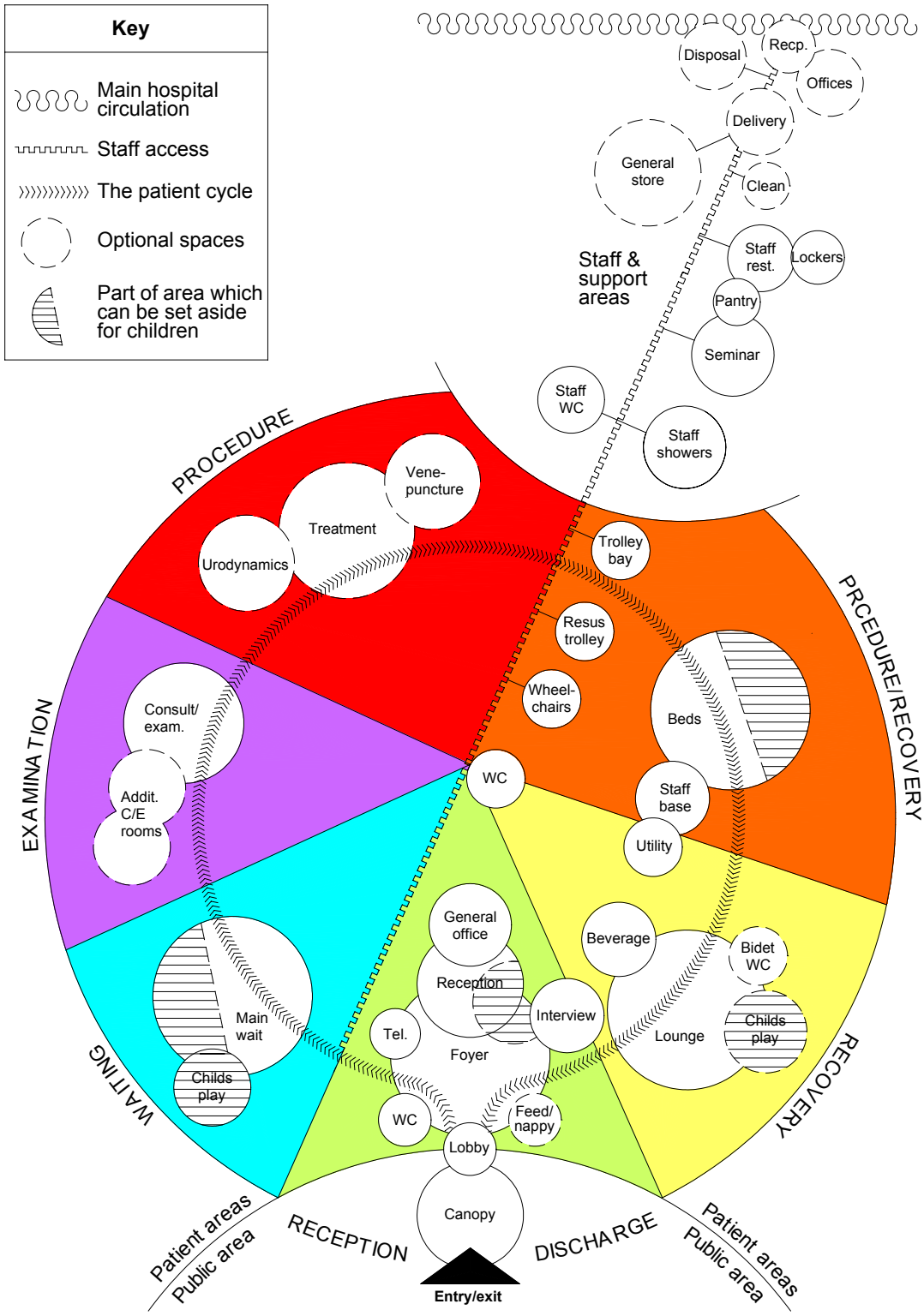



***Figure 3:*** **Functional relationship diagram**

### Main entrance foyer

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

3.7 A wheelchair accessible WC (paragraph 3.8), a baby feeding room (if provided - see paragraph 3.84), a nappy changing room (if provided - see paragraph 3.85) and a public telephone (paragraph 3.86) should be located with entry direct from the foyer and be easily accessible to people entering and leaving the unit.

### Wheelchair accessible WCs

3.8 A wheelchair accessible WC should be provided with direct access from the foyer. One or two additional wheelchair accessible WCs (depending on the size of the unit) should be provided with easy access from the main waiting area and from the bedrooms and lounge. See also paragraph 2.65.

### Reception counter

3.9 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 and, if necessary, in privacy.

3.10 The main functions of receptionists will be receiving and registering patients and their escorts upon arrival and completing discharge procedures upon the departure of patients. 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 and leaving the unit and in the main waiting and play areas;
- there is direct access to the general office;

- a private discussion can be held between a patient and/or escort and a member of staff. Provision of an interview bay or booth may be appropriate;
- there are two heights to the counter top:
  (i) for patients in wheelchairs;
  (ii) standing height for occasional writing.

**General office**

3.12 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 medical 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 MI&T unit the trolley will hold relatively few records and in a large unit the trolley will be full. In small to medium-size units, consideration might be given to storing records for two days in 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, 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 older 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. Provision of low-level background music and/or a TV/video system may help patients relax, alleviate the boredom of essential waiting 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 and leaflets about relevant clinical conditions should be available in a well-designed holder. Pin boards may be used to display information and notices about organisations helpful to patients attending the unit.

3.17 The main waiting area should have direct access from the foyer, be overseen by the reception counter and have easy access to WCs, the consulting/examination room(s), bedrooms and treatment room(s). The main waiting area should be sized on the basis of an effective appointments system. Appendix 4 identifies the assumptions made in assessing the area included in the 'Schedules of accommodation' in Chapter 6.

3.18 The functions of the main waiting area are compatible with the functions of the recovery lounge and, therefore, project teams may consider integrating the two spaces. See also paragraph 3.68.

**Secondary entrance**

3.19 A secondary entrance to the MI&T unit preferably off the main hospital circulation route, will provide a convenient link to the hospital. Dedicating the main entrance for use by patients, escorts and visitors, the secondary entrance will facilitate:

- access for patients to and from other clinical departments;
- access and admission of patients from and to in-patient wards;
- ease of access for staff;
- delivery of supplies and disposal of waste, etc.

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 to the hospital and the unit 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.

**Venepuncture room**

3.21 Facilities will be required for taking and testing blood specimens. Depending on local policy, specimens may be taken in a consulting/examination room or a bed space and initial analysis performed in the dirty utility room, or a venepuncture

room may be provided where both functions may be carried out. Provision of a venepuncture room, therefore, is a project option.

3.22 A venepuncture room may need to accommodate more than one patient at the same time, depending on workload. In order to preserve patient privacy and dignity in such cases, and for safety reasons (to reduce the risk of 'needlestick' injuries), the venepuncture room should include individual venepuncture cubicles.

3.23 Each venepuncture cubicle will require a venepuncture chair, storage facilities for a working stock of sterile and other supplies, and clinical hand-wash facilities. Normally, the patient will be attended only by the phlebotomist. In a venepuncture room with cubicles, one cubicle should be suitable for a patient in a wheelchair.

3.24 The venepuncture room should include a worktop for portable analytical equipment and an examination couch in case it is necessary for a patient to lie down.

**Consulting/examination room**

3.25 This SHPN has been prepared on the basis that combined consulting/ examination rooms are preferable to separate consulting rooms and examination rooms. The combined room facilitates unbroken consultation and examination and, if there is only one door, greater acoustic privacy. The combined room has greater flexibility in use, as it may be used for either consultation, or examination, or it may be used for both. The provision of combined rooms also simplifies the present and future allocation of rooms to doctors for particular clinics.

3.26 A standard consulting/examination room should be large enough to accommodate a doctor, a nurse, a patient (who may be in a wheelchair), and an escort.

3.27 The room will be used for consultation, examination, taking and recording of blood pressure, and for minor diagnostic and treatment procedures. Space is needed for a desk and chairs, and an examination couch, screened by curtains. There should be sufficient space within the curtained area for a patient to undress/dress in privacy, with assistance when required. The examination couch should be accessible from both sides. Space is needed for storing small items of equipment and small quantities of supplies and for a mobile adjustable inspection lamp. Clinical hand-wash facilities are required.

3.28 The layout of the room should ensure maximum privacy, especially when the door is opened. Communication doors between adjacent consulting/ examination rooms may facilitate the movement of staff, but they are not recommended as their use intrudes upon both the patient's privacy and the consultation. If they are provided, the rooms must not be used as a general traffic route.

3.29 A pair of combined consulting/examination rooms equate in area with one consulting room and two examination rooms. Combined consulting/ examination rooms, therefore, offer greater flexibility (two doctors can consult and/or examine simultaneously) and can accommodate the same patient throughput.

3.30 Standard consulting/examination rooms can be used by a wide range of specialities. They should not be used routinely as offices, although they can be allocated for example, as a base for a social worker for the period of a clinic.

**Bed spaces**

3.31 A patient may be admitted to a bed space from the main waiting area. They may then change, securely store belongings and be examined, investigated, treated, recover in, and discharged from the bed space. Other options include examination in a consulting/examination room prior to admission to a bed, investigation and treatment in a treatment room in the unit or in another department elsewhere in the hospital, and completion of recovery in the lounge.

3.32 Bed spaces in an MI&T unit have similar user requirements to bed spaces in an adult acute (in-patient) ward (see SHPN 04 - 'In-patient accommodation: Options for choice). Provision of oxygen and vacuum outlets is excluded from the description in the following paragraph. However, mobile facilities should be available and may be parked in the clean utility room.

3.33 Each bed space should be provided with:

- a variable-height bed, a bedside wardrobe, an overbed table, an easy chair and space for an additional stacking chair;
- a bedhead luminaire;
- a bedhead services panel incorporating:

  electrical socket-outlets;
  luminaire control switch;
  nurse call reset button/indicator lamp;
  staff/staff emergency pull switch;
  socket for patient handset;
  patient handset storage bracket;
  radio/TV stethoscope headset outlet (may be on handset control unit);
- patient handset control unit incorporating:

  nurse call button;
  reassurance light;
  luminaire switch;
  radio/TV volume control knob;
  radio/TV selector switch.

3.35 Most patients will not need to undress. Even so, beds may be preferred to reclining chairs and trolleys. Beds are:

- better for patient care. Patients with certain conditions can acquire 'bed' sores in a short period of time. (Note: pressure relieving trolleys are available);
- more comfortable;
- easier to clean;
- cheaper.

Project teams may consider that a mixture of beds, trolleys and reclining chairs is most appropriate.

3.36 Particular attention should be paid to the location of windows. Patients should have a pleasant external view when lying on a bed, a trolley or a reclining chair. Wardrobes should be so placed that they do not block the light or view.

**Multi-bed room**

3.37 Each bed space should not be less than 2.9 m x 2.5 m and be separated into bays by fixed partitions or heavy duty moveable screens. Provision of moveable screens enables patients to choose between being with others or a measure of separation and privacy. Windows between beds should be so located that patients do not suffer from draughts.

3.38 A multi-bed room used by male and female patients at the same time may provide therapeutic, organisational and economic advantages. However, mixed sex accommodation is not popular and some patients may find a mixed sex multi-bed room embarrassing and distasteful: it is essential to ensure that patient privacy and dignity is not impaired.

3.39 Options for completely separating male and female patients include:

- in small MI&T units use of the multi-bed room for one sex and the single-bed rooms for the other sex;
- in larger MI&T units using one multi-bed room for males and one for females;
- separate sessions for each sex

Project teams, when considering mixed sex occupation of multi-bed rooms, should recognise that some patients may not need to undress.

3.40 Clinical hand-wash facilities, and payphone socket-outlets for use with a telephone trolley and/or a portable telephone, should be provided in a multi-bed room.

### Single-bed rooms

3.41 Single-bed rooms may be more appropriate for some patients and for some procedures and should include a bed space similar to that provided in a multi-bed room (see paragraphs 3.32 to 3.36), clinical hand-wash facilities, and a payphone socket-outlet for use with a telephone trolley and/or a portable telephone.

### Staff base

3.42 A small staff base is required to provide a focal point for staff managing patients occupying and moving to and from the bed rooms. Facilities required include:

- a writing surface;
- communications equipment, including a telephone and a VDU and keyboard;
- storage space for a working supply of stationery;
- space for holding health records.

3.43 The staff base should be associated with, and may be located in, the multi-bed room

### Treatment room

3.44 A standard treatment room provides a space where some clinical investigation and treatment can be performed which it is not appropriate to perform in a consulting/examination room or a bed space and which does not require the facilities of a special treatment room either in the MI&T unit or elsewhere in the hospital. A standard treatment room also provides an alternative location in which to perform procedures.

3.45 Patients may be brought to the standard treatment room on a bed or a trolley, in a wheelchair or on foot: they will probably be accompanied by a member of staff and possibly an escort. The door to the standard treatment room should be wide enough to permit easy access. Door swings should not impede movement or activities within the room.

3.46 Procedures may be carried out by doctors, nurses and appropriate other staff with the patient lying on a bed, a trolley or an examination couch, sitting in a wheelchair or a chair, or standing. Access is required all round a patient. The examination couch should be mobile so that it can be moved easily to allow access to patients who need to be treated on a bed or a trolley.

3.47 The standard treatment room should be equipped with terminal units for oxygen and for vacuum, an X-ray viewing facility, a mobile examination lamp, a staff emergency call point, and clinical hand-wash facilities. Clinical quality colour rendering light sources should be provided and walls, ceilings and floors should be of suitable colour and reflectance. The room should be sound attenuated. Natural light is preferred but not essential; mechanical ventilation should be provided to control the movement of air to and from other spaces.

3.48 A preparation area is required where sterile packs, lotions and drugs for immediate use are stored and prepared for use, and where trolleys can be prepared for use and/or held. The preparation area should be separated from the standard treatment room by means of a partition wall, with the preparation area interfacing the standard treatment room and circulation space from where entry is made.

3.49 The standard treatment room should have easy access from the consulting/ examination room(s) and bedrooms and be positioned between the clean and dirty utility rooms with direct access for staff to each from the preparation area.

**Urodynamics treatment room**

3.50 A urodynamics treatment room may be required where a range of bladder function studies can be performed, including fluoroscopic radiological investigations to monitor, for example, bladder pressure and urine flow, following an infusion of radioactive dye.

3.51 Patients may be brought to the urodynamics treatment room on a bed or a trolley, in a wheelchair or on foot: they will probably be accompanied by a member of staff and possibly an escort. The door to the urodynamics treatment room should be wide enough to permit easy access. Door swings should not impede movement or activities within the room.

3.52 Items of equipment required for urodynamics procedures include a mobile C-arm image intensifier with a monitor on a mobile stand, a video recorder, a radio-diagnostic table or trolley, a protective apron rack, a pressure monitor, a mobile infusion stand and infusion pump, a commode with a liquid measure, and a dressings trolley.

3.53 The urodynamics treatment room should be equipped with terminal units for oxygen and for vacuum, an X-ray viewing facility, a mobile examination lamp, a staff emergency call point, and clinical hand-wash facilities. Clinical quality colour rendering light sources should be provided and walls, ceilings and floors should be of suitable colour and reflectancies. The room should be sound attenuated. Natural light is preferred but not essential; mechanical ventilation should be provided to control the movement of air to and from other spaces.

3.54 During procedures, the patient may lie on the radio-diagnostic table or trolley and a doctor, a nurse, a radiographer and a technician may be in attendance.

3.55 The urodynamics treatment room should be adjacent to the standard treatment room and include a preparation area which extends that associated with the standard treatment room.

3.56 This SHPN includes alternative methods for the provision of a urodynamics treatment room: the method selected will be influenced by the workload of standard and urodynamics treatment procedures.

3.57 Method 1 involves the conversion of the standard treatment room (provided as basic accommodation) to a urodynamics treatment room and use of the converted room for both standard and urodynamic treatment procedures. The 'Schedules of accommodation' in Chapter 6 allow for the enlargement of the standard treatment room to enable the extra staff and equipment to be accommodated and of the general store to provide additional space for the storage of urodynamics equipment when not in use.

3.58 Method 2 involves the provision of a dedicated urodynamics treatment room additional to the standard treatment room. The urodynamics treatment room may be used for other appropriate treatment procedures when not in use for urodynamics procedures.

### Clean utility room

3.59 A clean utility room is required where mobile oxygen and vacuum facilities may be parked, drugs, medicines and lotions may be stored safely and prepared, a working supply of clean and sterile supplies may be held, and dressing trolleys prepared. A Controlled Drugs cupboard with indicating lamps (see SHPN 03: General design guidance) may be located here. Clinical hand-wash facilities are required. The room should be located adjacent, and have direct access, to the treatment preparation area and be close to the bedrooms.

### Dirty utility room

3.60 A dirty utility room is required where:

- simple blood and urine tests can be carried out;
- suction bottles can be automatically emptied, washed and disinfected;
- bedpans, urinals and vomit bowls can be stored, prepared for use and their contents disposed of following use;
- dressing trolleys and other items of equipment can be cleaned;
- materials to be reprocessed and for disposal may be temporarily held.

It should be located close to the consulting/examination room(s), bed room(s) and treatment room(s) and, if possible, adjacent to a WC and include a hatch through which specimens can be passed. Bedpans, etc. should not have to be carried through areas where patients wait.

3.61 Project teams must decide between a disposable bedpan system with bedpan macerator or a non-disposable system with bedpan washer, and plan accordingly. In making a choice, account should be taken of cost and storage needs. Additional requirements include an automatic suction bottle washer/disinfector, a sink-unit with drainer, hand-wash facilities, a work surface, cupboards and shelves. Space should be available to park trolleys and for temporarily holding bags of linen, etc. Pedal-operated sack stands are also required. Mechanical extract ventilation should be provided.

### Resuscitation trolley bay

3.62 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 close to the bed rooms and with easy access to all spaces used by patients.

### Shower

3.63 Project teams may provide a shower for use by patients in localities where residential accommodation may have inadequate facilities; it may also be used by staff. The shower should be located close to the bedrooms and adjoin the WC. It is a project option.

### Trolley/wheelchair bay

3.64 Trolleys and wheelchairs will be used mainly to transfer patients between the bedrooms and the treatment room(s) in the unit and elsewhere in the hospital. Wheelchairs may be used to transfer patients to the recovery lounge. A trolley/wheelchair bay should be located close to the bedrooms.

### Recovery lounge

3.65 A lounge, furnished with a variety of chairs and with occasional tables arranged in small, informal groups, is required where patients can complete their recovery prior to discharge. The lounge may also be used by patients having certain types of investigation and treatment. Project teams should consider the need to provide a telephone, and a VDU and keyboard, in the lounge. Patients may spend long periods of time in the lounge. 'Healthy' light refreshments and beverages prepared in the beverage bay (paragraph 3.70) may be consumed here. Easy access is required to a WC. An area where children can play safely, similar to that en-suite with the main waiting area, may be provided with the lounge. A supply of current reading material and leaflets about relevant clinical conditions should be available in a well-designed holder and pin boards to display information and notices about organisations helpful to patients attending the unit may be used in the lounge as well as, or instead of, in the main waiting area. Space may be allowed for health promotion exhibitions for patients and escorts who will have time to browse. A payphone socket-outlet should be provided for use with a telephone trolley and/or a portable telephone. Project

teams may wish to consider the provision of low-level background music and/or a TV/video system in the lounge (see also paragraph 3.16). The lounge should be close to the main entrance by which patients will leave after discharge.

3.66 Patients should have a choice of environment in which to recover: this will be influenced by their personal preferences and clinical conditions. Some patients will wish to relax quietly, perhaps also reading, while other patients will enjoy more activity, for example, seeing people moving around, watching TV and listening to radio. Project teams should, therefore, consider subdividing the lounge into "quiet" and "noisy" areas.

3.67 Appendix 4 identifies the assumptions made in assessing the area of the lounge included in the 'Schedules of accommodation' in Chapter 6.

3.68 Project teams considering the integration of the main waiting area and the recovery lounge (see paragraph 3.18), and the subdivision of the lounge (see paragraph 3.66), should consider the provision of a separate "quiet" integrated main waiting area/lounge and a separate "noisy" integrated main waiting area/lounge.

3.69 A well laid out external patio and/or garden provides a therapeutic environment which can be used in suitable weather by patients during treatment and recovery periods. The patio/garden should be enclosed and, if possible, have direct access from the lounge. See SHPN 45 - 'External works for health buildings' for more detailed guidance on this subject.

**Beverage bay**

3.70 A beverage bay where patients, escorts and/or staff can prepare light refreshments and beverages should be provided close to the bedrooms and the lounge. 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, a water dispenser and ice making machine.

**Interview room**

3.71 It is expected that most confidential discussions with patients will occur in the consulting/examination room(s). 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 MI&T unit in order to facilitate easy access for pre-and post-procedure counselling. Patients and escorts may be left in the interview room to recover in privacy after 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.

### Nurse manager's office

3.72 This office is the administrative base for the nurse manager. 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.

### Unit director's office

3.73 The unit director requires similar office facilities to those provided for the nurse manager. Project teams may not be able to justify provision of a unit director's office. It is included, therefore, as a project option.

### Medical staff office

3.74 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. Project teams may not be able to justify provision of a medical staff office. It is included, therefore, as a project option.

### Staff change/locker room

3.75 The guidance in Part 3 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 and if appropriate, 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. Small lockers for the secure storage of small items of personal belongings may be located in rest rooms. Rest rooms should have direct access to the pantry.

### Pantry

3.82 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 hand-wash basin.

### Seminar room

3.83 The nature of the work in an MI&T unit is such that staff cannot easily leave the unit when it is operational. A seminar room should therefore be provided within or close to 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 may be provided from treatment areas to the seminar room.

### Baby feeding room

3.84 A room where a baby can be breast or bottle fed, in privacy, should have direct access from the foyer and easy access from the main waiting area, bed rooms and lounge. Seating, and facilities for the disposal of waste, are required. Hand-wash facilities should also be provided. The room may be made available to people attending other parts of the hospital if it is suitably located. Provision of a baby feeding room is a project option.

### Nappy changing room

3.85 A room where a baby can have a nappy changed, in privacy, should adjoin the baby feeding room. Seating, and facilities for the disposal of soiled nappies and other waste, are required. Hand-wash facilities should also be provided. The

room may be made available to people attending other parts of the hospital if it is suitably located. Provision of a nappy changing room is a project option.

### Public telephones

3.86 Patients and escorts may need the use of a telephone. A fixed payphone should be provided in the foyer. Payphone socket-outlets should be provided in the bedrooms and the lounge 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. The need for patients and escorts to be able to conduct telephone conversations in privacy should be recognised.

### General store

3.87 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.

### Unit cleaners' room

3.88 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-wash facilities are also required. Shelving and vertical storage should not encroach on the working space or restrict access to the cleaners' sink. The cleaners' room should be located away from the principal routes used by patients. A close relationship with any particular area within the unit is not required. 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.

### Disposal hold

3.89 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.

3.90 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.

3.91 The hold area should be located near the exit from which collections will be made.

3.92 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**

3.93 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.

3.94 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

4.1 There is no supplementary guidance under this heading for a medical investigation and treatment 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 a medical investigation and treatment unit (MI&TU). 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

5.2 As a guide and for preliminary planning purposes only, the following table gives the estimated demands for a 12 bed MI&T unit.

| *Service* | *Typical max. demand* | *Notes* |
|---|---|---|
| Heating/ventilation/hot water (kW) | 85 | |
| Hot water (l/s) | 0.5 | Storage 410 litres (2 hour recovery) |
| Cold Water (l/s) | 0.6 | Storage 1,050 litres |
| Supply ventilation ($m^3$/s) | 0.94 | |
| Extract ventilation ($m^3$/s) | 0.95 | Clean and dirty |
| Electrical (kVA) | 20 | Includes essential 5kVA |
| Medical gases (litre/min) | | |
| Oxygen | 20 | |
| Vacuum | 20 | |

## 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

5.4 Wherever possible, spaces should be naturally ventilated. Single and multi-bed areas will therefore normally be naturally ventilated but the treatment room and some other areas will require mechanical supply and/or extract for clinical or functional reasons.

5.5 The ventilation system serving the treatment and similar rooms may be turned off during periods of non-use. However, the controls should provide for automatic reinstatement of the system via the building management system or sensors which detect the presence of staff.

### Piped medical gases and vacuum

5.6 Treatment room(s) should be provided with oxygen and vacuum (see paragraphs 3.47 and 3.53). Further guidance on piped medical gas systems is contained in SHTM 2022.

### Pneumatic transport

5.7 Pneumatic tube transport may provide a viable alternative to porters for moving specimens to the pathology department. Factors to be assessed will include:

- distance, time and cost of travel between the two locations;
- time to process specimens in the laboratory;
- proportion of specimens which require urgent results.

5.8 Further guidance on pneumatic conveyor systems is contained in SHTM 2009.

## Electrical services

### Secondary entrance

5.9 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.

5.10 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 disengage on initiation of the fire alarm system.

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

### Staff location system

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

### Patient/staff and staff/staff call systems

5.12 Patient/staff call points should be provided in all bed spaces (see paragraph 3.33) and in all spaces where patients may be left alone temporarily, such as consultation/ examination/treatment rooms and WCs.

5.13 Staff/staff call points should be provided in all spaces where staff consult, examine and treat patients.

### Music and television

5.14 Conduits for television/video and background music system outlets may be provided to the main waiting area and the recovery lounge (see paragraphs 3.16 and 3.66) and may be supplied from the hospital system.

# 6. Schedules of accommodation

## Introduction

6.1 The following schedules are based on the text in Chapter 3, and are illustrative of the acceptable accommodation for the functional units detailed.

6.2 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.

| Para No. | Activity space | Space area sq.m. | 6 beds Qty | 6 beds Total area sq.m. | 12 beds Qty | 12 beds Total area sq.m. | 18 beds Qty | 18 beds Total area sq.m. |
|---|---|---|---|---|---|---|---|---|
| | **Entrance and reception** | | | | | | | |
| 3.5 | Draught lobby | 11.0 | 1 | 11.0 | 1 | 11.0 | 1 | 11.0 |
| 3.6 | Foyer | | 1 | 20.0 | 1 | 27.5 | 1 | 36.0 |
| 3.9 | Reception | | 1 | 9.5 | 1 | 13.5 | 1 | 13.5 |
| 3.12 | General office | 14.0 | 1 | 14.0 | 1 | 14.0 | 1 | 14.0 |
| 3.13 | Records trolley store | 2.5 | 1 | 2.5 | 1 | 2.5 | 1 | 2.5 |
| 3.16 | Main waiting | | 1 | 20.0 | 1 | 31.0 | 1 | 31.0 |
| 3.8 | Wheelchair wc – type 5 | 4.5 | 1 | 4.5 | 1 | 4.5 | 1 | 4.5 |
| | **Patient investigation & treatment spaces** | | | | | | | |
| 3.25 | Consulting/examination room | 16.5 | 1 | 16.5 | 2 | 33.0 | 3 | 49.5 |
| 3.42 | Staff base | 4.5 | 1 | 4.5 | 1 | 4.5 | 1 | 4.5 |
| 3.37 | Multi-bed room (4 beds) | 40.0 | 1 | 40.0 | 2 | 80.0 | 3 | 120.0 |
| 3.41 | Single-bed room | 11.5 | 2 | 23.0 | 4 | 46.0 | 6 | 69.0 |
| 3.44 | Treatment room | 12.5 | 1 | 12.5 | 1 | 12.5 | 1 | 12.5 |
| 3.64 | Trolley/wheelchair bay | 5.0 | 1 | 5.0 | 1 | 5.0 | 1 | 5.0 |
| 3.71 | Interview room | 7.0 | 1 | 7.0 | 1 | 7.0 | 1 | 7.0 |
| | **Patient recovery areas** | | | | | | | |
| 3.65 | Recovery lounge | | 1 | 22.0 | 1 | 27.5 | 1 | 35.0 |
| 3.70 | Beverage bay | | 1 | 8.0 | 1 | 8.0 | 1 | 8.0 |
| | **Sanitary facilities** | | | | | | | |
| 3.8 | Wheelchair wc – type 5 | 4.5 | 1 | 4.5 | 1 | 4.5 | 2 | 9.0 |
| | **Staff facilities** | | | | | | | |
| 3.75 | Male staff change/locker | | 1 | 12.0 | 1 | 21.0 | 1 | 30.0 |
| 3.75 | Female staff change/locker | | 1 | 12.0 | 1 | 21.0 | 1 | 30.0 |
| 3.79 | Staff wc/wash – type 1 | 2.0 | 1 | 2.0 | 2 | 4.0 | 4 | 8.0 |
| 3.79 | Staff shower – type 4 | 2.5 | 1 | 2.5 | 2 | 5.0 | 2 | 5.0 |
| 3.80 | Staff rest room | | 1 | 10.0 | 1 | 16.0 | 1 | 22.5 |
| 3.82 | Pantry | 6.0 | 1 | 6.0 | 1 | 6.0 | 1 | 6.0 |
| 3.72 | Nurse manager's office | 9.0 | 1 | 9.0 | 1 | 9.0 | 1 | 9.0 |
| | **Support spaces** | | | | | | | |
| 3.62 | Resuscitation trolley bay | | 1 | 2.0 | 1 | 2.0 | 1 | 2.0 |
| 3.59 | Clean utility room | 10.0 | 1 | 10.0 | 1 | 10.0 | 1 | 10.0 |

Cont.

| Para No | Activity space | Space area sq.m. | 6 beds Qty | 6 beds Total area sq.m. | 12 beds Qty | 12 beds Total area sq.m. | 18 beds Qty | 18 beds Total area sq.m. |
|---|---|---|---|---|---|---|---|---|
| 3.60 | Dirty utility room | 6.5 | 1 | 6.5 | 1 | 6.5 | 1 | 6.5 |
| 3.87 | General store | | 1 | 12.0 | 1 | 18.0 | 1 | 24.0 |
| 3.89 | Disposal hold | | 1 | 6.0 | 1 | 8.0 | 1 | 12.0 |
| 3.93 | Switch cupboard | | 1 | 2.0 | 1 | 4.0 | 1 | 6.0 |
| | Net Total | | | 316.5 | | 462.5 | | 603.0 |
| | ADD – Planning provision | 5% | | 15.8 | | 23.1 | | 30.2 |
| | Sub-Total | | | 332.3 | | 485.6 | | 633.2 |
| | ADD – Engineering zone | 3% | | 10.0 | | 14.6 | | 19.0 |
| | ADD – Circulation | 27% | | 89.7 | | 131.1 | | 171.0 |
| | **Gross Total** | | | **432.0** | | **631.3** | | **823.2** |
| | Departmental areas | | | 432.0 | | 632.0 | | 824.0 |

## Essential Complementary Accommodation

| | | | 5% | 3% | 27% | |
|---|---|---|---|---|---|---|
| ***Para No*** | ***Activity space*** | ***Space area sq.m.*** | ***Planning sq.m.*** | ***Engineering sq.m.*** | ***Circulation sq.m.*** | ***Total area sq.m.*** |
| 3.83 | Seminar room | 20.0 | 1.0 | 0.6 | 5.9 | 28.0 |
| 3.63 | Shower – type 4 | 3.0 | 0.2 | 0.1 | 0.8 | 4.0 |
| 3.88 | Unit cleaners' room | 7.0 | 0.4 | 0.2 | 1.9 | 9.0 |

## Optional Accommodation and Services

| | | | 5% | 3% | 27% | |
|---|---|---|---|---|---|---|
| ***Para No*** | ***Activity space*** | ***Space area sq.m.*** | ***Planning sq.m.*** | ***Engineering sq.m.*** | ***Circulation sq.m.*** | ***Total area sq.m.*** |
| | **Patient investigation & treatment space** | | | | | |
| 3.25 | Consulting/examination room | 16.5 | 0.8 | 0.5 | 4.7 | 23.0 |
| 3.44 | Treatment room | 12.5 | 0.6 | 0.4 | 3.5 | 17.0 |
| 3.50 | Urodynamics treatment room | 22.5 | 1.1 | 0.7 | 6.2 | 31.0 |
| | **Add. treatment facilities (extra over area)** | | | | | |
| 3.44 | Treatment room | 10.0 | 0.5 | 0.3 | 2.7 | 14.0 |
| 3.87 | General store | 10.0 | 0.5 | 0.3 | 2.7 | 14.0 |
| | **Miscellaneous spaces** | | | | | |
| 3.73 | Unit director's office | 9.0 | 0.5 | 0.3 | 2.8 | 13.0 |
| 3.74 | Medical staff office | 11.0 | 0.6 | 0.3 | 3.1 | 15.0 |
| 3.8 | Wheelchair wc – type 5 | 4.0 | 0.2 | 0.1 | 1.2 | 6.0 |
| 3.84 | Baby feeding room | 5.5 | 0.3 | 0.2 | 1.6 | 8.0 |
| 3.85 | Nappy changing room | 4.0 | 0.2 | 0.1 | 1.2 | 6.0 |
| 3.63 | Shower – type 4 | 3.0 | 0.2 | 0.1 | 0.8 | 4.0 |
| 3.21 | Venepuncture room – 1 bay | 8.0 | 0.4 | 0.3 | 2.3 | 11.0 |
| 3.21 | Venepuncture room – 2 bay | 16.0 | 0.8 | 0.5 | 4.7 | 22.0 |
| 3.21 | Venepuncture room – 3 bay | 24.0 | 1.2 | 0.8 | 7.0 | 33.0 |

# 7. Appendices

# Appendix 1

## Specialities and investigations/treatments

Specialities which might use an MI&T unit for day case procedures and, relative to each speciality, a list of investigations and treatments for which patients might be admitted.

### Cardiology

- pacemaker implantation;
- exercise stress test;
- transoesophageal echo;
- introduction of drug therapy;
- blood pressure monitoring.

### Clinical haematology

- blood transfusion;
- autologous blood transfusion;
- blood volume measurement;
- intravenous infusion (chemotherapy, in case of accidents of Factor 8 for haemophiliacs, and to give artificial immunity);
- bone marrow aspiration;
- trephine bone biopsy;
- peripheral stem cell harvest;
- urgent assessment of haematological disorders;
- teaching self-administration of drugs.

### Dermatology

- dressing ulcers.

### Endocrinology

- growth hormone test;
- cortisone day curve;
- short Synacthen test;
- water deprivation test;
- glucose tolerance test;
- glucogon stimulation test;
- insulin stress test;
- hormone implant;
- aspiration of thyroid gland;
- sugar day curve;
- foot care;
- application of Scotch cast boots.

### Gastroenterology

- pancreatic function test;
- gastric function test;
- oesophageal manometry;
- bowel motility test;
- liver biopsy;
- breath test, including C 13, C 14 and hydrogen.

### General medicine

- blood transfusion;
- venesection.

### Genito-urinary medicine

- blood transfusion;
- intravenous infusion;
- pentamidine nebulisation;
- lumbar puncture;
- series of injections (if associated with other procedures);
- skin biopsy.

### Neurology

- intravenous drug therapy (MS patients/steroids and peripheral neuropathies/immunoglobulin);
- lumbar puncture;
- myelography (lumbar and cervical).

### Palliative medicine

- blood transfusion;
- intravenous drug therapy (hypercalcaemia);
- naso-gastric intubation;
- paracentesis;
- intrathecal block;
- epidural block;
- lymphodema treatment.

### Respiratory medicine

- intravenous infusion (replacement immunoglobulin);
- pleural biopsy;
- chest aspiration.;
- blood gas analysis;
- spirometry test;
- reversibility test;
- full respiratory function test.
- myelography;
- muscle biopsy;
- bone biopsy;
- skin biopsy;
- multiple joint injection;
- hip injection.

### Urology

- bladder instillation;
- catheter care, including self-catheterisation;
- transrectal ultrasound;
- pre-investigation ("one-stop") clinic;
- haematuria clinic;
- urodynamics.

### Rheumatology

- intravenous infusion.

# Appendix 2

## A method for calculating the number of beds and consulting/examination rooms required in an MI&T unit

### Introduction

1. Appendix 2 provides a method which may be used to calculate the number of beds and consulting/examination rooms required in an MI&T unit. The method is illustrated by worked examples.

### Definitions

*Workload per annum*

2. The **workload per annum** is the number of patients in a year who will need to occupy a bed/attend a consulting/examination room when attending the unit.

*Workload capacity of one bed/one consulting/examination room*

3. The **workload capacity of one bed/one consulting/examination room** is the number of patients per annum that can be accommodated by one bed/one consulting/examination room.

### Method

*Workload per annum*

4. The **workload per annum** must be forecast locally. In estimating the future number of patients, 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 bed/one consulting/examination room*

5. The **workload capacity of one bed/one consulting/examination room** is the product of:

- the average throughput of patients per working day/ per session;
- the length of the working week in days/sessions; ·
- the length of the working year in weeks;

- the utilisation rate. For example, the length of the working week may be five days/ten sessions but the accommodation may be utilised for only (say) four days/eight sessions, that is 80% of the time. The utilisation rate of a bed may be different from the utilisation rate of a consulting/examination room.

6. The length of the working year would not be expected to be less than 48 weeks.

7. In calculating the workload capacity of one bed, 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 16 to 18, illustrates this point), often preferred by patients.

**The number of beds/consulting/examination rooms required**

8. The number of **beds/consulting/examination rooms required** in the MI&T unit is the **workload per annum** divided by **the workload capacity of one bed/ one consulting/examination room**.

9. The number of beds/consulting/examination 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/session, week or year be lengthened so as to include a higher number of patients.

10. Rounded-up, the number of beds/consulting/ examination rooms will introduce some spare capacity.

11. The number of consulting/examination rooms is also affected by the number of staff holding clinic sessions, for example, if two doctors hold a clinic every Monday morning and use one consulting/examination room each then two consulting/examination rooms have to be provided irrespective of whether they are used concurrently on any other occasion. Every effort should be made to minimise under-utilisation. Paragraphs 25 and 26 illustrate the effect of a range of utilisation rates.

**Worked examples**

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

*Worked example 1 - Number of beds*

13. The following assumed figures are used in worked example 1 to illustrate the method:

- workload per annum (number of patients) = 2000;
- average number of patients per working day = 2;
- length of working week in days = 5;
- length of working year in weeks = 50;

- utilisation rate = 80%.

14. The workload capacity of one bed is

2 x 5 x 50 x 80% patients

= 400 patients.

15. The number of beds required is

$$\frac{2000}{400} = 5.$$

*Worked example 2 - Number of beds*

16. The following assumed figures are used in worked example 2 to illustrate the method:

- workload per annum (number of patients) = 5,500;
- average number of patients per working day = 3;
- length of working week in days = 5;
- length of working year in weeks = 50;
- number of patients per evening session = 1;
- number of evening sessions per week = 2;
- utilisation rate = 80%.

17. The workload capacity of one bed is

(3 x 5 x 50 x 80%) + (1 x 2 x 50) patients

= 600 + 100 patients

= 700 patients.

18. The number of beds required is

$$\frac{5,500}{700} = 7.8$$

Rounded up = 8.

*Worked example 3 - Number of consulting/examination rooms*

19. The following assumed figures are used in worked example 3 to illustrate the method:

- workload per annum (number of patients) = 5000;
- average number of patients per session = 15;
- length of working week in sessions =10;

- length of working year in weeks = 50;
- utilisation rate = 80%.

20. The workload capacity of one consulting/examination room is

15 x 10 x 50 x 80% patients

= 6,000 patients.

21. The number of consulting/examination rooms required is

$\frac{5,000}{6,000} = 0.83$

Rounded up = 1.

**Illustrative examples**

22. Noted below is a range of workloads per annum which can be accommodated by various sizes of MI&T unit.

*Illustrative example 1*

23. The workload per annum which can be accommodated by an MI&T unit with six beds (the smallest size included in the 'Schedules of accommodation' in Chapter 6), assuming:

- all patients attending are admitted to a bed (that is, the consulting/ examination room and the treatment room are used only in support of the beds);
- an average throughput per working day of two patients;
- a five-day week;
- a fifty-week year;
- a range of utilisation rates;

is:

- 100% utilisation: 3,000 patients;
- 90% utilisation: 2,700 patients;
- 80% utilisation: 2,400 patients;
- 70% utilisation: 2,100 patients;
- 60% utilisation: 1,800 patients;
- 50% utilisation: 1,500 patients.

24. The workload per annum which can be accommodated in MI&T units with 12 and 18 beds is double and treble respectively the workload per annum which can be accommodated by a unit with six beds.

*Illustrative example 2*

25. The workload per annum which can be accommodated by an MI&T unit with six beds (the smallest size included in the 'Schedules of accommodation' in Chapter 6), assuming:

- an average of 15 patients per session attend an out-patient clinic in the consulting/examination room;
- an average throughput per bed per working day of two patients;
- a five-day/ten session week;
- a fifty-week year;
- a range of utilisation rates.

is as per illustrative example 1 in terms of use of beds and, in terms of the out-patient clinic:

- 100% utilisation: 7,500 patients;
- 90% utilisation: 6,750 patients;
- 80% utilisation: 6,000 patients;
- 70% utilisation: 5,250 patients;
- 60% utilisation: 4,500 patients;
- 50% utilisation: 3,750 patients.

*Illustrative example 3*

26. The workload per annum which can be accommodated by an MI&T unit with six beds and two additional consulting/examination rooms, assuming:

- an average of 15 patients per session attend an out-patient clinic in each consulting/examination room;
- a proportion of the patients who have attended the out-patient clinic then go on to be admitted to a bed;
- an average throughput per bed per working day of two patients;
- a five-day/ten session week;
- a fifty-week year;
- a range of utilisation rates;

is as per illustrative example 1 in terms of use of beds and, in terms of the out-patient clinic:

- 100% utilisation: 22,500 patients;
- 90% utilisation: 20,250 patients;
- 80% utilisation: 18,000 patients;
- 70% utilisation: 15,750 patients;
- 60% utilisation: 13,500 patients;
- 50% utilisation: 11,250 patients.

# Appendix 3

## Information management and technology network diagram (Figure 2) - Glossary

This glossary explains the meaning of those terms used in connection with "Station functions" on Figure 2 (paragraph 2.76 of this SHPN) that are not self-explanatory.

1. **Orders:** electronically placing orders for tests, for example, blood tests and X-rays, and clinical services, for example, physiotherapy and audiology. This function may also include the ability to enquire on the status of orders placed previously, for example, received, being processed and completed.

2. **Results:** electronically receiving results of orders (paragraph 1), for example, results of blood tests and X-rays, direct from clinical service departments. 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.

3. **Order communications system:** the "Orders" and "Results" functions are usually combined in an order communications system.

4. **Clinical coding:** the process by which clinical information, for example, diagnoses, symptoms and treatment, is entered into a computer in a coded form. It is noted that one element of the NHS Information Management and Technology (IM&T) strategy is the development of a thesaurus of coded clinical terms and groupings.

5. **GP contact:** 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 NHS IM&T strategy.

6. **Waiting lists:** access to a clinician's waiting list management system.

7. **Appointments:** maintaining, or making enquiries of, the appointments systems for the medical investigation and treatment unit and, for example, the out-patients department.

8. **Health records:** access to health records held electronically as text, coded data or digitised images, for example, X-rays.

9. **Patient assessment:** 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.

10. **Care planning:** 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.

11. **Staff rosters:** maintenance of rosters for nursing staff. Computer systems can assist nurse managers in the preparation of rosters.

12. **Nursing management system:** the "Patient assessment", "Care planning" and "Staff rosters" functions are usually combined in a single nursing management system.

13. **Community contact:** a facility to exchange patient information with community, primary care and/or other sectors or agencies, for example, Social Services Department, either by electronic mail or directly by means of a computerised communications network.

14. **Decision support:** 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.

15. **Contracting:** a facility which enables the activities of an MI&T unit to be monitored against its contracts and assists with the management of extra-contractual referrals.

16. **Non-clinical orders:** electronically placing orders for non-clinical services, for example, for repairs or supplies. This function may also include the ability to enquire on the status of orders placed previously, for example, received, being processed and completed.

# Appendix 4

## Areas of main waiting area and lounge

### Introduction

1. A range of local factors significantly influence the sizes of the main waiting area and lounge in an MI&T unit. In determining the requirements for a particular MI&T 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 areas of the main waiting area and lounge included in the 'Schedules of accommodation' in Chapter 6. Project teams should challenge the assumptions by comparing them with local factors.

### Main waiting area

3. The principal factor used in assessing the size of the main waiting area is the number of chairs that need to be accommodated.

4. In sizing the main waiting area **in terms of the number of beds** in the unit, it was assumed that:

   - all patients are accompanied by one escort and that half of the escorts remain for the duration of the session;
   - patients do not wait in the main waiting area.

5. On the basis of the assumptions noted in paragraph 4, the numbers of chairs required in main waiting area in relation to patients admitted to a bed equates with half of the number of beds in the unit.

6. In sizing the main waiting area **in terms of the number of consulting/ examination rooms** in the unit, a "worst-case" scenario was assumed for one consulting/ examination room and an "average-case" scenario was assumed for additional consulting/examination rooms, as follows.

*"Worst-case" scenario clinic*

7. Assumptions made were:

   - all patients are accompanied by one escort;
   - 60 patients attend, for example, a nurse/ venepuncture clinic of four hours 30 minutes duration, half of whom remain to see a doctor;

- appointments are at 15 minute intervals.

8. On the basis of the above assumptions, 6.66 patients and escorts arrive every 15 minutes and 3.33 patients and escorts remain to see a doctor, and, therefore, ten chairs have been allowed for a "worst-case" scenario clinic.

*"Average-case" scenario*

9. Assumptions made were:

- all patients are accompanied by one escort;
- 20 patients attend a clinic which lasts for three hours and 20 minutes;
- appointments are at 10-minute intervals but three "appointments" arrive during an interval.

10. On the basis of the above assumptions six chairs have been allowed.

11. On the basis of paragraphs 4 to 10, the number of chairs required in the main waiting area, with an allowance for extra chairs as a "cushion", is:

| **Number of beds** | **6** | | | **12** | | | **18** | | |
|---|---|---|---|---|---|---|---|---|---|
| Number of consulting/ examination rooms | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Number of chairs | 13 | 19 | 25 | 16 | 22 | 28 | 19 | 25 | 31 |
| "Cushion" | 3 | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 1 |
| Number of chairs/ rounded up | 16 | 22 | 28 | 18 | 24 | 30 | 20 | 26 | 32 |

**Recovery lounge**

12. The principal factor used in assessing the size of the lounge is the number of chairs that need to be accommodated.

13. In sizing the recovery lounge **in terms of the number of beds** in the unit, it was assumed that:

- half of the patients complete their recovery in a chair in the lounge;
- half of the patients completing their recovery in the lounge are accompanied by an escort (see paragraph 4).

14. On the basis of the assumptions noted in paragraph 13, the numbers of chairs required in the lounge in relation to patients admitted to a bed equates with 75% of the number of beds in the unit.

15. In sizing the lounge **in terms of the number of consulting/ examination rooms** in the unit, it has been assumed that:

- for each consulting/examination, 10% of the patients in the "average-case" scenario remain for treatment and recover in a chair in the lounge;
- all patients are accompanied by one escort.

16. On the basis of paragraphs 13 to 15, the number of chairs required in the lounge is:

| **Number of beds** | **6** | | | **12** | | | **18** | | |
|---|---|---|---|---|---|---|---|---|---|
| Number of consulting/ examination rooms | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Number of chairs | 9 | 13 | 17 | 13 | 17 | 21 | 18 | 22 | 26 |

# Appendix 5

## Combined day surgery, endoscopy and MI&T 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', Part 2 - 'Endoscopy unit' and this Part 3 - 'Medical investigation and treatment unit' can be used to plan and design a combined day surgery, endoscopy and MI&T unit.

2. Appendix 2, 'Combined day surgery and endoscopy unit' of SHPN 52 Part 2 is relevant in connection with the requirements for accommodation for day surgery and endoscopy in a combined day surgery, endoscopy and MI&T unit. This appendix considers how Appendix 2 in SHPN 52 Part 2 needs to be modified to take account of SHPN 52 Part 3 when planning and designing a combined day surgery, endoscopy, and MI&T unit.

### SHPN 52 Part 3 - 'Medical investigation and treatment unit'

3. Main differences in the spaces provided in the MI&T unit described in SHPN 52 Part 3 compared with spaces provided in the combined day surgery and endoscopy unit described in Appendix 2 of SHPN 52 Part 2 are noted below:

- additional spaces are included, namely:
  - (i) multi-bed and single-bed rooms and an associated staff base;
  - (ii) a treatment room;
  - (iii) a lounge;
  - (iv) a clean utility room;
  - (v) a urodynamics treatment room (OAS);
  - (vi) a venepuncture room (OAS).
- an interview room is included as basic accommodation (whereas in Parts 1 and 2 the interview room is optional);
- separate baby feeding and nappy changing rooms (both OAS) are included (as against a combined baby feeding and nappy changing room (OAS) in Parts 1 and 2);
- unisex wheelchair accessible WCs only are included or all users;
- staff change/locker rooms are included as ECA (whereas in Parts 1 and 2 staff change/locker rooms are included as basic accommodation);

- spaces associated with surgical and endoscopic procedures, but which are not required in connection with medical investigation and treatment procedures, are excluded.

### Combination of spaces from SHPN 52 Parts 1, 2 and 3

*Schedule of accommodation*

4. The schedule of spaces for a combined day surgery, endoscopy and MI&T unit may include the spaces described in Appendix 2 of SHPN 52 Part 2, plus the additional spaces (as listed in paragraph 3 above) and variations to spaces (as noted in paragraph 3 above) described in Part 3.

5. Paragraphs 1.2, 2.20 to 2.22 and 2.59 of Part 3 refer to the need for spaces attended by patients for medical investigation and treatment to be separate from spaces attended by patients for day surgery and endoscopy. Project teams will need to consider this matter carefully: decisions may be influenced by the workload and detailed design of the unit. However, provision of separate spaces would be expected in respect of those noted in paragraph 3 “additional spaces” (i), (ii), (iii), (v) and (vi) and the main waiting area.

6. Project teams will need to consider carefully the numbers and sizes of spaces in a combined day surgery, endoscopy and MI&T unit. The schedule of accommodation for a combined unit assembled from SHPN 52 Parts 1, 2 and 3 will be determined by:

   - the functional content of the day surgery, endoscopy and medical investigation and treatment components;
   - the functions of the spaces (see paragraphs 7 and 8);
   - the operational policy of the combined unit.

7. Spaces which are dedicated for a particular function, for example, the operating theatre, the anaesthetic room, the scrub-up and gowning area, the preparation room, the utility room, etc., for day surgery, the endoscopy room for endoscopy, and the bed rooms, treatment room, etc., for medical investigation and treatment, 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, the endoscopy function and the medical investigation and treatment function will need to be determined individually: a wide range of permutations are possible. A combined unit may require:

   - the same number and sizes of spaces as allowed in Part 1;
   - more spaces of the same, or a smaller, size;
   - the same number of, but larger, spaces.

*Relationships of spaces*

9. Project teams should seek to ensure that the requirements for intradepartmental and interdepartmental relationships, as expressed in SHPN 52 Parts 1, 2 and 3 are maintained in plans for a combined unit.

10. It is also important to recognise the need for spaces attended by patients for medical investigation and treatment to be separate from spaces attended by patients for day surgery and endoscopy.

# References

References are identified by paragraph number.


1.3 **HBN 36 - Local healthcare facilities**. NHS Estates, TSO 1995.

**HFN 12 - Acute care at home**. NHS Estates, TSO 1996.

1.6 **Patient hotels: a quality alternative to ward care.** NHS Management Executive, Department of Health, TSO 1992.

1.7 **HBN 23 - Hospital accommodation for children and young people.** NHS Estates, TSO 1994.

**SHPN 21 - Maternity department**. NHS Estates, TSO 1996.

1.9 **SHPN 03 – General design guidance**. NHSScotland Property and Environment Forum Executive 2001.

2.8 **HBN 38 – Accommodation for adult acute day patients**. NHS Estates, TSO 1982.

2.11 **Lying in wait: the use of medical beds in acute hospitals.** Audit Commission, 1992.

2.28 **HBN 23 - Hospital accommodation for children and young people.** NHS Estates, TSO 1994.

2.57 **SHTM 2009 – Pneumatic conveyor systems.** NHSScotland Property and Environment Forum Executive 1999.

2.64 **Cycling by Design.** ISDN 0748089438 Scottish Executive 1999.

2.66 **SHPN 03 – General design guidance**. NHSScotland Property and Environment Forum Executive 2001.

2.70 **SHPN 34 - Estates maintenance and works operations**. The Scottish Office NHS in Scotland Management Executive, TSO 1992.

2.75 **SHPN 03 – General design guidance**. NHSScotland Property and Environment Forum Executive 2001.

3.12 **HBN 18 - Office accommodation in health buildings**. NHS Estates, TSO 1991.

3.32 **SHPN 04 – In-patient accommodation: Options for choice**. NHSScotland Property and Environment Forum Executive 2000.

3.69 **SHPN 45 - External works for health buildings**. The Scottish Office NHS in Scotland Management Executive, TSO 1994.

4.1 **SHPN 03 – General design guidance**. NHSScotland Property and Environment Forum Executive 2001.

5.1 **SHPN 03 – General design guidance**. NHSScotland Property and Environment Forum Executive 2001.

5.6 **SHTM 2022 - Medical gas pipeline systems**. NHSScotland Property and Environment Forum Executive 1999.

5.8 **SHTM 2009 – Pneumatic conveyor systems.** NHSScotland Property and Environment Forum Executive 1999.

5.10 **SI 2179:1990(S187) The Building Standards (Scotland) Regulations (with subsequent amendments)**. TSO 1990.

6.2 **SHPN 03 – General design guidance**. NHSScotland Property and Environment Forum Executive 2001.

# Publications in Scottish Health Planning Note series

Given below is a list of all Scottish Health Planning Notes. This list is correct at time of publication of this Note, but refer also to the Health Building Notes and Scottish Health Planning Note Reference Guide published by NHSScotland Property and Environment Forum Executive.

03 **General design guidance**. NHSScotland Property and Environment Forum Executive 2001.

04 **In-patient accommodation: Options for choice**. NHSScotland Property and Environment Forum Executive 2000.

08 **Facilities for rehabilitation services**. NHSScotland Property and Environment Forum Executive 2001.

27 **Intensive Care Unit**. NHSScotland Property and Environment Forum Executive 2000.

35 **Accommodation for people with mental illness Part 1 – The acute unit**. NHSScotland Property and Environment Forum Executive 2000.

35 **Accommodation for people with mental illness Part 2 – Treatment and care in the community**. NHSScotland Property and Environment Forum Executive 2000.

52 **Accommodation for day care Part 1 – Day surgery unit**. NHSScotland Property and Environment Forum Executive 2001.

52 **Accommodation for day care Part 2 – Endoscopy unit**. NHSScotland Property and Environment Forum Executive 2001.

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

# Publications in Scottish Hospital Planning Note series

Given below is a list of all Scottish Hospital Planning Notes. Those Notes which have to be read along with their counterpart Health Building Note (HBN) are marked with an *. This list is correct at time of publication of this Note, but refer also to the Health Building Notes and Scottish Health Planning Note Reference Guide published by NHSScotland Property and Environment Forum Executive.

1 **Health Service building in Scotland**. TSO 1991.

2 **Hospital briefing and operational policy**. TSO 1993.

6 **Radiology department**. TSO 1995.

12 **Out-patients department (with DBS).** TSO 1993.

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

12 **Out-patients department Supplement 1 - Genito-urinary medicine clinics**. TSO 1993.

12 **Out-patients department Supplement 2 – Oral surgery, orthodontics, restorative dentistry**. TSO 1996.

13 **Sterile services department**. TSO 1994.

15 **Accommodation for pathology services**. TSO 1994.

20 **Mortuary and post-mortem rooms**. TSO 1993.

20 **Mortuary and post-mortem rooms Supplement 1 - Activity space data sheets**. TSO 1994.

21 **Maternity department.** TSO 1996.

22 **Accident and emergency department in an acute general hospital**. TSO 1995.

22 **Accident and emergency department in an acute general hospital Supplement 1 – Trauma care and minor injury**. TSO 1996.

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26 **Operating department Supplement 1 - Activity space data sheets**. TSO 1993.

34 **Estate maintenance and works operations*.** TSO 1992.

34 **Estate maintenance and works operations Supplement I - Activity space data sheets**. TSO 1993.

40 **Common activity spaces Volume 5 – Scottish appendix*.** TSO 1996.

45 **External works for health buildings*.** TSO 1994.

47 **Health records department**. TSO 1995.

51 **Accommodation at the main entrance of a District General Hospital**. TSO 1992.

51 **Accommodation at the main entrance of a District General Hospital Supplement A - Activity space data sheets**. TSO 1993.

51 **Accommodation at the main entrance of a District General Hospital Supplement 1 - Miscellaneous spaces in a District General Hospital**. TSO 1992.

51 **Accommodation at the main entrance of a District General Hospital Supplement 1A - Miscellaneous spaces in a District General Hospital - Activity space data sheets**. TSO 1993.