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Health Building Note 15-02: Facilities for same day emergency care/ambulatory emergency care

Preface

About Health Building Notes

Health Building Notes (HBNs) give best practice guidance on the design and planning of new healthcare buildings and on the adaptation/extension of existing facilities.

They provide information to support the briefing and design processes for individual projects in the NHS building programme.

Language usage in technical guidance

In HTMs and HBNs, modal verbs such as "must", "should" and "may" are used to convey notions of obligation, recommendation or permission. The choice of modal verb will reflect the level of obligation needed to be compliant.

The following describes the implications and use of these modal verbs in HTMs/HBNs (readers should note that these meanings may differ from those of industry standards and legal documents):

- "Must" is used when indicating compliance with the law.
- "Should" is used to indicate a recommendation (not mandatory/ obligatory), i.e. among several possibilities or methods, one is recommended as being particularly suitable – without excluding other possibilities or methods.
- "May" is used for permission, i.e. to indicate a course of action permissible within the limits of the HBN or HTM.

Typical usage examples

- "All publicly-funded organisations must ensure that all contracts established to collect and treat waste conform to the Public Contracts Regulations." [obligation]
- "All low voltage (LV) distributions should be configured as TN systems." [recommendation]
- "Alcohol hand gels that do not contain siloxanes may be rinsed out and the packaging recycled or placed into the municipal waste stream." [permission]

"Shall", in the obligatory sense of the word, is never used in current HTMs/HBNs.

Project derogations from the Technical Guidance

Healthcare facilities built for the NHS are expected to support the provision of high-quality healthcare and ensure the NHS Constitution right to a clean, safe and secure environment. It is therefore critical that they are designed and constructed to the highest and most appropriate technical standards and guidance. This applies when organisations, providers or commissioners invest in healthcare accommodation

(irrespective of status, e.g. Foundation and non-Foundation trusts).

Statutory standards plus technical standards and guidance specific to NHS facilities:

- Health Building Notes
- Health Technical Memoranda
- Complete list of NHS estates related guidance

The need to demonstrate a robust process for agreeing any derogation from Technical Guidance is a core component of the business case assurance process.

The starting point for all NHS healthcare projects at Project Initiation Document (PID) and/or Strategic Outline Case (SOC) stage is one of full compliance.

Derogations to standards will potentially jeopardise business case approval and will only be considered in exceptional circumstances. A schedule of derogations will be required for any project requiring external business case approval and may be requested for those that have gone through an internal approvals process.

While it is recognised that derogation is required in some cases, this must be risk-assessed and documented in order that it may be considered within the appraisal and approval process.

Derogations must be properly authorised by the project's senior responsible owner and informed and supported by appropriate technical advice (irrespective of a project's internal or external approval processes).

Sustainability and 'Net Zero Carbon' targets

Healthcare provision is a significant contributor to the UK's carbon footprint. (In 2019, this was estimated to be around 5.4% of our greenhouse gases.) Accordingly, all NHS organisations have their part to play in meeting Net Zero Carbon targets alongside other sustainability measures.

In January 2020, Health chief Sir Simon Stevens announced three steps the NHS will take during 2020 to tackle this problem:

a. NHS England has established an expert panel to chart a practical route map to enable the NHS to get to 'net zero';

b. the NHS Long Term Plan commits to better use of technologies to make up to 30 million out-patient appointments redundant, sparing patients thousands of unnecessary trips to and from hospital. It is estimated that 6.7 billion road miles each year are from patients and their visitors travelling to the NHS;

c. the panel will consider changes that can be made in the NHS's medical devices, consumables and pharmaceutical supply, and areas the NHS can influence such as the energy sector as the health service moves to using more renewable energy.

This guidance is not mandatory (unless specifically stated). However, any departures/derogations from this HBN – including the measures implemented – should provide a degree of safety not less than that achieved by following the guidance set out in this HBN.

Executive summary

Same day emergency care (SDEC) is the provision of patient care with an investigation and/or treatment within the same day for non-elective patients who in the past would otherwise be admitted to a hospital bed. Under this care model, referred patients presenting at hospital with specific conditions can be rapidly assessed, diagnosed and treated without being admitted to an in-patient ward.

This Health Building Note (HBN) gives guidance on the planning and design of an SDEC department. A well-designed SDEC unit will help to manage patients effectively with minimal delays as they move through stages of care. Good patient flow is central to patient experience, clinical safety and reducing the pressure on staff. It is a key factor in providing effective healthcare.

The HBN describes:

- the patient pathway – the route an individual will take through the SDEC;
- the essential and desirable adjacencies – the prime links with other departments (for example, Emergency Department);
- the functional relationships with other departments (for example, diagnostic imaging).

This HBN specifies the rooms/areas that should be considered when planning and designing an SDEC unit and also provides a generic layout diagram (Appendix 1) schedules of accommodation (Appendix 2) and room data sheets (Appendix 3).

The generic layout diagram in Appendix 1 sets out an example arrangement of services expected in such a facility. The schedules of accommodation list all the rooms, following the patient through the SDEC, and giving the floor areas of each. An SDEC Activity Calculator is also provided as an aid to calculating room sizes based on projected annual attendances.

The core recommendations are:

- Where possible, the SDEC facility should be close to a type 1 Emergency Department.
- Patients should have access to diagnostics within the same time frame as other emergency patients as acuity and availability allows.
- The SDEC facility should have a combination of consulting rooms, patient trolleys and chairs for patient assessment and treatment.
- Beds should not be provided in an SDEC unit as it may have a negative impact on patient flow.

The schedules of accommodation spreadsheet and SDEC Activity Calculator can be downloaded as separate files along with this document from the HBN 15-02 web page.

Acknowledgements

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Contents

1.0 Introduction to Health Building Note 15-02

1.1 Emergency department (ED) attendances and hospital admissions are rising (*NHS Key Statistics: England*, February 2020). Same day emergency care, also known as ambulatory emergency care (the abbreviation SDEC is used throughout), is a well-established model of care that addresses this increase in demand and improves patient flow. Patients, where appropriate, are diagnosed and treated on the same day, within 12 hours, and sent home with ongoing clinical support and supervision as needed. This approach has improved both clinical outcomes and patient experience and reduced costs and pressures in the urgent care system (Royal College of Physicians, 2014). This facility does not contain patient beds.

1.2. The right accommodation and facilities need to be made available for SDEC. Up until now, there have been no design standards for such facilities, a situation that could lead to:

- slower implementation of this care model;
- individual healthcare organisations reinventing the wheel, potentially missing the opportunity to optimise and standardise planning and design.

1.3 With investment in new design standards, productivity improvements can be achieved. At the same time the therapeutic environment will be improved for all staff, patients and other users, hence the need for this new Health Building Note on the planning and design of facilities for SDEC.

Note:

Health Building Note 15-01 – 'Accident and emergency departments: planning and design guidance' provides design guidance on type 1 emergency departments. Health Building Note 15-01 briefly touches on chair-centric areas for lower acuity patients in an ambulatory setting. This document (Health Building Note 15-02) develops that concept further with the aim of supporting the current Long-Term Plan's ambitions for SDEC services.

1.4 Good briefing documentation and design improves the efficiency of operational relationships. Each Health Building note (HBN) identifies unique design quality requirements and aspirations. In this HBN, the ethos of designing a non-bedded area is paramount: that is, a facility that reinforces a discharge mind-set and avoids the temptation of using beds/trolleys overnight. Patients whose length of stay will exceed the opening hours of the unit will be referred for further assessment (for example, to a medical assessment unit or surgical assessment unit as appropriate). Including beds in an SDEC unit will be

counter-productive and will have a significant negative impact on patient experience and patient flow. Every new department will be unique as the demands will be different depending on location, whether a new build or refurbishment, local staffing issues and demographics. The initial briefing document is vitally important, and the make-up of the client team should include all divisions of the workforce. During the design process, the stakeholders should include patient and carer representatives who will be involved at key points in the development of the brief and design from the start.

1.5 The project team should familiarise itself with the intentions of design guides and should understand that the spaces specified within this HBN are of standard size, as referenced in Health Building Notes 00-01, 00-02, 00-03 and 00-04 and also in the ProCure22 Repeatable Room documentation.

ProCure22 (P22) is a construction procurement framework administrated by the Department of Health and Social Care (DHSC) for the development and delivery of NHS and social care capital schemes in England.

Policy context

1.6 In August 2015, NHS England published its "transforming urgent and emergency care services in England" guidance. This policy document provides guidance on service design principles including: "each acute site should consider establishing an Ambulatory Emergency Care (AEC) facility that is resourced to offer same day emergency care to patients in a non-bedded setting". In addition, it goes on to say that hospitals introducing SDEC for the first time should expect to convert a minimum of 25% of their adult acute medical admissions to ambulatory care episodes. This is based on evidence from the Royal College of Physicians (2014), which found that nearly a third of patients admitted to acute medical units can be managed in an ambulatory setting:

> Clinical teams using this approach report managing significant numbers of emergency patients quickly, without the need for full admission, converting at least 20–30% of emergency admissions to AEC. Pioneers of AEC have achieved good results, with growing evidence of the impact.

1.7 The SDEC service is aimed at improving patient flow: it reduces the demand for in-patient beds by providing rapid access to the same care in a clinic setting. The ECIST (Emergency Care Intensive Support Team) provides support to NHS organisations across England to improve safety and outcomes by focusing on patient flow. Both The Getting It Right First Time (GIRFT) programme and ECIST (GIRFT, 2018) strongly recommend implementing the measures outlined in NHS Imrovement's patient flow guidance:

- 'National priorities for acute hospitals 2017 – good practice guide: focus on improving patient flow'.
- 'National priorities for acute hospitals 2017 – case studies: focus on improving patient flow'.

1.8 These documents have a set of core principles for ambulatory emergency care, for example:

- Where possible, the SDEC facility should be close to the ED.
- SDEC should be available for patients with medical, surgical or low risk gynaecological symptoms.
- Patients should have access to diagnostics within the same time frame as other emergency patients as acuity and availability allow.
- The SDEC facility should have a combination of consulting rooms,

treatment trolleys and chairs for patient assessment and treatment.

1.9 The *Future Hospital* report (Royal College of Physicians, 2013) recommended that "care will be organised so that ambulatory (day case) emergency care is the default position for emergency patients unless their clinical needs require admission".

1.10 The SDEC service is likely to expand exponentially due to both demand and lengthening of opening hours. The NHS Long Term Plan sets out proposals for updating urgent and emergency care, including the expansion of the SDEC model. It advocated that under the Plan, every acute hospital with a type 1 emergency department will move to a comprehensive model of SDEC, increasing the proportion of acute admissions discharged on the day of attendance from a fifth to a third.

1.11 A joint statement from the Royal College of Emergency Medicine (RCEM) and the Society for Acute Medicine (SAM) (2019) further clarified the principal facets and activities of an SDEC service.

1.12 The Society for Acute Medicine and the Royal College of Physicians of Edinburgh (2019) published a set of suggested standards for delivery of care in an SDEC setting.

Go to https://www.england.nhs.uk/urgent-emergency-care for a full explanation and definition of different ED types.

2.0 Use

Description of service being provided

2.1 SDEC is the provision of patient care with an investigation and/or treatment within the same day for non-elective patients who in the past would otherwise be admitted to a hospital bed.

2.2 Under this care model, referred patients presenting at hospital with specific conditions can be rapidly assessed, diagnosed and treated without being admitted to an in-patient ward. Then, if clinically safe to do so, they will go home the same day their care is provided, or they can be booked to return the following day, or later, for a day procedure (for example, operation or endoscopy). This would be dependent on availability of procedure slots in these areas, local processes and patient pathways.

2.3 SDEC services will treat a wide range of clinical conditions, most commonly either medical or surgical. These could include high temperature indicating infection, abdominal pain (for example, appendicitis), deep vein thrombosis, and pleuritic chest pain. The types of conditions that can be managed through SDEC will vary depending on the hospital and needs of the local population.

2.4 In-patient beds should not be included. This may preclude certain groups of patients, but any decision to exclude will be made at a strategic level by the healthcare provider. By default, children are excluded from this adult service.

2.5 Patients can be referred to an SDEC through a number of different ways, including:

- triage on arrival at an emergency department (ED);
- direct referral from an ED after some initial assessment;
- direct referral from GP or out-patient services;
- direct referral from the ambulance service;
- future direct referral from the NHS Integrated Urgent Care Service (at the time of writing, the protocol for which is still in development).

2.6 Types of SDEC treatment include:

- acute medical;
- surgical;
- acute frailty.

Acuity, presenting condition and mobility of patients of any specialty will predict whether a trolley or reclining chair needs to be used, although this may change during their time in the unit.

2.7 The ambitions from the NHS Long Term Plan note that all hospitals with a 24-hour ED (type 1) will provide:

- the provision of SDEC at least 12 hours a day, 7 days a week;

- an acute frailty service at least 70 hours a week, with the aim to complete a clinical frailty assessment within 30 minutes of arrival in the SDEC unit;
- a record of all patient activity in EDs, urgent treatment centres and SDECs using same day emergency care data sets.

2.8 A paperless/paper-light system including computerised medical records, imaging, pathology laboratory ("hot lab") and electronic prescribing would expedite the patient and staff pathways as well as the gathering of statistics and patient activity data. This is a client decision and should be a priority within whole hospital policies and will also be discussed in user group meetings (see also Note below). Consideration should also be given to a point-of-care room/area within or near to the SDEC to speed up access to investigation results and to shorten the patient pathway.

Note:

The NHS Long-Term Plan emphasises the importance of collecting information on the way SDEC units operate and how patients flow through the system in real time. In common with other modes of urgent and emergency care, SDEC data activity needs to be collected and submitted in a standard format to the Emergency Care Data Set (ECDS) (the national data set for urgent and emergency care) so that the patient pathway can be understood and patient activity can be measured transparently wherever it happens in the system. Therefore, sufficient data points to external and internal IT communications should be provided. For more information on the technical standards required for the ECDS, visit the ECDS website.

Patient groups or streams

2.9 The principle at all times is that all patients should be streamed through SDEC unless clinically unstable or otherwise excluded using referral criteria.

2.10 Four key streams of patient will present at an SDEC unit:

a. Diagnostic exclusion group (patients who are waiting for tests, for example, abdominal or chest pains in order to rule out any serious underlying condition).

b. Specific procedural group (patients who need to come in for a procedure such as draining fluid from their lungs, which includes a short period of recovery before they are allowed to return home).

c. Prolonged treatment and observation group (where patients can recline in a comfortable chair for a period of time while receiving treatment, for example, an infusion), see list item (b) above.

d. Ad-hoc groups depending on local policy and location.

2.11 These case-mix groups as well as the type of acute clinical setting will need to be considered when co-locating and designing an SDEC unit at the early design stage. This will inform the discussions that will be held within user group meetings to help determine the type and number of rooms required for the schedules of accommodation in a live project.

For a full list of clinical conditions likely to be treated in an SDEC unit, see the latest edition of the Ambulatory Emergency Care Network Directory.

3.0 Planning and design

The design process

3.1 In order to start the design process, the project team and particularly the healthcare planner/design team should have access to fully written-up whole hospital policies (WHPs) which may not be finite but could be developed through the duration of the project.

Note:

See Health Building Note 00-01 – 'General design guidance for healthcare buildings', which gives further guidance on the design process. See also Chapter 6 in the same document, which provides evidence-based design ideas for a therapeutic design.

Whole hospital policies

3.2 WHPs have a site-wide impact on all departments in a healthcare facility. These are fundamental to the seamless running of every department in the hospital to ensure they are all working to the same ends.

3.3 The list below is not comprehensive but should include the following.

Safety and security

3.4 The security of the unit, together with the security and safety of the people who use the unit – staff, patients and visitors alike – is paramount. The unit should be able to be made secure and locked out of hours.

Privacy and dignity

3.5 National guidance on eliminating mixed-sex accommodation is only relevant in areas where patients are admitted. SDEC units will therefore not be in breach of the guidance as patients will go home the same day as their care is provided.

3.6 However, privacy and dignity is important and planning decisions should take account of this. Therefore, design planning decisions should take account of patient preferences (culture, faith or otherwise) in terms of privacy, dignity and modesty. There may be occasions when a patient will need to remove items of clothing as appropriate to their condition. In this case either the consult/exam room, during initial or post assessment, or the treatment room will provide privacy. Single multi-functional rooms should also be included (see also paragraphs 3.12–3.14 on infection control). These rooms should provide the necessary visual and acoustic privacy for patients and/or carers.

Interior planning and design

3.7 Reference should be made to relevant guidance (see the References section). All of these should be consulted as detailed guidance is given on the following:

- views;
- nature and outdoors;
- wayfinding;
- acoustics;
- colour;
- lighting, whether general or specific task lighting;
- artworks, paintings, murals.

3.8 Patients and carers will spend time waiting, and consideration should therefore be given to the environment and accessible entertainment/refreshments. Where possible, there should be visual and/or physical access to outside spaces to aid orientation and to provide stress relief. Access to outside spaces can also help with the reduction and de-escalation of violence and aggression.

3.9 Design teams need to be aware of their local population profile and plan accordingly (for example, if there is a high percentage of older people or people with mental health conditions). Separate guidance is available (for example, Health Building Note 08-02 – 'Dementia-friendly health and social care environments' and the King's Fund's EHE Environmental Assessment Tool (hosted by the Association for Dementia Studies)).

Wayfinding

External

3.10 Highly visible signage should be provided, showing safe routes for walking, cars and patient transport services (as different from blue-light routes).

Internal

3.11 Signposting inside should be clear and concise, easily seen and comprehensible to all users. Consideration should be given to using multiple languages on signs. It is important that patients and visitors can get to where they need to go as easily and quickly as possible.

Remember:

- Those with eyesight problems.
- Good contrast of text with the signage background.
- Consult with the interior design team at an early stage.
- Intuitive wayfinding enhanced by artworks.

For more detailed guidance, refer to NHS estates (2005) 'Wayfinding' and BS 8300 Parts 1 and 2.

Infection prevention and control

3.12 There may be a need for single rooms within the unit for infectious or immunocompromised patients. The location and numbers of clinical wash-hand basins is critical for good clinical practice. This should be discussed with relevant stakeholders such as user groups, infection prevention and control teams, the Ventilation Safety Group (see Health Technical Memorandum 03-01) and the Water Safety Group (see Health Technical Memorandum 04-01).

3.13 Health Building Note 00-09 – 'Infection control in the built environment' along with advice from the local infection prevention and control team should be used for guidance on designing-in infection control.

3.14 There should be FM cleaning regimes in line with the above guidance and with departmental policies and protocols.

Supply and distribution

3.15 There should be FM policies whether for in-house or contracted-out services. There should be separate flows for clean and dirty supplies.

3.16 All goods in and waste disposal vehicle access routes will be separate from blue-light routes, and patients, visitors and staff access.

Catering

3.17 In line with the key requirements of the Hospital Food Standards Panel Report (Department of Health, 2014), the healthcare provider's catering services department should decide what level of snacks and beverages will be delivered to this cohort of patient and whether room for expansion should be provided for.

Fire strategy

3.18 The design of the facility must address fire safety issues, in terms of management, when a fire occurs, and the evacuation and movement of patients, staff and visitors. The same regulations and advice on fire prevention, evacuation and means of escape apply as in any major hospital project or refurbishment or retrofit of existing premises in a main hospital.

- Consider patient mobility impairments, including those with mental health problems and people with other disabilities who may need assistance.
- Evaluate signposting and ease of exit.

3.19 Guidance on access and facilities for the fire service is given in Health Technical Memorandum 05-02.

3.20 Health Technical Memorandum 05-02 also gives guidance on the means of escape including evacuation procedures, the height above ground of the treatment area, travel distances and escape routes, the provision of an adequate number of stairways to facilitate vertical escape, and emergency and escape lighting.

3.21 The majority of people presenting at an SDEC unit will be "independent" (as defined in Health Technical Memorandum 05-02). This means they are able to physically leave the premises without the assistance of staff in the event of evacuation. However, some patients will still need assistance (for example, those patients who are on a trolley, in a wheelchair, attached to an intravenous infusion, frail or living with dementia).

Equality

3.22 Healthcare providers must comply with the requirements of the Equality Act with regard to the diverse needs, values and circumstances of users.

Note:

This is not the definitive list of whole hospital policies. Each healthcare organisation should be consulted for every project.

Location and access

3.23 The location of the SDEC on any site will differ depending on the geographical location, the site specifics and the local demographics. The entrance to the department will likely, but not necessarily, be close to that of the ED which will have existing space and facilities for ambulance parking, delivery and short-term drop-offs. The SDEC access and short-term parking should not impinge on or utilise the ED entrance provisions but should allow separate space for taxis, private cars, cycle and pedestrian admission. There may be occasional need for patient transfer ambulances, but this option should be discussed in user-group sessions.

3.24 The design brief should identify additional support facilities that are required to be located close by (particularly diagnostic services). It should also consider ease of access for staff, patients and visitors, and parking requirements, cross-referencing

to other guidance documents where necessary. See the References section for links to HBNs and HTMs.

Adaptability/flexibility and future-proofing

3.25 The need for a flexible and adaptable design is essential. The plan needs to allow for adaptation, change and future planning, including strategic infrastructure decisions (roads, access) that minimise restrictions for future development (see Chapter 4 in Health Building Note 00-01 on master planning and development control plans).

3.26 All these issues should be discussed in detail in early user-group meetings, which inform the development of the final brief in consultation with the design team.

3.27 Advances in medical technology and pharmaceuticals will affect ways of working. Such advances will allow for more diagnostics to be undertaken within GP practices or in patients' own homes. Therefore, the facilities within an SDEC need to be multifunctional and capable of modification to allow for service changes.

3.28 Local demographics will also change over time, for example an ageing population with increasing longevity and multiple acute/chronic clinical conditions or a concentration of a younger population in urban/city environments and changing travel flows.

3.29 There will be a need for multi-use spaces, to allow for flexibility of use and to maximise the utilisation of resources and staff time.

3.30 The key to a successful SDEC unit will be measured by how adaptable the grouping of the component rooms is and how the use of such rooms can be quickly and easily reviewed and ultimately managed. This will be discussed in full during user-group meetings and is a key part of the briefing process.

- Ensure rooms can be used for a variety of purposes.
- Ensure no designations for sole use unless for a specific purpose (for example, dirty utility).
- Include key service requirements in each clinical room.

3.31 The ratio of chairs to trolleys and treatment rooms will be based on projected demand. The Ambulatory Care Directory can be used as a guide for estimating proportions of each condition that can be seen in an SDEC.

Patient journey/patient pathway

3.32 No matter which patient group (as described in paragraph 2.10), Figure 1 indicates the route any individual would take through the SDEC.

- Patient arrives by car, taxi, on foot or by transfer from ED reception.
- The waiting area, which – depending on design and management decisions – may be subdivided or split into smaller units, but which should always be overseen by reception or staff base/touchdown points.
- The waiting area for all patients pre- and post-initial assessment, diagnosis and treatment should provide:
  - access to and from initial assessment;
  - access to and from diagnostics (imaging, near-patient testing);
  - access to and from assessment and observation;
  - access to and from treatment.
- Patient review prior to discharge or ongoing treatment.
- Follow up (same day or next day).
- Transfer to medical or surgical assessment unit if condition means the patient will exceed a 12-hour length of stay (LOS).
- Discharge to home/place of residence.
- Support by virtual ward – organisational (this is the patient's usual place of residence (their home)). They are monitored and follow instructions/timelines set and may have contact via the phone (for example, a surgical patient waiting for a planned or urgent operation).

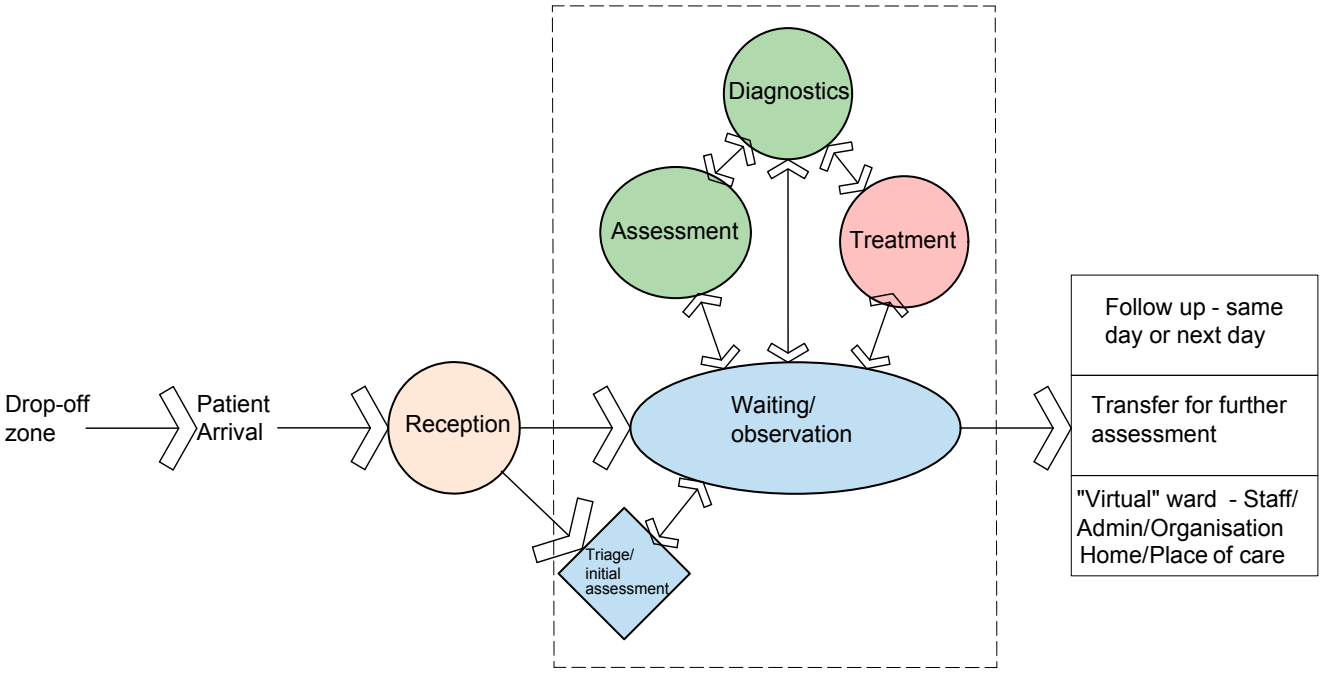


Figure 1 Patient pathway

Departmental functional adjacencies

3.33 Figure 2 represents a typical SDEC within an acute hospital environment. It shows the prime links with other departments to allow for the sharing of facilities and resources (for example, ED). It assumes that other support departments may have links via pneumatic tubes (for example, pharmacies and hot labs for urgent fast-turnaround blood tests).

Essential adjacency:

- ED;
- imaging;
- out-patients (OPD).

Important:

- medical and surgical assessment;
- day surgery;
- endoscopy.

Desirable:

- hot lab (a pneumatic tube link negates need for close proximity);
- pharmacy (a pneumatic tube link negates need for close proximity).

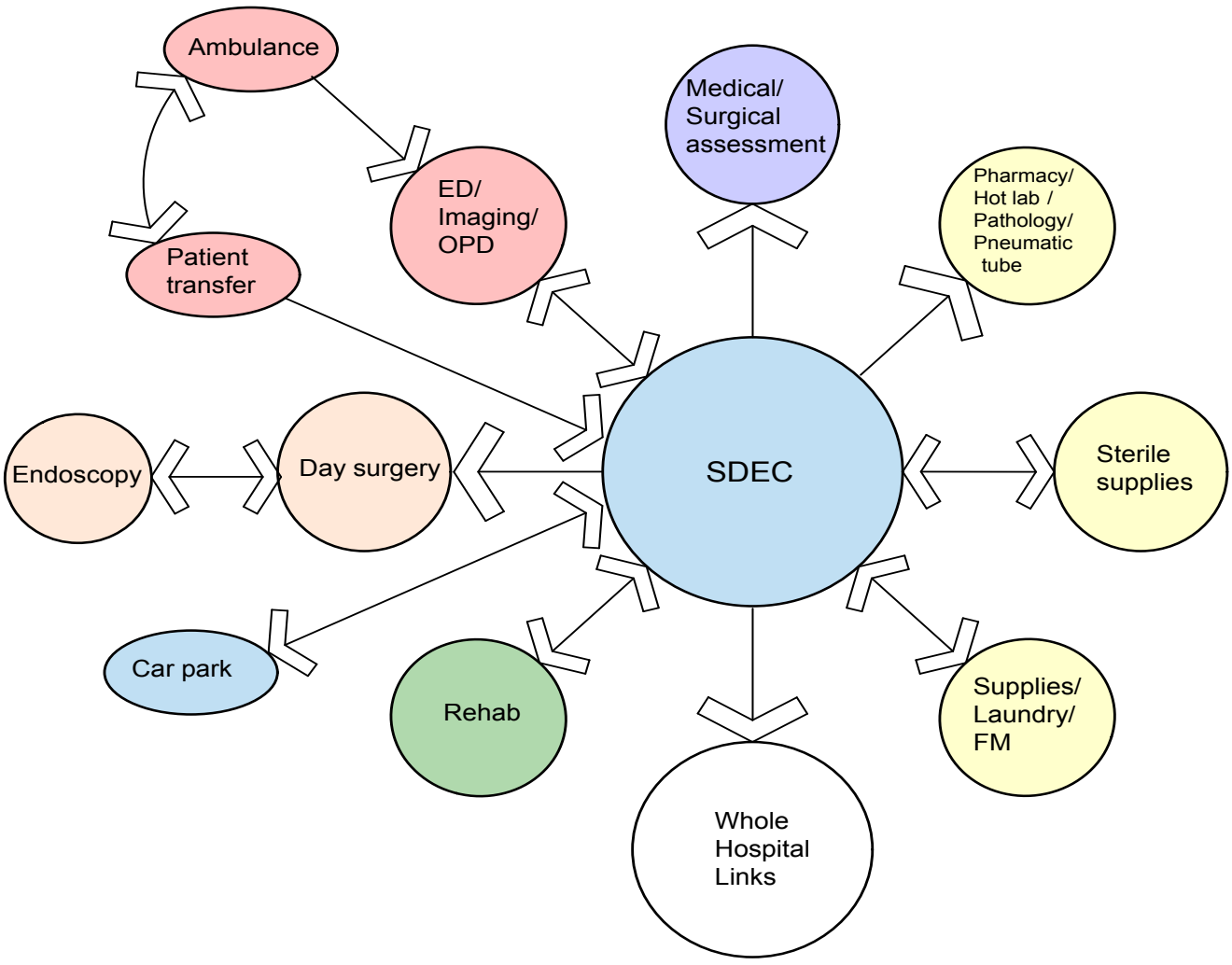


Figure 2 Departmental functional relationships

Functional relationships, workflows and logistics

3.34 Patients will arrive at the entrance to the unit via patient drop-off (see Figure 3). Their route thereafter will vary depending on their condition and patient stream. The route will be cyclical:

- reception and/or registration;
- initial assessment;
- wait;
- clinical measurement (includes near-patient testing);
- return to wait or to patient trolley or reclining chair/armchair;
- consult/exam or treatment;
- return for assessment/review;
- discharge or further treatment which may be outside this department.

The precise route/pattern will be discussed in user-group meetings.

3.35 To avoid costly duplication of equipment and staff, it should be noted that the potential for use of shared accommodation will vary from hospital to hospital. Ideally the department would have use of the clinical and support facilities within the main hospital, dependent on the final planning solution of the following departments:

- ED and imaging – co-located;
- ED staff facilities (for example, rest, change, seminar room and beverage bay – co-located);
- OPD specialist clinics – same floor but separate department;
- day surgery – separate department;
- endoscopy – separate department;
- medical and surgical assessment – separate department;
- FM – whole hospital service;
- supplies – whole hospital service;
- access to main hospital.

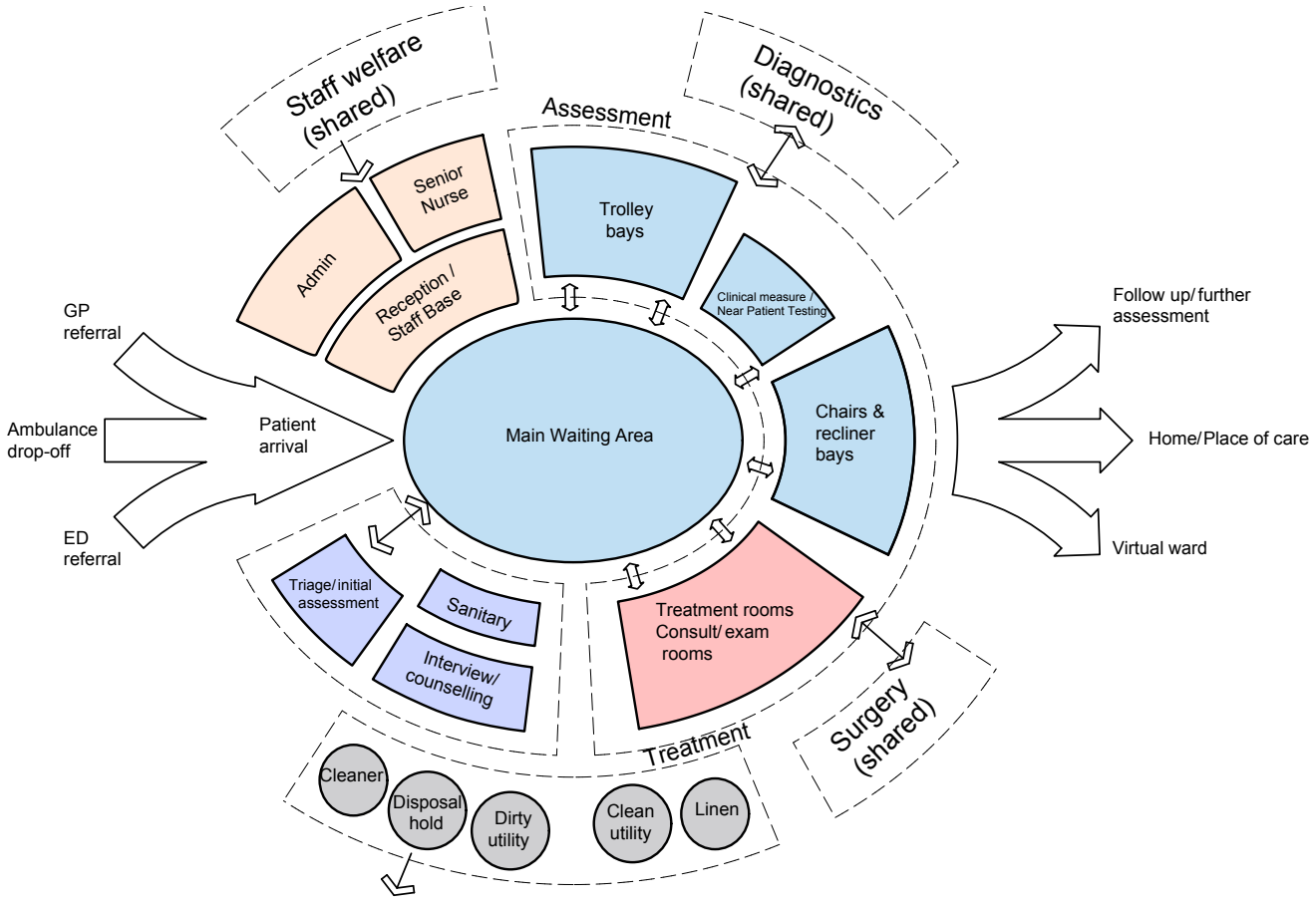


Figure 3 Notional relationships and workflows

4.0 Space

A generic layout diagram in Appendix 1 sets out an example arrangement of services expected in an SDEC unit.

Functional content and space standards

Space standards for repeatable rooms

4.1 Most of the rooms and patient spaces that are found in the SDEC are standard and repeatable rooms as detailed in Health Building Notes:

- 00-01 – 'General design guidance for healthcare buildings';
- 00-02 – 'Sanitary spaces';
- 00-03 – 'Clinical and clinical support spaces'; and
- 00-04 – 'Circulation and communication spaces'.

4.2 Before early design-team user-group meetings, but following discussion with the client during the briefing process, the healthcare planner should assemble a preliminary schedule of accommodation using standard/repeatable rooms with specialist rooms as required. There will be very few of the latter in the SDEC unless a particular location requires them.

4.3 The schedule of accommodation will list all rooms, following the patient through the SDEC, and giving the floor areas of each. Each schedule of accommodation will depend on different scenarios: that is, the model of care, local demographics, staffing levels, and other local provision (for example, urgent care centres and minor injuries units) will impact on the final brief. Typical schedules of accommodation are provided in Appendix 2. These should be the first principles from which to design.

4.4 A typical schedule of accommodation will contain different types of treatment rooms (see Appendix 2). The numbers of patient trolleys, recliners and armchairs will vary, and such decisions will be made by the healthcare provider during early discussions. Optional extras such as single rooms, with or without en-suites, and an interview room may be included. Single rooms should not be used as an in-patient facility and therefore may be of minimum size.

Standard rooms

4.5 This section outlines a range of repeatable rooms that would be required within an SDEC department. Spaces around regular activities are shown as coloured blocks. For details about the make-up of these zones, see Health Building Note 00-03.

Waiting room

4.6. The waiting area will be used by patients awaiting triage and/or initial assessment, consultation, examination and/or treatment and discharge together with their escorts. The waiting area should be zoned for different patient cohorts (for example, elderly frail).

4.7 The area of the central waiting space area will be calculated to accommodate the maximum number of predicted patients and will also allow for escorts, carers and wheelchair users. A metric should be used to determine these numbers, which will depend on location and demographics. The patient may be ambulant or in a wheelchair. At some stage in the patient journey, there may be a need to transfer to a reclining chair or a trolley so that the patient will be taken from the waiting room to a designated space. The waiting area should be overseen by the reception/staff base. In refurbishments or units where this may not be possible, there should be clear operational processes to ensure patient safety in the waiting room. Beverage facilities and sanitary facilities should be close by. Information systems should be provided and the ambience of the room should be calming and relaxing. A variety of chair types and heights should be provided. See chapter 7 in Health Building Note 00-03 for guidance on waiting-area provision.

4.8 Sub-waiting areas may be needed depending on layout. For post-procedure patients, some privacy and quiet may be desirable.

Reception/staff base

4.9 This should be a multi-disciplinary staff base which includes an administrative zone as well as reception services. As mentioned in paragraph 3.32, space for virtual-ward support may be provided next to the reception area. Consideration should also be given to ensure there is enough workspace/computers for visiting specialty teams as well as the SDEC team. See paragraph 12.46 in Health Building Note 00-03.

Triage/initial assessment

4.10 This room should be provided as a means of initial assessment and streaming. This should be equipped as a standard consulting/examination room as detailed in Figures 7, 8 and 15 of Health Building Note 00-03.

4.11 The project team may consider an alternative configuration to allow for a second entry to the assessment room, to provide a means of retreat for staff in the event of an incident with a disturbed or agitated patient/visitor.

4.12 This room (see Figure 4) is one of several flexible consult/examination spaces that will allow consultation, examination and assessment, thus achieving a differential diagnosis and treatment plan. This room may also be used for interview, private conversations, or counselling as desired by the management team if there is no separate and clearly identified counselling room.

4.13 The room may be single- or dual-entry access. The patient couch needs only single-sided access due to the condition of the patients. The final decision will be project-

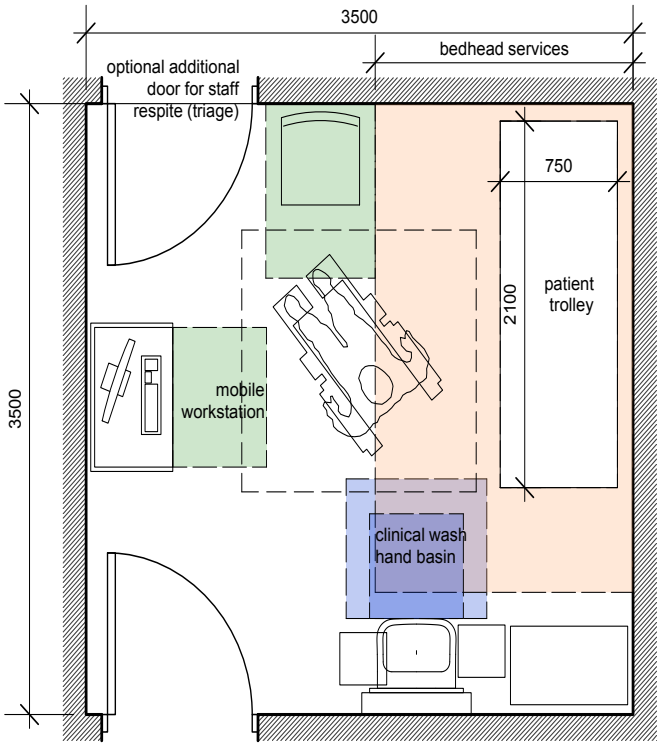


Figure 4 Suggested layout for triage/initial assessment room

specific. Bedhead services should include oxygen, suction, electrical socket-outlets, emergency and nurse call facilities, and data outlets as necessary (access to WiFi to be expected throughout). See Health Building Note 00-03 and Health Technical Memorandum 08-03.

4.14 The space will be used by:

- the patient;
- one member of staff;
- up to two others.

4.15 The following activities will take place:

- Patient may arrive on foot, in a wheelchair or using walking aids.
- Patient may be positioned on a recliner chair or trolley as required for the consultation/triage process.
- Clinical handwashing and antimicrobial hand-rub dispensers should be located close to patients and be immediately accessible to clinicians.
- Monitoring equipment may be used during triage or examination.
- Piped medical gases may be provided adjacent to trolley/recliner chair.
- Dual access to the room may be required for staff safety and security.
- Small items of diagnostic equipment may be used during examination.
- The room may be used as an office space or as a counselling room for privacy purposes.
- Use of computer workstation or hand-held device.
- Small items of equipment and sundries will be brought in as required.
- Call indicator lamp to be situated outside room.
- Separate data and voice outlets may be used.

Adjacencies

4.16 The triage/initial assessment room should be adjacent to the main waiting area and be close to the entrance to the department.

Patient treatment zones

4.17 Whatever treatment the patient is receiving, there will be little reason to change clothes. There will, however, be a need to hang outdoor garments, handbag, umbrellas, etc., so provision must be made for this close to the point of treatment for both patient and any carer.

4.18 Patients may take refreshments while undergoing treatment. A table should be available for use. Consideration for an adjacent water fountain should also be given, where possible, to reduce staff calls and facilitate hydration.

4.19 There should be access to refreshment from adjacent hospital catering facilities, whether a café or restaurant and/or vending machines.

4.20 WC provision should be in proportion to patient numbers and should include toilets for independent wheelchair users/ semi-ambulant patients (male and female) and possibly staff cubicles. (Health Building Note 00-02 gives further guidance on sanitary facilities, including a section on "Changing Places" in chapter 5 of the HBN.) Doors should not open direct to waiting areas or corridors.

Chair-centric spaces

Chair-centric treatment bay: recliner

4.21 Chair-centric treatment bays enable patients who do not need a patient trolley to be observed and/or treated. The ratio of

recliners to armchairs will be determined by patient demand on a project-by-project basis (see the SDEC Activity Calculator that accompanies this HBN on the HBN 15-02 web page).

4.22 See Figure 5 for an example layout for a chair-centric recliner bay. (Refer to *ProCure22 Repeatable Rooms for Urgent and Emergency Care: Chair-centric Spaces*.)

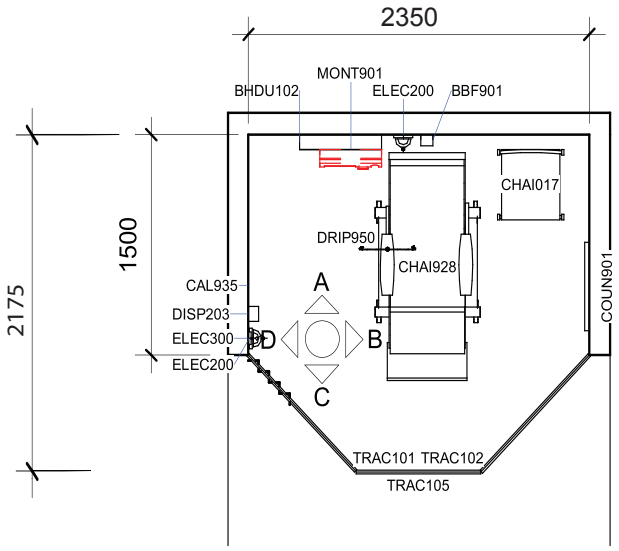


Figure 5 Example layout of a chair-centric recliner bay (Reproduced by kind permission of ProCure22)

Chair-centric treatment space: armchair

4.23 Some patients may prefer to sit upright in an armchair depending on their physical condition (see Figure 6).

4.24 The chair zone should allow space for staff to treat the patient (for example, to attend IV infusions) and for accompanying escorts to sit next to the patient.

4.25 Physical division between small cubicles may not be required. However, for privacy/dignity, a project option is to provide dividers between chair bays by way of wipeable partitions (full or half-height), curtain tracks, or retractable/mobile partitions.

4.26 The number and location of clinical wash-hand basins will depend on the

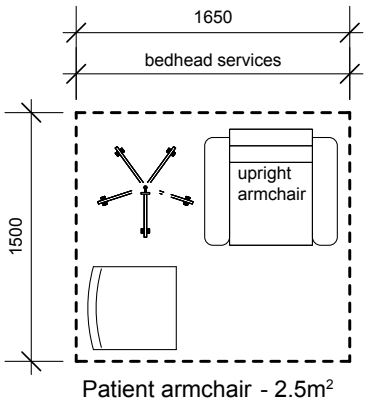


Figure 6 Example layout for armchair space

configuration of the armchairs/recliners and should be discussed with the infection prevention and control team (see also Health Building Note 00-09 – 'Infection control in the built environment').

4.27 Sufficient electrical socket-outlets should be provided for patient use as well as for medical equipment (such as IV infusion pumps). There should also be provision of a patient–nurse call and emergency call at each chair.

4.28 A staff touchdown base will allow for short-term supervision and monitoring of this chair-centric area. There should be clear lines of vision from the touchdown base to all chair-centric spaces to facilitate patient observation.

4.29 Within the treatment zone and close to the patient there should be space for a clinical supplies trolley and another non-clinical trolley where vomit bowls and other miscellaneous items are held.

4.30 The numbers of touchdown bases and supply trolleys will vary depending on the layout of the area and the numbers of patients to be treated.

Note:

Health Building Note 04-01 – 'Adult in-patient facilities' defines a staff touchdown base as "a workstation located close to patients but not within single rooms or multi-bed rooms. This is where electronic patient records can be accessed and updated. The touchdown base is at standing height with a perching stool". See Health Building Note 04-01 and Health Building Note 00-03 – 'Clinical and clinical support spaces' for further details.

4.31 The space will be used by:

- the patient;
- one member of staff;
- one other.

4.32 The following activities will take place:

- Patient may arrive on foot, in a wheelchair or using walking aids.
- Patient will be positioned in a comfortable armchair as appropriate.
- Clinical handwashing and antimicrobial hand-rub dispenser should be located close to patients.
- Oxygen and vacuum services may be used for treatment.
- Monitoring equipment may be used during treatment.
- Small items of diagnostic equipment may be used during treatment (for example, ultrasound/Doppler).
- Small items of equipment and sundries will be brought in as required.
- Use of computer workstation.
- Call indicator lamp to be situated outside bay.
- Separate data and voice outlets may be used.
- Project option of a half-height privacy screen which may be drawn out to provide for cultural sensitivities.

Adjacencies

4.33 The chair-centric armchair bay will be adjacent to the main waiting area and in close proximity to other patient assessment bays and welfare facilities.

Trolley bay

4.34 This HBN provides for a flexible and multi-functional unit; therefore, patient trolley bays have been based on the standard consulting/examination rooms as described in Health Building Note 00-03 (see Figure 7). The critical dimensions are those delineating the orange-shaded area. There is no need for a permanent workstation in every trolley bay as mobile units can be shared among several bays.

4.35 The patient trolley needs to be height-adjustable with brakes and a mattress suitable for a maximum of a 12-hour length of stay. The bay requires bedhead services as for consult/examination rooms and may be the same size as a single-entry access consult/examination room. The number of trolley spaces will be based on projected demand and may need to be increased in time.

4.36 The proportion of chairs to trolleys will depend on client preference, informed by anticipated patient mix.

4.37 The space will be used by:

- the patient;
- one member of staff;
- one other.

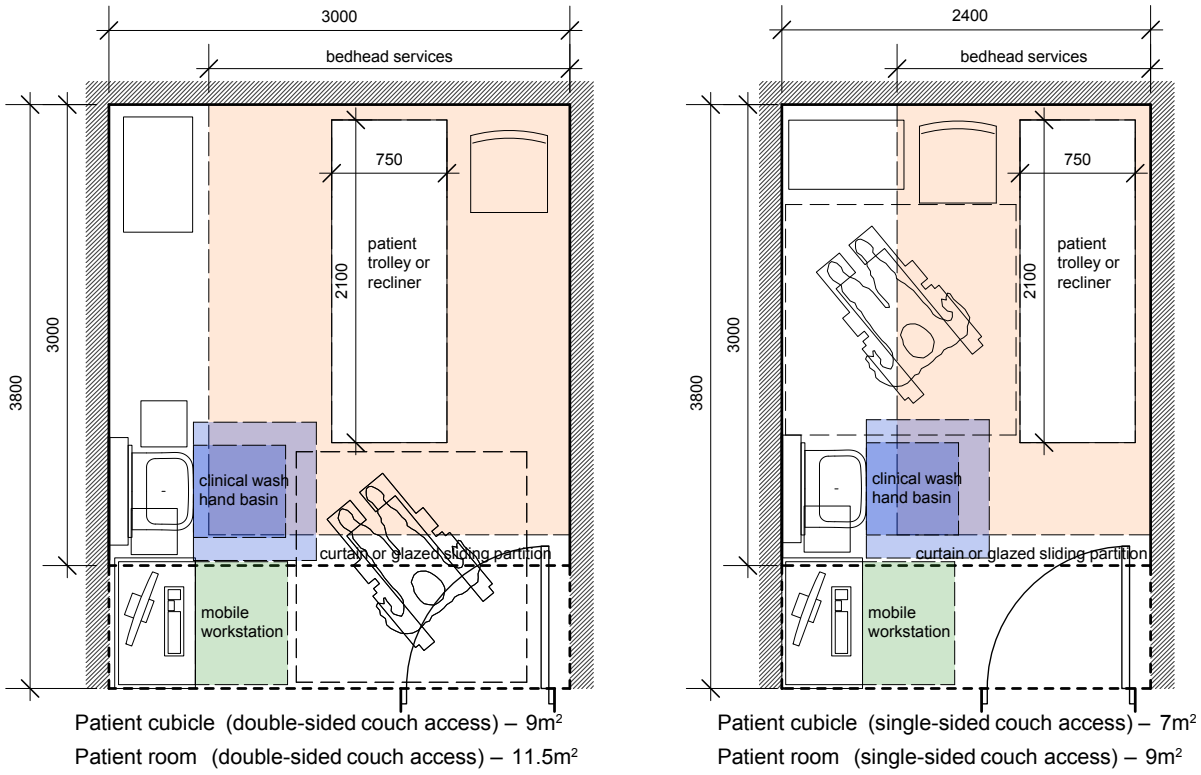


Figure 7 Suggested room layout for trolley bay

4.38 The following activities will take place:

- Patient may arrive on foot, in a wheelchair or using walking aids.
- Patient may be positioned on a trolley (or recliner chair as appropriate).
- Trolley/recliner chair may have single- or dual-sided access.
- Clinical handwashing and antimicrobial hand-rub dispenser should be located close to patients and be immediately accessible to clinicians.
- Monitoring equipment may be used.
- Piped medical gases may be provided adjacent to trolley/recliner chair.
- Small items of equipment and sundries will be brought in as required.
- Use of computer workstation.
- Call indicator lamp to be situated outside bay.
- Separate data and voice outlets may be used.

Adjacencies

4.39 A staff touchdown base, if required as a result of layout and trolley numbers, will allow short-term supervision and monitoring of these trolley bays. This is where any computer will be located.

4.40 The trolley bay should be adjacent to the main waiting area and close to other patient assessment bays and welfare facilities.

Standard consult/exam room, single access

4.41 See paragraph 4.12 and see also Health Building Note 00-03.

Treatment room

4.42 Clinical treatments/procedures will be undertaken in this room. This may involve the use of local anaesthetic and blocks. No general anaesthetics will be used in this room. Ventilation should be designed to provide an environment for the range of

treatments undertaken in accordance with the room specification and Health Technical Memorandum 03-01.

4.43 The following should be included:

- medical gases;
- touchdown worktop or mobile computer trolley; and
- consumables stored in supply trolleys.

Examples of standard treatment rooms are described in Health Building Note 00-03.

Surgical SDEC services play an important role. Undertaking minor procedures in the SDEC unit creates a much better experience for patients as they can be assessed, diagnosed and treated the same day. This also frees up much space on the emergency theatre list.

Counselling room

4.44 Some healthcare organisations may prefer to have a dedicated counselling room (see Health Building Note 00-01). Examples of standard counselling rooms are described in Health Building Note 00-03.

4.45 This room can be used flexibly as required.

Refreshment area/beverage bay

4.46 The provision of water dispensers should be overseen and agreed with the healthcare provider's Water Safety Group (see Health Technical Memorandum 04-01).

Resuscitation trolley

4.47 This may be located at the staff base/reception or close to patient trolley bays. Consideration for further resuscitation trolleys should be given to ensure equipment can be available to the patient within three minutes, as per the Resuscitation Council (UK)'s guidance. Depending on the layout and size of the SDEC, this may result in the need for further resuscitation trolleys.

Support/utility

Storage

4.48 Storage of equipment for SDEC should not be underestimated due to the variety of specialties, presenting complaints and treatments involved in the service. If the SDEC also includes a frailty service, consideration for storage of mobility aids and equipment such as walking frames should also be considered.

4.49 Local stores should be located throughout the department wherever possible in line with supply and distribution timetables and hospital policy. These stores can house a variety of small equipment and supplies and be located close to the point of use.

Clean utility/medicines storage

4.50 This room will hold clinical supplies that will be used to top-up supply trolleys in patient areas (see Health Building Note 00-03). There will be a need for secure storage of medicines and IV solutions. Space for storage of IV fluids should not be underestimated, and enough storage space needs to be allocated to ensure adequate stock levels can be maintained in the unit.

4.51 Discharge medication may also be stored here, but will depend on whole hospital policies for pharmaceuticals/medication. The functions of clean supplies and medication storage may be separate.

Dirty utility

4.52 A dirty utility with bedpan washer/macerator should be provided (see Health Building Note 00-03).

5.0 Engineering requirements

Introduction

5.1 This chapter sets out engineering services recommendations for the SDEC rooms/areas contained within the department.

5.2 It does not cover any areas outside of the rooms or infrastructure. Reference should be made to the associated HTMs which the designer must be familiar with.

5.3 Specific requirements should be formulated in discussion with end-users such as:

- clinicians;
- the Ventilation Safety Group, Electrical Safety Group, and Water Safety Group; and
- manufacturers of specialist equipment.

Environmental requirements

5.4 Consultation should take place at an early stage of the design process to determine if any equipment proposed for use has particular environmental requirements so that they can be met by the design.

5.5 Designers should aim to create an environment that is conducive to the well-being of staff and patients (see Health Building Note 00-01).

5.6 Ventilation is used to provide a safe, comfortable and odour-free environment for patients and staff. Wherever possible natural ventilation is the preferred option but where mechanical ventilation is required it should be efficient and controllable to minimise energy consumption.

5.7 Ventilation provision should comply with Health Technical Memorandum 03-01.

Energy

5.8 Minimum energy performance of new and refurbished buildings is governed by legislation such as Building Regulations Part L2 'Energy conservation' which contributes to compliance with overarching legislation for net zero carbon emissions. Guidance such as Health Technical Memorandum 07-02 – 'Making energy work in healthcare' gives advice on energy-efficient design and operation. The Chartered Institute of Building Services Engineers' (CIBSE) TM39 'Building energy metering' gives recommendations for metering to facilitate operational monitoring of energy use. BREEAM provides criteria and assessment tools for evaluating the energy efficiency and performance of buildings. In addition to the legislative requirements, implementation of best practice guidance and advice should be incorporated into the design to help deliver energy efficiency.

5.9 All meters should be linked to a building management system (see paragraphs 5.38–5.40).

Engineering services capacity

5.10 Consultation should take place at an early stage of the design process to determine whether any equipment proposed for use has particularly demanding services requirements (electricity, water, data, etc.) so that provision can be made within the design. Other guidance for specific engineering services provides advice on maximum demand, diversity and spare capacity for future use.

5.11 Where specific equipment requirements are not known at the main services design stage, typical requirements based on other installations and consumption data may be used to ensure sufficient capacity without over-designing.

5.12 This strategy will allow the healthcare provider time to select the latest equipment that best suits their requirements in line with their procurement strategy.

Routing of engineering services

5.13 Consideration for the routing of the main services should take into account maintenance access requirements and any disruption this could cause to the normal functioning of the building. Main services should be routed through non-clinical areas, and only the services required for any particular clinical area should enter that area including ceiling and floor voids. Services should be concealed within the fabric of the building so that they do not present difficulties to cleaning and infection control measures.

Engineering services isolation facilities

5.14 Health and safety regulations require that plant and equipment is made safe before work is carried out, and this is often achieved through the use of lockable isolation devices such as electrical disconnect switches and shut-off valves. These devices should be located in areas such as plant rooms and service risers where access is restricted to authorised maintenance personnel. For some engineering services and equipment it may be necessary to provide emergency isolation devices such as shut-off valves and emergency stop push-buttons for end-users. These devices need to be accessible for emergency use services and protected against inadvertent use and misuse. All isolation devices should be clearly labelled. HTM guidance documents for specific engineering services provide further advice.

5.15 Consideration should be given to the comfort as well as the safety of patients and others.

Commissioning of engineering services

5.16 The engineering services commissioning programme and management should form part of the project planning. During the design of engineering services, any particular facilities required specifically for commissioning should be identified and included. The contractor should install and test individual components of the system followed by commissioning of the overall system. This consists of operating the system, taking measurements and making any adjustments required to meet the design specification. The contractor should demonstrate the compliant system to the commissioning engineer and Authorising Engineer for witnessing and validation. Client representatives, such as estates teams and end-users, may provide preferred settings

for implementation as part of the commissioning process. Commissioning data should be recorded and provided to the client in the commissioning report. HBN, HTM, CIBSE and IHEEM guidance provides advice on the commissioning process and its management for specific types of facilities and engineering services.

5.17 The services for some diagnostic imaging equipment may need to be commissioned before the final completion of the engineering contract programme, to allow the imaging equipment commissioning to be completed prior to the first patient. Parts of this commissioning are concerned with radiation safety, and the approval of the radiation protection adviser (RPA) must be obtained for the imaging processes and schedules proposed.

Mechanical services

Ventilation

5.18 Ventilation is used to provide a safe, comfortable and odour-free environment for patients and staff.

5.19 Choosing the least energy-consuming ventilation method that meets the criteria for the area will reduce energy costs, provide a more sustainable healthcare estate and support the declared zero carbon target.

5.20 When designing the ventilation system, natural ventilation should be the first method considered, followed by mixed-mode ventilation where natural ventilation is assisted by mechanical means, followed by mechanical ventilation as required to meet the design specification and designation of the room or area including occupancy schedule. Selection of the ventilation method should take into consideration that it may be required, in certain rooms or areas, to help control airborne substances hazardous to health, such as anaesthetic gases, for compliance with the Control of Substances Hazardous to Health (COSHH) regulations.

5.21 The control strategy system should meet the design criteria while minimising any energy use.

5.22 Consideration should be given to the level of resilience required, which may have an influence on the configuration of the ventilation system such as the zoning of any rooms or areas served by common plant. The location of air supply diffusers or similar should be chosen to avoid draughts being experienced by the occupants of the room or area.

5.23 The level of maintenance required and any disruption this may cause to the normal function of the building should be considered during the selection and location of equipment. Ventilation equipment requiring regular routine maintenance should have appropriate access provided and should not be located within clinical areas.

5.24 The ventilation design should comply with Health Technical Memorandum 03-01 and be agreed with the Ventilation Safety Group.

Heating

5.25 The heating system should be designed to provide a safe and comfortable environment. Thermal modelling should be utilised to accurately calculate the heating requirement and produce an energy-efficient heating system design.

5.26 Consultation should take place at an early stage of the design process to determine the most appropriate method of heating that meets the criteria for the room or area, the level of resilience required, the maintenance access requirements and the room occupancy type and schedule. The control system should ensure that the

environmental parameters are met and energy use is minimised.

5.27 Heating-system components located in clinical areas should be designed to be easily and effectively cleaned as part of infection prevention and control measures.

5.28 The maximum surface temperature of any accessible heat emitters should be controlled within safe limits.

5.29 The ventilation system may be used to provide or assist the heating system in accordance with Health Technical Memorandum 03-01.

Cooling

5.30 Cooling may be required to provide a safe and comfortable environment.

5.31 Thermal modelling should be utilised to identify and minimise unnecessary heat gains and hence minimise the cooling requirement, leading to a more energy-efficient design.

5.32 Where cooling is required, it should be achieved via the ventilation system in accordance with Health Technical Memorandum 03-01.

5.33 Consideration should be given to the required level of resilience of the cooling functions as part of the overall ventilation system design.

5.34 The control system should ensure that the environmental parameters are met and energy use is minimised.

Medical gases

5.35 Medical gas service provision should be designed in accordance with Health Technical Memorandum 02-01 – 'Medical gas pipeline systems' and Health Technical Memorandum 08-03 – 'Bedhead services'.

5.36 In the treatment room, local anaesthetics and blocks may be used. No general anaesthetics will be used.

Domestic water services

5.37 Domestic water services should be designed in accordance with Health Technical Memorandum 04-01 and agreed with the Water Safety Group.

Building management system

5.38 A building management system (BMS) may be utilised to monitor and control engineering services within the building. Equipment and devices such as heating, ventilation, cooling, lighting, emergency lighting and window switches may be connected to the BMS network.

5.39 Consultation should take place with relevant stakeholders, such as engineering estates teams, at an early stage of the design process to determine the BMS strategy. Examples of energy-efficiency measures include using occupancy sensors together with normal working patterns to switch off lighting in non-critical areas, setting heating and ventilation systems to set-back mode during out of hours, and switching off heating when windows are open. Other examples of BMS functions include automatic testing of emergency lighting during out of hours and monitoring of fire alarm and security systems.

5.40 A BMS can enable substantial energy savings to be made by optimising control strategies. Paragraph 5.8 provides references to other guidance that provides advice on the control aspects of energy-efficient design and operation.

Electrical services

Electrical power distribution

5.41 The primary objective is to deliver designs that are both safe for staff, patients

and visitors and available when they need to use it. Health Technical Memorandum 06-01 provides guidance on electrical distribution within a healthcare estate, addressing both of these issues and forms the basis on which design proposals should be assessed.

5.42 As required by Health Technical Memorandum 06-01, these recommendations need to be considered, reviewed and expanded upon in conjunction with the healthcare provider's Electrical Safety Group (ESG), to finalise the brief and include but are not limited to the following:

- normal electrical supplies (dual path);
- emergency electrical supplies;
- electrical interference;
- uninterruptible supply units (UPS);
- medical IT (also known as isolated power supplies (IPS)).

5.43 Risk is addressed from two different viewpoints: the effect on the patient (clinical risk, life safety) and on continuity of service (business continuity); that is, while a patient may be safe, the loss of a facility such as IT servers over a prolonged period will prevent the functioning of the hospital.

5.44 The healthcare designer and the designer through consultation should agree the level of clinical and business risk that could be seen through loss of power in an area. Unless local requirements increase the risk, then the following risk levels should be adopted:

- For chair-centric treatment bays, a minimum of clinical risk C should be adopted.
- For trolley bays, a minimum of clinical risk C should be adopted.
- For treatment rooms, a minimum of clinical risk B should be adopted.

  Where interventional procedures are undertaken, the risk category should be increased accordingly.

Note:

The clinical risk categories outlined above (that is, clinical risks B and C) are from Health Technical Memorandum 06-01 – 'Electrical services supply and distribution' and relate to the risk to the patient in the event of a loss of electrical supply. The risks are graded from A to E according to the dependence certain departments have on the sustainability of the electrical supply. Grade A is the highest risk (life support/complex surgery) and grade E is the lowest risk (support services and circulation). Grade B relates to complex treatment and diagnostics, while grade C is general patient care.

5.45 Electrical supply connections to all medical electrical equipment should comply with BS 7671 and associated guidance notes.

5.46 Designers must ensure that the electrical loads are balanced across the infrastructure network and that there is sufficient capacity to meet current and potential future demands.

Lighting

5.47 The use of as much natural daylight as possible will help in creating a bright and airy feel to the space.

5.48 Artificial lighting should be provided to supplement as required, and achieve the desired light levels and environment conditions while considering energy consumption.

5.49 Where this is the case, proposals should reflect the guidance set out in CIBSE

Lighting Guides with particular reference to LG02 – 'Hospitals and healthcare buildings'.

Call systems

5.50 Addressable call systems should be designed in accordance with Health Technical Memorandum 08-03. Outlet quantities identified should form the starting point for discussions with the users and should be included in project's room data sheets.

Security

5.51 CCTV may be provided after consultation with users for general safety and security, which may include surveillance of restricted areas to monitor any unauthorised access.

5.52 The CCTV system should comply with relevant legislation, codes of practice, and local policies and procedures. Notices should be provided in areas covered by CCTV surveillance. Patient privacy and the confidential nature of footage should be taken into consideration when positioning cameras and managing the data obtained.

Fire safety

5.53 A fire risk assessment and evacuation strategy should be developed at the design stage and include wide consultation with stakeholders including the users, the Fire Safety Group and the local fire and rescue service. Addressable fire alarm systems should be designed in accordance with BS 5839. The functions performed by the fire alarm panel, typically presented as cause-and-effect diagrams, should be agreed with the stakeholders. The Health Technical Memorandum 05 FireCode suite of guidance documents provides relevant guidance for fire safety in healthcare premises.

Information and communications technology

5.54 Designers should consult with the healthcare provider's IT lead to identify specifications and requirements for the facility.

5.55 The ICT provision, such as connection to existing infrastructure, server rooms, cabling, data outlets, and Wi-Fi hubs, should be agreed with relevant stakeholders.

5.56 The Institution of Engineering and Technology's (IET) 'Code of Practice: building infrastructures for healthcare ICT' (forthcoming) provides guidance and best practice advice in this area.

Entertainment

5.57 The experience of the patients and others visiting healthcare facilities can be enhanced through the provision of entertainment facilities. For SDEC facilities some form of entertainment in reception or waiting areas, such as a free-to-air TV should be considered. Patients should not require any installed entertainment facilities within treatment areas.

5.58 Many users will have their own mobile devices for entertainment; therefore provision of Wi-Fi and charging stations may be considered if permitted by local policy.

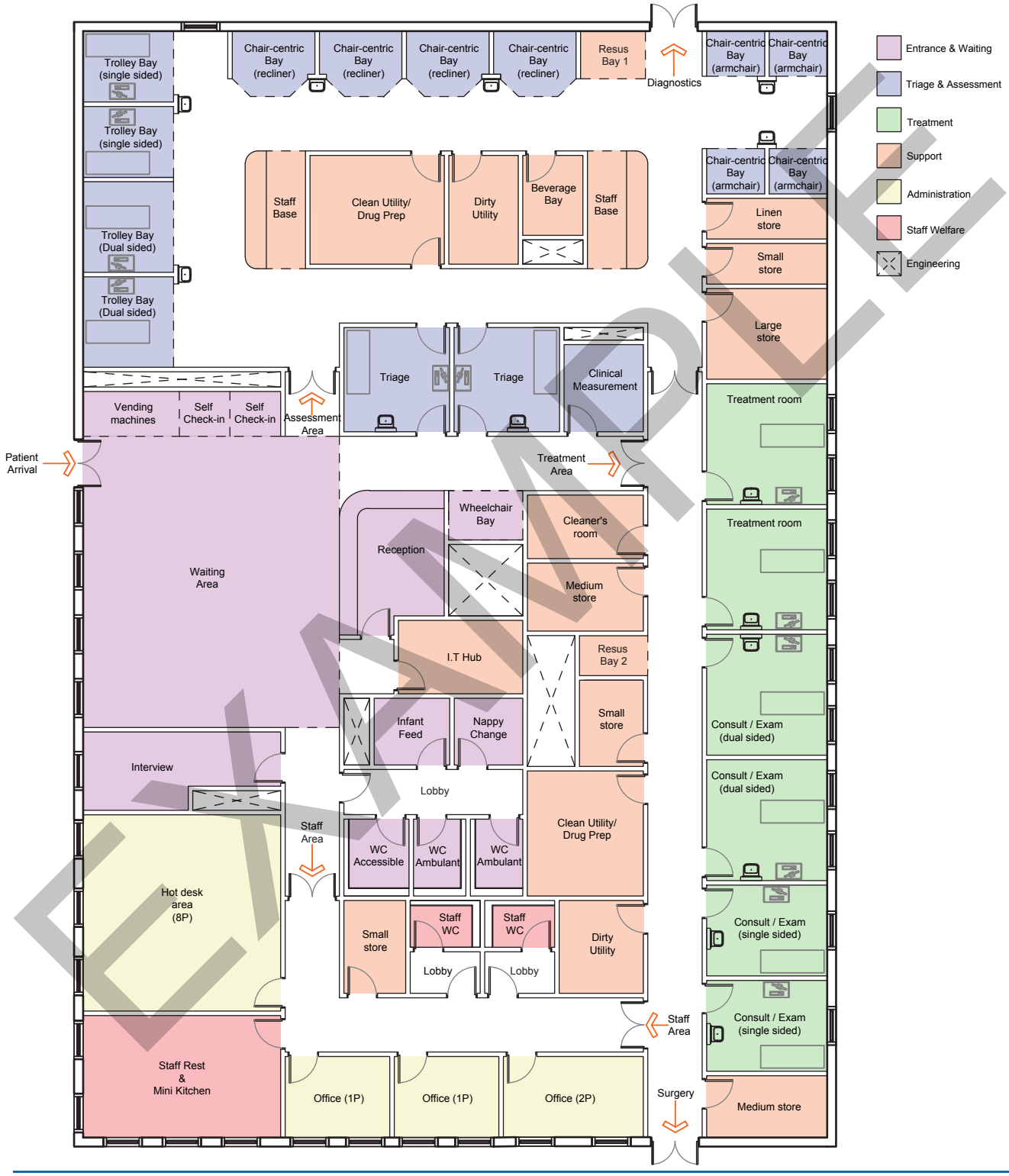
Public health services

Above ground drainage

5.59 Provision for inspection, rodding and maintenance should ensure "full bore" access and be located to minimise disruption or possible contamination. Manholes should not be located within the SDEC unit.

Appendix 1: Example generic layout diagram

When designing an SDEC facility, the generic layout diagram below sets out an example arrangement of services expected in such a facility. The final layout will be influenced by site constraints and surrounding departments and estate features. The size of the facility will be project-specific and will depend on the number of attendances – a number of different versions are provided in the schedules of accommodation (see Appendix 2).



Appendix 2: Schedules of accommodation

	15,000 attendances			25,000 attendances				
Room description	**Size**	**No.**	**m²**	**Size**	**No.**	**m²**	**Notes on size & quantity**	**Commentary**
Entrance, reception & waiting								
Reception (size per staff member)	5.5	3	16.5	5.5	3	16.5	Allow 5.5m² per staff member. Minimum of 2 staff.	May be combined with staff communication base
Wheelchair parking	4.0	1.0	4.0	4.0	1.0	4.0		
Main waiting area	1.5	21	31.5	1.5	33	49.5	1 place per clinic room	Space should be comfortable and offer a mixture of seating options
Staff base (size per staff member)	5.5	2	11.0	5.5	2	11.0	For especially large departments size may be increased. Allow 5.5m² per staff member	May be located with reception to provide efficiencies
WC - Accessible	4.5	1	4.5	4.5	2	9.0	Sanitary provision will be based on activity	
WC - Semi-ambulant	2.5	2	5.0	2.5	4	10.0		
Infant feed	5.5	1	5.5	5.5	1	5.5		
Nappy change	5.0	1	5.0	5.0	1	5.0		
Vending machines	3.0	1	3.0	3.0	1	3.0		Consider proximity to public amenities and encourage patients to use those
Interview/counselling room	12.0	1	12.0	12.0	2	24.0		
Sub total			98.0			137.5		
Triage & Assessment								
Triage room	12.0	2	24.0	12.0	3	36.0	Provide 1 room per 10 clinic spaces	Healthcare planner to work with project teams to translate functional content requirements into the optimal mix of triage and assessment spaces to provide
Consult/exam (single-sided)	12.0	2	24.0	12.0	2	24.0	Number and mix of patient bays and rooms will be a project specific, informed by activity and capacity projections, workforce profile and models of care.	
Trolley bay (dual-sided)	9.0	2	18.0	9.0	4	36.0		
Trolley bay (single-sided)	7.0	2	14.0	7.0	6	42.0		
Chair-centric bay (recliner)	5.0	4	20.0	5.0	6	30.0		
Chair-centric Bay (armchair)	2.5	4	10.0	2.5	6	15.0		
Clinical WHB station	1.5	6	9.0	1.5	9	13.5	Minimum 1 between 2 patient bays	
Clinical Measurement	8.0	1	8.0	8.0	1	8.0	1 per 20 clinic rooms	
Sub total			127.0			204.5		
Treatment								
Consult/exam (dual-sided)	16.0	2	32.0	16.0	3	48.0	1 per 10 clinic spaces	
Treatment room	16.0	2	32.0	16.0	3	48.0	1 per 10 clinic spaces	
Sub total			64.0			96.0		

(*Continued over page*)

	15,000 attendances			25,000 attendances				
Room description	**Size**	**No.**	**m²**	**Size**	**No.**	**m²**	**Notes on size & quantity**	**Commentary**
Support								
Beverage Bay	5.5	1	5.5	5.5	1	5.5		
Clean utility/medicine Store	16.0	2	32.0	16.0	2	32.0	1 per 12 patient bays / rooms	May be split into separate smaller rooms for medicine storage and preparation
Dirty utility	8.0	2	16.0	8.0	2	16.0	1 per 12 patient bays / rooms	
Resus parking bay	2.0	2	4.0	2.0	2	4.0		
Small store	6.0	3	18.0	6.0	3	18.0	Number and size of storage to be determined on a project by project basis	Includes storage of equipment, and consumables
Medium store	8.0	2	16.0	8.0	2	16.0		
Large store	12.0	1	12.0	12.0	1	12.0		
Linen store	6.0	1	6.0	6.0	1	6.0		
Cleaner's room	8.0	1	8.0	8.0	1	8.0		
IT hub	10.0	1	10.0	10.0	1	10.0		
Sub total			127.5			127.5		
Administration								
Office: 1 person	9.0	2	18.0	9.0	2	18.0	Number and mix of admin areas will be project specific. Assume 1 desk per clinic space	
Office: 2 person	12.0	1	12.0	12.0	2	24.0		
Hot desk area (per desk)	5.0	8	40.0	5.0	12	60.0		
Sub total			70.0			102.0		
Staff welfare								
Staff WC	2.0	2	4.0	2.0	4	8.0	Minimum of 2. More may be required for larger departments	
Staff rest and mini kitchen	1.8	14	25.2	1.8	24	43.2	Size based on number of seats. Project specific. Assume 1 place per clinic room	Consider use of shared facilities
Staff Changing / Showers / lockers	0	0	0	0	0	0	Project specific, dependent on workforce profile. Assume shared with A&E	
Sub total			29.2			51.2		
Net internal area			515.7			718.7		
Departmental allowances								
Circulation allowance	33%		170.18	33%		237.17		
Planning	5%		25.79	5%		35.94		
Engineering	3%		15.47	3%		21.56		
Gross internal area			727.14			1013.37		

The schedules of accommodation spreadsheet and an SDEC Activity Calculator can be downloaded as separate files along with this document from the HBN 15-02 web page.

Appendix 3: Room data sheets – schedules of components

Multi-use room (triage/initial assessment/consult exam)

Quantity	Description	Group	Comments
1	PUSH BUTTON • patient/staff call (help) • with socket for patient hand-held unit	1	At bedhead
1	LAMP • patient/staff call repeat • trunking-mounted	1	At bedhead
1	PULL/PUSH BUTTON • staff emergency call, reset • integral/adjacent indicator lamp	1	At bedhead
1	LAMP • repeat call, patient/staff • or staff emergency	1	Above entrances to room
1	LUMINAIRE • examination, wall-mounted, adjustable, LED cool light	1	At bedhead
1	CONNECTION UNIT • switched, 13-amp, flex outlet	1	For exam lamp
4	SOCKET outlet • switched, 13-amp, twin, trunking-mounted	1	At bedhead
1	CLEANERS' SOCKET outlet • switched • 13 amp • single • wall-mounted	1	Low-level mounting approx 150–200mm height above floor, located close to door / access point
1	SOCKET outlet • double data/voice • wall/trunking-mounted	1	Quantity is a project option
1	OUTLET oxygen medical • trunking-mounted	1	At bedhead
1	OUTLET vacuum medical • trunking-mounted	1	At bedhead
1	TRUNKING • for power, data and medical services • length as drawn	1	At bedhead
1	HOOK • single • large • wall-mounted	1	For use by patient and carers to hang personal items of clothing, bags etc. at bedhead, but away from any bedhead services provided. Ensure self-harm and ligature risk assessments are undertaken
1	WASH BASIN • clinical • with lever- or sensor-operated wall/panel-mounted tap/s	1	Immediately on access to room by clinical staff
1	DISPENSER • paper towel • wall-mounted	2	Union with clinical wash-hand basin

Quantity	Description	Group	Comments
1	DISPENSER • soap • disposable single cartridge • lever action • wall-mounted	2	Union with clinical wash-hand basin
1	DISPENSER • barrier cream • disposable single cartridge • wall-mounted	2	Union with clinical wash-hand basin
1	DISPENSER • antimicrobial hand-rub • lever action • mounted appropriately	2	Union with clinical wash-hand basin (close to the point of patient care)
1	BRACKET • holder • suction unit • wall/trunking-mounted	2	At bedhead
1	TROLLEY, PATIENT • with x-ray translucent platform • with castors and brakes • with fully retractable cot sides • with pressure-reducing mattress • with tilt facility • o/a 2130 × 735mm	3	Recliner chair is a project option
1	TROLLEY • dressing/equipment • 6 clear trays • buffered • 890H 510W 480D	3	
1	CHAIR • height-adjustable, with arms • high back • swivel • 5 star base • wipeable • on castors		
1	DESK UNIT • cantilever • cable management • adjustable legs • modesty panel • 1400W 700D	3	
1	CHAIR upright upholstered • stacking • with arms • wipeable	3	
1	COMPUTER • keyboard • screen • with telephone	3	On mobile worktable
1	WORKTOP • non-clinical • on castors • 900W 600D 900H	3	
2	HOLDER sack • with lid • foot-operated • freestanding • 875H 430W 385D	3	Clinical and non-clinical

Chair-centric bay (recliner)

Quantity	Description	Group	Comments
1	PUSH BUTTON, • patient/staff call (help) • with socket for patient hand-held unit	1	At cubicle bedhead
1	PULL/PUSH BUTTON • staff emergency call, reset • integral/adjacent indicator lamp	1	At cubicle bedhead
1	LAMP • repeat call, patient/staff	1	At cubicle bedhead
1	LAMP • repeat call, patient/staff • staff emergency call • ceiling-mounted	1	At cubicle bedhead
1	LUMINAIRE • examination, wall-mounted, adjustable, LED cool light	1	At bedhead
1	CONNECTION UNIT • switched, 13-amp, flex outlet	1	For exam lamp
4	SOCKET outlet • switched 13 amp • twin • trunking-mounted	1	
1	SOCKET outlet • double data/voice • wall/trunking-mounted	1	Quantity is a project option
1	CLEANERS' SOCKET outlet • switched • 13 amp • single • wall-mounted	1	Low-level mounting approx 150–200mm height above floor to serve 4 bays Locate central to all 4 bays, but not behind chair or under clinical trunking
1	OUTLET oxygen medical • trunking-mounted	1	Central to two bays or as project agreed decision
1	OUTLET vacuum medical • trunking-mounted	1	Central to two bays or as project agreed decision
1	OUTLET, 4 kPa compressed air, medical • trunking-mounted	1	For example, for nebulising therapy etc. at bedhead. This is a project option. Central to two bays or as project agreed decision
1	TRUNKING • for power, data and medical services • length as drawn	1	At bedhead or as required between bays If using movable separation between bays, where practical, consideration may be given to sharing trunking for bedhead services between bays
1	SCREEN • privacy • dividing • full or half height • between recliner chairs • retractable	1	Or for use as artwork Curtain may be preferred project option. Check hospital policies Ensure self-harm and ligature risk assessments are undertaken

Quantity	Description	Group	Comments
1	HOOK • single • large • wall-mounted	1	For use by patient and carers to hang personal items of clothing, bags etc. at bedhead, but away from any bedhead services provided Ensure self-harm and ligature risk assessments are undertaken
1	DISPENSER • antimicrobial hand-rub • lever action • mounted appropriately	2	Union with clinical wash-hand basin (close to point of patient care)
1	CHAIR • treatment • reclining • height-adjustable • wipeable • reclined: L1460mm W900mm seat height: 460–500mm	3	
1	CHAIR upright, upholstered • stacking • with arms • wipeable	3	
1	HOLDER • sack • with lid • foot-operated, • small • freestanding	3	Clinical

Chair-centric space (armchair)

Quantity	Description	Group	Comments
1	PUSH BUTTON, • patient/staff call (help) • with socket for patient hand-held unit	1	At cubicle/bay
1	LAMP • patient/staff call repeat • ceiling mounted	1	At cubicle/bay
1	PULL/PUSH BUTTON • staff emergency call, reset • integral/adjacent indicator lamp	1	At cubicle/bay
1	LAMP • repeat call, patient / staff • or staff emergency • ceiling-mounted	1	At cubicle entrance
1	LUMINAIRE • examination, wall-mounted, adjustable, LED cool light	1	This is a project option
1	CONNECTION UNIT • switched, 13-amp, flex outlet	1	This is a project option
2	SOCKET outlet • switched 13 amp • twin • trunking-mounted	1	
1	CLEANERS' SOCKET outlet • switched • 13 amp • single • wall-mounted	1	Low-level mounting approx 150–200mm height above floor to serve 4 bays Locate central to all 4 bays, but not behind chair or under clinical trunking
1	SOCKET outlet double data/voice wall/trunking-mounted	1	Quantity is a project option
1	OUTLET oxygen medical trunking-mounted	1	Central to two or more bays (as per local decision)
1	OUTLET vacuum medical trunking-mounted	1	Central to two or more bays (as per local decision)
1	OUTLET, 4 kPa compressed air, medical trunking-mounted	1	For example, for nebulizing therapy etc. & central to two or more bays This is a project option
1	TRUNKING • for power, data and medical services • length as drawn	1	Behind armchair and central to two or more bays If using movable separation between bays, where practical, consideration may be given to sharing bedhead services between bays
1	SCREEN • privacy • dividing • full or half height • between chairs • foldable/retractable	1	Or for use as artwork Curtains may be a project option dependent on hospital policies and taking into account the patient's auditory privacy Ensure self-harm and ligature risk assessments are undertaken

Quantity	Description	Group	Comments
1	HOOK • single • large • wall-mounted	1	For patient/visitor coats and handbag etc. Ensure self-harm and ligature risk assessments are undertaken
1	BRACKET • holder • suction unit • wall/trunking mounted	2	
1	DISPENSER • antimicrobial hand-rub • lever action • mounted appropriately	2	Behind armchair
1	CHAIR, easy • high back • with open arms • upholstered • wipeable	3	
1	CHAIR, upright upholstered • stacking • with arms • wipeable	3	For carer/companion
1	HOLDER • sack • with lid • foot-operated • small • freestanding	3	Clinical

Trolley bay (dual- or single-sided access)

Quantity	Description	Group	Comments
1	PUSH BUTTON • patient/staff call (help) • with socket for patient hand-held unit	1	At bedhead
1	LAMP • patient/staff call repeat	1	At bedhead
1	PULL/PUSH BUTTON • staff emergency call, reset • integral/adjacent indicator lamp	1	At bedhead
1	LAMP • patient/staff call repeat • or staff emergency call • ceiling-mounted	1	Above entry to cubicle/room
1	LUMINAIRE • examination, wall-mounted, adjustable, LED cool light	1	At bedhead
1	CONNECTION UNIT • switched, 13-amp, flex outlet	1	For exam lamp
4	SOCKET outlet • switched, 13-amp, twin, trunking-mounted	1	At bedhead
1	CLEANERS' SOCKET outlet • switched, 13-amp, single, wall-mounted	1	Low-level mounting approx 150–200mm height above floor, close to entrance
1	SOCKET outlet • double data/voice • wall/trunking-mounted	1	At bedhead Quantity is a project option
1	OUTLET oxygen medical • trunking-mounted	1	At bedhead
1	OUTLET vacuum medical • trunking-mounted	1	At bedhead
1	OUTLET, 4 kPa compressed air, medical • trunking mounted	1	For example, for nebulising therapy etc at bedhead. This is a project option
1	TRUNKING • for power, data and medical services • length as drawn	1	At bedhead
1	HOOK • single • large • wall-mounted	1	For use by patient and carers to hang personal items of clothing, bags etc. at bedhead, but away from any bedhead services provided Ensure self-harm and ligature risk assessments are undertaken
1	WASH BASIN • clinical • with lever- or sensor-operated wall/panel-mounted tap/s	1	Immediately on access to room by clinical staff or located for sharing between 2 cubicles
1	DISPENSER • paper towel • wall-mounted	2	Union with clinical wash-hand basin

Quantity	Description	Group	Comments
1	DISPENSER • soap • disposable single cartridge • lever action • wall-mounted	2	Union with clinical wash-hand basin
1	DISPENSER • barrier cream • disposable single cartridge • wall-mounted	2	Union with clinical wash-hand basin
1	DISPENSER • antimicrobial hand-rub • lever action • mounted appropriately	2	Union with clinical wash hand basin (close to the point of patient care)
1	BRACKET • holder • suction unit • wall/trunking-mounted	2	At bedhead
1	TROLLEY, PATIENT • with x-ray translucent platform • with castors and brakes • with fully retractable cot sides • with pressure-reducing mattress • with tilt facility • o/a 2130 × 735mm	3	Recliner chair is a project option
1	TROLLEY • dressing/equipment • 6 clear trays • buffered • 890H 510W 480D	3	
1	CHAIR upright upholstered • stacking • with arms • wipeable	3	For carer/companion
1	COMPUTER • keyboard • screen	3	On mobile worktable
1	WORKTOP • non-clinical • on castors • 900W 600D 900H	3	
2	HOLDER • sack • with lid • foot-operated • small • freestanding	3	Clinical and non-clinical

Note:

These are department-specific room data sheets. Those for generic clinical spaces are covered elsewhere.

Appendix 4: Case studies

Case studies of healthcare organisations that have utilised the support of the Ambulatory Emergency Care Network (AECN) in developing a same day emergency care service can be found on the AECN Case Studies website.

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