King's Fund

Choosing Health Care Beds for Use at Home

A guide for users and professionals

John Mitchell
Bardy McNair
Judith Jones

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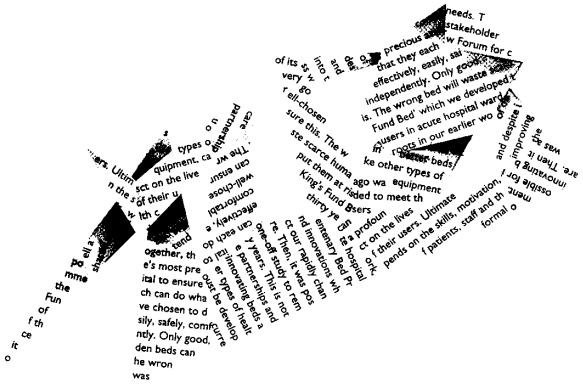

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WHO NEEDS A BETTER BED?
A user guide to beds which help when you are ill or disabled appears after the Appendices.

Acknowledgements

We would like to thank all who gave generously of their time and expertise to our consultation. They are too numerous to mention individually.

We are also grateful to the National Back Pain Association for permission to reproduce a number of the illustrations used in this Guide, and to the Medical Devices Agency, for permission to reproduce their mattress testing procedures (Appendix 2).

Disclaimer

The authors have made every effort to ensure that the information contained in this Guide was accurate at the time of going to press, and that as wide a range as possible of different types of (non-specialist) beds available in the UK was covered.

The authors can accept no liability for errors or omissions and strongly recommend that details of any beds or equipment should be checked directly with the supplier(s).

The authors are seeking to develop methods by which the information in this Guide can be kept systematically updated and distributed, but as yet there is no certainty that this will prove possible.

Introduction

Caring for someone who is ill or disabled in their own home is not easy. Nor is being ill or disabled, at home or anywhere. Furniture and equipment are important to the lives of people in such circumstances.

While an ordinary domestic bed may provide a satisfactory surface for sleeping on, it does little to help with the activities of daily living, or of caring for someone, and may make it difficult for the occupant to function independently.

Most health care has always been family-based and in the home. These days much formal health care, delivered by professionals, is also taking place at home. Whereas in hospitals, staff and patients benefit from beds which are designed with health care in mind, this is often not so at home. This poses problems for the health and independence of the occupant and, since the bed is part of the working environment of carers and professionals, it may have an influence upon *their* health as well.

Beds are usually selected in one of three ways:

- by staff requesting a bed from an equipment loans store
- by professionals choosing a bed with, or on behalf of, an individual using health, social care or voluntary sector funding
- by an individual who is ill or disabled, or their carer, purchasing a bed themselves.

Although there are different degrees of choice, in each case it is important that the person making the choice bases their decision upon the best available information.

Although this guide does not directly address the needs of the staff of equipment loans stores, we hope they will find it valuable in setting the context and providing information about beds for use in the community. *Choosing Beds for Hospitals: A guide* (a companion volume to this one) may also offer some useful insights for loans stores.

Where does our information come from?

Much of the information in this guide comes from wide-ranging consultation with health care staff in the community, care homes and hospitals. We spoke also to service managers, manufacturers, equipment and information experts and experts in fields such as tissue viability and ergonomics. We put great emphasis on consulting those with experience as patients and residents in health care settings and as carers and users of

beds when coping with a disability or illness at home. You can read about this consultation and its implications in *Better Beds for Health Care: Report of the King's Fund Centenary Bed Project*. (See Appendix 1.)

The guide – what it is and isn't

The first part of the guide helps you to consider some of the important issues underlying the choice of beds.

The second part helps you to make rational choices, by giving information about beds and guidance on the process of choosing. You may find it helpful to work through this, following the suggestions for noting down information or using the checklists. Checklists may be photocopied or downloaded from our website (*www.kingsfund.org.uk*).

The third part is a photocopiable section addressed to individual 'occupants' and carers who need a straightforward guide to the issues.

The aim here is to help you choose a type of bed or accessory. The guide does not name specific models or manufacturers, nor do we discuss 'specialist' beds in detail. No attempt is made to evaluate the quality of design or manufacture of any particular bed or item of equipment.

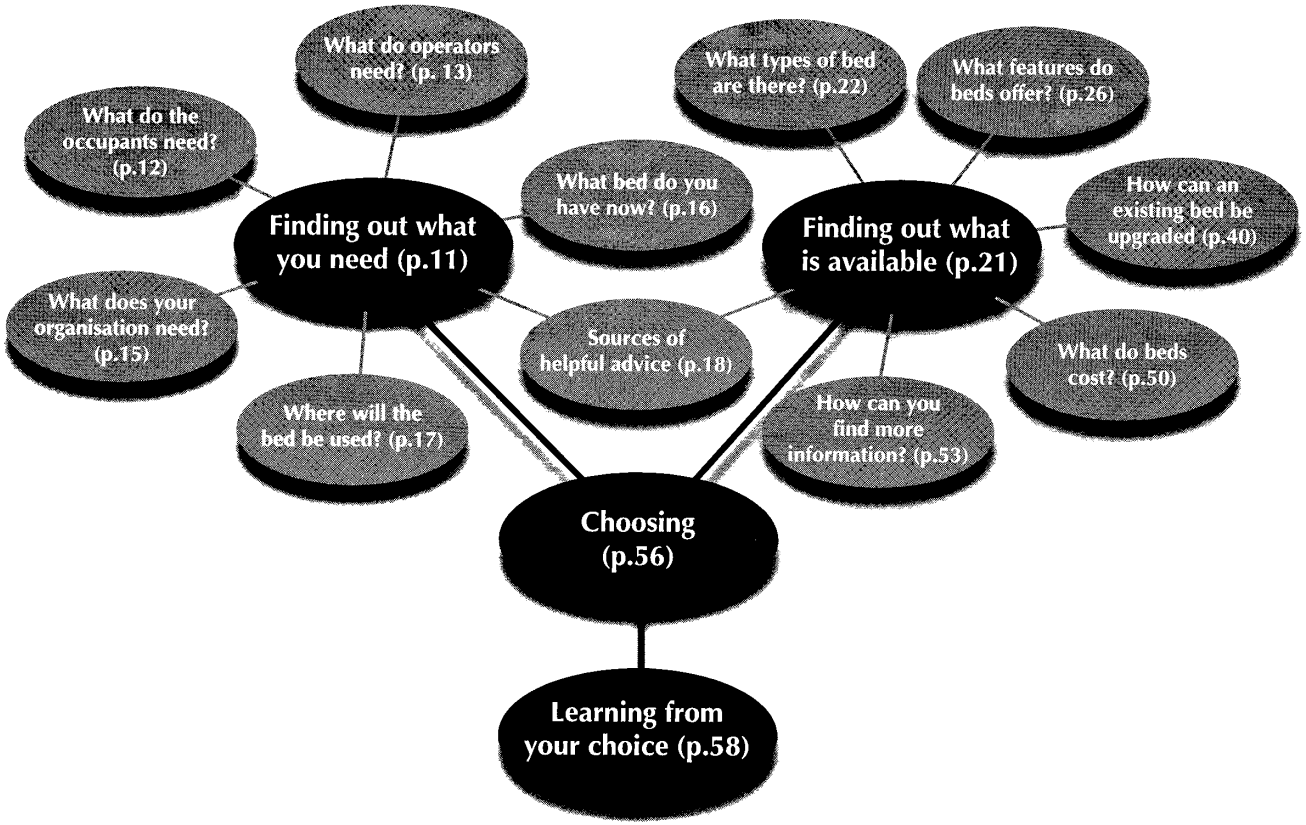
For an overview of the process of choosing, see the diagram *What's involved in choosing beds?*, on page 3.

Defining our terms

In this guide we use the term 'occupant' to mean the person in the bed. We use 'operator' to mean someone who deals with the bed as part of their work. This is anyone involved in caring for the occupant, or involved in the cleaning, moving, or maintenance of beds.

What's involved in choosing beds?

This chart represents an overview of the process of choosing beds



Chapter 1

Why is the right bed important?

In choosing a bed you are addressing a complex set of needs which encompass both occupants and operators. Of the many factors which have to be considered, the three most important are the influence of the bed upon work-related back pain in operators, upon the tissue viability of the occupants and upon the independence of occupants.

Beds can impact upon work-related back pain

Causes and costs

'Manual handling' involves lifting, pushing, pulling, carrying, lowering and supporting loads. In the health services in 1990/91, it accounted for almost 50 per cent of workplace accidents reportable to the Health & Safety Executive (i.e. over-three-day injury).[1] Such injuries most commonly affect the back.[2]

In cases where an injury had destroyed a person's career in health care, recent awards have amounted to as much as £150,000 to £345,000 in compensation.[3] Costs to the organisation are also likely from sickness absence, recruitment and training of replacement staff, fines for breaches of legislation, and increases in insurance premiums.[4]

As well as single incidents, cumulative back stress predisposes the spine to pain and/or injury.[5] This could result from repeated heavy lifting, or from poor postures (e.g. stooping, twisting or bending sideways). Hospital nurses, for instance, have been estimated to stoop for 22 per cent of their shift.[6]

Back pain in carers may incur treatment costs, and could result in the need for assistance in caring for occupants.

Who is affected

A variety of people are affected by back pain. It is likely that carers and professional community staff are more at risk of back trouble than the general population, especially where beds are involved. For example, a study of carers employed to work in people's homes found that 40 per cent of accidents resulting in a back injury involved the bed,[7] either from helping the occupant into or out of bed, moving them in bed or making the bed. Likewise, a study of hospital and community nurses found that 52 per cent of manual handling accidents involved the bed itself.[8]

Back pain may also be a risk for some occupants. Activities such as washing, eating, reading, writing or watching television will be uncomfortable for those both with and without back trouble if there is no proper backrest.

The need for space

It is not possible to handle occupants safely in a work area which restricts freedom of movement, or where the furniture/equipment presents obstacles or results in staff adopting awkward postures.[3] This is particularly so where the bed is low or is a double bed.[9]

The need for adjustability and ease of use

Moving a bed in order to clean around or underneath it is difficult if it is not on castors, while making a bed or changing the sheets is harder if the bed is low and cannot easily be raised. This will usually result in stooping, possibly with the need to handle a heavy object, for instance, pulling the bed away from the wall or lifting a mattress in order to slip the sheets underneath.

All employers are legally required to avoid hazardous manual handling. Where this is not possible, tasks must be assessed and risks reduced as far as is reasonably practicable, using an ergonomics approach.[1] The workstation (the bed) height must be suitable and be reached without undue bending and stretching. This is important for staff when handling occupants, and when making or cleaning the bed. It is crucial for the safety of carers, who have no legal protection with regard to injury.

The right bed height depends on the task, and the height and body proportions of operators. The '*use of non-adjustable beds for patients requiring more than an absolutely minimal degree of nursing care cannot be condoned.*'[3] Fixed-height beds, such as divans, are only suitable for occupants who need no help. Beds for nursing must be of variable height and the easier it is to adjust the height, the more likely it is that the adjustment will be used.[3] Electrically powered adjustment is easiest of all, especially for those who are pregnant, and for frail and elderly carers.

It may be possible to adapt an existing bed, for example by inserting a height adjustable 'bed lift' under the bed (see page 45), or a mattress inclination to assist the occupant to sit up (see page 42). As well as reducing back stress, accessories may increase independence, reducing the amount of help needed from others.

All mechanisms on adjustable beds must be easy and safe to operate. This will facilitate, or even eliminate, manual handling. Most pull-out backrests cannot be operated with one hand and result in awkward postures, often while trying to hold an occupant forward. Some beds have winder handles which wind in a vertical plane to adjust tilt or profiling. These make operators stoop and twist, and where not retracted fully after use, may catch

against people's legs. Electrically powered beds make manual handling much easier for operators and for occupants.

Beds can impact upon tissue viability

Anyone choosing a bed must take into account the risk of pressure sores, particularly if the bed may at some time accommodate someone who is frail and elderly, or who is at risk for other reasons, such as neurological impairment.

Why think about pressure sores?

Pressure sores represent a huge burden: to the sufferer, who has pain and added illness; to their carers, for whom the treatment of sores means extra work and worry and to the organisation providing care, which bears the cost.

A study in 1991 suggested that in one health district the annual cost of treatment of pressure sores in the community amounted to between £100,000 and £200,000.[10] One community provider found that in a three-month period 12 per cent of all patient contacts were for pressure area care, and of this nearly one third of the workload consisted of daily visits to patients with severe sores.[11]

Causes of pressure sores

The three major mechanisms by which pressure sores develop are:

- **by disproportionate pressure on bony prominences,** from the weight of an occupant lying on an ordinary mattress. Occlusion of the blood supply cuts off the supply of oxygen and nutrients, and retains waste products
- **by shearing force,** where an occupant is sitting up in bed and slips down. The skin itself remains static, while deeper tissues below are dragged and blood vessels damaged
- **by friction,** often from the occupant being dragged rather than lifted, causing superficial skin damage, which is then liable to further damage.

The risk is further increased where skin remains moist, through poor ventilation or incontinence.

The mattress and pressure sores

'Specialist' beds, such as alternating pressure mattresses and air fluidised beds may be provided by community nursing services for those at highest risk of pressure sores, or who already have sores.

Where assessment shows an occupant to be at low or medium risk, the mattress should provide a surface which 'conforms to the contours of the body so increasing the area of the body in contact with the mattress, with a resulting reduction in peak pressure'.[12] 'Pressure-reducing' foam mattresses are effective and have been compared in trials,[13] although no best buy has been identified. Foam and fibre-filled overlays are not very effective in reducing pressure;[14,15] it is better to replace the mattress than use such an overlay.

Care and replacement of foam mattresses are as important as the actual choice of mattress. Nursing beds supplied by loan stores usually have a foam mattress, and these must be turned regularly and tested frequently for 'bottoming-out', for integrity of the cover and for contamination (for how to do this, see Appendix 2). Mattresses should be replaced immediately on failing any of these tests.

Not much information is available about how good spring mattresses are at pressure reduction. Such mattresses, if of good quality (preferably pocket sprung) and in good condition, may well be better than poor quality foam mattresses or other mattresses in poor condition. However, they are unlikely to be as good as good quality foam 'pressure reducing' mattresses.

The bedstead and pressure sores

The amount of *pressure* exerted upon vulnerable tissues depends mainly upon the mattress, while *shear* and *friction* may be related to the type of bedstead.

An occupant sitting in the bed with knees extended tends to slide down. Both shear and friction result from this, and also from somebody lifting the occupant back up. These forces are reduced when the knees are supported in slight flexion.[16] This position can be achieved with a wedge for the knees, or better still, a profiling bed.

Beds which help minimise manual handling reduce the danger of friction and correspondingly, the risk of pressure sores.

Beds can impact upon the independence of occupants

Studies have been done which explore the financial implications of back pain and pressure sores. However, we have found no studies assessing the cost of avoidable dependence. It seems likely that if occupants with impaired mobility could do more for themselves, staff time might be saved, the burden upon carers might be less and there might be some increase in the overall well-being of the ill or disabled people concerned. So far there is no published evidence for this. We do know, however, that independence is a major issue affecting the quality of life of disabled people and those receiving health care.

Our consultation showed how much independence mattered to occupants and carers.

Sometimes the bed made life difficult:

'One ninety-year-old that I care for, she is very short and her bed was too high for her. She couldn't get in it properly when she sat, you know, to sit back on it and she gradually broke down the side of the mattress so the bed became tilted. She fell out once or twice'
(Care assistant)

Whereas a bed which helped, made life easier for both carer and occupant:

'Also if they're electrically operated they can be used by the person in the bed or the carer, so they can be used for independence or for caring can't they? You're stuck if you've got to call somebody to wind it down or to wind you up'
(District nurse)

On the other hand, a bed or accessory could help an occupant to move unaided:

'He did a lot more for himself, didn't he really? [on electric profiling bed] ... before I mean he never moved in bed really unless you positioned him, whereas once he got the bed he was doing it for himself'
(Carer)

Or get in and out:

'I can't sit up in bed unless I've got the monkey pole. Once I've got the monkey pole I'll swing my legs round and get out of bed into the chair on my own'
(Man living at home with multiple sclerosis)

A bed with variable height helped a severely disabled man to do things for himself:

'You can be in a sitting position with your feet out of bed and you can press it and it comes up high so that you can stand up, or even put your trousers on'
(Man disabled by stroke)

The help of the bed could allow for further independence in less obvious ways:

'With this bed, you see, he could sit up, he could bend his legs and then he could actually ... he started to use his hands more because he could reach for a book, that sort of thing'
(Care assistant, residential home)

Many of those living at home with severe disability found a profiling, height-adjustable bed essential to their way of life:

'I'd need someone living with me or be in care if I did not [have a profiling bed]. These type of beds are a real boon to the disabled'
(Woman disabled by late effects of polio)

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Chapter 2

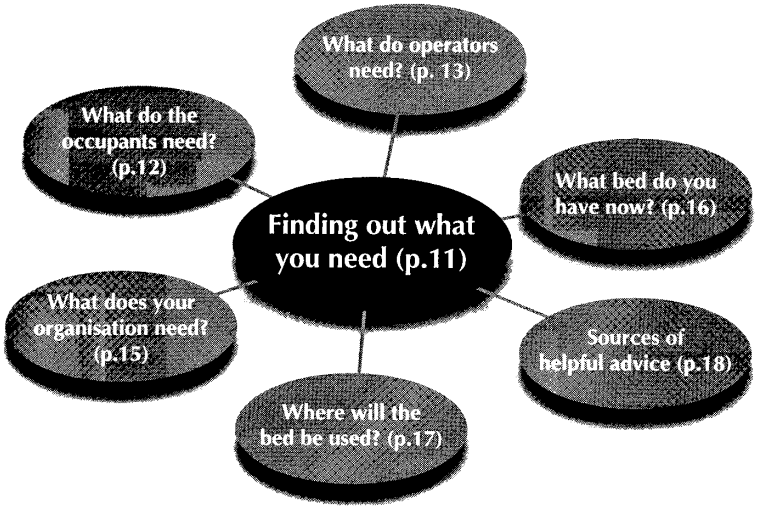
Finding out what you need

For most people their bed is the place where they sleep. However, when somebody becomes ill, and spends time in bed, the needs of the occupant and their carers become more complex. The occupant needs safety, comfort and as much independence as possible. For the operator, the bed is rather like a workbench upon which the tasks of care are performed. It must allow them to work in safety.

Individuals who, because of illness or disability, need a nursing or home care bed are usually entitled to the free loan of one from a health, social services or joint equipment loans store. This store has to provide for a wide range of needs and so may have difficulty in meeting very specific ones. On the other hand, where money is available to purchase for an individual – whether that money be statutorily, charitably or personally provided – it is possible to match the bed closely to the individual need.

Whichever the situation, it is essential to be very clear about what is required. We suggest that before finding out what there is to choose from, you talk to the people who are going to use the bed every day.

This first stage helps you consider your present position and to look at what you should take into account when choosing a bed.



What do occupants need?

Occupants in bed may need to:

- rest and sleep
- communicate: see and hear what is going on around, talk with others
- move about in the bed: sit up, lie down, turn over
- get in and out
- stay in a sitting position in order to: reach things on a bedside table, watch TV, read, write, have a conversation
- care for themselves: eat, maintain personal hygiene.

Consider whether the present bed allows them to do these things **easily, effectively, comfortably, safely** and, where possible, **independently.**

Occupants may need to overcome the following difficulties:

- movement difficulties, such as loss of muscle power, pain, joint stiffness, muscle spasticity
- sensory difficulties, such as hearing, sight, awareness of joint position, skin sensation
- mental difficulties, such as confusion, mental illness
- respiratory or circulatory difficulties.

Also consider the possible problems of occupants who are very short or tall, very thin or very heavy.

What do operators need?

The operators may be carers, nurses, therapists, doctors or home helps. They may need to:

- communicate with the occupant
- move the occupant in bed
- move the occupant into and out of the bed
- help the occupant with eating, drinking, personal hygiene
- set up or use equipment
- examine, or give treatment
- make the bed
- clean the bed
- clean around the bed
- move the bed
- dismantle or assemble the bed
- repair the bed.

With the present bed, can all these people perform their various tasks **easily, effectively, comfortably** and **safely**? Would a different bed improve matters?

The capabilities of the operators

Not all operators (whether informal carers or professional staff) have full strength and mobility capabilities. You may be able to reduce the demands placed on operators, and expand their effective capability, by having beds which are of variable height and which, perhaps with the help of accessories, allow occupants to do more for themselves. Could the right bed make any of the tasks listed above easier for them? Consider:

- **Numbers.** Will operators be working alone?
- **Size.** Does the bed height suit the occupant and all operators, from the smallest to the tallest, for the tasks they must undertake? Would variable height help them and others involved?
- **Health and pregnancy.** Do manual handling tasks put at risk operators who have a health problem such as back trouble, muscular weakness, or restricted range of joint movement, or who are pregnant?
- **Carer frailty.** Can a more suitable bed reduce manual handling demands for carers who are frail?

Loans store operators

Loans stores have to take into account the needs of their staff. They will have to assemble and dismantle the bed, transport it, repair or maintain it and clean it. These requirements are important, and the loan store chooses its stock accordingly. Limitations on the range and variety of beds and equipment may mean that individual needs cannot always be met from stock.

What does your organisation need?

As a professional providing health or social services, you have to take into account the needs of your organisation when choosing beds. Consider:

- cost constraints
- time constraints (are you limited as to when the money can be spent?)
- the available supply of equipment which attaches to, or interfaces with beds, such as safety rails and bed cradles
- organisational policies which may affect which beds can be bought (e.g. manual handling policies)
- existing maintenance contracts
- the organisation's existing relationship with suppliers.

What bed do you have now?

A better bed may be needed for a number of reasons. Consider the following:

Condition of the bed:

- is the bed worn out, broken or unfit for use?
- is the bed uncomfortable?

Suitability for delivery of nursing care:

- is the bed too low?
- is the bed too wide?
- is there insufficient room for a hoist underneath?
- is there inadequate support for the occupant to sit up?
- is it in the wrong place (e.g. upstairs) and cannot be moved?

Independence:

- does bed height make it difficult for the occupant to get into and out of bed unaided?
- is it difficult for the occupant to sit up or lift their legs into bed unaided?

Change in circumstances:

- is a new bed needed to fit into a smaller room, for instance after moving house?
- is it time to appraise present and future capabilities? Would a better bed help as the occupant gets older?

Be clear about the problems you are trying to solve with a new bed. Making a few notes may help.

Where will the bed be used?

All likely users need to be consulted to find out how the bed works for them in its surroundings. Consider the following:

Room space:

- is there enough room for the bed and for other furniture, belongings and people?
- is there enough room for handling aids, such as hoists? If not, space must be created. It may be possible to choose or adapt a bed to reduce the need for manual handling
- ideally, the bed should not be against the wall. If it must be, is there enough space for it to be pulled out? A bed which is easy to move is best; the weight of the bed and the quality of the castors determine this. Remember, larger castors make it easier to move the bed on carpet, but increase its overall height
- if the bed has any controls, will they be accessible when the bed is in position?

Storage space:

- is there storage space for accessories? If not, items, such as backrests may be best built into the bed, rather than separate.

Getting the bed in place:

- can the bed be moved in and out of the building and the room? Are the doors wide enough and is there room to turn? If the bed has to travel in lifts, will it fit? If not, it must be able to be dismantled (*What features do beds offer?: transportability*, on page 39).

Electrical supply:

- if you choose a bed, some part of which is electrically powered, is there a power supply conveniently located?
- could there be any hazards, such as fire, or the danger of people tripping over cables, or of overloading the electrical system?

Aesthetics:

- does the bed look right? Many people feel that a King's Fund or nursing bed looks too 'clinical' for use at home. Most nursing beds can have wooden or laminate ends fitted, and newer styles have wooden frames and look more like ordinary beds. Some people disguise underbed mechanisms with valances or oversized duvets.

Who can give you helpful advice?

As well as talking with those who will use the beds, you can benefit from the advice of experts at all stages in the choosing process. Useful advice can come from:

- **Users (occupants and operators)** who have practical experience. Carers are particularly valuable, because they live with the problems from day to day. They can help in identifying what is wrong with what you have at present, and what is needed
- **Literature.** This can be found through a health library and may be able to answer some of your questions. Some suggested reading is to be found in Appendix 1
- **Specialists.** They can advise about particular aspects of bed choice. They are helpful at all stages of the process.

The checklist below may help with your decision-making. If you are purchasing on behalf of a loans store, you may also wish to consult specialists in the areas of ergonomics, infection control, health and safety, and maintenance.

If you do not know of a local specialist in every related field, the following organisations may be able to put you in touch with someone:

- Tissue Viability Society
- Infection Control Nurses' Association
- The Ergonomics Society
- Royal College of Nursing
- College of Occupational Therapists
- Chartered Society of Physiotherapy
- National Back Exchange (for manual handling specialists).

For how to contact these, see Appendix 3.

Checklist: Whom to consult

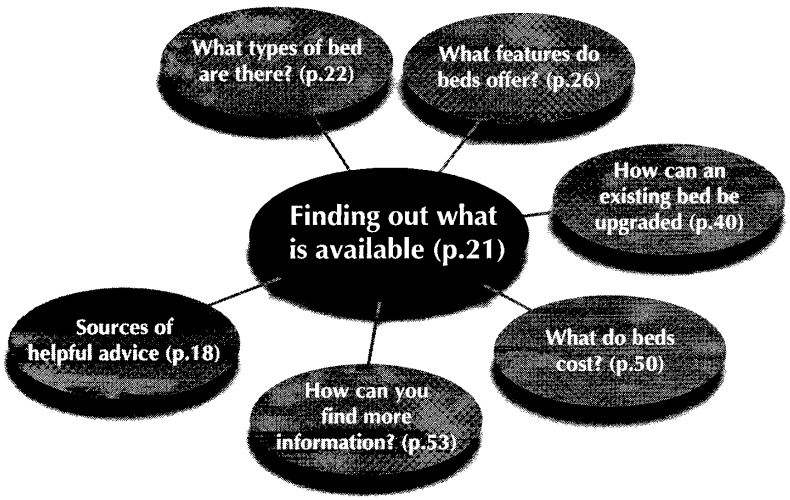
Whom to consult	Done	Comments
Users		
Occupants	☐	
Family and friends of occupants	☐	
District nurses	☐	
Occupational therapists	☐	
Physiotherapists	☐	
Care staff	☐	
Others (specify)	☐	
	☐	
	☐	
Specialists		
Tissue viability specialist	☐	
Manual handling adviser	☐	
Others (specify)	☐	
	☐	
	☐	
Your peers		
Others in your present workplace	☐	
Others of your profession doing similar work elsewhere (can be contacted via special interest groups, 'user' organisations, etc.)	☐	
Others		
Suppliers and manufacturers' representatives	☐	

Chapter 3

Finding out what is available

This section of the guide aims to help you match what you need to what there is. It contains information about beds and points you to some further sources.

It may be helpful to use the checklist on page 19 to ensure that you have consulted everyone who could help at this stage.



What types of bed are there?

Home or hospital style?

Most people like a bed in their home to look as normal as possible. There is a wide range of beds available, from ordinary domestic divans to high-tech hospital beds. Nursing and home care beds fall somewhere in between. Beds from loans stores are often associated with a 'hospital' look, though nursing beds are available which have a pleasant, domestic appearance but also have the all-important height variability and sometimes profiling, as well as other useful features. This section describes the types of bed which are available.

Domestic beds

Divan bed

A divan is a low, flat platform, of fixed height and contour and supported at each corner by a leg or skid.

The platform is usually an upholstered box, though some manufacturers also refer to low, fixed-height wooden or metal beds as 'divans'. An upholstered headboard is usual.

A **shallow divan** has a box platform approximately 15cm (6") deep (see Fig. 1).

A **deep divan** has a box platform approximately 38cm (15") deep. Some have drawers for storage in them. Deep divans may not have sufficient clearance for a hoist underneath and it may be difficult for operators to get their feet under when making the bed or attending to the occupant. This puts operators at risk: such beds should not be used for nursing.

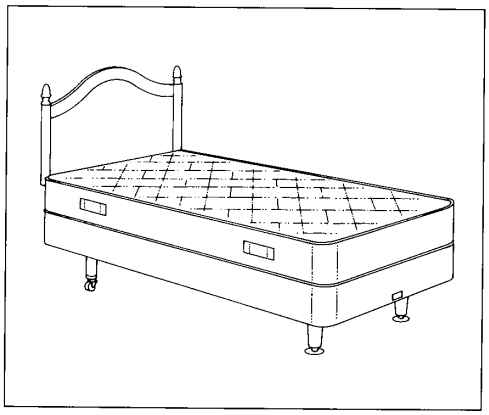


Fig. 1 A shallow divan

Wooden bedstead

This is a fixed-height bedstead which may have a sprung, slatted, or occasionally a solid platform.

Metal bedstead

A fixed-height bedstead, with sprung, mesh or slatted platform.

Profiling or adjustable divan bed

Some domestic divans can 'profile' or 'contour'. The mattress platform is made up of three, four or five sections, which may be angled (usually electrically) for comfort and convenience. Profiling is discussed in detail on page 36. Such beds are often marketed as 'health care' beds or as beds suitable for disabled people. While profiling is very helpful for assisting with nursing care and with independence of occupants, it is of limited value if the bed is not also height adjustable. Purchasers should weigh carefully the pros and cons of this, as opposed to a profiling 'nursing' or 'home care' bed (see below). Some 'adjustable' beds are fitted with an electrically powered 'massager', which might be helpful for pain or stiffness. However, they should be tried out by the occupant before buying.

Hospital beds

King's Fund bed

The King's Fund bed (see Fig. 2.) is most commonly used bed in British hospitals and is any bed made to the British Standard for Hospital Bedsteads.* The bed has to have certain features, which include one-way tilt, adjustable backrest, detachable interchangeable bed ends, castors with centrally-operated brakes, a bed stripper, a bed extension and variable height within a specified range. Two-way tilt is optional. It must also meet dimensional, constructional, strength and stability requirements as well as requirements for its weight and surface finish.

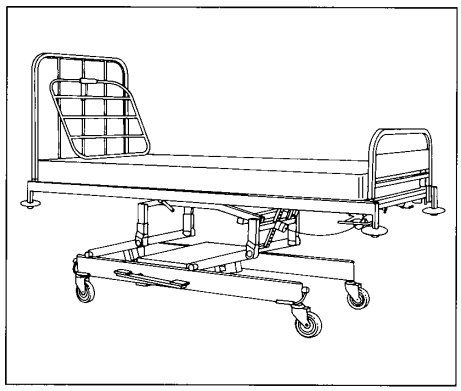


Fig. 2 A King's Fund bed with a pull-out backrest

* British Standards Institution. *British Standard Specification for Hospital Bedsteads*. BS 4886: 1988

There are now electrically powered versions of such beds, sometimes called 'electric King's Fund beds'.

Many 'specialist' beds are available, designed mainly for use in hospitals, but occasionally used in domestic homes. These include:

- **Cardiac bed.** A profiling bed with the additional feature of having the foot end come down to form a chair shape. They can be useful for heavy or very immobile occupants
- **Heavy duty bed.** For occupants who exceed the usual weight capacity of hospital beds. It usually profiles into a chair shape (like the cardiac bed) to bring the occupant into a sitting position
- **Pressure-reducing/relieving bed.** Low air loss, alternating pressure and air fluidised beds are specialist beds for the prevention of pressure sores in those at medium or high risk, and for the treatment of existing pressure sores. They are discussed in the extensive literature on tissue viability, and not in this guide
- **Stand-up bed.** This bed tilts to bring the occupant into a standing position
- **Turning bed.** This bed can turn from side to side, usually to a maximum angle of between 45 and 60 degrees. It is useful for heavy, dependent occupants and for those with pressure sores.

Nursing beds

These are also known as 'home care beds'. A very wide range of beds fall into this category. Some are very similar to King's Fund beds, only failing to meet the specification in a few minor respects. At the other end of the range are some which are close to domestic beds. (See Figs. 3 and 4.)

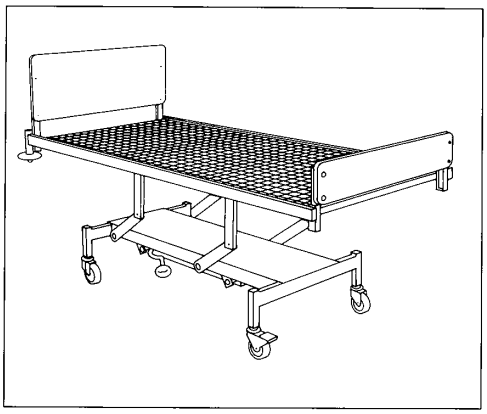


Fig 3. A nursing bed

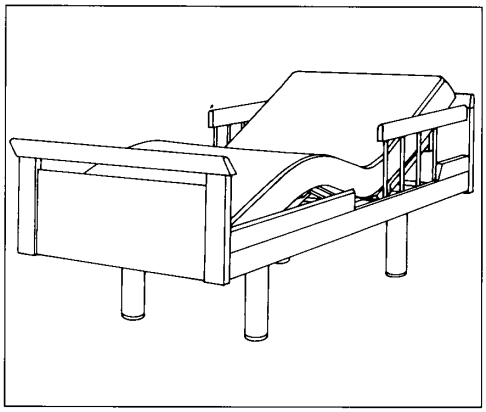


Fig. 4 A nursing bed with four-section profiling and integral safety rails

A nursing bed may *look like* a hospital bed, a wooden bedstead or a metal bedstead. It may have any of the following features:

- fixed or variable or adjustable **height***
- **variable-height mechanism** (hydraulic, mechanical or electric mechanism)
- **tilt** (head down, head up, or both)
- **feet** or **castors** (castors may be on one or both ends of the bed)
- **brakes** (on two or four of the castors, operated centrally or individually)
- **mattress platform** (slatted, mesh or solid)
- **backrest** (rising or pull-out; rising backrest may be manual or electric)
- **profiling** (of three, four or five sections, operated manually or electrically)
- **bed ends** (metal, wooden or laminate, usually detachable and interchangeable)
- **bed stripper**
- **bed extension**
- capable of accepting **accessories** such as drip poles, safety rails, lifting (monkey) poles.

Home care beds

These are nursing beds which are capable of being easily dismantled and assembled for transporting.

* 'Variable height' means that height can be varied by any amount within the bed's range with the occupant in it. 'Adjustable height' means that the legs can be individually extended by a fixed amount and then will stay there until the next adjustment.

What features do beds offer?

This section helps you decide which features you need and know what to look for when choosing those features. Bear in mind your list of user needs (see pages 12–14). Appendix 4 may be useful in helping to clarify your requirements.

Before you decide on features, however, consider throughout the importance of **ease of cleaning** and of **maintenance** to your choice of bed.

Although many people prefer an upholstered divan, it is impractical to clean, particularly if spillages happen frequently or an occupant is incontinent. A metal or wooden bedstead may be a more durable and hygienic option.

Manufacturers claim that modern hydraulic and mechanical systems are now so reliable, and replacement of electric motors so easy and inexpensive, that preventive maintenance is largely unnecessary. However, some specialists regard it as important. It is perhaps more important to ensure that should anything go wrong, repairs can be carried out promptly.

The features covered in this section are as follows:

Backrest

Many nursing beds have an integral backrest to support the occupant in a sitting position. This helps them communicate with others and to do things such as reading and eating. It is useful for occupants who are unable to lie flat because of, for instance, a hiatus hernia or breathing difficulties.

All backrests tend to make the occupant slide down the bed. You can counteract this by tipping up the foot end or, better still, by using a profiling bed instead.

Types of backrest

Backrests may be pull-out or rising. A **pull-out backrest** is built into the bed end, and can be pulled out as required. A **rising backrest** is the head end of a hinged, two-section mattress platform. This type may be electrical, mechanical (winder) or gas spring assisted (with a release lever). Rising backrests form part of profiling beds (see pages 36–7). Electrically powered backrests help occupants be more independent, for those capable of operating them, and put less musculoskeletal stress on operators than hydraulic or mechanical mechanisms. (See Fig. 2 on page 23 and Figs. 5 and 6.)

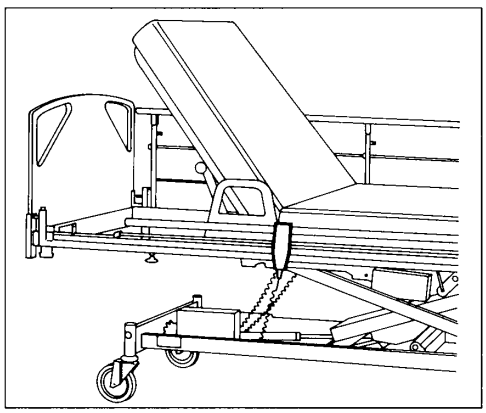


Fig 5. A rising backrest

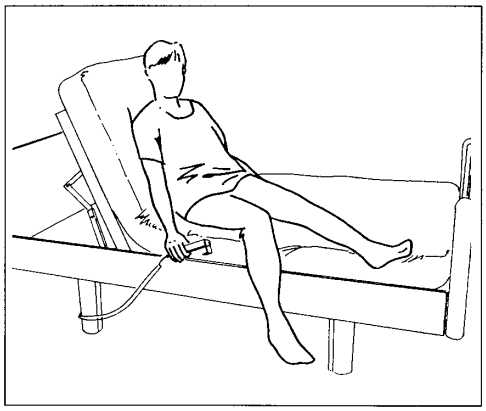


Fig 6. Getting out of bed: using a rising backrest to sit up

What to look for – Backrests

- ☐ The British Standard* recommends at least 0–60 degrees of adjustment for a rising backrest. However, more is better: the more upright the occupant, the easier becomes activity (e.g. reading and writing; manual handling). A pull-out backrest should adjust between 0–90 degrees.
- ☐ Quick and smooth action
- ☐ Easy to position by one person working alone, with a dependent occupant
- ☐ Adjustable with one hand – this reduces back stress for an operator working alone
- ☐ Ideally, adjustable by the occupant while in bed (to increase independence and reduce staff input)
- ☐ Comfortable for the occupant

Watch points – backrests

Pull-out backrests

- Most cannot easily be adjusted by one person working alone with a dependent occupant. This is potentially dangerous
- Impossible for occupants to adjust safely whilst in bed
- Pulling the backrest over the mattress may be difficult, especially if the mattress is thick (more than 130 mm) or an overlay is used
- Bars are uncomfortable, as pillows tend to slip down

Rising (gas spring-assisted) backrests

- May be hard to lower with light occupants or empty beds, or may be hard to raise with heavy occupants
- Some release levers may be too close to the head of the bed and so are obstructed by furniture (e.g. lockers).

Rising (winder handles) backrests

- May take many turns for the backrest to reach the desired position
- If not fully stowed away winders may catch against people
- Detachable winders may be lost
- Handles which wind in a vertical plane make operators stoop and twist, causing back stress

See also: mattresses; profiling

* British Standards Institution. *British Standard for Hospital Bedsteads*. BS 4886: 1988.

Bed ends

Bed ends help retain the mattress and bedding, and provide a handhold when moving the bed.

What to look for – Bed ends

- ☐ On nursing beds, head and foot boards should be easily removable and interchangeable, so that the bed can be reversed for tilting both ways
- ☐ Attachment points for lifting poles should allow easy fitting
- ☐ Must be deep enough to retain both a mattress, and an overlay if one is likely to be used
- ☐ Construction and fitting should be secure
- ☐ No protruding edges or projections which can cause damage to walls or equipment
- ☐ No dirt traps
- ☐ Can be attractively styled in wood or laminate to fit with the decor of the room

See also: bed accessories (lifting pole); tilt

Brakes

If a bed has castors, brakes may be important for safety. However, they are only as good as the floor on which the bed rests. If this is uneven or slippery, the bed may skid even with good brakes. Brakes may be on two or four individual castors, or all four castors may be braked by a central mechanism which is operated by a single control, usually a lever at the foot of the bed. Some newer beds are braked electrically.

What to look for – Brakes

- ☐ Easy to reach and operate, even when the bed height has been altered
- ☐ Operate on all four castors
- ☐ Easy to see if brakes are on or off

Watch points – Brakes

Individually braked castors:

- mean the operator must walk around the bed. Leaving some castors unbraked is dangerous
- are awkward to reach when the wheel turns in under the bed or when some sorts of safety rail are lowered
- placing a bed against a wall makes access to brakes awkward

See also: castors

Castors

Castors make moving the bed easier, but if they have no brakes the bed may be less stable for an occupant getting in and out. Some beds have castors only at one end, which is a compromise between safety and manoeuvrability. Castors come in various sizes: generally, the larger the castor, the easier the bed is to manoeuvre especially upon a carpeted floor, over gaps, thresholds and uneven surfaces. However, larger castors will increase the overall height of the bed. Some newer beds have retractable castors. These sit inside the sleeve of each bed leg and are only dropped into position when the bed must be moved.

What to look for – Castors

- ☐ Sealed units, to reduce the build up of dirt and allow easy cleaning. This also helps to keep castors running smoothly
- ☐ Easy to fit, for maintenance

See also: brakes

Dimensions of the bed

Some nursing beds take up too much space in a small home, because the frame and bed ends add extra width and length. The overall width of a King's Fund bed (see page 23), for instance, may be between 865mm (2'10") and 965mm (3'2") and the overall length (without extension) may be between 2010mm (6'7") and 2235mm (7'4"). When extended, it may be between 2180mm (7'1") and 2415mm (7'11"). Some nursing beds are smaller. A standard single divan is 900mm (2'11") wide and 1900mm (6'3") long overall. This corresponds closely to the size of the mattress.

Double beds can be hazardous for operators where the manual handling of occupants is concerned, since they must lean further over to reach the occupant. Manual handling aids should be used.

Extension (hospital and nursing beds)

King's Fund beds and some nursing beds can be fitted with an extension, for taller occupants. This is becoming more common as the average height of the population is increasing. A mattress wedge is used to lengthen the mattress. Extensions are either an attachment or an integral part of the bed frame to be pulled out as required. They should not inhibit use of other bed mechanisms (e.g. tilt or bed stripper) and should be easy to use and fit.

See also: stripper; tilt

Height

The height from the floor to the top of the mattress of a fixed-height bed may be anything from approximately 50cm (20") to 91cm (36").* Beds which are of low fixed height endanger operators, while high beds are difficult for occupants to get in and out. There are two alternatives to the fixed-height bed:

- **height adjustment**
- **height variability.**

Height adjustment

The height of some nursing beds is altered manually in fixed stages by a telescopic mechanism in each leg. It can be useful where the bed needs to be kept high for some time to make nursing tasks easier and safer and can be lowered should the occupant become well enough to get in and out. However, adjusting the mechanism is awkward and needs at least two operators, and preferably a bed jack. A *variable-height* bed is much to be preferred.

Height variability

The height can be altered at any time for the convenience of the occupant or operator, usually low for getting in and higher for getting out. It can be put at the right level for transfer to wheelchair or commode. Variable-height beds can be kept lowered to reduce the risk of injury to occupants who fall out of bed.

Types of height variability

Most nursing beds have a 'pedestal' system, where a hinged support raises the platform. They may be mechanical (foot pump), hydraulic (foot pump) or electric (switch). Some beds have winders, but those which wind in a vertical plane cause operators to stoop and twist. Some newer designs have electrically powered telescopic legs.

Adjustment is by foot pump mechanism, but occupants can operate electric height mechanisms themselves while in bed.

* British Standards Institution. *British Standard Specification for Hospital Bedsteads*. BS 4886: 1988.

Operators must be able to stay in a good posture when adjusting the height, at all stages.

What to look for – Variable height

- ☐ As wide a range of height adjustment as possible, preferably going lower than the current British Standard for Hospital Bedsteads* of between 355 and 405mm (13–16"). Some newer beds will go down to 300mm (12") or lower – look for them. They make a difference to occupants' independence and safety
- ☐ Easy access to controls
- ☐ Sufficient clearance for hoists and cantilever tables underneath. Telescopic legs have no underbed space taken up by mechanisms. This allows these beds to go lower than 'pedestal' beds
- ☐ Clear labelling of controls with their function (i.e. 'up', 'down')

Watch points – Variable height

- When an overlay or thick mattress (more than 130mm/5") is used, most beds do not go low enough for wheelchair transfers or for small occupants to get into and out of bed unaided. This must be weighed against the advantages of a thick mattress for pressure reduction
- Some foot pedals become difficult to reach when the bed is at its lowest
- Using a foot pump can be hard work with a heavy occupant on the bed

See Figs. 6 (on page 27) and 7.
See also: bed accessories (safety rails); mattress; profiling; underbed mechanisms

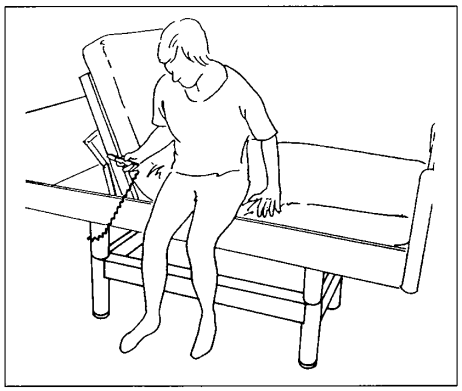


Fig. 7 Getting out of bed: using variable height to stand up

* British Standards Institution. *British Standard Specification for Hospital Bedsteads*. BS 4886: 1988: variable height.

Legs

Divan beds can be supplied with metal skids instead of legs. Such beds are easier to move than those with legs and no castors, but still present a manual handling risk. It is advisable to have an extra skid or set of legs in the middle of the bed for a heavy occupant. However, consider access for a hoist before purchasing such a bed.

Mattress

A mattress should be comfortable, safe and suitable for the bed upon which it rests. There is much information available to compare mattresses, such as that from the Medical Devices Agency (see *How can you find more information?*, on page 53, and Appendix 3 for details).

Sprung mattresses

The mattress on a divan bed is usually sprung. There are three types of springing:

- **Open springs.** Rows of hour-glass shaped springs joined to each other by coiled wire. The comfort and durability of the mattress increases with the number of springs
- **Continuous springs.** The mattress is woven out of a continuous length of wire
- **Pocket springs.** Each spring is in an individual fabric pocket, allowing for the greatest conformity of the mattress to the body, and so is likely to be best for comfort and pressure relief.

The sprung layer is covered with several layers of padding, over which is a quilted cover. The better quality the padding, the more comfortable the mattress.

Removable waterproof covers can be used, or mattresses supplied with a waterproof vinyl-impregnated cover where necessary. These are less comfortable than 'breathable' covers on foam mattresses, and significantly reduce the pressure-reducing qualities of the mattress.

A good sprung mattress, especially upon a sprung base, can conform well to the body and therefore gives a reasonable degree of pressure reduction. However, someone who is at risk of pressure sores would probably be better nursed on a pressure-reducing mattress of a type appropriate to their assessed level of risk. An overlay does not compensate for an inadequate mattress.

Foam mattress

Most 'nursing' style and hospital style mattresses consist of a foam core encased in a waterproof cover. Standard mattresses are 130mm and 150mm thick. They are made of solid foam construction or of layers of foam of differing densities. Some have surfaces

which are contoured or cut into cubes, to reduce interface pressures and shearing. Others have an outer 'frame' of foam of a higher density to give a firm edge to the mattress.

Published trials indicate that most foam 'pressure-reducing' mattresses are more effective than the now outdated, but still widely used NHS contract mattress (with marbled cover; now sold as the 'economy' mattress). No one of these has as yet been assessed as superior in all respects to the others.

The new NHS contract mattress (cream cover) introduced early in 1998 mattress has much better pressure-reducing qualities than the old one.

Care and replacement

Care and replacement of foam mattresses is crucial. Mattresses should be turned regularly (weekly if occupied during the daytime) to minimise indentation of the foam, and should be tested regularly for 'bottoming-out'* and for integrity of the cover (fluids penetrating the cover damage the foam). When they fail any of these tests, they should be replaced at once. For how to test, see Appendix 2.

What to look for – Foam mattresses

- ☐ For general purpose use look for a mattress which says it is suitable for occupants at 'low to medium risk' of pressure sores
- ☐ Two-way stretch fabric cover. This significantly reduces interface pressures and is more durable and comfortable than a PVC coated nylon cover
- ☐ Vapour permeable fabric. This allows moisture to dissipate, reducing the risk of skin maceration. Occupants will perspire less and be more comfortable
- ☐ Zipped removable cover, for cleaning, testing for water resistance and inspection of the foam core
- ☐ Space on cover to write the date of first use
- ☐ Easy identification of ends and sides, to help with regular turning
- ☐ For profiling beds or beds with rising backrests, mattresses should be hinged or highly flexible so they conform to the profile of the bed

* 'Bottoming-out' or 'grounding' means that the mattress is too worn or damaged to conform properly to the shape of the body on it and the mattress platform can be felt through it.

Watch points – Mattress

- 150mm mattress may interfere with the use of a pull-out backrest
- The thicker the mattress, the higher the bed will be at its lowest setting. This may make it difficult for small occupants to get in and out. This disadvantage has to be weighed against the advantages of a thick mattress for pressure reduction
- Spring mattresses are not generally suitable for profiling beds, since they do not conform well to the profile of the bed

See also: height adjustment; profiling

Mattress platform

This is the base upon which the mattress rests. In a nursing or 'home care' bed it may be mesh, slatted, perforated or solid. Some beds have solid unventilated bases but these trap moisture. In a divan bed it may have a layer of springs over a wooden frame, with or without a wooden edge, and with padded upholstery on top, or it may have a solid upholstered or a slatted base.

What to look for – Mattress platform

- ☐ No traps for moisture, spilled fluids or dirt
- ☐ No sharp corners or edges on which bedding may snag or hands may be scratched
- ☐ No finger traps, especially when cleaning, making, or maintaining the bed

Watch points – Sprung bases

- Cannot be cleaned adequately

See also: profiling

Profiling

Profiling mattress platforms are made in three, four or occasionally five sections. They support the head and torso, thighs, and lower legs respectively. Four-section bases have an extra piece for the buttocks. Five-section bases have an adjustable head section. All sections may be angled to allow changes of posture, except for the buttock section which remains horizontal.

The angling of the sections allows the occupant any choice of position between lying flat, through reclining, to sitting up. Knees may be flexed or extended in any of these positions, and use of the knee break helps to prevent occupants from sliding down when sitting.

An occupant who can control the profiling facility is more independent. Electric profiling substantially reduces manual handling and back stress. Even dependent occupants may be moved by one person.

Profiling is sometimes available on a double bed, where the mattress is split into two lengthways, to allow each partner to alter their side of the bed independently. It should be remembered that a bed which profiles without height adjustment is generally not suitable for nursing and may not help with independence.

Duvets and fitted sheets may be more convenient on profiling beds. Pillows are best secured.

See Fig. 4 on page 25.

Types of profiling

Models vary in the number of sections which may be operated independently of each other. For example, in some the knee break automatically rises as the backrest rises, whereas in others they work separately. The more independent sections the better.

Profiling beds may be adjusted electrically, often with a manual knee break.* Some may be entirely manual using winders (maybe more than one) and assisted mechanisms (gas spring). Controls for electric models are usually on a pendant handset.

* 'Knee break' is the joint between the thigh and lower leg sections of a profiling mattress platform. As it rises or lowers, the occupant's knees flex or extend.

What to look for – Profiling

- ☐ Four sections, preferably. Three-section beds tend to wedge the occupant's bottom between the top two sections
- ☐ A backrest which does not move the occupant away from the head of the bed (the backrest slides towards the head end) as it rises
- ☐ Independent operation of as many sections as possible
- ☐ Head section high enough to support occupant's head when sitting up
- ☐ Split mattress (made in sections) or one flexible enough to follow the contours of the bed
- ☐ Easy to use and clear controls. Switches should be distinguishable in the dark, or by those with poor vision, and operable by those with weak hands
- ☐ Robust pendant handset, which is easy to attach securely to the bed, when not in use

! Watch points – Profiling

- Long periods of sitting with bent knees could encourage contractures
- Winder handles may cause problems: they may take many turns for the profiling to reach the desired position; if not fully stowed away, they may catch against people; and they are easily lost. Handles which wind in a vertical plane make operators stoop and twist, causing back stress

See also: backrests; height adjustment; mattress platform

Stripper

Some beds have a bed stripper, which is a pull-out platform on which to rest bed linen when the bed is being made. It should slide in and out easily. It should be robust and when pulled out should not block access to brakes or any adjustment mechanisms.

See also: extension

Tilt

This allows the bed to be tilted head down (Trendelenburg) or foot down (reverse Trendelenburg). It is helpful for people with certain respiratory, cardiac or circulatory problems.

Types of tilt

Tilt may be manually operated from the foot of the bed (release levers or a winder handle) or may be powered. One-way tilt should adjust up to 12 degrees. For two-way tilt, one way should adjust up to 12 degrees and the other should reach at least 6 degrees. It should be possible to achieve reverse tilt in one-way tilt beds by exchanging the head and foot ends and turning the bed round.*

Watch points – Tilt

- Some tilt mechanisms mean that operators take part of the weight of the occupant plus the bed, when the mechanism is released. This strain is potentially dangerous
- Winder handles may be problematic: they take many turns for the bed to reach the desired position; if not fully stowed away, they may catch against people; and they are easily lost
- Handles which wind in a vertical plane make operators stoop and twist, causing back stress

See also: bed ends; bed extension

Transportability

Some beds may be dismantled for ease of transport to and from the home, and to allow them to be manoeuvred in awkward spaces.

NB: Under the *Manual Handling Operations Regulations 1992*, assembling, dismantling and transporting a bed are likely to require a risk assessment.

What to look for – Transportability

- ☐ Easy and quick to assemble and dismantle, preferably without the need for tools
- ☐ Lightweight pieces
- ☐ No small pieces to be lost

* British Standards Institution. *British Standard Specification for Hospital Bedsteads*. BS 4886: 1988.

Watch points – Transportability

- On some beds which dismantle the mattress platform remains as a single piece, being unwieldy and potentially heavy and difficult to manoeuvre up a staircase which has turns. This is likely to present a manual handling risk
- In view of the weight of each piece when dismantled, it is unlikely that a bed can be safely handled by one person working alone

Underbed space

This may contain any stand on which the platform rests, and any mechanisms attached to it for adjusting the bed.

What to look for – Underbed space

- ☐ Easy access and enough clearance for items such as portable hoists and cantilever tables at all height settings
- ☐ Easy access to adjustment controls (e.g. footpumps), at all height settings
- ☐ No trailing wires, on which portable hoists or other equipment could catch
- ☐ Easy cleaning
- ☐ Easy access for maintenance

See also: height adjustment

Weight capacity

This is the maximum safe load for the bed. It should be stated clearly by the manufacturer, preferably on the bed itself. Most hospital beds in the UK take 140 to 180 kg (22–28 stone). However, there are heavy duty beds which take more weight. (See *What types of bed are there?*, on page 22.) An extra pair of legs or skids in the middle of a divan can increase its capacity to a limited extent, but may interfere with hoist access. Divans are unsuitable for very heavy occupants.

How can an existing bed be upgraded?

Some of the features of more sophisticated beds can be added separately to the simpler nursing or domestic beds. The purpose of these is to increase the independence or comfort of the occupant or to make it easier to give care.

There will be a limited number of accessories which may be used at the same time, since some will attach to the same part of the bed. The accessories discussed in this section are:

- **Back support**
  - adjustable angle headboard
  - electric backrest
  - folding backrest
  - mattress inclinator
  - pneumatic backrest

- **Height adjustment**
  - bed blocks

- **Height variability**
  - bed lift

- **Mobility**
  - bed rail (grab rail)
  - leg lifter (getting legs into bed)
  - lifting pole (monkey pole)

- **Profiling**
  - profiling platform

- **Other**
  - bed board
  - leg elevator
  - safety rail (cot side)
  - turning assistor.

Back support

Back supports provide a simple and relatively inexpensive solution if the problem is not long term. They allow one partner in a double bed to sit up while the other is lying down. They are easy to store.

Adjustable-angle headboard

This can be fitted to a divan bed, and operates as a pull-out backrest (see page 27). Being padded, it can be comfortable and can be supplied with armrests. It cannot be adjusted by the occupant in the bed, and it may be awkward for staff to adjust whilst supporting the occupant.

Folding backrest

This is a hinged frame, which may be covered in fabric. It rests on top of the mattress and can be placed at a variety of angles to provide a backrest.

Electric backrest

Similar to a folding backrest, but powered and adjustable from in bed by a hand-held switch.

! Watch points – folding backrest

- May need a lot of pillows to make it comfortable, and it may be difficult to keep pillows in place
- Tends to make occupant slide down the bed, as there is no knee break
- Lacks the stability of an integral rising backrest

Mattress inclinator

A metal frame which rests under the mattress at the head end of the bed, and hinges upward to angle the head end of the mattress. It may be powered by an electric motor, or by an electric pump which inflates a series of air sacs which push the mattress up. Models are single or double bed size. It is secured to the bed by straps underneath the bed base and the motor is either attached to the side of the bed or must be kept close by. It is better than the fold-up backrest in comfort and stability, but is relatively expensive. (See Fig. 8.)

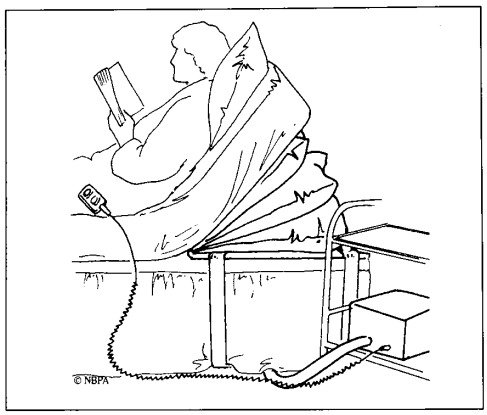


Fig. 8 A mattress inclinator

What to look for – mattress inclinator

- ☐ Angle of at least 60 degrees,* to give support when eating etc.
- ☐ Quiet in use

Watch points – mattress inclinator

- Mattress must be hinged, or flexible enough to conform with angle of inclinator
- Tends to make the occupant slide down the bed, as there is usually no knee break

* British Standards Institution. *British Standard for Hospital Bedsteads*. BS 4886: 1988.

Pneumatic backrest

This sits on top of the mattress and a pump inflates two angled air sacs to bring the occupant up to a sitting position. Its advantage is its lightness and the comfort of having no metal parts in contact with the occupant.

What to look for – pneumatic backrest

- ☐ A model which is wide enough to be stable in use
- ☐ An angle of at least 70 degrees to the horizontal to give support when eating etc.
- ☐ Room for the pump, if relevant
- ☐ If powered, quiet in use

See Fig. 9.

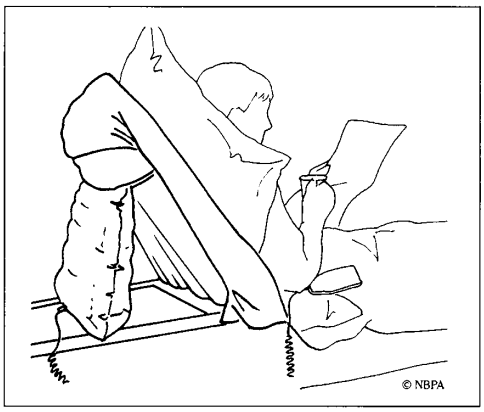


Fig. 9 A pneumatic backrest

Height adjustment

Bed blocks

These provide a semi-permanent fixed increase in height. There is a wide variety of different designs, some of which are individual and some linked together for extra stability. Some have a choice of height settings. They are an inexpensive solution, where a bed is too low for all purposes, but they do have some serious drawbacks. (See Fig. 10.)

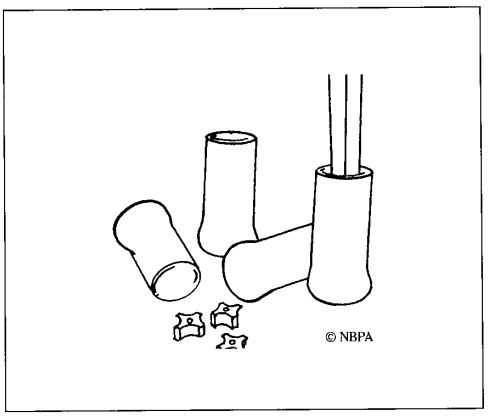


Fig. 10 Fixed-height bed blocks

Watch points – bed blocks

- Usually make the bed immobile: most designs cannot accommodate castors
- Lifting a bed onto blocks is a manual handling task which must be assessed for risk. Use of a bed jack is strongly recommended

Height variability

Bed lift

A frame on braked castors, with hydraulic or electric motor-powered raising action (similar to the raising mechanism of a variable-height bed). It may be used under a nursing or domestic bed. The method by which the frame is secured to the bed varies from model to model. It may provide a way to make an old bed more suitable for independence or nursing care, but is unlikely to prove much cheaper than buying a variable-height bed. (See Fig. 11.)

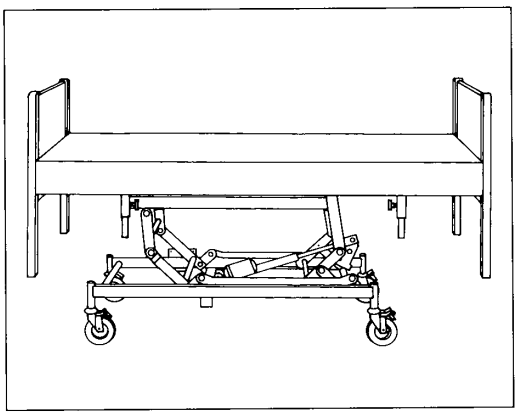


Fig 11. A bed lift

What to look for – Bed lift

- ☐ Sufficient clearance beneath the frame to allow access for a hoist or cantilever table
- ☐ The lift must be compatible with the bed – some are suitable only for a particular model
- ☐ Electric operation is easier than a footpump for the operator, and can also be used by the occupant

Mobility

Bed rail (grab rail)

A rail running parallel with the mattress, though not the full length of it, can be fixed beneath the mattress or positioned alongside the bed as a free-standing frame. The occupant can pull themselves over on to one side, and/or help themselves into a sitting position on the side of the bed. Some are adjustable in height.

Watch points – Bed rail

- Ensure that there is sufficient clearance under the bed for a free-standing device
- It should not interfere with the use of items such as hoists and cantilever tables

Leg lifter (getting legs into bed)

A hinged frame, working on the same principle as the inclinator, is attached alongside the bed. It is a slowly rising platform which brings the occupant's legs up from a sitting position to mattress level. Some models continue up to a vertical position, converting into a safety rail. (See Fig. 12.)

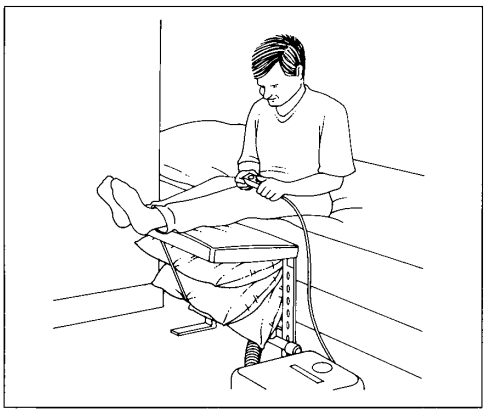


Fig. 12 Getting into bed: using a leg lifter

Lifting pole (monkey pole)

A vertical pole with gantry from which hangs a handle on a strap or chain. The occupant pulls on this to lift buttocks clear of the bed for changes of position. It may be free-standing, or attached to the bed head, wall or ceiling.

Watch points – Lifting pole

- A lifting pole is only useful for those with strong upper limbs and full range of movement. It gives relatively little help to sit up from lying

Profiling

Profiling platform

A four- or five-section electrically-operated profiling platform can be fitted over certain standard bed bases, including some double beds. This allows the advantages of profiling without the full expense of a new bed. It may not be compatible with all beds.

Watch points – Profiling platform

- If profiling is added to a fixed-height bed the occupant may still have trouble getting in and out, and the carer may have difficulty with manual handling. Variable height is usually desirable

Other accessories

Bed board

A board under the mattress can make it firmer for an occupant who has difficulty in moving on too soft a bed. A purpose-made lightweight folding board can be easily inserted. This will usually affect the conformity of the mattress, so reducing its capacity to redistribute pressure.

Leg elevator

This acts exactly like the mattress inclinator but at the foot end of the bed. It allows legs to be elevated to reduce swelling.

Safety rail (cot side)

These attach to the sides of the bed and stop the occupant from accidentally rolling or slipping off the mattress. They also provide a handhold for occupants when getting out of bed. Padding is available, usually separately. Safety rails (far side only) should be

raised if a single operator is turning an occupant in bed (e.g. with a sliding sheet), or if an occupant is sitting on a bed pan.

They should not be used to prevent occupants from getting out of bed, since injury may occur if they try.

Types of safety rail

Safety rails may fit either side of the bed (universal), or only one (left/right fitting), or may be free standing. They may fold down flat, slide down through the attachment point, or be split into two pieces, although some must be removed for access to the occupant. Some are width and/or length adjustable. Fixed length models may come in a variety of lengths. Newer designs of nursing bed, with wooden frames, have discreet integral rails as standard. (See Fig. 4 on page 25)

There is risk of death from entrapment and asphyxiation of occupants where safety rails are fitted. Choose carefully and assess the occupant before fitting rails, as the size and physiological condition of some occupants may make the use of 'safety' rails actually unsafe.

What to look for – Safety rail

- ☐ Height not less than 250mm
- ☐ May be lowered without the need for removal
- ☐ No obstruction to activities (e.g. bed making), when rails are lowered
- ☐ Easy access to underbed mechanisms when rails are lowered
- ☐ Quiet to use
- ☐ Easy to use and to see how to use
- ☐ Compatibility with beds
- ☐ If choosing continuous rails they should be not less than two-thirds of the mattress platform length

Watch points – Safety rail

- May become too low when an overlay or thick mattress is used. Extra height rails may be available
- Rails which, when lowered, protrude above the mattress, make transfers awkward
- Rails which add to the bed width when they are stowed away can cause injury to occupants when getting in and out of bed
- Rails which cannot be stowed fully away may cause back stress by obstructing the operator's movements

Turning assistor

On the same principle as the inclinator, this frame, hinged along its length, covers the entire mattress platform. As the set of air pockets along one side inflates, that side of the mattress is raised, transferring the patient's weight to the other side. This cannot fully turn the patient, but can relieve pressure and assist with turning.

NB: In addition to these there is a wide variety of 'low-tech' and inexpensive accessories to help with specific problems. Examples of these are rope ladders for pulling up into a sitting position, or V-pillows for support. They can be seen in Disabled Living Centres, disability equipment shops and some chemist's shops. Occupational therapists can give advice about them.

What do beds cost?

Purchasing

As an indication of how much different types of beds and accessories cost to buy, this section sets out some approximate price ranges. Prices are exclusive of VAT and of transport or installation charges. Individuals buying for themselves should know that items which are designed solely for disabled people are exempt from VAT. Some beds and accessories may fall into this category: suppliers will be able to give information about this. All prices are for 1998 based on items from a selection of manufacturers.

Beds

Bed type	*Height variability*	*Backrest*	*Profiling*	*No. of models*	*Price (£)*	
					Range	*Median*
Domestic bed						
metal bedstead	fixed	no	no	8	50–100	60
divan	fixed	no	no	12	55–250	135
profiling divan	electric	yes	yes	17	450–2,100	800
Hospital bed						
King's Fund	variable	yes	no	14	515–880	640
'King's Fund' type	electric	yes	no	2	820–1,200	N/A
Nursing bed						
'hospital' type	fixed	yes	no	6	245–570	290
'hospital' type	manual	yes	no	8	425–830	550
'hospital' type	electric	yes	no	4	785–1,400	910
'hospital' type	manual	yes	yes	4	850–925	865
'hospital' type	electric	yes	yes	6	995–1,285	1,150
'domestic' type[1]	electric	yes	yes	7	1,000–2,300	1,600
'Home care' bed						
dismantle for transport	manual	yes	no	6	520–920	830
dismantle for transport	electric	yes	no	3	630–1,248	890
dismantle for transport	electric	yes	yes	8	995–2,130	1,760

Note
1 'Domestic' type ranges from a wooden frame with a metal undercarriage to a bed on wooden telescopic legs.

Accessories

Item	Type	No. of Models	Price (£) Range	Median
adjustable angle headboard	N/A	1	95	N/A
backrest	electric	1	485	N/A
backrest	folding	6	22–45	35
backrest	pneumatic	8	440–570	440
backrest	pneumatic, with knee break	2	300	N/A
bed blocks	adjustable height (increments)	14	22–25	25
bed blocks	fixed height	22	8–15	13
bed lift	N/A	5	600–2,000	770
bed rail / grab handle	detachable	6	30–75	35
bed rail / grab handle	free standing	8	30–100	75
bedboards	N/A	6	11–35	25
leg elevator	N/A	1	400	N/A
leg lifter	manual	4	10–20	10
leg lifter	powered	3	450–610[1]	500
mattress inclinator	electric	8	300–490	395
lifting (monkey) pole	detachable	3	35–85	85
lifting (monkey) pole	free standing	17	50–150	90
lifting (monkey) pole	wall/ceiling mounted	9	45–100	85
pillow securing strap	N/A	1	3	N/A
profiling platform	N/A	3	195–4,200	1,400
safety rail pads	N/A	7	35–130	60
safety rail, (cot side) domestic	fixed length/width	8	90–610[2]	115
safety rail, (cot side) domestic	fixed length/width, extra height	1	120	N/A
safety rail, (cot side) domestic	length adjustable	1	80	N/A
safety rail, (cot side) domestic	width adjustable	7	95–140	105
safety rail, (cot side) domestic	length & width adjustable	8	75–130	75
safety rail,(cot side) domestic	length & width adjustable, extra height	5	100	N/A
safety rail, (cot side) domestic	night	3	20–30	25
safety rail, (cot side) hospital	drop down	1	100	N/A
safety rail, (cot side) hospital	drop down,length adjustable	3	75–110	75
safety rail, (cot side) hospital	fold down	5	100–210	170
safety rail, (cot side) hospital	fold down, extra height	5	100	N/A
safety rail, (cot side) hospital	fold down, length adjustable	5	110–120	N/A
turning assistor	N/A	2	1,400–1,600[3]	N/A

Notes
1 Most expensive model of leg lifter converts into a safety rail.
2 Most expensive model of safety rail is also a leg lifter.
3 Most expensive model of turning assistor is available for hire.

Hiring

Local firms sometimes hire disability or nursing equipment which may include beds (try the *Yellow Pages*). This may be useful if an occupant or carer is thinking of buying a bed but wishes to try it first. Loans stores may be willing to arrange for the hire of a bed from one of their suppliers. While the cost would be met by the occupant, the loans store would be able to get a better deal than if the occupant had contacted the supplier direct.

Remember that some manufacturers or suppliers who hire beds may deduct the hire charge from the purchase price, if the bed is subsequently bought. However, this may prove to be an expensive option, depending on the hire charge and the purchase price of the bed. See *Choosing*, on page 56, for information about trying out beds.

Ongoing costs

The cost of a bed does not begin and end with the purchase price. Your choice of bed may be affected by the cost of: maintenance and repair, including spare parts; electricity, for powered beds; and the need for new bedding (e.g. fitted sheets for a profiling bed).

Hidden costs

Choosing a bed which is not right for your needs also brings costs. Where there is injury, tissue damage or avoidable dependence, there are human and financial costs. The purchase price of a bed should be set against the possible costs of avoidable injury to carers and staff, of increased workloads, of the need for extra crisis or respite care or the treatment of pressure sores (this is discussed in detail in *Why is the right bed important?*, on pages 5–10). Buying a bed on the basis of its purchase price alone may not be cost-effective in the long term.

Financial help

A new bed, particularly a nursing or home care bed, means a large outlay of cash for anyone buying their own. If a loans store bed is not a possibility there may be financial help available. The Disabled Living Foundation or a DIAL group should be able to provide information on sources of help for disabled people. Age Concern has information about raising capital on your home. Libraries have directories of fund-giving bodies, and Charity Search can put elderly people in touch with charities. For how to contact these, see Appendix 3.

How can you find more information?

Contact details for the following are in Appendix 3.

British Surgical Trades Association

The trade association for suppliers of medical equipment in the UK, including hospital and nursing beds, and accessories. The Association can give you names and addresses of UK manufacturers and suppliers.

Disabled Living Centres (DLCs)

There are about forty of these in cities and towns throughout the UK. You can call at a centre to view a wide range of equipment and get impartial advice from experts. They are open to disabled people, their friends and relatives as well as to professionals and will also answer queries by telephone or letter. The Disabled Living Centres Council can put you in touch with your nearest centre.

Disabled Living Foundation (DLF)

The DLF has a helpline which can provide information about beds, mattresses and related equipment, and which can give contact details for a range of disability organisations. The line is open to all, both professionals and individuals.

It also produces the Disabled Living Foundation Data-Off-Line and the Hamilton Index, which contain full details of many products. Each part is updated every sixteen months. They may be obtained individually, at £8 each (1998 price). Most DLCs will have a copy or, along with occupational therapists, will know where one may be accessed. The sections which relate to beds are:

- Part 1, section 3: *Beds and Bed Accessories*
- Part 2, section 9: *Pressure Relief*
- Part 4, section 20: *Manual Handling, Hoists and Lifting Equipment.*

The Disability Information Trust

Publications provide detailed independent information on a wide range of equipment. *Furniture* has information on beds and accessories (£10 at 1998 price).

Exhibitions

All Round Ability Exhibition

Details available from Maria Adderley & Associates Ltd.

Care-Xpo

Details available from Image Exposure Ltd.

Disability Scotland

Details available from Disability Scotland.

EMAP Health Care Exhibitions

Organise annual exhibitions including equipment in Glasgow, Belfast and London.

Independent Living Exhibition / Independent Living North West

Exhibitions with displays from suppliers and disability organisations, held regionally several times a year. Entrance free. Details available from Independent Living.

Infodex

For the disabled, the elderly and carers. Details available from Infodex.

Naidex Care Management Exhibition

Exhibition of equipment and services for disability. Held annually at the NEC in Birmingham. Details available from Reed Exhibitions Co. (UK) Ltd.

National Care Homes Exhibition/Northern Care Homes Exhibition

Commercially run exhibition of equipment for care homes. Details available from DMG Trinity Ltd.

Royal College of Nursing Annual Congress

This has a trade exhibition alongside.

West Midlands Mobility Roadshow

Details available from DMP Promotions (UK) Ltd.

Medical Devices Agency (MDA)

This government agency produces evaluative reports on equipment, including foam mattresses, alternating pressure mattress overlays, static mattress overlays and moving and transfer equipment. *Reports are free of charge to health care professionals*, otherwise costing between £20 and £35 per report (1998 price).

The Adverse Incident Centre gathers and investigates reports of incidents concerning medical devices. If a problem is found with the device, the centre distributes a hazard warning. You can contact them to find out about any which may have been issued in relation to beds, accessories and pressure relieving devices. It is important to report any adverse incidents which you experience with equipment to the MDA.

National Bed Federation

The trade association of manufacturers of domestic beds. They can provide general advice about buying domestic beds, including domestic-style adjustable (profiling) beds. They can tell you which manufacturers and suppliers can supply which sort of beds.

The Sleep Council

This is an organisation which promotes the interests of bed manufacturers. It can supply leaflets giving general advice about buying beds.

Other sources

These include: literature from manufacturers and suppliers; manufacturers' representatives; professional journals; health libraries; local bed retailers and shops specialising in equipment for disabled people.

Chapter 4

Choosing

Having chosen the type of bed you need, you should shortlist suitable models for closer inspection by the occupant and operators. The checklist *Whom to consult*, on page 19, provides suggestions of people to ask for feedback. *How can you find more information?*, on page 53, provides details of sources to help you with shortlisting.

If you cannot find a bed which meets your needs, a manufacturer may be willing to modify a design. However, make sure there will be no problems with repairs or spare parts.

Options for obtaining a bed are to borrow from a loans store, or to buy or hire a model. The latter may be chosen if funding is available or the applicant is ineligible for a loan.

Trying out a bed

Every effort should be made to enable the occupant and operators to try out the bed before deciding on a model. Ask everyone who will use it to comment on good and bad points. Make sure all necessary interfacing equipment or furniture is tried out to see if it is compatible with the bed. If it is a double bed in which a partner will also sleep, both should try the bed at the same time. Are there problems with ease of use, safety, manual handling, tissue viability or independence? Can these be overcome or is a different model required?

Trying out a bed from a loans store

If the occupant is eligible for a bed from a loans store, they can usually try it out at home for a short period. If the store does not stock the required model, they may be able to borrow it from one of their suppliers to try out. If it is suitable, they may then be able to purchase the bed.

A health care professional may visit the loans store with the occupant to see the beds on offer. However, stock will be limited, since most of it will be out on loan. Disabled Living Centres or local shops selling equipment for disabled people may be better places to see beds on show.

Short-term loan from a manufacturer

Some, but not all manufacturers, will allow this free of charge. A loans store may help to arrange a short term loan (free of charge) if it is for a model which they do not stock.

Hiring and hiring-to-buy

Some manufacturers will hire a bed to an occupant. If the bed is subsequently bought, some will deduct the hire charge from the purchase price. This may be an expensive option, depending on the hire charge and the purchase price of the bed.

Getting a demonstration

At a Disabled Living Centre (DLC). The size of the showroom will restrict the number of models on display. However, it should be possible for the occupant to try out a type of bed, such as a profiling bed, although not necessarily the particular model of interest. Alternatively, the DLC may agree to arrange a demonstration by a company of a particular model in the showroom. Remember that DLCs do not hire or sell beds.

In a local 'disability equipment' shop. The occupant (and partner, if appropriate) should lie down for as long as possible on the bed to assess comfort. But not all occupants will feel happy to do this in a shop.

At home. The manufacturer's representative may agree to give a demonstration in the occupant's home rather than allow the bed to be loaned. The occupant (and partner, if relevant) should lie down for as long as possible to assess comfort.

A demonstration is useful, but does not allow much time for the occupant and operators to become used to the bed or for any problems to emerge.

Training

It is not always clear how to make the best use of a more sophisticated bed than you are used to. Operators will need training, particularly with regard to using it to facilitate occupant independence.

Find out about the quantity and quality of instructions supplied with the bed. Does the manufacturer offer videos or training packages? Can they offer training within the purchase price of the bed?

Maintenance

Before choosing an adjustable bed, make sure there are satisfactory maintenance arrangements.

Chapter 5

Learning from your choice

First and foremost, you will use your experience to help make decisions about beds and to offer advice to occupants in the future. It is also important to evaluate your choice in order to learn from it and, where possible, pass on your experiences to others.

Complete this section once the bed has been in place long enough for you to make a judgement on performance, but not so long afterwards that you have forgotten what life was like beforehand.

Evaluating your choice

Think about the following:

What has changed since you made your selection?

Consider any change in circumstance regarding:

- condition of the occupant for whom the bed was intended
- operator capabilities (e.g. health of carers)
- the environment.

Were your original expectations realistic?

Consider whether:

- problems and priorities were correctly identified
- hopes and expectations were realistic
- what was important then remains so now.

How well has the bed solved the problems which were identified?

This may be in relation to:

- occupant independence
- occupant comfort and tissue viability
- reduced musculoskeletal stress of operators.

How is the bed now performing?

Consider the following:

- in what ways has it been successful?
- how could it do better?
- are all the chosen features and/or accessories used?

Passing on your experiences to others

There will be a number of people interested in hearing of your experiences. This may mean passing on information informally, such as by talking to colleagues or to occupants and carers. Or you may wish to do it formally within your own organisation – for instance, in meetings of staff groups or to your line manager or senior manager. You may do it by newsletter or networking. It may mean disseminating it locally – for instance, at meetings of special interest groups, or talking with local suppliers or loans stores. Nationally, you might want to feed back to the Loans Stores Association, to disability groups, to manufacturers or professional associations.

Conclusion

Having suitable furniture and equipment is one of the ways to lighten the burden of coping at home with illness or disability. Relative to the overall cost of care (and particularly to that of institutional care, should carers be no longer able to cope) the cost of suitable furniture and equipment is small.

New designs of bed are becoming available which not only 'do more' for occupants and operators, but also look good enough to be acceptable in anybody's home. So far such beds are being provided by only a few loans stores and are purchased by relatively few individuals.

We hope that as we move into the 21st century the importance of good equipment for health care at home will be increasingly recognised, both by those providing it within health and social services and by the public at large.

If professionals requesting equipment from loans stores were able to take a proactive approach – supplying good quality, appropriate equipment to individuals at an early stage – it might be possible for service users to stay more independent for longer, and carers to manage with greater ease and for longer. Though in some areas this happens, the limited funding presently available to most loans stores makes it difficult for them to supply as they would wish.

The public at large, while generally aware of the much-publicised domestic profiling beds, lack the information to be able to distinguish between these and the 'nursing' and 'home care' beds, or even to know that these are available. This guide, and particularly the third part, aims to address this lack of information, and help people to make informed choices. There remains a need for more, and more affordable, models to be generally available.

Appendix 1

Suggested further reading

Consumers' Association. A bed time story. *Which?* 1991; March:126–9. London: Consumers' Association

Department of Health. *Pressure Sores: A key quality indicator.* London: Department of Health, 1993

Department of Health. *Relieving the Pressure: Your guide to pressure sores.* London: Department of Health, 1994

The Disability Information Trust. *Furniture.* Oxford: The Disability Information Trust, 1997

The Disability Information Trust. *Hoists, Lifts and Transfers.* Oxford: The Disability Information Trust, 1996

Disabled Living Foundation. *DLF Hamilton Index.* Part 1, Section 3. Beds & bed accessories. London: Disabled Living Foundation, 1996

Disabled Living Foundation. *DLF Hamilton Index.* Part 4, Section 20. Manual handling, hoists and lifting equipment. London: Disabled Living Foundation, 1996

Disabled Living Foundation. *DLF Hamilton Index.* Part 2, Section 9. Pressure relief. London: Disabled Living Foundation, 1998

Health Services Advisory Committee. *Manual Handling in the Health Services.* Suffolk: HSE Books, 1998 (This replaces Health Services Advisory Committee. *Guidance on manual handling of loads in the health services.* London: HMSO, 1992)

Health & Safety Executive. *Management of Health & Safety at Work Regulations 1992 – Approved code of practice.* L21 HSE Books, 1992

Health & Safety Executive. *Manual Handling Operations Regulations 1992 – Guidance on regulations.* L23 HSE Books, 1992

Health & Safety Executive. *Workplace (Health, Safety & Welfare) Regulations 1992 – Approved code of practice and guidance.* HSE Books, 1992

Jones JAR, McNair B, Mitchell JC. *Choosing Beds for Hospitals: A guide*. London: King's Fund, 1998

McNair B, Jones JAR, Mitchell JC. *Choosing Beds for Nursing and Residential Homes: A guide*. London: King's Fund, 1998

Medical Devices Agency. *Evaluation: Foam mattresses*. No. PS1, 1993

Milne J. *Assessment of Chair and Bed Raising Systems: Raising units, sleeves/leg extenders, blocks, made to measure raisers*. Disability Equipment Assessment Programme, Medical Devices Agency, 1989

Mitchell JC, Jones JAR, McNair B, McClenahan JW. *Better Beds for Health Care: Report of the King's Fund Centenary Bed Project*. London: King's Fund, 1998

National Back Pain Association/Royal College of Nursing. *The Guide to the Handling of Patients – Introducing a safer handling policy*. 4th edition. Teddington: NBPA, 1997

Nuffield Institute for Health/University of York NHS Centre for Reviews & Dissemination. *Effective Health Care: The prevention and treatment of pressure sores*. 1995

The Sleep Council. *The Bed Buyers Guide*. Skipton: The Sleep Council (undated)

Smith G, Seccombe I. *Manual Handling: Issues for nurses*. Brighton: The Institute for Employment Studies for the RCN, 1996

Tarling C, Burns N. Let the bed take the strain. *Professional Nurse* 1994; August:759–63

Appendix 2

Testing foam mattresses

Visual inspection

- Is cover split or perforated?
- Does core show signs of staining, dampness or obvious compression set?

Hand compression assessment*

This is a test for whether the mattress is 'bottomed-out' or 'grounded':

1. Using both fists and, starting at the foot end of the bed, press down using full body weight
2. Move the hands up the entire length of the bed repeating the hand compression
3. Note any variation in the density of the foam, including whether the base of the bed can be felt through the foam

If the base is felt through the foam, the mattress is 'bottomed-out'. If it is, the pressure applied to the occupant's tissues is likely to be nearly the same as if he or she were lying directly on the mattress platform.

Some experts suggest sitting on the mattress rather than using the hands, to feel for grounding.

Water penetration test*

1. Undo zip and place a sheet of absorbent paper between cover and foam core
2. Using fist, indent the mattress to form a shallow well and pour tap water (about half a cup) into the well.
3. Agitate the surface with the fist for approximately one minute to increase contact, then mop up water.
4. Inspect tissue for water marking
5. Repeat procedure on reverse side of mattress

If there is any penetration, the mattress is able to harbour bacteria from body fluids and will be prone to damage by fluid. It should not be used.

* As described by the Medical Devices Agency, *Evaluation: Foam mattresses*, No. PS1, 1993.

Appendix 3

Useful addresses

Disability information

DIAL UK
National Association of Disablement
Information and Advice Lines
Park Lodge
St. Catherine's Hospital
Tickhill Road
DONCASTER
DN4 8QN
Tel: 01302 310123
Fax: 01302 310404

DIAL Scotland
Braid House
Labrador Avenue
Howden East
LIVINGSTONE
EH54 6BU
Tel: 01506 433468

The Disability Information Trust
Mary Marlborough Centre
Nuffield Orthopaedic Centre
Headington
OXFORD
Oxfordshire
OX3 7LD
Tel: 01865 227592
Fax: 01865 227596

Disabled Living Centres Council
Winchester House
Cranmer Road
Kennington Park
LONDON
SW9 6EJ
Tel: 0171 820 0567
Fax: 0171 735 0278
Website: http://www.dlcc.demon.co.uk
e-mail: dlcc@dlcc.demon.co.uk

Disabled Living Foundation
380-384 Harrow Road
LONDON
W9 2HU
Tel: 0171 289 6111
Fax: 0171 266 2922
Help Line: 0870 6039177 (calls charged at 8p per minute)
Minicom: 0870 6039176
Website: http://www.dlf.org.uk
e-mail queries: advisor@dlf.org.uk

National Back Pain Association
16 Elmtree Road
TEDDINGTON
Middlesex
TW11 8ST
Tel: 0181 977 5474
Fax: 0181 943 5318

Exhibition organisers

Disability Scotland
Princess House
5 Shandwick Place
EDINBURGH
EH2 4RG
Tel: 0131 229 8632
Fax: 0131 229 5168

DMG Trinity Ltd
Times House
Station Approach
RUISLIP
Middlesex
HA4 8NB
Tel: 01895 677677
Fax: 01895 676027

DMP Promotions (UK) Ltd
Barn Cottage
38 Lawrence Close
Higham
BARNSLEY
South Yorkshire
S75 1PE
Tel: 01226 386677
Fax: 01226 390777

EMAP Health Care Exhibitions
Porters South
Crinan Street
LONDON
N1 9XW
Tel: 0171 843 4841
Fax: 0171 843 4849

Image Marketing Group
77–81 Bank Parade
BURNLEY
Lancashire
BB11 1TU
Tel: 01282 728200
Fax: 01282 728299

Infodex
Adbaston
Ixworth Road
HONINGTON
Suffolk
IP31 1QX
Tel: 01359 268614
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Fax: 01275 892609

Maria Adderley & Associates Ltd
209 Greenwich High Road
LONDON
SE10 8NB
Tel: 0181 293 5903
Fax: 0181 293 5895

Reed Exhibitions Co. (UK) Ltd.
Oriel House
26 The Quadrant
RICHMOND
Surrey
TW9 1DL
Tel: 0181 910 7873
Fax: 0181 910 7926

Manufacturers

British Surgical Trades Association
1 Webbs Court
Buckhurst Avenue
SEVENOAKS
Kent
TN13 1LZ
Tel: 01732 458868
Fax: 01732 459225

National Bed Federation
251 Brompton Rd
London
SW3 2EZ
Tel: 0171 589 4888
Fax: 0171 823 7009

The Sleep Council
High Corn Mill
Chapel Hill
Skipton
BD23 1NL
Tel: 01756 795374
Fax: 01756 798789

Professional organisations

College of Occupational Therapists
6–8 Marshalsea Rd
Southwark
LONDON
SE1 1HL
Tel: 0171 357 6480
Fax: 0171 378 1353

Chartered Society of Physiotherapy
14 Bedford Row
LONDON
WC1R 4ED
Tel: 0171 306 6666
Fax: 0171 306 6611

The Ergonomics Society
Devonshire House
Devonshire Square
LOUGHBOROUGH
Leicestershire
LE11 3DW
Tel/Fax: 01509 234904

National Back Exchange
Contact either the DLF or the National Back Pain Association for details of the current membership secretary.

Royal College of Nursing
20 Cavendish Square
LONDON
W1M 0AB
Tel: RCN Direct (information line):
0345 726100

The Tissue Viability Society
Glanville Centre
Salisbury District Hospital
SALISBURY
Wiltshire
SP2 8BJ
Tel: 01722 336262 x 4087
Fax: 01722 425263

Safety and evaluation

HSE Books
PO Box 1999
SUDBURY
Suffolk
CO10 6FS
Tel: 01787 881165
Fax: 01787 313995

Evaluative reports

Medical Devices Agency
Evaluative reports
Room 2/S05
Crown Buildings
Kingston By-Pass
SURBITON
Surrey
KT6 5QN
Tel: 0181 268 4488
Fax: 0181 268 4496
Website: www.medical_devices.gov.uk

Adverse incidents

Medical Devices Agency
Adverse Incident Centre
Hannibal House
Elephant and Castle
LONDON
SE1 6TQ
Tel: 0171 972 8080
Fax: 0171 972 8109

Other

Age Concern Cymru (Wales)
4th floor
1 Cathedral Road
CARDIFF
CF1 9SD
Tel: 01222 371566
Fax: 01222 399562

Age Concern England
Astral House
1268 London Road
LONDON
SW16 4ER
Tel: 0181 679 8000
Fax: 0181 679 6069

Age Concern Northern Ireland
3 Lower Crescent
BELFAST
BT7 1NR
Tel: 01232 245729
Fax: 01232 235497

Age Concern Scotland
113 Rose Street
EDINBURGH
EH2 3DT
Tel: 0131 220 3345
Fax: 0131 220 2779

Charity Search
25 Portview Road
BRISTOL
BS11 9LD
Tel: 0117 982 4060
Fax: 0117 982 2846

Health Literature Line
Tel: 0800 555 777
for copies of *Relieving the Pressure: Your guide to pressure sores*

Loan Store Association
c/o Loan Equipment Department
Cornwall Health Care Trust
St Lawrence's Hospital
BODMIN
PL31 2QT
Tel: 01208 251501
Fax: 01208 251518

Appendix 4

Choosing features of a nursing bed

For each feature that you require, work from left to right and tick the type and option which you prefer.

	Possibilities				
Feature	**Type**		**Options**		
Backrest	rising ☐		electric ☐	manual ☐	
	pull-out ☐				
	part of profiling ☐				
Bed ends	headend ☐				
	headend & footend ☐		detachable ☐	reversible ☐	
	none ☐				
Brakes	central ☐		electric ☐	manual ☐	
	individual ☐				
Castors	4 castors ☐		non-retractable ☐	retractable ☐	
	2 castors and 2 legs ☐				
	no castors ☐				
Extension	detachable ☐				
	integral ☐				
Height	adjustable ☐				
	fixed ☐				
	variable ☐		electric ☐	manual hydraulic ☐	manual mechanical ☐
Mattress platform	mesh ☐				
	perforated ☐				
	slatted ☐				
	solid ☐				

WHO NEEDS A BETTER BED?

A user guide to beds which help when you are ill or disabled

John Mitchell, Bardy McNair and Judith Jones

Do you need a better bed? Perhaps yours is no longer comfortable, or is worn out. Perhaps you are wondering if there are beds which are easier to get into, or easier to move. Perhaps you are thinking of moving into more convenient accommodation and you need a bed to fit.

This booklet looks at how different beds and accessories can make life a little easier if you are ill, or disabled, or perhaps just getting older and less mobile. It tells you what you can get, and where to go for information or advice.

Types of bed

In this section we describe the main types of bed you can get. Page 5 onwards tells you more about the problems they can solve.

Mrs A was finding her arthritis was making it increasingly difficult for her to make her bed, especially moving it away from the wall to tuck in the sheets, and turning the mattress.

Her new bed was a light metal-framed one with castors. This made moving it easy. A foam mattress rather than a sprung one helped keep the weight down, and handles on the side made it easier to turn. She was pleased to find the mattress very comfortable for her painful hips.

Domestic bed. This is the kind you buy in an ordinary shop. It may be an upholstered divan or it may have a wooden or metal frame. It can be supplied with a sprung mattress or one made of foam, or even a cotton-filled futon. Beds come in a huge variety of heights, sizes and styles. The best way to choose such a bed is to visit as many shops at possible, looking at the different types and trying them out for comfort.

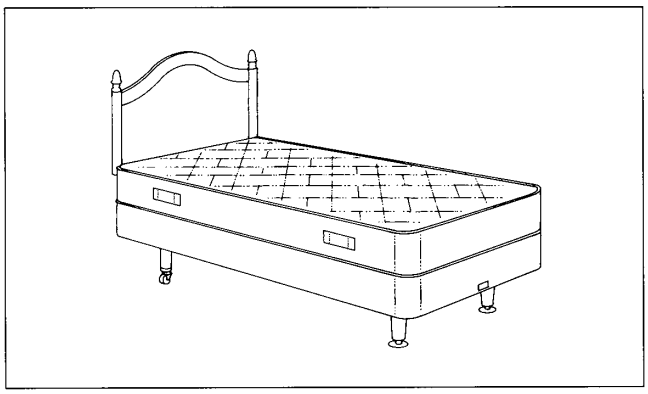

Fig. 1 Divan bed

Adjustable beds are also available in bed shops and are advertised in magazines and on TV. They are usually divan style. The mattress can be adjusted at the touch of a button into a variety of positions so that it can sit you up, bend your knees or raise your feet up. This can be very comfortable and convenient. Some even have a massager incorporated into the mattress.

An adjustable bed may suit you, but they do have drawbacks. Some are heavy to move and low to the ground. This makes it difficult to use a bed

table or a hoist if you need one. They do not adjust in height, so are not really suitable if you need a lot of help. If you are thinking of buying such a bed, get some advice first. For how to do this, see page 13.

A ***nursing bed,*** also known as a ***home care bed,*** is usually bought from specialist suppliers. Shops which specialise in equipment for disabled people sell them, or they can be bought direct from manufacturers. There is a huge variety of such beds with many different features.

Don't be put off by the term 'nursing bed'. It does not mean that it has to look like a hospital bed, though some of them do. Others are elegantly styled and fit nicely into your home. Many can be adjusted like the 'adjustable' beds mentioned above, and so can help you sit up and get comfortable. If you need help, a nursing bed makes life easier for your carer because its height can be adjusted. Prices are variable, according to what the bed can do and what it looks like. Most are more expensive than ordinary domestic beds, but to many people the advantages are well worth the extra cost.

You can find out more about them from a Disabled Living Centre or by phoning the Disabled Living Foundation (see page 15).

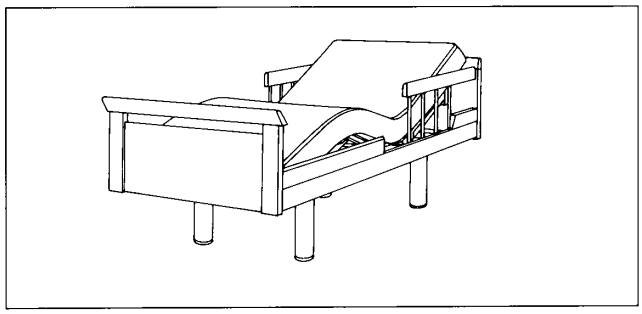

Fig. 2 Nursing/home care bed (with profiling)

If you have a health care need for a special bed, you may be able to borrow a nursing/home care bed free of charge from the health service. You may also be able to borrow some of the accessories we mention. If you look through the rest of this booklet it may help you to decide if such a bed or accessory could really be able to solve your problem.

To find out about borrowing, ask your district nurse, if you have one who visits you, or your family doctor or any staff from the surgery.

If you want to buy a health care bed but are short of money, ***Charity Search*** *may be able to suggest possible sources of funding.* ***Age Concern*** *also provide useful factsheets. See page 15 for how to contact them.*

Since he had a stroke, Mr B had problems sitting up in bed to drink his morning tea. He sometimes doesn't feel well and prefers to stay in bed for part of the day, so he likes to be able to watch TV in bed. His wife, who is not strong, was having trouble helping him to get up from bed.

He bought a nursing bed with variable height and profiling. He uses the profiling to sit himself up – the backrest supports him and the 'knee break' section stops him from sliding down the bed. When he wants to get up, he sits on the edge and raises the bed to its highest. This helps him to stand up.

What can the right bed do for you?

Being comfortable

Comfort is important if you are to sleep well. The sort of **mattress** which suits you will not suit someone else. People with pain, especially back pain, find the right combination of bed and mattress can make all the difference – for some it is something very firm, like a **futon** (which is filled with cotton fibre) on a wooden base; others find something softer, like a **sprung mattress** or a **foam mattress** is better. Some find the constant slight movement of a **water bed** stops them getting stiff, and eases pain (but remember, it is very difficult to move about on a water bed, and it is very heavy).

At present there is no recognised rating system for the firmness of mattresses, so a 'firm' mattress from one company may be the same as another's 'medium' one. The word 'orthopaedic' is not much help; it is used by different manufacturers to mean different things. The only way to find out if a bed is right for you is to lie on it! Don't be afraid to take your time doing this in the shop.

If your mattress is very soft or has a hollow in the middle, it can become quite difficult to move about in the bed. A simple **bed board** under the mattress can solve this, but it will make the bed feel much harder. A purpose-made folding bed board costs from £11 to £35, though some people make their own.

A sprung mattress can cost anything from £50 to over £1000, depending on its construction and quality. Foam mattresses cost between £50 and £400.

If moving is difficult for you, and you have to stay in bed a lot, you may be at risk of getting pressure sores. Special mattresses are available which reduce this risk; your district nurse can advise you about this, and if you need one, will probably be able to arrange for a loan.

Mrs C is very frail, and has dementia. Her daughter looks after her, and was finding nursing her a problem. Mrs C has had some falls out of bed.

A simple variable-height nursing bed, borrowed with the help of the district nurse, meant that her daughter could help her eat, drink, wash and dress easily and without risking injury to her own back. Safety rails eased the worry about her falling from bed.

Sitting up in bed

A backrest may be an integral part of your bed. It gives a sloping surface for you to lean against when sitting up in bed. Most nursing/home care beds have either a backrest which pulls out from the head end and you stack pillows against it to lean on, or one which raises the end of the mattress up from underneath. A simple nursing bed with a backrest can cost from £245 to £570.

Some nursing/home care beds and all adjustable beds have a backrest which you can operate electrically. The end of the mattress gradually raises you up when you press a switch. This helps a lot if it is difficult to sit up, and takes the strain off the people who help you. Some people find it helps them with getting out of bed too. A bed with an electric backrest could cost from about £800 to £1400.

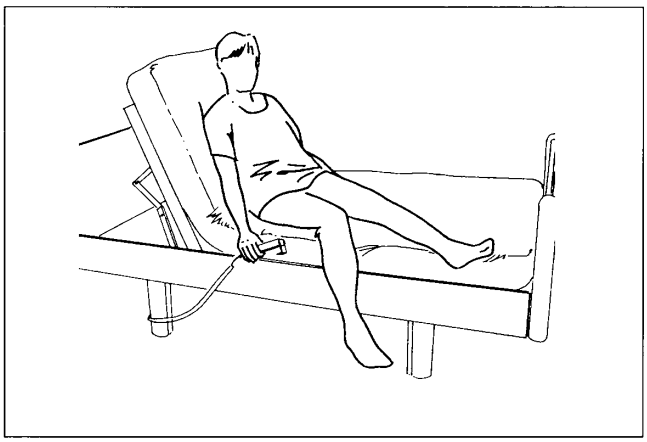

Fig. 3 Getting out of bed: using an electric backrest to sit up

If you can't buy a new bed, you can buy a simple **folding backrest** which rests on your mattress for about £35. An **electrically powered backrest** can go either under the mattress or on top of it, and will cost between £400 and £500. Check before you buy that it will work with your mattress – a very thick or firm mattress may not bend enough. You will need space under the bed, or beside it, for the motor, and a socket to plug it in.

Ms D has to spend a lot of time in bed, but doesn't like to lie down all the time. She has chronic fatigue syndrome.

A simple folding backrest allows her to sit comfortably in bed and listen to the radio or watch TV.

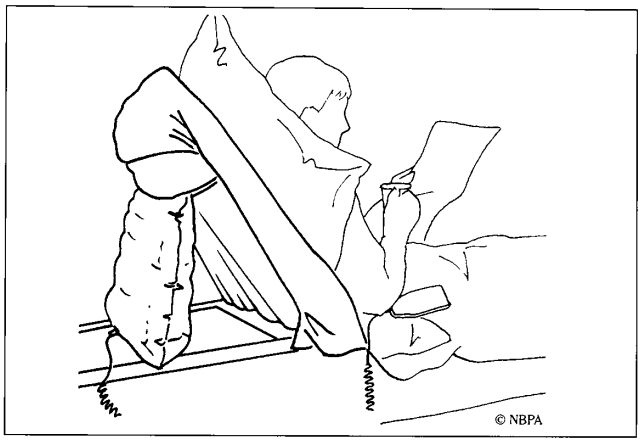

Fig. 4 Separate electric backrest

The right height

Most nursing/home care beds have **variable height**. They either work with a foot pump or an electric motor. The electric sort is best because you can operate it yourself from the bed.

Raising the bed to its highest may make it easy for you to reach things, to see out of a window or to talk to people naturally (it is not pleasant being looked down on). If you find getting out is difficult, it may help you with standing up from sitting on the edge. If you need a lot of help, variable height makes it easier and much safer for the person helping you.

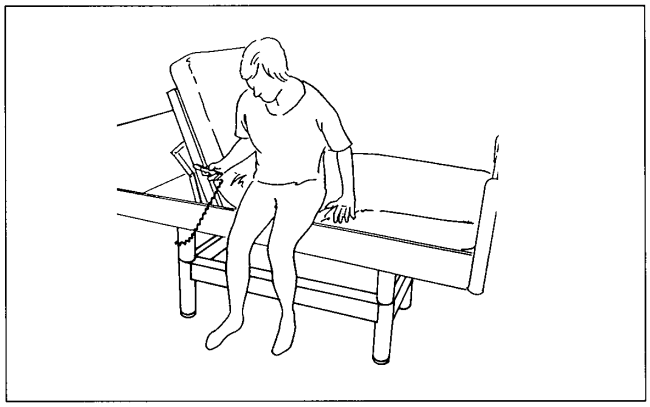

Fig. 5 Getting out of bed: using variable height to stand up

Mr E feels he is becoming less mobile so he is moving into sheltered accommodation. He is approaching 70 and has been disabled since childhood by polio.

The sale of his house gave him enough money to buy a wooden-framed electric profiling variable-height bed. This goes low enough to allow him to move easily to and from his wheelchair, but has enough clearance underneath in case he should need a hoist in future. The integral split siderails give him a hand-hold for rolling over and the profiling helps him sit up in bed. He sometimes gets swollen feet, and he uses the profiling to lift them up to relieve it.

Lowering the bed makes it easier to get into bed, and keeping it low may feel safer for you if you are ever in danger of falling out. You can adjust a variable-height bed to exactly the right height for moving across to a wheelchair or commode.

A single bed with variable height can cost anything between £425 and £2,300, depending on what other features it has.

It is also possible to get a **'bed lifter'** to go under a fixed-height bed, but of course it can only make your bed go *higher,* not *lower* than it already is. It can cost anything from £600 to £2000. If you go for this, make sure that it is compatible with your particular bed.

If you do not need to move the bed up and down, but just need it to be higher, **bed blocks** may be the answer. You may be able to get these supplied by an occupational therapist – see below.

Feeling safe

Some nursing/home care beds are made with a collapsible **side rail** on each side, which can help you feel a bit more secure when you turn over in bed. Some of these are made in sections, so

one section can also act as a convenient arm rest when you are sitting, and give you something to grip when getting in and out. A bed with that sort of rail has many other sophisticated features and so tends to be near the top of the price range of such beds – around £2,000.

You can get separate rails which can be fitted on most ordinary beds. These give security against falling out, and are usually rather functional looking. They cost between £75 and £210 per pair.

Moving the bed

Castors make a bed much easier, and safer, to move. You may be able to fit castors to your existing bed. Remember that they will make it higher, though. Will you still be able to get in?

Some nursing/home care beds have big castors with **brakes** fitted. This is a good idea if there is any risk of the bed skidding away as you are trying to sit down on it or stand up.

Some manufacturers will make a larger bed on request.

How big does the bed need to be?

A domestic bed can be anything from 75cm (2'6") to 180cm (6') in **width**. The **length** is usually 190 or 200 cm (6'4" or 6'8"). Some adjustable beds can be bought as doubles. Nursing/home care beds are usually singles. The wider the bed, the more secure you feel when turning over, but a wide bed is awkward for a carer – they may have to lean a long way to reach you.

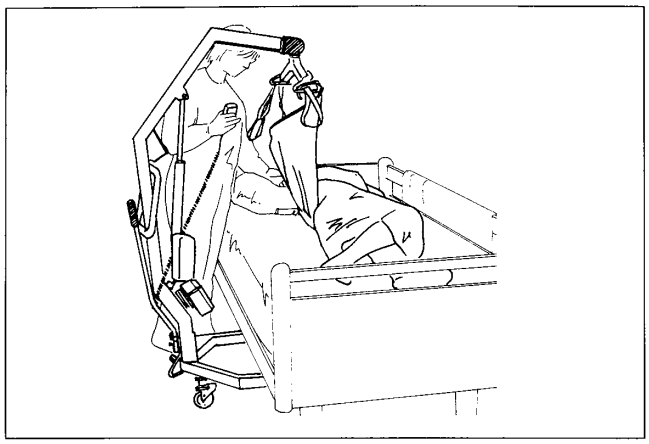

Fig. 6 Carer using hoist to turn patient

Space underneath

Some divans, especially those with drawers in, come very close to the floor. This leaves little room for the wheels of a cantilever table or a hoist to fit underneath. A hoist can be vital if you need a lot of help with moving or getting out of bed. If you think this might ever be your situation (and it can happen to anyone), make sure that your bed has at least 114mm (4½") clearance underneath it, and preferably 150mm (6").

Adjustability (profiling)

All **adjustable beds** and many **nursing/home care beds** have profiling. By pressing a switch the contour of the mattress can be altered for comfort and convenience. It has both a powered backrest (see above) and a leg section which is hinged at the knee. This helps you to move your legs, allowing you to sit with knees bent, which stops you sliding down the bed.

Such a bed makes it easy for you to alter your position as often as you like. This is comfortable, and if you are at risk of getting pressure sores, can help prevent these. It can help you sit up in bed to watch TV or have a conversation. If you need

nursing care, it can make it much easier for your carers to move you, without having to lift so much.

A domestic adjustable bed can cost anything from £1,000 to £4,000. A nursing/home care bed with profiling costs between £850 and £2300, depending on the type. Double profiling beds are available.

You can also buy a **profiling platform** which fits under an ordinary mattress to make it profiling. It can cost between £195 and £4200. Before buying one you should be sure that:

- it is compatible with your particular bed
- the mattress you have is suitable for it
- it is not actually more expensive than buying a suitable profiling bed.

Accessories to help you move around

A **lifting pole** ('monkey pole'), either attached to the bed or free standing, helps some people move about in bed and get in and out. You need strong arms for this, though. A **grab rail,** which may also be attached or free standing, can help you pull yourself over onto your side and get out. If you have trouble getting your legs into bed, an electric **leg lifter** alongside the bed lifts your legs up level with the mattress.

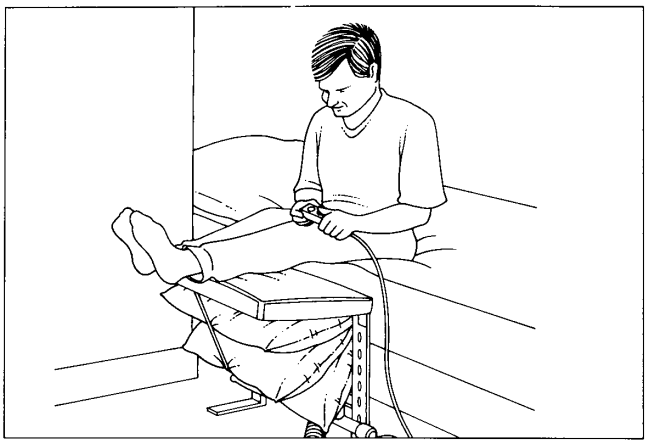

Fig. 7 Getting into bed: help from a leg lifter

A nurse, occupational therapist or physiotherapist can tell you about the many other aids and accessories which might help you. You may be entitled to loan some of these from the health service.

How can I find out more?

You can see beds at a **Disabled Living Centre,** which you can visit free of charge. Anyone can go – you don't have to be registered disabled. It will have a permanent display of equipment, which may include beds and will certainly include accessories. There will also be an expert adviser for you to talk to: you will need to make an appointment for this. **The Disabled Living Centres Council** can tell you where to find your nearest Disabled Living Centre.

You can also see beds at a local disability equipment shop. To find one, look in the *Yellow Pages*, under 'Disability Equipment', or you could telephone or write to **DIAL UK** or **DIAL Scotland,** or the **Disabled Living Foundation** (see below for numbers).

People to talk to

If a **district nurse,** a **physiotherapist** or an **occupational therapist** visit you at home, ask them about whether accessories could help you or whether another type of bed might help.

They may have more information which could help you decide, such as *Choosing Beds for Use at Home: A guide for users and professionals*. They, or you, can find this in a library or get it from the King's Fund Bookshop, telephone 0171 307 2591.

If you don't have anyone like that coming to see you, ask at your doctor's surgery if it can be arranged. If there is no one who can help you, or you prefer to 'go private', you may be able to contact a private occupational therapist through the College of Occupational Therapists. She or he will be expert in ways to help overcome the problems which accompany a disability or illness.

Useful addresses

DIAL UK
(National Association of Disablement Information and Advice Lines)
Park Lodge
St Catherine's Hospital
Tickhill Road
DONCASTER
DN4 8QN
Tel: 01302 310123
Fax: 01302 310404

DIAL Scotland
Braid House
Labrador Avenue
Howden East
LIVINGSTONE
EH54 6BU
Tel: 01506 433468

Disabled Living Centres Council
Winchester House
Cranmer Road
Kennington Park
LONDON
SW9 6EJ
Tel: 0171 820 0567
Fax: 0171 735 0278
Website: http://www.dlcc.demon.co.uk
e-mail: dlcc@dlcc.demon.co.uk

Disabled Living Foundation
380–384 Harrow Road
LONDON
W9 2HU
Tel: 0171 289 6111
Fax: 0171 266 2922
Help Line: 0870 6039177
(calls charged at 8p per minute)
Minicom: 0870 6039176
Website: http://www.dlf.org.uk
e-mail queries: advisor@dlf.org.uk

College of Occupational Therapists
6–8 Marshalsea Rd
Southwark
LONDON
SE1 1HL
Tel: 0171 357 6480
Fax: 0171 378 1353

Charity Search
25 Portview Road
BRISTOL
BS11 9LD
Tel: 0117 982 4060

Age Concern
Astral House
1268 London Road
LONDON
SW16 4ER
Tel: 0181 679 8000
Fax: 0181 679 2832
(Send SAE for factsheet)

What makes a better bed for health care?

In the 1960s the King's Fund caused a major stir when it developed a new specification for hospital beds. Manufacturers implemented the specification as 'The King's Fund Bed', which was revolutionary in its time, and a major step forward for patient care in hospitals.

Today, more than thirty years later, and in its Centenary year, the King's Fund revisited health care beds. Our research shows that consideration of needs for modern health care beds cannot be limited to their use in hospitals. Nor can a single type of bed meet the wide range of requirements in hospitals, nursing and residential homes, and people's own homes. Rather, the need is for information and practical help to choose the most appropriate bed for use in different circumstances, and to improve the process of specification and design of better beds by providing feedback from users.

Choosing Health Care Beds for Use at Home is a practical guide which provides needed information and a systematic process for choosing or upgrading beds, taking into account the needs of individuals, carers, and visiting professional staff. It is invaluable for district nurses, occupational therapists, doctors' surgeries, and equipment loans store managers, and includes a section which may be copied for use by individuals and their carers.

Other reports in the series are:

Choosing Beds for Hospitals: A guide
Choosing Beds for Nursing and Residential Homes: A guide
Better Beds for Health Care: Report of the King's Fund Centenary Bed Project

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