Improving the environment for older people in Health Services

An audit tool

Prepared by
National Ageing Research Institute
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A Victorian Government initiative

Prepared by Kirsten Black, Joan Nankervis and Melita Giummarra, Preventive and Public Health Division, National Ageing Research Institute.

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Authors of this document include:

- Ms Kirsten Black, Research Fellow, Preventive and Public Health Division, National Ageing Research Institute (Project Manager from August 2005)
- Ms Joan Nankervis, Research Fellow, Preventive and Public Health Division, National Ageing Research Institute (Project Manager to August 2005)
- Ms Melita Giummarra, Research Assistant, Preventive and Public Health Division, National Ageing Research Institute.

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Foreword from the Ministers

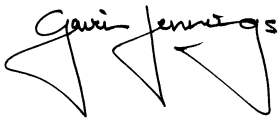
The Victorian Government, together with Health Services, has a clear responsibility for meeting the health care needs of the increasing number of older people who access our health and community care services, and who often have greater medical complexity and care requirements. We are improving the way we care for older people and changing our processes so that we are more responsive to their needs.

In November 2003, the Victorian Government launched the policy *Improving Care for older people: a policy for Health Services*. This policy challenges us to view older people as the key users of our health services and to provide care and services to better meet their needs. The aim is to make sure that older people are being cared for in the appropriate setting for their individual situation, and to empower them and the people who care for them to be involved in decision making.

Our challenge is to create older person friendly environments across all our Health Services. Our care settings should be designed and managed so that appropriate physical, social and environmental features relating to the special needs of older people are provided. Health Service environments catering to the specific needs of older people provide many benefits for clients as well as staff. Independence can be maximised, functional decline minimised and safety for both clients and staff improved.

While older people (aged 70 years and over) are our focus, improvements to our Health Service setting environments will improve the quality of care provided for other groups with complex and chronic conditions.

We encourage you to engage with this innovative resource and develop more suitable environments that better cater for our major client group to improve care for older people.



Gavin Jennings MLC
Minister for Aged Care

Hon Bronwyn Pike MP
Minister for Health

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Introduction

The impact of physical and social environments on health is becoming more recognised in health research through models such as the ecological approach, which recognises the interrelationship between health, environment and the use of resources (Harris & Wills 1997). Using these models, the development of a Health Service environment that values older people and promotes their health would consider the physical surroundings as well as the relationship between service providers and older people.

As people get older, they use Health Services and community care services more frequently and for longer periods of time. For example, in 2004–05, people aged 70 years and over accounted for 29 per cent of all separations from Victorian public hospitals and 48 per cent of multiday patient stays (Department of Human Services 2004–2005). The average length of hospital stay for the general population is 6.6 days; for people over 80 years it is 12.9 days (Department of Human Services 2004-2005).

The older age group uses a disproportionate number of public hospital bed days and this trend has been steadily increasing. Public hospital multiday stays for people in the 70 years and over age group grew from 41 per cent to 48 per cent between 1995–1996 and 2004–2005, despite this age group representing only 9.7 per cent of the population in 2004–2005 (Department of Sustainability and Environment 2004; Department of Human Services 1995-1996; Department of Human Services 2004-2005). It is therefore important that Health Services consider the needs of this patient group and provide appropriate responses.

At any age, a hospital admission can be a traumatic experience associated with intrusive tests and treatments, physical pain, and dealing with a recently diagnosed condition. For older people, the degree of distress can be exacerbated as a result of the declines in perception, cognition and control of movements associated with ageing (Fisk et al. 2004; The Kendal Corporation 2002). These changes can impact on how people navigate the physical environment and may result in increased intervention from carers or staff and sometimes the use of patient-handling equipment. Difficulties associated with age-related changes can be amplified when people are faced with an unfamiliar hospital environment. To create a Health Service that is older person-friendly requires an environment that capitalises on an older person's strengths and abilities, protects against harm and takes account of the needs of staff charged with their care. While guidelines and building codes are available for basic access needs, it has been argued that these do not fully address the specific needs of older people (O'Keeffe; WorkSafe Victoria 2002).

The audit tool

This audit tool was developed as part of an initiative of the Department of Human Services' Continuing Care and Clinical Service Development Section to support the Victorian Government's implementation of its policy, *Improving care for older people: a policy for Health Services* (Department of Human Services 2003). The audit tool enables Health Services to perform environmental audits and to develop action plans for improving the physical environment for older people accessing their services, thereby fostering a safer, more accessible and comfortable environment. The designers of this audit tool have considered how the physical environment interacts with and impacts on the safety of staff when they are caring for older people and have sought advice to ensure the audit tool considers the needs of older patients and the occupational health and safety needs of direct care staff.

The audit tool is not intended to replace existing processes and audits for occupational health and safety, hygiene, infection control, emergency equipment and air quality within Health Services. It aims to complement and, in some instances, to assist these processes.

Developing the audit tool involved a comprehensive review of resources relevant to the care of older people, including dementia care design and access design. The methodology for the resource review and for evaluating and piloting the audit tool is described in Appendix 1. Appendix 2 outlines the principles underpinning the tool.

One of the key resources used was *Design guidelines for hospitals and day procedure centres* (Department of Human Services 2004). This is a set of guidelines for the briefing, planning and construction of hospitals and day procedure centres, and represents a view of the minimum standard of accommodation expected in a new or extensively renovated facility. For an existing facility, these guidelines can be used to identify significant shortcomings that may require capital funding solutions (Department of Human Services 2004). Generic briefs for aged care facilities, such as the Sub-acute care generic brief (Department of Human Services 2000a) and the *Community rehabilitation centres generic brief* (Department of Human Services 2000b), are regarded as more appropriate yardsticks for facilities built generally from the late 1990s or 2000 until 2005; however, it is acknowledged that these are outdated and need to better reflect current practice and policy changes. The *Design guidelines for hospitals and day procedure centres* were reviewed to ensure the audit tool recommendations were consistent with industry standards for the health sector.

This tool may be useful in Mental Health and Residential Aged Care settings but was not designed specifically for these settings and needs to be used in conjunction with specific regulations for these settings.

Aims of the audit tool

The audit tool provides information and resources to:

- increase staff awareness and knowledge of how the physical environment interacts with and impacts on older people and the safety of staff when they are caring for older people
- identify improvements to the physical environment to foster a safer, more accessible and comfortable environment for older people, which also takes account of the safety of staff when they are caring for older people.

The definition of the physical environment used to guide the development of the audit tool was sourced from *Everyday dementia care: a practical photographic guide including environmental management* (Grealy et al. 2004). In this resource 'physical environment' refers specifically to the impact that building design, materials, colours, climate, lighting and odour have on older people and others working in, living in, or visiting the facility. This audit tool considers the impact of the physical environment on older people, including older people with dementia.

The audit tool should assist staff and management in generalist public Health Services to identify 'easy to achieve' changes and to recommend long term, often more costly changes. They would then use the identified changes to develop project briefs for builders, architects and health care interior designers.

Who this audit tool is for

Although the audit tool encompasses many features that are relevant to architects and building codes, the audit is designed to be conducted by health care practitioners (direct staff or managers) auditing existing Health Service settings, such as:

- acute care
- inpatient rehabilitation
- geriatric evaluation and management and interim care
- centre-based community rehabilitation
- sub-acute specialist clinics.

The maximum benefits from this tool are likely to be realised when clinical, support staff and management work together to achieve sustained, positive improvements for older people. This audit tool should apply across the Health Service system because older people are the main users of the above services.

What the audit tool includes

The audit tool has the following components:

1. **guide to using the audit tool**, to support staff responsible for implementing the environmental audit and developing action plans
2. **summary page**, which provides a table for recording the total number of recommendations achieved within each part of the audit tool
3. **audit tool**, which comprises four parts and 113 recommendations. The audit tool also includes tips to increase staff awareness and knowledge of strategies to address specific environmental recommendations, and references to resources that provide evidence for the environmental recommendation
4. **action plan template** for recording identified actions
5. **resource review**, which offers a complete list of resources reviewed plus individual reviews of resources to assist staff to improve the physical environment for older people accessing their services. This section contains all resources referred to in the audit tool
6. **photography guide** to illustrate some of the environmental recommendations
7. **appendices**, which include a description of the methodology used for developing the audit tool, the principles underlying the tool, and some specific tools, identified through the resources review, which may assist staff to implement specific recommendations.

References

Department of Human Services 1995-1996, *Victorian Admitted Episode Dataset 1995–1996*, Department of Human Services, Melbourne.

Department of Human Services, 2000a, *Sub-acute care facilities and specialist clinics generic brief*, Department of Human Services, Melbourne.

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Grealy, J, McMullen, H & Grealy, J 2004, *Everyday dementia care: a practical photographic guide including environmental management*, Big Kidz Ltd, Melbourne.

Harris, E & Wills, J 1997, 'Developing healthy local communities at local government level: lessons from the past decade', *Australian and New Zealand Journal of Public Health*, vol. 21, p. 403–12.

O'Keeffe, J, *Creating a senior friendly physical environment in our hospitals*, The Regional Geriatric Assessment Program of Ottawa.

The Kendal Corporation 2002, *Untie the elderly: a resource manual for the elimination of restraints in the care of the elderly in health care facilities*, 5th edn, Kennett Square, Pennsylvania.

WorkSafe Victoria 2002, *Designing workplaces for safer handling of patients*, Worksafe Victoria, Melbourne.

User guide

To implement and sustain ongoing improvements to the environment to ensure it is older person-friendly, Health Services should make sure the process and tools for auditing the environment are operated within the existing framework for quality improvement for providing high quality and safe health care. This framework can be found in the standards for the Evaluation and Quality Improvement Program (EQuIP) of the Australian Council on Healthcare Standards and online at www.achs.org.au.

The EQuIP standards are categorised into three areas:

- clinical
- corporate
- support.

The standards, and elements of individual standards, are designed to help an organisation identify:

- gaps in achievement
- opportunities for improvement
- the achievement level.

Using the tool within the existing framework for quality improvement will facilitate achievement of EQuIP standards for accreditation; however, compliance with the recommendations included in the audit tool will not imply that the Health Service will automatically qualify for accreditation by the Australian Council on Healthcare Standards. Although the standard of the facility is certainly a consideration, accreditation is primarily concerned with hospital management and patient care practices (Department of Human Services 2004). However, to ensure identified improvements are appropriately recorded and followed up by the Health Service, it is suggested that nominated auditors draw on the expertise of quality improvement coordinators.

Who can undertake the audit?

Although the audit tool encompasses many features that are relevant to architects and engineers, assessment of the Health Service environment using the audit tool can be a collaborative effort of clinical and non-clinical Health Service staff. The best mix of staff may depend on policies and practices within individual Health Services. The Health Service will need to determine appropriate staff to complete the audit. Participants involved in the auditing process could include:

- nurses
- after hours coordinators or staff (for the night time audit in Part D)
- allied health staff, including occupational therapists, physiotherapists and dietitians
- therapy assistants
- cleaners
- building maintenance and engineering staff
- nominated health and safety representatives from the workplace.

Preparing for the audit

Before conducting the audit:

- seek expertise from the organisation's quality manager or coordinator about linking the auditing process to the existing framework for quality improvement (that is, through EQuIP) to ensure the organisation appropriately records and follows up identified improvements
- select a setting (ward, unit or area) in which to undertake the audit. An understanding of how the setting or unit is used (or will be used) is critical. Ask the following questions:
  - What types of patients will occupy the unit (both now and in the future)?
  - What special patient care activities will be undertaken?
  - What types of equipment and furniture will be used in the unit?
  - How will this unit interact with other units in the Health Service?
- nominate a facilitator or lead auditor responsible for implementing the audit
- provide opportunities for input from staff who work in the setting being audited. They will be able to provide information on potential hazards in the area as well as knowledge of staff practices required to assess some recommendations included in the audit tool. Their participation will also fulfil employers' responsibilities under the *Occupational Health and Safety Act 2004* to consult with employees about any proposed change to the work environment or work practices. Guidelines on effective consultation with direct care staff are provided in *Designing workplaces for safer handling of patients* (WorkSafe Victoria 2002).

The audit tool comprises 113 environmental recommendations. Become familiar with all the items before undertaking the audit.

How to use this audit tool

The audit tool has nine sections:

- summary page
- part A: general audit
- part B: environment supports rehabilitation
- part C: environment is adapted to the individual
- part D: night time audit
- action plan
- resource review
- photographic guide
- appendices.

Parts A, B, C and D have various subsections, as shown in Table 1. While there are 113 recommendations in the audit tool, some sections of the audit tool do not need to be completed for outpatient settings, leaving 84 recommendations relevant to these settings.

Table 1: Parts and subsections of the audit tool

Part	Subsections	Setting	Number of recommendations
Part A: General audit	• External areas, entrances and hallways • Flooring • Equipment/furniture • Bathrooms/toilets – *Additional recommendations for bed-based settings* • Visual perception and lighting – *Additional recommendations for bed-based settings* • Signage • Orientation • Appropriate level of stimulation • Mood enhancement/comfort • General bedroom • Call bells	All types of inpatient and centre-based Health Services (subsections in italics only to be completed for bed-based settings)	101 (79 for outpatient settings)*
Part B: Environment supports rehabilitation	N/A	Rehabilitation settings	3
Part C: Environment is adapted to the individual	N/A	All settings	2
Part D: Night time audit	N/A	Bed-based settings	7

* Within Part A there are four subsections (indicated in italics) that are only relevant to bed-based settings. These account for 22 recommendations in Part A.

Summary page

The four parts of the audit tool and the corresponding number of environmental recommendations are summarised on the first page of the audit tool. After completing the audit, this summary page can be used to record the number of recommendations requiring action against each part.

Part A: General audit

Part A consists of environmental recommendations grouped around locations and equipment within the Health Service, such as bathrooms, flooring and signage. As shown in Table 1, some subsections do not need to be completed in outpatient settings, as follows:

- the latter part of 'bathrooms/toilets'
- the latter part of 'visual perception and lighting'
- 'general bedroom'
- 'call bells'.

Use a pencil to mark achievements against each environmental recommendation. Some recommendations may be satisfied in some rooms but not in others. A notes section is provided at the bottom of each page to record any required actions that are identified while the audit is being conducted. Should there be any recommendations that do not apply to a particular setting, there is an option to select 'not applicable'.

Part B: Environment supports rehabilitation

This part considers requirements of environments designed for rehabilitation (inpatient and community) and therefore only needs to be completed for these environments.

Part C: Environment is adapted to the individual

This part of the audit tool addresses issues where the physical environment needs to be adapted on a more regular basis to meet individual patients' needs. Rather than requiring the audit tool to be completed on a frequent basis for individual patients, Part C considers whether there are policies and protocols in place to ensure the environment is adjusted to meet individual needs. There is also a recommendation about practice needing to meet the policies and protocols in place.

Part D: Night time audit

Specific recommendations for inpatient settings about overnight stays for older people are included in the night time audit. Conduct this audit at night to identify noise volume, movement and lighting.

Parts A, B, C and D include:

- links to resources (presented in a numbered reference format; for example, [1], referring to the number of the resource in the resource review section), which can provide further information addressing the recommendation
- useful hints/tips to help identify actions to address recommendations, including references (see 'Resource review').

Action plan

People responsible for the audit should be responsible for ensuring actions identified through the auditing process are documented using the action plan template. The next section provides guidelines for using the action plan.

Resource review

This section includes a review of resources. Each resource is numbered in the resource review and the numbers referenced in the audit tool refer to this numbering (that is, if the audit tool references resource 15, see resource 15 in the resource review. Numbers are shown in square brackets [ ] in the audit tool). These resources provide auditors with more detail on environmental factors as well as intrinsic factors related to falls prevention, dementia care, sleep management, physical restraint reduction and music therapy. The resources provide the evidence base used to develop the audit tool.

For each of the areas of clinical care included in the resource review, the environment is only one factor of the multifactorial approach required for best practice. For example, reducing falls risk not only requires a hazard-free environment, but also consideration of intrinsic factors, such as acute and chronic conditions, muscle weakness, poor balance and medications. To achieve improved care for older people, strategies to address environmental recommendations will need to be complemented with interventions that address these intrinsic factors.

Photography guide

The photography guide includes photographs to help users visualise particular recommendations in the audit tool. Where the camera symbol (shown below) is included under the useful tools/tips next to a specific recommendation, refer to the photography guide for the corresponding photo.

Appendices

The methodology for developing the audit tool and principles underlying it, as well as two resources to supplement the resource review, are included as appendices to the audit tool.

Agreeing on actions

Having identified recommendations that need to be addressed, the facilitator or lead auditor and participants involved in the auditing process will need to:

- identify actions to meet recommendations
- prioritise those actions.

Required actions may not be evident and discussion with others and problem solving may be necessary to identify them. Some recommendations may conflict with others. Some points that may be useful to consider are:

- Do suggestions in the 'Useful tools/tips' section of the audit tool help?
- Could you use any resources referred to in the 'Resource review' to assist in finding solutions?
- Who in the organisation could help in addressing this recommendation, such as clinical staff, staff working in the setting, staff responsible for risk management, occupational health and safety staff or other non-clinical staff responsible for funding equipment and maintenance?

The action plan prompts staff to consider whether the action is urgent, whether it should be completed in six weeks or six months, or whether it relies on capital funding. These categories may not always be mutually exclusive because an action may be urgent but still require capital funding. Some points to consider are:

- Are the recommendations and actions consistent with the standard of accommodation expected in health facilities? See *Design guidelines for hospitals and day procedure centres* (Department of Human Services 2004), which represents a view of the minimum standard of accommodation expected in a new or extensively renovated facility. Generic briefs for aged care facilities, such as the Sub-acute care facilities and specialist clinics generic brief (Department of Human Services 2000a) and the *Community rehabilitation centres generic brief* (Department of Human Services 2000b), are regarded as more appropriate yardsticks for facilities built generally from the late 1990s or 2000 until April 2005; however, it is acknowledged that these are outdated and need to better reflect current practice and policy changes.
- Do the recommendation and actions improve the safety of the environment for older people and staff?
- Are there factors, such as patient comfort, that need to be considered? For instance, opportunities for people to listen to their favourite music have therapeutic benefits for reducing anxiety and improving mood.
- Are the recommendation and its required actions achievable and realistic?

References

Department of Human Services 2000a, *Sub-acute care facilities and specialist clinics generic brief*, Department of Human Services, Melbourne.

Department of Human Services, 2000b, *Community rehabilitation centres generic brief*, Department of Human Services, Melbourne.

Department of Human Services, 2004, *Design guidelines for hospitals and day procedure centres*, Department of Human Services, Melbourne.

WorkSafe Victoria 2002, *Designing workplaces for safer handling of patients*, Worksafe Victoria, Melbourne.

The Audit Tool

Summary page: audit tool principles

Location of audit: _____
Person completing audit:_____
Staff consulted: _____
_____
Health and safety representatives consulted: _____
Date audit conducted:_____

The audit tool comprises four parts. Part A has a number of subsections. Each part and subsection has a number of specific environmental 'recommendations' as shown in the table below. This table is to be completed after the full audit has been conducted. Once the full audit has been completed, count the number of recommendations that require action and write the total in the far right column. This can provide a brief overview of general areas of concern or may be useful as a summary of audit outcomes.

	Number of recommendations	**Number requiring action**
PART A: General audit		
External areas, entrances and hallways	22	
Flooring	10	
Equipment/furniture	11	
Bathrooms/toilets	12	
- *Additional recommendations for bed-based settings**	6	
Visual perception and lighting	7	
- *Additional recommendations for bed-based settings**	2	
Signage	3	
Orientation	3	
Appropriate level of stimulation	4	
Mood enhancement/comfort	7	
*General bedroom**	11	
*Call bells**	3	
PART B: Environment supports rehabilitation	3	
PART C: Environment is adapted to the individual	2	
PART D: Night time audit*	7	

*Sections indicated in *italics* are only relevant for bed-based settings.

Part A: General audit

External areas, entrances and hallways

Environmental recommendation	Achieved?	Resource	Useful tools/tips
1. Parking is available and accessible.	☐ Yes ☐ Action required ☐ Not applicable		
2. There is a covered outside entrance with drive-up drop-off area available, allowing easy access for wheeled equipment. There should be no steps or steep gradients.	☐ Yes ☐ Action required ☐ Not applicable	[1, 2]	• Refer AS 1428.1 for guidance on walkways (visit www.standards.com.au). Consider having someone available to assist. This requirement is also incorporated in to Part B 'Health facility briefing and planning' [2].

3. Conventional steps with contrasted edge are available.	☐ Yes
	☐ Action required
	☐ Not applicable
		[1, 3, 4]	• Refer AS 1657 *Fixed platforms, walkways, stairways and ladders* – design, construction and installation for stair design and dimensions (visit www.standards.com.au):
			  • risers between 150 mm and 215 mm
			  • goings between 215 mm and 305 mm
			  • surface of every tread shall extend across the full width of the stairway and shall be slip resistant etc.
			• AS 1428.1 recommends that a strip of between 50 mm and 75 mm be provided on the tread at the nosing with a minimum luminance contrast of 30 per cent to the background to aid navigation.

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips

4. Ramps provide access to all areas.	☐ Yes
	☐ Action required
	☐ Not applicable
		[1–3, 5]	• [2: refer to Part C, section 730.7].
			• All ramps must conform to AS 1428.1:
			  • maximum gradient of a ramp exceeding 1520 mm in length shall be 1:14
			  • landing required at intervals not exceeding 9 m (rest areas every 9 m)
			  • top and bottom marked with yellow strip [1].
			• The surface of a ramp must also be suitable for the tasks undertaken; for example, pushing wheeled equipment up a carpeted ramp can be difficult for older people and carers. Force measurements may need to be taken to ensure they are within acceptable limits. Refer Solution Sheet 3, *Choosing safe floor coverings* [5].

5. External paths are level, non-slip, and free of trip hazards, overhanging branches, shrubs, leaves, weeds and moss.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4]	
6. There are clearly defined internal and external paths that guide the patient to their starting point without allowing them to become lost.	☐ Yes ☐ Action required ☐ Not applicable	[3, 6, 7]	
7. Staff frequently observe internal and external paths.	☐ Yes ☐ Action required ☐ Not applicable	[6]	
8. Internal and external paths allow the patient to see into areas that might invite participation in an activity other than wandering.	☐ Yes ☐ Action required ☐ Not applicable	[6, 8, 9]	• Having lounge areas and activities at ends of corridors may encourage wandering patients to enter and take part in activity [9].

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
9. Internal and external paths are sufficiently clear and wide to allow two people who are each using a frame to pass.	☐ Yes ☐ Action required ☐ Not applicable	[2-4]	• [2: refer Part C, section 710]. (See photo for recommendation 5.)
10. There are sufficient seats and toilets along internal and external paths for regular rest	☐ Yes ☐ Action required ☐ Not applicable	[3, 4]	
11. Automatic doors are used in main entrances and hall doorways.	☐ Yes ☐ Action required ☐ Not applicable	[1, 2]	• [2: refer Part C, section 760.14].
12. All doors are wide enough for easy clearance of wheelchairs, scooters and, where required, beds.	☐ Yes ☐ Action required ☐ Not applicable	[1, 2, 10]	• Refer [10: Section 3.3.5] for recommended doorway clearances. In addition, to enable uninhibited access for people in a wheelchair, AS 1428.1 requires 460 mm clear space of wall on the latch side of a swinging door (visit www.standards.com.au). • [2: Part C, section 760].
13. Exits for patients with dementia are secure or patients have an alert system to alert staff to a patient wandering out of the ward or hospital.	☐ Yes ☐ Action required ☐ Not applicable	[3]	• There are also numerous strategies for reducing attempted exits by confused patients. Refer to Appendix 3 for more details.
14. Full length glass panels or doors are avoided or clearly marked for visibility.	☐ Yes ☐ Action required ☐ Not applicable	[2]	• [2: refer Part C, sections 760.12–760.13, 770].
15. Lift doors provide patients adequate time to get in and out. The lift opens so that the lift door is level with the external floor and allows safe and easy movement of wheeled equipment and walking frames.	☐ Yes ☐ Action required ☐ Not applicable	[2, 3, 10]	• [2: refer Part E, section 5.3]. • [10: refer section 3.3.9].

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
16. Buttons in lifts are easy to reach and easily understood (for example, it is clear which is the ground floor and which is the exit floor).	☐ Yes ☐ Action required ☐ Not applicable	[3]	
17. Reception is immediately evident and accessible on arrival, and incorporates a high-low design to accommodate wheelchair users.	☐ Yes ☐ Action required ☐ Not applicable	[2, 11]	• Visual cues outside the building need to guide patients and visitors to the reception area. The reception area should promote privacy by enabling patients and visitors to ask for directions without being heard by other patients and visitors [11]. • [2: refer Part C, section 720.4].
18. Waiting rooms are private and comfortable with access to food, drinks, toilets and a public telephone (including a phone link to request a taxi).	☐ Yes ☐ Action required ☐ Not applicable		
19. Reception and waiting rooms and consulting rooms and treatment areas are in close proximity of each other.	☐ Yes ☐ Action required ☐ Not applicable		
20. Handrails in corridors, paths, on all steps, and in lifts are in accordance with AS 1428.1, *Design for access and mobility*.	☐ Yes ☐ Action required ☐ Not applicable	[2, 12]	• [2: refer Part C, section 765] • AS 1428.1–2001, *Design for access and mobility*.
21. Windows are restricted in the extent to which they open so that patients cannot climb out.	☐ Yes ☐ Action required ☐ Not applicable	[2, 6, 9]	• [2: refer Part C, section 770].
22. Areas where patients are not to enter (for example, cleaners' cupboards, storerooms) are kept locked or camouflaged (for example, painted the same colour as the wall, have a hidden door handle).	☐ Yes ☐ Action required ☐ Not applicable	[1, 6]	

Notes:

Flooring

Environmental recommendation	Achieved?	Resource	Useful tools/tips
23. Flooring is free of clutter and hazards, such as cords and loose rugs.	☐ Yes ☐ Action required ☐ Not applicable	[3, 10, 12, 13]	• Reduce the use of cords by replacing equipment that use cords with cordless equipment where possible, or use an extension lead to provide extra length to allow running a power cord along a wall rather than across walkways. • [10: refer section 3.3.4].
24. Flooring is in good condition, firmly attached and appropriate for tasks undertaken.	☐ Yes ☐ Action required ☐ Not applicable	[2–5, 7, 10]	• Refer Solution Sheet 3, *Choosing safe floor coverings for workplaces in health and aged care* [5]. • [2: refer Part C, section 780]. • [10: refer section 3.3.6].
25. Floor surfaces are non-slip.	☐ Yes ☐ Action required ☐ Not applicable	[2–4, 10, 14]	• Wet areas should have non-slip floor surfaces in accordance with AS 4586 2004, *Slip resistance classification of new pedestrian surface materials* (visit www.standards.com.au). • [2: refer Part C, section780]. • [10: refer section 3.3.6].
26. Floor surfaces have a matte finish.	☐ Yes ☐ Action required ☐ Not applicable	[2, 3]	• [2: refer Part C, section 780].
27. Carpets are low pile and tightly woven. If carpets are used, push/pull forces for wheeled equipment are within acceptable limits	☐ Yes ☐ Action required ☐ Not applicable	[2, 3, 5, 9, 10]	• Refer Solution Sheet 3, *Choosing safe floor coverings for workplaces in health and aged care* [5]. • [2: refer Part C, section 780]. • [10: refer section 3.3.6]. • Tightly woven carpet promotes mobility for wheelchairs over carpet [9]. • Some carpets can cause trips for older people who may shuffle their feet, some carpets are difficult for older people to self-propel wheelchairs, and some reduce battery life for electric wheelchairs due to increased resistance.

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
28. There is an absence of raised edges on the floor/ground. Joining strips between different floor surfaces are as smooth as possible so as not to create resistance when wheeled equipment is being used.	☐ Yes ☐ Action required ☐ Not applicable	[1, 2, 4, 10]	• Bevelled edges no greater than 7 mm high [1] • [2: refer Part C, section 780]. • [10: refer 3.3.6].
29. Carpets, other flooring and upholstery are of a constant colour rather than strongly flecked patterns.	☐ Yes ☐ Action required ☐ Not applicable	[1, 3, 15]	
30. Changes in floor surface are clearly defined.	☐ Yes ☐ Action required ☐ Not applicable	[4, 9, 10]	• A change from one floor surface to another, such as carpet to vinyl, can be a hazard if patients are not aware of the change. Different floor surfaces, therefore, should appear different (for example, by being a different colour). Avoid using a definite line on a floor, which could appear as a step to an older person. Some people with dementia will not step over a border. • [10: refer 3.3.6].
31. Appropriate floor cleaning equipment is available for the types of floor coverings (for example, some carpets require specialised machinery).	☐ Yes ☐ Action required ☐ Not applicable	[2]	• [2: refer Part C, section 780].
32. Floor cleaning procedures are developed and take into account safety of patients and staff.	☐ Yes ☐ Action required ☐ Not applicable	[3]	For example: • 'Wet floor' signs are readily available and used promptly in the event of a spillage. • Routine cleaning of floors is done in a way to minimise risk to patients (well signed; out of hours). • Low-gloss cleaning solutions are used.

Notes:

Equipment/furniture

Environmental recommendation	Achieved?	Resource	Useful tools/tips
33. Furniture is secure enough to support a patient should they overbalance.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4, 12]	• Furniture also needs to be easy to move for staff.
34. Arms on chairs and commodes are secured and sturdy.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4]	
35. Unused furniture is stored in a separate area when not in use. Adequate storage space is provided for equipment, mobility aids and furniture so that it is easy to access when required.	☐ Yes ☐ Action required ☐ Not applicable	[2-4, 10, 16]	• [2: refer Part B, section 650.26]. • Mobility aids should be stored in strategic locations to facilitate use; for example, have designated spaces for parking wheelchairs, hoists and so on. There must also be adequate space on both sides of the bed for using mobility aids and for general access by staff, patients and visitors. • Refer [10: section 4.1.1] for information on specific workspace required for use of mobility aids.
36. Doors and drawers are easy to open, accessible to patients and positioned so they do not have the potential to strike other objects when in the open position.	☐ Yes ☐ Action required ☐ Not applicable	[1, 3, 4, 14]	• Lever handles are easier to use than knobs. Doors: maximum 3.6 kg pull and 6.4 kg push force [1].
37. Chair legs stand straight, rather than sticking out on angles and posing a tripping hazard.	☐ Yes ☐ Action required ☐ Not applicable	[3]	(See photo for recommendation 34.)

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
38. Chairs have non-slip, easily cleaned fabric.	☐ Yes ☐ Action required ☐ Not applicable	[1]	(See photo for recommendation 34.)
39. Devices such as telephones, speakers and warning sounds can be adjusted to the needs of the individual.	☐ Yes ☐ Action required ☐ Not applicable	[1, 17]	• For warning signals, try to keep the signal within 500–2000 Hz and intensities of at least 60 dB at the ear of the listener [17].
40. Equipment and mobility aids, which promote patient independence and patient and staff safety (for example, wheelchairs, footrests, pressure cushions, mobility aids, electric beds, slide sheets), are available when needed.	☐ Yes ☐ Action required ☐ Not applicable		• Seek advice from physiotherapist, occupational therapist and/or occupational health and safety representative.
41. All features on wheelchairs work effectively, including footrests being easy to move, wheels and brakes being in good working condition with good tread on tyres, and wheels moving freely. The type of wheel/tyre must be appropriate for the floor surface to maintain push/pull forces for staff to within acceptable limits and to facilitate independence for wheelchair users.	☐ Yes ☐ Action required ☐ Not applicable	[3-5]	
42. Gait aids have rubber stoppers in place and are in good condition, and wheels and brakes are in good working condition with good tread on tyres and wheels moving freely.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4]	
43. There is a proactive maintenance program in place for equipment.	☐ Yes ☐ Action required ☐ Not applicable	[4, 12, 13]	

Notes:

Bathrooms/toilets

Environmental recommendation	Achieved?	Resource	Useful tools/tips
44. Patients can see toilet facilities from areas they frequently occupy.	☐ Yes ☐ Action required ☐ Not applicable	[6]	For people with dementia, a view of the toilet is a useful reminder.
45. There is a sufficient number of toilets close to activity areas so patients do not have to travel too far.	☐ Yes ☐ Action required ☐ Not applicable		
46. Toilet flush and sink taps are accessible and user-friendly (for example, automatic or lever handles).	☐ Yes ☐ Action required ☐ Not applicable	[1]	
47. Receptacles for soap are designed so as not to create a striking hazard (for example, where practicable they are recessed into the wall).	☐ Yes ☐ Action required ☐ Not applicable		
48. There is adequate space in the bathroom for patient, staff member and all patient-handling equipment used.	☐ Yes ☐ Action required ☐ Not applicable	[3-5, 10]	• [10: refer section 4.2, 4.3]. • Refer Solution Sheet 2, *Ensuite design for dependent and semi-dependent persons* [5]. • Toilets that are located directly opposite the door are recommended because they are easier for patients and staff to access, especially where wheeled equipment is used.
49. Handbasins in bathrooms allow wheelchair access.	☐ Yes ☐ Action required ☐ Not applicable		
50. Walls around shower/bath and sink are marked in contrasting colours to the shower/bath and sink.	☐ Yes ☐ Action required ☐ Not applicable	[3]	

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
51. Toilet paper dispensers are accessible.	☐ Yes ☐ Action required ☐ Not applicable	[1]	• Refer to AS 1428.1 for the zone in which to position the toilet paper outlet (visit www.standards.com.au).
52. Grabrails in bathrooms are adequate to match patient and staff needs.	☐ Yes ☐ Action required ☐ Not applicable	[2, 5, 10]	• Refer Solution Sheet 2, *Ensuite design for dependent and semi-dependent patients* [5] and AS 1428.1 (visit www.standards.com.au). • It is also important to note that towel rails may be mistaken for a grabrail; hence, they must be sufficiently strong to withstand the downwards force of up to 110 kg. Refer [2: Part C, section 730.3] and [10: section 3.3.10, 4.2].
53. Chair and commode heights are adjustable so patients can rise and sit with ease. Toilet heights are raised using over-toilet frames as required.	☐ Yes ☐ Action required ☐ Not applicable	[3, 12, 13, 18]	• Good chair height allows patient to have their feet on the ground and their legs at a 90-degree angle. • For some patients (for example, those who have had a hip replacement) a higher chair height may be required. • Have access to chairs with armrests for those who need assistance rising to their feet. • See Appendix 4 'Individual seating assessment tool'. • Seek advice from an occupational therapist or physiotherapist about optimal height for individual patients.
54. Water temperature of taps is limited so that it cannot scald.	☐ Yes ☐ Action required ☐ Not applicable	[6]	
55. Doors into bathrooms and toilets open outwards so an older person cannot fall against the door and block access.	☐ Yes ☐ Action required ☐ Not applicable	[2, 10]	• If the door opens inwards, it needs to be provided with removable hinges or an alternative means of access (for example, a panel in the door that can be opened). Locks on doors into bathrooms must be able to be opened from the outside to allow access in an emergency. • [2: refer Part C, section 760]. • [10: refer section 4.2.2].

Notes:

Additional recommendations for bed-based settings

Environmental recommendation	Achieved?	Resource	Useful tools/tips
56. Shower bases are step-less. The gradient of the bathroom floor must be assessed to ensure: - adequate drainage after the shower is used (otherwise it's a slip hazard) - the floor gradient of the shower base is located far enough away from the toilet to avoid wheelchairs rolling away from the toilet down the slope.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4, 10]	• [10: refer section 4.2.1].
57. There is adequate space in the bathroom to place soap, shampoo and washers.	☐ Yes ☐ Action required ☐ Not applicable		
58. Receptacles for soap, shampoo and washers are easy to reach, including when seated, and do not require bending over to reach them.	☐ Yes ☐ Action required ☐ Not applicable	[3, 12]	
59. Taps in showers are easily accessible for patients and staff (on side rather than back wall).	☐ Yes ☐ Action required ☐ Not applicable		
60. Commodes and shower trolleys have rubber stoppers in place and are in good condition, and wheels and brakes are in good working condition with good tread on tyres and wheels moving freely.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4]	
61. Clothing hooks and towel rails are easily accessible from the seated position.	☐ Yes ☐ Action required ☐ Not applicable		

Notes:

Visual perception and lighting

Environmental recommendation	Achieved?	Resource	Useful tools/tips
62. Walls are in a contrasting colour to floors.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4, 7, 9, 13, 15]	• Use non-reflective light colours on walls to enhance available light [13]. (See photo for recommendation 50.)
63. Handrails are in a contrasting colour to walls.	☐ Yes ☐ Action required ☐ Not applicable	[2-4, 7, 9, 15]	• [2: refer Part C, section 765] • AS 1428.1, *Design for access and mobility* (visit www.standards.com.au).
64. Food colours contrast with the colour of the plate and the plate contrasts with the colour of the placemat/table.	☐ Yes ☐ Action required ☐ Not applicable	[15]	• For example, avoid placing white food on white plates. This assists identification of food, plate and eating area to promote nutrition.
65. Glare is avoided.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4, 9, 15, 17, 19]	• Reduce glare by moving light sources as far away as possible from the patient's line of sight. • It is preferable to have several low-intensity lights than one high-intensity light. • Shield light sources or use diffusers. • Use non-reflective materials on walls, floors and ceilings (matte preferable to gloss). • Ensure there are appropriate coverings on windows to shield work surfaces from direct sunlight [17]. • Install dimmer switches on lights to enable control of lighting levels [15].
66. Lighting is adequate throughout (for example, 75 watts).	☐ Yes ☐ Action required ☐ Not applicable	[2–4, 17]	• Increase level of illumination to greater than 100 cd/m2 light reflected from reading surfaces. Photometers (luminance meters) can be used to assess light levels [17]. • [2: refer Part E, section 2.11]. • Refer to recommended illuminance in AS 1680.1, *Interior lighting – general principles and recommendations* (visit www.standards.com.au).

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
67. Stairs are well lit day and night, with light switches at top and bottom.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4]	
68. Lighting in all areas is at a consistent level so patients are not moving from darker to lighter areas and vice versa.	☐ Yes ☐ Action required ☐ Not applicable	[1, 3]	• Avoid pooled lighting and shadows (such as table lamps) [1]. • Create gradual changes of light levels when coming in from outdoors (for example, using a skylight in the entrance, having an outdoor covered entrance or brighter interior light inside entrance) [1]. • May need adjustable window coverings in some areas where strong light may occur at various times of the day.

Additional recommendations for bed-based settings

Environmental recommendation	Achieved?	Resource	Useful tools/tips
69. Light switches are within easy reach and accessible to patient (no higher than patient's shoulder height).	☐ Yes ☐ Action required ☐ Not applicable	[3, 12, 15, 16]	
70. A patient reading light is mounted at each bed head.	☐ Yes ☐ Action required ☐ Not applicable	[2]	• [2: refer Part E, section 2.12].

Notes:

Signage

Environmental recommendation	Achieved?	Resource	Useful tools/tips
71. Signage is adequate. This includes having signs at eye level and on the floor and using primary colours on all key areas that patients are required to go to.	☐ Yes ☐ Action required ☐ Not applicable	[2, 3, 9, 19]	• Signs should use text and icons to deliver message [9]. • Having signs on the floor can be useful for some patients who may tend to have a downcast gaze [19]. • [2: refer Part C, section 750].
72. Signs using icons or symbols are familiar to older people, are easy to discriminate, have little detail and clearly represent their meaning.	☐ Yes ☐ Action required ☐ Not applicable	[2, 16, 17]	 • [2: refer Part C, section 750].
73. Text is easy to read and there is not too much information on one sign.	☐ Yes ☐ Action required ☐ Not applicable	[1, 2, 17]	• Make signs large and have the text on a contrasting background (for example, black on white). • Decorative and cursive fonts are to be avoided (preferable fonts include Times New Roman/Arial/Verdana). • Avoid scrolling or flashing signs [17]. • Text should be provided in common community languages. • [2: refer Part C, section 750].  (See photo for recommendation 72.)

Orientation

Environmental recommendation	Achieved?	Resource	Useful tools/tips
74. Staff can be identified and distinguished from patients and families.	☐ Yes ☐ Action required ☐ Not applicable	[20, 21]	• In some environments for older people, such as residential aged care, allowing staff to wear regular clothing rather than a uniform helps patients distinguish between individual staff members and also normalises the environment; however, in acute settings, uniforms may help orientation by identifying staff members.

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
75. There are views to outdoors and landmarks to assist orientation.	☐ Yes ☐ Action required ☐ Not applicable	[9, 15, 19]	• Artwork can be useful for orientating patients by acting as a landmark. The artwork can also be relevant to the location (such as pictures of food in dining areas). • Some other factors to consider include using non-reflective glass, avoiding abstract art, and considering placement of art so that patients who tend to gaze downwards or are stooped over can see it [15].
76. Large clocks and calendars are displayed.	☐ Yes ☐ Action required ☐ Not applicable	[1]	

Appropriate level of stimulation

Environmental recommendation	Achieved?	Resource	Useful tools/tips
77. Different functional areas are clearly demarcated by colour, sign, physical layout and use of partitions to assist patients to focus on tasks.	☐ Yes ☐ Action required ☐ Not applicable	[1, 19]	
78. Overstimulation (for example, calling out and loud speaking, background noise, loud noises, crowding, disruptive behaviour from other patients) is avoided.	☐ Yes ☐ Action required ☐ Not applicable	[1, 2, 8, 9, 15, 17, 19]	• [2: refer Part C, section 785]. • Refer to AS 2107. • Use sound-absorbing materials on walls, floors and ceilings [17]. • Avoid background music while speaking to patients [17]. • Reduce the number of hard surfaces and echoes [1]. • Turn down loud televisions and radios [15]. • Lubricate squeaky wheels on equipment [15]. • If confused patients have access to a wardrobe, avoid having too many choices of clothing because this could be overwhelming [9]. Presenting clothing in the order in which it is to be put on can also assist patients to maintain their independence.

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
79. Understimulation (for example, repetitive spaces with little activity, large open spaces) is avoided	☐ Yes ☐ Action required ☐ Not applicable	[8, 19]	
80. Use of public address systems is minimised. If possible, have announcements made by speakers who have low pitched voices (frequencies below 4000 Hz).	☐ Yes ☐ Action required ☐ Not applicable	[17, 20]	• Voices coming over these systems are stressful and confusing for frail patients [20]. • Some older people have high frequency hearing impairments and therefore lower pitched voices, such as male voices, may be more easily heard [17].

Mood enhancement/comfort

Environmental recommendation	Achieved?	Resource	Useful tools/tips
81. The environment respects dignity and privacy.	☐ Yes ☐ Action required ☐ Not applicable	[11, 16]	• Patients have access to an ensuite from their bedroom. • Toilets should have double locks that display when the toilet is occupied and should not be entered but allow the door to be opened from the outside if the patient requires assistance.
82. Small, comfortable and quiet areas are available for private social interaction between patients and visitors and patients and staff.	☐ Yes ☐ Action required ☐ Not applicable	[6, 8, 11]	
83. Furniture is comfortable.	☐ Yes ☐ Action required ☐ Not applicable		
84. In lounge or sitting areas, chairs are placed in small circles to encourage social interaction.	☐ Yes ☐ Action required ☐ Not applicable	[15]	

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
85. Rooms are fresh and fragrant-smelling.	☐ Yes ☐ Action required ☐ Not applicable	[15]	• In bathrooms, soaps and air fresheners can help. Having indoor plants and opening windows refreshes the air. • Food aromas can also increase appetite. Consider aromatherapy and essential oils to stimulate or relax. Use scented plants, shrubs and flowers in outdoor areas [15], ensuring these are edible.
86. Rooms are kept at a temperature comfortable for the patient through use of effective cooling and heating systems.	☐ Yes ☐ Action required ☐ Not applicable	[2, 14, 15]	• Bathrooms need to be warmer than other areas and therefore installation of heat lamps or radiant heat panels is recommended [15]. • Refer Part E, 'Heating, ventilation and air-conditioning' [2].
87. Natural elements, such as views of gardens and trees and pictures of natural scenes, are provided to decrease agitation.	☐ Yes ☐ Action required ☐ Not applicable	[19, 22]	• Access to natural elements, including views to trees and access to gardens, has been shown to have a restorative effect and improve recovery from illness [22] (particularly useful during bathing).

General bedroom

Environmental recommendation	Achieved?	Resource	Useful tools/tips
88. Firm mattresses are used to provide support when moving in bed. (The exception is pressure mattresses as indicated.)	☐ Yes ☐ Action required ☐ Not applicable	[3]	
89. Bed height is adjustable but kept at lowest height for patient safety. Beds are able to be adjusted to an appropriate height for the carer to undertake patient handling and patient care tasks without bending. Electric beds are recommended.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4, 14]	• Seek advice from physiotherapist, occupational therapist and/or occupational health and safety representative.
90. Bed wheels and brakes are in good working condition with good tread on tyres and wheels moving freely.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4]	

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
91. There is access to a bedside table positioned so that placing items on it does not require undue stretching and twisting.	☐ Yes ☐ Action required ☐ Not applicable	[3, 12]	
92. A gender mix is avoided in patient rooms.	☐ Yes ☐ Action required ☐ Not applicable		
93. Patients are encouraged to bring personal belongings to promote recognition of their room and increase comfort. Personal belongings are assessed for suitability in the health facility so that they do not create hazards for patients or staff.	☐ Yes ☐ Action required ☐ Not applicable	[9, 15, 20]	• Personal items and increasing familiarity can also improve orientation, such as placing a piece of the patient's clothing on their bed. Consider using the patient's favourite scent or familiar smell cues in bedrooms to assist with orientation [15].
94. Patients' rooms are numbered and personal memorabilia is used for assisting patients to find their room.	☐ Yes ☐ Action required ☐ Not applicable	[2, 6, 19]	• Ensure personal memorabilia does not identify the individual, due to the requirement for privacy and confidentiality of patient records. • [2: refer Part C, section 750.6, 750.7].
95. Where a television is provided, the appropriate design and placement of it in the patient's room enhances the older person's comfort. This includes positioning for easy viewing and listening, and easy-to-use controls.	☐ Yes ☐ Action required ☐ Not applicable		
96. Patients have a choice of whether to eat in communal dining areas or in their bedroom.	☐ Yes ☐ Action required ☐ Not applicable	[9]	• A communal dining area can promote social interaction but may also be overwhelming. Patients may prefer smaller dining areas that are more consistent with home dining experiences. Large dining rooms can be partitioned off to encourage people to eat in small groups (such as two to six people) [9].
97. Ceilings are designed to support ceiling hoists.	☐ Yes ☐ Action required ☐ Not applicable	[5]	• Refer Solution Sheet 1, *Overhead tracking for safe people handling* [5].

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
98. The environment is made accessible for visitors.	☐ Yes ☐ Action required ☐ Not applicable		Some elements to consider for visitors include: • ample seating • clear directional signage • toilets • food and drink options during visiting hours.

Call bells

Environmental recommendation	Achieved?	Resource	Useful tools/tips
99. Call bells work.	☐ Yes ☐ Action required ☐ Not applicable	[4]	
100. Call bell positioning is flexible, allowing for right and left hand use by patients, and the buttons are easy to push. Turn-off buttons for staff are easily accessible.	☐ Yes ☐ Action required ☐ Not applicable	[4, 12]	
101. Call bells are within easy reach when the patient is lying in bed or in the toilet or shower.	☐ Yes ☐ Action required ☐ Not applicable	[3, 4, 10, 13]	• It is useful to have call bells, particularly in bathrooms, within reach if the patient has fallen on the floor and cannot get up. • [10: refer section 3.3.7]. (See photo for recommendation 70.)

Notes:

Part B: Environment supports rehabilitation

(Only completed in settings where rehabilitation is provided)

Environmental recommendation	Achieved?	Resource	Useful tools/tips
102. The environment enables patients to have opportunities to participate in incidental activities, such as making a cup of tea or accessing the library, café or garden, and to assume other non-patient roles.	☐ Yes ☐ Action required ☐ Not applicable	[23]	
103. The environment is suitable for the functional and therapeutic activities taking place within it.	☐ Yes ☐ Action required ☐ Not applicable		• Consult allied health staff who work in the area to ensure it meets their needs. Some requirements may include: • Does the therapy area/gym have high ceilings for ball games for dynamic balance activities and doorways wide enough so patients in bed can enter and take part in therapy? • Do consulting rooms have access to a sink? • Is the therapy kitchen close to a car park for carrying shopping out of the car and inside? • The design of therapy bathrooms and work procedures must ensure that activities undertaken are safe for patients and staff. For example, if a home-like shower base is provided, only patients assessed as being physically able to manage should use this shower (otherwise both patients and staff may be at risk). If a non-adjustable bath is provided, overhead tracking over the bath should be installed to allow staff to safely remove patients if required.

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
104. The environment provides opportunities for contextually relevant activities, such as using showers and basins similar to ones patients are likely to use at home.	☐ Yes ☐ Action required ☐ Not applicable	[23]	• The unfamiliar hospital environment may pose an obstacle to rehabilitation and for patients preparing to return home. Environmental features that are consistent with the patient's home setting may assist in determining the patient's readiness to go home. This is likely to conflict with other recommendations. For example, a step-less shower base is recommended under 'Bathrooms/toilets' (recommendation 56) but is unlikely to be available in the home environment. In rehabilitation environments it may be useful to have a therapy bathroom more consistent with a home bathroom for therapists to supervise patients' use before discharge home or as part of therapy.

Notes:

Part C: Environment is adapted to the individual

Environmental recommendation	Achieved?	Resource	Useful tools/tips

105. A protocol or policy is in place to ensure the physical environment is adapted as required to suit individual patients' needs. This protocol or policy would cover issues such as patient's personal items, restraint use, size and heights of furniture and equipment, and room for gait aids and patient placement in relation to nurses' station and toilets (refer to 'Useful tools/tips').	☐ Yes
	☐ Action required
	☐ Not applicable
		[3, 4, 12, 14, 18, 20, 24–27]	• Policy requires all physical restraints (including siderails) to be assessed, authorised and only used as a last resort [24–26]. Refer to summary of strategies and list of resources in Appendix 3, 'Minimising restraint use'.
			• There is a system in place to ensure that confused patient behaviours and movements can be monitored by staff (for example, confused patients' beds are moved near to nurses station) [12].
			• Patients who are likely to urgently need a toilet have beds closest to toilets [12].
			• Patients are given a choice of music, such as classical, instrumental, relaxing, piano and new age, as well as music from their country of origin. Use headphones to minimise disruption to other patients. Use disposable ear pads or wipe ear pads for infection control [27].
			• Where use of footstools is indicated and used, make sure patients can reach them as required and move them easily [3, 4].
			• Personal items should be safe, effective and well fitted:
			  • Footwear should be appropriate, with non-slip sole and wide heels. No slippers.
			  • Clothing should be easy for staff and patients to remove and put on and fit well/not be too long.
			  • Eye glasses should be clean and fit securely.
			  • Hearing aids should be clean and function properly [4, 12, 14].
			• Wheelchairs and mobility aids should be used safely by patient as intended and be within easy reach. Resource [18] provides a practical guide for undertaking individual assessments for fitting wheelchairs. Seek advice from an occupational therapist or physiotherapist about individual patient needs [3, 4, 18, 20].
			• Individual cultural and religious needs should be identified and met (for example, private contemplation facilities should be available for patients requiring these).
			• Patient identifiers should be used to indicate a person's impairments (visual, hearing, cognitive), subject to their consent in accordance with privacy legislation requirements.
			• Patients are able to summon assistance as required (for example, they are able to use call bell).

Notes:

Environmental recommendation	Achieved?	Resource	Useful tools/tips
106. Practice is consistent with protocol or policy as outlined above (recommendation 105).	☐ Yes ☐ Action required ☐ Not applicable		

Notes:

Part D: Night time audit

Environmental recommendation	Achieved?	Resource	Useful tools/tips
107. Noise in patients' rooms at night is kept to a minimum.	☐ Yes ☐ Action required ☐ Not applicable	[28]	
108. Disruption in patients' rooms at night is kept to a minimum.	☐ Yes ☐ Action required ☐ Not applicable	[28]	• Provide lights that staff can switch on at night without waking the patient. Lighting would enable staff to read patient notes without disturbing the patient. Patient notes may be placed outside the patient's room to reduce disruption; however, this must be done in a way that does not jeopardise the patient's confidentiality and privacy.
109. Noise levels of alarms and telephones are decreased at night.	☐ Yes ☐ Action required ☐ Not applicable	[28]	
110. Lighting is sufficient for night toileting.	☐ Yes ☐ Action required ☐ Not applicable	[2, 4]	• During the night, if a light is left on in the ensuite with the door shut, the light coming from under the door may guide the patient to the ensuite. • [2: refer Part C, section 760.9 regarding door grilles and undercuts].
111. Adequate night lighting is in all patient areas.	☐ Yes ☐ Action required ☐ Not applicable	[2, 4]	• [2: refer Part E, section 2.11].
112. Patients have easy access to night lights.	☐ Yes ☐ Action required ☐ Not applicable	[3]	
113. Light switches are marked so as to be visible in the dark.	☐ Yes ☐ Action required ☐ Not applicable	[3]	

Notes:

Action plan

Completed by: _____ Date completed: _____

(Copy these pages if more than 12 recommendations require action.)

Environmental recommendation (requiring action)	Describe required action and location (for example, room number or ward)	Priority	Person responsible for action	Useful tools/tips	Date action achieved
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			

Environmental recommendation (requiring action)	**Describe required action and location (for example, room number or ward)**	**Priority**	**Person responsible for action**	**Useful tools/tips**	**Date action achieved**
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			
		☐ Urgent ☐ Within six weeks ☐ Within six months ☐ Reliant on capital funding			

Resource review

List of resources

1. O'Keeffe, J, *Creating a senior friendly physical environment in our hospitals*, The Regional Geriatric Assessment Program of Ottawa.
2. Department of Human Services 2004, *Design guidelines for hospitals and day procedure centres*, Department of Human Services, Melbourne.
3. Queensland Health 2003, *Falls prevention: best practice guidelines for public hospitals and state government residential aged care facilities incorporating a community integration supplement,* Queensland Health, Brisbane.
4. Peninsula Health Falls Prevention Service 2004, 'Individual and general environmental checklists', Reproduced in the Victorian Quality Council's *Minimising the risk of falls and fall-related injuries. Guidelines pack for acute, sub-acute and residential care settings,* Metropolitan Health and Aged Care Services Division, Department of Human Services, Melbourne.
5. WorkSafe Victoria various years, *Victorian Hospitals Industrial Association's Design Advisory Service solution sheets,* Worksafe Victoria, Melbourne.
6. Fleming, R, Forbes, I & Bennett, K 2003, *Adapting the ward for people with dementia*, New South Wales Department of Health, Sydney.
7. Judd, S, Marshall, M & Phippen, P 1998, *Design for dementia,* The Journal of Dementia Care, Hawker Publications, London.
8. Cohen, U & Day, K 1993, *Contemporary environments for people with dementia*, Johns Hopkins University Press, Baltimore.
9. Calkins, MP 1988, *Design for dementia: planning environments for the elderly and the confused*, National Health Publishing, Maryland.
10. WorkSafe Victoria 2002, *Designing workplaces for safer handling of patients*, Worksafe Victoria, Melbourne.
11. Bacon, V & Lambkin, C 1994, *Building design and the delivery of day care services to elderly people*, Buildings Research Team, School of Architecture, Oxford Brookes University, London.
12. Australian Centre for Evidence Based Aged Care 1998, 'Falls in hospitals'*, Best Practice: Evidence Based Practice Information Sheets for Health Professionals*, vol. 2, issue 2, Blackwell Publishing Asia, Adelaide.
13. Victorian Quality Council 2004, *Minimising the risk of falls and fall-related injuries. Guidelines pack for acute, sub-acute and residential care settings*, Metropolitan Health and Aged Care Services Division, Department of Human Services, Melbourne.
14. Pennsylvania Restraint Reduction Initiative Training Team 2003, *Untie the elderly: assessment tools and guidelines for nurses and caregivers*, The Kendal Corporation, Kennett Square, Pennsylvania.
15. Grealy, J, McMullen, H & Grealy, J 2004, *Everyday dementia care: a practical photographic guide including environmental management*, Big Kidz Ltd, Melbourne.
16. Centre for Universal Design 1998, *The universal design principles: designing for people of all ages and abilities*, North Carolina State University, Raleigh, North Carolina.
17. Fisk, A, Rogers, W, Charness, N, Czaja, S & Sharit, J 2004, *Designing for older adults: principles and creative human factors approaches,* CRC Press, Boca Raton, Florida.

18. Rader, J, Jones, D & Miller, L 2000, 'The importance of individualized wheelchair seating for frail older adults', *Journal of Gerontological Nursing,* vol. 26, p. 24–32 & quiz p. 46–7.

19. Day, K, Carreon, D & Stump, C 2000, 'The therapeutic design of environments for people with dementia: a review of the empirical research'*, The Gerontologist*, vol. 40, p. 397–416.

20. The Kendal Corporation 2002, *Untie the elderly: a resource manual for the elimination of restraints in the care of the elderly in health care facilities*, Kennett Square, Pennsylvania.

21. World Health Organization 2004, *Towards age-friendly primary health care,* World Health Organization, Geneva.

22. Kaplan, S & Kaplan, R 2003, 'Health, supportive environments, and the Reasonable Person Model', *American Journal of Public Health*, vol. 93, p. 1,484–9.

23. von Koch, L, Wottrich, AW & Widén Holmqvist, L 1998, 'Rehabilitation in the home versus the hospital: the importance of context', *Disability and Rehabilitation*, vol. 20, p. 367–72.

24. Hospital Bed Safety Workgroup 2003, *Clinical guidance for the assessment and implementation of bed rails in hospital, long term care facilities, and home care settings*, US Food and Drug Administration.

25. Black, K & Haralambous, B 2005, *Barriers to implementing 'restraint free care' policies*, Report for the Bernard Judd Foundation, National Ageing Research Institute, Melbourne.

26. Barnes, L & Price, K 2004, *Decision-making tool: responding to issues of restraint in aged care*, Report for the Department of Health and Ageing, Canberra.

27. Australian Centre for Evidence Based Aged Care 2001, 'Music as an intervention in hospitals', *Best Practice: Evidence Based Practice Information Sheets for Health Professionals*, vol. 5, issue 4, Blackwell Publishing Asia, Adelaide.

28. Australian Centre for Evidence Based Aged Care, 2004, 'Strategies to manage sleep in residents in aged care facilities', *Best Practice: Evidence Based Practice Information Sheets for Health Professionals*, vol. 8, issue 3, Blackwell Publishing Asia, Adelaide.

Evaluation of resources

1. Creating a senior-friendly physical environment in our hospitals

Type of resource	Web-based guidelines
Source	J. O'Keefe, Regional Geriatric Assessment Program of Ottawa
Date	Not reported
How to obtain the resource	www.rgapottawa.com/english/Senior-friendly-fulltext2.pdf (most recently downloaded 23 February 2006)
Face validity: Does the resource appear to meet the intended purpose?	The resource meets its intended purpose to 'assist discussions and negotiations with hospital planners and administrators when planning additions, renovations or even redecorations of hospital facilities' (p. 2).
Target audience	Hospital planners, administrators and staff
Target setting	■ Inpatient acute ■ Inpatient sub-acute ■ Outpatient ☐ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	'By providing well-designed environments, the hospital can maintain and enhance the senior's ability to function while in hospital and retain their quality of life for discharge' (p. 1).
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	Not evident in the guidelines
Content validity: Is the resource based on research evidence?	The resource provides many specifications for environmental aspects, such as recommended step heights, chair heights and so on, without referencing each specification. There is a bibliography provided at the end to support the specifications.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource is brief and easy to follow, with recommended actions listed in tables and grouped into categories. Images to illustrate recommendations would be a useful addition to the resource. The resource uses appropriate terminology; however, because it was developed in Canada it provides imperial measurements. The resource is also available in French.

2. Design guidelines for hospitals and day procedure centres

Type of resource	Design guidelines for hospitals and day procedure centres
Source	Prepared by Health Projects International for the Department of Human Services, Victoria
Date developed and updated	2004
How to obtain the resource	Guidelines can be viewed and downloaded from www.healthdesign.com.au/vic.dghdp/guidelines.htm
Face validity: Does the resource appear to meet the intended purpose?	These guidelines represent a view of the minimum standard of accommodation expected in a new or extensively renovated facility, and for an existing facility could be used to identify significant shortcomings that may require capital funding solutions. The Department of Human Services advises that generic briefs for aged care facilities, such as the *Sub-acute care generic brief* (Department of Human Services 2000) and the *Community rehabilitation centres generic brief* (Department of Human Services 1999), might be more appropriate yardsticks for facilities built generally from the late 1990s/2000 until April 2005; however, it is acknowledged that these are outdated and need to better reflect current practice and policy changes. For more information on the intended purpose of the guidelines, refer to Part A of the guidelines.
Target audience	The guidelines are the minimum requirements for the briefing, planning and construction of hospitals and day procedure centres (see Part A).
Target setting	■ Inpatient acute ■ Inpatient sub-acute ■ Outpatient ☐ Residential (high and low care) ■ Other, specify: Day procedure centres
What are the principles underpinning the resource?	The main aims of the guidelines are to: • establish the minimum acceptable standards for design and construction • maintain public confidence in the standard of health care facilities • determine the basis for the approval and registration of private hospitals • provide general guidance to designers seeking information on the special needs of typical health care facilities

	• promote the design of health facilities with due regard for safety, privacy and dignity of patients, staff and visitors • eliminate design features that result in unacceptable practices • update guidelines to meet current medical practices • eliminate duplication between various standards.
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	The guidelines were publicly released in March 2005.
Content validity: Is the resource based on research evidence?	'Many existing guidelines and standards used in Australia and United States of America have been evaluated in order to arrive at the requirements of these guidelines' (see Part A. p. 6). 'A short list of other Guidelines reviewed for the preparation of these Guidelines can be found under "References and Further Reading" in each section of the Guidelines' (see Part A, p. 2).
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The guidelines are divided into parts. The intention is to cover each discrete subject in a compartmentalised fashion to avoid duplication of the same information under different hospital units. The parts are: Part A: Introduction and instructions for use Part B: Health facility briefing and planning Part C: Access, mobility, occupational health and safety Part D: Infection control Part E: Building services and environmental design enclosures. Part B describes the functional areas and relationships, design, and components for individual hospital planning units (HPUs). This review has focused on the following HPUs: inpatient accommodation unit, rehabilitation unit, and sub–acute care unit.

3. Falls prevention: best practice guidelines for public hospitals and state government residential aged care facilities incorporating a community integration supplement

Type of resource	Best practice guidelines
Source	Queensland Health
Date	2003
How to obtain the resource	www.health.qld.gov.au/fallsprevention/default.asp
Face validity: Does the resource appear to meet the intended purpose?	The best practice guidelines form part of a series of resources available from Queensland Health to support falls prevention program implementation in the target settings. The guidelines booklet is very comprehensive, and might be too detailed for some of the staff who may be accessing it. It includes a small number of select resources to be used as part of the guideline implementation.
Target audience	Originally developed for hospitals and residential aged care facilities, the resource has more recently had a community integration supplement added.
Target setting	■ Inpatient acute ■ Inpatient sub-acute ■ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	The guidelines are in two sections: a hospital/residential aged care setting and a community setting. They are around key areas of assessment, falls prevention strategies, injury prevention strategies, and patient/resident and staff education. A range of support resources are available in addition to the guidelines document, including an implementation workbook, an information booklet and checklist for older people, and information brochures (in a number of languages as well as English).
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	The guidelines and resources were developed by a project team and with the involvement of 16 self-nominated trial sites (acute and sub-acute hospitals, metropolitan and regional centres). A six-month pilot implementation occurred at the trial sites, with a pre- and post-trial evaluation.

Content validity: Is the resource based on research evidence?	While the guidelines document is largely based on the research evidence at the time of publication, a small number of elements of the guidelines are not evidence-based and potentially of limited value. An example is the risk assessment tool provided in the guidelines, which was not based on a validated tool but developed by one of the resource development sites. No validation of the new tool was reported and aspects are inconsistent with current knowledge.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	Because of its level of detail, terminology and other aspects, the guidelines document is likely to be most useful for a falls prevention coordinator or a staff member who needs detailed information, rather than as a resource for all staff to use. A number of the associated resources, such as brochures, contain useful information. In addition, the implementation workbook, which provides a step-by-step guide to implementation and evaluation issues and how to address these, is very useful. The readability and applicability of the hospital and residential aged care setting component of the guidelines are limited in that this component incorporates considerable research and implementation elements from the community setting (where the majority of the research has been done). If these are to have application in the hospital and residential aged care settings, they may need modification (which is not noted). There is inconsistent terminology at times in the first section, moving interchangeably between the words 'patient', 'resident' or 'patients/residents'. This may give the impression that some sections only apply to one or the other setting when in fact the first section is written to apply to both hospital and residential aged care settings.

NOTE: As part of a recently completed project by Queensland Health for the Australian Council for Quality and Safety in Healthcare, a national guideline based on Queensland Health's Falls Prevention Best Practice Guidelines was produced, together with a range of new resources, including a staff training video, posters, information sheets, and a quick reference guide. The best practice guidelines and other resources are available from the Australian Council for Safety and Quality in Healthcare at www.safetyandquality.org, on telephone 02 62894244, or by email safetyandquality@health.gov.au.

4. Individual and general environmental checklists

Type of resource	Environmental checklist
Source	Peninsula Health Falls Prevention Service, Mt Eliza
Date	2004
How to obtain the resource	Reproduced in the Victorian Quality Council's *Minimising the risk of falls and fall-related injuries. Guidelines pack for acute, sub-acute and residential care settings* Also available at www.health.vic.gov.au/qualitycouncil/plans/falls_5d.htm
Face validity: Does the resource appear to meet the intended purpose?	The resource meets its intended purpose of providing an environmental checklist for identifying hazards in the environment that may cause falls.
Target audience	Not stated
Target setting	■ Inpatient acute ■ Inpatient sub-acute ☐ Outpatient ☐ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	That falls can be prevented if hazards are removed from the environment
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	Not stated
Content validity: Is the resource based on research evidence?	Experienced clinicians working in a falls prevention service developed the resource. There are no references to other research evidence on the checklists.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The two checklists are each two pages long and have an easy-to-use format that does not require any guidelines to use.

5. Victorian Hospitals Industrial Association's Design Advisory Service solution sheets

Type of resource	Solution sheets
Source	WorkSafe Victoria
Date developed and updated	See individual solution sheets
How to obtain the resource	www.workcover.vic.gov.au/vwa/home.nsf/pages/so_aged
Face validity: Does the resource appear to meet the intended purpose?	The resources meet their aim of providing the health and aged care sector with information about specific design aspects of patient care and safety to supplement current building codes and relevant Australian Standards. The sheets are: Solution Sheet 1: *Overhead tracking for safe people handling* (2003) Solution Sheet 2: *Ensuite design for dependent and semi-independent persons* (2003). This provides solutions affording flexibility for a range of disabilities, from independent to dependent, and for needs beyond those catered for by AS 1428.1–2001, *Design for access and mobility* Solution Sheet 3: *Choosing safe floor coverings for workplaces in health and aged care* (2005).
Target audience	Direct care workers who handle patients/residents, managers and designers
Target setting	■ Inpatient acute ■ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ■ Other, specify: Day procedure centres
What are the principles underpinning the resource?	The broad principle underlying the resources is providing solutions on specific design aspects of patient care and safety, which address the occupational health and safety legislative obligations of employers.
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	There is no information on dissemination of the solution sheets or their impact on design to improve patient care and safety.

Content validity: Is the resource based on research evidence?	The solutions provided address the occupational health and safety legislative obligations of employers. For readers who wish to obtain more detailed information, the solution sheets refer to relevant guidance material and industry standards.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The solution sheets are short in length and well presented. The information is presented in a very accessible format for direct care workers through to designers.

6. Adapting the ward for people with dementia

Type of resource	Manual and audit tool
Source	*New South Wales action plan on dementia 1996–2001*, by The Hammond Care Group for the New South Wales Department of Health.
Date	2003
How to obtain the resource	A hard copy of the resource can be obtained through the New South Wales Department of Health's Better Health Centre (telephone 02 9816 0452; Locked Bag 5003, Gladesville NSW 2111) or downloaded from: www.health.nsw.gov.au/pubs/a/adapting030208.html
Face validity: Does the resource appear to meet the intended purpose?	The resource clearly indicates the intention of the guidelines, and the audit tool provides a straightforward approach for auditing a ward and covers a broad range of topics and issues regarding caring for people with dementia.
Target audience	Staff and management of small hospitals (particular focus on smaller rural hospitals) and architects who may be called in to help with changes
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ☐ Residential (high and low care) ■ Other: Small hospitals caring for people with dementia for lengthy periods
What are the principles underpinning the resource?	An environment used to provide care aimed at maintaining the abilities of people with dementia should: • make the environment safe and secure • reduce the size of the group • make the environment simple, with good 'visual access' • reduce unnecessary stimulation • highlight helpful stimuli • provide for planned wandering • make the environment as familiar as possible • provide opportunities for both privacy and community; that is, a variety of social spaces • provide for visitors • make the environment as domestic as possible.

Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	There is no reference to the guidelines being field tested or validated to support the utility and effectiveness of using the resource in any setting.
Content validity: Is the resource based on research evidence?	The resource has an extensive list of 68 references and appears to comprehensively cover a range of research articles; however, because the content is very broad, there appear to be some areas where only limited research has been reviewed. For example, in the area of falls prevention, which fits under the principle to be safe and secure, only one reference is reported in relation to falls and the environment. There is no reference to clutter, hazards such as rugs, lack of handrails, chair and bed heights and maintenance of walking aids. The one reference used in relation to falls and the environment discusses the effectiveness of bean bag chairs to put the person closer to the floor to reduce injuries. Although these may reduce injuries, they could also limit mobility and could be considered a form of restraint if people cannot get up from them.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource is a rather large document but is broken down into three main parts: Part 1: Principles, evidence, and examples Part 2: The audit tool Part 3: Architectural guidelines. The layout is reasonably easy to follow with a contents page. The audit tool comprises ten checklists, one on each principle identified in Part 1. The checklists, however, could be confusing because they are inconsistent. Some of the checklists have a 'yes' response as a desired environmental feature and some have a 'no' response as a desired feature. It is not clearly indicated which is the desired response. On some checklists the 'yes' column is in the far right column but in the others the 'no' column is in this position. This does not correspond with desired responses (desired features are not consistently in the far left column). The audit tool has two stages: completing the checklist and developing short term and long term goals. This is adequately described and should promote discussion and documentation of goals and strategies. The resource is visually appealing, well presented and uses good images to illustrate the three examples given. The language avoids jargon and negative wording. Within Part 3 of the manual there is a section titled, 'Designing for Indigenous people with dementia'.

7. Design for dementia

Type of resource	Book
Source	S Judd, M Marshall and P Phippen
Date	1998
How to obtain the resource	*Journal of Dementia Care*, Hawker Publications, London
Face validity: Does the resource appear to meet the intended purpose?	Provides real examples of residential settings designed for people with dementia
Target audience	Written for a wide range of professionals responsible for designing residential care facilities for people with dementia
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	Consensus on principles of design should: • compensate for disability • maximise independence • enhance self-esteem and confidence • demonstrate care for staff • be orientating and understandable • reinforce personal identity • welcome relatives and the local community • allow control of stimuli. Features of design should include: • small size • familiar domestic, home-like style • plenty of scope for ordinary activities • unobtrusive concern for safety • different rooms for different functions • age-appropriate furniture and fittings • safe outside space

	• single rooms big enough for lots of personal belongings • good signage and multiple cues where possible; for example, sight, smell, sound • use of objects rather than colour for orientation • enhancement of visual access • controlled stimuli, especially noise.
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	Cites research that supports the principles and on which case studies of designs are assessed
Content validity: Is the resource based on research evidence?	Identifies recurring design themes from the case studies presented in the book
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The book presents designs for 20 buildings that have been selected for their attempts to present a therapeutic environment for groups of people with dementia. As well as Australian case studies, it also presents examples from Northern Europe. These case studies provide good visual images for professionals who may be involved in commissioning a new building or renovating an existing building.

8. Contemporary environments for people with dementia

Type of resource	Book
Source	U Cohen and K Day
Date	1993
How to obtain the resource	Published by Johns Hopkins University Press, Call number: 362.196831
Face validity: Does the resource appear to meet the intended purpose?	The resource appears to meet its purpose of providing a design guide for developing supportive and healthy environments for people with dementia.
Target audience	Broad audience including people working with people with dementia, family caregivers and design professionals.
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care). The resource is relevant for any environment in which people with dementia reside; however, it tends to focus on residential care. ☐ Other, specify:_____
What are the principles underpinning the resource?	• The physical environment represents a potentially valuable therapeutic resource in the care of people with dementia. • Physical settings occupied by people with dementia are integral parts of a larger system and must operate within the social and organisational dimensions of the larger system. • As much as possible, therapeutic settings should retain the positive attributes of home.
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	The resource is based on a compilation of case studies that help illustrate the effectiveness of design concepts that consider the relationship between the physical environment and behaviour in dementia care and are promoted by design guides, researchers and consultants.
Content validity: Is the resource based on research evidence?	The methodology used was a rigorous and systematic survey of case studies of facilities that have implemented and experienced various design concepts and innovations.

Utility • **easy to understand and use** • **visually well presented** • **uses appropriate terminology**	The book uses appropriate terminology and is visually well presented with photos and maps to illustrate case studies.

9. Design for dementia: planning environments for the elderly and the confused

Type of resource	Book
Source	MP Calkins
Date	1998
How to obtain the resource	National Health Publishing, Maryland
Face validity: Does the resource appear to meet the intended purpose?	The book meets its intended purpose. The approach taken in the book will assist direct care staff to become active participants in applying the design principles.
Target audience	The book is targeted at administrators and staff in aged care facilities, interior designers and architects. The design solutions can also be used to assist staff in other Health Service settings considering environmental modifications.
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	• Maximise independence in activities of daily living: self-feeding, dignified and enjoyable bathing, gracious grooming, personalised dressing. • Offer natural outlets for the need to exercise, for fresh air and motion. • Use environmental design, cues and props, in addition to programs and social experiences, to connect residents with their past: with memories, familiar experiences and emotions. • Draw on visual, audio, tactile, olfactory and kinaesthetic resources to help residents compensate for sensory losses and use remaining abilities. • Design spaces to encourage formation of manageable-sized groups for social and program purposes rather than providing large areas drawing 20 or more people. • Control noxious stimuli (glare, noise) and social irritants (crowding, isolation, lack of tactile stimulation, excessive stimulation).

	• Provide comfortable areas for cognitively impaired residents to interact with families and friends in a manner that is as satisfying as possible for all who are involved.
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	Not evident in the book
Content validity: Is the resource based on research evidence?	Material is well referenced and design responses are empirically based. The book provides an overview of the changes produced by Alzheimer's disease and related disorders which are important to the design of the physical environment. Design solutions are oriented to addressing behavioural considerations focusing on how a facility's environment can be used effectively to achieve person-oriented goals.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	It is easy to find information in the book on design solutions for specific rooms and spaces. A design review checklist is provided in the final chapter which can be completed during a walk-through tour.

10. Designing workplaces for safer handling of patients

Type of resource	Guidelines
Source	WorkSafe Victoria
Date developed and updated	2002
How to obtain the resource	Go to the publications section of the web site, www.workcover.vic.gov.au
Face validity: Does the resource appear to meet the intended purpose?	Provides practical guidance for planners and designers of health and aged care facilities who are building a new facility or refurbishing an existing building on designing the workplace to help eliminate staff injuries.
Target audience	The guidelines are targeted at direct care workers who handle patients or residents, as well as managers and designers.
Target setting	■ Inpatient acute ■ Inpatient sub-acute ■ Outpatient ■ Residential (high and low care) ☐ Other, specify:
What are the principles underpinning the resource?	The Victorian WorkCover Authority has developed these guidelines in cooperation with the health and aged care sector to provide comprehensive guidance on how good workplace design can reduce manual handling injury risks.
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	The impact of the dissemination of these guidelines on improved design is not known. The guidelines are to be reviewed to ensure new developments in workplace design in health care are incorporated.
Content validity: Is the resource based on research evidence?	The development of the guidelines included a review of existing research and information, evaluation of eight hospitals and aged care facilities, expert opinion, consultation and feedback from the industry, and a mock-up field trial.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The guidelines provide best practice information for the design and layout of the main patient or resident handling areas within hospitals and aged care facilities. Sketches showing spatial requirements accompany the guidelines. Information about consultation processes with direct care staff is provided in Section 5 and Appendix B. A safety audit checklist for safe handling of patients or residents is included in Appendix C.

11. Building design and the delivery of day care services to elderly people

Type of resource	Book
Source	V Bacon and C Lambkin
Date	1994
How to obtain the resource	Building Research Team School of Architecture, Oxford Brookes University, London Call Number: 362.60941 BACO
Face validity: Does the resource appear to meet the intended purpose?	The resource is a report of a research study and meets its aim of describing the findings of this study.
Target audience	Not specified
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ■ Outpatient ☐ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	That under the National Health Service and Community Care Act 1990 (UK), local authorities are required, in consultation with other providers, to promote the development of domiciliary, day and respite services as a means of enabling elderly people to live in their own homes rather than in institutional care.
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	No. The resource provides research findings about the strengths and limitations of existing day therapy programs, which will inform the future provision of day therapy services.
Content validity: Is the resource based on research evidence?	The resource is based on a survey conducted in 1990 of 599 Health Services providing day therapy programs in England and Wales.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	Detailed report (146 pages), well illustrated with photos, tables and maps

12. Falls in hospitals

Type of resource	Evidence-based practice information sheet for health professionals
Source	*Best practice* (vol. 2, issue 2), The Joanna Briggs Institute
Date	1998
How to obtain the resource	www.joannabriggs.edu.au/pubs/best_practice.php
Face validity: Does the resource appear to meet the intended purpose?	The resource meets is aim of summarising the research evidence available regarding patient falls in hospitals, including risk of falling, assessment of risk of falling and interventions aimed at minimising the risk of falling.
Target audience	Health professionals
Target setting	■ Inpatient acute ■ Inpatient sub-acute ☐ Outpatient ☐ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	The broad principle underlying the resource is providing evidence-based practice.
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	There is no indication that the pamphlet was validated or tested.
Content validity: Is the resource based on research evidence?	The resource is a summary of a systematic review of research titled, *Falls in acute hospitals*; however, if readers wish to look up particular references they need to refer to the original systematic review for a reference list.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource requires some understanding of research methodologies. The resource is short in length, easy to use and provides a comprehensive summary of the research evidence. The document clearly indicates the levels of evidence in which research is categorised, and provides recommendations at the end of the document. The pamphlet is also available in Japanese and Italian.

13. Minimising the risk of falls and fall-related injuries. Guidelines pack for acute, sub-acute and residential care settings

Type of resource	Best practice guidelines and associated resources to support falls prevention implementation in hospitals and residential aged care facilities
Source	Victorian Quality Council
Date	July 2004
How to obtain the resource	www.health.vic.gov.au/qualitycouncil/plans/falls_5d.htm
Face validity: Does the resource appear to meet the intended purpose?	The resources available as part of the guidelines kit include a guidelines booklet, a research supplement, a tools supplement (including examples of a range of useful risk assessment tools, incident forms, environmental audits, post-fall pathways, and client brochures), a quick reference guide (flip-chart of risk factors, indicators, and a list of potential interventions), sample posters, and an education supplement (six modules covering aspects of the guidelines that can be used as a basis for facilitated workshops with staff or self-learning guides). The range of resources provides a useful basis against which users can commence new, or review existing, falls prevention practice. An additional component that would be useful is an implementation guide, which is still being developed by the Victorian Quality Council.
Target audience	All staff in hospital and residential aged care settings
Target setting	■ Inpatient acute ■ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	The guidelines report a client-centred process model (four steps) which sits within an organisation's quality improvement framework as the foundation for falls prevention in the target settings. While outlining a clear framework, it does not prescribe the tools and resources to be used. In most instances, two or more examples of tools and resources that met key criteria are included in the tools supplement.

Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	During the development of the guidelines and tools, a pilot trial was conducted in two acute, two sub-acute and two residential aged care settings. Feedback from the trial sites was incorporated into the final version of the guidelines. The pilot trials demonstrated that each setting achieved several key self-selected goals in moving towards implementing part of the guidelines.
Content validity: Is the resource based on research evidence?	A research review was conducted (included as a research supplement) and used to identify the evidence base underpinning the guidelines' development.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	Generally easy to follow guidelines and resources. Development involved a research team (National Ageing Research Institute) and experts in instructional design (Word Design Interactive), and resources have been professionally produced. The quick reference guide is a colour coded, tabbed flipchart which can be positioned at nurses' stations for easy reference. Other resources follow the framework of the guidelines so that cross-referencing is relatively easy.

14. Untie the elderly: assessment tools and guidelines for nurses and caregivers

Type of resource	Compilation of assessment tools
Source	Pennsylvania Restraint Reduction Initiative Training Team and Untie the Elderly®
Date	January 2003
How to obtain the resource	A resource catalogue for purchasing this resource can be downloaded from the Kendal Corporation's web site, www.kendaloutreach.org. As of November 2005 this resource cost $US45 (there may be additional shipping fees).
Face validity: Does the resource appear to meet the intended purpose?	The resource meets the intended purpose of providing a resource for 'any facility that may be revising or developing assessment forms' (p.1).
Target audience	Nurses and caregivers, particularly those in residential aged care facilities
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	Assessment and care planning are critical elements of restraint minimisation programs.
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	Although it is not documented that the resource has been validated, the resource was developed as part of the Pennsylvania Restraint Reduction Initiative (PARRI), which achieved a 79 per cent reduction in physical restraint use (excluding side rails) across the state of Pennsylvania between 1994 and 2002. The resource is a compilation of assessment tools, some of which have been validated, such as the Berg Balance Scale, and others that have been developed by a residential aged care facility where no validation is evident.
Content validity: Is the resource based on research evidence?	The resource is a collection of assessment tools collected or developed by the PARRI training team. The resource is not based on research evidence but rather is a 'resource guide based on the experience of providers in the field of long term care' (p. 1); however, some of the tools are validated and based on research evidence and references or full journal articles are provided for published assessment tools.

Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource is easy to use with assessment tools categorised into groups that are separated by tabs. A contents list also helps the reader find a particular assessment tool. The language in some of the assessment tools does rely on some knowledge of nursing terminology (appropriate for the target audience).

15. Everyday dementia care: a practical photographic guide including environmental management

Type of resource	A photographic guide
Source	J Grealy, H McMullen, and J Grealy, Big Kidz Ltd, Melbourne
Date	2004
How to obtain the resource	Available from Melbourne University Biomedical Library
Face validity: Does the resource appear to meet the intended purpose?	The resource provides a guide for the professional or family carer on looking after a person in the later stages of dementia. Called the Resistance to Care (RTC) Project, it involved implementing and evaluating recommendations about care practices and health and environmental management practices at 12 participating residential care sites. RTC is defined as 'any behavioural symptom exhibited by a person with dementia, occurring upon commencement or during care that interferes with or prohibits care provision'. Direct care staff recorded RTC episodes for three consecutive days at each site to identify the care activities that were associated with the most prevalent RTC. These were: • repositioning in bed (19.4 per cent) • assist with eating (9.5 per cent) • showering/bathing (9.3 per cent) • pad change (8.3 per cent) • dressing (8.3 per cent) • toileting (7.3 per cent). The four variables that influence the risk of RTC behaviours are: • the person • the carer • the environment • the interaction. The guide addresses each variable separately.
Target audience	Professional or family carers
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____

What are the principles underpinning the resource?	The main features of the environment are to: • orientate to the purpose of the area • provide general and focal lighting for tasks • include places for both relaxation and stimulation • occupy the person in a meaningful way • encourage mobility (where appropriate) • promote independence • promote a feeling of security • take account of the person's personality • enhance self-esteem and confidence • be sensitive to each person • facilitate the opportunity for family, visitors and carers to interact freely with the person.
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	The four variables of dementia care were assessed and evaluated by review of care plans, environmental audits at each site, three-day behavioural observation at each site and carer survey. Recommended care practices were implemented and evaluated. A second set of behavioural observations was repeated across the sample.
Content validity: Is the resource based on research evidence?	The resource provides an overview of dementia; stages, behavioural and psychological symptoms of dementia; definition of RTC; and detail of methodology used to identify RTC behaviours and variables influencing these behaviours. Material is well referenced and the project was overseen by an expert panel. It is very dementia-focused so there could be gaps in areas such as falls, although none are obvious.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	Each variable is addressed separately, an environmental audit tool is available on a CD ROM, and images are used to illustrate recommended care practices.

16. The universal design principles: designing for people of all ages and abilities

Type of resource	Guidelines
Source	The Centre for Universal Design
Date	1998
How to obtain the resource	The Centre for Universal Design is based at North Carolina State University www.design.ncsu.edu/cud
Face validity: Does the resource appear to meet the intended purpose?	Broad-based principles intended for use across environments, products and communications
Target audience	Used to guide a wide range of design disciplines, including environments, products and communications
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ☐ Residential (high and low care) ■ Other, specify: General
What are the principles underpinning the resource?	There are seven principles: • equitable use • flexibility in use • simple and intuitive use • perceptible information • tolerance for error • low physical effort • size and space for approach and use. Guidelines, images and case studies have been developed for each principle (see attachment to this resource review).
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	The resource has its roots in architecture, engineering and environmental design. The principles were developed by the Centre for Universal Design in collaboration with a consortium of universal design researchers and practitioners from across the United States.
Content validity: Is the resource based on research evidence?	The guidelines document does not cite the evidence for the principles.

Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	Lots of examples and images are provided to illustrate the application of the principle.

Attachment: Universal design principles and guidelines

Principle	Guidelines
1. Equitable use: The design is useful and marketable to people with diverse disabilities.	1a Provide the same means of use for all users: identical whenever possible; equivalent when not.
	1b Avoid segregating or stigmatising any users.
	1c Make provisions for privacy, security, and safety equally available to all users.
	1d Make the design appealing to all users.
2. Flexibility in use: The design accommodates a wide range of individual preferences and abilities.	2a Provide choice in methods of use.
	2b Accommodate right and left handed access and use.
	2c Facilitate the user's accuracy and precision.
	2d Provide adaptability to the user's pace.
3. Simple and intuitive use: Use of the design is easy to understand regardless of the user's experience, knowledge, language skills or current concentration level.	3a Eliminate unnecessary complexity.
	3b Be consistent with user expectations and intuition.
	3c Accommodate a wide range of literacy and language skills.
	3d Arrange information consistent with its importance.
	3e Provide effective prompting and feedback during and after task completion.
4. Perceptible information: The design effectively communicates necessary information to the user, regardless of ambient conditions or the user's sensory abilities.	4a Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
	4b Maximise legibility of essential information.
	4c Differentiate elements in ways that can be described (that is, make it easy to give instructions or directions).
	4d Provide compatibility with a variety of techniques or devices used by people with sensory limitations.
5. Tolerance for error: The design minimises hazards and the adverse consequences of accidental or unintended actions.	5a Arrange elements to minimise hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated or shielded.
	5b Provide warnings of hazards and errors.
	5c Provide fail-safe features.
	5d Discourage unconscious action in tasks that require vigilance.
6. Low physical effort: The design can be used efficiently and comfortably and with a minimum of fatigue.	6a Allow user to maintain a neutral position.
	6b Use reasonable operating forces.
	6c Minimise repetitive actions.
	6d Minimise sustained physical effort.
7. Size and space for approach and use: Appropriate size and space are provided for approach, reach, manipulation and use, regardless of user's body size, posture or mobility.	7a Provide a clear line of sight to important elements for any seated or standing user.
	7b Make reach to all components comfortable for any seated or standing user.
	7c Accommodate variations in hand and grip size.
	7d Provide adequate space for the use of assistive devices or personal assistance.

17. Designing for older adults: principles and creative human factors approaches

Type of resource	Book
Source	A Fisk, W Rogers, N Charness, S Czaja & J Sharit
Date	2004
How to obtain the resource	Call number: 620.82 DES
Face validity: Does the resource appear to meet the intended purpose?	The resource appears to meet its intended purpose of providing guidelines for designing systems, products or environments for older people which are 'accessible to a wide variety of readers and immediately applicable to the design process' (p.xi). The book contains a broad range of design recommendations that are both specific and general and aim to improve the interaction between older people and their environment.
Target audience	Product designers, health care practitioners, managers and others involved in design for older people
Target setting	■ Inpatient acute ■ Inpatient sub-acute ■ Outpatient ■ Residential (high and low care) ■ Other, specify: The book focuses on design for older people generally and is therefore relevant to any setting.
What are the principles underpinning the resource?	The field of human factors underpins the guidelines. 'We may define the overarching goal of human factors as making human interaction with systems and environments one that reduces error, increases productivity, promotes safety, and enhances comfort' (p. 13). Characteristics of humans which need to be considered include sensation (awareness of properties of stimuli), perception (awareness of complex characteristics of things in environment; interpreting information from sensations), and cognition and movement control (carrying out action on basis of perception or cognition).
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	The resource appears to be based on the best available research evidence, including the authors' own research experience; however, research evidence is not referenced throughout, preventing readers from searching for particular research evidence.

Content validity: Is the resource based on research evidence?	The five authors have aimed to move away from an academic resource that is fully referenced and have drawn together their research experience to write these guidelines. They have also included a bibliography for further information.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	Although the first chapter outlines the topics covered in each chapter, readers who are not familiar with human factors approaches would need to read large sections of the book to understand the concepts and to apply them in practice. Each chapter provides summary points as well as a list of recommended readings. There are few images used in the book; however, the font and layout are appropriate for the style of the guidelines. The resource uses appropriate terminology and avoids jargon and negative connotations.

18. The importance of individualized wheelchair seating for frail older adults

Type of resource	Journal article
Source	Joanne Rader, Debbie Jones and Lois Miller
Date	November 2000
How to obtain the resource	*Journal of Gerontological Nursing* (vol. 26, issue 11, p. 24–32)
Face validity: Does the resource appear to meet the intended purpose?	The resource meets its intended purpose of outlining indicators of need for a seating assessment, benefits of proper seating, as well as discussion of how team members can work together to address the issue.
Target audience	Care staff working with frail older adults
Target setting	■ Inpatient acute ■ Inpatient sub-acute ■ Outpatient ■ Residential (high and low care) ■ Other, specify: Settings occupied by frail older adults
What are the principles underpinning the resource?	That wheelchairs need to be adjusted to fit individuals to ensure comfort and function
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	Not stated
Content validity: Is the resource based on research evidence?	The article describes the importance of individualised assessment for fitting wheelchairs appropriately. The article is based on the authors' (nursing/associate professor) experiences and has 13 references.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The article is easy to follow and effectively uses tables to highlight key points and case studies to illustrate the benefits of fitting wheelchairs for individuals. It is a practical guide; however, because it was written in the United States, the section on obtaining funds has limited relevance to an Australian setting.

19. The therapeutic design of environments for people with dementia: a review of the empirical research

Type of resource	Journal article – literature review
Source	Kristen Day, Daisy Carreon and Cheryl Stump
Date	2000
How to obtain the resource	*The Gerontologist* (vol. 40, issue 4, p. 397–416)
Face validity: Does the resource appear to meet the intended purpose?	The resource's intended purpose is to discuss dementia-friendly environment and care. Issues such as lighting, furnishings and outdoor spaces were included, but microscale product design and the sensory and social environments were excluded.
Target audience	'For this review, the physical environment was loosely defined as the domain of relevance to architects, interior designers, facility managers, and/or administrators or caregivers undertaking environmental design or renovation' (p. 398).
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	'Recommendations for the Therapeutic Design and Planning of Dementia Environments: • Incorporate small size units. • Separate non-cognitively impaired residents from people with dementia. • Offer respite care as a complement to home care. • Relocate residents, when necessary, in intact units rather than individually. • Incorporate non-institutional design throughout the facility and in dining rooms in particular. • [Use] moderate levels of environmental stimulation. • Incorporate higher light levels, in general, and exposure to bright light in particular. • Use covers over panic bars and door knobs to reduce unwanted exiting. • Incorporate outdoor areas with therapeutic design features.

	• Consider making toilets more visible to potentially reduce incontinence. • Eliminate environmental factors that increase stress in bathing' (p. 416).
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	The resource has been validated to the extent that the findings are based on research evidence.
Content validity: Is the resource based on research evidence?	Seventy-one research reports were reviewed after completing a comprehensive review of literature. (The authors of this audit tool query the recommendation for using furnishings that put residents lower to the ground (such as bean bags) to reduce falls. This is also likely to reduce mobility by limiting the resident's ability to get up from the seat.)
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource is provided in terminology appropriate for a journal and review of research literature.

20. Untie the elderly: a resource manual for the elimination of restraints in the care of the elderly in health care facilities

Type of resource	Resource manual
Source	The Kendal Corporation
Date	The Untie the Elderly program commenced in 1986. The fifth revision of the manual was completed in 2002.
How to obtain the resource	A resource catalogue for purchasing this resource can be downloaded from the Kendal Corporation's web site www.kendaloutreach.org. As of November 2005 this resource cost $US132 (there may be additional shipping fees).
Face validity: Does the resource appear to meet the intended purpose?	The resource meets its first two aims of increasing awareness of the damaging effects of physical restraints and providing support and expertise to facilities trying to implement a non-restraint policy. It is not evident whether it meets its third goal of influencing legislators and public policy at a national (United States) level.
Target audience	Not specified
Target setting	■ Inpatient acute ■ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	• That older people have a 'basic human right to be treated with respect as an individual and to be protected from neglect, discrimination or physical and psychological abuse' (p. 1–4) • 'Physical restraints are a dangerous violation of human rights.' (Preface) • 'Safe, quality care can be delivered without using physical restraints.' (p. 1–4).
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	The manual is based on principles and methods used in Kendal aged care facilities which have been restraint-free since Kendal's inception in 1973.

Content validity: Is the resource based on research evidence?	The resource includes a range of research articles that indicate that physical restraints are ineffective in reducing harm and also can cause physical and emotional harm to residents. Some of the assessment tools included are not referenced or validated tools.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource is a very comprehensive document with a contents page and tabs separating the different sections. The introduction clearly states the aims and philosophies of the Untie the Elderly program, but there is little guidance on using the manual. There are also multiple assessment tools for assessing one issue, such as identifying falls risk, requiring the reader to select one without guidance. The resource is generally well presented, although fonts are inconsistent and some of the reproduced journal articles are slightly blurry. The resource generally avoids inappropriate terminology, although the use of the term 'elderly' can be viewed negatively.

21. Towards age-friendly primary health care

Type of resource	Booklet
Source	World Health Organisation
Date	2004
How to obtain the resource	World Health Organisation, 20 Avenue Appia, CH 1211, Geneva 27, Switzerland. Fax: +41-22-7914839 www.who.int/hpr/ageing/af_report.pdf
Face validity: Does the resource appear to meet the intended purpose?	The purpose is clearly stated: 'to make the local Primary Health Care (PHC) centre more aware of and more suited to the needs of older persons and the types of care they require' (p. 2). The booklet clearly identifies a series of principles to meet this purpose.
Target audience	Primary health care providers and older users of these services
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ☐ Residential (high and low care) ■ Other, specify: Primary health care
What are the principles underpinning the resource?	Three sets of principles of age-friendly primary health care were developed in the areas of: • information, education and training • community-based health care management systems • physical environment. The principles in the areas of the physical environment are: • 'The common principles of Universal Design should be applied to the physical environment of the PHC facility whenever practical, affordable and possible. • Safe and affordable transport to the PHC centre should be available for all, including older persons, whenever possible, by using a variety of community-based resources, including volunteers. • Simple and easily readable signage should be posted throughout the PHC centre to facilitate orientation and personalise providers and services. • Key PHC staff should be easily identifiable using name badges and name boards. • The PHC facility should be equipped with good lighting, non-slip floor surfaces, stable furniture and clear walkways.

	• The PHC facilities, including waiting areas, should be clean and comfortable throughout' (p. 16).
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	The booklet has not been subject to any validation testing; however, an accompanying 'age-friendly toolkit' provides information on training materials and was in the process of being field tested at the time of publication of the booklet. The toolkit was not publicly available during the evaluation of resources for this project.
Content validity: Is the resource based on research evidence?	The principles are based on expert opinion and a series of focus groups with service providers and older people in five countries (including Australia). There is no reference to empirical research evidence regarding the needs of older people in the primary health care setting, although there may be limited research evidence available. The background information describing the demographics of the ageing population worldwide has a bibliography but is not referenced.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource is brief, has a table of contents and is reasonably easy to follow; however, the three sets of core principles are dispersed throughout the document and would be more readily located if they were provided in one location, such as the executive summary. The resource is well presented and highlights key principles and information in shaded boxes. Figures are used well and the font is clear and easy to read. The booklet avoids negative stereotypes, but the language may not be suitable for the target audience (primary health care service providers and older service users) because it does not use lay person's terms. The resource does discuss the importance of primary health care services being responsive and sensitive to the needs of people with different languages, health practices and beliefs.

22. Health, supportive environments, and the Reasonable Person Model

Type of resource	Journal article
Source	S Kaplan and R Kaplan
Date	September 2003
How to obtain the resource	*American Journal of Public Health* (vol. 93, issue 9, p. 1,484–9)
Face validity: Does the resource appear to meet the intended purpose?	The resource appears to meet its purpose of illustrating how the Reasonable Person Model provides a useful framework for bridging public health and environmental domains by focusing on people's information needs.
Target audience	Not specified
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ☐ Residential (high and low care) ■ Other, specify: Not focused on a particular setting
What are the principles underpinning the resource?	'The Reasonable Person Model is a conceptual framework that links environmental factors with human behaviour. People are more reasonable, cooperative, helpful, and satisfied when the environment supports their basic informational needs. The same environmental supports are important factors in enhancing human health' (p. 1,484).
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	Not stated
Content validity: Is the resource based on research evidence?	Fifty-four references are cited to illustrate the model.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource is in a standard journal article format. The writing focuses on theoretical frameworks and sections may be challenging for a lay audience.

23. Rehabilitation in the home versus the hospital: the importance of context

Type of resource	Journal article
Source	L von Koch, AW Wottrich and L Widén Holmqvist
Date	1998
How to obtain the resource	*Disability and Rehabilitation* (vol. 20, p. 367–72)
Face validity: Does the resource appear to meet the intended purpose?	The article meets its intended purpose of exploring the differences between therapy provided at home and therapy provided in hospital for a sample of three stroke clients.
Target audience	Rehabilitation therapists
Target setting	☐ Inpatient acute ■ Inpatient sub-acute ■ Outpatient ☐ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	That the context of the rehabilitation environment influences outcomes as well as the behaviour and roles of the patient and therapist
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	The article is not intended to be used as a resource, but rather discusses the implications of the location of rehabilitation on therapy.
Content validity: Is the resource based on research evidence?	The article has a reference list of 15 references as well as a qualitative study with three patients using observation and interview methods.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The article uses a standard journal format comprising abstract, introduction, method, results and discussion. Figures are used to illustrate the relationship between patients, therapists and the physical and social environments.

24. Clinical guidance for the assessment and implementation of bed rails in hospital, long term care facilities, and home care settings

Type of resource	Clinical guidelines
Source	Hospital Bed Safety Workgroup*
Date	2003
How to obtain the resource	See the US Food and Drug Administration's web site: www.fda.gov/cdrh/beds.
Face validity: Does the resource appear to meet the intended purpose?	The purpose of the document is clearly stated: 'The purpose of this guidance it to provide a uniform set of recommendations for caregivers in hospitals, long-term care facilities, and home care settings to use when assessing their patient's need for and possible use of bed rails' (p. 1). The document meets this objective by identifying a range of principles, strategies and considerations that should be applied when assessing the need for bed rails.
Target audience	Caregivers in hospitals, long term care settings and home care settings
Target setting	■ Inpatient acute ■ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	1. The automatic use of bed rails may pose unwarranted hazards to patient safety. 2. Decisions to use or to discontinue the use of a bed rail should be made in the context of an individualised patient assessment using an interdisciplinary team with input from the patient and family or the patient's legal guardian. 3. The patient's right to participate in care planning and make choices should be balanced with caregivers' responsibility to provide care according to an individual assessment, professional standards of care, and any applicable state and federal laws and regulations.
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	There is no reference to the guidelines being field tested or validated to support the utility and effectiveness of using the resource in any setting.

Content validity: **Is the resource based on research evidence?**	The introductory sections about possible harms of bed rails and legal issues are well referenced with research evidence; however, the principles, recommendations and strategies are not referenced, but appear to be based on expert knowledge of best practice. The document has 16 authors experienced in health administration and research, including recognised researchers in the field of restraint.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource is a brief document with a table of contents and a number of appendices. There are no details on how to use the resource, but it is straightforward and brief (19 pages). The resource uses appropriate terminology for the targeted audience.

*In the United States, the Food and Drug Administration in partnership with representatives from the hospital bed industry, national health care organisations, patient advocacy groups and other federal agencies formed the Hospital Bed Safety Workgroup.

25. Barriers to implementing 'restraint free care' policies

Type of resource	Report
Source	Kirsten Black and Betty Haralambous, National Ageing Research Institute
Date	April 2005
How to obtain the resource	The resource can be downloaded from the National Ageing Research Institute web site: www.nari.unimelb.edu.au/divisions_health_clinical.html.
Face validity: Does the resource appear to meet the intended purpose?	The resource meets its aims of identifying barriers to implementing 'restraint free care' policies in the residential care setting.
Target audience:	People concerned with care in residential aged care facilities
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	The use of restraints can be detrimental to the physical and emotional wellbeing of a resident. Understanding the barriers to reducing restraints requires an understanding of organisational and individual characteristics, attitudes and beliefs.
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	There has been no validation of the strategies for reducing restraint use; however, many of the strategies are practical approaches reported by staff, residents and family members as being successfully used in practice.
Content validity: Is the resource based on research evidence?	The resource includes a literature review of research evidence containing 59 references. The strategies for reducing restraint use are based on a qualitative study exploring perceptions of residential aged care staff, residents and family members and linked to research evidence.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The document is lengthy but includes a contents page, executive summary highlighting key findings, and separate chapters dealing with key issues. There are few visual images. Font and layout are clear. The resource uses appropriate terminology and avoids jargon and negative connotations.

26. Decision-making tool: responding to issues of restraint in aged care

Type of resource	Decision making tool (booklet)
Source	Australian Government Department of Health and Ageing
Date	2004
How to obtain the resource	www.health.gov.au/internet/wcms/publishing.nsf/Content/ ageing-decision-restraint.htm
Face validity: Does the resource appear to meet the intended purpose?	The purpose 'to make informed decisions in relation to the use or non use of restraint, in responding to behaviours of concern' (p. 2) is clearly stated and appears to be met by the resource.
Target audience	Staff and management in residential aged care facilities
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	• 'The application of restraint, for ANY reason, is an imposition on an individual's rights and dignity and, in some cases, may subject the person to an increased risk of physical harm. The decision to use restraint in any of its forms, and for any reason, should therefore not be taken lightly and only be used as a measure of last resort' (p. 4). • 'The use of restraint should always be viewed as a temporary solution to any behaviour of concern or circumstantial factor. Its use should only be considered after a comprehensive assessment, use of preventive strategies and alternative options have been exhausted' (p. 11). Although the resources is based on a principle of restraint as a last resort, it may have been beneficial to include evidence about the potential dangers of restraint use to support this principle and to help residential care staff understand the reasons for trying to minimise restraint use.
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	There was no reference to the resource being field tested and no report that could be located; however, verbal feedback from the Department of Health and Ageing indicates the resource was pilot tested in residential aged care facilities during its development.

Content validity: Is the resource based on research evidence?	The resource is not referenced, except for one list of interventions adapted from an evidence-based practice information sheet developed by the Australian Centre for Evidence Based Aged Care. A resource list is also provided at the end of the document.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource contains a lot of information and has a table of contents; however, there are no instructions on using the resource or using the flow diagram that aims to guide people through the decision making process for using or not using restraint. The resource uses appropriate terminology and avoids jargon and negative connotations.

27. Music as an intervention in hospitals

Type of resource	Evidence-based practice information sheet for health professionals
Source	*Best practice* (vol. 5, issue 4), The Joanna Briggs Institute
Date	2004
How to obtain the resource	www.joannabriggs.edu.au/pubs/best_practice.php
Face validity: Does the resource appear to meet the intended purpose?	The resource meets its aim of summarising the research evidence available for music therapy as an intervention in hospitals.
Target audience	People who have music therapy expertise
Target setting	■ Inpatient acute ■ Inpatient sub-acute ■ Outpatient ☐ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	Broad principles promoting older person-friendly environments are not enunciated; however, the research evidence for music therapy lends support for environmental recommendations to include use of music therapy.
Content validity: Was any validation undertaken to support utility/effectiveness of the resource?	There is no indication that the pamphlet was validated or tested.
Content validity: Is the resource based on research evidence?	The resource is a summary of a systematic review of research titled, 'Music as an intervention for hospital patients'; however, if readers wish to look up particular references they need to refer to the original systematic review for a reference list.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource requires some understanding of research methodologies. The resource is easy to use and the six-page pamphlet includes a comprehensive summary of the research evidence. The document clearly indicates the grades of recommendation in which research is categorised, and provides recommendations at the end of the document. The resource is well presented. It is also available in Italian.

28. Strategies to manage sleep in residents of aged care facilities

Type of resource	Evidence-based practice information sheet for health professionals
Source	The Joanna Briggs Institute, Best Practice, Volume 8, Issue 3
Date	2004
How to obtain the resource	www.joannabriggs.edu.au/pubs/best_practice.php
Face validity: Does the resource appear to meet the intended purpose?	The resource meets its aim of summarising the research evidence available for assessing sleep disturbances and managing sleep for residents in aged care facilities.
Target audience	People who have appropriate expertise in sleep management
Target setting	☐ Inpatient acute ☐ Inpatient sub-acute ☐ Outpatient ■ Residential (high and low care) ☐ Other, specify:_____
What are the principles underpinning the resource?	The broad principle underlying the resource is providing evidence-based practice.
Content validity: Was any validation undertaken to support utility/ effectiveness of the resource?	There is no indication that the pamphlet was validated or tested.
Content validity: Is the resource based on research evidence?	The resource is a summary of a systematic review of research titled, 'Effectiveness of strategies to manage sleep in residents of aged care facilities'; however, if readers wish to look up particular references they need to refer to the original systematic review for a reference list.
Utility: • **Easy to understand and use** • **Visually well presented** • **Uses appropriate terminology**	The resource requires some understanding of research methodologies. It is short, easy to use and provides a comprehensive summary of the research evidence. The resource is generally well presented, although the yellow font on white background is difficult to read. The recommendations provided at the end of the document are in language accessible to an audience with limited understanding of research methodologies.

Photography guide

Contents

	Recommendation 4	Ramps provide access to all areas
	Recommendation 5 Recommendation 9	External paths should be level, non slip, free of trip hazards and free of overhanging branches, shrubs, leaves, weeds and moss. Internal and external paths sufficiently clear and wide to allow two people with frames to pass.
	Recommendation 10	Sufficient number of seats and toilets along internal and external paths for regular rest
	Recommendation 17	Reception is immediately evident and accessible on arrival incorporating a high-low design to accommodate wheelchair users
	Recommendation 22	Areas where patients are not to enter (for example, cleaners' cupboards, storerooms, etc) are kept locked or camouflaged (for example, same colour as wall, hidden door handle).
	Recommendation 29	Carpets, other flooring and upholstery constant colour rather than strongly flecked patterns
	Recommendation 30	Changes in floor surface clearly defined
	Recommendation 34 Recommendation 37 Recommendation 38	Arms on chairs/commodes secured and sturdy. Chair legs stand straight, rather than sticking out on angles and posing a tripping hazard. Chairs with non-slip easily cleaned fabric.
	Recommendation 35	Unused furniture stored in separate area when not in use. Adequate storage space provided for equipment, mobility aids and furniture so that it is easy to access when required
	Recommendation 46	Toilet flush and sink taps are accessible and user friendly; i.e. automatic or lever handles.
	Recommendation 50 Recommendation 62	Walls around shower/bath and sink marked in contrasting colours to shower/bath and sink. Walls contrasting colour to floors.
	Recommendation 56	Step-less shower bases. The gradient of the bathroom floor must be assessed to ensure: • adequate drainage following the shower being used (otherwise a slip hazard) • that the floor gradient of the shower base is located far enough away from the toilet to avoid wheelchairs rolling away from the toilet down the slope.

	Recommendation 63	Hand rails contrasting colour to walls
	Recommendation 64	Food colours contrast with the colour of plate and the plate contrasts with the colour of the placemat/table.
	Recommendation 69	Light switches within easy reach and accessible to patient (no higher than patient's shoulder height).
	Recommendation 70 Recommendation 101	A patient reading light is mounted at each bed head. Call bells within easy reach when lying in bed or in toilet/shower
	Recommendation 72 Recommendation 73	Signs using icons/symbols are familiar to older people, are readily discriminated, have little detail and clearly represent their meaning. Text is easy to read and there is not too much information on one sign.
	Recommendation 75	There are views to outdoors and landmarks to assist orientation.
	Recommendation 77	Different functional areas are clearly demarcated by colour, sign, physical layout and use of partitions to assist patients to focus on tasks.
	Recommendation 79	Under-stimulation is avoided (e.g. repetitive spaces with little activity, large open spaces).
	Recommendation 84	In lounge/sitting areas chairs are placed in small circles to encourage social interaction
	Recommendation 94	Patients' rooms are numbered and personal memorabilia is used for assisting patients to find their room.
	Recommendation 102	Environment enables patients to have opportunities to participate in incidental activities such as making a cup of tea, accessing library/café/garden and to assume other non-patient roles.

Recommendation 4:

Ramps provide access to all areas.

Recommendation 5:

External paths should be level, non slip, free of trip hazards and free of overhanging branches, shrubs, leaves, weeds and moss.

Recommendation 9:

Internal and external paths sufficiently clear and wide to allow two people with frames to pass.

Recommendation 10:

Sufficient number of seats and toilets along internal and external paths for regular rest.

Recommendation 17:

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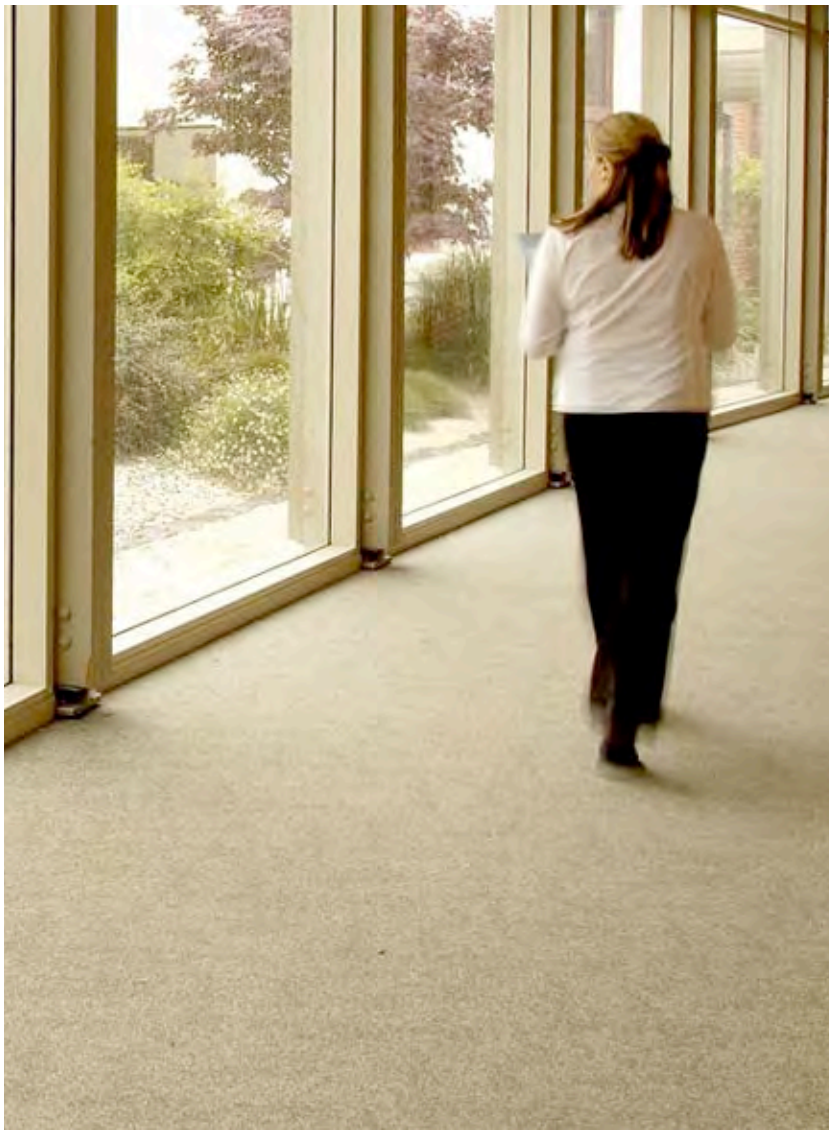
Areas where patients are not to enter (for example, cleaners' cupboards, storerooms, etc) are kept locked or camouflaged (for example, same colour as wall, hidden door handle).

Recommendation 29:

Carpets, other flooring and upholstery constant colour rather than strongly flecked patterns.



Recommendation 30:

Changes in floor surface clearly defined.

Recommendation 34:

Arms on chairs/commodes secured and sturdy.

Recommendation 37:

Chair legs stand straight, rather than sticking out on angles and posing a tripping hazard.

Recommendation 38:

Chairs with non-slip easily cleaned fabric.

Recommendation 35:

Unused furniture stored in separate area when not in use. Adequate storage space provided for equipment, mobility aids and furniture so that it is easy to access when required.

Recommendation 46:

Toilet flush and sink taps are accessible and user friendly; i.e. automatic or lever handles.

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Walls around shower/bath and sink marked in contrasting colours to shower/bath and sink.

Recommendation 62:

Walls contrasting colour to floors.

Recommendation 56:

Step-less shower bases. The gradient of the bathroom floor must be assessed to ensure:

- adequate drainage following the shower being used (otherwise a slip hazard); and
- that the floor gradient of the shower base is located far enough away from the toilet to avoid wheelchairs rolling away from the toilet down the slope.

Recommendation 63:

Hand rails contrasting colour to walls.

Recommendation 64:

Food colours contrast with the colour of plate and the plate contrasts with the colour of the placemat/table.

Recommendation 69:

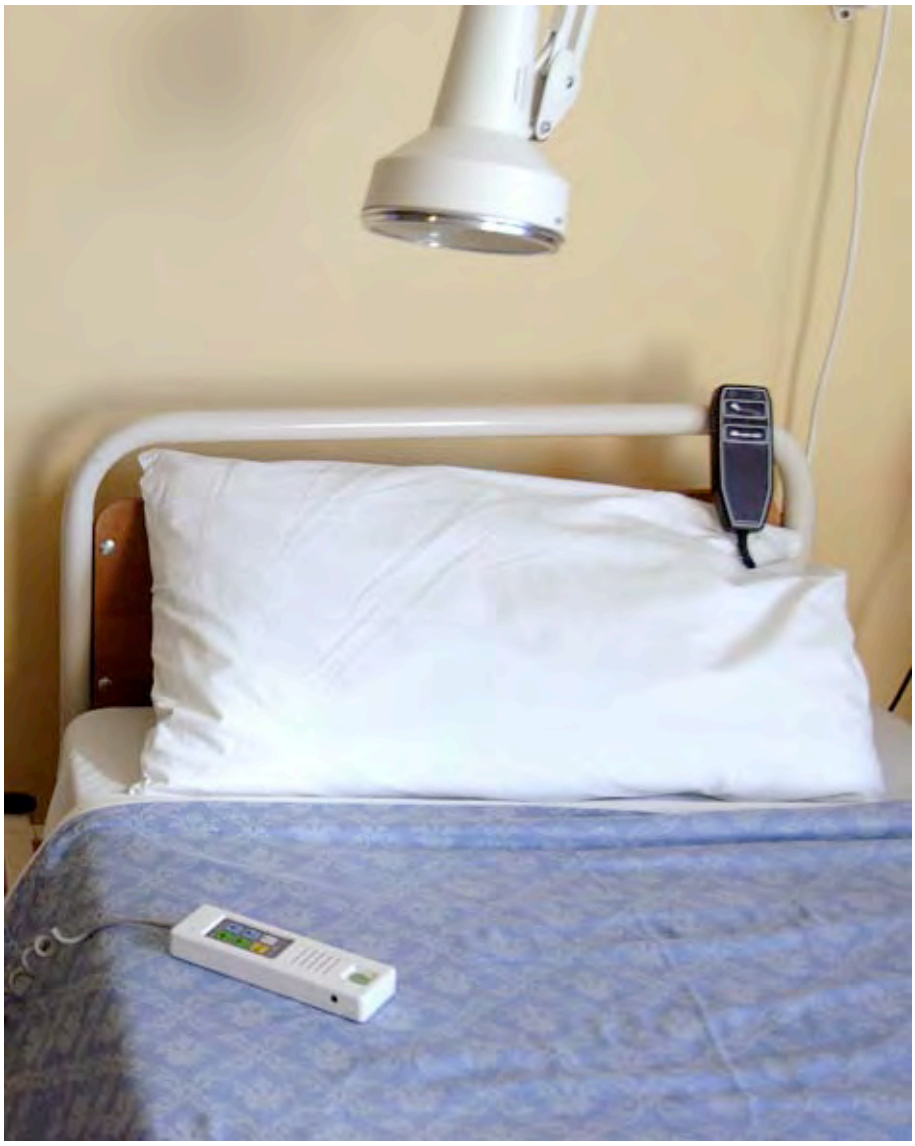
Light switches within easy reach and accessible to patient (no higher than patient's shoulder height).

Recommendation 70:

A patient reading light is mounted at each bed head.

Recommendation 101:

Call bells within easy reach when lying in bed or in toilet/shower.



Recommendation 72:

Signs using icons/symbols are familiar to older people, are readily discriminated, have little detail and clearly represent their meaning.

Recommendation 73:

Text is easy to read and there is not too much information on one sign.

Recommendation 75:

There are views to outdoors and landmarks to assist orientation.

Recommendation 77:

Different functional areas are clearly demarcated by colour, sign, physical layout and use of partitions to assist patients to focus on tasks.

Recommendation 79:

Under-stimulation is avoided (e.g. repetitive spaces with little activity, large open spaces).

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In lounge/sitting areas chairs are placed in small circles to encourage social interaction.

Recommendation 94:

Patients' rooms are numbered and personal memorabilia is used for assisting patients to find their room.

Recommendation 102:

Environment enables patients to have opportunities to participate in incidental activities such as making a cup of tea, accessing library/café/garden and to assume other non-patient roles.

Appendices

Appendix 1: Methodology

Developing the audit tool involved the following steps:

1. a review of resources produced nationally and internationally for inpatient and centre-based Health Services, including acute care, inpatient rehabilitation, geriatric evaluation and management and interim care, centre-based community rehabilitation and sub-acute specialist clinics. The scope of the review also included resources designed for residential care that may have key information for other health settings. The search strategy conducted for this review is detailed below
2. the development of a draft suite of principles, audit tool and guidelines for implementation by staff in Health Services on the basis of the resource review and identification of gaps in existing manuals and guidelines
3. pre-testing of the audit tool in three Health Services to assess the tool's usefulness for staff, wording and readability, structure (ease with which information can be found) and content
4. review of the tool by relevant staff in the Department of Human Services' Capital Management Branch and an occupational health and safety consultant to ensure the audit tool is consistent with building codes of Australia, Australian Standards, the *Design guidelines for hospitals and day procedure centres*, and occupational health and safety standards
5. following modifications to the tool after pre-testing, provision of feedback on the audit tool by key implementation contacts in 14 Victorian Health Services Key information contacts are key staff nominated by Health Services to implement *Improving care for older people: a policy for Health Services.*
6. modification of the tool and distribution to the 14 Health Services to undertake a trial. The trial was conducted over a four-week period and Health Service staff were asked to provide feedback on the tool through an evaluation survey. The survey examined the merits and limitations of the tool and guidelines and suggestions for improvement. A total of 22 staff from the participating Health Services returned the survey. Four acute settings, five inpatient rehabilitation settings, seven geriatric evaluation and management and interim care settings, seven community rehabilitation centres and five specialist clinics returned the survey
7. following completion of the trial, restructuring and modification of the audit tool to address issues raised by staff
8. a photography shoot to illustrate good practice examples of some of the recommendations in the audit tool.

Search strategy

The review of resources aimed to identify relevant design guidelines, developed by clinicians, policy developers and designers and architects, for older person-friendly Health Service environments. Guidelines that take into account the features older people have said they need in the design of a Health Service environment were also pursued.

The search strategy used for identifying resources was multifaceted and included searching the web and making contact with a range of agencies. Databases, such as Libraries Australia (Kinetica) and the University of Melbourne library, were searched for published design guidelines for older person-friendly and dementia-friendly environments. The following key search terms were used in various combinations:

- Health Services
- hospital
- environmental audit
- elder/senior friendly
- built environment
- design
- clinical practice guidelines
- ageing
- risk assessment (health/falls)
- universal design
- inclusive environment
- guidelines or evaluation tool
- aged/older person
- dignity or privacy.

A broad range of organisations that are involved in developing resources for health and aged care were also contacted, or their websites were searched, for guidelines on older person-friendly environments. Reference lists of resources that had been obtained for review were also searched for further possible resources. Another strategy for identifying relevant resources was using the researchers' knowledge of health and aged care contacts, including occupational health and safety contacts for the industry.

Organisations included in the search strategy:

1. personal contact with:
   - Murray Mountain – Access Design Solutions
   - Ms Catherine Bridge, Lecturer, School of Occupation and Leisure Sciences, The University of Sydney
   - Dr Laurie Wilson, Research Leader, TeleHealth, CSIRO, Information and Communication Technologies Centre, Sydney
   - Professor Dimity Reed, Urban Design, Royal Melbourne Institute of Technology, Melbourne

2. State and federal government health-related web sites
3. Ageing Research Online
4. The Joanna Briggs Institute
5. National Ageing Research Institute
6. Victorian Quality Council
7. Alzheimer's Victoria/Australia
8. City of Melbourne/Building Commission
9. Centre for Applied Gerontology, Northern Health
10. Melbourne Health
11. Positive Ageing Foundation (WA)
12. Allied Health Consultancy Group
13. New Zealand Institute of Research for Ageing
14. Royal New Zealand College of General Practitioners
15. National Guideline Clearinghouse (USA)
16. World Health Organization
17. Centre for Universal Design – North Carolina University
18. The Kendal Corporation
19. Conference proceedings of Designing for the 21st Century III (Brazil, 2004)
20. Resources relevant to current health reform in the United Kingdom:
    - The Helen Hamlyn Research Centre
    - Sensory Trust
    - Design Line
    - Access2go
    - Centre for Accessible Environments
21. University web sites and affiliated centres on ageing:
    - University of Iowa
    - University of North Carolina
    - University of Buffalo.

Resource review

A template was designed to enable comparisons between resources and to identify gaps in existing resources. The criteria included:

- Who is the target group for the resource (settings, client and staff)?
- What does the resource set out to do?
- How was the resource developed?
- What are the principles or recommendations to promote older person-friendly facilities and what evidence is used to support them?

From the review, evidence of the dissemination and acceptance of the resource into routine practice was difficult to establish in most, but not all, cases. Of the resources identified for review (approximately 43), 28 are referenced in the audit tool and summarised in the resource review.

This review continued until saturation was reached; that is, no new environmental recommendations were being identified.

Appendix 2: Design principles

Many changes can be made to the environment to capitalise on an older person's strengths and abilities and to minimise the adverse consequences of hospitalisation. For example, using large text on a contrasting background to make reading easier, having toilet areas that are close and easy to identify, and using lever doors instead of door knobs to make doors easier to open.

Table 2 highlights examples of age-related changes, such as visual loss, reduced hearing, physical changes and impaired cognition, which are particularly relevant in considering design principles to help older people navigate their environment.

Table 1: Examples of age-related changes (Adapted from Fisk et al. 2004; O'Keeffe)

Mode for interacting with the environment	Examples of age-related changes
Vision	• Reduced ability to distinguish objects • Glare is more problematic • Depth perception is altered • Reduced speed of accommodation to changing light levels • Reduced vision in low light • Reduced visual acuity • Reduced fields of vision.
Audition	• Reduced hearing ability • High pitched tones can be difficult to hear • Difficulty filtering out background noise.
Physical changes	• Loss of muscle strength, flexibility and coordination • Reduced balance • Reduced reflex/reaction time • Reduced dexterity and fine motor coordination • Difficulty sensing movement and touch.
Cognition	• Age-related decline in working or short term memory (ability to keep information active) • Age-related decline in time-based prospective memory (for example, remembering to do something in an hour's time) • Reduced reasoning and abstract thinking.

The impact of these age-related changes on an older person's ability to navigate the environment can be compounded by diseases of each of these sub-systems; for example, cataracts or glaucoma can further compound a person's visual loss.

Principles underpinning the creation of older person-friendly Health Service environments were identified through the review of resources. Broad-based design principles for barrier-free accessibility, supplemented with principles that are used explicitly in designing environments for older people and for people with dementia, were used to develop the audit tool.

The universal design principles: designing for people of all ages and abilities (1998) developed by the Centre for Universal Design, North Carolina State University, are broad-based principles intended for use across environments, products and communications. There are seven principles:

- equitable use
- flexibility in use
- simple and intuitive use
- perceptible information
- tolerance for error
- low physical effort
- size and space for approach and use.

The series of universal design principles has its roots in architecture, engineering and environmental design and was developed by the Centre for Universal Design in collaboration with a consortium of universal design researchers and practitioners from across the United States (Centre for Universal Design 1998).

Supplementing these principles are design features that aim to ensure the physical environment assists clinical care of people with dementia. These features are recurring themes in dementia design resources reviewed through this project. The consensus on principles of design state that design should:

- compensate for disability
- maximise independence
- enhance self-esteem and confidence
- demonstrate care for staff
- be orientating and understandable
- reinforce personal identity
- welcome relatives and the local community
- allow control of stimuli (Calkins 1988 and cited in Fleming et al. 2003).

Expert occupational health and safety advice sought through the project ensured the needs of staff charged with the care of older people were taken into account and principles about demonstrating care for staff were addressed.

The challenge in developing a person-centred environmental audit tool is ensuring the range of design considerations are taken into account, including:

- the functional capacity of older patients: those requiring minimal staff assistance and those requiring significant or full staff assistance
- the type of facility: acute care, inpatient rehabilitation, geriatric evaluation and management and interim care, centre-based community rehabilitation and sub-acute specialist clinics
- the standard of accommodation expected in a new or extensively renovated facility and in an existing facility.

References

Calkins, MP 1988, *Design for dementia: planning environments for the elderly and the confused*, National Health Publishing, Maryland.

Centre for Universal Design 1998, *The universal design principles: designing for people of all ages and abilities*, North Carolina State University, Raleigh, North Carolina.

Fisk, A, Rogers, W, Charness, N, Czaja, S & Sharit, J 2004, *Designing for older adults: principles and creative human factors approaches*, CRC Press, Boca Raton, Florida.

Fleming, R, Forbes, I & Bennett, K 2003, *Adapting the ward for people with dementia*, New South Wales Department of Health, Sydney.

O'Keeffe, J, *Creating a senior friendly physical environment in our hospitals*, Regional Geriatric Assessment Program of Ottawa.

Appendix 3: Minimising restraint use

The use of restraints in health care is a complex issue and warrants the implementation of an organisational policy to ensure restraint use is monitored, reviewed and only used as a last resort. 'The application of restraint, for ANY reason, is an imposition on an individual's rights and dignity and, in some cases, may subject the person to an increased risk of physical harm. The decision to use restraint in any of its forms, and for any reason, should therefore not be taken lightly and only be used as a measure of last resort' (Barnes & Price 2004, p. 4).

'The use of restraint should always be viewed as a temporary solution to any behaviour of concern or circumstantial factor. Its use should only be considered after a comprehensive assessment, use of preventive strategies and alternative options have been exhausted' (Barnes & Price 2004, p. 11).

Reducing restraints requires a multifaceted approach and alternatives will depend on the reason restraints are being applied. The **resource review outlines a number of documents relating to restraint minimisation** and provides more details about defining restraint; developing a policy; assessing, authorising, reviewing and monitoring restraints; and alternative approaches to care (refer to sleep management, falls prevention and dementia resources). A number of environmental factors have been identified as barriers to reducing the use of restraint, including:

- single rooms and ensuites limiting observation
- environmental hazards, including clutter
- unsafe outdoor areas (Black & Haralambous 2005).

Devices that can be used as alternatives to physical restraints include:

- beds that can be lowered to the ground (as an alternative to bed rails) (Australian Centre for Evidence Based Aged Care 1998; Black & Haralambous 2005; Day et al. 2000)
- bed/chair alarms to alert staff of at-risk patients getting up
- hip protectors to minimise injuries should a patient fall
- grip bars on the side of the bed as an alternative to a side rail for assisting patient mobility in bed.

If wards are secure/locked, consider strategies for reducing agitation around locked doors.
Some strategies include:

- camouflaging doors and door handles:
  - reducing light and view of outside through exit door (Day et al. 2000)
  - placing a full length mirror on the door (Day et al. 2000)
  - using a cloth panel to camouflage door knobs (Fleming et al. 2003; Day et al. 2000)
  - painting door the same colour as adjacent walls (Grealy et al. 2004)
- providing for planned wandering
- providing safe, accessible and interesting outdoor areas that promote interest and activity (Black & Haralambous 2005). Some examples include bus stops, raised garden beds, a bird aviary, a garden shed, pets, and water features. Paths should end at an entrance to a building rather than at a locked gate, and fences should be obscured by shrubs to reduce the sense of being fenced in (Grealy et al. 2004).

References

Australian Centre for Evidence Based Aged Care 1998, '*Falls in hospitals', Best Practice: Evidence Based Practice Information Sheets for Health Professionals*, vol. 2, issue 2, Blackwell Publishing Asia, Adelaide.

Barnes, L & Price, K 2004, *Decision-making tool: responding to issues of restraint in aged care*, Prepared for the Department of Health and Ageing, Canberra.

Black, K & Haralambous, B 2005, *Barriers to implementing 'restraint free care' policies*, Report for the Bernard Judd Foundation, National Ageing Research Institute, Melbourne.

Day, K, Carreon, D & Stump, C 2000, 'The therapeutic design of environments for people with dementia: a review of the empirical research', *The Gerontologist*, vol. 40, issue 4, p. 397–416.

Fleming, R, Forbes, I & Bennett, K 2003, *Adapting the ward for people with dementia*, New South Wales Department of Health, Sydney.

Grealy, J, McMullen, H & Grealy, J 2004, *Everyday dementia care: a practical photographic guide including environmental management*, Big Kidz Ltd, Melbourne.

Appendix 4: Individual seating assessment tool (ISAT)

Purpose: To evaluate bed and chair characteristics that may facilitate transfers, minimise potential for falls, promote resident comfort and prevent negative outcomes associated with improperly fitted chairs/seats.

Directions: Use this tool to evaluate a resident in the bed and chair that is used for the majority of activity they perform over a 24-hour day. For each item checked 'Yes', refer the resident for comprehensive evaluation by physiotherapist/occupational therapist/care plan team.

1. Resident is unable to touch floor with feet when sitting on the edge of bed.	☐ yes	☐ no
2. Resident is unable to touch feet to floor when sitting in chair.	☐ yes	☐ no
3. Resident leans or slides when sitting in chair.	☐ yes	☐ no
4. Resident frequently attempts to move leg rests or removes feet/legs from leg/foot rests.	☐ yes	☐ no
5. Resident frequently slides or shifts pelvis when seated in chair.	☐ yes	☐ no
6. Resident frequently arches back or leans forward when seated.	☐ yes	☐ no
7. Resident is unable [to] or does not self-propel wheelchair.	☐ yes	☐ no
8. Resident uses wedge cushion, bolster, pillows, seat belt, lap tray/buddy or other positional aides when seated in chair.	☐ yes	☐ no
9. Seat belts (if used) cross over or above abdominal area.	☐ yes	☐ no
10. Resident becomes verbally agitated, physically agitated/restless or cries when seated in chair.	☐ yes	☐ no
11. Resident does not use armrests (if present).	☐ yes	☐ no
Referral indicated?	☐ yes	☐ no

Comments:

_____

_____

_____

_____

Completed by:..... Date: ...../...../.....

Assessment tool developed by Sara Wright, MSN, CRNP, Pennsylvania Restraint Reduction Initiative (PARRI) cited in resource number 14.