Technical Series 2 - Wayfinding for Health Facilities

Summary
In October 2007, Professors Hughes and Walters conducted an inquiry into an incident where a patient miscarried in an Emergency Department (ED). The inquiry recommended that ED signage be uniform, prominent, concise and in plain language to avoid confusion. Signs stating "If your condition changes you should notify the nurse immediately" were also recommended. To facilitate implementation of these recommendations particular reference has been made to ED signage and this has been incorporated into the "Wayfinding for Healthcare Facilities Technical Series - TS2". Additionally a guide to implementation, "Practical steps to improving ED signage", has been developed to assist with signage initiatives. The revised TS2 - Wayfinding for Healthcare Facilities will be uploaded onto the Centre for Health Assets Australasia website and provide a link to the site.

Author Branch Business and Asset Services
Branch contact Nina Ceh 9424 5867
Applies to Area Health Services/Chief Executive Governed Statutory Health Corporation
Audience Area Executive, Asset Management, Capital Works
Distributed to Public Health System
Review date 25-Jun-2014
Policy Manual Not applicable
File No. 07/8861
Status Rescinded
Rescinded By GL2014_018
# Technical Series 2 - Wayfinding for Health Facilities

<table>
<thead>
<tr>
<th>Document Number</th>
<th>GL2009_010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publication date</td>
<td>25-Jun-2009</td>
</tr>
<tr>
<td>Functional Sub group</td>
<td>Corporate Administration - Asset Management, Corporate Administration - Governance</td>
</tr>
</tbody>
</table>

## Summary
In October 2007, Professors Hughes and Walters conducted an inquiry into an incident where a patient miscarried in an Emergency Department (ED). The inquiry recommended that ED signage be uniform, prominent, concise and in plain language to avoid confusion. Signs stating "If your condition changes you should notify the nurse immediately" were also recommended. To facilitate implementation of these recommendations, particular reference has been made to ED signage and this has been incorporated into the "Wayfinding for Healthcare Facilities Technical Series - TS2". Additionally, a guide to implementation, "Practical steps to improving ED signage", has been developed to assist with signage initiatives. The revised TS2 - Wayfinding for Healthcare Facilities will be uploaded onto the Centre for Health Assets Australasia website and provide a link to the site.

## Author Branch
Strategic Procurement & Business Development

## Branch contact
Nina Ceh 9424 5867

## Applies to
Area Health Services/Chief Executive Governed Statutory Health Corporation

## Audience
Area Executive, Asset Management, Capital Works

## Distributed to
Public Health System

## Review date
25-Jun-2014

## File No.
07/8861

## Status
Active
NSW HEALTH TECHNICAL SERIES 2 - WAYFINDING FOR HEALTH FACILITIES

PURPOSE
The guideline provides detail to enable the implementation of effective Wayfinding in the healthcare environment, addressing both new and existing facilities of any size and improve Emergency Department signage.

KEY PRINCIPLES
A collaborative approach to updating or designing signage is recommended to ensure it is appropriate and meet the needs of consumers, staff, the facility and the community.

All signage should be consistent with the specified guidelines:
- Technical Series - TS2 Wayfinding for Healthcare Facilities
- Practical steps to improving Emergency Department signage

The Technical Series - TS2 Wayfinding for Healthcare Facilities has been updated to incorporate recommendations from the October 2007, Royal North Shore Hospital inquiry conducted by Professors Clifford Hughes and William Walters with reference to Emergency Department signage incorporated.

The inquiry recommended that Emergency Department signage be uniform, prominent, concise and in plain language to avoid confusion. Signs stating “If your condition changes you should notify the nurse immediately” were also recommended.

Practical steps to improving Emergency Department signage is a guide developed to assist with the signage initiative implementation in emergency departments.

Wayfinding for public buildings and sites is subject to a growing regulatory environment; although most of this is concerned with safety there is a steady expansion in providing for people with disabilities. Both legislative requirements and assistive technologies are covered in some detail.

USE OF THE GUIDELINE
The TS2 - Wayfinding for Healthcare Facilities guide is directed toward a specific audience of Design professionals, Facility management, maintenance, departmental staff and other project/construction team members.

The revised TS2 - Wayfinding for Healthcare Facilities will be uploaded onto the Centre for Health Assets Australasia website http://www.healthfacilityguidelines.com.au/ and provide a link to the site.
GUIDELINE SUMMARY

GL2009_010

Issue date: June - 2009

Page 2 of 2

REVISION HISTORY

<table>
<thead>
<tr>
<th>Version</th>
<th>Approved by</th>
<th>Amendment notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2009</td>
<td>Acting Director-General</td>
<td>New guideline covering the revised Technical Series TS-2 and Emergency Department Signage.</td>
</tr>
<tr>
<td>(GL2009_010)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ASSOCIATED DOCUMENTS

1. Technical Series TS-2 - Wayfinding for Healthcare Facilities
2. Practical steps to improving Emergency Department Signage
EXECUTIVE SUMMARY

The primary aim of this Guide is to enable the implementation of effective Wayfinding in the healthcare environment. The contents address both new and existing facilities of any size.

The original TS2 signage system still provides a well-designed and comprehensive solution to current needs. The application and detail of the System therefore occupy a major part of the content.

Although this Guide is directed towards a specific audience of Design professionals, Facility management, maintenance, departmental staff, and other project/construction team members; it can be read by a person with no prior wayfinding experience.

Wayfinding for public buildings and sites is subject to a growing regulatory environment; although most of this is concerned with safety there is a steady expansion in providing for people with disabilities. Both legislative requirements and assistive technologies are covered in some detail.

There are a number of stages in the design, planning and execution of wayfinding; the tasks of evaluation and scheduling are examined and a methodology proposed.

Section 1 traces the history of TS2, looks at the general aims of wayfinding, and measures to be taken to meet the NSW Health customer focus policy.

Section 2 examines the various healthcare user groups, the regulatory framework and wayfinding strategies and technologies.

Section 3 describes the different sign types, and the methods of controlling and auditing facility signage.

Section 4 deals with community, site and road signage.

Section 5 provides an overview of interior signage.

Section 6 examines the TS2 sign system in general, the application of sign types and reading distances.

Section 7 covers the scheduling of signage and the TS 2 sign system codes.

Section 8 looks in detail at sign design, formats, message, colour, contrast and mounting heights.

Section 9 provides information for sign and message layouts, for each sign type.

Section 10 deals specifically with the use of pictograms.

Section 11 addresses emergency departments.

Section 12 provides supplementary information on community, regulatory and special signage.

Section 13 examines tendering methods and documentation.

The Appendices contain a glossary, list of abbreviations, bibliography and further reading list, organisations and a vocabulary for healthcare signage. Technical information is provided and covers typefaces, colour systems and regulatory colours, sign manufacture and materials, accessibility issues and statistics, and RTA draft policy extracts.
TABLE OF CONTENTS

EXECUTIVE SUMMARY .................................................................................................................. iii
1 INTRODUCTION .............................................................................................................................. 1
  1.1 Background ............................................................................................................................... 1
  1.2 Wayfinding .............................................................................................................................. 1
  1.3 Customer Focus Policy ........................................................................................................... 1
  1.4 Use of this Guide ..................................................................................................................... 2
2.0 WAYFINDING ............................................................................................................................ 3
  2.1 Consumer Groups ................................................................................................................... 3
     2.1.1 Service Users .................................................................................................................. 3
     2.1.2 Visitors ............................................................................................................................ 3
     2.1.3 Staff ................................................................................................................................ 3
  2.2 Wayfinding ............................................................................................................................. 4
     2.2.1 Wayfinding strategy ........................................................................................................ 4
     2.2.2 Wayfinding Process ......................................................................................................... 4
     2.2.3 Colour coding .................................................................................................................. 5
     2.2.4 Regulatory requirements ................................................................................................. 5
     2.2.5 Guidelines and Policies ................................................................................................... 6
     2.2.6 Accessibility ................................................................................................................... 6
     2.2.7 People with Disabilities ................................................................................................. 7
     2.2.8 Assistive technologies ..................................................................................................... 7
     2.2.9 People from a Non-English Speaking Background ......................................................... 9
     2.2.10 Parents with Prams and children ................................................................................... 10
     2.2.11 Children's Services ....................................................................................................... 10
     2.2.12 Out of office Hours ....................................................................................................... 10
     2.2.13 Site Access .................................................................................................................... 10
3 SIGNAGE ..................................................................................................................................... 11
  3.1 General .................................................................................................................................. 11
  3.2 Sign content ............................................................................................................................ 11
  3.3 Sign groups ............................................................................................................................. 11
     3.3.1 Directional Signs .............................................................................................................. 12
     3.3.2 Location and Identification Signs .................................................................................... 12
     3.3.3 Information and Directory Signs .................................................................................... 12
     3.3.4 Regulatory, including safety and fire safety ..................................................................... 12
     3.3.5 Traffic and Parking Signs ............................................................................................... 12
     3.3.6 Miscellaneous Signs ....................................................................................................... 12
  3.4 Signage Hierarchy .................................................................................................................... 12
  3.5 Signage Process ....................................................................................................................... 13
  3.6 Temporary Signage ................................................................................................................ 13
  3.7 Signage Manual ....................................................................................................................... 14
  3.8 Signage Audits ........................................................................................................................ 14
4 EXTERIOR WAYFINDING ............................................................................................................. 15
  4.1 Community Signage ............................................................................................................... 15
  4.2 Site Signage ............................................................................................................................ 15
  4.3 Site Maps ................................................................................................................................. 16
5 INTERIOR SIGNAGE .................................................................................................................. 18
  5.1 General .................................................................................................................................. 18
  5.2 Signage Hierarchy ................................................................................................................... 18
  5.3 Signage Methodology ............................................................................................................. 18
6 SIGNAGE SYSTEMS .................................................................................................................. 20
  6.1 Selecting a Sign System ......................................................................................................... 20
     6.1.1 External Sign Applications ............................................................................................... 21
12.6 Notices ............................................................................................................................54
12.7 Sign Maintenance ........................................................................................................55

13.0 TENDERS ..........................................................................................................................56
13.1 New projects ..................................................................................................................56
13.2 Existing installations ......................................................................................................56
13.3 Tender Specification Checklist .....................................................................................56

APPENDIX 1 - GLOSSARY AND ABBREVIATIONS ........................................................................58
Abbreviations ........................................................................................................................58
Glossary ..................................................................................................................................59

APPENDIX 2 - VOCABULARY ....................................................................................................63
General ........................................................................................................................................63
Vocabulary ...............................................................................................................................63

APPENDIX 3 - REFERENCES ...................................................................................................65
Legislation Regulations and Guidelines - Commonwealth and NSW ..................................65
Policy and Guidelines - NSW Health .......................................................................................65
Road and Traffic Signage ........................................................................................................66
Australian Standards .............................................................................................................66
Draft Standards at May 2008 ..................................................................................................68
Standards - Overseas .............................................................................................................68
Public information symbols .....................................................................................................68

APPENDIX 4 - BIBLIOGRAPHY and FURTHER READING ..........................................................69
Bibliography ...........................................................................................................................69
Further Reading .......................................................................................................................71

APPENDIX 5 - ORGANISATIONS ..........................................................................................74
Organisations General - Australia ............................................................................................74
Organisations General - Overseas ...........................................................................................74
Standard Organisations - Overseas ......................................................................................75
Organisations Accessibility - Australia ..................................................................................75
Organisations Accessibility - Overseas ................................................................................76

APPENDIX 6 - WAYFINDING CHECKLISTS .............................................................................77
General .......................................................................................................................................77
Accessibility .............................................................................................................................77

APPENDIX 7 - TECHNICAL INFORMATION ..........................................................................77
Standard Sign Lengths ............................................................................................................77
Typefaces ...................................................................................................................................77
Sans Serif ...................................................................................................................................77
Serif ..........................................................................................................................................77
Principal Colour Systems in general use: .............................................................................78
Safety Signs .............................................................................................................................78
Signage Manufacture ..............................................................................................................78
Typical materials: ..................................................................................................................78
Accessibility .............................................................................................................................79
General .................................................................................................................................80
Vision impairment and blindness .........................................................................................80
Hearing loss and deafness ....................................................................................................81

APPENDIX 8 - RTA Draft Guidelines .......................................................................................82
1 INTRODUCTION

1.1 Background

Signposting for Healthcare Facilities was first published in 1974 and set out to promote the improvement and standardisation of signage systems. It provided a working signage manual specifying a system developed for the N.S.W. Hospitals Planning Advisory Centre (HOSPLAN) in conjunction with the architectural graphic designer, Alan S. Porritt.


The fourth 1994 edition (with Perumal Partners Pty Ltd) adopted customer focus and expanded the Signposting Manual beyond hospitals to apply to all healthcare facilities. It recognised change and promoted flexibility in signage solutions. It aimed to assist signage manufacturers, and to assist healthcare facility staff, specify, install and maintain signage.

This edition Wayfinding for Healthcare Facilities developed with The Centre for Health Assets Australasia (CHAA), modifies the title to reflect current practice. Sections dealing with wayfinding technology and sustainable practices, legislation and importantly provision for people with disabilities have been updated and expanded. The growing body of evidential material relating to the theory and practice of wayfinding is drawn upon where appropriate to support the recommendations. The original signage system is retained as a recommended option for healthcare facilities.

1.2 Wayfinding

Simply stated wayfinding is a strategy to assist people to successfully navigate a site and reach their intended destination. As a strategy or design concept it takes in the complete site environment, using signage as an essential and major part in this process.

To find and navigate a site people will use a number of senses to make decisions. Their success in orienting themselves and solving problems will depend on how these processes have been understood and implemented in the wayfinding installation.

Any wayfinding strategy should address the complete journey from home to facility and back. Information sheets and directions must be coordinated with the physical site and the wayfinding system, ensuring that landmarks, roads/parking, building/department names, routes and other wayfinding tools are checked for consistency in terminology and currency.

One of the most important aspects in providing comprehensive signage is seeking comment from people who will use the signs. Suitable questionnaire and audit material for use is listed in the Appendices.

1.3 Customer Focus Policy

The N.S.W. Government and the N.S.W. Health Department advocate customer focus as a core operating philosophy. To use this as a key operating principle for an effective wayfinding system, the customer has to be identified and the specific needs of each customer understood.
Customer satisfaction, whilst typically perceived as a positive action, is often the result of an absence of such things as inconvenience, stress or worry. Although an effective wayfinding system may not directly yield customer satisfaction; an ineffective one will produce dissatisfaction, leading to behaviour that may affect staff and others. More importantly poor wayfinding may compromise customer safety particularly in emergency situations.

Wayfinding besides providing assistance in negotiating a site is equally concerned with the reduction of risk. Risks can be wide ranging and are often known only through staff experience and reported cases. AS/NZS 4360: Risk Management provides a basis for the assessment and management of risk.

1.4 Use of this Guide

Healthcare facilities are one of the most complex building types to be found, differentiated by having many highly specialised services in addition to many of the functions found in other building types. Healthcare facilities in common with other public buildings are used by a complete cross section of the population, but with a higher proportion of a particular consumer group, e.g. aged or those with impairments (physical, cognitive and sensory). Many visitors and service users may be stressed or anxious in addition to any medical conditions.

The purpose of this guide is to provide the wayfinding tools to meet this task. The main differences between healthcare and general wayfinding are:

- specialist vocabulary
- regulations affecting wayfinding for these particular classes of building
- visitors and service users with special needs
- number and variety of journeys undertaken

It is also the case that general wayfinding principles apply, but carry special responsibilities when used in healthcare, these include:

- risk management and duty of care issues
- security and staff safety issues
- patient safety issues
- OHS, medical and other processes involving hazards and safety.

The original TS2 (Hosplan) signage system was commissioned to address the specific requirements for hospitals, it successfully achieved this aim and is as relevant today as it was on release; for this reason it continues to be a recommended with no fundamental changes. By continuing the system the task of integrating new work into an existing TS2 system and providing a matching and uniform finished product is greatly simplified.
2.0 WAYFINDING

2.1 Consumer Groups

The population found in most healthcare facilities can generally be described by the following groups.

2.1.1 Service Users

Patients (inpatients and outpatients) form the most recognisable user group. In reviewing or planning a wayfinding system, a comprehensive list of all categories of service users should be compiled - all categories e.g. daily, residential and occasional should be included. This will identify the destination of people and movement of people within the site, the point of initial reception, the point of completion of service, and the time of day these events take place.

This information can be used to revisit existing operational policies. It may be the case that several out-patient clinics operate in close proximity to each other yet maintain separate registration/reception functions. Depending on the specific policies of each facility, a common reception point could then be identified to simplify access.

2.1.2 Visitors

This group includes those who are visiting inpatients or accompanying outpatients. Relatives and friends of people entering the Emergency Department require particular consideration in view of their potentially distressed state.

Other visitors to a facility include commercial representatives, service and delivery personnel, ambulance and police officers, fire brigade officers, assorted health and welfare workers and other official representatives.

Visitors should be identified so that the purpose and means of their access can be understood. This will not only assist in identifying wayfinding needs, but assist in a review of operational policies covering security and access.

2.1.3 Staff

Facility staff categories will include salaried, sessional, voluntary and consultant. Of the three facility user groups Staff are the most advantaged and most obligated.

Frequency of attendance provides the advantage of familiarity with the facility, with a resultant reduction in dependence on wayfinding. However this in turn places an obligation on Staff to share their knowledge of the facility with service users and visitors who are lost or in need of assistance.

The use of outsourcing and contracting services is now common, and may include cleaning and maintenance services where there may be a high turnover in staff coupled with the need for extensive access within the facility. Wayfinding should meet these needs and an appropriate orientation process should be in place for each staff category. Where facilities have a teaching role the needs of students need to be included.
2.2 Wayfinding

2.2.1 Wayfinding strategy

Wayfinding is used in a number of different ways to achieve the following objectives:

- direct individuals to a particular destination
- identify and confirm a particular location or service
- control vehicles and pedestrians
- clearly identify staff, patient and visitor areas, and draw attention to restricted areas
- provide a first line of defence against intruders by defining areas where entry is restricted.

These wayfinding functions can also be achieved by other means. Where for example a customer may be guided by a staff member to their destination, or a staff orientation program may identify particular locations for staff.

While most buildings are unique and it is not possible to prescribe a universal approach, there are some principles that have a general application – these are covered in the following clauses.

2.2.2 Wayfinding Process

The process for people ‘finding their way’ can be described as a problem solving task; here a series of decisions are made at points along the journey, involving decision making; decision processing; and information processing [Arthur and Passini]. Some of the problems encountered in the wayfinding process can be explained as resulting from a disparity between the mental model created and the actual environment.

People use their senses consciously and unconsciously in the wayfinding process, with information supplied by language, pictograms, graphics and colour, tactile, auditory and other means that are processed cognitively for use. Only a very short time is usually given to scanning information and if this information is not immediately understood it is disregarded, and process continues to search for something immediately recognisable. If this is the case for the average person it follows that the needs of people with sensory/cognitive and physical impairments, including cultural, language and other differences need more detailed consideration.

The following steps illustrate the application of these cognitive principles into wayfinding design:

- understand and identify routes, entries, and exits clearly prior to starting wayfinding design
- identify decision points and design information at each as part of a sequential process
- keep information to a minimum and relevant to each location to prevent information overload and confusion
- use language and pictograms that are unambiguous and generally recognised
- differentiate, group and present information for fast recognition
• aim for clarity, consistency, ease of comprehension and legibility throughout
• employ recognised visual tools such as colour, pattern, motif, design elements, etc
• address special needs, and provide information in a readily accessible form
• use appropriate expertise for wayfinding evaluation, design and continued development.

Additional detail on the outline points listed above are covered in the sections that follow. For additional and background information refer to Appendix 4, Bibliography and Further Reading.

One aim of wayfinding strategy is to simplify the site. This can be achieved physically in terms of rationalizing layout and routes, and by using recognized wayfinding techniques such as the use of colour, consistent terminology, effective signage, pictograms and graphics.

2.2.3 Colour coding

Colour coding can simplify decision making and reduce the amount of information on signs. Colour is now universally used to identify and distinguish different sign functions e.g. safety signs, site elements, such as floor levels, buildings, departments and routes. Despite universal acceptance colour coding by itself is not a complete solution, and on some sites it may even prove to be an inappropriate strategy. The use of colour as a wayfinding device should be always be used with care.

If colour is to be used for coding then the following points need to be taken into consideration:
• colour vision impairment (red/green and other)
• vision acuity loss with age (differentiating colours)
• difficulty in remembering more than 5 colours [Arthur and Passini]
• failure to notice colour coding systems when used – up to 66% [IDU]
• a limited number of distinct colours (approximately 8) for use [Miller and Lewis]
• should be immediately recognised as serving this function
• readily understood by visitors, e.g. use an explanatory sign or map
• avoid confusion with decorative colour schemes
• be consistent, apply to the whole site, including building elements and signage
• use only colours that can be recognized (and described) when not seen against another colour
• ensure a high contrast of message against background for signage
• employ colour in a secondary role to assist signage, not as a primary wayfinding device.

2.2.4 Regulatory requirements
Various aspects of wayfinding and signage are subject to regulation in the following documents:

- The Building Code of Australia [BCA]
- The Disability Discrimination Act [DDA]
- Section 11, Workplace Surveillance Act, NSW, 2005

The BCA deals with acceptable standards for the design and construction of buildings, the focus for the wayfinding requirements relate to egress, safety and access.

The Disability Discrimination Act (DDA) is concerned with citizen rights and wayfinding falls principally under section 23 Access to premises.

The Workplace Surveillance Act, NSW, 2005 in Section 11 has the requirement that surveillance equipment be visible, and in addition that “signs notifying people that they may be under surveillance in that place are clearly visible at each entrance to that place.”

Note: Australian Standards cover wayfinding over a wide range of issues some of which relate directly to healthcare facilities. Applicable Standards may be those adopted by the BCA, the DDA, or by other statutory bodies in their regulations and guidelines e.g. Roads and Traffic Authority (RTA). These usually relate to accessibility, OHS and safety issues, infection control, security, engineering services, indoor environment, roads, parking, etc.

2.2.5 Guidelines and Policies

Wayfinding are also defined by specific Industry, medical and other organisations concerned with specific areas or services within a facility, e.g. Australian College of Emergency Medicine.

2.2.6 Accessibility

The BCA and DDA regulate to ensure that the access and wayfinding needs of people with disabilities are adequately met. This is particularly relevant to healthcare facilities where a high proportion of users may have a temporary or permanent disability, be feeling unwell or stressed, or affected by medication.


The Disability Discrimination Act (DDA) unlike the BCA is a complaint based instrument. Section 23 covers discrimination in relation to means of access to (and within) premises. Wayfinding is included by inference and subject to the interpretation of this and other sections. Lighting, lettering and pictogram size, tactile, auditory and visual safety information are similarly included. Seeking expert advice is advised for the interpretation of access issues within the DDA (and the BCA).

“If, after working through the guidelines, you are concerned you may not be providing the best access possible, you should seek assistance from someone with expertise in the areas of building law (the BCA) and discrimination law or a suitably qualified architect, designer, building surveyor or access expert”.
[HREOC, Access to buildings and services: Guidelines and information],

It is also recommended that the Australian Building Code Board (ABC) and DDA be checked for regulatory changes and initiatives such as the DDA Standards Project and the draft Premises Standard.
Wayfinding within the context of accessibility is covered by various NSW Government and NSW Health Policy documents and Guidelines such as NSW Health, 1994, DS32, Improved Access for Health Care Facilities.

2.2.7 People with Disabilities

The term People with disabilities is used by the AS 1428 series and includes those with physical, vision, hearing, cognitive impairments and mental illness.

Vision-impairment and its causes are strongly related to age. An estimated 9.4% of Australians aged 55 or older are vision impaired and about 1.2% are blind (AIHW 2003, Vision problems among older Australians).

There were approximately 1.12 million people aged over 60 in NSW in 2002 (35% of the national total). 840,500 people are aged over 65. By 2021, nearly 18% of people (1.3 million) in NSW will be over the age of 65. (DADHC – NSW).

A significant section of the population experience hearing impairments, here again there is also a close relationship with the ageing process. Currently, one in six Australians suffers from some form of hearing impairment, and this is projected to increase to one in four by 2050 (Access Economics, 2005). There are 365,900 Australians over 50 years, who have a moderate or severe hearing loss in their better ear. At this level of loss a hearing prosthesis is essential. (Listen Hear, The economic impact and cost of hearing loss in Australia, Victorian Deaf Society, 2006).

Most wayfinding and signage is accessible to people with hearing impairment, in some case where an audible signal or information is relied on, then signage will be a need to be supplemented by appropriate assistive technologies.

Where users are affected by both hearing and vision impairments (Deafblindness) then assistive technologies are essential. Since this impairment is not recorded statistically there is a general lack of awareness of the subject. It is estimated that of the general population that have a hearing loss approximately 1% are also blind or have serious vision loss, (ADBC, Australian DeafBlind Council). The methods of meeting the needs of people with sensory impairment are covered later in this guide.

In Mental Health Facilities (including dementia care) appropriate medical advice on effective wayfinding techniques should be sought. Signage in areas accessed by Mental Health patients will need special consideration under OHS in terms of the possible misuse of signs as a weapon or for self-harm, and in relation to damage, defacement or removal.

Older healthcare facilities will have a history of addition and refurbishment. Because of this many facilities may be a collection of buildings with different floor levels, sometimes abutting or connected by covered-ways. In these cases wayfinding should direct a route that can be negotiated by people with disabilities (using wheelchairs, walking frames, or other aides). This strategy may involve directing via an alternative longer route, or by resolving any possible DDA issues with a built solution such as an additional access ramp or lift.

2.2.8 Assistive technologies
A range of assistive technologies applicable to wayfinding are available for inclusion in facility infrastructure. Systems carried for everyday use, e.g. ultrasonic-canes, Electronic Travel Aids (ETAs) and GPS Position Locators should be provided for if their function can be supported within the facility.

The following assistive technologies are designed for warning, navigation and location; all should be considered within the terms of the DDA, while a limited number are requirements of the BCA principally under Parts D and E.

Passive Systems:
- Tactile Ground Surface Indicators (TGSIs) for direction and warning [BCA and AS 1428.4 Tactile Indicators]
- Raised Tactile (Embossed) and Braille Signage Systems [BCA]
- Tactile maps and information points.

Note: The use of Tactile Ground Surface Indicators (TGSIs) should be subject to a risk assessment. TGSIs may constitute a trip hazard for the aged, very young, and those with a gait impediment or using a walking aid. For this reason the BCA permits alternatives for Class 9b buildings. TGSIs can also adversely affect the movement of wheeled equipment, trolleys and patient transport by causing vibration or the tracking of wheels.

Many of the passive systems listed above have proved to be effective and reliable within their limitations. Active systems have been in use for some time however the more advanced electronic systems can be subject to rapid change and development and should be carefully evaluated before use.

Active Systems:
- Audible systems for lifts and evacuation [BCA]
- Hearing induction loops [BCA], see further explanation below
- Accessible Pedestrian Signals (APS)
- Remote (Infrared) Audible Signage – may be linked to TGSIs, see further explanation below
- Directional sound evacuation systems [BCA]
- Audible signs – by push button, infrared receiver, proximity or smartcard device
- Wireless pedestrian navigation system devices.

Information terminals:
- Telephone typewriters (TTY), see further explanation below
- Video telephones, see further explanation below.

Note: Audio-Frequency Induction Loop Systems (Hearing Loops) are built-in devices, and assist people who have hearing aids fitted with a T-switch, (or people provided with a loop receiver device). Care should be taken to avoid installing sources of electromagnetic radiation in proximity to hearing loops to avoid problems with interference. The International Deafness Pictogram should be displayed to indicate the presence of a hearing loop.

Active Systems – user based:
• Infrared Systems (a direct unblocked line of sight is required), and FM Systems require the user to wear a special receiver. Used in special areas or events they are not generally applicable in healthcare wayfinding. Other systems make use of mobile phones, personal digital assistant (PDA) and other worn or carried devices.

• Telephone typewriters (TTYs) enable text communication over telephone lines between two people, both of whom may be unable to use voice telephones and have a TTY. Unlike SMS, this is real time communication. This has an application at information nodes/terminals. Options in TTY include Type and Read and Speak and Read (or Voice Carry Over call - VCO). [Deafness forum Australia]

• Videophone developments and access to fixed and mobile broadband allow for visual communication; this facilitates lip-reading and the use of Auslan (sign language). Good quality Video over Internet Protocol (VoIP) telephone communication increases the uses for information services and wayfinding. Development of low bandwidth transmission software may allow good quality signing to be viewed on mobile phone screens. Currently high speed broadband (384kbps or more upload speed) is required to achieve satisfactory picture quality for successful signing and lip-reading communication, [Deafness forum Australia].

Note: GPS based systems are affected by tall surrounding buildings outdoors and are generally ineffective indoors. Other local facility wide systems may offer a real solution.

Access to all video material pre-screened to the public is subject to media legislation, in NSW all analogue and digital video format material must be open captioned, [Media Access Australia. Wayfinding in the Built Environment, Report 2002-058-C-09].

2.2.9 People from a Non-English Speaking Background

Providing adequate and effective wayfinding strategies for non-English speaking (NESB) customers may required by provisions of the DDA and possible duty of care issues. A direction on policy to be adopted should be sought from facility management for each situation.

When a significant percentage of customers belong to particular NESB groups, appropriate initiatives will need to be considered by management, these may be in the form of bi-lingual or multi-lingual signage - in the languages spoken within the facility catchment area. However the use of too many languages can cause confusion for some user groups, and some customers may be illiterate in their own language.

If bi-lingual and multi-lingual signage is to be used then care should be taken in the method and extent of use. Established graphic rules should be followed to avoid confusion with the primary language (Australian), and pictograms should be used wherever possible to facility immediate recognition and overcome literacy problems [Sign Design Guide]. It is recommended that only generally recognised pictograms or those that are or those sourced from Standards should be used [Section 10].

Responsive operational policies and understanding staff will provide a valuable wayfinding resource in special circumstances, but reliance on the assistance of staff members to answer general wayfinding enquiries should be reduced by providing adequate wayfinding on an ongoing basis. Answering unnecessary enquiries can interrupt tasks cause distractions and affect patient safety, increase work loads and stress. Enquiries should be limited to dedicated staff e.g. reception or information desks.

It may be advisable, during the orientation of staff with a NESB, to ensure that emergency and evacuation procedures, especially those involving verbal cueing, are understood. Knowledge of the existence of such staff will be useful for communicating non-clinical matters to customers from a NESB.
Initiatives may also include operational policies enabling the routine use of the Telephone Interpreter Service throughout the facility. Two-way telephones can also usefully be installed in reception areas of the emergency department, outpatient clinics, general enquiries and other high use areas.

Irrespective of what wayfinding or other initiatives are used, some community education may be required. Consideration could be given to the use of the Healthcare Interpreter Service, migrant health education officers, and ethnic health workers to disseminate information to specific community segments. This information may include maps of key areas or departments within the facility, explanations of pertinent signs, and an explanation of the range of services available.

2.2.10 Parents with Prams and children

The needs of customers and visitors with baby prams, strollers, or carrying or walking with young children while negotiating a facility equally need to be addressed in terms of accessibility. Special routes and facilities such as information, baby-change, play, childcare, all require directional and identification wayfinding.

2.2.11 Children’s Services

Children and adolescents are a group with special needs; facilities designed especially for children’s services provide a unique opportunity to integrate wayfinding, signage and interior graphics/design in a way that provides a reassuring, enjoyable and healing environment appropriate to each age group.

The involvement of a graphic/wayfinding designer with experience in children’s services and full collaboration with staff and users is recommended. Signage at a suitable height and adequately providing for children with disabilities and special needs are among the practical issues to be considered.

2.2.12 Out of Office Hours

The hours of operation within a healthcare facility may be limited to standard office hours or extend to 24 hour coverage, with some access points locked off from 24 access. Wayfinding and other initiatives (intercoms systems, electronic message boards) should be provided for these conditions. Illuminated signage is relevant outside daylight hours; particularly for exterior and Emergency Department signage.

2.2.13 Site Access

The implementation of site and facility security management objectives will lead to a reduction in the number of entry and exit points to the site and buildings, this initiative directly benefits wayfinding by reducing the entry and route options and the additional signage generated. [AS 4485: Security for health care facilities Part 1 General Requirements. AS/NZS 4360 Risk Management and SA/SNZ HB 167: Security Risk Management].
3 SIGNAGE

3.1 General

Up to this point attention has been focussed on wayfinding, however until wayfinding was identified and developed as a valid design concept the only recognised means of achieving that objective was signage, signage still remains the major functional element in any wayfinding strategy.

Interior and exterior signage should ideally function as one system. Effective exterior signage and the rationalisation of entry/exit points will eliminate unnecessary interior signage at every entrance, and avoid a chaotic working environment with an unacceptably complex array of signs. The various elements and policies that define and guide users and staff movements should be thoroughly reviewed before starting the wayfinding design process.

Although this Guide describes only one signage system (TS2 system), it is at the same time intentionally non-prescriptive to encourage the use of other appropriate proprietary systems, and original solutions if warranted. It is a requirement that the performance of an alternative proposal be not less than the TS2 signage system, and that it meets the functional standards and recommendations in this guide.

In addition to being a complex subject, signage now operates in a diverse and growing regulatory environment. From the perspective of risk management and an effective and successful design outcome, the use of a suitably qualified consultant is strongly recommended. Signage alone cannot be relied on to resolve problems caused by confusing information or planning.

3.2 Sign content

The general principles of effective wayfinding apply equally to signage and are identified in Section 2, Wayfinding Process. In approaching the subject of sign content there are a number of generally accepted rules derived from research. The principal among these (for all categories of reader) are:

- short, concise, and readily understood
- clear, legible text and lettering
- consistent wording, naming and pictogram use on each site or related sites
- accessible content – raised tactile, braille, audible and other methods.

Methods of ensuring that good content is not rendered ineffective by poor location or placement is covered in the sections following.

A further finding often overlooked is that if content is designed to be clear and readily accessible to partially sighted people, it will offer this added advantage to people with average vision. [JMU Access Partnership, Fact Sheet 23 – Signage].

3.3 Sign groups
Most healthcare facility signage can be listed under the following 6 functional groups:

3.3.1 Directional Signs

These signs define the paths, routes or directions needed to guide users to specific destinations. Message content should use accepted terminology, include clear directional arrows, and match the corresponding destination sign. This category includes directory panels and individual directional signs.

Once used to direct service users and visitors, they are now relevant for more mobile and flexible staffing arrangements.

It is recommended that no more than 4 to 5 destinations or terms are included in any one list. If this is exceeded then grouping into shorter lists is recommended to assist retention and avoid confusion [Sign Design Guide].

3.3.2 Location and Identification Signs

These signs confirm the identity or name of built or functional elements, they include buildings, floors/levels, departments, rooms, bed numbering etc. Some of these will be the destinations referred to by directional signs, but the majority exist independently of other signage.

Signs that identify buildings, departments and rooms will be used by service users, visitors and staff. Room numbering and door tagging generally relates to management, engineering or maintenance functions, and may be in the form of bar codes or RFID (electronic) tags.

3.3.3 Information and Directory Signs

These simply inform and can cover a variety of content. Directory boards and maps provide information on locations. Others inform, caution or prohibit the reader and are often regulatory signs.

3.3.4 Regulatory, including safety and fire safety.

These are signs required by legislation or regulation covering Public Utilities and services, OHS, Security, Safety, egress and other required signage.

3.3.5 Traffic and Parking Signs

These are intended for road users and pedestrians on the public road or within the facility site boundaries and include parking, loading and service areas. Public road signage is regulated and should be continued on-site, to utilize the advantages of consistency, familiarity, immediate recognition and accountability.

3.3.6 Miscellaneous Signs

These signs generally provide information regarding procedures, relate to operational matters, and are usually intended to be read by staff.

3.4 Signage Hierarchy
Excessive (and confusing) signage in Healthcare facilities can arise from the size and complexity of layout and function, or by attempting to provide too much information.

The possibility of unnecessary signage can be minimised by developing a protocol or a hierarchy of messages. Simply stated this first establishes the routes, journeys and decision points, followed by the type of information required at each decision point.

Understanding the internal process used by the individual before and during the journey, is essential to the wayfinding design process.

3.5  Signage Process

Signage is an important part of the overall facility risk reduction strategy in healthcare facilities. In this context signage design should be a controlled and accountable process with quality assurance, risk management and accessibility as important objectives.

The design of new signage or the modification to an existing system should come under the control of a nominated staff member, group, suitably qualified consultant or signage supplier. Audits of existing signage are recommended and the practice of putting up ad hoc and uncontrolled signage should be discouraged or prohibited.

Not every location needs to be included in a signage system. Some are excluded for security reasons (Pay Office, Pharmacy), to provide anonymity (some community health services), or because they are exclusive to staff (Sterilizing department, Staff Canteen). Staff orientation processes and the familiarity of staff with the facility greatly simplify and reduce the need for signage.

To schedule new signage or review and record existing signage, the functional categories outlined in this guide (or an equivalent method) should be used. Room numbering and door identification tagging should conform to existing or proposed facility management systems.

3.6  Temporary Signage

Temporary signage has an important but little recognised role in the signage process. It provides an excellent means of testing the effectiveness of signs in use, and can reduce the risk of discarding or changing permanent signage after installation. Temporary signage is applicable for:

- Existing facilities where it has become apparent that problems caused by poor signage exist.
- For secondary and tertiary level signs in new installations.

The initial cost of a temporary sign may seem minimal, however additional visits to fix permanent signage, with the associated difficulty of work in occupied areas may cancel out any savings. In new installations staged signage will result in small less economical post-production runs. Signage tendering and contract provisions drafted to include this method should recognise and control these hidden costs.

Temporary signage options include laminated photocopies, budget sign products or simply the modification of a message or plank on a permanent sign. Issues of durability, fire resistance, vandalism and unauthorised removal may need to be considered in selecting the type of temporary sign to be used. In some circumstances signs removal or alteration may create a risk.
3.7 Signage Manual

An approved site signage manual is essential for any signage installation. It is recommended that this guide (or an equivalent comprehensive sign manual) is included in the brief for the signage system, and used for all subsequent signage throughout the life of the facility.

3.8 Signage Audits

Enquiry and observation are the two principal methods used in evaluating and auditing existing sign installations.

Enquiry includes information obtained from service users, visitors or staff. The methods for obtaining this data and the focus of the information obtained will vary with the category, identity of the informant. To achieve a comprehensive review the sample should be as wide as possible. In relation to signage and its effectiveness, a high proportion of enquiry will be qualitative rather than quantitative.

Enquiry might include the following:

- The relevant government department, statutory authority or authorised agent can be asked to inspect, certify or advise e.g. workplace safety, access groups.
- Surveys, by means of questionnaire/ interview, of service users may be undertaken. This can be done as part of patient discharge or during their initial attendance as outpatients.
- Staff may be requested to ask visitors about difficulties experienced in locating specific destinations and to describe the process. The collation of feedback will identify common problems.
- Managers and supervisors can be educated to record anecdotal information, which may provide useful insights for improvements.

Observation assumes the ability of the reviewer to notice salient events; examples of which are given below:

- The existence of informal or makeshift signage throughout the facility should be noted and discouraged, its existence should be examined to determine any deficiencies in the formal signage system or in the operational policies.
- The observation of visitor and patient behaviour by a staff member can reveal where and why signage is confusing, ineffective or lacking.
- People in new and unfamiliar environments, can observe how they are helped or hindered by signs and the methods used. This knowledge can then be applied to familiar environments.

The complete journey for the customer from home to the final destination within the facility needs to be considered. By adequately addressing the first time visitor, signage will cover all other instances such as planned or regular visits. If signage is designed for first time emergency visits or where the visitor is under stress or function is impaired, then this will benefit the effectiveness in everyday use.
4 EXTERIOR WAYFINDING

4.1 Community Signage

In New South Wales the Roads and Traffic Authority (RTA) are responsible for traffic signage. Proposals relating to the public road system should comply with RTA policies, and be approved by the RTA.

RTA signage and policy documents should be checked for currency, and any proposals discussed with the RTA before implementation. RTA, Draft policy guideline, 2008 extracts are provided for information in Appendix 8.

Where community signage is to be installed or modified, management should liaise with the relevant local council and the local or regional office of the R.T.A. Discussions with these bodies will clarify the extent and location of required signage. It will be necessary that the entrance to be used to gain access to the site is identified to assist in estimating traffic flow, the primary exit point should be identified if this is different from the entrance.

If, as a consequence of redevelopment or other reasons, it is proposed to alter access to the site, then consideration should be given to both the coordination of relevant traffic authority signage and the implementation of a community advice program to increase public awareness of the changes.

4.2 Site Signage

The role of site signage is to assist drivers and pedestrians approaching, entering and navigating the site, this involves finding a drop off point or carpark, locating a building or entry, and reaching the intended destination. Wayfinding elements such as landmarks, prominent architectural or site features, and major routes also assist in this process.

For roads, parking and service areas it is recommended that RTA regulation signage be continued within the site (for vehicles and pedestrians), this avoids confusion and the risk of misinterpreting alternative or non-standard signage.

For pedestrian routes and pathways not associated with vehicles, the signage should conform to the approved facility signage system.

In providing signage to guide journeys across the exterior site, the identification of the appropriate entry is a fundamental first step in signing the route to the intended destination e.g. Emergency department.

The identification of buildings or function e.g. Emergency, is an opportunity to use the message or graphics as a landmark, landscape element or as part of the building envelope design.

Visits to Emergency departments, Admissions, Out-patient clinics, Community Health services and Inpatient units represent the bulk of attendances. After-hours access points need to be clearly indicated if these differ from those used during normal working hours.

Exterior signage should perform the following functions:

- identify parking areas and the type of parking available e.g. short and long term, specific services (emergency cases), service users, staff, visitors, facility operational and supply services, emergency services, etc.
• identify buildings and principal building entries, pedestrian traffic from car parks, public transport set-downs, or site entry points

• direct pedestrians and vehicles on site and to and from the facility

• advise, warn or prohibit. E.g. lock vehicles, security patrols, reduce noise, no skateboarding.

Exterior signage needs to address long viewing distances, multiple directions of approach and existing planting (with an allowance for the growth and for future planting. Vocabulary and terminology should correspond to that used for printed information sheets and signs within the facility, it should also reflect the naming of buildings, services and departments used by staff. Any new naming should be agreed and publicised by management. Exterior signage should be as uncomplicated as possible and incorporate the following points:

• use messages such as Visitor Parking, Main Entrance, Enquiries, Emergency Department, and Inpatient Units. These messages if followed in sequence will direct from the site entrance to the relevant service or location

• include a specific unit or department on an exterior direction sign only when it cannot be reached from the main entrance, or where general directional information is given e.g. site maps

• locate signs near decision points and on routes to locations, confirm routes at intersections or at changes of direction

• place double-sided exterior signs at right angles to the roadway to be read by traffic from both directions

• position signs to avoid blocking to the line of sight or lighting by vehicles, trees and shrubs including for future growth

• use official RTA traffic signs and road marking for any roads or areas used by vehicles and pedestrians, familiarity with these signs will greatly reduce the potential risk of driver/pedestrian confusion and the associated liability that could be attributed to non-standard signs and pictograms.

The primary emphasis of exterior signage is towards customers and visitors, however appropriate signage should include staff parking and site deliveries. It is assumed that staff orientation and operational policies will be put in place to assist in the direction of customers, though this should not diminish the need to provide adequate signage for all users as part of DDA and duty of care obligations.

The sign systems specified in the technical sections of this guideline provide letter sizes (or x-height) from 20mm to 80mm in height. Maximum recommended reading distances for ‘x’ heights and capitals are given in Section 6. For other reading distances adjust the standard typeface, pictograms and format proportionally. For RTA signage refer to RTA manuals (and referenced Australian Standards) for the appropriate message and sign details.

4.3 Site Maps

Site maps are recommended for most sites or facilities with multiple entry/exit points. Successful map reading depends upon the ability of the reader, and the simplicity and clarity of the map. Maps help create a mental model of the built elements, major circulation routes and entries. Maps also provide orientation by locating the reader, e.g. You are here. If confusion could result from showing all the salient information on one map, then the information can be separated into 2 or more maps to be read together.
The orientation of the Map and the site should be identical. Give only group destinations such as *All Inpatient Units, Outpatients Clinics, Emergency Department, Enquiries, Administration*, etc. More detailed information would be provided later at the designated building or entrance.

Effective maps rely on established graphic and cognitive principles, these alone should lead to good design, rather than solutions driven by aesthetics alone. Advertising will always compromise a site map and should be avoided; if unavoidable it should be kept apart from the wayfinding information.

Maps are less useful for multi-level situations as these create an added 3 dimensional (conceptual) complexity. In addition complex or overly detailed maps have a tendency to require more frequent updating. For these reasons the use of maps as the central or key component of a signage installation is not recommended in most circumstances. The role of a map is generally supplementary and has more relevance when used as a source of reference in the exterior environment.

Note: Research indicates that fewer than 1 in 10 people used a map to find their way, more than 1 in 3 of those who had seen a map found it difficult to understand. The conclusion was that this reflected more on the quality of existing maps and that improvement in maps would increase use. *(Miller and Lewis)*
5 INTERIOR SIGNAGE

5.1 General

All interior signage within the building envelope should conform to a facility signage system, this may be the use of this guide, a proprietary system or a custom designed signage system. The road signage (RTA signs) covered in the previous section forms a separate system.

The facility signage system should reflect the wayfinding and signage principles outlined in Section 2 as these provide the basis for any interior signage installation. The 6 sign groups identified in Section 3 are repeated below for convenience:

- Directional.
- Location and identification.
- Information and directory.
- Regulatory, including safety and fire safety.
- Traffic and Parking Signs.
- Miscellaneous.

5.2 Signage Hierarchy

The use of a signage hierarchy will reduce the number of messages by initially using use one simple collective message – Inpatient Wards, leading to the point at which the individual message is required - Ward A.

5.3 Signage Methodology

For Signage to be structured in a logical and sequential way, it is necessary to use an orderly design method that follows these principles:

- work from the general to the specific
- service users, their friends and relatives have priority
- give special consideration to emergency customers
- minimise the number of decision points
- confirm routes at decision points
- keep signage as uncomplicated as possible
- consider security and out of hours usage
• remember that efficient operational policies minimise signage.

The aim is to guide customers to their destination in the least complicated way, however this will only partially succeed if the circulation is complex. Clear, simple and logical circulation routes are a basic requirement to reduce signage and provide effective wayfinding.

Once the main public access and the routes for each category of service user and visitor have been established; identify the decision points with confirming signage. Once a destination has been reached install a sign that is visible along the length of a corridor, in addition to a door sign.

In a complex environment where a destination/route does not use the main circulation route, then provide separate signage for those destinations.

Ensure that signage equally addresses return journeys (and egress routes) for each category of service user/visitor, to enable return to their car or to public transport. The shortest path might not necessarily be the most advantageous if it deviates from previously encountered points of reference or if it disorients the visitor.

Familiarity with the paths to particular destinations improve with repetition. Wayfinding visual cues or memory aids such as the use of colour coding and identification emblems or branding assist in this process.

Within lift cars identify the major destinations to be found on each floor.
6 SIGNAGE SYSTEMS

6.1 Selecting a Sign System

Each of the standard sign systems 50/20, 100/40 etc. has a defined layout and design logic. Specialist advice is recommended if any design modifications are proposed.

Each of the systems is illustrated from Section 9 on, with production and installation methods given in detail. Examples of typical applications are provided for a general understanding of the use of the sign systems.

The table below shows the recommended systems for common applications:

<table>
<thead>
<tr>
<th>SIGN SYSTEM</th>
<th>APPLICATION</th>
<th>LETTER SIZE 'x' Height</th>
<th>SIGN HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>System 50/20</td>
<td>Directories and room (door) signs</td>
<td>20mm</td>
<td>50mm</td>
</tr>
<tr>
<td>System 100/40</td>
<td>Direction and location signs</td>
<td>40mm</td>
<td>100mm</td>
</tr>
<tr>
<td>System 200/40</td>
<td>Direction and location signs (with pictograms)</td>
<td>40mm</td>
<td>200mm</td>
</tr>
<tr>
<td>System 200/80</td>
<td>Direction and location signs</td>
<td>80mm</td>
<td>200mm</td>
</tr>
<tr>
<td>System 300/20</td>
<td>Notices</td>
<td>20mm</td>
<td>300mm</td>
</tr>
<tr>
<td>System 800/20</td>
<td>Direction and information signs</td>
<td>20mm</td>
<td>800mm</td>
</tr>
<tr>
<td>System 800/40</td>
<td>Direction and information signs (exterior)</td>
<td>40mm</td>
<td>800mm</td>
</tr>
</tbody>
</table>
6.1.1 External Sign Applications

6.1.2 Interior Sign Applications
6.2 Reading Distances

Reading (viewing) distances indicate the distance at which a person is able to read text or a pictogram successfully. The size of the text and properties such as, light reflection value, colour, contrast with background, lighting conditions, letter definition, simple and clear message content, are all factors in reading speed and comprehension.

The diagrams below are provided for information only. Refer also to AS 1742.1: Manual of Uniform Traffic Devices - General introduction and index of signs, and to AS 1744: Forms of letters and numerals for road signs.

Diagram 1

3/60
Below this line someone who is registered blind* with 3/60 visual acuity would probably not be able to read the text.

6/60
Below this line someone who is registered partially sighted* with 6/60 visual acuity would probably not be able to read the text. (6/60 represents ‘legal blindness’ in Australia).

6/9
This is 6/9 visual acuity, which approximates to the UK standard for driving.

Diagram reproduced with permission from Sign Design Guide, JMU, Sign Design Society. UK.

* Note: The definitions in the text relate to UK legislation, see text in brackets for Australian equivalents [source Vision Australia].
Diagram 2

[Source - University of NSW Signage Manual].

Note: These distances are for clear contrasted Capitals viewed under good lighting conditions with vision quality slightly below that required to drive a motor vehicle in NSW.
7 SIGNAGE SCHEDULES

7.1 General

The method for scheduling signage provided here is intended as a general guide. Each installation will be different and each individual signage system, scheduling method or software application vary.

It is essential that a suitably qualified person or wayfinding group is nominated for the task. That person or group representative should be acquainted with the subjects covered in this guide, with preferably some previous healthcare wayfinding or signage experience.

The method of working from the general to the specific, and following each route sequentially from the exterior to the interior, including the return journey is a fundamental principle.

For new facilities the method of documenting and tendering signage will depend on the type of construction contract selected. In traditional contracts signage will usually be completed as part of the tender documentation. There will normally be floor/ceiling plans, wall elevations, door schedules and perspectives to work from at this stage.

For a late signage package a visit before ceiling linings are in place but with ceiling support systems visible will reduce conflicts with overhead elements such as bulkheads, door openings across corridors, exit signage or anything else which will affect the viability of overhead signs. Signage requiring a connection to services should be coordinated with those services (electrical, communications etc.).

For existing facilities the routes can be physically travelled and signage simply marked up on a plan showing:

- for exterior signage: a site plan showing all buildings, entrances, roads, paths and carparks
- for interior signage: a floor plan of each level showing corridors, rooms, fixtures, seating layouts in waiting areas, etc.

A pro-forma schedule (hard copy or scheduling software) for entering the individual sign details. A suggested format is provided in the following pages.

A consistent and logical approach is an obvious advantage. One method is to simulate someone visiting the facility for the first time, or for an existing facility survey the experience of first time customers. The criteria set out in previous sections should be used as a basis for determining where and what signage should be used.

The draft schedule should be tested by real (or virtual) journeys from entry to destination - including the return journey. For quality assurance someone other than the designer should test the proposal. The sign schedule pro-forma will need to provide the information set out under Sign identification below.

7.2 Sign identification

Identifying and listing each sign or bank of signs can be done in a number of ways and is essential for the documentation, manufacture and installation of signage. Short numeric or alphanumeric labels should be used particularly if plans are to be printed and read at workable scale (1:100 minimum). Overly long or complex tags will overwrite other plan information at any scale.
The simplest method numbers signs from 01 upwards, for multistorey layouts the floor number is used as a prefix, e.g. G.18, for sign number 18 on the Ground floor and 1.18 for level one. This method is adequate for smaller projects.

The use of separate schedules for individual buildings avoids an extra level of information in each sign number, e.g. for Block D a sign would be D.G.18.A.

Use short, simple numbers that can be easily located on plan, sign details and location are recorded separately in the schedule. This will simplify verbal communication and reduce unnecessary errors.

7.3 Sign location

Each sign has a location (room/space number or grid reference) and locating a sign on a large and complex signage plan can be difficult. The location can simply given in a column next to the sign number on a schedule, assigned to a space within a database or included as data in an electronic Building Information Model (BIM) graphics program for retrieval in a variety of formats.

The ability to locate a sign becomes particularly important as the signs and rooms (and corresponding numbers) are inevitably modified, added or deleted during the duration of a large construction project or life of a facility.

Any linkage of signs to door and door numbering adds another level of complexity since door numbers are usually cross-referenced to rooms and can undergo a similar process of modification during a project.

Note: The room and door numbering used on 'Construction' drawings is usually unrelated to the final numbering system to be used after hand over. A separate 'Commissioning' set of plans (additional level of electronic information) is created for this purpose and for later facility management use.
7.4 **Sign type**

Coding by sign type provides a simple method to identify signs on the schedule, and provide the manufacturer and installer with adequate information. The following codes for each generic category are suggested:

**F1**  
Free standing sign, single sided, message on one side only.

**F2**  
Free standing sign, double sided, identical messages on both sides (one side only is detailed as side 2 is a mirror image of side 1).

**F2**  
Free standing sign, double sided, different messages on each side (both sides must be detailed - as side 1 and side 2). NB. An unequal number of messages on each side are balanced by blank message planks on the other.

**H1**  
Ceiling hung sign, single sided, message one side only (side 2 is a blank plank).

**H2**  
Ceiling hung sign, double sided, identical messages on both sides (one side only need be detailed - side 2 is a mirror image of side 1).

**H2**  
Ceiling hung sign, double sided, different messages on each side (when specifying, both sides must be detailed - as side 1 and side 2). NB: An unequal number of messages on each side are balanced by blank message planks on the other.

**W**  
Wall mounted sign, single sided.

**W1**  
Bracket sign off wall, single sided, message one side only (side 2 is a blank plank).

**W2**  
Bracket sign off wall, double sided, identical messages on both sides (one side only need be detailed - side 2 is a mirror image of side 1).

**W2**  
Bracket sign off wall, double sided, different messages on each side (both sides must be detailed - as side 1 and side 2). NB: An unequal number of messages on each side are balanced by blank message planks on the other.

**D**  
Room identification sign (mounted adjacent to Door), single sided.

**G**  
Lettering is to be applied directly to glazing (the back of the letter is applied to the glass).

**RG**  
Lettering is to be applied directly to glazing (the face of the letter is applied to the glass).

**RP**  
Reverse lettering on a transparent covering panel.

**P**  
Pictogram/Pictogram

Note: ‘D’ signage should be located on the wall adjacent to the door. Signs fixed to the door leaf are not recommended as this practice creates a hazard for people with vision impairment, besides being difficult to read when the door is left open. Signage on doors may be appropriate for services cupboards, plant rooms etc. and for safety signage, where the door is normally closed and the message is intended to be read before entering the space.
7.5 Message

The message zone is designed with 3 designated sections:

- Arrow (left justification)
- Message
- Arrow (right justification)

A typical selection of messages demonstrating the use of arrows is shown. Note that the message is justified, or ranged, in accordance with the direction of the arrow. Where a bank of signs is specified, left justified messages should be grouped together, followed by right justified messages.

- The Arrow columns are left blank where no arrow is required.

7.6 Sign System codes

The sign system code 100/40 indicates - height of the sign (100 mm) / x-height or lettering size (40 mm).

7.7 Sign Plank Lengths

Standard sign plank lengths are designed to be used for the majority of applications. Standard plank lengths are 600, 800, 1000, 1200, 1600, 2000 mm and should always be used where possible, this will facilitate later replacement and modification.

Note: Previous editions of TS2 provided a Message vocabulary giving a Length Code for each message, sign plank lengths are now automatically calculated by CAD/CAM software applications and this table is now redundant.

7.8 Remarks

The ‘remarks’ column allows for additional information for each sign to be included if required. This can describe where a pictogram, non-standard lettering colour or baseboard colour is required, where lettering is to be embossed, or to indicate a blank panel, special fixing, etc.
7.9 The Use of Arrows

The interpretation and arrangement of arrows and messages are shown below:

<table>
<thead>
<tr>
<th>Arrows</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>↓</td>
<td>Down Downstairs</td>
</tr>
<tr>
<td>←</td>
<td>Medical imaging</td>
</tr>
<tr>
<td>←</td>
<td>Medical imaging</td>
</tr>
<tr>
<td>←</td>
<td>Clinical psychology</td>
</tr>
<tr>
<td>←</td>
<td>Medical imaging</td>
</tr>
<tr>
<td>←</td>
<td>Clinical psychology</td>
</tr>
<tr>
<td>←</td>
<td>Director of Anaesthesia and intensive care unit</td>
</tr>
<tr>
<td>←</td>
<td>Exit and lifts</td>
</tr>
</tbody>
</table>

- **Medical imaging**
- **Exit and lifts**
- **Group of two direction signs.** Message ranged left with left hand arrow.
- **Group of two direction signs.** Message ranged left with left hand arrows.
- **Group of three direction signs.** One and two line messages ranged left and right with left and right hand arrows.
8 SIGN DESIGN AND MOUNTING HEIGHTS

8.1 Design Format

Sign design is based on the height of the lower case letter ‘x’. This module is referred to in this guideline as the ‘x’-height. Sign (plank) heights are multiples of 2.5 the lettering ‘x’-height, as shown below.

Three sizes of ‘x’-height (20mm, 40mm, 80mm) are the basis of the system in this Guide. The standard sign lengths: 600, 800, 1000, 1200, 1600, 2000mm and special, are used for different message lengths.

Sign layouts contain left and right arrow zones, left and right hand pictogram zones and message zones separated by word spaces. Messages should remain within message zones, whether single or multiple messages are displayed.

Wall mounted tactile (embossed) and Braille signs must conform to BCA Specification D3.6 Braille and tactile Signs.
8.2 Typeface

Helvetica Medium has been the nominated typeface since the inception of the TS2 (Hosplan), system, consequently a high proportion of signage in existing facilities contain this typeface. It is recommended that for additions and alterations to an existing signage system that Helvetica should be continued to be used.

This edition continues to recommend the use of Helvetica for the TS2 Signage System, and the illustrations of the system show this as the standard typeface.

The following type and text characteristics are recommended:

- Capitalize (Titlecase), i.e. first letter uppercase, remainder lowercase.
- Regular style*.
- Visually consistent spacing between letters.

* Italic and Condensed styles reduce legibility.

For new or separate buildings the use of other typefaces is optional provided that they meet the following criteria for accessibility and readability (for both capital and lower case letters):

- Sans serif typeface with large 'x'-height (lower case letter 'x'), with large apertures and consistent and short ascenders and descenders.
- Bold letterform weight for primary text, regular (also called Book, Roman, Plain, Normal) for secondary text. Extra Bold reduces legibility and is not recommended.

If using serif typefaces for special projects, select a typeface with small serifs that satisfies general legibility criteria.

For a sample list of other typefaces that meet the performance standards for use in healthcare facilities, see Appendix 7.

8.3 Letter size

The signage system in this guide uses the following lettering sizes:

<table>
<thead>
<tr>
<th>LETTERING SIZE</th>
<th>APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>20mm ‘x’-height</td>
<td>Directories, notices and door signs</td>
</tr>
<tr>
<td>40mm ‘x’-height</td>
<td>Direction and location signs</td>
</tr>
<tr>
<td>80mm ‘x’-height</td>
<td>Exterior direction and location signs</td>
</tr>
</tbody>
</table>
8.4 Directional arrows

In recognising that there are a substantial number of existing TS2 signage installations in NSW Healthcare facilities, and that alteration of these is a continuing process, the original TS2 signage diagrams have been retained in unaltered in this edition, the only exception is the terminology now used for accessibility.

For a new signage installation or where matching an existing TS2 installation is not required, the use of the ISO 7001 arrow (shown below) is recommended, this design is more easily recognized by people with vision impairment [Sign Design Guide].

Directional Arrow, ISO 7010: Graphical symbols - Safety colours and safety signs - Safety signs used in workplaces and public areas.

Note: This should not be confused with the ISO 7010 safety arrow used for emergency Exit Signs (see Section 12); this has a shorter shaft and is intended to be used only in conjunction with another symbol (or a symbol and text) to indicate movement of a person towards something. Refer: ISO 7010: Graphical symbols — Safety colours and safety signs — Safety signs used in workplaces and public areas.

8.5 Contrast

Contrast results from a difference in the light reflection values (LRV) of the colours, or a difference in colour hue (red, green, blue). In signage this usually relates to the difference between:

- message and background
- sign against surroundings.

For people with impaired or low colour vision, tonal differences (light, dark) are more effective than differences in hue (red, green, blue), [Sign Design guide]. For message legibility contrast is as equally important as letter height.

Wall mounted tactile (embossed) and Braille signs must conform to BCA Specification D3.6 Braille and tactile Signs.

Dirty unmaintained signs will reduce contrast and legibility, sign surfaces that do not attract or trap dirt and are self cleaning or easily cleaned without marking or degrading are recommended.

8.6 Lighting and glare

Signage to be effective depends on adequate lighting, however glare and reflections can render signage ineffective, the following conditions should be avoided:

- low general light levels
- low sign illumination
- signs against or adjacent to a light source or a bright or busy background
8.7 Colour

Colour is an effective and commonly used wayfinding device and is most often used to identify floor levels or parts of a building complex. It should be recognised however that some people have low colour vision and more readily recognise tonal differences that hue (colour), in addition there are only a limited number of colours of significant difference that can be used successfully for this purpose. Colour recall for most people relies on the verbal naming of a colour such as red, yellow, green, blue or on a combination with shapes or letters and the visualisation of colour or shades of colour is difficult for most people without an associated shape or image, e.g. red square.

Using a change in the colour signs to identify level or buildings is generally not advised for a number of reasons. Some colours and colour combinations are reserved for regulatory or other designated (e.g. emergency) signage, this reduces the number of available colours and colour combinations with adequate contrast. Large facilities and multiple floors only increase this problem.

General signage should avoid the colour combinations reserved for regulatory, warning and safety signage. Road signs where recognition at speed is essential, are examples of the successful use of simple colours derived from research and testing.

The type of light source used e.g. discharge, halogen, fluorescent, LED, affects the perception of colour; similarly the colour temperature e.g. 2500 to 6500 K approx range of the lamp installed. For this reason signage colours should ideally be chosen under the same lighting conditions that will apply on site. Fortunately a standardisation of light fittings and lamps in NSW healthcare facilities recommended by TS11 limits this problem, [NSW Health, TS11 – Engineering Services and Sustainable Development Guidelines].

8.8 Colour Combinations

Legibility is proportional to contrast and varies considerably between different colour combinations. Most effective is the use of dark lettering against a light background or the reverse, however the combination of black and white (often a ‘standard’ combination) can cause halation for some readers [Sign Design Guide].

The use of dark lettering on a white background set against a white wall is common but not an optimal solution, however in a large facility with a wide range of wall colours this is an acceptable compromise providing consistency in signage. The use of a border overcomes this particular problem and is commonly used in road signs.

In addition to regulatory, warning and safety signs there are some other signs that employ a standard recognisable combination, the sign ‘EMERGENCY’ for an Emergency department has white lettering on a red background. [ACEM, Policy on Emergency Department Signage].

8.9 Materials

Aluminium planks in a satin or matt paint finish with applied die-cut PVC sheet lettering or silkscreened lettering are recommended as a durable, general-purpose solution. For alterations and additions a general rule is to match existing signage, however gloss finishes should not be reproduced.
Materials, manufacturing methods and equipment are expanding constantly with new products and fixing methods coming onto the market regularly. A review of current options and specialist advice is recommended.

General information on materials, sign making and fixing is given in Appendix 7.

8.10 Sign Mounting Heights

It is suggested that wall mounted and free-standing signs are fixed 1500mm above floor level, and suspended or projected signs 2100mm above the floor. See illustrations.

These heights continue the recommendations in the previous edition of TS2, and reflect the current heights recommended by other sources.

Wall mounted tactile (embossed) and Braille signs must conform to BCA Specification D3.6 Braille and tactile Signs.

Note: For additional information on mounting signs for people with disabilities refer to the Sign Design Guide, (see Appendix 4 - Bibliography).
MOUNTING HEIGHTS

System 200/80 free standing
System 200/80 wall mounted

System 100/40 free standing
System 100/40 wall mounted
System 100/40 ceiling suspended
System 100/40 door mounted

System 50/20 wall mounted
System 50/20 door mounted
System 50/20 wall mounted adjacent to door or opening
System 300/20 wall mounted
Symbol wall mounted
Symbol door mounted
9.0 SIGN APPLICATIONS

9.1 System 50/20: Directories and Door Signs

System 50/20 is applicable for single sided room (door) signs for interior use, positioning on the wall is preferred (side adjacent to door handle) for accessibility as many doors are left ajar. This system is also used for information directories and other small direction and location signs.

Two messages can be displayed on the one sign, but use 2 ‘word’ spaces (see diagram) to separate the messages; both messages must remain within the message zone.

Where signs use headings to denote particular buildings, floors, departments or sections; the lettering (size/colour etc) should differentiate the heading from the sub group of messages.

A number of methods can be used to fix sign planks to walls or doors (e.g. double-sided foam tape, adhesive, screw/mechanical, magnetic etc), each have advantages and drawbacks. Consideration should be given to unauthorised removal, vandalism, damage to surfaces if removed, and methods of temporary removal for redecorating e.g. use of a sub frame.

Where more than one sign is required at the one location, all sign plank lengths should be the same, e.g. equal to the longest message plank.

Direction signs not subject to change are butted vertically without spaces between the planks and are fixed to the wall. Changeable directory planks are spaced 1mm apart vertically on rear carrier sections fixed to the wall.

The recommended fixing height and order of positioning planks is shown in Mounting Heights.
System 100/40 is applicable for single sided wall mounted, and single or double sided free standing or suspended signs, for interior or exterior use.

Single sided wall signs (with concealed fittings) are clipped into place, the ends finished with PVC end plugs.

Free standing signs use planks fixed to vertical support posts by special brackets that secure the back of the plank.

Suspended signs use two stainless steel wires, the exposed ends of the planks are finished with matching PVC end caps.

Recommended fixing heights and order of positioning planks is shown in *Mounting Heights*. 
System 200/40 is used in preference to System 100/40 where a pictogram is included in the message.

System 100/40 production and installation guidelines apply.
9.4 System 200/80: Exterior Direction and Location Signs

System 200/80 is applicable for exterior single sided wall mounted, projected or free-standing signs.

When mounted single sided as a wall sign with concealed fittings screwed to the wall, securely clip the sign into place. The sign’s ends are finished flush.

When used as free standing signs the planks are secured to their vertical support posts with special brackets which hold the back of the plank.

When used as projected signs the planks are fitted to two aluminium angle-brackets which are bolted to the wall.

Powder coat aluminium for planking and die-cut sheet PVC letters or screen printed lettering is recommended.

The recommended fixing height and order of positioning planks is shown in *Mounting Heights*. 
9.5 System 300/20: Notices

Signs which include one or more messages conveying information or instructions are classified as notices.

They can be made up in System 300/20 and the preferred format is square, on which a message in narrative form with a maximum of six lines is positioned. Multiple short messages are possible, provided 1 clear line space is left between the messages. Messages are justified to the left margin.

Notice panels are cut to size from 1mm aluminium sheet and are finished in powdercoat or sprayed paint. The preferred material for lettering is die-cut sheet PVC letters.

Panels can be applied direct to walls and doors with double sided foam tape, adhesive or screw fixed.
9.6 System 800/20: Direction and Information Signs

System 800/20 is used for exterior direction and information signs.

Notice panels are cut to size from 1mm aluminium sheet and powdercoat or spray paint finish. Die-cut sheet PVC or screen-printing is recommended for lettering and pictograms.

Messages on directional information signs are left-justified. For multiple short messages leave 1 clear line space between messages.

Sign panels can be applied directly to walls and doors but are more frequently used as free-standing exterior signs mounted on a central post. In each case they are positioned 1500mm from the ground or floor to the centre of the panel.
The production and installation of System 800/40 and System 800/20 are similar.

System 800/40 can be substituted for System 800/20 where the message is short and requires emphasis. The two systems are compared in the above illustration.
9.8 Accessible Signage

In most cases information for people with disabilities can be incorporated into the standard TS2 sign system. For some applications however System 400/20 and System 1200/20 can be used.

System 400/20 can be used for interior identification and directional signs. Guidelines for the production and installation of System 100/20 and System 400/20 are similar.

System 1200/20 is used where extra height is required for the additional pictogram. Guidelines for the production and installation of System 800/20 and System 1200/20 are similar.

Signs should provide information in raised tactile and Braille formats for people who are blind or vision impaired. Tactile (embossed) and tactile signs should conform to BCA Part D3 Access for People with Disabilities:

- D3.6 Identification of accessible facilities, services and features
- D3.7 Hearing augmentation
- D3.8 Tactile indicators
- Specification D3.6 Braille and Tactile Signs
- Standards adopted by reference, e.g. AS 1428.1

Refer to AS 1428.1, Section 14 Signs indicating access for people with disabilities for further information.

Further information on Braille and raised tactile signage is available from the Australian Braille Authority.
System 400/20: Access Signs
System 1200/20: Access Signs

Access pictogram
only
10 PICTOGRAMS

10.1 Use of Pictograms

Pictograms provide a symbolic representation of a procedure of service, aid comprehension and assist with directions. When integrated into a rational sign system, pictograms can help overcome language difficulties and serve as a means to rapidly identify services.

A number of generally recognized pictograms are shown on the following pages, with the reference number and accompanying wording. The process of standardisation is aimed at progressively increasing the level of recognition within the community.

As a general rule, the use of pictograms should be restricted to AS or ISO Symbols. An exception is the ‘No Sharps’ pictogram, for which the original artwork is available from the Infection Control Association, this pictogram is directed to staff rather than the general community.

If other non-standard Pictograms are considered, they should be designed or selected with care and ultimately tested for ease of recognition. Some designs may be difficult to interpret and ultimately prove counterproductive.

ISO and Standards Australia pictograms should not be altered, any modifications may create a liability and constitute a risk to the reader. Raised tactile pictograms should conform to the BCA and the relevant Standards.

Pictogram panels (non embossed) may be cut to size from 1mm aluminium sheet and finished with powdercoat or spray paint, alternatively 1.6mm plastic laminate sheet can be used. Pictograms screen-printed directly onto the sign surface with a synthetic resin or cut from sheet PVC are usual. Engraved Pictograms are not recommended.

For internally illuminated sign applications, Pictograms may be back sprayed or screen-printed. See Illuminated signs.

Pictogram panels are generally fixed to walls (or doors) with double sided foam tape or adhesive, if this is a redecorating issue use alternative removable methods. Where two or more Pictograms appear together, they should be placed together horizontally with a gap 1/10th of the pictogram width.

10.2 Pictogram Sizes

The following standard pictogram sizes are provided for general guidance.

<table>
<thead>
<tr>
<th>SIZE (mm)</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>75 x 75</td>
<td>For use on 100/40 sign planks. This small pictogram size has limited applications.</td>
</tr>
<tr>
<td>150 x 150</td>
<td>For use on interior 200/40 signs and for direct application to a wall and door. This is the standard pictogram size for interior use.</td>
</tr>
<tr>
<td>300 x 300</td>
<td>For use on exterior 800/20 signs or applied directly to a wall.</td>
</tr>
</tbody>
</table>
10.3 Pictograms for Healthcare Facilities

10.3.1 Public Information Signs

The pictograms below are indicative of those in ISO 7001: *Graphical symbols — Public information symbols*.

- **PI PF 001** Information
- **PI PF 003** Toilets – unisex
- **PI CF 002** Refreshments – coffee shop or cafe or buffet
- **PI CF 001** Restaurant
- **PI BP 001** Quiet please or silence
- **PI BP 003** Line up or queue
- **PI BP 004** Line up or queue in twos
- **PI PF 023** Nursery or baby care
- **PI CF 007** Pharmacy
- **PI PF 025** Shower
- **PI PF 021** Stairs (not escape stairs)
- **PI PF 031** Accessible Elevator or lift

**Negation bar example**
Not allowed.

**Negation cross example**
Forbidden action
10.3.2 Safety Signs

Typical International Safety symbols below are indicative of those in ISO 7010: *Graphical symbols - Safety colours and safety signs - Safety signs used in workplaces and public areas.*

![Safety symbols](image)

**E 009**  
Doctor

**E 004**  
Emergency telephone

**E 003**  
First aid

**P 001**  
General prohibition sign

**P 002**  
No smoking

**P 007**  
No access for persons with pace-makers

**P 008**  
No metallic articles or watches

**W 001**  
General warning sign

**W 003**  
Warning: Radio-active material or ionizing radiation

**W 008**  
Warning: magnetic field

**W 005**  
Warning: Non-ionizing radiation

10.3.3 Healthcare specific pictograms

The use of symbols from AS 2899.3 *Hospital Signs* or similar specially designed pictograms is generally not recommended, as many are ambiguous and not readily understood without an accompanying text message. ISO symbols however are more easily recognised and some of these cover healthcare and general use topics.

Note: AS 2899.3: *Hospital Signs* is withdrawn but available for reference.
11 EMERGENCY DEPARTMENTS

11.1 General

Emergency departments (EDs) are unique in having all of the following characteristics concentrated in one location:

- 24 hour access, every day of the year
- principal access point for many patients
- high volume of patient presentations
- patients from all age groups with a wide range of medical conditions
- patients in a distressed, confused, agitated state, or involved in violence
- patients and companions/carers from diverse cultural and linguistic backgrounds
- patients with physical, sensory or cognitive impairments or mental health conditions.

This combination provides an environment with a potentially high exposure to risk for staff, visitors and property. As stated in the introduction poor wayfinding can produce dissatisfaction, leading to behaviour that may affect staff and others, and may compromise customer safety particularly in emergency situations. “The hospital has a duty of care to provide for the safety and security of employees, patients and visitors” [ACEM 2006].

The wayfinding solutions relating to many of these issues have been covered in earlier sections, however there are some specific to EDs that need elaboration.

Two of the major issues central to EDs are security, and the movement of patients within the department (including arrival and departure). In this respect the layout of the department plays an important role in assisting or hindering this movement. Where a layout is dysfunctional this will need to be addressed first, wayfinding alone cannot be relied on to resolve the effects of defective planning.

A primary (and essential) function of ED is the triage (assessment/sorting) of the patient; this should be addressed as a priority in wayfinding design, followed by the subsequent needs of patients and carers, e.g. directions to treatment areas, waiting, etc. These activities come within the concept of the ‘Ideal Emergency Department Patient Journey’, [NSW Health PD2008_009].

11.2 Guide: “Practical Steps To Improving Emergency Department Signage”, 2008, NSW Health – Health Services Performance Improvement Branch

This guide includes many of the general issues covered above that are peculiar to EDs, however this guide is required reading if implementing or reviewing ED signage. Some of the key findings are included below, however the guide should be read in it’s entirety and acted on:

- Include the sign ‘if you feel unwell or wish to leave the department before treatment, please inform the nurse’, where required e.g. waiting areas
- use temporary signage to test and improve wayfinding performance
- use electronic signage
- evaluate wayfinding performance in a collaborative way
- consider process and flow issues
- establish a wayfinding working party and an accountable representative.

The guide can be found online at:

11.3 Additional Information

Identification sign for Emergency department

[Source Australasian College for Emergency Medicine (ACEM)]. For the inclusion of directional arrows see Section 7.

Note: For general internal directional and other sign types containing the ‘Emergency’ message, use white letters on red as above but match other signage by using the standard sign system rules for layout and message e.g. Capitalise with first letter uppercase and remainder lowercase.

Other reference documents and further reading include:


Section 2, Circulation – Wayfinding, A&E design evaluation, Evaluation of two proposed accident and emergency departments: Brent Emergency Care and Diagnostic Centre at Central Middlesex Hospital, and an exemplar plan, NHS Estates, 2004, TSO, UK.
12 SUPPLEMENTARY INFORMATION

12.1 Community Signage

For the use of signs on public land and for public roads, consult with the RTA, public transport authorities, and local council. All aspects of design and construction, height and location are subject to regulation and their approval.

The purpose of providing traffic signage is to assist in the safe and orderly movement of traffic (including cyclists and pedestrians), to and from the healthcare facility.

Signage is an essential part of the road traffic system, the messages should be consistent, and the design and placement co-ordinated with the road layout. The examples of typical RTA and community signs are shown below.

“.......................... the RTA will supply, erect and maintain all signs on classified roads providing that council provides a continuity of signposting on any unclassified roads until the hospital is reached.......................... All signs on state roads remain the property of the RTA”. [RTA Draft Document 2008] See Appendix 8.

12.2 RTA Traffic Signs

12.2.1 Advance Direction signs – public roads.

Typical RTA signs.

ADVANCE DIRECTION (G1-4) sign that includes the hospital symbol

Example of HOSPITAL ADVANCE DIRECTION (G7-310) sign where the visitor car park and emergency services have separate access points

ADVANCE DIRECTION (G7-286) sign for a hospital

HOSPITAL EXIT (GE7-216) sign
INTERSECTION DIRECTION (G7 series) sign leading to a hospital, or, for use at the hospital entrance (G7-288)

Source RTA online publications.
For information only. Not to scale.

Refer also to associated Australian Standards and Austroads publications, see Appendix 3, References

12.2.2 Site traffic signs

Typical RTA signs for on-site use.

- Parking direction (G7-7)
- Permissive Parking, people with disabilities
- Permit holders general
- No Parking at any time Parking series (R5)
- Stop Sign Movement series (R1)
- Give way Sign Movement series (R1)
- Speed Restriction Speed series (R4)
- Pedestrian Crossing Pedestrian series (R3)
All traffic turn left
Direction Series (R2)

One Way Left
Direction series (R2)

Road Marking
Keep Clear bounded by
road line markings


These signs serve to direct users internally throughout the grounds of the healthcare facility. Where possible the standard public road sign format for directing traffic and regulating parking should be used on internal roads.

Signage suitable for site road and parking is covered by the following RTA sign series: Movement series R1, direction series R2, pedestrian series R3, speed series R4, parking series R5, miscellaneous series R6, exclusive lane series R7, bicycle/pedestrian series R8, supplementary plates for general use R9, [RTA, 2002, *Regulatory Signs*].

Other signage will include Road and Kerb marking, and the use of Fluorescent and reflective materials.

### 12.3 General Site Signage

Typical ISO 7001: *Graphical symbols — Public information symbols*, suitable for general site signage.

- PI TF 021 Bicycle or cycle parking.
- PI TF 005 Heliport or helicopters
- PI TF 006 Bus station or bus stop or buses
- PI TF 008 Taxi stop or taxis

For information only. Not to scale.

### 12.4 Fire Signs

Fire signs for healthcare facilities are subject to regulation under statutory codes for public buildings. Fire signage is governed by the BCA (subject to state variations) under:

- Part D Access and Egress, D2, D3 (exit signs) and D4
- Section E Services and Equipment, Parts E1, E2, E 4.6 and Specification E 1.8

The BCA should be checked for amendments and fire signage proposals should be confirmed or verified with the relevant authorities or a certified Building Regulation consultant before implementation.

Typical recommended sizes (height) 100, 150, 200, 250 mm. Additional background and boarders are optional.

For Exit Signs refer to BCA and AS/NZS 2293 parts 1 and 3.

Typical international exit signs - AS/NZS 2293.3: *Emergency evacuation lighting for buildings - Emergency luminaires and exit signs.*

- Straight on
- Left from here
- Right from here
- Opaque background (dark preferred)

For information only. Not to scale.

Typical Fire equipment pictograms: For additional sign and message information refer BCA, AS 2419.1 and AS 2441.

- Fire Hose Reel
- Fire Alarm Call Point
- Fire fighting Equipment
- Fire extinguisher

For information only. Not to scale.


AS 2441: *Installation of fire hose reels.*
The use of internally illuminated signs in healthcare facilities is less common than in other public buildings. There are specific areas where the higher attention factor generated by an illuminated sign may be warranted. Examples are Emergency department entrances, enquiry counters and outpatient areas.

The intensity of the internal lighting of pictograms on translucent background material should be controlled to prevent loss of legibility due to halation.

In NSW healthcare facilities, ceiling heights of 2400mm restrict the height of suspended sign boxes to 300mm in interior corridor locations, permitting only one or two line formats. Examples of basic formats for one and two line illuminated messages are shown above.

Where signage is to be integrated into the interior as an built element, for example as a continuous fascia panel above an enquiry counter, the correct letter height to background height ratio should be maintained.

Expert advice on graphic layouts, illumination levels and signbox construction techniques should be sought for internally illuminated signs.

Refer: BS 873.5: Specification for internally illuminated signs and external lighting luminaires. (Referenced by AS 1319: Safety signs for the occupational environment.)

12.6 Notices

The following points should be considered in the preparation of notices:

- write messages in the most concise way possible
• break the message into word groups to fit lines

• check the longest line does not exceed 250mm by laying out actual lettering correctly spaced

• if satisfied that the sense of the message is maintained within the selected line breaks, commence lettering from the bottom line first, and work upward from the bottom line until the message is finished. Surplus space is always at the top of the panel in this type of sign.*

* This ‘bottom up’ layout style is a peculiarity of the original signage system. It is equally valid to start from the top when not matching existing signage.

12.7 Sign Maintenance

In general, signs produced and installed by sign manufacturers are guaranteed to be maintenance free apart from routine cleaning by the healthcare facility. Sign maintenance involving repair, replacement or relocation should preferably be carried out by the sign manufacturer.
13.0 TENDERS

13.1 New projects

Depending on the procurement method to be used, tender documentation for signage will include signage plans, detail drawings, sign schedules and a detailed specification. In most cases this will form a separate documentation package. Care should be taken to coordinate signage with the engineering services documentation to avoid gaps and overlaps. Some signage will be connected to a service (e.g. illuminated and exit signs), or required for customer services (e.g. hearing loops), building services and plant.

The option of using temporary signage for specific purposes was discussed earlier and can be included if considered to be a productive solution.

13.2 Existing installations

Over time it is inevitable that the signage installation will require alteration for a number of reasons such as:

- movement and changes in staff and services
- alterations and additions to building and site
- feedback on signage deficiencies from staff, service users and visitors.

The elements of a sign system are inter-related and a change in one location may have impact on traffic flow and signage elsewhere. Accordingly, it is recommended that responsibility for alteration or amendment to the sign system come under the control of a nominated person or group. While requests can be acted upon as they arise, it is preferable to fabricate and install signs in batches to reduce costs and provide a considered rather than a piecemeal solution.

13.3 Tender Specification Checklist

The following checklist is provided to assist tender documentation quality assurance. Use Australian Standards wherever possible to control materials and workmanship.

**Materials**
Specify the materials to be used in the manufacture of the planks, posts, supports and lettering.

**Finishes**
Specify the finishes to be used for planks and message, including applied finishes, method of application, paints, gloss level, surface texture, anodising etc.

**Fixing**
Specify the fixing and attachment methods, materials, finishes and coatings, corrosion resistance, vandal proofing, etc.

**Inclusions**
Detail materials and processes that are to be included in the tender price: fixtures, brackets, wire, bolts, screws, tape/adhesives, packaging, transport and handling, storage, installation, insurances and rectification of defects, etc.
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery</td>
<td>Specify a firm date for completion of production and installation of signs.</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Request details of how the sign system can be subsequently modified by the user while preserving its overall appearance. The expertise required to make these changes and the indicative cost.</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Clarify what maintenance will be required and what post-installation service will be provided by the manufacturer.</td>
</tr>
<tr>
<td>Durability</td>
<td>Ask the manufacturer to provide a warranty for each sign type (interior and exterior applications).</td>
</tr>
<tr>
<td>Limitations</td>
<td>Any specific issues such as access routes, hours of operation, restricted areas, noise levels etc. must be advised and agreed.</td>
</tr>
</tbody>
</table>

The use of an appropriate approved written contract is recommended for any proposed work. If possible itemised cost for each sign type should be obtained. Issues such as variation rates, penalty rates etc. covered by the individual contract conditions are outside the scope of this checklist.
**APPENDIX 1 - GLOSSARY AND ABBREVIATIONS**

This Document adopts the terms and meanings used in the BCA, Australian Standards, and HREOC where noted. Common abbreviations for NSW and Commonwealth Government Agencies are used without additional explanation.

**Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABCB</td>
<td>Australian Building Code Board</td>
</tr>
<tr>
<td>ACAA</td>
<td>Association of Consultants in Access, Australia Inc.</td>
</tr>
<tr>
<td>ACEM</td>
<td>The Australasian College for Emergency Medicine</td>
</tr>
<tr>
<td>AIHW</td>
<td>Australian Institute of Health and Welfare</td>
</tr>
<tr>
<td>AS</td>
<td>Australian Standard</td>
</tr>
<tr>
<td>ASCC</td>
<td>Australian Safety and Compensation Council (formerly NOHSC)</td>
</tr>
<tr>
<td>AS/NZS</td>
<td>Australian and New Zealand Standard</td>
</tr>
<tr>
<td>Aust HFG</td>
<td>Australasian Health Facility Guideline</td>
</tr>
<tr>
<td>BIM</td>
<td>Building information model, additional function within CAD</td>
</tr>
<tr>
<td>CAD(CADD)</td>
<td>Computer-aided design (and drafting)</td>
</tr>
<tr>
<td>CAD/CAM</td>
<td>Computer-aided design and manufacture</td>
</tr>
<tr>
<td>CAE</td>
<td>The Centre for Accessible Environments (UK)</td>
</tr>
<tr>
<td>CALD</td>
<td>Culturally and linguistically diverse</td>
</tr>
<tr>
<td>CASA</td>
<td>Civil Aviation Safety Authority Australia</td>
</tr>
<tr>
<td>CPTED</td>
<td>Crime Prevention Through Environmental Design</td>
</tr>
<tr>
<td>DADHC</td>
<td>Department of Aging Disability and Home Care</td>
</tr>
<tr>
<td>DDA</td>
<td>Commonwealth Government Disability Discrimination Act, 1992;</td>
</tr>
<tr>
<td>ESD</td>
<td>Ecologically Sustainable Development</td>
</tr>
<tr>
<td>ETA</td>
<td>Electronic travel aid</td>
</tr>
<tr>
<td>FF&amp;E</td>
<td>Furniture, Fittings and Equipment, includes Fixtures and Fittings.</td>
</tr>
</tbody>
</table>
FM Facility management
GPS Global positioning system
HPU Health Planning Unit
HREOC Commonwealth Government Human Rights and Equal Opportunity Commission
ISO International Standards Organisation
NESB Non English speaking background
OHS Occupational Health and Safety
RFID Radio frequency identification tag - passive or active, see barcodes.
RTA Road and Traffic Authority
SA HB Standards Australia - Hand Book
TGSI Tactile ground surface indicators (Warning information device)
TTY Telephone typewriter
VCO Voice carry over call, see TTY

Glossary
Access General abbreviated term for accessibility.
Accessible Having features to permit use by people with disabilities. (BCA).
Accessway A continuous accessible path of travel to or within a building suitable for people with disabilities as defined in AS 1428.1. (BCA).
Ascender Portion of lower case letter above x-height.
Arrow Zone Area at left or right end of signs reserved for arrow.
Artwork High quality final drafted design suitable for photographic reproduction.
Assistive listening system (ALS) A means of improving speech intelligibility at the ear of a listener, e.g. Hearing Loop system or an Infra red system (HREOC).
Auslan Australian Sign Language
Backsprayed A method of production of acrylic faced signs, where graphic elements are reproduced by mask and spray on the rear sign face.
Braille A system of touch reading for the blind, which employs raised dots, evenly arranged in quadrangular letter spaces or cells. (AS 1428.1). See also Tactile Signage.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descender</td>
<td>Portion of the lower case letter below x-height.</td>
<td>60</td>
</tr>
<tr>
<td>Die Cut</td>
<td>Process where shapes are stamped from sheet material gives accurate shape and edge definition, see laser cut.</td>
<td></td>
</tr>
<tr>
<td>Direction Signs</td>
<td>Indicating the direction to a required exit, (BCA E4.6), see Exit Signs.</td>
<td></td>
</tr>
<tr>
<td>Disability Standard</td>
<td>Document(s) approved by the Commonwealth Attorney General ….. that satisfies the DDA (ACAA).</td>
<td></td>
</tr>
<tr>
<td>Emergency information signs</td>
<td>Signs indicating the location of, or directions to, emergency related facilities such as exits, safety equipment or first aid facilities (AS 1319).</td>
<td></td>
</tr>
<tr>
<td>Engrave</td>
<td>Inscribe into a hard surface, using cutting tools, lasers, water jets etc.</td>
<td></td>
</tr>
<tr>
<td>Etch</td>
<td>To alter or imprint on a surface by various methods, acids, solvents, sand/shot blasting, laser etc.</td>
<td></td>
</tr>
<tr>
<td>Exit signs</td>
<td>Illuminated emergency exit signage, (AS 2293.1), and as defined by BCA Part.</td>
<td></td>
</tr>
<tr>
<td>Fire signs</td>
<td>Signs advising the location of fire alarms and fire-fighting facilities (AS 1319). Excludes Exit signs.</td>
<td></td>
</tr>
<tr>
<td>Fixtures*</td>
<td>Fixed items that require service connection (e.g. electrical, hydraulic, mechanical) and includes basins, light fittings, clocks, medical service panels etc.</td>
<td></td>
</tr>
<tr>
<td>Fittings*</td>
<td>Fixed items attached to walls, floors or ceilings that do not require services such as curtain and IV tracks, hooks, mirrors, blinds, joinery, pin boards etc.</td>
<td></td>
</tr>
<tr>
<td>Fonts</td>
<td>A common term in electronic publishing and word processing, see Typefaces,</td>
<td></td>
</tr>
<tr>
<td>Hazard signs</td>
<td>Signs advising of hazards (AS 1319). Includes Danger and Warning (caution) signs.</td>
<td></td>
</tr>
<tr>
<td>Hearing loop</td>
<td>Assistive listening system, used with International symbol for deafness.</td>
<td></td>
</tr>
<tr>
<td>Hue</td>
<td>Colour quality (light frequency) Red, green, blue.</td>
<td></td>
</tr>
<tr>
<td>Laser cut</td>
<td>Shapes are cut from (through) sheet material using computerised laser technology. See CAD/CAM. Also water jet cutting.</td>
<td></td>
</tr>
<tr>
<td>Layout</td>
<td>A drawing or sketch of proposed sign-face.</td>
<td></td>
</tr>
<tr>
<td>Legend</td>
<td>The message content of a sign in words (text) or symbols, or a combination of these (AS 1319).</td>
<td></td>
</tr>
<tr>
<td>Letterform</td>
<td>Space between adjacent letters.</td>
<td></td>
</tr>
<tr>
<td>Limitation signs</td>
<td>Signs that place a numerical or other defined limit on an activity or use of a facility (AS 1319). See restriction signs.</td>
<td></td>
</tr>
<tr>
<td>Line Space</td>
<td>Vertical space between adjacent lines of lettering.</td>
<td></td>
</tr>
<tr>
<td>Logotype</td>
<td>Name of an organisation or product in a special design used as an identifying mark.</td>
<td></td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Lowercase</td>
<td>Type without capitals</td>
<td></td>
</tr>
<tr>
<td>Luminance contrast</td>
<td>The amount of light reflected from one surface or component, compared to the amount of light reflected from the background or surrounding surfaces. (AS 1428.1).</td>
<td></td>
</tr>
<tr>
<td>Mandatory sign</td>
<td>Sign that indicates that an instruction must be carried out (AS 1319).</td>
<td></td>
</tr>
<tr>
<td>Message Zone</td>
<td>Area between arrow zones reserved for message wording.</td>
<td></td>
</tr>
<tr>
<td>Pictogram</td>
<td>Recent term, interchangeable with Symbol in a Signage context.</td>
<td></td>
</tr>
<tr>
<td>Plank</td>
<td>Sign background extruded or fabricated in aluminium or other material.</td>
<td></td>
</tr>
<tr>
<td>Prohibition sign</td>
<td>Sign that indicates that an action or activity is not permitted (AS 1319).</td>
<td></td>
</tr>
<tr>
<td>Regulatory Sign</td>
<td>Sign containing instructions with which failure to comply an offence at law. Includes Limitation, Mandatory and Prohibition signs (AS 1319).</td>
<td></td>
</tr>
<tr>
<td>Routing</td>
<td>The partial cutting away of the sign’s surface to form the graphic elements. (See also Engraving)</td>
<td></td>
</tr>
<tr>
<td>Sans serif</td>
<td>Absence of serifs e.g. Helvetica – also a category of typefaces.</td>
<td></td>
</tr>
<tr>
<td>Serif</td>
<td>A stroke or line at the end of a letter, e.g. Times New Roman.</td>
<td></td>
</tr>
<tr>
<td>Screen print</td>
<td>A method of reproducing graphic elements by using a squeegee to force ink (paint) through a stencil onto a sign face.</td>
<td></td>
</tr>
<tr>
<td>Sign</td>
<td>A combination of graphic elements on a background to convey a message - includes visual, auditory or tactile devices. See also definitions in AS 1319.</td>
<td></td>
</tr>
<tr>
<td>Signage</td>
<td>Collective. Equivalent terms Signposting (older), Signing (UK), etc.</td>
<td></td>
</tr>
<tr>
<td>Strip</td>
<td>Sign background cut to size from sheet material.</td>
<td></td>
</tr>
<tr>
<td>Sustainable</td>
<td>General term for ‘Environmentally Sustainable Design’.</td>
<td></td>
</tr>
<tr>
<td>Symbol</td>
<td>A graphic or pictorial device used to represent objects or concepts (AS 1319). See Pictogram.</td>
<td></td>
</tr>
<tr>
<td>Tactile ground surface indicators (TGSI)</td>
<td>Warning TGSIs are areas of raised surface domes or cones on the ground designed to provide pedestrians who are blind or who have a vision impairment with warning information about features such as stairs, ramps or hazards (HREOC).</td>
<td></td>
</tr>
<tr>
<td>Tactile Signage</td>
<td>Signage incorporating raised text/symbols to enable touch reading by the blind and touch enhancement for visual perception for visually impaired readers. (AS 1428.1).</td>
<td></td>
</tr>
<tr>
<td>Template</td>
<td>Master device with which many reproductions of the same element can be made.</td>
<td></td>
</tr>
<tr>
<td>Tile</td>
<td>Removable backing on which die cut letters and arrows are positioned to facilitate storage, spacing and application.</td>
<td></td>
</tr>
</tbody>
</table>
Tiresias font
RNIB developed fonts.

Transposition
To exchange the position of a word, line, symbol or arrow with another.

Telephone typewriter (TTY)
A machine that has a keyboard and a screen. It may be built into a telephone or connected to one (HREOC).

Typeface
The styling of lettering or alphabet.

Typography
The use of lettering or alphabet.

Vinyl
Polyvinyl chloride (PVC).

Wayfinding
Strategy to assist people in finding their way, includes signage.

Word Space
Space between adjacent words.

X-Height
Height of the lower case letter ‘x’.

Sources are given in brackets (...).
* For further information on FF&E and Fixtures and Fittings refer to the Aust HFG - Standard Components Room Data Sheets (RDS), ‘How to use’ sheet.
APPENDIX 2 - VOCABULARY

General
Effective signage requires the use of a consistent vocabulary. Ensure a consistency of wording between various healthcare facilities, and especially within a facility and on information sheets.

A common vocabulary for healthcare facility signage is included below, the vocabulary reflects the terminology used within the AUS HFG Schedules of accommodation and Guidelines text, these should be always checked for currency and for any terms not included.

Vocabulary
Fire stairs (arrow+symbols). Fire exit (arrow+symbol). Flammable store. Flowers. Formula room
Inpatient Units. Intensive care unit. Interview room. Interview 1 (2) etc. Isolation Room. Isotopes
Kiosk. Kitchen
Laboratory. Laboratory 1 (2) etc. Laundry. Lecture room. Level 1 (2) etc. Library. Librarian. Lifts. Linen store. Leave specimens

Oral surgery. Outpatients. Overnight stay


Quiet Room


Sterile supplies. Sterile Supply Unit (S.S.U). Store. Surgical Inpatient Unit

Technician. Toilets. Toilet Female. Toilet Male. Transport office. Treatment 1 (2) etc. Treatment room

Virology. Visitors car park. Visitors. Visiting Medical Officer

Waiting areas. Way out (arrow). Women. Workshop
APPENDIX 3 - REFERENCES

Legislation Regulations and Guidelines - Commonwealth and NSW


Australian Building Code Board (ABCB).

BCA - Building Code of Australia and NSW appendices

• Sections D, E, G
• Specification D3.6 Braille and Tactile Signs


The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

• Safety guidelines for magnetic resonance diagnostic facilities (1991), Radiation Health Series No. 34
• Code of Practice for Radiation Protection in the Medical Applications of Ionizing Radiation (2008)

M94-11 STANDARD SITE SIGNAGE FOR NSW GOVERNMENT PROJECTS, 1994, NSW Department of Premier and Cabinet.

The National Health and Medical Research Council (NHMRC), publications.


NSW Department of Health, Day Procedure Centres Regulation 1996 and Private Hospitals Regulation 1996

Occupational Health & Safety (OH&S) Act 2000, NSW Government

CAAP 92-2 (1) - Guidelines for the establishment and use of helicopter landing sites (HLS). Civil Aviation Safety Authority Australia. <www.casa.gov.au>

Policy and Guidelines - NSW Health


Improved Access for Health Care Facilities, DS32, 1994, Capital and Infrastructure Services


NSW Health - Occupational Health Safety and Rehabilitation Guide (Grey Guide)

Protecting People and Property: NSW Health Policy and Guidelines for Security Risk Management in Health Facilities,

Health Facility Guidelines - Use of Australasian Health Facility Guidelines (AUS HFG)

Technical Series TS11 - Engineering Services & Sustainable Development Guidelines

Road and Traffic Signage

Road and Traffic Authority, NSW, <www.rta.nsw.gov.au>
- Traffic and Transport - Technical Direction Guidelines, TM and TDT series as applicable
- Interim Guide to Signs and Markings, 1981 (parts replaced by later documents)
- Traffic Signal Design, Sections 1 - 17, Appendices A - E
  In particular
- Restricted Parking areas, 2003

RTA - Australian Road Rules
Schedules
  2 - Standard or commonly used traffic signs,
  3 - Other permitted traffic signs,
  4 - Symbols and traffic-related items,

Parts
  Part 8 - Traffic signs and road markings,
  Part 20 - Traffic control devices and traffic related items.

Australian Standards

Standards Australia Ltd. <www.standards.org.au>
The publication/revision date is intentionally omitted - Check for the current revision, drafts or new associated Standards.
Note: Withdrawn Standards are included (if still published) for reference and use.

AS/NZS 1158.0: Road lighting-Introduction.
- AS/NZS 1158.1.1: Vehicular traffic (Category V) lighting - Performance and installation design requirements.
- AS/NZS 1158.3.1: Pedestrian area (Category P) lighting - Performance and design requirements.

AS 1319: Safety signs for the occupational environment.

AS 1428: Design for Access and Mobility, Parts 1 to 4 (refer Drafts).

AS/NZS 1580.601.4: Paints and related materials - Methods of test - Colour - Calculation of colour differences.
AS 1670.4: Fire detection, warning, control and intercom systems - System design, installation and commissioning - Sound systems and intercom systems for emergency purposes.

AS/NZS 1680.0: Interior lighting - Safe movement.

AS 1735: Lifts, escalators and moving walks.
- AS 1735.1: General requirements.

- AS 1742.1: General introduction and index of signs.
- AS 1742.5: Street name and community facility name signs.
- AS 1742.15: Direction signs, information signs and route numbering.

AS 1743: Road signs – Specifications.

AS 1744: Forms of letters and numerals for road signs. Known as Standard alphabets for road signs - Metric units.

AS 1746: Road Signs – Specifications.

- AS/NZS 2293.1: System design, installation and operation.
- AS/NZS 2293.3: Emergency luminaires and exit signs.

AS 2342: Development, testing and implementation of information and safety symbols and symbolic signs.


AS 2441: Installation of fire hose reels.

AS 2444: Portable Fire Extinguishers Selection and Location.

AS 2700: Colour Standards for general purposes.

AS 2786: Symbols - Health Care in Hospitals (Withdrawn).

AS 2890.1: Parking facilities.
- AS 2890.1: Off-street car parking.
- AS 2890.6: Parking for people with disabilities.

AS 2899: Public Information Symbol Signs. (Withdrawn).
- AS 2899.1: General information signs.
- AS 2899.3: Public information symbol signs - Hospital signs.

AS 3745: Planning for emergencies.


AS 4282: Control of the obtrusive effects of outdoor lighting.

AS/NZS 4360: Risk Management.
AS4428.4: Fire detection, warning, control and intercom systems - Control and indicating equipment - Intercommunication systems for emergency purposes.

AS 4485.2: Security for health care facilities - Procedures guide.


**Draft Standards at May 2008**

DR 04019: Part 1 - General Requirements for Access - New Building work.

DR 04021: Parking facilities - Off-street parking for people with disabilities.

DR 05130: Manual of uniform traffic control devices, Part 15, Direction signs, information signs and route numbering.

DR 91226: Procedures for the development, testing and implementation of public information and safety symbols and symbolic signs.

**Standards - Overseas**


ISO 7010: Graphical symbols - Safety colours and safety signs - Safety signs used in workplaces and public areas.

ISO 3461: General principles for the creation of graphical symbols.

ISO 3864: Graphical symbols - Safety colours and safety signs.

ISO 3864.1: Design principles for safety signs in workplaces and public areas.

ISO 3864.3: Design principles for graphical symbols for use in safety signs.

ISO 7239: Development and principles for application of public information symbols.

ISO 9186: Graphical symbols - Test methods
- ISO 9186-1: Part 1: Methods for testing comprehensibility
- ISO 9186-2: Part 2: Method for testing perceptual quality

ISO 16069: Graphical symbols - Safety signs - Safety way guidance systems (SWGS).

Note: See also British Standards for guidance on signage design and testing where not covered by Australian or International standards. e.g. BS 8501: Graphical symbols and signs.

**Public information symbols**


ITU E136: Tactile identifier on pre-paid telephone cards.

ITU E161: Arrangement of figures, letters and symbols on telephones.

IEC 73 Colours of pushbuttons and their meanings.
APPENDIX 4 - BIBLIOGRAPHY and FURTHER READING

Bibliography

The available literature associated with Wayfinding and Signage is considerable, the following references were accessed in preparation of this Revision. Additional references are provided under Further Reading.

Accessibility - A Colour & Contrast Design Guide, Dulux Trade, CD Rom or web resource <http://www.icipaints.co.uk/support/specifications/colour/accessibility/index.jsp>

Accessible Design For Public Buildings Signage, Recommendations for people who are blind or vision impaired, Vision Australia. <www.visionaustralia.org.au>


Access to health services for people who are blind or vision impaired, Blind Citizens Australia, <www.bca.org.au>


Building Code of Australia (BCA).


CRC Construction Innovation, 2007, Wayfinding Design Guidelines, Icon.net Pty Ltd.

CRC Construction Innovation, 2007, Wayfinding System Audit, Icon.net Pty Ltd.


Disability Standards for Access to Premises (Premises Standard) - Draft Regulation Impact Statement (RIS2004), ABCB.


Hogan D, Apelt R, Crawford J, Smit D, Advances in Wayfinding in the Built Environment, Case Study Paper, Clients Driving Innovation: Benefiting from Innovation (12-14 March 2008), Third International Conference of the Cooperative Research Centre (CRC) for Construction Innovation.

HREOC, web resources:
- Advisory Notes on Access to Premises.
- FAQ – Access to Premises.
- The Good the Bad and the Ugly – Design and Construction for Access.


JMU Access partnership, Fact Sheet 23 – Signage, JMU, RNIB.

JMU Access partnership, Fact Sheet 24 – Lighting, JMU, RNIB.

Martin E, Improving Access to Heritage Buildings. A practical guide to meeting the needs of people with disabilities, AHC, Chap.10.0 Information presentation and interpretation.


Miller C, Lewis D, 1998, Key findings and guidelines: NHS Estates wayfinding research project, Information Design Unit Ltd, Newport Pagnell, UK.


Research Group for Inclusive Environments, RGIE.


Tiresias, Guidelines – Colour Blindness, <www.tireias.org>


Further Reading


Ageing and disability Dept, 2000, Best Practice Manual for the publication and display of Public Transport Information, NSW.

CNIB, Clearing Our Path, Canadian National Institute for the Blind.


Empowering with colour - creating safe, functional environments for the visually impaired, Akzo Nobel Decorative Coatings Ltd.


Bright K, Cook G, Harris J, 1997, A design guide for the use of colour and contrast to improve the built environment for visually impaired people, Project Rainbow, University of Reading, UK.


Bright, K, G.Cook, , Harris, J - Colour, Contrast & Perception Design Guidance for Internal Built Environments.

Carpman J, Grant M, Wayfinding woes, Common Obstacles to a Successful Wayfinding System, Health Facility Management, Feb 2002.

Carpman, J., Grant, M., & Simmons, D, 1984, No More Mazes: Research About Design For Wayfinding In Hospitals, Michigan, The University of Michigan Hospitals.


Cook, G; Bright, K; Access Journal 18 - Spring 2005 - Colour and Luminance Contrast - What, Why, How and When?


DFA, Accessibility Initiatives for Deaf and Hearing Impaired People, Seminar Brochure, seminar 20 March 2007 at Brisbane’s Princess Alexandra Hospital. Deafness Forum of Australia

Disability WA, Guides to various access resources, Disability Services Commission, WA, <www.disability.wa.gov.au>


EC Signs Directive 1996/82/EEC.


Heller S, December 2005, Navigating Today’s Signs, An Interview with Mies Hora, AIGA. <www.aiga.org>

Hillier, 1996, Space is the Machine, Cambridge University Press.

McCrindle, R; Cook, G; Booy, D; Barrett, J, O’Neill, L (2005). Designing hospital bedside systems for use by patients with a visual impairments.


Nzegwu F, The Experiences of Visually Impaired Users of The NHS.

Orientation and wayfinding in Public Buildings, 1988, Public Works, Canada.


Raubal, M, 2005, Cognitive Engineering for Geoinformatics, Ausgabe 24, Institute of Geoinformatics, (IfGI) prints, University of Munster.


Tiresias, Fonts (download), RNIB, <www.tiresias.org/fonts/fonts_download.htm>


Workbook; Universal Symbols in Health Care, Executive Summary Best Practices for Sign Systems, Hablamos Juntos, USA.

APPENDIX 5 - ORGANISATIONS

Organisations General - Australia

The Australasian College for Emergency Medicine, <www.acem.org.au>
Australian Building Codes Board, <www.abcb.gov.au>
Australian Infection Control Association, <www.aica.org.au>
Australian Local Government Association, <www.alga.asn.au>
The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), <www.arpansa.gov.au>
Civil Aviation Safety Authority Australia, <www.casa.gov.au>
Media Access Australia, <www.mediaaccess.org.au>
National Health and Medical Research Council, <www.nhmrc.gov.au>
Standards Australia, <www.standards.org.au>

Organisations General – Overseas

Agency for Healthcare Research and Quality (AHRQ), USA, <www.ahrq.gov>
American Institute of Graphic Arts, (AIGA), <www.aiga.org>
HCIRN, Human Computer Interaction Resource Network <www.hcirn.com>
InformeDesign, Articles on Orientation, Wayfinding, and Spatial Movement, American Society of Interior Designers and University of Minnesota, <www.informedesign.umn.edu>
Intelligent Space Partnership (ISP), <www.intelligentspace.com>
NHS Estates, National Health Service Estates (UK), <www.> TO BE ADVISED

Project Rainbow, Research Group for Inclusive Environments, School of Construction Management and Engineering, The University of Reading, <www.reading.ac.uk/ie/research/rainbow/rainbow.htm>


**Standard Organisations - Overseas**

Comite Europeen De Normalisation (CEN), <www.cen.eu>
European Telecommunications Standards Institute (ETSI), <www.etsi.org>
International Telecommunications Union (ITU), <www.itu.int>
International Organization For Standardization (ISO), <www.iso.org>
International Electrotechnical Commission, (IEC) <www.iec.ch>

**Organisations Accessibility - Australia**

ACAA, Association of Consultants in Access, Australia Inc, <www.access.asn.au>
Blind Citizens Australia (BCA), <www.bca.org.au>
Australian Association of the Deaf, <www.gad.org.au> TO BE ADVISED
Better Hearing Australia, <www.betterhearingsydney.org.au>
Blind Citizens Australia <www.bca.org.au>
The Deaf Society of New South Wales, <www.deafsocietynsw.org.au>
DeafBlind Association (NSW), <www.dbansw.org.au>
Deafness Forum of Australia, <www.deafnessforum.org.au>
Department of Aging Disability and Home Care, <www.dadhc.nsw.gov.au>
National Disability Services (formerly ACROD), <www.nds.org.au>
Vision Australia, <www.visionaustralia.org.au>
Organisations Accessibility - Overseas


American Foundation for the Blind (AFB), <www.afb.org>

Canadian National Institute for the Blind, CNIB, <www.cnib.ca>

European Disability Forum, <www.edf-eph.org>

The Centre for Accessible Environments (CAE), <www.caee.org.uk>


Mencap, <www.mencap.org.uk>

MUSIL Munster Semantic Interoperability Lab, Institute of Geoinformatics, (IfGI), University of Munster, <http://musil.uni-muenster.de>

National Council on Disability, (NCD), USA, <www.ncd.gov>


Royal National Institute for the Blind, (RNIB), <www.rnib.org.uk>

Royal National Institute for the Deaf, (RNID), <www.rnid.org.uk>

Rehabilitation Engineering and Assistive Technology Society of North America (RESNA), <www.resna.org>

Royal Association for Disability and Rehabilitation (RADAR), <www.radar.org.uk>

Society for Environmental Graphic Design (SEGD), <www.segd.org>


Trace Research and Development Centre, University of Wisconsin-Madison, <http://trace.wisc.edu>
APPENDIX 6 - WAYFINDING CHECKLISTS

General

Refer to the checklists provided in:

- CRC Construction Innovation, 2007, Wayfinding System Audit, Icon.net Pty Ltd.

Accessibility

Refer to checklist provided in:

- HREOC - Access to buildings and services: Guidelines and information.

APPENDIX 7 - TECHNICAL INFORMATION

Standard Sign Lengths

Lengths (mm) - 600, 800, 1000, 1200, 1600, 2000, Special.

Typefaces

The following short list of typefaces are included here for legibility, and are recommended in Sign Design Guide, Wayfinding, and Sign Systems and Information Graphics. Some are more suited to limited use on smaller projects due to the ornate design of certain characters, e.g. ‘g’.

Note: Corporate typefaces that are suitable for printed matter may not be suitable for signage.

Sans Serif:

Serif:
Baskerville, Bembo, Capitoleum, Century Schoolbook, Sabon, Times New Roman, etc.

Note: Serif typefaces should be reserved for Heritage or similar special contexts, they are not as legible as sans serif and are not suitable for embossed access signage.
Both JMU/RNIB and Tiresas make available typefaces (downloads) for print and signage, these provide increased legibility for people with vision impairment.

**Principal Colour Systems in general use:**

BS British Standard System - Architectural colours etc.
Commission Internationale de l'Eclairage (C.I.E) - colour matching system.
DIN (German Standards Institute) System, DIN 6164 Colour Chart.
Munsell System.
Natural Colour System (NCS) (Swedish).
Ostwald Colour System, see DIN.
OSA/UCS The Optical Society of America's Uniform Colour System, see Munsell.
Pantone® Matching System (PMS) - Proprietary system for printing industry, paints.
RAL System - paint industry pigments.

Colour descriptions (Munsell and associated systems) include:

- **Hue** – basic pure colours from Red to Blue, chromatic colours.
- **Value** – lightness of a colour, neutral colours (greys) range from black to white (no hue). Value applies to both chromatic and neutral colours.
- **Chroma** – saturation or intensity of a colour.

**Safety Signs**

AS 1319: Safety signs for the occupational environment.

**TABLE 3.1 - Colour of word legends**

<table>
<thead>
<tr>
<th>Background colour</th>
<th>Word legend colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>White (Regulatory)</td>
<td>Black</td>
</tr>
<tr>
<td>Yellow (Warning)</td>
<td>Black</td>
</tr>
<tr>
<td>Green (Emergency)</td>
<td>White</td>
</tr>
<tr>
<td>Red (Fire)</td>
<td>White</td>
</tr>
</tbody>
</table>

Refer to AS 1319 Table 2.1: Colour and shape requirements for symbolic shapes.

Refer also AS 2700: Colour standards for general purposes and other Standards referenced under AS 1319.

**Signage Manufacture**

Select the appropriate product for use and location:
- Exterior (normal/severe), exposed or covered.
- Interior use (normal/vandal proof/safety/infection control).
- Accessibility (embossed/Braille/voice).

Typical materials:

**Backings – sheet material:**
- Safety glass: Clear, opaque, tinted, coated backing,
- Acrylic (Perspex etc), Fibreglass,
- Metal: Aluminium and aluminium composite, steel (coated), brass, bronze etc.
- Composite boards: Fibreboard (MDF), compressed fibre-cement (CFC), laminates (melamine, other), composite bulletin boards (cork etc).

Backing finishes:
- Satin, matt, etched, hammered, sand blasted, gloss not recommended.
- Reflective and phosphorescent material.

Frames, end caps, supports:
- Metal sections extruded or folded, Plastic extruded/moulded, fibreglass moulded.

Planks, Inserts:
- Metal, plastic, fibreglass, paper (requires a cover).

Hardware:
- Locks, hinges, stays, suspension wire, tamper proof screws, lock pins.

Covers:
- Clear acrylic or glass.

Graphics:
- Permanent and non-permanent graphics.
- For internally illuminated and non illuminated.
- Cut and applied – vinyl, acrylic, metal.
- Transfer tape.
- Paint – sprayed, screen print, brushed.
- Positive or negative graphics on clear/opaque backings.
- Etched, machined or laser/abrasive jet, incised, raised.
- Reflective and phosphorescent material.
- Bar code or RFID tagging.

Self illuminated:
- Backing back or edge lit by light sources (fluorescent), or Neon or LED in graphics.

Illuminated:
- Attached or separate light source.

Fixing
- Vandal proof or non vandal proof.
- Fasteners, adhesive, magnetic, clip and holding devices

Digital signs:
- Proprietary variable electronic message display or voice.

Digital Information Systems
- Proprietary systems with various interfaces and user input or activation systems.
- Visual, voice, phone, Braille, multi-lingual capabilities.

Accessibility
General

"Almost 4 million Australians have a disability. About 50% of people aged over 55 have difficulty with their mobility, hearing or vision. If we add their families, friends and work colleagues the number of people affected by disability and access issues is larger still. Each of these people is a potential customer, client and employee."

"The law says that a person with a disability must be able to access any building that the public is allowed to enter or use, and to have access to any goods, services or facilities just like any other customer or visitor. The law applies to all levels of Government and the private sector."

[HREOC, Access to buildings and services: Guidelines and information]

The HREOC Guidelines include wayfinding as a part of physical access, the guidelines outline the requirements found in BCA and Standards referenced by the BCA; they also elaborate on the access provisions within the DDA.

Note: Compliance with BCA and AS requirements may not be sufficient to ensure compliance with the Disability Discrimination Act (DDA).

"A person with a disability has a right to have access to places used by the public. The Disability Discrimination Act (DDA) makes it against the law for public places to be inaccessible to people."

"Every area open to the public should be open to people with a disability. They should expect to enter and make use of places used by the public if people without a disability can do so."

"This applies to existing places as well as places under construction. Existing places must be modified and be accessible (except where this would involve "unjustifiable hardship")."

"The DDA does not require the provision of access to be made if this will cause major difficulties or excessive costs to a person or organisation. This is called "unjustifiable hardship."

[HREOC, D.D.A. guide: The ins and outs of access]

Vision impairment and blindness.

Types of Vision impairment.

*The Sign Guide* groups the effects of vision impairment on the ability to use signage into the following 4 categories:

- Central field loss
- Peripheral field loss
- Combined central and peripheral field loss
- Reduced contrast

Based on Australian Bureau of Statistics study: Disability, Ageing and Carers, Australia: Disability and Long Term Health Conditions: Table 4:

"All persons with a disability, Sight Limitation by Disability Status and Age (cat no 4430.0.55.001), 1.44% of the Australia population are blind or have low vision. This is made up of 1.32% (low vision) and 0.11% total loss of sight. Adjusted to the 2006 population (presuming the rate has remained constant), this means approximately 300,000
Australians are blind or have low vision (i.e. with a condition that cannot be corrected by glasses). In addition to these people, there is a significant number of Australians with under-corrected refractive error”.

“According to Clear Insight: The Economic Impact and Cost of Vision Loss in Australia, Centre for Eye Research Australia prepared by Access Economics (2004), there are nearly 300,000 Australians with under-corrected refractive error”.

“Blindness and low vision is strongly correlated with age and the world health organisation expects blindness and low vision figures to double by 2020”.

“Note: The above figures are all with respect to people who meet the technical criteria of low vision. However, in general most people over 40 would benefit from clear signage and print materials (good contrast etc). This is because of common and normal eye conditions that are part of an ageing rather than a diseased eye”. [Australian Bureau of Statistics]

Colour Vision Deficiencies.
“Incidence of red-green colour deficiencies vary between human populations of different racial origin. The highest rates are found in Europeans and the Brahmins of India (c. 8% of males) and Asians (c. 4%); the lowest in Africans (c. 2.5%) and the aborigines in Australia (c. 2%), Brazil, North America (c. 2.0%) and the South Pacific Islands (c. 1.0%)”. [Tiresias.org].

Hearing loss and deafness

The following is an extract from the Deafness Forum of Australia, March 2008, Position Statement Communication Access In Airport Facilities, Draft V 1 0.

“The Commonwealth Disability Discrimination Act 1992 (DDA) makes it clear that all people who are Deaf or have a hearing impairment have the same right to access information as do those without significant hearing impairment. Therefore, if a facility provides arrangements to amplify speech (such as enquiry counters or the like, and/or meeting rooms) and those arrangements use sounds to alert users to anything, then the facility should provide parallel arrangements that enable Deaf and hearing impaired people to receive the sounds and information. Failure to provide equitable access to such facilities means the person who is Deaf or has a hearing impairment is discriminated against. It is illegal to discriminate against people on the basis of their hearing disability”.

“If there are legislative provisions to provide particular information or sounds, such as fire alarms or emergency warnings/instructions, then that information/sounds must be accessible to all. The Building Code of Australia (BCA) and various Australian Standards indicate the specific obligations in respect of various types of buildings and transport systems. Where there are no specific other legislative provisions, the DDA still applies and makes it illegal to discriminate against people with deafness on the basis of that disability”.

Refer also to recommendations and suggestions. These include the following provisions that would apply to Healthcare Facilities:

Induction Loop systems, Telephone Typewriters (TTYs) with clear signage, volume controlled phones and access to the National Relay Service (NRS).

All associated services should provide accessibility e.g. car parks, shops including car park booths and machines. Where payments are made cash registers should have a visual display. The International Symbol for Deafness be used appropriately to identify what assistive technologies available. Other signage may be used in conjunction with the International Symbol, but should not be used in place of the International Symbol for Deafness.
APPENDIX 8 - RTA Draft Guidelines

Edited extracts are taken from RTA, Draft policy guideline, 2008, and are provided in Appendix for information purposes only.

Hospitals - It is essential that road users are able to locate hospitals in an emergency, in both urban and rural areas.

Eligibility - Signposting should be provided for hospitals, whether public or private, where emergency facilities are provided. Hospitals that don’t have such facilities are not to be signposted as time wasted in an emergency may be critical.

Signs will only be considered when the individual hospital confirms that they provide emergency aid 24 hours per day.

Sign types, legends and siting.

All hospital signs have a white retro-reflective legend on a blue retro-reflective background.

See RTA’s Signposting manual for the determination of letter sizes for hospital guide signs.

Signs may be provided in the following situations:

- On freeways or motorways on the approach to the exit to the route leading to an eligible hospital. This sign would normally be erected between the diagrammatic 2km ADVANCE DIRECTION (GE1-11) and 1km ADVANCE DIRECTION (GE1-12) signs. An INTERSECTION DIRECTION (G7 series) sign, showing the hospital symbol and name, is erected below the INTERSECTION DIRECTION (G2-3) sign at the end of the exit ramp.

Where the freeway or motorway exit serves a signposted focal point town containing an eligible hospital and where there are a large number of subsequent intersecting roads, it may be necessary to show a HOSPITAL SYMBOL (S1) only, in conjunction with the focal point town name. This symbol would appear on all ADVANCE DIRECTION, INTERSECTION DIRECTION and REASSURANCE DIRECTION signs either until the hospital is reached, or to the access road turnoff where signs indicated by the next two dot points apply.

- On the nearest classified road in advance, and at the turn-off to, an unclassified road leading to an eligible hospital. Where it is the only hospital in a regional city or town the name of the town can be omitted; and

- On classified roads in advance, and at the entrance to an eligible hospital. Where a hospital’s emergency and parking access points are not shared, then signs must be erected to guide road users safely to each access. Whilst guide signs for hospitals are not provided for visitors to a hospital’s patients, there may be an expectation by some road users that such signs are indeed intended for that purpose, so signs must be erected to prevent visitors from using the emergency access.

[RTA, Draft policy guideline, 2008].
Practical steps to improving Emergency Department signage

September 2008
Emergency Department Signage

Emergency Departments (EDs) are frequently the main point of access to hospital for many patients. They are also the only entry point to provide access to patients 24 hours a day, every day of the year.

EDs are often very busy and stressful environments for patients and carers. Anxiety and confusion may be further increased in those from culturally diverse backgrounds.

All ED signage should be prominent, concise and give clear easily identified guidance to everyone using the ED. Simple signage with plain language should be used wherever possible to avoid confusion.

Clear consistent signage will:

- Improve patient flow.
- Manage traffic flow through clinical areas.
- Improve patient, carer and staff experiences.
- Reduce confusion for patients and reduce unnecessary work for staff.
- Contribute to improved patient safety.

It is recommended, as per Hughes Walters recommendations\(^1\) that signage is installed stating:

“If you feel unwell or wish to leave the department before treatment, please inform the nurse’

A collaborative approach to updating or designing signage is recommended to ensure it is appropriate and meets the needs of consumers, staff, the facility and the community.

All signage should be consistent with the specified guidelines on page 6 of this document.

---

Steps for designing and updating signage

When designing and updating signage for ED include the following steps:

- Plan
- Involve consumers and staff
- Align with departmental objectives and legislative requirements
- Consider process and flow issues
- Use of temporary signage
- Use of electronic signage
- Evaluation

Plan

The best results for planning the update or renewal of ED signage can be achieved by using a project management plan.

- Establish a project plan with set outcomes.
- Assign a person accountable for project outcomes e.g. ED Medical Director or Nurse Manager.
- Establish an ED ‘signage’ working party to:
  - Review existing signage.
  - Formulate new signage recommendations.
  - Implement new signage.
  - Review implemented signage
A collaborative approach with patients, carers and staff will ensure that signage meets the needs of all ED users and the facility. This should include a review of signage and recommendations. A timeline of 2-4 weeks should be adhered to in order to develop agreed recommendations.

A checklist may be used to ensure streamlined assessment of signage requirements. (Appendix 1).

**Involve consumers and staff**

Involving consumers and staff in the design and update of signage can help achieve a practical and usable result:

- Obtain collaborative involvement by consumers and ED staff to identify deficits and develop new signage.
- Consideration of multicultural requirements should be given throughout the signage development process.
- Involvement from those of Aboriginal or Torres Strait Islander descent, and culturally and linguistically diverse (CALD) communities should be sought, if appropriate.
- Consideration should be given from those with physical, visual, hearing, cognitive impairment and mental illness.

Internationally recognised symbols should be used to overcome language difficulties where possible. Symbols should be consistent with International Organization for Standardization (ISO) published symbols which provide universal standardised symbols as well as recommended accompanying wording for each symbol.²

An example of use of symbols RNS Hospital

Note floor signage should be durable and ensure it does not constitute a floor safety hazard. New facilities may consider incorporating signage within floor finishes.

---

The ED ‘signage’ project working party should include the following members:

- Consumer representatives (patients and carers).
- Clinical staff (e.g. medical, nursing, allied health).
- Clerical and support staff (e.g. wards person, cleaners, security).
- Health care facility representative (e.g. engineering).
- External signage consultants (e.g. signage companies can be engaged to obtain advice and quotation for local projects).

Involvement by consumers and staff will ensure deficits are identified by those who ‘live’ in or ‘pass’ through the ED environment. Diagnostic methods that have been found to be helpful include:

- Interview of ED staff regarding current and potential signage.
- Review of current signage and identification of areas that require attention by a “walk through” of the ED.
- Observations within the ED to review effectiveness of signage.
- Compilation of a photographic journal. Photographs of problematic areas can be used to create a photographic book. This can be left with staff within the ED so that comments or suggestions can be entered. (Appendix 2). It is important to keep this process brief so that a concentrated approach is made (1-2 weeks maximum).
- NSW Health Patient Survey Questionnaires ask patients the “Ease of understanding directions and signs inside and outside the hospital” and offer a 5 point scale to rate ease. This data is available for all NSW EDs via the NRC website eReports system. Data can be made available for ED Service Managers by accessing the AHS Patient Survey Contact Officer on the patient survey section of the intranet at http://internal.health.nsw.gov.au/hps/sheets.html
- The Statewide Patient Survey report is also available on the following NSW Health internet and intranet sites:

Alignment with departmental objectives and legislative requirements

Any new signage must be checked to ensure it correlates with ED operational policies and legislative requirements. Signage should be used to clearly delineate different functional areas within the ED, such as an acute treatment area or fast track zone, and ensure that access to these areas is understood by patients, carers and staff.

Signage should also correctly reflect terminology used in the ED with reference to accepted standards. It should be noted that it is acceptable to use the terms Triage Desk, Reception and Waiting Room in ED signage.

---

Process and flow issues

The importance of clear signage in the ED can not be underestimated. Signage plays a major role in the coordination of safety, process and patient flow in the ED. Inadequate or poorly placed signage may result in:

- Confusion, stress and anxiety for patients, carers and staff. This may create delays and impact poorly on experience.

- Constant interruptions to staff, as a result of patients and carers seeking directions. This may impact negatively on patient flow and workload.

Installation of adequate signage can reduce confusion, improve patient flow, patient, carer and staff experience and workload. It will also facilitate the right patient arriving in the right location on time.

Temporary signage

The use of temporary signage, where possible, will enable the effectiveness of signage to be evaluated by consumers and staff prior to permanent installation. This can be done by repeating the steps highlighted above. Temporary signage is also cost effective when initially updating or designing new signage in departments as it is able to be trialled prior to permanent installation.

Example of temporary signage RNS Hospital
Electronic signage

Electronic signage is available through a number of companies and may be used to complement existing or new signage initiatives. The benefits of electronic signage are that messages can be constantly updated as required. Examples as per Hughes Walters’ recommendations include:

“If you feel unwell or wish to leave the department before treatment, please inform the nurse”

Evaluation

It is important to evaluate the effectiveness of ED signage after update or implementation of new signage. This can be done by a “walk through” with consumers and staff to review temporary signage and by repeating the methods previously discussed.

Summary

Health care facilities, and in particular EDs are busy, complex and stressful environments. They are the one part of a hospital that require 24 hour access and therefore prominent, clear and concise signage is vital to provide guidance to everyone using the ED.

A standardised and collaborative process of review, design, implementation and evaluation is beneficial to all signage initiatives. This should include input from patients, carers, relevant community groups, staff and internal or external signage consultants.

All signage should be consistent with the following guidelines and should be referred to in conjunction with this document:


• International Organization for Standardization, ISO 7010: Graphical symbols- Safety colours and safety signs- Safety signs used in workplaces and public areas.
• The Australasian College for Emergency Medicine (ACEM), 2006, Policy on Emergency Department Signage P20, Melbourne

Contact:

Brian Shimadry, Principal Project Officer, Health Services Performance Improvement Branch, NSW Health, bshim@doh.health.nsw.gov.au
Ph 02 93919426

Danielle Kerrigan, Senior Project Officer, Health Services Performance Improvement Branch, NSW Health, dkerr@doh.health.nsw.gov.au
Ph 02 93919853
## Emergency Department Signage Progress Checklist

<table>
<thead>
<tr>
<th>Activity</th>
<th>Name of person responsible</th>
<th>Date Commenced</th>
<th>Date Completed</th>
<th>Signed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signage review commenced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ED Signage working party commenced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person responsible nominated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Staff and consumer involvement:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Consumer representatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Medical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Nursing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Allied health</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Clerical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Support staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Health care facility representative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Signage consultant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Diagnostic/ identify deficits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interview ED staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk through “tagalongs” with staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walk through “tagalongs” with patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photographic journal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Signage specifications</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signage is according to ACEM policies and standard terminology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signage including symbols considered</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accompanying wording for each symbol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signage as per Australian Standards</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary signage implemented</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic signage implemented</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signage is clear and visible e.g. free of obstruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signage is free from clutter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrance signage clearly visible</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrance identifiable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directional signage visible</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation post signage update</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Photographic Journal

A large sign over the triage desk may help.

Signs highlighting the security office in the waiting room would be great.

No signage to direct you to the appropriate place.

Would be good to have proper signs telling patients where to go.

Signs on the floor may help to direct people to the triage nurse.

An example of a photographic journal with comments written by staff members.

RNS Hospital waiting room, view on arrival.