DRAFT 2

Health Facility Guidelines Framework for Development

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1.0 Introduction

This is a short description of the system and developed framework for the creation of new Health Facility Guidelines in Australia. It is intended to inform and guide the potential users, authors and client groups.

2.0 Intent of the System

2.1 Health Facility Guidelines for the Future

- The Guidelines will ultimately replace previous paper based guideline systems that were out of date, too costly to maintain and often disseminated as incomplete versions in the form of several generation photocopies.
- The current versions will always be easily obtainable by all potential users, to reduce the risk associated with using out of date or incomplete versions of guidelines.
- The system will be designed with built in review and revision cycles to maintain their currency and consequent user confidence. The process for these will be separately documented.

2.2 Reflect current good practice

- During guideline development, research into good practice has been undertaken using a variety of sources and methods. These include review of existing guidelines produced in Australia and overseas by various organisations including professional associations, review of applicable Standards and Codes, plus discussion, review and sourcing of information regarding current work practices with industry reference groups.
- Draft guidelines have been reviewed extensively by industry review groups in Australia and New Zealand, with commentary assessed and incorporated into the guidelines where appropriate in response to that commentary,

2.3 Establish Standards for all Health Facility design and construction

- As a result of consultation with industry reference groups and guidance by health department personnel, the guidelines have been developed to produce facilities that will support required service delivery needs, models of care and operational policies.
- The guidelines are intended to establish an acceptable standard to be met in all health facilities; it should be noted that this may not always provide the best possible solution.

2.4 Establish the standard required for the Government funding of Health Facilities

- The limited health capital budgets in most guidelines jurisdictions require that a series of decisions be made regarding the standard of facilities that will attract project funding. This reflects decisions made regarding the achievement of value for money in the building of health facilities, by defining an acceptable standard at which each facility design process should aim.

2.5 Potentially cover both Public and Private Health Facilities

- Although public and private health facilities are usually developed, approved and operated in accordance with different legislation, codes and other requirements in most jurisdictions, there is a level of agreement achievable regarding design standards that should apply to all types of health facilities.
- Whether the guidelines cover both public and private health facilities must be made explicit for each jurisdiction and in most cases, the guidelines will be referenced by the relevant legislation.

2.6 Use good design to promote efficient & safe management and facility operation

- The ongoing necessity to promote operational efficiency, to contain recurrent costs and to ensure that all users of facilities are kept safe requires careful thinking about design issues that aid these objectives.
- The relationship of operational policy decisions to the design of a facility has been recognised in the development of the guidelines. New Models of Care require different facilities to support them and this is part of the ongoing development and review process for the guidelines.

2.7 Guide Architects and Designers

- The Health Facility Guidelines have been developed for architects and designers to assist them in meeting the requirements of the relevant Health Department, funder or regulator for the design and planning of health care facilities, ensuring that designs respond to new models of care and changes in operational policies.

2.8 Guiding users & managers to plan health facilities and manage the process

- For many managers and users planning a health facility and managing the procurement process is an occasional or 'one-off' experience.
- Unfamiliar with building industry terminology and commonly accepted design and construction work practices, they will use the guidelines to understand some of the concepts underpinning the design of their project, to assess the facility in terms of commonly accepted standards and to better understand the stages of the facility procurement process.

2.9 Reasonably anticipate the future

- The development process for the guidelines has responded to both current and foreseen work practices and issues to be considered in the development of facilities. Examples include the need to adapt to emerging antibiotic resistant organisms or to those that can spread virulently through populations and require isolation rooms, special airconditioning systems, etc.
- The ongoing increasing concern with OHS issues, infection control and advancement of medical technology continue to raise issues associated with facility design, and the guidelines attempt to address some of these now and will continue to do so as they evolve.

2.10 Adapt to changing circumstances

- The guidelines are a 'living' document that effectively will never be finalised. This is a deliberate strategy adopted to ensure that new Models of Care, better construction methods and evidence-based conclusions regarding better design practices can all be responded to within future versions of the guidelines.
- This is part of the regular review and modification cycle planned for the guidelines based on continual improvement principles that will incorporate national clinical best practice benchmarks.

2.11 Be capable of easy modification and improvement

- The guidelines have been developed in a consistent format within a MS Access database.
- Modification and improvement is quite easy eg whole new sections are easy to introduce, existing components are easily modified, reordered, etc without major issues or use of IT experts.

2.12 Reduce duplication by using common information blocks.

- By developing and streamlining a consistent format for all sections of the guidelines, the opportunity to provide information once only and to then reference it from other parts of the guidelines is straightforward.
- This means that the need to correct or update the one piece of information in several different locations is reduced, if not removed completely, and is one of the fundamental differences resulting from creation of the guidelines from a database and not as a word processed document.

2.13 Capable of State Based variations

- Although all guideline content is contained within one MS Access database, the ability to report on this in different formats and for different purposes is an inherent database characteristic that can be exploited to produce guidelines for each State, Country or Area Health jurisdiction (client groups).
- Content can be repeated for each jurisdiction where it is relevant, amended or deleted where it is inappropriate.
- Content can also be created specifically for one jurisdiction only where an issue has particular relevance, eg earthquake issues in New Zealand.

2.14 Capable of ultimate unification to create National Guidelines

- Much as the Building Code of Australia required a long process of negotiation prior to its initial production with much shared content plus a series of appendices that related to particular State or Territory requirements, the development of National Guidelines would follow a similar process and adopt similar initial features.
- The BCA experience shows that over time the appendices of individual State/Territory requirements diminished and the shared content increased. It is anticipated that State based variations of the guidelines would follow a similar path.

2.15 Promote information sharing and the creation of a Health design knowledge base

- By researching and documenting accepted good design practice, the Guidelines are an important repository of knowledge regarding health facility design.
- They provide a reference point for designers, clients and facility managers as to the accepted standards to be achieved in facility design that will enable benchmarking of projects against these standards and testing of assumptions regarding the design process followed for 'real' projects.
- It is intended that information from Post Occupancy Evaluation (POE) of projects will be used to test the provisions of the Guidelines by assessing their use for the briefing and design of built projects. In addition POE will show up issues that are not addressed in the Guidelines, but should be and those that make little difference to the design of projects and that may perhaps be deleted from Guideline requirements

3.0 Content Creation

3.1 Study, absorb, filter and extend current acceptable guidelines

- The starting point for the Guidelines project was the Victorian Guidelines for Hospitals and Day Procedure Units developed for the Department of Health and Human Services by Health Projects International (HPI). These guidelines had a private hospital focus, were developed in an electronic database format and were effectively an amalgam of guidelines from many sources.
- The NSW project continued the development of the guidelines database which was made available to NSW to use in the creation of nine priority unit guidelines for use in NSW.
- The Guidelines database was initially created by converting a range of currently used health facility guidelines into a series of database clauses categorised and classified in accordance with a system developed by HPI.
- Each clause was created to encompass one idea or issue so that these become the most basic building block within the Guideline creation system.
- Compilation of the Guideline reports required review and rewriting of some clauses to increase readability and consistency of style and voice.
- An agreed Reporting format was developed for extraction of the clauses as Guidelines which can be printed or accessed via a webpage or from a CD ROM.

3.2 Create new guidelines where current guidelines are not available or suitable

- Where content was not available from existing guidelines or other sources, the Guidelines project teams in Victoria and NSW created new clauses to meet requirements for content identified by the teams and as part of the industry input and review processes.
- The rules for creation of content were followed to ensure consistency and compatibility of content already within the database.

3.3 Consultation, testing and review by industry practitioners

- In both Victoria and NSW, the Guidelines reports were created with the input of industry experts in processes that involved extensive and wide ranging consultation.
- Following the initial production phase, the Guidelines were issued in each State for industry review, with the results of those reviews considered and incorporated where appropriate into the next issue of the guidelines for industry use.

3.4 Creation of a database of evidence & benchmarks to support the requirements

- Setting standards for health facility design requires an understanding of acceptable design, and the space provision accepted as the 'norm' by the wider health service delivery industry. Wider investigation of these issues means that patterns emerge and may be extrapolated in terms of recommended standards.
- Professional judgement is required in assessing the available data to ensure that standards are not accepted merely because they occur frequently and in many places.
- The purpose of investigating current practice and setting standards in response uses the experience gained from many projects to guide the development of Guidelines that will impact on individual projects. This enables wider levels of design expertise to impact on each and every project.
- The setting of standards must pass through a process of evidence based cost/benefit analysis before being promulgated within Guidelines that will affect the development of many, if not all, future projects.
- The setting of standards provides the opportunity for comparisons between projects and for projects against the standards. Design proposals and completed projects may then be compared against commonly accepted and endorsed standards that have been established as the result of research and rigorous cost/benefit analysis.
- Not only can projects be compared to one another, or against acceptable standards, they can also be compared against themselves over time. Alternatively, a set of similar projects can be compared against the applicable standards over time, to test whether improvements in quality are occurring as required or predicted.
- Improving the delivery of health services is the only real reason for setting standards or benchmarks at all. If unable to be tested, assessment of continuous quality improvement cannot occur. Therefore standards need to be specific, achievable and endorsed by those who will assess their implementation on projects.
- In effect, they become the shared definition of the standard of building to be achieved on each and every project.

3.5 Creation of "live" documents capable of ongoing update and improvement

- Generally, all guidelines are created to represent the acceptable industry standard at the time of publication. Even the best forward looking guidelines are quickly outdated as operational practices and technology changes affect the design response. The new guidelines have been structured in a "modular" or "compartmented" fashion using internal references to standard components and concepts so that it is easier to adapt to changes in the future.
- Each "Part", "Unit", or "Standard Component" in the guidelines can be updated

without necessarily making the balance of the guidelines obsolete or in need of complete re-drafting.

- The guidelines are expected to be published in multiple formats including via the Internet. The Web format will be the preferred format and its use will be encouraged to ensure that the documents remain "live" and subject to ongoing improvements. Users will be encouraged to visit the "Guidelines Web Site" often to ensure access to the latest information and to always download the most recent version of the guidelines for each project.
- The web based version of the guidelines will have hyperlinks to other web sites and further reading material. These, by the nature of the web, are also live and subject to continuing change and improvement.

3.6 Create new guidelines in a consistent, familiar and user friendly format

- Given time, users will get used to almost any consistent set of guidelines. However, at the commencement of a new series of guidelines, being created over many years, it is important to examine the most appropriate style of writing:
- Guidelines, traditionally come in a variety of styles including:
  - Proscriptive (You shall not do this)
  - Prescriptive (You must do this)
  - Performance Based (It must achieve this)
  - Guideline by "Deemed to Satisfy" examples (You may do something similar to this)
- Each of the above writing styles can be expressed in different language styles including:
  - Expanded, descriptive text with a loose structure (as in the guidelines written by professional organisations and colleges)
  - Short text, supported by tables and diagrams (as in the Australian/NZ Standards)
  - Legalistic language with numerous internal references to clauses and sub-clauses (as in the Building Code of Australia)
  - Multiple structures for various parts of the guidelines (as in the current NSW and Victorian guidelines)
- In order to create consistency within a large body of work over many years of production, the style of writing has been carefully considered. All current and future authors of the new guidelines are encouraged to write in a consistent style which combines the good features of all the above writing and language styles. This can be summarised as follows:
  - The new guidelines generally use a combination of Performance Based and Prescriptive styles. Proscriptive style is generally avoided except for warnings against common mistakes.
  - The guidelines will incorporate "Deemed to Satisfy" examples in the form of fully featured Room Data Sheets and Room Layout Sheets which show real-world examples for full compliance.
  - Authors are required to write the guidelines in relatively short paragraphs incorporating the principle of "one clause=one concept". This allows each clause to stand alone, be accepted, modified or rejected by the reviewers in different States.
  - All clauses are to be written in a positive language (eg. "An Inpatient Unit includes the following Standard Components"). Negative language used in more legalistic codes is to be avoided (eg. "A Hospital may not be built unless it provides the following Standard Components in every Inpatient Unit")
  - Hard internal cross references are to be avoided (eg. Every operating room shall comply with clause 23.5.1 (b) on page 375. Such hard references become obsolete with every change to the guidelines affecting clause or numbering. Also, they do not suit the web delivery system. Instead reference may be made to the information

compartments within the new guidelines (eg. “Refer to Part D Infection Control” or “Refer to “Clean Utility in the Standard Components”).

3.7 A set of “guideline” templates for all current and future authors of new guidelines

- The above writing styles are reinforced by the common format used by the reporting system of the guidelines database. Examples of styles for each component of the guidelines can be made available to the current and future authors.
- A new data entry computer interface is provided to every new Client Group joining the guidelines. These include blank forms for every aspect of the guideline creation with short directions written directly on the data entry forms.
- Each group may start with the large collection of existing guidelines on a variety of subjects. The task is to examine the content for suitability, then accept, modify or reject them. If all the current contents of the guidelines are not adequate to express the required concept or standard, then new guidelines should be written in the writing style described above, using one of the data entry templates provided within the database. These clauses immediately become available to all other authors of the guidelines considering the same subject. They may in turn adopt the new writing, or modify it for their specific use.

3.8 Ensure compatibility of future guidelines with the adopted framework

- The system will incorporate its own QA checks, which are being documented progressively by the development team; these will be reinforced by appropriately scheduled training sessions.
- The guideline creation templates and data entry forms facilitate writing in the style adopted for the new guidelines and make it difficult to deviate from it.

3.9 Content deliverables

- State Based Administrative Provisions
  These are expected to be written specifically for the legislative requirements of each Client Group. Even in this section, many aspects such as common definitions and “how to use” sections may be adopted by all States and Countries.
- Guideline Clauses
  These represent the body of the guidelines, using the concept of “one clause=one concept” style.
- Health Planning Units (HPU’s)
  These represent one aspect of the compartmentation of information. Each HPU is defined under a consistent set of Headings and Sub-headings. The individual rooms which make up each HPU are referred to as“Standard Components” to avoid un-necessary duplication within the guidelines.
- Schedules of Accommodation
  Each HPU includes a Schedule of Accommodation which defines the minimum requirements for Hospitals components at Role Delineation levels 2 to 6. These requirements may be expressed in the form of Standard or Non-Standard components. Furthermore, these items may be Mandatory (default), Optional, or Shared.
- Room Data Sheets (RDS)
  These further detail the requirements of the Standard Components under several categories including:
  - Area
  - Special Requirements
  - Materials and Finishes
  - FF - Furniture and Fittings where no services are required.
  - FE - Fixture and Equipment where services are required.
  - Building Services
  - Quantity and type of service outlets
  - Hospital groups (1, 2 & 3)

  It must be noted that the Room Data Sheets include not only the mandatory

requirements of the guidelines but represent a real-world example of all the items typically found in the rooms making up the Standard Components. As such they can guide both the designers and users.

- Room Layout Sheets (RLS)
  These are individual layout sheets which match the Room Data Sheets in content. Each RLS includes a plan and several wall elevations in 1:50 scale. The RLS's guide the designers and users in relation to:
  - One example of a desirable layout for the space
  - Clearances between objects and building elements
  - Height and width of items representing ergonomic design
  - Preferred location of service outlets such as Nurse Call, Gas Outlets etc
  - Relationship to immediately adjacent rooms such as Bedrooms/Ensuites
  - Infection control concepts such as separation of clean/dirty

  The Room Layout Sheets are not by themselves mandatory, except in the way they define relationships, ergonomic design or infection control.
- Checklists
  Each "Part" in the guidelines has a checklist for compliance. These may be completed by the designers or the approval authority. This will depend on the individual administrative requirements of each Client Group. The checklists make it possible to create a self-certification system for compliance verification.
  The guidelines incorporate standard checklists applying to all HPU's. Users are required to print and complete one checklist for each HPU present in the proposed facility.
- Diagrams
  Each HPU has a simplified Functional Relationships Diagram to assist with the assembly of the Standard Components into a functional unit. The style adopted by these diagrams has been considered. The most appropriate style has been adopted with the following features:
  - The diagrams are not realistic "plans", but resemble the way the components are typically organised in a plan (such as an ICU staff base surrounded by patient bays). This is to make the diagram easier to read by experts and non experts.
  - Diagrams are colour coded using a limited set of colours
  - Important relationships are shown with arrows
  - Where appropriate, multiple configurations are shown (eg. Operating Suite modules)
- Enclosures
  Guidelines invariably include enclosures which do not easily fit into any standard format. This is the method for presenting certain items such as complex charts in any desired format. Extensive use of Enclosures is not encouraged within the guidelines.
- References and further reading
  These are additional documents which may be studied by the user of the guidelines for greater depth of knowledge and an understanding of the background to various issues. The external references may be for information only, or a set of other stand-alone but mandatory standards. The web based version of the guidelines may have hyperlinks to many of the references.

4.0 Delivery Machinery: the Guidelines Database

4.1 A system capable of manipulating concepts for use/ re-use by the authors

- The guidelines are made of individual clauses, each with a unique identification code (ID). Each clause has a number of attributes such as:
  - Origin- the original author of the clause
  - Category- describing which "Client" version is being edited
  - Subject- the "Part" of the guidelines to which the clause belongs
  - Heading- showing the membership of a concept
  - Subheading- further narrowing the range of concept
  - Remarks- describing any changes made or comments on the content
  - Issue- records which version of the document the clause belongs to
  - Enclosures- this lists any enclosures attached to the clause
  - Status- the primary means of selecting and manipulating the clauses including categories such as accept, reject, modified, etc.

4.2 A system of information management to eliminate duplication and inconsistency

- Whilst the clauses, described above, represent the building blocks of the guidelines, there is a "structure" to the guidelines established by the common use of Subject, Headings and Sub-headings. These are created by the authors of the guidelines. Every one of these items instantly becomes a menu item for subsequent authors, creating the incentive for standardisation. This encourages not only the authors, but different states to adopt common terminology and categories to describe similar concepts and share the resulting work.

4.3 A system capable of tracking the progress of each concept or guideline clause

- The attributes of each clause effectively record the history of the clause. Authors and researchers can find out where a certain concept has come from and how it has changed over time.

4.4 A system of clause selection based on individual Client Group requirements

- The various guidelines for different States, Countries or Area Health Services are created from the same database of information. At the time of printing, the database system assembles only those clauses which are approved by each group in order to create a custom version. Each State, County or Area Health Service has a unique computer interface for its version of the guidelines. This allows their version to customise its version of the guidelines. The order of clauses within the overall structure depends on the clause numbering system which is again individually customised for each Client Group.

4.5 Central shared, searchable knowledge database of Health Design information

- Typically, the author of a new section of the guidelines will search the system under the relevant Subjects, Headings, Super-headings and Sub-headings for relevant concepts. All relevant clauses created, adopted or even rejected by other authors will come up. The new author then has the option of adopting some, modifying some and if necessary, creating new clauses. The author will have maximum incentive to use references to already existing Standard Components and compartmented parts such as Part D- Infection Control.

4.6 A system capable of simultaneous access by multiple users and authors

- The system has been structured around a single "Back End" database, located on a central server and several "Front End" databases, belonging to individual client groups. Each Front End includes those fields of information which customise the system for the unique requirement of the client groups. The Front End databases attach and reference the Back End databases. The Back end contains raw data in simple tables whist the Front End(s) include the unique queries, data entry forms and printing forms for each client group.

4.7 A system capable of data extraction to suit a variety of specialised uses

- Just as the Front End databases customise the selection and publication of information for individual client groups, it is possible to automatically extract specialised information, format and print them for special purposes. For example it is possible to print only a complete set of schedules of accommodation for all Hospitals at the role delineation levels of 5 and 6 in a table form.

4.8 Allow easy web access and download

- Arguably, the best method of publication for the new guidelines will be via the web. A common format for web publication has been created for adoption in NSW and Victoria. The compartmented structure of the new guidelines facilitates publication on the web. The shell for the web based version is available to all client groups. This format replicates the presentation of the printed guidelines with added web features such as:
  - Hyperlinks to references and further reading
  - Search capability
  - Navigation method for drilling down information
  - Possibility of bundling selected packages of information for download
  - Possibility of highlighting new or modified information
  - Possibility of obtaining comments and suggestions for improvement through the web
- It is possible for all web based versions to be run from the same central server or from different servers belonging to individual client groups.

5.0 Training

- Each new author of the guidelines is given training over one or two days at the University of NSW (UNSW). The authors are guided to:
  - write in a consistent style and format
  - use references to shared components
  - understand the general capabilities of the system
  - request searches of the system

- Following the training, the authors have two ways of creating the data:
  - Clause by clause entered directly into the system
  - Write in any format compatible with the general principles of the system and allow the system administrators at UNSW to enter the information in the correct format.

For further information please contact the undersigned (who jointly prepared this document).

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