

# Windows into Safety and Quality in Health Care 2011

AUSTRALIANCOMMISSION ON SAFETY AND QUALITY IN HEALTHCARE





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# Foreword

The Australian Commission on Safety and Quality in Health Care was established on 1 January 2006 in an unincorporated form. The Commission has undertaken a wide range of activities since then, including leading and coordinating improvements in safety and quality in health care in Australia.

It is now accepted that safety and quality is of such importance to all Australians that the Commission was incorporated on 1 July 2011 by the Commonwealth Parliament, with a wide range of functions to promote, support and encourage the safety and quality of health care in Australia.

This year's report, *Windows into Safety and Quality in Health Care 2011*, builds upon the previous years' *Windows* reports and offers perspectives on a range of healthcare safety and quality matters in a number of settings. In part, it provides a review of the activities of the past five years. It also anticipates some of the emerging issues and challenges that the Commission may address, including the culture of health care, the importance of patient-centred care, and safety and quality in primary care. For the first time, we are including a perspective of safety and quality in mental health care.

The *Windows into Safety and Quality in Health Care 2011* report draws attention to the importance, and challenges, of implementing improvements to the safety and quality of health care. It also highlights some of the experiences and learnings from the Commission's activities in developing implementation resources and in supporting safety and quality implementation.

The issue of technology and how it can be harnessed to improve safety and quality is discussed in two chapters – one examining how to ensure that safety is a key consideration in the development and utilisation of e-health and one demonstrating how information and communication technology is being used to monitor four of the most significant healthcare associated infections.

I warmly acknowledge the enthusiasm and dedication of our staff who prepared this insight into aspects of the Commission's work.

Rice Samon

Bill Beerworth, Chair Australian Commission on Safety and Quality in Health Care

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# Introduction

The Australian Commission on Safety and Quality in Health Care (the Commission) commenced as an independent, statutory authority on 1 July 2011. Initially established in 2006 by the Australian, State and Territory governments to lead and coordinate national improvements in safety and quality, the Commission's permanent status was confirmed with the assent of the *National Health and Hospitals Network Act 2011 (NHHN Act)*.

Section 9 of the NHHN Act specifies the Commission's functions. These include:

- formulating standards, guidelines and indicators relating to healthcare safety and quality matters
- advising health ministers on national clinical standards
- promoting, supporting and encouraging the implementation of these standards and related guidelines and indicators
- monitoring the implementation and impact of these standards
- promoting, supporting and encouraging the implementation of programs and initiatives relating to healthcare safety and quality matters
- formulating model national schemes that provide for the accreditation of organisations that provide healthcare services and relate to healthcare safety and quality matters
- collecting analysing, interpreting and disseminating information relating to healthcare safety and quality matters
- publishing reports and papers relating to healthcare safety and quality matters.

The Commission welcomes the challenge of its expanded role. It looks forward to building upon the work that has been undertaken and to seeing further issues important to the safety and quality of health care addressed. The Commission will continue to develop and enhance its engagement and relationship with the many individuals and organisations whose knowledge and expertise make them vital partners as we collectively seek to improve the health care that Australians receive.

Lapses in the safety and quality of health care can have enormous costs, both in terms of the impact on people's lives and financially. For example, it has been reported that:

- Healthcare associated injury and ill health add 13–16% to hospital costs alone — at least one dollar in every seven dollars spent on hospital care.<sup>1</sup>
- There are approximately 190,000 medicine-related hospital admissions in Australia each year with an estimated cost of \$660 million.<sup>2</sup>
- If nothing is done to prevent falls, the total estimated cost attributable to falls-related injury will increase almost threefold from \$498.2 million per year in 2001 to \$1375 million per year in 2051.<sup>3</sup>
- Modelling has led to estimates of excess length of stay (LOS) attributed to surgical site infection (SSI) ranging

between 3.5 and 23 days, depending on the type of infection. It is estimated that the total national number of hospital bed days lost to SSI for a one year period was 206,527.<sup>4</sup>

 If there was optimal antimicrobial use and containment of antimicrobial resistance, \$300 million of the Australian national healthcare budget could be redirected to more effective use every year.<sup>5</sup>

Such findings are echoed in the literature internationally. For example, a 2010 study released by the US Society of Actuaries estimated that, in 2008, medical errors cost the American economy at least \$US19.5 billion.<sup>6</sup> Of that total, about \$US17 billion was due to increased medical costs, \$US1.1 billion to lost productivity from short-term disability claims, and \$US1.4 billion from increased mortality rates.

These costs can, and do, inform the Commission's work, including establishing its priorities. Recognising and advocating both issues and solutions is a first stage to addressing them. The next step is the development and implementation of solutions. This report has a focus on the challenge of implementation (Chapter 2), including examining how the Commission has been developing tools and resources to aid in the implementation of solutions to safety and quality issues (Chapter 3).

Along with the issues of implementation, another thread that runs through the chapters in this report is that of context and the importance of context in understanding and addressing the safety and quality issues facing everyone involved in health care in Australia. We are all involved as consumers and patients, and many of us have other roles, ranging from roles as clinical and other health workers through to administrators, managers and policy-makers.

The solutions that are developed and the implementation approaches adopted are not always universal and generalisable. Context is important in understanding and changing culture, in devising and implementing change, and in ensuring care is patient-centred and culturally safe.

In recent years the Commission, in consultation with a broad array of organisations and individuals, has developed the Australian Safety and Quality Framework for Health Care.<sup>7</sup> The Framework describes a vision for safe and high quality care for all Australians, and sets out the actions needed to achieve this vision. The Framework specifies three core principles for safe and high quality care: that care is consumer centred, driven by information, and organised for safety.



The *Windows into Safety and Quality in Health Care* annual series is intended to provide a focus for discussion and deliver a flavour of the activity being undertaken by the Commission. Each edition does not attempt to cover every aspect of Commission activity. The Commission, working with service providers, system managers and governments, is continuing to address the issues raised in these reports and to examine other significant safety and quality issues in Australian health care.

The chapters in this report describe some of the areas in which the Commission is active and anticipate developments in areas of emerging interest for the Commission. The sections below describe each chapter of the report.

## 2 The challenge of implementation: Changing practice to improve health care

This chapter examines the realities of the challenges of implementation. It begins with the observation that the great challenge in improving the safety and quality of health care is not in recognising problems, opportunities or possible solutions, but in the implementation — in changing the ways that health professionals behave and systems operate so that patients experience better care. These challenges are surmountable. Approaches to change and successful implementation, including the need to plan, the need to focus on the patient and the primacy of context are all discussed. The chapter concludes with a selection of tips for a successful implementation.

## **3** Supporting implementation

The previous chapter discussed the challenges of implementation and the characteristics of successful implementation. This chapter extends that discussion to describe how the Commission has supported jurisdictional and local implementation of safety and quality initiatives. Over the past five years a large range of materials, support and tools for implementation has been developed from Commission programs and projects. This chapter describes the various projects and the implementation materials that have been developed. Many of the materials are designed to be flexible so that they can support implementation in many settings or contexts. All the implementation tools and material described are available from the Commission's web site: www.safetyandquality.gov.au.

## 4 Developing a positive safety culture

It is recognised that the culture of an organisation is determined by the behaviours, attitudes, beliefs and actions of those within an organisation. Within healthcare organisations, the safety culture has many domains and influences, and is extremely context-sensitive. For many, the question of culture and how to change it is seen as too difficult an issue, too big and indistinct a target, to address. This chapter provides an introduction to safety culture and how it can be influenced so as to support the improvement of the safety and quality of the health care that is delivered. It includes a discussion of the domains of safety culture, why these are important, what positive domains look like and how they contribute to a positive safety culture.

## 5 Improving safety and quality through partnerships with patients and consumers

Windows into Safety and Quality into Health Care 2010 included a chapter on the value of learning from patient experience. Extending those concepts, this chapter examines how deepening the relationships between health service organisations, clinicians, patients and consumers is an opportunity to improve the responsiveness, the safety and the quality of health care to patients' needs.

Patient-centred care respects the needs and preferences of patients, and aims to share control of health care with

the patient, as well as with their family, partner, carer or any other significant people in their life. Patient-centred approaches to care encourage participation, collaboration and partnership to improve care at the individual, organisational and/or system level. Strategies to re-orient care to be more patient-centred can range from simple techniques, such as the adoption of communication and education strategies at the service delivery level, to the more complex involvement of patients and consumers in the co-design of physical facilities at an organisational and system level.

This chapter summarises the rationale, some of the evidence, and views of individuals and organisations in the health system about patient-centred care. It pays particular emphasis to the submissions made in response to the discussion paper *Patient-centred care: Improving quality and safety by partnering with patients and consumers.* 

## 6 Improving safety and quality in mental health care

Over the past couple of decades, much of the work that has been undertaken into the safety and quality of health care has focused on physical health care in acute care settings. While a significant proportion of this work does have application in mental health care, there are times when such approaches have to be modified to suit the mental health setting. There are also aspects of mental health care that require quite different or specific safety and quality approaches. This chapter looks at some of the challenges while also focussing on how Australia has been addressing some of the safety and quality issues that arise in mental health care. National activity, including safety priorities in mental health, is described. One area of much interest and activity has been that of reducing the use of, and where possible eliminating, seclusion and restraint. The chapter also discusses the revision of the National Standards for Mental Health Services which place an emphasis on the patient.

## 7 Patient safety in primary health care

The vast proportion of the health care Australians receive occurs in the primary care sector. However, the full extent and nature of the safety and quality issues that may exist in primary health care remains elusive. This chapter describes what is known about the issues in this critically important part of the health system and goes on to discuss the Commission's role in identifying and addressing the safety and quality issues. Much of the chapter reflects on the responses to the *Patient Safety in Primary Health Care* discussion paper released in 2010 as part of a public consultation process.

## 8 Supporting safety in e-health

One of the areas that holds promise for improving the safety and quality of health care is that of technology, particularly information and communication technology. It has long been hoped that these technologies could be as transformative for health care as they have been for almost every other facet of everyday life in Australia. This chapter looks at the interaction between safety and e-health, including how e-health may enhance patient safety and how to ensure that safety remains a key focus for e-health initiatives.

## 9 Improving surveillance of healthcare associated infection

Following on the theme of technology as a potential enhancer of safety and quality, this chapter looks at how the application of technology is improving our surveillance of healthcare associated infection. Here technology is helping to deliver consistent, standardised laboratory processes and reporting for four of the most significant healthcare associated infections, so as to improve the identification of and response to these infections.

## **Updates**

Each year in this report, updates are given on two particular issues: sentinel events and the national approach to the monitoring of hand hygiene in hospitals.

## Sentinel events

In April 2004, Australian Health Ministers agreed that: 'All public hospitals [are] to report all sentinel events ... and all states and territories will contribute to a national report on sentinel events.'<sup>8</sup> Sentinel event data have appeared in every edition of the *Windows* report. Sentinel events for both public and private hospitals are reported in Box 1.1, showing total numbers of these events in Australia for each year from 2005/06 through to 2009/10.

## Box 1.1 Sentinel events

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Sentinel event type	2005/06	2006/07	2007/08*	2008/09	2009/10
Procedures involving the wrong patient or body part <i>resulting in death or major</i> <i>permanent loss of function.</i>	66	159	21*	8	5
Suicide of a patient in an inpatient unit	25	41	32	20	36
Retained instrument or other material after surgery requiring re-operation or further surgical procedure	28	28	34	30	35
Intravascular gas embolism resulting in death or neurological damage	2	3	1	2	1
Haemolytic blood transfusion reaction resulting from ABO incompatibility	1	2	4	4	4
Medication error leading to the death of a patient reasonably believed to be due to incorrect administration of drugs	5	11	21	10	11†
Maternal death or serious morbidity associated with labour or delivery	12	13	22	9	14
Infant discharged to the wrong family	0	0	2	0	0
Total	139	257	137	83	106

\*From 2007/08 the national definition of the first sentinel event was revised to focus on those events that resulted 'in death or major permanent loss of function'.

<sup>†</sup>Reported figure includes two cases where later coronial findings determined that the cause of death could not be attributed to the incorrect administration of drugs.

## Table 1.2 Private sector sentinel events

Sentinel event type	2005/06	2006/07	2007/08*	2008/09	2009/10
Procedures involving the wrong patient or body part <i>resulting in death or major</i> <i>permanent loss of function</i>	13	28	1	3	5
Suicide of a patient in an inpatient unit	5	4	8	11	5
Retained instrument or other material after surgery requiring re-operation or further surgical procedure	16	27	14	14	9
Intravascular gas embolism resulting in death or neurological damage	1	3	0	0	0
Haemolytic blood transfusion reaction resulting from ABO incompatibility	2	1	2	1	0
Medication error leading to the death of a patient reasonably believed to be due to incorrect administration of drugs	0	0	1	0	0
Maternal death or serious morbidity associated with labour or delivery	7	4	9	6	9
Infant discharged to the wrong family	0	0	0	0	0
Total	44	67	35	35	28

The number of private hospitals voluntarily reporting sentinel event numbers has varied each year. Figures for 2009/10 cover facilities operating 27,562 beds, which represents 99 per cent of the 27,749 private hospital beds in Australia estimated by the Australian Bureau of Statistics.<sup>9</sup>

## Progress of the national approach to the monitoring of hand hygiene in hospitals

The National Hand Hygiene Initiative (NHHI) has been operating in all states and territories as well as the private sector. The guiding objectives of the NHHI are to:

- develop reliable indicators
- accurately measure performance in hand hygiene
- obtain and sustain improvement in hand hygiene compliance rates and reductions in HAI and to make HAI prevention 'core business' of all healthcare workers.

The NHHI has now been operating for over two years and the numbers continue to improve. The number of healthcare workers completing the online training in hand hygiene is now greater than 140,000, including information about the 5 Moments for hand hygiene the moments when it is necessary to practice hand hygiene. The number of hospitals submitting data has continued to increase, with more than 500 hospitals submitting data to Hand Hygiene Australia. From these data it is apparent that hand hygiene compliance rates in both public and private hospitals continued to improve during 2009/10 (Figure 1.1).

The NHHI commenced in some states and territories in February 2009, with others joining in mid-2009 and then early 2010. In October/November 2010 the overall national rate of hand hygiene compliance was 68.3% in 521 hospitals. The national compliance rate at baseline, largely influenced by an existing hand hygiene program in one jurisdiction, was 63.6%. Over the 24 months of the NHHI a total of 917,622 hand hygiene Moments have been assessed nationally.

Hand hygiene compliance rates by categories of healthcare worker (Figure 1.2) show that nursing staff are recording the best overall compliance rates, whilst medical staff are not only showing lower compliance but have only improved slightly from the baseline figure (from 50 to 52.4%). This is an area for a focus of efforts in 2011/12.

One of the notable features of the NHHI is that this is now providing data on outcomes, that is the rate of HAI. The national monthly rate of methicillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia (Figure 1.3) shows a distinct discontinuity in the pre- and post-implementation of the NHHI. Data for the 18 months prior to implementation and the two years since implementation are suitable for comparison. These show that the trend in MRSA rates was statistically stable prior to the NHHI, but has declined during 2009/10. The mean annual rates of total MRSA bacteraemia in 2008, 2009 and 2010 were 0.44, 0.33 and 0.30 per 1000 patient-days, respectively.





Figure 1.1 Hand hygiene compliance rates for public and private hospitals – February 2009 (Period 1, 2009) to January 2011 (Period 1, 2011)



Figure 1.2 National Hand Hygiene compliance rates according to healthcare worker category, 24 months after implementation of the NHHI in 2009



Figure 1.3 Australian national monthly rates of methicillin-resistant *Staphylococcus aureus* bacteraemia (MRSA) per 100,000 patient-days (or occupied-bed days) from mid-2007 to 2010

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# The challenge of implementation: the theory and science of changing practice to improve health care

Implementation is the process of designing and executing a plan to introduce and maintain changes in practice that improve patient care.

The great challenge in improving quality and safety in health care does not lie in recognising problems or identifying opportunities for better outcomes; it lies in changing the ways that health professionals behave and systems operate so that patients experience better care. Change can be difficult, time-consuming and slow to achieve. The chances of success are greater if implementation is systematically planned.

The three key components of the Australian Safety and Quality Framework for Health Care<sup>1</sup> — provision of care that is consumer centred, driven by information and organised for safety — are also core principles in the design of interventions that aim to implement safety and quality initiatives.



Effective implementation requires:

- a clear focus on the specific ways in which the patient's experience of care will be different from what currently happens
- a rigorous analysis of information on both current practice and achievable best practice
- a strategy for integrating both the implementation of change and the actual change in practice into the usual organisation of care.

A focus on the patient: Understanding what needs to be different about the care patients receive lies at the heart of implementation. Any broad general goal for improvement is likely to require a number of changes to care delivery. A focus on the specific changes that are needed to improve a patient's experience of care leads to identification of the actions required at the level of the individual health practitioner, team and organisation. Being able to clearly link goals and activities to improved care and outcomes for patients is central to effective implementation, regardless of whether it is occurring locally within a practice or institution, across a number of organisations, or at a national level.

*Driven by information:* Practice in any specific area of care is likely to vary with some aspects of practice performed better than others, and with some groups of practitioners or organisations demonstrating greater adoption of the desired aspects of care. Careful analysis of the information available on current patterns of practice helps identify the strategies, tactics and tools that are most likely to result in improvements in care.

The approach taken will be guided by knowledge about appropriate measures of change, the sub-groups of health professionals or organisations whose participation and collaboration in the implementation effort will be required, the degree of uptake that currently exists in these key target groups, and specific areas where usual care departs from best practice and which will be priorities for implementation. The initial analysis can also identify groups or organisations with high levels of performance. Knowledge about the extent to which high performing organisations are able to achieve best practice helps determine feasible and clinically-significant initial targets for improvement across the system.

Integrated into the organisation of care: There are many possible reasons for intervening to change practice — new scientific evidence, technologies or clinical practice guidelines, a review of current processes that reveals that patients are not consistently receiving effective care, or an adverse event that reveals aspects of care that are deficient. The nature of clinical care, and the rapid growth of the science and technology that underpins it, means that clinicians face continual and multiple calls for change in practice.

No matter how convincing the case for change in a particular area may be, it will be only one of a torrent of competing demands for the time and attention of busy clinicians. People charged with making change happen must find ways not only of presenting a compelling case for change, but also of identifying the ways in which implementation can use existing organisational structures and processes so that the need for separate, additional activities is minimised. This is also a key strategy for sustainability. Successful implementation embeds changes into the routines of professional practice and organisations so that they become part of usual care and continue once any specific implementation support is withdrawn.

## Factors influencing change

It is almost 50 years since Everett Rogers wrote his classic book on diffusion of innovations — defined as 'the planned or spontaneous spread of new ideas, practices or objects'.<sup>2</sup> Some new ideas and products

## Box 2.1 A state perspective on implementation

At a state and national level we are realising many system-wide improvements in the quality and safety of patient care — hand hygiene compliance, embedding clinical governance, and the meaningful engagement of consumers to name a few. These successes are characterised by some common threads: strong and effective leadership; engagement of people with different perspectives (e.g. clinicians, consumers, boards and managers, policy makers and researchers); credible evidence supporting changes in practice with a consistent message from relevant organisations; support for skill acquisition and maintenance; and ensuring that appropriate resources are available.

To implement sustainable change, a long-term commitment is vital. Recognising that health care is a complex adaptive system, planning needs to take account of external factors such as the historical/cultural environment, political context, the economic climate, and having incentives that support best practice. Initiatives must be supported by data and feedback mechanisms. A communication and relationship plan must be in place that utilises existing networks to strengthen the relevance of what is being done to meet the present and near-future needs of those we serve. While leadership is essential, we need to recognise that no one body can lead the advancement of all quality and safety improvement across the health system, so opportunities for collaboration must be actively pursued to add value to what others are doing.

#### Alison J McMillan

Director, Quality, Safety and Patient Experience, Department of Health, Victoria and Chair, ACSQHC Inter-Jurisdictional Committee spread rapidly, but for others the process can take a very long time. Rogers noted that getting a new idea adopted — even when it has obvious advantages — can be very difficult.

In the decades since Rogers' book was first published there have been numerous, often overlapping, theories aiming to explain or predict how and why innovations are adopted and much research on methods to achieve change in practice. Yet despite this accumulation of theory and knowledge about change and change methods, the process of actually achieving change continues to be challenging. This applies not just to the introduction of new ideas or practices — attempts to implement what is already well known can be frustratingly difficult.

Health care is not the only area where this is a challenge - it is a problem that occurs across many industries and services. Pfeffer and Sutton, in their book The Knowing-*Doing Gap*,<sup>3</sup> highlighted what they called 'one of the great mysteries in organisational management: why knowledge of what needs to be done frequently fails to result in action or behaviour consistent with that knowledge.' They comment on the enormous amount of money spent by businesses on education and training, organisational research, and consulting services, much of which provides no new knowledge but simply re-packages and re-presents what is already known about organisational performance and what would improve it. They also note that inability to translate knowledge to action is often seen as a problem of individual failure, but that differences across organisations in performance come more from management systems and practices than from the intrinsic motivation and quality of the people employed within them.

Similarly, while there is an ongoing flood of new knowledge and technology in health care, many of the major safety and quality challenges arise not from lack of adoption of the new but from the failure to consistently and routinely apply practices of known benefit. The nature of modern clinical practice means that successful implementation of change usually involves a wider perspective than the traditional focus on changing the knowledge, skills and motivation of individual health professionals. A complex mix of interacting factors determines whether change in clinical practice will happen, how quickly change will occur, and whether, and to what degree, the change is sustained. These are summarised in Box 2.4.

## Box 2.2 A perspective from the private hospital sector

The private hospital sector in Australia is very diverse in terms of its size, resources, location, ownership and service provision. It also has distinctive and varied funding arrangements, organisational structures (including medical practitioner engagement mechanisms), insurance arrangements and ownership structures. Such variety can be a strength, but can also make implementation of any national initiative on a consistent basis somewhat problematic.

In many ways, the private sector is very different from the public sector. Generally speaking, it is only in the public hospital system where medical practitioners are employed or contracted and thereby have a formal relationship with the hospital management. Medical practitioners are rarely employed in the private hospital sector, with their relationship usually governed only through the credentialling process. Therefore, when national initiatives are to impact on all practitioners, careful consideration needs to be given to the various types of relationships that different practitioners have with government, private service providers and private hospital owners and operators.

Consequently the sector appreciates and values materials that enable and support its implementation of safety and quality initiatives, particularly where those materials recognise the range of challenges that can exist and that provide relevant and appropriate guidance and support. The private hospital sector is keenly aware of the importance of safety and quality and its role in the triple aim of better care for individuals (including enhancing the patient experience of care by ensuring safety, quality and reliability), better health for populations, and managing resources and costs.

#### Christine Gee

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## Box 2.3 A GP's perspective on implementation

The primary care sector is rich in its reach and diversity.

Indeed, it is currently difficult to even ascertain the breadth of the sector, especially if one includes the range of complementary and alternative therapists from whom consumers seek care and advice. Large segments of primary health care are delivered by private clinicians, often from small businesses, and a significant proportion of primary health care services is delivered by the state-funded and non-governmental sectors. Across the primary care sector there is much variation in the degree of participation in, or experience of, safety and quality activities.

There is limited information and knowledge about the key safety issues in primary care in the Australian context and, additionally, enormous variability in the data and information collected relating to safety and quality in this arena.

The vast majority of clinicians and services is absolutely dedicated to delivering the best possible care. However, often they are not able to resource and access the full range of safety and quality supports and activities in the same way as, say, the acute sector.

Safety and quality improvements in primary care must be well coordinated, especially in the changing context of national health reforms. Effective implementation requires the meaningful engagement of the private clinicians, non-government organisations and other community clinicians driven by a sustainable business case.

The evolving roles of Medicare Locals, Local Health and Hospital Networks, and Lead Clinicians Groups will require careful integration into proposed safety and quality implementation approaches.

Dr Helena Williams GP and Executive Clinical Director General Practice Network South and Chair, Primary Care Committee, Australian Commission on Safety and Quality in Health Care

## Box 2.4 Factors influencing change

- Attributes of the innovation or suggested change in current practice.
- The methods used to promote adoption of change.
- Characteristics of the health professionals who are required to change their practice.
- Aspects of the social environment such as views of peers or the way teams interact
- Organisational characteristics.
- The broader social, political and economic context.
- The attitudes, expectations and behaviour of patients and their families.

## **Planning change**

For people charged with implementation there is often an imperative to act rapidly so that methods designed to produce change are quickly put into effect. This need to act quickly can be driven by the nature of the quality and safety problem, by limited availability or time restrictions on the funding and resources to support change, or because it is important to seize an opportunity to improve a long-standing problem. While it is extremely important to create and sustain momentum for any change effort, it is critical to ensure that there is clarity about what exactly the change is aiming to achieve and what a successful outcome would be.

Without an explicit statement of the goals, there is a risk that efforts will not be focused and time will be spent on activities that might contribute relatively little to the key outcomes required. It is equally important to understand and analyse the current situation and the factors that may hinder or help change so that the strategies and methods employed are suitable for the issues that need to be addressed. Otherwise what may happen is that the methods used to bring about change are chosen because they are readily available and familiar, rather than because they are the most likely to be effective given the nature of the problem.

## Theories of change

Different theories about the implementation of change come from many disciplines and focus to a greater or lesser degree on the different factors that influence change.

For example, the theory of planned behaviour proposed by lcek Azjen focuses on individual intentions to behave in a specific way and how these intentions are influenced by the individual's attitudes about the behaviour, the social pressures they experience around performance of the behaviour and their perceptions of control or ability to perform the behaviour.<sup>4</sup>

Rogers' diffusion of innovation theory emphasises the attributes of the innovation itself, the communication channels through which information about the innovation is exchanged, the receptiveness to innovation of different segments of the target user group, and the social networks and structures that influence decisions about adoption. There are a number of other theories that focus on the social context within which change occurs and the role of peers, opinion leaders, and professional cultures.

Management literature tends to focus on theories relating to organisational change — how organisations learn and the role of culture and process redesign. Continuous quality improvement approaches focus on organisational culture and systems.<sup>5–7</sup> They emphasise the need to understand causes of variation and to adopt a cyclical approach to planning, introducing and evaluating changes to organisational processes.

Theories from both social sciences and marketing are used in social marketing approaches which have been widely used in public health attempts to change behaviour.

The PRECEDE/PROCEED model<sup>8</sup> provides a comprehensive approach to planning change and is frequently used in health promotion. It emphasises the importance of clarity about the outcomes required and the need for participation by members of the target group throughout the change process. The model also requires critical analysis of the environment and the important factors (predisposing, enabling and reinforcing) that influence behaviour and outcomes. It reinforces the need to select strategies that correspond to the issues identified in the diagnostic analysis.

A number of theories for planning and managing change emphasise that change (whether it occurs at an individual or organisational level) involves a series of steps — from awareness and agreement of the need for change through the process of deciding to change, actual adoption of change and then a final step of routine adherence so that the change is sustained.<sup>9–11</sup> For any specific change that is being proposed, there are likely to be significant sub-groups of people and organisations which are at different stages of the change process. Planning for change needs to take this variation into account.

## **Implementation model**

Much of the current thinking about implementation of change to improve patient care has been influenced by the work of Richard Grol, who has researched and published extensively in this field. He and his colleague Michael Wensing summarised several of the theories that have relevance to improving patient care and identified a number of common themes which they incorporate in their model for implementation of change (Figure 2.1).<sup>11</sup>



## Figure 2.1 The Grol-Wensing model for implementation of change

Reproduced with permission from Grol R, Wensing M. Effective Implementation: A Model.<sup>11</sup>

The key themes that feature in this model are:

- 1. developing a plan and evaluating it regularly
- 2. having clear aims
- 3. involving the target groups in all stages of the implementation
- 4. presenting the proposed change in ways that might promote adoption
- 5. undertaking a comprehensive diagnostic analysis before starting implementation

- 6. tailoring and targeting the range of implementation methods to be used based on the issues identified in the diagnostic analysis
- 7. continuously evaluating the implementation process and outcomes: adjusting the plan as necessary
- 8. integrating implementation into existing structures.

Each of these is considered in the following paragraphs.

## 1 Developing a plan and evaluating it regularly

A systematic planning process forces clarity of thought about what needs to be achieved by when, how this could be done, what resources will be required and who needs to be involved. The complexity of clinical practice, and the number of factors that can influence change, mean that successful implementation (or even agreement about what would constitute success) is much less likely without an agreed plan. Regular evaluation of the implementation process enables assessment of the extent to which the implementation is proceeding according to plan and of progress in achieving change. It also enables decisions to be made about any aspects of the plan that might need to be altered to increase effectiveness.

## 2 Having clear aims

This is an integral part of the plan. A clear overall aim that states the desired improvement to patient care provides the basis for identifying the specific concrete proposals for change, for defining what needs to be achieved and for determining measures of success.

## 3 Involving target groups

The groups of people who will need to use the innovation or adopt the practice change view change from a different perspective than people proposing or managing the change process. Ensuring members of the target groups participate in all steps of the process increases the likelihood of successful implementation. It helps in building commitment to the need for change and is essential for developing a realistic and acceptable plan that can feasibly be put into effect.

## 4 Presenting the proposed change in ways that might promote adoption

A number of characteristics of the innovation or change proposal itself are known to influence the chances of adoption. These include where the proposal originates from and who supports it, the credibility of the development process, and the extent to which the target group is involved in the development. The attractiveness and clarity of the presentation of the change is also important. Several features of innovations have been identified as potentially affecting uptake.<sup>12</sup> Among those frequently mentioned are:

• the extent to which the perceived advantages of change outweigh the disadvantages or the costs involved

- whether the changes proposed are consistent with the norms and values of the target group of users
- the size, complexity and difficulty of the changes required
- the degree to which the innovation can be tested before large scale adoption
- the extent to which the results of implementing change can be seen, and the costs and risks of change.

The proposal for change should be developed and presented so that it takes account of the factors likely to enhance uptake.

## 5 Undertaking a diagnostic analysis

Analysis of current practice patterns and trends provides information about the key priorities for implementation. The information gained from this diagnostic analysis drives the implementation plan. It is critically important to consider the perspectives of patients, of healthcare professionals and of the organisations who will need to be involved in the change process involved and to identify what is important to them.

The specific goals of implementation and the range of strategies that are feasible and likely to be successful will also be determined by the setting and context in which implementation occurs, and the views of groups or individuals whose involvement or endorsement is critical to success. Analysis of the current situation helps identify which groups are already practising in the desired way and in which groups an intervention to change practice is most likely to have a significant impact on patient care. This information provides focus for the implementation efforts.

There is also likely to be significant variation within the target group of people who will need to use the innovation or change their practice. People will vary in terms of their current knowledge and extent of use of the innovation, their perceptions of the innovation and the need for change, their motivation and willingness to change, and the problems they may experience. Depending on the characteristics of the target group, a range of implementation strategies, tailored for each significant sub-group, may be needed.

A diagnostic analysis should also examine the potential barriers and incentives that operate to influence likelihood of change. Identifying these barriers and incentives and their relative importance helps to decide where to direct implementation efforts and the kinds of strategies to use. Barriers and incentives can operate at any level. They may relate to the proposed innovation and the way it is presented, to characteristics of care providers or patients, or to the social, organisational, economic or political context in which care is delivered.

Methods for identifying potential barriers and enablers can include literature reviews, surveys, focus groups, key informant interviews, brainstorming, direct observation or through the use of specialised techniques. Tools that use a structured process to identify barriers and enablers can also be used.<sup>13–14</sup>

## 6 Tailoring and targeting interventions

The diagnostic analysis should guide decisions about priorities for intervention, the timing, and the choice of the methods used to bring about practice change. It helps provide specific answers to these key questions:

- What are the essential aspects of care to change?
- Who are the significant groups to focus on?
- Which interventions are most likely to promote change?
- When will the interventions happen?

There is no comprehensive, universally agreed way of classifying the different types of interventions that can be used to promote change. The Cochrane Effective Practice and Organisation of Care Review Group (EPOC) focuses on reviews of research on interventions designed to improve professional practice and the delivery of effective health services. It lists specific types of interventions as falling within the areas of: continuing education and quality assurance, financial, organisational and regulatory.

The continuing education and quality assurance category includes use of opinion leaders, audit and feedback, reminders, and patient-mediated interventions as well as various types of educational approaches. Organisational interventions involve a change in the structure or delivery of health care such as case management, revision of professional roles, use of multidisciplinary teams and formularies, and changes in medical records systems. Examples of financial interventions include changes in how professionals are reimbursed, incentives and penalties. Regulatory interventions include changes in medical liability, management of patient complaints, peer review and licensure.

The EPOC group notes that in the research literature on interventions to improve the organisation, delivery or practice of health care, both the intervention and situation or context are often vaguely defined. Systematic reviews of the research literature on different types of interventions to change practice tend to reach common conclusions — that much of the evidence is of poor quality, reporting of interventions is incomplete, no strategy is consistently effective and studies can show great variation in effects for no easily explicable reason.<sup>15–21</sup> In general, effect sizes are small to modest (in the region of 5–10%), sustainability is usually not explored and information on cost is often unreported. This has led to calls for research that is more explicitly theory-based, as this would enable interventions to be better designed to take account of important factors and produce results that would be more generalisable.<sup>22</sup>

The complexity of practice and the multiple factors that influence how care is provided make it likely that a mix of methods will be required, each targeted and tailored toward the specific issues and context revealed through the analysis. While the available evidence supports the tailoring of interventions to meet barriers to change, as yet little is known about the most effective approaches to tailoring.<sup>23</sup>

Recently Michie and colleagues have proposed an approach to the design and selection of interventions that uses a framework called the 'Behaviour Change Wheel' (Figure 2.2). This links components that generate behaviour with descriptors of nine different intervention functions aimed at addressing deficits in one or more of these conditions, and with various types of policy options that support interventions.<sup>24</sup> Any given intervention might involve more than one of the various identified intervention functions (education, persuasion, incentivisation, training, enablement, coercion, restriction, environmental restructuring, and modelling) and affect more than one component of behaviour (capability, opportunity and motivation).

Choice of strategies and interventions will depend on the nature of the behaviour change required and the analysis of where significant target groups are placed along the change pathway — raising awareness or gaining acceptance of the need for change requires different approaches from actually instituting change or ensuring that it is sustained. People who are enthusiasts about a particular topic or who tend to be early adopters of innovations are likely to have different motivations for change and to respond differently to different methods.<sup>2, 25</sup>



## Figure 2.2 Behaviour Change Wheel

Original published by BioMed Central in Michie S, van Stralen M, West R. The Behaviour Change Wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science* 2011;6(1):42.

## 7 Evaluating and measuring outcomes

Implementation is not a straightforward, linear process — attempts to introduce change into a complex system require a continual process of evaluation and reassessment. Establishing concrete, measurable goals means that the progress and success of implementation activities can be monitored. Ongoing evaluation helps identify whether the targets for change are realistic, whether the actual implementation is proceeding in line with the plan and whether aspects of the plan or the strategies employed need to be changed. Part of the initial plan for implementation should be to gain agreement on the measures to be used to monitor progress and on the points during the implementation process when a review of progress should be made.

## 8 Integrating implementation into existing structures

Achieving change in practice is difficult. Achieving *sustained* change in practice, which is maintained once specific implementation efforts stop, is even more difficult. Success is much more likely if implementation projects are linked to the strategic goals and the agenda for quality and safety within the organisation. Use of existing structures and processes to support implementation efforts helps both to drive the process of change and to embed changes into the routines of professional practices and organisations. Implementation planning should include ways for practice change to become part of usual care and continue once any specific implementation support is withdrawn. The aim is to make the desired approach easier to follow than current practice or any other alternative approach.

## Conclusion

The key messages about implementation are the need for clear goals, for a systematic, planned approach that takes into account the factors that influence individual and organisational behaviour and the importance of involving stakeholders. While the Grol-Wensing model places a strong emphasis on the need for involvement of the target groups which will need to change, it does not make explicit mention of consumer involvement. The reason for implementing changes concerning safety and quality of practice is to improve patients' experiences of care. The Australian Safety and Quality Framework for Health Care emphasises the importance of partnering with consumers, patients and carers in safety and quality initiatives.<sup>1</sup> This is both because consumer-centredness is a core value underpinning care provision and because consumer perspectives can inform and improve implementation outcomes.<sup>26</sup> Organisations that are leading in patient-centred care approaches tend to have a culture of learning and strongly support change and improvement.

Implementation to improve care can occur at all levels of the healthcare system. While the specifics of implementation and the types of interventions that can be employed locally will differ from those that can be used to bring about change across organisations or nationally, the principles of systematic analysis and planning, identification of ways in which current structures and processes can be adapted to support change, and the involvement of all those who will be affected by the process remain constant.

## **Resources and examples**

There are increasing numbers of specific resources produced to help guide implementation efforts. The following chapter describes the implementation tools and supports that have been developed by the Australian Commission on Safety and Quality in Health Care's (the Commission's) programs and projects. These can all can be found on the Commission's web site: www.safetyandquality.gov.au.

Some practical ways to involve patients, families and carers at a service level in quality improvement and patient safety initiatives are provided in the Commission's discussion paper on patient-centred care, *Patient-Centred Care: Improving Quality and Safety through Partnerships with Patients and Consumers*.<sup>26</sup>

The open access online journal *Implementation Science* (www.implementationscience.com) publishes research relevant to the study of methods to promote the uptake of research findings into routine health care in both clinical and policy contexts.

The book *Improving Patient Care* by Richard Grol, Michael Wensing and Martin Eccles, summarises the evidence on how to best design implementation approaches and provides further information on the model discussed above.<sup>27</sup> One example of a practical checklist derived from implementation approaches proposed by Grol and Wensing and other researchers in this field is given in Box 2.5. This checklist is a shortened version of the detailed checklist produced by the evaluators of the Commission's Clinical Handover Pilot Program.<sup>28</sup>



Ten tips	Elements
<ul> <li>Establish a compelling case for change</li> </ul>	<ul> <li>Develop a brief, initial statement of the problem that will capture people's interest and attention.</li> <li>Different brief summaries of the case for change may need to be provided for each of the specific groups who need to support the project, using the information and evidence that will be most persuasive for each group.</li> </ul>
2. Enlist influential leaders and champions	<ul> <li>Involve people who will commit time to making change happen and who will work constructively with each other and the project team.</li> <li>Identify how patient/consumer input will be incorporated into the project.</li> <li>Include senior clinicians who are opinion leaders with the groups whose behaviour needs to change and gain support of senior managers who can provide the necessary resources to make the project happen.</li> </ul>
✓ 3. Determine governance arrangements	<ul> <li>Ensure governance arrangements for the project are consistent with those within the organisation where the project is taking place and at a level where the project will have a strong organisational profile.</li> <li>Establish a reporting and accountability framework that is clear to everyone involved.</li> <li>Gain agreement on the way in which any conflict or disagreement will be managed.</li> </ul>
✓ 4. Establish goals	<ul> <li>Specify the desired changes and outcomes from the project, the timeline for achieving change and the measures that will be used to monitor progress.</li> <li>Set an initial target that is likely to be achievable within the resources available.</li> </ul>
✓ 5. Analyse current issues	<ul> <li>Analyse the current situation and the problems with current tools and practices.</li> <li>Map the processes involved.</li> <li>Identify the barriers and incentives to change.</li> </ul>
✓ 6. Develop the plan for change	<ul> <li>Plan both process and people change and identify how measurement of change will happen.</li> <li>Develop tailored strategies to address barriers and enhance drivers for change, ensure strategies are tailored to the identified barriers.</li> <li>Identify expertise, project team and budget required.</li> </ul>

Ten tips	Elements
✓ 7. Develop the change package	<ul> <li>Develop a package of material to support implementation, including:</li> <li>the case for change (including examples of successful implementation elsewhere)</li> <li>the tools to support change and business rules of how they are to be used — a description of the new process, roles and responsibilities</li> <li>a measurement tool.</li> </ul>
✓ 8. Pilot the change	<ul> <li>Identify an area where conditions are best to test the approach, establish exactly who needs to do what to make the required change, and ensure that they are equipped to do so.</li> <li>Organise the processes to collect quantitative and qualitative data.</li> <li>Implement the new approach, regularly evaluate progress, tackle and resolve barriers, and celebrate wins.</li> </ul>
✓ 9. Sustain and spread	<ul> <li>Highlight, market and reinforce the gains made.</li> <li>Develop a plan for spreading change beyond the original site.</li> <li>Embed the changes in organisational routines, structures and policies.</li> </ul>
✓ 10. Measure, evaluate and improve	<ul> <li>Regularly assess the use of the new processes and measure the extent to which the desired improvements are being achieved.</li> <li>Regularly report the evaluation data to stakeholders and key committees.</li> <li>Develop an ongoing system to remove barriers, enhance drivers and improve the new processes and tools over time.</li> </ul>

Adapted from Australian Commission on Safety and Quality in Health Care. External Evaluation of the National Clinical Handover Initiative Pilot Program. Final Report. Sydney: ACSQHC, 2011.<sup>28</sup>

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# Supporting local implementation

Converting research knowledge into healthcare practice is a challenging process, just as introducing change in any system or organisation can be. There are many barriers and facilitators to change, as discussed in the preceding chapter. Since its commencement in 2006, the Australian Commission on Safety and Quality in Health Care (the Commission) has focussed on a number of high priority areas for safety and quality improvement in health care. In these areas, support for implementation — by clinicians, healthcare organisations and governments — across the health system is being progressively developed. This has meant the development of a range of approaches that assist public and private healthcare providers to implement safety and quality initiatives in their specific setting.

The Commission's approach to its understanding of implementation issues and the development of support material has been based on collaboration with a wide range of individuals, groups, organisations and governments, in addition to an exploration of implementation science. Following on from the development of the initiatives and products has been their piloting, testing, validation and evaluation. The Commission has made a point of placing this material into the public domain, including submissions made to the Commission, submissions made by the Commission, the evidence that informs the programs and projects as well as the outputs of the Commission's work with its partners.

In the five years since the Commission was established, more than 200 implementation supports or tools have been developed and published. The following sections describe some of the products developed through the Commission's programs to support the implementation of safety and quality initiatives. Each section describes the program, the materials developed, their format and content, and the intended audience. In a number of these areas there is a range of materials that may apply to specific settings.

All the materials that have been developed through these processes are available from the Commission's web site at www.safetyandquality.gov.au.

## Australian Charter of Healthcare Rights

The charter of healthcare rights was developed by the Commission in 2007 and 2008. The charter was developed with extensive and widespread consultation and specifies the key rights of patients and consumers when seeking or receiving healthcare services. In July 2008, Australian Health Ministers endorsed the charter as the *Australian Charter of Healthcare Rights* for use across the country.

The Charter applies to all health settings anywhere in Australia, including public hospitals, private hospitals, general practice and other community environments. It allows patients, consumers, families, carers and service providers to have a common understanding of the rights of people receiving health care.

The Commission has developed materials to assist health service organisations implement the Charter (Table 3.1). A toolkit includes the Charter and supporting documents, including an implementation guide. The materials are available in various formats to allow for re-branding with organisation logos and colour schemes if desired. A selection of Charter documents is also provided in a number of community languages and in an (English) audio format. The Commission has also arranged for the Charter to be made available in Braille, and copies can be obtained by contacting the Commission.



#### Table 3.1 Australian Charter of Healthcare Rights implementation supports

Name	Description	Audience	Date
Australian Charter of Healthcare Rights	Poster and flyer (A4 and A3), including in 17 community languages	Patients, consumers, families, carers, clinicians, health service managers and executives, other healthcare workers	2008
A guide for healthcare providers	Brochure	Clinicians, health service managers, executives	2008
A guide for patients, consumers, carers and families	Brochure, including in 17 community languages	Patients, consumers, carers and families	2008
Roles in realising the Australian Charter of Healthcare Rights	Brochure	Health service managers, clinicians and other health service workers	2008
Using the Australian Charter of Healthcare Rights in your health service	Brochure, including in 17 community languages	Health service managers, health professionals with responsibility for policy or quality improvement	2008
Your role in Using the Australian Charter of Healthcare Rights	PowerPoint presentation	Health service educators	2008

## Australian Safety and Quality Framework for Health Care

The Australian Safety and Quality Framework for Health Care describes a vision for safe and high quality care for all Australians, and sets out the actions needed to achieve this vision. The Framework specifies three core principles for safe and high quality care. These are that care is:

- consumer centred
- driven by information
- organised for safety.

The Framework was endorsed by Australian Health Ministers as the national safety and quality framework for Australia in November 2010.

The Commission is supporting use of the Framework through integrated printed and online resources (Table 3.2). A series of *Getting Started* documents has been prepared. These documents have been specially prepared for four groups who are important for embedding the Framework in the Australian healthcare system — the healthcare team, managers, policy makers, and health service executives and boards. Each *Getting Started* document focuses on a number of the actions in the Framework that particularly apply to that group



and describes activities that that group can do or put in place to improve safety and quality. Links to tools and resources that can be used to support the use of the Framework have been assembled and are available from the Commission's web site: www. safetyandquality.gov.au. This resource will grow as additional tools and resources are added.

## Table 3.2 Australian Safety and Quality Framework for Health Care implementation supports

Name	Description	Audience	Date
Australian Safety and Quality Framework for Health Care	A4 flyer (2 page)	Consumers, clinicians, managers, health executives, policy makers	2010
Getting Started: Activities for the Healthcare Team	Booklet	Healthcare team, healthcare workers, clinicians	2010
Getting Started: Activities for Managers	Booklet	Health service managers	2010
Getting Started: Activities for Health Service Executives and Boards	Booklet	Health service executives and boards	2010
Getting Started: Activities for Policy Makers	Booklet	Policy makers	2010
Tools and resources	Web site http://www. safetyandquality.gov.au/ internet/safety/publishing.nsf/ Content/NSQF-tools	Healthcare team, healthcare workers, clinicians, managers, health service executives and boards, and policy makers	2010

## **Clinical handover**



Between 2007 and 2009 the Commission invested over \$4 million in the *National Clinical Handover Initiative Pilot Program* to develop and trial practical and transferrable tools for improving clinical handover. Fourteen public and private sector organisations

were funded through the Pilot Program and produced a range of tools to aid improvements in clinical handover. An external evaluation of the Pilot Program found that many of these tools have also been transferrable beyond the initial pilot sites, including across the public and private sector.

In addition to the tools produced from the pilot projects, the Commission has developed a range of resources to support health services implementing a clinical handover improvement process (Table 3.3). The *OSSIE Guide to Clinical Handover Improvement* was endorsed by Australian Health Ministers in 2010 as a national guide to clinical handover improvement at shift change in a hospital setting.

The Implementation Toolkit for Clinical Handover Improvement, which provides clinicians and managers with the practical project management resources necessary to successfully implement clinical handover improvement will be published in 2011. The Implementation Toolkit for Clinical Handover Improvement uses the change management principles from the OSSIE Guide to Clinical Handover Improvement



and aligns with the National Safety and Quality Health Service Standard for Clinical Handover. Health services are encouraged to use the toolkit when implementing clinical handover improvement and to assist them in meeting the National Safety and Quality Health Service Standard for Clinical Handover.

The Commission has also released the Electronic Discharge Summary Systems: Self-Evaluation Toolkit based on a Safety and Quality Evaluation of Electronic Discharge Summary Systems. The toolkit provides guidance to health services about a consistent approach to facilitate local evaluation of the safety and quality impacts of implementing an Electronic Discharge Summary (EDS) system, as well as providing preimplementation planning guidance based on lessons learned from the case study sites.

#### Table 3.3 Clinical handover implementation support tools

Name	Description	Audience	Date
National Clinical Handover Initiative Pilot Program	<ul> <li>A range of clinical handover tools, implementation strategies and solutions, education resources developed from 14 research projects conducted in the acute care, primary and aged care and private sector settings</li> <li>Tools include: <ul> <li>protocols for improving clinical handover</li> <li>material using structured mnemonic briefing techniques at handover</li> <li>tools for inter-facility transfer</li> <li>online education tools</li> <li>materials on team communication</li> </ul> </li> </ul>	Health sector staff and clinicians	2009
OSSIE Guide to Clinical Handover Improvement	Change management guide	Health service managers	2010
External Evaluation of National Clinical Handover Initiative Pilot Program	Evaluation report of the Pilot Program, outcomes, impacts, spread and sustainability derived from the 14 funded projects and a 10 step clinical handover implementation checklist	Health sector staff and clinicians	2011
Implementation Toolkit for Clinical Handover Improvement	Project management toolkit	Clinicians	2011
Electronic Discharge Summary Systems Self-Evaluation Toolkit	Pre-implementation and self-evaluation toolkit	Acute health service staff	2011

## **Clinical quality registries**

A clinical quality registry is a registry whose purpose is to improve the safety or quality of health care provided to patients. Clinical quality registries build on data collected from events in daily health care and use this information to assess care provision and provide feedback that allows quality improvements to be identified and implemented where required.

It was identified that small numbers of clinical quality registries capture and report national patterns of care for a variety of high-volume, high-cost conditions or interventions. The burden of developing indicators and datasets, sound data collection, data governance arrangements and dedicated information systems frequently prevents the peak clinical groups who operate registries from achieving comprehensive national reporting, analysis and outlier management. The existing clinical quality registries are quite variable, both in their ability to improve health care and in the quality of the information they hold and publish. For these reasons the Commission sought to encourage the development of operating and strategic principles for Australian Clinical Quality Registries (Table 3.4).

A core function of Australian Clinical Quality Registries must be that they have the ability to improve clinical practice and health outcomes and be capable of accurately capturing the state of health care in Australia. For registries to meet their full potential in informing the state of health care in Australia, confidence is needed in the quality and relevance of the data.

## Table 3.4 Clinical quality registry implementation support tools

Name	Description	Audience	Date
Operating Principles for Australian Clinical Quality Registries	Operating principles manual	Clinicians, policy makers, potential registry funders, registry operators	2010
Strategic Principles	Flyer	Policy makers, registry operators, funders	2010
Architecture and Technical Standards for Australian Clinical Quality Registries	Manual	Registry operators	2010



## **Consumer centred care**

There is increasing evidence about the importance of partnerships between health service organisations and health professionals and patients, families, carers and consumers. Studies have demonstrated significant benefits from such partnerships in terms of clinical outcomes, the experience of care, and the business and operations of delivering care. The importance of having health systems and health services based on partnerships with patients, families, carers and consumers is reflected in national and international quality frameworks, including the Australian Safety and Quality Framework for Health Care.

There is widespread and strong support in Australian health services for providing care that is based on partnerships with patients. Many health services and health service providers have taken steps to embed patient-centred care principles into practice. For a range of reasons, however, people can struggle to carry out patient-centred care in practice. To address this need the Commission has developed a discussion paper that reviews patient-centred care and provides guidance and links to resources that can assist with implementation (Table 3.5). More specific tools and resources will be developed by the Commission on this topic in the future.

## Table 3.5 Consumer-centred care implementation support tools

Name	Description	Audience	Date
Patient-centred care: Improving quality and safety through partnerships with patients and consumers	Discussion paper	Health service managers, clinicians, policy makers	2011

## Core hospital-based outcome indicators

The hospital-based outcome indicators can be generated by jurisdictions or private hospital ownership groups and then reported back to provider facilities. The safety and quality value lies in developing the report-review-act cycle based on the routine supply of timely and targeted data back to hospitals.

The core, hospital-based outcome indicators recommended for local generation and review are:

- hospital standardised mortality ratio (HSMR)
- death in low-mortality Diagnosis Related Groups (DRGs)
- in-hospital mortality rates for:
  - acute myocardial infarction (AMI)
  - heart failure
  - stroke
  - fractured neck of femur
  - pneumonia

- unplanned hospital re-admissions of patients discharged following management of:
  - o AMI
  - heart failure
  - knee and hip joint replacements
  - depression
  - schizophrenia
  - paediatric tonsillectomy and adenoidectomy
- healthcare associated Staphylococcus aureus bacteraemia
- Clostridium difficile infections.

To assist the jurisdictions and private hospital groups to measure and report internally on these indicators, the Commission has undertaken a program of work, which has included the development of the Technical specification implementation toolkit.

#### Table 3.6 Core hospital-based outcome indictors support tools

Name	Description	Audience	Date
Technical specification implementation toolkit	Technical details for generation of indicators from data	Jurisdictions, hospital managers, hospital information managers, private hospitals	2011

## Credentialling

The processes of peer review are relied upon in a range of administrative, professional and clinical processes. The Commission has consolidated the available evidence and produced a simple guide to good practice so as to encourage peer review that is conducted transparently, equitably and free from bias.



## Table 3.7 Credentialling implementation support tools

Name	Description	Audience	Date
Review by Peers: A guide for professional, clinical and administrative processes	Best practice guide	Health service managers and clinicians	2010

## **Falls prevention**

Falls are a significant cause of harm to older people across Australia, both in the community and in care. They are responsible for unnecessary hospitalisation, increased healthcare costs and premature death. For older people (65 years and older), more than 80% of injury-related hospital admissions are due to falls and falls-related injuries.<sup>1</sup> Preventing falls in older people, and reducing the harm they experience from falls, is a national safety and quality priority. The Commission has developed a series of guidelines, guidebooks, fact sheets, and an implementation guide to support a nationally consistent and evidence-based approach to falls prevention (Table 3.8). These materials are designed to help health professionals minimise the risk of falling for older Australian receiving care in hospitals, residential care and the community.

In addition, the Commission maintains a falls prevention web site with links to falls prevention resources and research, and a register of falls guidelines issues and errata for guideline users and to inform future reviews of the guidelines.

## Table 3.8 Falls prevention implementation support tools

Name	Description	Audience	Date
Preventing falls and harm from falls in Australian hospitals	Guideline, guidebook, implementation guide, fact sheets	Clinicians, managers, patients, carers	2009
Preventing falls and harm from falls in Australian residential aged care facilities	Guideline, guidebook, implementation guide, fact sheets	Clinicians, managers, residents, carers	2009
Preventing falls and harm from falls in Australian community care	Guideline, guidebook, fact sheets	Clinicians, managers, older people, carers	2009
Falls Prevention Research	Web site http://www. safetyandquality.gov.au/internet/ safety/publishing.nsf/Content/ fallslinks	Clinicians, managers	2011





## **Health service accreditation**

The National Safety and Quality Health Service (NSQHS) Standards have been developed for use in an Australian Health Service Safety and Quality Accreditation (AHSSQA) Scheme. Both the Scheme and the Standards are the result of consultation and collaboration with jurisdictions, technical experts and a wide range of stakeholders, including health professionals and consumers. The Australian Health Ministers endorsed an AHSSQA Scheme in November 2010. A final version of the 10 NSQHS Standards was released in August 2011.

The aim of the Standards and the accreditation process is to promote and support safe patient care and quality improvement of healthcare services. The Standards focus on areas where a substantial body of evidence about patient harm currently exists and where actions can be taken to effectively reduce harm. Health services that provide high-risk services will be required to be accredited against the Standards. These services include hospitals, day procedure services such as day surgeries, and office-based practices such as dental practices. To support health services to implement the Standards, the Commission has developed a set of service-specific guides detailing the evidence that could be provided to demonstrate a health service has meet the requirements of the Standards (Table 3.9). These guides are for use by hospitals, day procedure services and office-based practices, and will be available by the end of 2011. The Commission has also developed a series of fact sheets on the NSQHS Standards and the ASSQHA scheme. These are available on the Commission's web site at www.safetyandguality.gov.au.



## Table 3.9 Health service accreditation implementation supports

Name	Description	Audience	Date
<ul> <li>National Safety and Quality Health Service Standards:</li> <li>Governance for Safety and Quality in Health Service Organisations</li> <li>Partnering with Consumers</li> <li>Preventing and Controlling Healthcare Associated Infections</li> <li>Medication Safety</li> <li>Patient Identification and Procedure Matching</li> <li>Clinical Handover</li> <li>Blood and Blood Products</li> <li>Preventing and Managing Pressure Injuries</li> <li>Recognising and Responding to Clinical Deterioration in Acute Health Care</li> <li>Preventing Falls and Harm from Falls</li> </ul>	Standards	Health services	2011
Service-specific guides	Guides	Health services	2011
<ul> <li>Fact sheets about:</li> <li>Australian Health Service Safety and Quality Accreditation (AHSSQA) Scheme</li> <li>National Safety and Quality Health Service (NSQHS) Standards</li> </ul>	Fact sheets	Health Services	2011
#### Infection prevention and control

Healthcare associated infection (HAI) and the management of antibiotic resistance are major and growing issues in both the hospital and community setting. HAIs pose a significant cost to both health services and affected individuals. Each year there are at least 200,000 healthcare associated infections.<sup>2</sup> In addition, surgical site infections could be costing as much as \$268 million per year with blood stream infections increasing this cost to as high as \$686 million per year.<sup>3</sup>

The levels of morbidity and mortality experienced by Australian patients due to HAIs have the potential to be significantly reduced using known evidence-based interventions.

The prevalence of multidrug-resistant bacterial pathogens such as methicillin-resistant *Staphylococcus aureus* has risen alarmingly over the last 40 years, while in

recent years few, truly novel, antimicrobials have been developed. As antimicrobial resistance increases and development of new antimicrobial agents declines, it is critical that antimicrobials are used judiciously. Effective antimicrobial stewardship programs have been shown to improve the appropriateness of antimicrobial use, reduce patient morbidity and mortality, and reduce institutional bacterial resistance rates and healthcare costs.

The Commission's Healthcare Associated Infection program has worked to address these issues by developing a suite of materials and resources to support healthcare workers in the area of infection prevention and control (Table 3.10). In order to ensure the uptake and use of these materials by the intended audience, implementation strategies have been devised at local and national levels, involving the expert advice and input of relevant stakeholder groups and professional associations. Materials have been developed in such a way as to target a variety of professionals within the healthcare setting, using interactive workshops and web-based education tools.

Reducing Harm to Patients from Health Care Associated Infection; The Role of Surveillance

#### The OSSIE Toolkit

for the implementation of The Australian Guidelines for the Prevent of Infection in Hisalth Care 2010

AUSTRALIMACCA



#### Table 3.10 Infection prevention and control implementation support tools

Name	Description	Audience	Date
Hand Hygiene Australia www.hha.org.au	Web site	Healthcare workers	2009
Hand Hygiene flyer	Flyer	Healthcare workers	2009
National definition and calculation of healthcare associated <i>Staphylococcus aureus</i> bacteraemia	Definition		2009
Reducing harm to patients from healthcare associated infection: the role of surveillance	Book		2009
WHO poster — Your 5 moments for Hand Hygiene	Poster	Healthcare workers	2009
Antimicrobial Stewardship in Australian Hospitals	Book	Infectious diseases professionals and health executives	2010
Australian Guidelines for the Prevention and Control of Infection in Healthcare	Book	Infection control practitioners	2010
Australian Guidelines for the Prevention and Control of Infection in Healthcare — Baseline assessment checklist	Checklist	Infection control practitioners and health administrators	2010
Australian Guidelines for the Prevention and Control of Infection in Healthcare — Guidebook for Primary Care Settings	Guidebook	Primary care professionals	2010
The OSSIE Toolkit for the implementation of The Australian Guidelines for the Prevention of Infection in Health Care 2010	Guide	Infection control practitioners	2010
Australian Guidelines for the Prevention and Control of Infection in Healthcare — National Implementation Workshops	Workshops	Infection control practitioners, primary care professionals and health administrators	2009– 2010
Australian Guidelines for the Prevention and Control of Infection in Healthcare — Business case template	Template	Infection control practitioners and health administrators	2010
<ul> <li>Infection Prevention and Control Training Portal with the following training modules:</li> <li>Principles of infection prevention and control</li> <li>Basic epidemiology/statistics</li> <li>Surveillance and quality improvement</li> <li>Basic microbiology and multi-resistant organisms</li> <li>Risk management systems for infectious agents and infectious diseases</li> <li>Infectious agent health screening and immunisation of healthcare workers</li> <li>Outbreak investigation and management</li> <li>Renovation, repairs and redevelopment risk management</li> <li>Management of occupational exposure</li> <li>Cleaning, disinfection and sterilisation</li> </ul>	Web site	Staff who undertake infection prevention	2010
National definition and calculation of Hospital identified <i>Clostridium difficile infection</i>	Definition		2010
Draft Data dictionary and collection guidelines for surveillance of healthcare associated infections	Data dictionary		2010

#### **Medication safety**

Medicines are the most common health therapy in Australia. In any two week period, around seven in ten Australians will have taken at least one medicine. For older Australians, that increases to nine in ten.<sup>4</sup> While most medicines are delivered safely to users, there is a risk of error and harm associated with medicines.

Due to the prevalence of medicines use, the risk of error and harm is significant. Approximately 2–3% of all hospital admissions are medication-related and, of those, approximately 50% are preventable.<sup>5</sup> It has been estimated that over 1.5 million Australians suffer an adverse event from medicines each year, resulting in at least 400,000 visits to general practitioners and 190,000 hospital admissions.<sup>6–7</sup> The cost is significant with estimates for medicine-related hospital admissions in 2008 at \$660 million.<sup>5</sup>

Between 2007 and 2011, the Commission's medication safety program undertook a large work program to assist health services reduce the incidence of adverse medicines events (errors relating to the delivery of medicines, such as the wrong medicine being prescribed or used, or the right medicine being used inappropriately). The following sections describe some of the work and the materials developed.



ND QUALITY SCOPING STU DMMITTEE REPORT







#### Table 3.11 National Inpatient Medication Chart (NIMC) implementation support tools

Name	Description	Audience	Date
National Inpatient Medication Chart	Chart	Hospital doctors, nurses, pharmacists, allied health professionals	2006, 2009
National Inpatient Medication Chart long-stay version	Chart	Hospital doctors, nurses, pharmacists, allied health professionals	2009
National Inpatient Medication Chart private hospital version	Chart	Hospital doctors, nurses, pharmacists, allied health professionals	2008
National Inpatient Medication Chart paediatric version	Chart	Hospital doctors, nurses, pharmacists, allied health professionals	2008, 2010
National Inpatient Medication Chart paediatric long-stay version	Chart	Hospital doctors, nurses, pharmacists, allied health professionals	2008, 2010
NIMC User Guide	Guide	Hospital doctors, nurses, pharmacists, allied health professionals	2006, 2011
National Inpatient Medication Chart four A4 page version	Chart	GP admitting doctors, hospital doctors, nurses, pharmacists, allied health professionals	2008
National Inpatient Medication Chart four A4 page version user advice	Guide	GP admitting doctors, Hospital doctors, nurses, pharmacists, allied health professionals	2008
NIMC Local Management Guidelines	Guide	Hospital doctors, nurses, pharmacists, allied health professionals	2006, 2011
NIMC Audit Form	Form	Hospital doctors, nurses, pharmacists, allied health professionals	2008, 2011
Guide to Auditing the NIMC	Guide	Hospital doctors, nurses, pharmacists, allied health professionals	2008, 2011
NIMC Audit System	Web tool	Managers, hospital doctors, nurses, pharmacists, allied health professionals	2010
NIMC Online Training Course (hosted by National Prescribing Service — Better Choices Better Health)	Training	Hospital doctors, nurses, pharmacists, allied health professionals	2006, 2011

#### National Inpatient Medication Chart

The National Inpatient Medication Chart (NIMC) was implemented during 2006 and 2007, and is now being used nationally in public hospitals and for a majority of private hospital patients. The NIMC has standardised the communication of medication information between doctors, nurses and pharmacists working in hospitals, and aims to reduce harm to patients from medication errors. Specialist versions of the NIMC are also available including a four page version for rural hospitals that may be printed from general practice prescribing software. Support materials are available to assist in the local management and evaluation of the NIMC (Table 3.11).

#### **Medication reconciliation**

The process of medication reconciliation has been shown to reduce errors and adverse events associated with poor quality information at transfer of care and inaccurate documentation of medication histories on patient admission to hospital. Medication reconciliation is a formal process of obtaining and verifying a complete and accurate list of each patient's current medicines, and comparing the list with the medicines prescribed and matching the medicines the patient should be prescribed to those they are actually prescribed, and resolving any discrepancies. At the end of the episode of care the verified information is transferred to the next care provider. A range of resources has been made available to assist hospitals implementing the medication reconciliation process (Table 3.12).





	Table 3.12 Medication	reconciliation in	nplementation	support tools
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Name	Description	Audience	Date
MATCH UP Medicines leaflet	Leaflet	Hospital doctors, nurses, pharmacists, allied health professionals	2010
MATCH UP Medicines poster	Poster	Hospital doctors, nurses, pharmacists, allied health professionals	2010
National Medication Management Plan (MMP)	Form	Hospital doctors, nurses, pharmacists, allied health professionals	2010
National Medication Management Plan User Guide	Guide	Hospital doctors, nurses, pharmacists, allied health professionals	2010
National Medication Management Plan poster	Poster	Hospital doctors, nurses, pharmacists, allied health professionals	2010
MMP PowerPoint presentation	Education	Hospital doctors, nurses, pharmacists, allied health professionals	2011

#### Safe terminology and safe labelling

The *Recommendations for Terminology, Symbols and Abbreviations to be Used in the Prescribing and Administering of Medicines* were originally developed by the New South Wales Therapeutic Advisory Group. The document provides principles for consistent prescribing terminology, a set of recommended terms and acceptable abbreviations, and a list of error-prone abbreviations, symbols and dose designations that have a history of causing error and must be avoided. The Commission has communicated the terminology document to a wide range of stakeholders including the university schools for medicine, nursing, pharmacy and allied health to ensure it is reflected in health professional curricula.



The national *Recommendations for Terminology, Symbols and Abbreviations to be Used in the Prescribing and Administering of Medicines* were endorsed by Australian Health Ministers in December 2008.

Labelling is a recognised risk in the safe administration of injectable medicines. Harm and death from medication administration errors as a result of inadequate labelling is an issue across the world. In 2010, *National Recommendations for User-applied Labelling of Injectable Medicines, Fluids and Lines*, along with recommended artwork specifications, were made available to help reduce the risk of patient harm from inadequate or absent user-applied labelling of all injectable medicine products and related containers and conduits. In 2010 Health Ministers endorsed the recommendations for use in Australian hospitals.

Similarly, the risk of selection error and patient harm, from look-alike, sound-alike names is a national safety and quality issue. To reduce the risk, the Commission has developed National Tall Man Lettering, the first national Tall Man standardisation in the world. Tall Man lettering is a typographic technique that uses selective capitalisation to differentiate similar looking or sounding drug names more easily. It will form a consistent basis for software used in electronic medication management systems and wherever health professionals select medicines. The Commission supports the use of Tall Man lettering as part of a multi-faceted approach to reducing the risks associated with confusable drug names and which includes more rigorous pre-market testing and bar-code verification.

#### Table 3.13 Terminology and labelling implementation support tools

Name	Description	Audience	Date
Recommendations for Terminology, Symbols and Abbreviations to be Used in the Prescribing and Administering of Medicines	Standardisation	Managers, hospital doctors, nurses, pharmacists, allied health professionals	2008
National Labelling Recommendations for User-applied Labelling of Injectable Medicines, Fluids and Lines	Standardisation	Managers, doctors, nurses, pharmacists, allied health professionals, other community health providers	2010
National Labelling Recommendations for User-applied Labelling of Injectable Medicines, Fluids and Lines User Guide	Guide	Managers, doctors, nurses, pharmacists, allied health professionals, other community health providers	2010
National Labelling Recommendations for User-applied Labelling of Injectable Medicines, Fluids and Lines Explanatory Notes	Guide	Managers, doctors, nurses, pharmacists, allied health professionals, other community health providers	2010
National Labelling Recommendations for User-applied Labelling of Injectable Medicines, Fluids and Lines PowerPoint presentation	Education	Managers, doctors, nurses, pharmacists, allied health professionals, other community health providers	2010
National Labelling Recommendations for User-applied Labelling of Injectable Medicines, Fluids and Lines Posters	Education	Managers, doctors, nurses, pharmacists, allied health professionals, other community health providers.	2010
National Tall Man Lettering	Standardisation	Managers, hospital doctors, nurses, pharmacists, allied health professionals, software proprietors	2011

#### Safe electronic medications management

Although electronic medication management systems (EMMS), including electronic prescribing, have been shown to be effective in reducing medication errors and improving the quality of medicines use, the implementation of EMMS in hospitals has not been rapid and is not without its challenges. There is a risk of introducing new errors if the implementation is not well planned or does not have inbuilt decision support and safety features, and if the system is not linked with other key hospital systems. The Commission, in conjunction with the National E-Health Transition Authority, has developed Electronic Medication Management Systems: A Guide to Safe Implementation to assist hospitals to safely select and implement EMMS. The guide draws on local and international experience and provides advice on:



- specifying and procuring safe EMMS
- safely implementing EMMS.

In addition, the Commission makes available *Electronic Medication Management Systems: Implementation Plan*, a template implementation plan on which hospitals can build a comprehensive EMMS implementation plan (Table 3.14). Finally, *Electronic Medication Management Systems: Specialist Functions* provides guidance on safely incorporating specialist functions into EMMS (such as infusions and body fluid, renal dialysis, chemotherapy and paediatrics). It is designed to be read in conjunction with *Electronic Medication Management Systems: A Guide to Safe Implementation.* 

#### Table 3.14 Safe electronic medications management implementation support tools

Name	Description	Audience	Date
Electronic Medication Management Systems: A Guide to Safe Implementation	Guide	Managers, hospital doctors, nurses, pharmacists, allied health professionals	2011
Electronic Medication Management Systems: Implementation Plan	Template	Managers, hospital doctors, nurses, pharmacists, allied health professionals	2011
Electronic Medication Management Systems: Specialist Functions	Guide	Managers, hospital doctors, nurses, pharmacists, allied health professionals	2011

#### **Open disclosure**

Open disclosure is 'the open discussion of incidents that result in unintended outcomes to a patient while receiving health care'. The Commission has led the development of a number of tools to support the implementation of open disclosure, including a patient brochure and guide and hospital manager handbook (Table 3.15).

The *patient brochure* is designed for patients who are entering health services. It provides general information on the low risk of harm from health care and a general outline of what patients can expect if unintended harm occurs as a result of the care they receive.

The *patient guide* is designed for patients and their carers or families who are participating in open disclosure. It provides advice on what to expect from open disclosure, space to take notes at open disclosure meetings and information on obtaining further information.

The *manager handbook* is designed to assist health service managers implement the Open Disclosure Standard in their facility. It describes the background to open disclosure, some of the challenges of implementing open disclosure and insights into successful implementation. A fact sheet and an education module for clinicians have also been developed.

On 12 November 2010, Health Ministers approved the new open disclosure resources for use in Australian hospitals.



#### Table 3.15 Open disclosure implementation support tools

Name	Description	Audience	Date
Open Disclosure Standard	Standard	Managers, doctors, nurses, pharmacists, allied health professionals	2003; re-designed 2009
Regaining trust after an adverse event	Education package	General practitioners	2008
Regaining trust after an adverse event	Poster	General practitioners	2008
Responding to an adverse event	Workbook	General practitioners	2008
Open disclosure if things go wrong in health care	Brochure	Patients, carers	2010
Open disclosure of things that go wrong in health care	Booklet	Patients, carers	2010
Open disclosure Manager Handbook	Guide	Health service managers	2010
Open disclosure FAQ	Fact sheet	Managers, doctors, nurses, pharmacists, allied health professionals	2010

#### **Patient identification**

Patient identification and the matching of a patient to an intended treatment is an activity that is performed frequently, and can often be seen as a relatively unimportant task. Risks to patient safety occur when there is a *mismatch* between a given patient and components of their care, whether those components are diagnostic, therapeutic or supportive.

The human factors approach to patient safety emphasises the design of systems to take into account human capabilities, limitations and characteristics. This approach suggests that the development of safe routines for common tasks (such as patient identification) provides a powerful defence against simple mistakes that may escalate and cause harm. These routines allow the workforce to focus its attention on those activities that require more cognitive processing and judgement, such as the provision of clinical care. The use of tools developed by the Commission can support the development of such routines and the standardisation of processes to improve patient safety (Table 3.16). These resources align with tools developed by other organisation such as the World Health Organization's Surgical Safety Checklist.



#### Table 3.16 Patient identification implementation support tools

Name	Description	Audience	Date
Specifications, for a standard patient identification band	Guide	Healthcare professionals, health service managers, policy makers, quality and safety officers	2008
Specifications, for a standard patient identification band	Fact sheet	Healthcare professionals, health service managers, policy makers, quality and safety officers	2008
Specifications, for a standard patient identification band	FAQ	Healthcare professionals, health service managers, policy makers, quality and safety officers	2008
Ensuring Correct Patient, Correct Site, Correct Procedure in Radiology, Nuclear Medicine, Radiation Therapy and Oral Surgery	Fact Sheet	Healthcare professionals, health service managers, policy makers, quality and safety officers	2008
Ensuring Correct Patient, Correct Site, Correct Procedure in CT and MRI	Protocol	Healthcare professionals, health service managers, policy makers, quality and safety officers	2008
Ensuring Correct Patient, Correct Site, Correct Procedure in General Radiology and Ultrasound	Protocol and FAQ	Healthcare professionals, health service managers, policy makers, quality and safety officers	2008
Ensuring Correct Patient, Correct Site, Correct Procedure in Interventional Radiology	Protocol and FAQ	Healthcare professionals, health service managers, policy makers, quality and safety officers	2008
Ensuring Correct Patient, Correct Site, Correct Procedure in Nuclear Medicine	Protocol and FAQ	Healthcare professionals, health service managers, policy makers, quality and safety officers	2008
Ensuring Correct Patient, Correct Site, Correct Procedure in Radiation	Protocol	Healthcare professionals, health service managers, policy makers, quality and safety officers	2008

## Recognising and responding to clinical deterioration

Serious adverse events such as unexpected death and cardiac arrest are often preceded by observable physiological and clinical abnormalities.<sup>8</sup> Early identification of deterioration may improve outcomes and lessen the intervention required to stabilise patients whose condition deteriorates in hospital.<sup>9</sup>

There is evidence that the warning signs of clinical deterioration are not always identified or acted on appropriately.<sup>10</sup> The organisation and workforce factors that contribute to a failure to recognise and respond

to a deteriorating patient are complex and overlapping. These include, but are not limited to:<sup>11–13</sup>

- not monitoring physiological observations consistently or not understanding observed changes in physiological observations
- lack of knowledge of signs and symptoms that could signal deterioration
- lack of formal systems for responding to deterioration
- lack of skills to manage patients who are deteriorating
- failure to communicate clinical concerns, including in handover situations.

Systems to recognise deterioration early and respond to it appropriately need to deal with all of these factors, and need to apply across a healthcare facility. The *National Consensus Statement: Essential Elements for Recognising and Responding to Clinical Deterioration* has been endorsed by Health Ministers as the national approach for recognising and responding to clinical deterioration in acute care facilities in Australia. It provides a consistent national framework to support clinical, organisational and strategic efforts to improve recognition and response systems. A guide to support implementation of the Consensus Statement will be available in late 2011.

The Commission has also conducted further work to support systems for recognising clinical deterioration. This has focused on the development of observation and response charts that are designed according to human factors principles to support accurate and timely recognition of clinical deterioration (Table 3.17). These charts are being tested in clinical environments in 2011–12, and will be modified as needed when this process is complete. In the meantime, the draft observation and response charts are available for use and can be customised for local response systems. *A Developer's Guide* has been prepared to assist with this process.



#### Table 3.17 Recognising and responding to clinical deterioration implementation support tools

Name	Description	Audience	Date
National Consensus Statement: Essential Elements for Recognising and Responding to Clinical Deterioration	Guide	Healthcare professionals, health service managers, policy makers, quality and safety officers	2008
Observation and response charts — ADDS chart with blood pressure table	Chart	Clinicians, health service managers, quality and safety officers	2010
Observation and response charts — ADDS chart without blood pressure table	Chart	Clinicians, health service managers, quality and safety officers	2010
Draft Observation and response charts — single parameter four response categories	Chart	Clinicians, health service managers, quality and safety officers	2010
Draft Observation and response charts — single parameter two response categories	Chart	Clinicians, health service managers, quality and safety officers	2010
Draft Observation and response charts — single parameter one response category	Chart	Clinicians, health service managers, quality and safety officers	2010
Draft Developer's guide for observation and response charts	Guide	Clinicians, health service managers, quality and safety officers	2010

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## Developing a positive safety culture

It is widely known that adverse events in healthcare settings result in harm to patients. Reducing adverse events has been a key objective of the patient safety movement over the last 15 years. The introduction of incident reporting systems and analysis has provided information about common recurring factors leading to adverse events.<sup>1–2</sup> It is known that these frequently relate to multi-factorial, organisational and human factors leading to poor outcomes rather than individual failures. It has been suggested that, rather than continuing to focus on single issues related to individual events, patient safety strategies should address these underlying factors or problems which contribute to adverse events.<sup>1, 3</sup> A great deal of effort has been placed in developing specific system, process and procedural interventions to reduce the recurrence of each of these problems. Whilst good progress has been made in this area, there is still limited evidence that the implementation of these interventions has been widespread or that they have substantially reduced the recurrence of common factors leading to adverse events.

Sustained progress in this area is thought to be influenced by the variation and complexity, or context, of the healthcare setting. This context includes a complex mixture of the attitudes, beliefs and behaviours of the organisation and those individuals who work within this setting — what we collectively term 'culture'. The culture of safety in an organisation is thought to play an important part in the receptiveness and responsiveness of people to the implementation of change to improve patient safety.

Improving safety culture in health care is already a key strategy that is being implemented to improve patient safety in a number of countries.<sup>4–6</sup> Improving the culture is thought to be an important step in facilitating the desired changes for improving quality and patient safety.<sup>7–10</sup> Whilst there is a strong policy agenda, internationally and nationally, to improve safety culture in the health setting, there is still limited information about what and how this might be achieved.

The limited progress in improving safety culture in health care to date is thought to be because culture is a complex phenomenon which is not only difficult to define, but even more difficult to change as a conscious large-scale policy initiative.<sup>11</sup> This is due to the very context-dependent nature of safety culture, which will vary from one clinical setting to another — even within the same organisation.<sup>12–13</sup> The leading patient safety advocate Charles Vincent noted that:

'[safety culture] seems to be a pretty broad, ill defined and all encompassing concept. Does this matter? Well, yes it does. If our challenge is to change culture, as so many of our commentators urge, then we need to understand what safety culture is, or at the very least decide on which aspects to highlight, and to bring as much precision to the definition as can be mustered.<sup>114</sup> If improving safety culture in the clinical setting is a potential means to improving patient safety, then defining and demystifying the concept to make it meaningful for health practitioners is essential, particularly as they have to be part of this change. This chapter discusses the background and concept of safety culture, describes what the various dimensions and factors influencing safety culture in the clinical environment might look like and possible ways in which strategies for improvement of this culture might be considered.

#### Why safety culture?

Safety culture as a concept has emerged from highrisk industries such as mining and aviation. Experience from the aviation industry suggests that assessing and understanding the attitudes, beliefs and perceptions of frontline workers towards teamwork and the safety culture are powerful strategies to identify and subsequently improve safety in that environment.<sup>15</sup> The aviation experience is often cited as a potential model for the healthcare setting. There is, however, some debate about the appropriateness of applying lessons from other industries to health care.<sup>16</sup> These relate to the differences in context, such as the ordered environment of an airplane cockpit versus the complexity and variation of that in health care.<sup>17–18</sup> Notwithstanding these debates, the importance of understanding the factors influencing safety culture and the attitudes and beliefs of the workers within it has application and utility to healthcare.

#### What is safety culture?

Safety culture can be interpreted and defined in a variety of ways.<sup>14</sup> Some have defined safety culture as 'a sub-facet of organisational culture that affects the attitudes and behaviours of members with regard to the health and safety performance of an organisation'.<sup>19–20</sup> Safety culture has also been defined as 'a product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of an organisation's health and safety management'.<sup>21</sup> A common interpretation of safety culture — which is perhaps more meaningful — is 'the way things are done around here'.

Safety culture is not dependent on a single factor or component, but rather it is the 'dynamic interaction' within a complex system. It is this dynamic interaction of the range of attitudes, beliefs and behaviours which will vary from setting to setting and over time which determines the local safety culture. It is this variation that often makes safety culture seem to be something of an abstract concept and difficult to understand as a whole or as something that can be consciously or deliberately altered. Whilst culture should always be considered in its entirety, it is possible to break safety culture into more familiar and manageable concepts. What is known is that there are multiple policy, systemic, organisational and personal factors that can influence patient safety in a given organisation. Those factors common to the clinical setting have been collectively described as patient safety culture 'dimensions' or 'domains'.<sup>18, 20, 22</sup>

#### Safety culture domains

Safety culture domains broadly include factors relating to: leadership; safety systems and risk perception; job demands; organisational reporting; teamwork, communication and feedback; physical resources; safety attitudes and the broader policy context.<sup>18, 23</sup> There is not a single standard combination or set of safety culture domains. Rather, factors included in domains can vary according to the particular aspect of safety culture being examined.

For example, one classification uses a combination of six patient safety culture related domains when assessing the safety culture in the clinical setting:

- 1. Safety climate.
- 2. Teamwork climate.
- 3. Job satisfaction.
- 4. Perceptions of management.
- 5. Stress recognition.
- 6. Working conditions.22

These six domains, including the factors considered, and the implications for patient safety and attributes important for positive safety culture are illustrated (Figure 4.1) and described below.





#### **1** Safety climate

This concept relates to the organisational commitment towards patient safety.<sup>21</sup> It includes the way patient safety issues and adverse events are reported, managed and responded to, and the feedback to staff about the actions taken in response to reported safety issues.

#### What does a positive safety climate look like?

Leaders of the organisation demonstrate strength and commitment toward patient safety<sup>5, 24–25</sup> This includes the prioritisation of safety over other organisational concerns, such as budgets, and the creation of systems and environments where staff are encouraged to report adverse events. There is a proactive 'no blame' response to the management of reported adverse events and regular feedback to staff about the actions taken in response to these events.

#### Why is this important?

A strong commitment and action toward patient safety by the leaders of an organisation are integral to the safety climate of the service. A lack of response to reported adverse events and failure to provide feedback to staff has been identified as a precursor to staff normalising these events and no longer reporting.<sup>24, 26</sup> This can adversely influence the prevailing safety climate.

#### 2 Teamwork climate

Teamwork climate relates to the quality of collaboration and communication between members of the healthcare team. Collaboration and communication is influenced by factors including: the experience of team members; familiarity and trust between team members; professional beliefs; role and job in an organisation; and perception of collaboration.<sup>27–28</sup> The extent to which these factors impact on the quality of collaboration between team members varies from setting to setting and over time.

#### What does a positive team look like?

Cohesive positive teams include those where health professionals: can predict a colleague's response in both expected and unexpected clinical situations; are familiar with their colleagues; and feel that their contributions are valued and welcomed. Conversely, teams that are less cohesive have health professionals who believe that they have poor collaboration or communication with colleagues.<sup>27</sup>

#### Why is this important?

The clinical team is a fundamental component or unit in health care. Poor teamwork is a factor frequently associated with adverse events<sup>16, 27, 29</sup> and is likely to influence the prevailing patient safety culture. Strategies to improve teamwork have been identified as an important factor to improving patient safety.<sup>27</sup>

#### **3 Job satisfaction**

Job satisfaction relates to factors such as staff morale, work enjoyment, and autonomy in work practice.

#### What does positive job satisfaction look like?

Positive job satisfaction includes high levels of morale among staff where they are actively engaged and have a sense of accomplishment in their work. Staff with positive job satisfaction have a level of autonomy and an ability to control their work schedule. There are low levels of absenteeism.

#### Why is this important?

There is evidence that maintaining a satisfied workforce and adequate levels of staffing are important factors in achieving good patient outcomes and a positive safety culture.<sup>31</sup> Factors known to directly influence job satisfaction relate to a lack of control or autonomy, work overload, limited resources to accomplish work, and undertaking tasks which are in conflict with the individual's values and beliefs. These factors can result in a number of symptoms commonly known as 'burnout' which can include emotional exhaustion, depersonalisation and detachment from work<sup>32–34,35</sup> and is considered to be a critical mediating mechanism between nurses and patient safety.<sup>36</sup>

#### 4 Perceptions of management

This concept includes factors relating to the management of staffing, equipment and leadership.

#### What does positive management look like?

Clinician managers actively lead and take responsibility for the development of patient safety strategies.<sup>37</sup> These strategies include the provision of safe systems of care to ensure safe outcomes for patients in their clinical setting, including the availability of appropriate staff and equipment.<sup>27 38</sup>

#### Why is this important?

The work of clinician managers is often 'fragmented, discontinuous and unpredictable'.<sup>37</sup> Their role is complex, with responsibilities which often require a focus on inputs, such as people and money, rather than the system and processes of health care in their units or patient outcomes. This can result in quality and safety activities not being the first priority for clinical managers.<sup>31, 37</sup> The complexity and fragmentation of the clinical manager's role presents potential challenges if the manager is to lead patient safety strategies.

#### 5 Stress recognition

Stress recognition relates to health professionals' personal recognition of and response to the influence of factors such as fatigue and/or personal stress on their ability to respond in the clinical setting.

#### Why is this important?

Prolonged shifts, rotations and extended working hours are common in health care. There is evidence of a link between extended shifts (greater than 24 hours) and increased rates of medical error.<sup>39,40</sup> Research has linked the performance of fatigued doctors working extended

## Box 4.1 What does a positive safety culture look like?

Positive safety cultures in health care have strong leadership to drive and prioritise the safety of all.<sup>4, 16, 45</sup> Leadership and management commitment in this context are considered to be important as their actions and attitudes are thought to influence the perceptions, attitudes and behaviours of staff throughout the organisation.<sup>46</sup>

Organisations with positive safety cultures have:

- strong leadership to drive safety culture
- strong management commitment with safety culture a key organisational priority
- staff who are always aware that things can go wrong
- acknowledgement at all levels that mistakes occur
- non-blame, non-punitive response to error
- ability to recognise, respond, give feedback and learn from adverse events.

and prolonged shift rotations to be similar to driving with a blood alcohol level of 0.05%. Fatigued and stressed clinicians have reduced clinical performance and decisionmaking skills, reduced alertness and vigilance to identify problems and reduced communication skills. There is a general lack of recognition by health professionals about the effects of fatigue in relation to error which may result in them continuing to work whilst fatigued.<sup>41</sup>

#### **6 Working conditions**

This concept relates to factors such as training, supervision and disciplinary policies.

#### Why is this important?

Any deficits in the levels of appropriate supervision or training will have implications for the safety of health care. For example, a lack of adequate clinical supervision resulting in junior medical officers undertaking unsupervised interventions for which they were not adequately skilled has been reported in a number of inquiries. A lack of skills and training is thought to contribute to or result in a failure to recognise and respond to problems in the clinical setting and has been cited as a common precursor to adverse events.<sup>1, 42–44</sup>

#### Safety culture

The safety culture in a given setting is shaped by a combination of all these domains. Consideration of the safety culture should also include the broader organisational and policy context which will also influence the local safety culture. The safety culture in any setting is fluid and dynamic. Just as the culture of any organisation or group changes in response to the broader environment, personalities, activities and changing issues, so too can the safety culture. Altering any of the factors and the domains, can affect the safety culture. Such changes can be short- or long-term. The elements of positive safety cultures are described in Box 4.1.

#### How can safety culture be assessed?

Reviewing safety culture in the clinical setting is becoming a widespread patient safety improvement strategy used to identify the strengths and weaknesses of a given clinical area.<sup>46</sup> The identification of weaknesses assists in developing appropriate and relevant patient safety improvement interventions.<sup>47</sup> To fully assess safety culture, a number of approaches are required. Initial measurement via a safety culture survey, followed by clarification and verification using other (qualitative) data sources is important.

Safety culture surveys provide a snapshot of the safety culture measured during one specific period.<sup>5, 27</sup> As such, the use of safety culture surveys in isolation is a somewhat limited approach and they have been found to provide only a rather superficial understanding about aspects of an organisation's safety culture.<sup>20</sup> When attempting to fully understand the culture, a more qualitative research approach is required. In addition to safety culture surveys, it is recommended that additional qualitative data, such as interviews, focus groups, observations and incident reports are collected so as to examine the human factor components of cultures.<sup>18, 20, 52</sup> The combination of the quantitative and qualitative data gathered provides a fuller picture of and richer understanding about — the safety culture in a given setting. This, in turn, will allow the more informed identification of those aspects which are likely to benefit from improvement.<sup>18, 23, 53</sup> These data will also aid in identifying the key barriers and challenges which must be addressed in order to improve the culture and implement patient safety interventions. The following section describes these approaches.

#### Safety culture surveys

A number of safety culture surveys have been developed to provide a snapshot of the safety culture.<sup>5, 27, 48</sup> These surveys are mostly designed to quantitatively measure the perceptions of participants regarding various aspects of the safety culture of an organisation or clinical unit.<sup>49</sup>

There are various surveys examining varying aspects of safety culture to choose from. Consideration should be given to the appropriate choice of survey. The choice of a survey to measure safety cultures should include the ability to demonstrate reliability and validity.<sup>5, 18</sup> Surveys should also be selected for the specific purpose of the project and, if possible, be previously tested and validated in a similar clinical setting. Ideally, surveys should have response rates of at least 60% so as to gather a representative view of the perceptions of the majority of participants in a given clinical area. When undertaking safety culture surveys, response rates are likely to be higher when participants are provided with the reasons for and benefits of the survey and allocated time to complete the survey. Examples of safety culture surveys are given in Box 4.2.

## Box 4.2 Examples of safety culture surveys

#### Hospital survey on patient safety culture

Developed by the US Agency on Healthcare Research and Quality, this quantitative survey assesses individual perceptions of 12 safety culture dimensions and two safety outcomes.<sup>50</sup>

Safety culture/climate dimensions assessed:

- 1. Supervisor/manager expectations and actions promoting patient safety
- 2. Management support for patient safety
- 3. Organisational learning continuous improvement
- 4. Overall perceptions of patient safety
- 5. Feedback and communication about error
- 6. Communication openness
- 7. Frequency of events reported
- 8. Teamwork in units
- 9. Teamwork across units
- 10. Staffing
- 11. Handoffs and transitions
- 12. Non-punitive response to error.

The two safety outcomes assessed:

- 1. Number of adverse event reported in previous 12 months
- 2. Overall patient safety grade.

#### Safety Attitudes Questionnaire

The Safety Attitudes Questionnaire (SAQ) is a quantitative survey assessing individual perceptions about six domains of safety culture. Includes open-ended questions about staff's perceptions of areas for safety culture improvement.<sup>47</sup> A number of versions have been developed and tested for use in various clinical settings.

Safety culture domains assessed:

- 1. Safety climate
- 2. Teamwork
- 3. Job satisfaction
- 4. Perception of management
- 5. Stress recognition
- 6. Working conditions.

#### **Qualitative data collection**

As noted earlier, safety culture survey data provide an initial snapshot of the aspects of safety culture that may warrant improvement. Additional qualitative data are required in order to gain a more complete picture of the human factor components of this culture and the potential barriers and challenges to improving it. A range of qualitative approaches that can be used to gain a greater understanding of the safety culture exists, including interviews, focus groups, observations and incident reports. The collection of these qualitative data not only assists with gaining further understanding but can also foster rapport, credibility and engagement with the clinicians in the clinical setting. Some examples of these approaches include:

 Interviews — Interviews can provide the opportunity to obtain targeted information from individuals with the most knowledge about the subject, provide more detail about issues raised in the safety culture surveys and give an opportunity for new issues to be raised. Interviews can be conducted face-to-face or via telephone with individuals or groups.

## Box 4.3 Example of a workshop-based assessment of safety culture

#### Manchester Patient Safety Assessment Framework

The Manchester Patient Safety Assessment Framework (MaPSaF) uses a facilitated workshop-based approach to assess organisation safety culture maturity.<sup>51</sup> It assesses nine dimensions of patient safety against five levels of safety culture maturity. Patient safety dimensions assessed include:

- 1. Overall commitment to quality
- 2. Priority given to patient safety
- 3. Perceptions and identification of the causes of patient safety incidents
- 4. Investigating patient safety incidents
- 5. Team learning following a patient safety incident
- 6. Communication about safety issues
- 7. Staff management and safety issues
- 8. Staff education and training about safety issues
- 9. Teamwork around safety issues.

- Observations Observations can be useful in providing insight to clinicians' experiences and reality and to reveal unusual aspects of the culture. They can take the form of field notes or film recording of the behaviours and activities of individuals and teams in the clinical setting.
- Focus groups Focus groups provide an opportunity to obtain the opinions and views from a group of participants on specific issues. Information can be collected by asking unstructured open-ended questions to groups of approximately six to eight participants.

One or a combination of these approaches may be used. Another example of an approach is provided in Box 4.3.

#### What does understanding and improving safety culture mean for clinicians?

The factors in the safety domains are likely to be familiar to many of those working in the clinical setting. Clinicians will be aware that a number of these factors do not occur in isolation; rather they are interlinked. It is this linkage and the unique combination of factors within each domain in a given setting that will determine the prevailing safety culture. Culture is everything we do. In this way, safety culture is very relevant to clinicians, managers and patients as it influences aspects of their everyday working life and thus the safety of the patients in their care.

#### "Culture is everything we do."

Understanding the relevant aspects of safety culture in order to identify potential areas for improvement can have benefits for both clinicians and their patients. This is illustrated in the following adapted case study.

#### A case study

A review of the safety culture in a maternity service in a large teaching hospital was undertaken. Safety culture surveys, incident reports, focus groups and interviews were collected and reviewed in order to understand the existing safety culture and the barriers and challenges to improving that culture. The data told the following story.

#### The safety culture survey

The safety culture survey scores highlighted that the following three safety culture domains were most likely to require improvement in this setting:

- team work
- working conditions
- safety climate.

#### Incident reports

A review of incident reports highlighted a number of cases where there had been delay in the recognition of and response to clinical deterioration, and junior clinicians were undertaking procedures outside their expertise. There were a number of incident reports with similar incidents, but their recurrence indicated that the factors leading to the problems remain unresolved.

#### Focus groups and interviews with the local clinicians

The data from the focus groups and interviews provided a more detailed understanding of the clinicians' perceptions about issues and barriers raised in the safety culture surveys, including the following:

- Communication and collaboration between the midwives, junior medical staff and senior medical consultants was perceived to be poor on occasion, particularly in the presence of problems and the need to escalate care to senior medical consultants.
- Problems in escalating care were due to a lack of familiarity between members of the maternity team. At times, there was a perceived lack of respect and trust by some obstetricians for the skills, experience and clinical judgement of midwives and the junior medical staff.
- Collaboration between the midwives, junior medical staff and senior medical consultants was dependent on individual relationships.
- Poor teamwork was associated with maternity personnel not always functioning or training as teams, staff working infrequently together and staff not being familiar with the senior medical consultants.
- The level and quality of supervision of junior medical staff was related to the limited presence of the senior medical consultants on the labour ward.
   Senior medical consultants had limited opportunities to engage and be involved in the supervision and quality activities due to contractual employment and competing work demands.

• The combination of poor communication between teams and inadequate levels of supervision sometimes created situations where junior staff could fail to recognise or escalate care when problems arose.

This adapted case study illustrates how an approach which combines a range of sources of data can provide a more nuanced description of the interaction of factors which influence the safety culture and the barriers and challenges to improving the safety culture.

The next step in this case study would be to develop a strategy to improve the culture and locally implement appropriate interventions to improve patient safety. Considering what is now known, it would be essential to address the attitudes and behaviours and the system issues influencing these factors to increase the successful implementation of specific interventions to improve communication, teamwork and supervision. An important element would be to engage all the clinicians in the strategy. Linking the incident data to the safety culture data also makes a strong case for change. In addition, presenting the benefits for the clinicians is an important strategy.

#### Clinician benefits for improving safety culture

The potential benefits and goals of improving the safety culture in this example could be improved supervision, support and engagement for decision making and clinical care, respectful collaboration between the multidisciplinary team, and structured processes for receptive timely consultation and handover of patient care. In the event of adverse events, clinicians would have the ability to report the incident without fear of blame and expect constructive feedback, and lessons learnt about the actions taken to reduce recurrence. Ultimately, making these changes could also improve patient safety.

## How to go about changing the culture

The previous section described an example of what aspects of safety culture could benefit from improvement. That is not to say changing culture is an easy thing to do. There is 'no one size fits all solution'. Rather, there is likely to be a range of solutions applicable in each setting. However, assessing and understanding the safety culture to identify and prioritise which areas require improvement using the range of diagnostic approaches processes described previously is a critical first step. If the local context and prevailing culture are known, this aids in identifying possible barriers, challenges and enablers. Improving safety culture must be focused on instilling and promulgating the values and behaviours that are conducive to developing positive cultures in that context. This approach is likely to increase the successful implementation for context-specific safety improvement interventions.<sup>54</sup>

In some settings, certain aspects of the culture may need to be improved prior to implementing safety improvement interventions, while in others they may occur concurrently. Identifying the solution(s) and subsequently implementing change can take time, planning and resources. As with all successful improvement initiatives that require changes in the attitudes, beliefs and behaviours, this will need a change management approach. This approach should include the engagement of local stakeholders and champions to develop a strong case for change.<sup>10</sup> Engaging and consulting with stakeholders via focus groups or interviews will provide greater understanding about how attitudes, beliefs and behaviours are influencing the safety culture in a

#### Box 4.4 Steps for developing context-specific safety culture improvements

- 1. Understand the survey results to identify potential areas for improvement.
- 2. Collect additional qualitative data to create a richer understanding of the safety culture context.
- 3. Assemble a team of local stakeholders.
- 4. Communicate and discuss survey and qualitative data results.
- 5. Agree on the aim and goal of the improvement.
- Identify context-specific solutions and develop a focused action plan (case for change).
- 7. Communicate and obtain engagement for action plan and deliverables.
- 8. Implement the action plan.
- 9. Track progress and evaluate impact.
- 10. Share what works widely.

Modified from AHRQ 2010 Hospital Survey on patient safety culture.<sup>50</sup>

given context. In addition to understanding the problem better, this approach allows individual stakeholders to understand how their attitudes and behaviours influence the safety culture and enable the development of local solutions owned by the local clinicians. This process should include the development of an agreed aim or goal, specific interventions and processes to be implemented. This is not only a way of improving ownership of the solution but also a way of presenting the potential benefits to all stakeholders.<sup>10</sup>

One example of steps which could be taken to progress a locally-driven solution to improve local safety culture is given in Box 4.4.

#### Key messages

Improving safety culture in the clinical setting is a means of improving patient safety. Safety culture, to date, has often been thought of as being too complex a phenomenon to tackle. This chapter has attempted to define and demystify the concept in order to make it meaningful for practitioners to engage in making the change. Important messages arising from this chapter are that:

- Culture is everything you do.
- Culture is 'the way things are done around here'.
- Culture is not complicated; it is just another aspect of your clinical environment.
- Normal approaches to implementing change work on culture too.
- Making change helps clinician and patients.

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# Improving safety and quality through partnerships with patients and consumers

Patient-centred care is care that recognises the patient as a person, and recognises that patients have needs, desires and preferences which are shaped by their lives and experiences. Patient-centred care respects those needs and preferences, and aims to share control of health care with the individual patients, as well as with their families, partners, carers or any other significant people in their lives.

Patient-centred approaches to care encourage participation, collaboration and partnership to improve care at the individual, organisational and/or system level. Strategies to re-orient care to be more patient centred can range from simple techniques, such as the adoption of communication and education strategies at the service delivery level, to the more complex involvement of patients and consumers in the co-design of physical facilities at an organisational and system level. Examples of such approaches in Australia are shown in Box 5.1.

Patient-centred care can mean many things and can be implemented in many ways. Different definitions and

terminology have also been used to describe the concepts in this area (such as person-centred and consumercentred care). At its heart, patient-centred care is 'an approach to planning, delivery, and evaluation of health care that is grounded in mutually beneficial partnerships among healthcare providers, patients, and families.'<sup>1</sup>

Key principles of patient-centred approaches include:

- treating patients, consumers, carers and families with dignity and respect
- communicating and sharing information between patients, consumers, carers, families and health providers

#### Box 5.1 Patient-centred care strategies at work

The following are examples of Australian approaches, programs and strategies that have been implemented to improve patient-centred care:

- Hunter New England Health in New South Wales has developed the Listening Posts initiative, which involves talking with cancer patients, carers and community members at the local town hall about their experience of care from diagnosis through to treatment and beyond. The initiative acts as an informal focus group. At the conclusion of each session, a thematic analysis is undertaken. The results are fed back to the health service to inform its Cancer Strategic Plan. www.hnehealth.nsw.gov.au/news/media\_releases/ March\_2011/share\_your\_cancer\_journey\_to\_ improve\_services.
- The new Queensland Children's Hospital has been designed with input and advice from the Youth Advisory Group. The group meets and discusses issues related to the development of the Children's Hospital from a consumer and patient perspective, including architecture, service delivery and the experiential qualities of the building. The group has conducted site visits and participated in planning processes throughout the hospital, including working with architects, designers and policy officers to contribute to the design of wards, retail areas, adolescent relaxation and family-focused spaces. www.health.qld.gov.au/childrenshospital/content/ establish\_yaf.asp.
- The Enhancing Practice Program was developed by Northern Health, Victoria, in collaboration with the Council on the Ageing, to improve the way health services work with older people and their carers. The program is aimed at health professionals who work with older people and comprises a series of workshops, co-hosted by health professionals and consumers. The workshops provide participants with an opportunity to reflect on current practice, and look at opportunities for adopting a more person-centred approach to care. By late 2010, more than 1500 staff and 500 managers from 23 Victorian agencies had participated in the program.

www.mednwh.unimelb.edu.au/pchc/Resources/ Training/Staff%20training/Enhancing%20Practice%20 Program.pdf.

The Southern Mental Health Peer Service was established in southern Adelaide and operated from 2006-08. Peer support workers who had experience and training in support work, and had experienced a mental health condition that required hospitalisation, were employed by the service to work with mental health consumers to reduce the risk of readmission and improve the likelihood of early discharge. It was concluded that using peers to provide support to consumers at this stage of their recovery seemed highly effective, had personal benefit to consumers and peers, provided savings to the system in terms of bed days, and had the potential for encouraging mental health service culture and practice towards an increased focus on recovery.<sup>2</sup>

- encouraging and supporting participation in decision making by patients, consumers, carers and families
- fostering collaboration with patients, consumers, carers, families and health professionals in program and policy development, and in health service design, delivery and evaluation.

This chapter summarises the rationale, some of the evidence, and various views of individuals and organisations in the health system about patientcentred care. It also describes the work of the Australian Commission on Safety and Quality in Health Care (the Commission) in this area to date and its emerging role in fostering models of care that place the patient at the centre of the healthcare system as a means of improving the safety and quality of health care in Australia.

Patient-centred care is 'an approach to planning, delivery, and evaluation of health care that is grounded in mutually beneficial partnerships among healthcare providers, patients, and families'.<sup>1</sup>

## Why is patient-centred care an important issue?

In international comparisons, it is clear that Australia has a high quality and safe healthcare system<sup>3-6</sup> and Australians generally experience good health and long life expectancy, with the notable exception of some vulnerable groups, such as Aboriginal and Torres Strait Islander peoples.<sup>7</sup> However, as with any system, improvements can still be made.

#### Box 5.2 Patient-centred approaches and outcomes following acute myocardial infarction

The association between the experience of patients following acute myocardial infarction and overall post-treatment outcomes has been investigated in a number of studies. These studies found that patient satisfaction and/or experience data that reflected a more patient-centred experience of care was associated with better quality of care and clinical outcomes, including reduced mortality.<sup>24 30-31</sup> One study in particular found that better patient-centred care during admission for acute myocardial infarction was associated with a decreased risk of death one year after discharge.<sup>24</sup>

Healthcare professionals in Australia feel that they intuitively have an understanding of the principles and value of patient-centred care, and of working with patients, consumers, families and carers to achieve the best outcomes. However, feedback received through state-based patient experience surveys,<sup>8-10</sup> complaints processes and projects such as *100 Patient Stories*<sup>11</sup> indicate there is still some work which can be done to improve the experiences of, and outcomes for, patients. If health care is to become truly responsive to the needs and desires of the patient this work is vital.

Internationally there is growing discussion of, and support for, the use of patient-centred approaches to care as a means of contributing to improvements in the safety and quality of health care.<sup>12</sup> This is underpinned by an increasing acknowledgement of the importance of placing patients and consumers at the centre of healthcare in policy and quality frameworks and the developing evidence base.<sup>13-16</sup>

#### Policy and quality frameworks

Patient-centred care is increasingly being recognised as a dimension of health care quality in its own right and was identified in the seminal 2001 Institute of Medicine report, *Crossing the Quality Chasm*, as one of the six quality aims for improving care.<sup>6</sup>

Consequently, over the last decade a range of policy drivers has been introduced in a number of countries, including the USA, England and Canada, that support the adoption of patient-centred approaches to care. Examples of these policy drivers include legislative requirements for the collection and publication of patient experience data and financial incentives for providers who achieve high measures of patient-centredness.

Recent national Australian healthcare policy, including the Australian Safety and Quality Framework for Health Care,<sup>5</sup> the *National Safety and Quality Health Service Standards*,<sup>4</sup> the *National Primary Health Care Strategy*<sup>3</sup> and the Fourth National Mental Health Plan,<sup>17</sup> acknowledge that patient-centred approaches to care are integral to improving healthcare services and patient outcomes.

There have also been a range of health and human rights charters developed in Australia, at both the national<sup>18</sup> and state level.<sup>19-21</sup> These charters provide a foundation for patient-centred care and embed concepts — such as treating people with respect and dignity, and providing the opportunity for active participation — as core rights within the healthcare system.

Further, recent national healthcare reforms focus on the need to improve access to services, quality of service delivery, financial responsibility, patient outcomes and patient experience.<sup>22, 23</sup> In particular, the proposed linking of patient experience to performance and funding, and the move towards greater transparency on a range of performance indicators, once again demonstrate a recognition of the importance of patient-centredness to health reform at the national level.

#### Evidence for patient-centred care

The evidence regarding the impact of patient-centred approaches to care has been building since the Institute of Medicine acknowledged patient-centred care as the core focus of quality in health care. There is now good evidence that the use of patient-centred approaches to care is associated with better clinical outcomes, improved quality and safety, decreased costs, a better experience of care and higher patient and provider satisfaction.<sup>24-29</sup> This makes patient-centred care important to the patient, health professionals, healthcare organisations and the system as a whole. Evidence outlining some of the benefits of patient-centred care is given in Box 5.2 and Box 5.3.

#### Patient-centred care: Improving quality and safety through partnerships with patients and consumers discussion paper

In 2010, the Commission identified patient-centred care as a priority area and began to look for opportunities to support the use of patient-centred approaches to care within the Australian healthcare system. As a starting point, the Commission developed the *Patient-centred care: Improving quality and safety by partnering with patients and consumers* discussion paper in collaboration with Australian experts, Dr Karen Luxford and Dr Donella Piper.<sup>36</sup>

The discussion paper was the first Australian review of this kind, and looked at patient-centred care approaches including evidence, strategies, resources and tools, international models and Australian examples of patient-centred care in practice. The final version of the discussion paper is available from the Commission's web site at: www.safetyandquality.gov.au.



#### Box 5.3 Patient-centred care, communication and collaboration in primary health care settings

Communication and collaboration are important aspects of a patient-centred approach to health care and can influence the intensity, cost and outcomes of care. Much research has been undertaken on the impact of strategies aimed at improving communication and collaboration between healthcare professionals and patients within primary health care settings.

The studies focusing on patient-centred approaches in general practice and primary health care have found that a focus on communication and collaboration between patients and providers is associated with:

- a reduction in the number of diagnostic test orders and other referrals<sup>32-34</sup>
- better adherence to treatment regimens<sup>35</sup>
- greater satisfaction<sup>33 35</sup>
- greater patient capacity to cope with their medical condition.<sup>33</sup>

Two key purposes of the discussion paper were to realise a common understanding of concepts and evidence for patient-centred care and to define a set of strategic actions, through a series of recommendations, that can be implemented at a system or organisational level to facilitate patient-centred practices. The final version of the discussion paper offered 22 recommendations (Box 5.4).

Given the diversity within the Australian healthcare system, many of these recommendations may need to be adapted to the local context. In any given setting some may be easily and quickly implemented, whereas others may require more long-term planning and negotiation before implementation is possible. The Commission does not regard these recommendations as a strict formula to be followed to achieve patient-centred care. Rather, the recommendations should be used as a

#### Box 5.4 Recommendations from *Patientcentred care: Improving quality and safety through partnerships with patients and consumers*<sup>36</sup>

Based on the research, evidence, programs and policies described in the discussion paper, the Commission proposed a series of recommendations that could be implemented at the system or organisational level to facilitate implementation of patient-centred practices. These are listed below.

#### 1. System-oriented recommendations

- 1. Policy makers and regulators should include patient-centred care as a dimension of quality in its own right in strategic and other policy documentation.
- A core set of nationally endorsed patient survey questions should be developed to facilitate collation and comparison of patient care experience data in key healthcare settings.
- Patient surveys used to assess patient care experience need to include questions specifically addressing recognised patient-centred care domains and assess more than patient 'satisfaction'.

guide for organisations to shape their own strategies for implementing patient-centred practices.

A draft version of the discussion paper was circulated widely for consultation in September 2010. Input was sought from key stakeholders, including professional bodies and organisations, consumer groups, accreditation and standards agencies, government agencies, safety and quality organisations, research groups and universities.

## Feedback on the draft discussion paper

The draft discussion paper received an overwhelmingly supportive response from stakeholders. The submissions included feedback from many organisations and individuals involved in implementing or looking to

- 4. 'Improving patient care experience' should be included as an indicator of quality and reflected in healthcare reporting and funding models.
- 5. To improve transparency, Australian policy makers and regulators should make data regarding patient care experience in health services publicly available via web sites.
- 6. Patient-centred care should be a component of undergraduate and postgraduate education programs for all health professionals.
- 7. Education programs should engage patients and families as teachers and collaborators, rather than solely as cases to be studied.
- 8. Research funding bodies should acknowledge the importance of patient centred care to the health system and this should be reflected in the distribution of funding.

#### 2. Service-oriented recommendations

Health service executives and managers should:

9. Ensure that organisational systems and processes are designed so that they are patient-centred.

implement patient-centred strategies and projects within their own healthcare organisations.

There was a consensus among the submissions that this is an important and necessary component of safe and high quality health care, and there is strong support for the Commission undertaking work in this field.

Patient-centred care is seen as an ethical way of practising health care and respondents to the consultation agreed that patients have the right to receive care that is tailored to their individual situation. However, some of those providing submissions expressed uncertainty about how to go about re-orienting the way health care is delivered so that it is patient-centred. Some of this uncertainty may stem from the fact that patient-centred care is not a single way of delivering care; it does not have a simple definition and it can be enacted in many different ways.

The responses to the draft discussion paper raised an array of issues and demonstrated a range of ways in which different organisations and individuals interpret patient-centred care and the need for patient-centred approaches, and the applicability of the evidence and the recommendations to different types of healthcare organisations and settings.

Despite this variability, stakeholders identified a series of common issues that reflect challenges and enablers to implementing effective patient-centred care within the Australian healthcare system. These are discussed in the following sections.

- Ensure their healthcare organisation develops a shared patient-centred mission that senior leaders continually articulate to staff to promote the implementation of patient-centred care.
- Develop and implement policies and procedures for engaging patients, families and carers in their own care.
- 12. Develop and implement policies and procedures for involving patients, families, carers and consumers at a service level, in policy and program development, quality improvement, patient safety initiatives and healthcare design.
- Provide support for patients, families and carers involved in governance to develop the necessary skills and capacity required for effective partnerships with their healthcare organisation.
- 14. Ensure that the service meets the *National Safety and Quality Health Service* Partnering with Consumers standard.
- 15. Ensure that systems are in place for the regular collection and reporting of patient care experience data through quantitative patient surveys and qualitative, narrative-based sources.
- Ensure that organisational approaches to quality improvement include feedback about patient care experience — alongside clinical and

operational data — when determining health service action plans.

- 17 Contribute to the evidence base for patientcentred care by recording and publishing changes in key organisational and patient outcome metrics over time.
- Provide organisational support to enable staff to partner with patients and consumers and to implement any necessary changes based on that partnership.
- Support staff through training and education activities tailored to building the capacity of all staff to deliver patient-centred care.
- 20. Focus on work environment, work culture and satisfaction of staff as an integral strategy for improving patient-centred care. Workforce surveys and review of staff recruitment and retention rates should be undertaken at regular intervals to monitor work environments.
- 21. Integrate accountability for the care experience of patients into staff performance review processes.
- 22. Foster a culture of learning within the organisation, equally learning from successes and failures, including tragic events, to promote patient-centred care.

## Challenges to implementing patient-centred care

Challenges to implementing patient-centred care were identified at both the local level for healthcare organisations and for health services as a whole.

#### Challenges for healthcare organisations

At the local level, a healthcare organisation's readiness and capacity to change the way health care is delivered is critical to implementing effective patient-centred care. Issues such as existing organisational or professional culture, engagement of leaders, access to guidance on implementing patient-centred care, competing organisational priorities and strained resources were all seen as barriers to change in this context.

Ensuring an organisational and professional culture that supported patient-centred practice was seen as critically important to staff so that they could feel that they had a 'mandate' to implement patient-centred care. Those providing submissions suggested that without the support and engagement of healthcare managers and respected leaders an organisation's capacity to change would be hampered. There is considerable research on the role of culture and leadership in change management that is consistent with this sentiment.<sup>37-39</sup>

'It is not unreasonable to expect hesitance by healthcare professionals to embrace the necessary changes in culture unless the benefits of patient-centredness are clearly demonstrated. Strategies will need to be developed to overcome resistance at an operational level. There is a need to develop initiatives and provide education for healthcare professionals to effect cultural change on healthcare delivery and everyday practice.' Submission to Patient-Centred Care consultation

The strategies, tools and approaches described in the draft discussion paper were largely based on the work of international organisations and research in acute care settings, as this is where patient-centred care as a policy concept has developed to date. The concepts and recommendations outlined in the draft discussion paper are broadly applicable across different health sectors. However, stakeholders generally felt there was a need to identify both Australian examples of patient-centred care in practice and examples of strategies and models that have been used in non-acute settings.

Feedback also indicated that the strategies and recommendations may need to be tailored at the local level in order to allow for the contextual variables relevant to the sector or organisation, such as the size, location and organisational structure. There was uncertainty about how best to adapt and apply the strategies and recommendations from the discussion paper, and some



organisations and individuals were actively seeking guidance on approaches that would work within different settings and for specific patient and consumer groups.

'More consideration needs to be given to ways in which the recommended strategies can be comprehensively and appropriately implemented, and guidance developed on how organisations can effectively implement the ... recommendations.'

Submission to Patient-Centred Care consultation

Lastly, many of those providing submissions listed competing priorities, strained resources and overworked staff as barriers to delivering patient-centred care. There was a perception that changing to a more patientcentred approach or adopting such strategies would create additional resourcing requirements, such as increasing the time and costs associated with providing services and additional education and training, and the need to modify systems and processes to make them more patient-centred.

The draft discussion paper describes the evidence indicating that patient-centred care can have a positive impact on business metrics, including finance, quality, safety and market share.<sup>29</sup> However, stakeholders were seeking stronger and clearer evidence of the impact of patient-centred approaches within the current Australian healthcare context.



'For many at the coal face of health serv[ice] provision, the requirement to ration resources means that prioritising a more patient centred care model will result in something else "having to give". In addition, some culturally embedded ways of working do not currently place value on or enable a more patient centred model. Adopting more patient centred care approaches is therefore unlikely to happen quickly and in many instances will require additional resourcing. Commitment from executive and clinical leadership for this approach is therefore essential.' Submission to Patient-Centred Care consultation

#### Challenges for the health system

Stakeholders raised a number of system-level issues that were seen to be contributing to the challenges of re-orienting healthcare organisations towards a more patient-centred approach. These issues included:

- Structural changes to the health system such as those that were being implemented as part of the current health reforms at the time were seen to be contributing to uncertainty about future arrangements, roles and responsibilities.
- Allocation of government resources and other funding — whether through new or existing funding streams for healthcare professionals or healthcare organisations — was seen as an influential driver of capacity to change current models of care delivery, systems and processes.
- Workforce challenges including training, retaining and leading a workforce with the capacity for and focus on a patient-centred culture were seen by some stakeholders as a barrier to patient-centred care due to the influence on continuity and workforce capacity.
- Integration and coordination of care including processes and practices at both an organisational and system level — were seen as major barriers to patient-centred care as there was a view that patient-centred care often failed during transition between care stages and providers.

'A common problem for patients that is illustrated in complaints, however, is the lack of continuity of their care when transferred between different health care providers.' Submission to Patient-Centred Care consultation

It was considered that these system level issues influenced the capacity and effectiveness of health care at an individual, organisational and system level.

## Enabling implementation of patient-centred care

There were four key areas consistently raised within the submissions that were seen as potential areas of focus to influence the implementation of patientcentred approaches to care in Australia. These include: the development of research; education and training: implementation guidance and tools; and the investigation of appropriate policy drivers for the Australian context.

#### **Research and evidence**

As already mentioned, the vast majority of research into the effect of utilising patient-centred approaches to care has been undertaken overseas, particularly in the USA and England. Although there are similarities between these health systems and Australia's, there are also considerable differences. Further, much of the research and trials on systematic changes to healthcare delivery using a patient-centred approach have been undertaken in the acute sector, with the exception of work on patientcentred approaches to communication and chronic disease self-management in primary health care.

As a consequence, a number of stakeholders argued that there needs to be a greater understanding of the type of strategies which will work within the Australian healthcare system, including within different sectors, organisation types, and for different types of patients and consumers. It has been argued that this kind of research is needed in order to develop tools, models and educational strategies that are specifically suited to the Australian healthcare system. This research would include developing an understanding of the work that has already been undertaken within Australia using patient-centred approaches to care.

'We recommend that this Paper be ... a starting point for the ongoing development of more comprehensive Australian research into patient-centred care.' Submission to Patient-Centred Care consultation

#### Education and training

A patient-centred approach to healthcare delivery, in which power and decision making are shared, can challenge the current relationship dynamics and expectations of health professionals and patients. It was noted in a number of submissions that in order for this type of relationship to be effective, health professionals may need to be equipped with new skills, requiring further education and training to support this change.<sup>40</sup> Many of those making submissions agreed that if patientcentred care is to be integrated into the way the health system does business, then health professionals will need to be supported through education and training. It was considered that this education and training should include both the principles and the application of patient-centred care and should be delivered in parallel to clinical training.

It was noted in some of the submissions that within Australia there has been a shift within educational facilities towards the use of patient-centred principles and approaches within their curricula. However, there was a call for this to be implemented more broadly and also to be included in ongoing professional development programs.

A number of those providing submissions noted that education and training for health professionals alone might not be sufficient to address the professional cultural barriers and habituated practices of some healthcare organisations. As with any change process, committed senior leadership and credible 'champions' are critical in ensuring effective cultural change and adoption of patient-centred care.<sup>41</sup> Leadership is required at all levels in order to embed and support change. One opportunity to foster leadership on patient-centred care may be through the work being undertaken to establish Lead Clinician Groups, as well as Medicare Locals and Local Hospital Networks.

A number of organisations expressed the view that implementing patient-centred practices at the governance level requires the provision of structured education, training and support for those patients and consumers directly involved in governance. Effective partnerships require active engagement with patients, including supporting patients to develop their capacity to engage in what can often be a challenging and unfamiliar environment. When involving patients in more complex partnerships, such as through governance arrangements, there is value in providing education, training and support to prepare patients for the role and to ensure they are aware of their responsibilities.

'To take the final version of this report and develop meaningful change in the clinical work-space will require ongoing educational input and cultural change. The preparation of educational resources including on-line resources will be a key component.' Submission to Patient-Centred Care consultation

#### Implementation support

While it was generally agreed that the patient should be at the centre of the health system, many organisations providing submissions acknowledged that they found it difficult to implement strategies that were outside the usual processes or systems for care. As with any change, there was a need for guidance on how to implement patient-centred approaches, including tools, strategies and examples of practice where these types of approaches have had a positive impact on health care.

Some concern was expressed in the submissions about the use of implementation guidance, noting that stepby-step protocols and rigid care pathways in themselves can be anathema to patient-centred care. However, given the differing interpretations of what patient-centred care can be and the confusion that can exist about how to implement practices that are patient-centred, there seems to be a need for and value in providing implementation guidance for Australian healthcare organisations.

In addition to general guidance on how to implement patient-centred care, there was also a call to provide guidance about specific strategies and approaches applicable to different sectors and vulnerable groups. There was much discussion on whether general approaches to patient-centred care adequately addressed issues such as health inequalities and the social determinants of health or whether more tailored strategies, tools and resources were required for patients who experience additional complexities.

'... one issue that is not clear to us is how the patients[,] general practitioner[s] and other key health professionals both pre and post acute admission will be factored into the implementation of the recommendations.' Submission to Patient-Centred Care consultation

'There are some unique challenges for mental health services... It should be recognised that there are contradictions between the philosophy of patient-centred care and the realities of restrictions placed on people with mental illness when in the interests of their own safety and safety of others.' Submission to Patient-Centred Care consultation

#### **Policy drivers**

The draft discussion paper described a number of international policy drivers. Two in particular prompted much debate and conflicting views in the submissions: patient experience measurement and financial incentives linked to patient-centred practices. Concerns were expressed about the applicability of the models described in the draft discussion paper to the Australian healthcare context, and about the impact and value of using these types of drivers on healthcare organisations that were not large, well-resourced and highly systematised.

#### Patient experience measurement

Healthcare organisations in England and the USA are required to have systems in place so that they meet government requirements on collecting and publishing information about the healthcare experiences of patients and carers. Government organisations in these countries have established surveys and processes for the consistent collection, comparison and publication of this data, which contributes to the quality improvement processes and overall transparency of the healthcare system.

Within Australia, states and territories undertake their own patient experience and/or satisfaction surveys. There are no nationally agreed core survey questions, and as a consequence national aggregation and analysis of patient experience information is not possible.

The draft discussion paper recommended the establishment of a national core set of patient experience survey questions. Some of those providing submissions questioned the value of this recommendation. Included within these concerns were complex issues around processes for the development of core measurement items, including how they may be integrated with existing tools, and the broader applicability of these types of approaches outside the acute care sector. Generally, it was recognised that there was a need for further exploration of the models of measurement and reporting and their applicability to different parts of the healthcare sector.

'National standardisation (or survey tools) must take into consideration current tools available, and should support the work already established by the profession.' Submission to Patient-Centred Care consultation

#### **Financial incentives**

The use of financial incentives, such as pay-forperformance, is seen as a controversial means of influencing the way care is delivered. There were conflicting views on the effectiveness, value and ethics of what was seen as rewarding healthcare professionals for providing an aspect of care that many considered core business. It should be noted that many of the healthcare systems that do provide pay-for-performance do not actually provide bonuses as such to healthcare providers, but rather withhold a portion of the healthcare provider's salary or income until performance benchmarks are met.<sup>36</sup>

Some of those providing submissions saw financial incentives as requiring further exploration in the context of the proposed health reform arrangements and changes to funding structures. However, it was seen as a complex issue requiring considerable review and investigation regarding the value of this approach.

'... patient-centred care must be embedded in the practice of all health professionals. The suggestion that any sector of the health professional community be given incentive payments to include patient-centred care into their practice (as if it were an optional extra to care delivery) is offensive to nurses and midwives.' Submission to Patient-Centred Care consultation

'The College agrees with this recommendation [on performance based payments] in principle. However, quality indicators and performance measures need to be meaningful to, and be able to be measured, in the general practice setting.'

Submission to Patient-Centred Care consultation

#### Future directions: Where the Commission may go from here

Across Australia, healthcare organisations, healthcare professionals, consumers, and government organisations are increasingly seeing the value in adopting more patient-centred approaches to care. The evidence that demonstrates the effectiveness of utilising patient-centred approaches to care in the delivery of services, and the design and governance of healthcare organisations, is continually being expanded.

Embedding patient-centred practices into the Australian health system is a large and complex task, and many individuals and organisations within the system have a role to play. The Commission's part in this process will be through its role as a national policy leader in safety and quality. The Commission will be working to improve safety and quality by fostering patient-centred approaches. Other issues identified in the submissions, such as government funding structures, workforce availability, educational curricula or integration and coordination of care, will be addressed through other means.

The Commission is committed to promoting the key messages from the discussion paper through a range of methods. For patient-centred care, the Commission's future focus is on supporting, fostering and advocating for research, education and awareness, and the implementation of patient-centred approaches to care.

A key message garnered from the submissions, and one area the Commission will be contributing to, is the need for resources that clarify the understanding of what patientcentred care means at a practical level. There was a clear desire for implementation guidance that addresses the contextual issues applicable to different healthcare settings, sectors and professions. In addition, there was a call for resources on implementing patient-centred strategies specifically designed for patients and consumers, policy makers, healthcare professionals, managers, boards, executives and clinical leaders. A number of international organisations such as Planetree<sup>42</sup> and the Institute for Patient- and Family-Centered Care43 in the USA have undertaken considerable work developing tools and resources for healthcare organisations wishing to adopt patient-centred approaches to care, many of which may be able to be adapted to the Australian context.

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# Improving safety and quality in mental health care

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Mental health has received a lot of attention in recent times. The assertion that one in five Australians will experience a mental health problem in any year is now familiar.<sup>1</sup> Much has been said about the need for increased investment and consequent accountability in mental health services. There have also been concerns and complaints about the adequacy of mental health services, the perceptions expressed by consumers and carers of difficulty in accessing appropriate services, and the standard of care provided.

More positively, at both a State and Australian Government level there has been significant investment in a broad range of services designed to improve and increase access to services, in both the public and private sectors. These include the Better Access initiative, Headspace programs, and a number of state-based initiatives targeted at areas such as housing and support, early intervention, and better linkages between primary and mental health services. The 2011/12 Commonwealth budget included a focus on mental health, with a significant increase in the commitments to initiatives designed to increase timely access to mental health treatment, enhance care coordination, facilitate community linkage, and target vulnerable populations.

Alongside these efforts to improve access to appropriate services, there have also been considerable efforts to improve the quality of services and to improve the safety of services for consumers, carers and staff. A national structure has been established, with the Mental Health Standing Committee (MHSC) reporting to the Australian Health Minister's Conference (AHMC). The MHSC has a number of subcommittees charged with overseeing and monitoring the implementation of the Fourth National Mental Health Plan<sup>2</sup> and the National Mental Health Strategy. The framework of policies and actions to achieve the aims of the strategy are contained within the National Mental Health Policy (2008), the Fourth National Mental Health Plan; An agenda for collaborative government action in mental health 2009–2014<sup>2</sup> and the Mental Health statement of rights and responsibilities.

One of the subcommittees of the MHSC, the Safety and Quality Partnership Subcommittee (SQPS), oversees safety and quality areas at a national level. The SQPS comprises: representatives from each state and territory; consumers and carers; the community-managed sector; and the private sector. A senior representative of the Australian Commission on Safety and Quality in Health Care (the Commission) is a permanent member of the SQPS.

Governments in all states and territories manage specialised public mental health services. The private sector also plays a significant role with services provided by practitioners in office-based private practices and inpatient and day-only services provided by private hospitals. The interrelationship and collaboration between the public and private sectors is a distinctive component of the Australian health system. This chapter outlines the progress to date on a number of key areas at the national level. Areas of focus include:

- the efforts to minimise the use of seclusion and restraint in mental health inpatient facilities
- the development and introduction of revised National Standards for Mental Health Services (NSMHS) that will sit alongside the recently developed National Safety Quality Health Service Standards (available from the Commission's web site: www.safetyandquality.gov.au.)
- the introduction of measures focusing on outcomes and experience of service provision.

# National safety priorities in mental health

In 2005, the AHMAC approved a national plan for reducing harm with the release of the *National Safety Priorities in Mental Health.*<sup>3</sup> This plan outlined the priorities for improving safety in mental health services at a national level. The priorities are:

- 1. reducing suicide and deliberate self harm in mental health services
- 2. reducing use of, and where possible eliminating, restraint and seclusion
- 3. reducing adverse drug events in mental health services
- 4. safe transport of people experiencing mental disorders.

Over the past five years, there has been considerable effort in these areas. Much of this effort has been lead by the Australian Government, but supported and implemented at the state and territory level. In some areas — for example safe transport — the issues faced by jurisdictions such as Western Australia and Northern Territory are very different from those that occur in the more densely populated states such as Victoria and New South Wales.

In some locations the major issues relate to the availability of road ambulance transport and the use of alternative means when an ambulance is not available. Consideration has to be given to the appropriate level of sedation or restraint when transporting an acutely disturbed person by air. The use of air transport varies markedly between states and territories.

In all jurisdictions it is now generally accepted that police should only be used as a means of transport

when other forms are considered unsuitable because of safety concerns or are unavailable in an emergency. In 2008, the AHMC endorsed a set of principles to guide more detailed policies at the jurisdictional level.<sup>4</sup> *The National Safe Transport Principles* are:

- 1. Respect
- 2. Consumer and carer involvement in decision making
- 3. Decision support for transportation processes
- 4. Functional efficiency of transport system
- 5. Timeliness of the transportation process
- 6. Staff competency.

Policy and service development aiming to reduce suicide and self harm goes beyond health services provision. At the health service level, the introduction of Root Cause Analysis (RCA) around critical incidents, such as suicide of an inpatient, has lead to improvements in areas such as information provision, design and amenity of inpatient units, clinical assessment tools, nursing observations and evidence-based guidelines. The RCA methodology supports open exploration of systems and processes that may have contributed to an adverse event. Absolute prevention of suicide is difficult. Suicide differs from other adverse events in a health setting as it is a decision and an action made by the affected person.

Efforts to reduce adverse drug events in mental health services have been supported by the work of a SQPS working group. This group has developed a Framework for Reducing Adverse Medication Events in Mental Health Services, including recommendations for actions such as the production and dissemination of information about commonly used medications to consumers and carers, and better training and information for prescribers. The Framework has been referred to the Commission and the National Prescribing Service to inform their work.



# Seclusion and restraint in mental health services

The safety priority which has seen the most sustained effort and attention has been that of reducing the use of, and where possible eliminating, seclusion and restraint. Seclusion relates to the sole confinement of a person in a place from which they are unable to leave without staff assistance. Mechanical restraint is the application of devices which limit a person's ability to move their limbs. These are practices relevant to all jurisdictions, where clinicians, consumers and carers are united in working towards a better outcome. Work in this area illustrates some of the mechanisms used to develop broad-ranging improvement in practice.

Some people experiencing mental illness may display severely disturbed behaviour. This occurs more often in illnesses such as schizophrenia, bipolar affective disorder, or in crisis situations where there is an underlying personality disorder. Such disturbed behaviour is likely to increase with the use of illicit substances or alcohol, or when the person has difficulty in understanding their environment, such as when the person is also intellectually disabled.

Early intervention during the illness or episode, can reduce agitated and aggressive behaviour. This can include skilled assessment and intervention by nursing and medical staff, and providing a calm and contained environment. In mental health services, extreme behavioural disturbance is sometimes also managed through the use of seclusion or restraint. These coercive interventions are highly regulated and closely monitored through mental health legislation. Such interventions can generally only be imposed when there is an immediate concern of harm to self (the patient) or other people, including healthcare professionals.

However, the experience of being secluded or restrained is sometimes very traumatic, and the psychological effects can be long-lasting. There are now a number of studies internationally that have demonstrated that the use of these interventions can be significantly reduced without any increase in assaults on staff and with much better outcomes for patients and consumers.

In Australia, sustained effort to reduce these practices has occurred at a number of levels. For example, the Commonwealth Department of Health and Ageing funded the National Mental Health Seclusion and Restraint Project that started in 2007. This project included 11

### Box 6.1 Creating Safety

The *Creating Safety* initiative, which commenced in 2008, is a partnership between the Office of the Chief Psychiatrist and the Victorian Quality Council. Through a focus on six adult acute inpatient units, the project aimed to reduce the use of restraint and seclusion and to share findings. The initiative's findings highlighted the role of:

- · leadership and organisational support
- the involvement of all staff, particularly multidisciplinary staff
- the need for practices to comply with legislation and demonstrate use of guidelines
- · rigorous review and audit process
- the experience of consumers and carers
- the physical environment and therapeutic milieu
- training that uses a prevention and early intervention framework
- practice change supported by sustained effort.

Victoria continues to focus on the reduction of seclusion through a range of activities. These include:

- the Chief Psychiatrist facilitating inpatient practice forums
- the reporting and review of data
- the implementation, in 2010, of a clinical review program endorsed by the Chief Psychiatrist and Quality Assurance Committee utilising audit tools that include peer review of seclusion practice.

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'Beacon' demonstration sites that developed improved practices to reduce the use of seclusion.<sup>5</sup>

As part of the project, scholarships were provided to support a number of practitioners to travel to the USA to examine evidence-based practice first-hand. National forums were then held in Australia to share the experiences and outcomes from these projects and to learn from the experience of international experts. The project resulted in the development of a nationally endorsed set of guidelines, and audit tools to guide improved practice. In addition, an indicator relating to the use of seclusion was included in the National Mental Health Performance Framework in order to benchmark and drive changed practices.<sup>6</sup> A number of states also provided funding to support related projects such as the Creating Safety initiative in Victoria (Box 6.1).<sup>7</sup>

The *Victorian Chief Psychiatrist's Annual Report 2009–10* highlights the initial progress made in reducing seclusion episodes following jurisdictional leadership, training and monitoring.<sup>8</sup> Figure 6.1 shows that seclusion peaked in 2006/07 and has declined by 20% since, even though bed capacity in public mental health services expanded over this period and the number of clients admitted to an inpatient unit increased by 12%.

Changing practice in areas such as seclusion and restraint involves changing the culture and model of care (see Chapters 2 and 4). Sustained change requires sustained effort. Annual national forums have assisted with supporting this culture change.<sup>9</sup> Although there has been a focus on this area for a number of years, with some pleasing results, it is necessary to maintain the focus to ensure that practice continues to improve, with better outcomes for all concerned.

### National Standards for Mental Health Services

To date there has not been a national plan devoted to improving quality in mental health services to sit alongside the National Safety Priorities. However, the area has not been lacking in initiatives or progress.

The *National Standards for Mental Health* Services (NSMHS) were first developed in 1996.<sup>10</sup> They provided guidance for public mental health services over a range of domains and were incorporated into accreditation processes through the development of an 'in-depth review' provided by the Australian Council on Healthcare Standards. State and territory funded services were

required to comply with the Standards, and a review against the standards was included in the National Mental Health Report (Figure 6.2).<sup>11</sup>

Where and how mental health services are delivered has changed since 1996. Consequently, the Australian Government sought a review and re-development of the NSMHS in 2006. After a period of consultation and refinement, with input by jurisdictional and national consumer and carer organisations, the revised standards were finally approved and released in 2010 (Box 6.2).<sup>12</sup>

The Standards build on existing professional and workforce practice standards. In recognition of the changed scope of mental health service provision, it is intended that these standards will be considered across the age span of service provision and in a broader range of settings — state-funded clinical mental health services, community-managed (NGO) services and private/office-based services. A subcommittee of the SQPS was formed to oversee the development of guidelines to support the implementation and monitoring of the standards for the three sectors. It is anticipated that consideration of the standards will be incorporated into relevant accreditation processes, including those developed to support accreditation against the generic *National Safety and Quality Health Services Standards* developed by the Commission (available from the Commission's web site: www.safetyandquality.gov.au).

The implementation of the revised standards is being supported through Australian Government funded and jurisdictional projects such as a national forum held in November 2010, the development of an audit tool, posters, and an e-learning module.<sup>13</sup> The accrediting agencies have been involved in these developments.



Figure 6.1 Trend in the use of seclusion in Victoria 2003/04 to 2009/10

Although the revised standards share many features with the original NSMHS, new standards have been included to support a 'recovery' orientation and a stronger focus on the needs of carers. 'Recovery' refers to the personal aspirations and subjective experience of well-being of mental health consumers and sits alongside the more traditional notion of clinical or functional recovery.

'It is important to remember that recovery is not synonymous with cure. Recovery refers to both internal conditions experienced by persons who describe themselves as being in recovery — hope, healing empowerment and connection — and external conditions that facilitate recovery — implementation of human rights, a positive culture of healing and recovery-oriented services.' Jacobson N, Greenley D. What Is Recovery? A Conceptual Model and Explication. *Psychiatr Serv* 2001;52(4):482-85.<sup>14</sup>

A consumer standard has also been developed to acknowledge that the core focus of service provision has to be the consumer. These changes reflect the need to better engage with consumers and carers in areas beyond the traditional remit of health services to include services such as accommodation, employment and education.

The National Safety Priorities are also embedded in the Standards, so as to further integrate safety and quality processes.

Development and implementation of the Standards has not been without its challenges. These include the need to engage and align the diverse views of critical partners from professional and peak bodies, service users, providers, funders and government. In particular, it has been important to support a focus on implementing the standards, without imposing an undue administrative burden on private and public providers.

### Measurement

Developing a system for the routine monitoring of consumer outcomes has received considerable attention and investment over the past decade. The goal has been to develop standard measures of a consumer's clinical status and functioning, and apply these at entry and exit from care so as to allow change to be measured. A suite of measures has been determined for use, across the age span, in different practice settings and includes clinician and consumer-rated measures. Implementation



### Figure 6.2 Percentage of state and territory mental health services that completed external review under the 1996 *National Standards for Mental Health Services*, June 2008

Source: National Mental Health Report, page 55

of the measures has been a complex process, requiring extensive training, updating of information systems in each state and territory, and the development of resources and tools to embed the tools in clinical and operational practice.

National routine measurement of outcomes is now in place across the public and private mental health sectors. Figure 6.3 indicates the proportion of the public mental health system collecting and reporting consumer outcome measures. In 2000, under the auspices of the Australian Medical Association, the Australian Private Hospitals Association, the Australian Health Insurance Association and the Australian Department of Health and Ageing, private hospitals with psychiatric beds published

### Box 6.2 The revised National Standards for Mental Health Services 2010

The revised *National Standards for Mental Health Services* 2010<sup>12</sup> are:

- 1. Rights and responsibilities.
- 2. Safety.
- 3. Consumer and carer participation.
- 4. Diversity responsiveness.
- 5. Promotion and prevention.
- 6. Diversity.
- 7. Carers.
- 8. Consumers.
- 9. Integration.
- Delivery of care (Supporting Recovery; Access; Entry; Assessment and review; Treatment and support; Exit and re-entry).

an agreed National Model for the Collection and Analysis of a Minimum Data Set with Outcome Measures.<sup>15</sup> By 2011 all private hospitals with psychiatric beds had implemented the agreed national collection. Since 2002, on the basis of that data collection, comprehensive standard reports have been provided to both hospitals and health insurers for purposes of quality assurance and benchmarking on a quarterly basis by the Private Mental Health Alliance's (PMHA) Centralised Data Management Service (CDMS). The PMHA website includes copies of the recent reports.<sup>16</sup>

The PMHA is alliance of major stakeholders who fund and provide mental health services in the Australian private sector. Established in 1996, members of the Alliance are committed to the provision of high quality mental health care in the private sector. The PMHA addresses issues related to funding, classification, quality of care, outcome measurement, consumer and carer participation and related matters as they affect the private mental health sector.

By the end of 2011, the PMHA will have completed work on an agreed National Model for the Collection and Analysis of Consumer Perceptions of Care by private hospitals with psychiatric beds, with implementation of the collection, analysis and reporting of that information occurring in 2012.



Understanding the aggregated national outcome results is proving to be complex. The aggregated results indicate that approximately three-quarters of people admitted to public psychiatric inpatient units have a significant reduction in their symptoms from admission to discharge. They also show that most people on discharge from hospital continue to experience symptoms, demonstrating the need for continuing mental health care in the community.

Community results are more opaque as a consequence of the range of models of service provision and the wide range of people receiving treatment. The measurement tools and the results have stimulated many discussions on technical and conceptual issues.<sup>17</sup> These include concerns about the imprecise nature of measurement by the tools, the arbitrary segmentation of care that is being used with the tools, and the absence of a measure that adequately reflects the consumer's 'lived experience'. Australia is continuing to lead the way on building evidence that will inform the development, use and interpretation of outcome indicators in mental health.

### Improvement and innovation

In 2009, the AHMC endorsed the *Fourth National Mental Health Plan*,<sup>2</sup> which provides a framework for mental health reform. One of the five priority areas it identified encompasses quality improvement and innovation. The indicators that will indicate progress in this area include:

- the proportion of services reaching threshold standards of accreditation under the *National Standards for Mental Health Services*
- mental health outcomes for people who receive treatment from state and territory services and the private hospital system
- the proportion of consumers and carers with positive experience of service delivery.

Increased attention is being given to how best to learn from the perceptions of care by consumers and carers — and subsequently improve the quality of services. In general, surveys of consumers and carers about the services provided have given information of limited validity or utility. Tools are being developed to better measure the consumer or carer experience of care to gain a deeper and more integrated platform on which to improve the quality of services. The following projects provide useful examples:

- The Mental Health Consumer Perceptions and Experiences of Adult Mental Health Services (MH-CoPES) Project, conducted through a partnership between the Centre for Mental Health, New South Wales Department of Health and the NSW Consumer Advisory Group.<sup>18</sup>
- The Consumer and Carer Experience of Care Project, conducted by the Victorian Mental Illness Awareness Council in partnership with the Victorian Mental Health Carers Network and the Department of Health.<sup>19</sup>
- Consumer Perceptions of Care Study, conducted jointly by Queensland Health and the Private Mental Health Alliance.<sup>20</sup>



Figure 6.3 Percentage of public mental health system collecting and reporting consumer outcome measures

### **Future directions**

Over the past two decades, mental health services have moved from a largely bed-based, clinically-based service, to a more holistic system of care across state and territory and Australian Government funded clinical and community-managed services. Ensuring continuity of care and consistent standards of safety and quality across such a complex system is a challenge to all levels of government and to all providers of care. Supporting this process is the strong relationship and engagement with consumers and carers.

Health services need to partner with providers of community-based services in order to fully realise the aims of recovery oriented service provision. There may need to be a new dialogue about sharing risk, and tolerating decisions that may not seem to be in the best interest of the decision maker. This shift reflects a supported decision-making approach to treatment and care, where consumers are supported to exercise, wherever possible, informed choice and their capacity to make decisions is understood to be dynamic. Incorporating these difficult areas into health service safety and quality domains, while retaining the high expectations on staff professionalism, will need the support of health leaders over the coming years.

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# Patient safety in primary health care

The majority of health care in Australia is provided in primary health care settings (Box 7.1). In any two week period, almost one in five people visit a general practitioner (GP), and one in ten visit an allied health professional.<sup>1</sup> Given the size and importance of this sector of the health system, it is essential that the care provided in it is safe and of high quality.

A focus on quality in primary health care has brought significant gains for patients. For example, the management of conditions such as diabetes, cancer and asthma has improved between 1998 and 2008 in line with guidelines.<sup>3</sup> Providing care that is in accordance with current professional knowledge is necessary, but alone it is not sufficient for optimal patient outcomes. Care also needs to be safe: patients should not be harmed in the delivery of healthcare services in primary care settings. However, we know that patient safety incidents do occur in primary health care, and that these can cause harm to the patient.<sup>4</sup> Having an explicit focus on patient safety and prevention of harm would support and contribute to the existing efforts to improve the quality of primary health care in Australia.

Patient safety in primary health care is a relatively new area of sustained interest. Consequently, the evidence base about the nature of patient safety risks and patient safety solutions in primary health care is still developing. Nonetheless, from what is known, it is clear that there is an imperative to act to improve patient safety in primary health care.

In 2010, the Australian Commission on Safety and Quality in Health Care (the Commission) gathered information about the views of the primary health sector about patient safety in primary health care. This was done to raise awareness and stimulate discussion about patient safety in primary health care in Australia, and to identify possible priority areas regarding patient safety in primary health care that could be the basis for national discussion and development.

This chapter describes the issues that were identified in this consultation process, how they link with current initiatives and reforms in primary health care in Australia, and the directions they suggest for future actions to improve patient safety in primary health care.

# What do we know about patient safety in primary health care?

In 2010, the Commission released a discussion paper on patient safety in primary health care for public consultation.<sup>5</sup> This paper, *Patient Safety in Primary Health Care*, summarised what is known about the nature and size of the patient safety problem in primary health care. There is an increasing awareness that the patient safety risks that have been identified in hospital environments manifest themselves in different ways in

### Box 7.1 What is 'primary health care'?

The terms 'primary care' and 'primary health care' are used in many different ways. Primary health care is commonly viewed as the first level of health care or the entry point to the healthcare system for consumers.<sup>2</sup> Primary health care can include care delivered by GPs, nurses, allied health providers, indigenous health workers, community pharmacists, dentists, health promotion officers and paramedics. It can be delivered in settings such as general practices, dental practices, community health centres, Aboriginal Community Controlled Health Services, pharmacies, private allied health practices, residential aged care facilities, homes, schools, workplaces and non-health based community settings (such as shopping centres and community halls).

primary health care, and that there are risks to patient safety that are unique to primary health care. Solutions developed for hospitals do not necessarily apply here. Primary health care practitioners can learn from these solutions but also need to rigorously examine their own processes and systems to identify specific patient safety risks and possible solutions.

Key issues about the nature and size of the patient safety problem in primary health care include the following:

- Much of the existing information about patient safety risks in primary health care settings has come from research about reported errors and incidents, particularly in general practice.<sup>4, 6–8</sup> (Box 7.2) These studies have identified two broad types of patient safety incidents:
  - those associated with the *processes of care* such as administration, treatment, investigation and communication (the most common type of reported incident, ranging from 70–90% depending on the study)
  - those associated with the *knowledge and skills* of the practitioner, including missed or delayed diagnosis, wrong treatment and errors in task execution.

- A considerable body of research exists about medication safety in the community.<sup>10</sup> Medication errors occur at all stages of the medication process, including prescribing, supply, administration, monitoring and documentation. The prevalence of errors varies according to the stage and the method used to collect information.
- Attempts to measure the *size of the patient safety problem* in primary health care give varying results, depending on the method used.<sup>11</sup> The most common method has been counting the number of reported patient safety incidents, where estimates have varied from 5 up to 240 incidents per 100,000 consultations.<sup>7, 11</sup> Other methods that have been reported include prospectively identifying patient safety incidents (83 of 351 patient visits identified as involving a patient safety incident/<sup>12</sup> and using a 'global trigger tool' to identify potential adverse events in healthcare records (47 of 500 records indicated the presence of an adverse event).<sup>13</sup>

Although there is uncertainty about the size of the patient safety problem in primary health care, it is clear that patient safety incidents can be associated with harm to the patient. The proportion of reported incidents associated with some level of patient harm varies considerably, based on factors such as the definitions and methodology used, and can range from 10–50% of reported incidents.<sup>4, 6, 12, 14–16</sup> The types of consequences reported include delay in care, pain, emotional or psychological consequences, temporary physical consequences, unexpected hospitalisation, permanent or very serious damage, death, and time and financial cost.

# Patient safety themes in primary health care

The Commission's discussion paper on patient safety in primary health care was sent to key professional bodies and organisations, consumer groups, accreditation and standards agencies, government agencies, safety and quality organisations, research groups and universities with an invitation to comment. An open invitation for written submissions was also issued via the Commission's web site and by email.

The specific points on which the Commission sought feedback in the consultation paper were:

- evidence about patient safety in primary health care and gaps in knowledge
- the types of safety risks that were relevant to the sector and priority areas for action
- exemplar models for improving patient safety in primary health care
- action and activities that could be implemented at a local, state or national level to improve patient safety in primary health.

The Commission received 66 written submissions regarding the discussion paper (Table 7.1). Those providing submissions represented a broad range of primary health care professions and disciplines, providing perspectives that addressed the social, emotional and physical health and well-being of Australians. The submissions received as part of the consultation process are available on the Commission's web site: www.safetyandquality.gov.au.

### Box 7.2 Examples of reported patient safety incidents9

- Accidental incorrect dosage instructions on a prescription resulting in a patient taking a weekly medication daily.
- Collapsed lung resulting from incorrect administration of pain relieving injection for fibromyalgia.
- Abnormal urine result attributed to another patient with a similar name. The wrong patient was treated and there was also a delay in treating the original patient.
- Prescribed anti-malarial medication to a patient on anti-epileptic medication. This could have resulted in a serious interaction if the patient had

not got a second opinion and not taken the anti-malarial medication.

- Incorrect equipment used during surgery when taking specimen for laboratory testing, resulting in accidental destruction of the specimen.
- Delay in receiving pelvic ultrasound results when the radiology practice forgot to send the results to the requesting GP. Also confusion over whether the patient was to collect the films or if the radiology practice was to send the films directly to the GP practice.
- Wrong patient responded to call in waiting room and notes were entered into another patient's file.

### Table 7.1 Number of written submissions by source

Type of organisation	Number of written responses
Professional or member organisations including associations	20
Researcher or university	11
Safety and quality organisations including accreditation organisations and complaints commissioners	9
Government departments or agencies	9
Professional colleges	6
Clinician or health service worker or individual not representing an organisation	4
Health service or organisation	4
Consumer organisation	3
Total	66

Responses to the discussion paper were very positive overall, and there was strong support for the Commission undertaking work in this field. Those providing submissions agreed that patient safety was critical to the delivery of high quality care; it is an important, but largely unknown, aspect of primary health care.

The submissions covered many issues specific to patient safety, as well as a number of broader issues that reflect general concerns with the state of primary health care in Australia. Despite the multiplicity of providers, professions and services within the sector, there was a series of common underlying themes that emerged from these submissions.

### Knowledge of patient safety risks

Those providing submissions considered that there is limited evidence about the type, extent and consequences of patient safety risks in primary health care. This is in itself a risk. Without this sort of knowledge it is hard to know what risks to target or prioritise, hard to build the case for investing in patient safety initiatives, and hard to effectively manage the risks using systematic processes.

It was also considered that the evidence that does exist is not representative of, or relevant to, the whole of the primary health care sector. Rather, it is focused on specific areas related to either profession, discipline or patient type. The evidence is not comprehensive and there is a belief among stakeholders that risks to patient safety in primary health care are much broader than those that have been identified to date.

Some of the submissions noted that many primary health care organisations do have quality systems in place. These systems include accreditation and governance arrangements that require the collection of information about the safety and quality of services delivered. It was acknowledged, however, that these types of systems are under-utilised in parts of the primary health care sector, and that even when they are used, the information that is collected may not be used to improve safety and quality locally, or contribute to the broader knowledge base about patient safety in primary health care.

Activities that were suggested to address this included conducting research into patient safety in primary health care and reviewing the effectiveness of existing strategies and initiatives to improve patient safety in this sector. It was also suggested that putting in place coordinated systems for reporting patient safety incidents in primary health care settings would help to build knowledge and understanding about the nature of patient safety risks and the factors that contribute to their occurrence.

'Further research and evaluation is clearly required across the breadth of primary health care to gain a greater and more accurate understanding of the size, nature and context of the consumer / patient safety problem in this sector.' Submission to Patient Safety in Primary Health Care consultation

### Scope, roles and responsibilities of the sector

Primary health care is a large, disparate sector, with a high proportion of stand-alone private facilities and providers. In a number of submissions it was asserted that the fragmented and complex nature of primary health care is itself an impediment to safe and high quality care. The number of services and professions within the sector, which in many cases provide similar types of care, can lead to a level of confusion for both health professionals and patients regarding the roles and responsibilities of different parties within the sector. This can lead to inappropriate treatment and/or duplication of services and can act as a deterrent to patients seeking care.

There have been changes in responsibilities for professions over the years that have seen optometrists, nurses and other health professionals taking on new tasks, such as limited prescribing. It was suggested that this complexity and overlap of providers and services could make it difficult for patients to determine and navigate the best options for their care, potentially leading to poorer health outcomes.

Linked with this is a perceived lack of a readily identifiable point of responsibility and accountability for ensuring safety and quality, both at the local level and across the primary health care system. The submissions noted that clarity around roles and responsibilities within primary health care should include consideration of responsibility for different aspects of safety, including clinical governance arrangements.

One option that was suggested to address this issue included clarifying and reaching agreement on the roles, responsibilities and boundaries of the primary health care sector. Some of those providing submissions also suggested that it would be useful to conduct research about the impact of the changes in roles and responsibilities on safety and quality.

'There are a huge range of clinical, rehabilitation and health maintenance organisations working in primary health care. This does make it difficult to operationalise a safety framework, given the lack of uniform governance and clinical information systems.' Submission to Patient Safety in Primary Health Care consultation

### Communication and consumer education

The most commonly cited risks to patient safety identified in the submissions related to communication failures, either between the patient and the provider or between care providers. Some of the specific examples of communication risks provided include:

- Limited health literacy of some patients. This can affect the capacity of patients to understand care and treatment requirements, including medication regimens, and may result in poor compliance, treatment adherence and adverse events.
- Inadequate awareness and consideration of the patient's history and broader health needs. This can result in incomplete care planning and treatment.
- Poor referral processes and transfer of information between health professionals and services, resulting in poor continuity, integration and follow-up of care.
- Poor implementation of activities to ensure informed consent and appropriate levels of privacy and confidentiality. Linked to this is the failure to provide services that are appropriate to specific groups such as Aboriginal and Torres Strait Islander peoples and culturally and linguistically diverse populations. These issues can potentially provide a disincentive to continue care and treatment.

In the majority of submissions it was noted that health literacy is a critical safety factor that requires urgent attention. This was seen as an important area for improving the safety of care, particularly for vulnerable populations. Activities that were suggested included facilitating access to, and understanding of, relevant health information for consumers in appropriate formats and providing checklists for consumers highlighting patient safety risks. Other suggestions to improve communication focused on the development and implementation of communication pathways and effective e-health systems.

"While the complaints may be about wrong diagnoses or wrong treatment all of them contain components of failures of communication. Opportunities therefore exist to explore how better communication skills can be used to bolster patient safety in this sector." Submission to Patient Safety in Primary Health Care consultation

### Consistent guidelines and standards

The submissions identified the fact that there are currently a range of competing guidelines and standards available to primary health care providers. These guidelines and standards have often been developed by different agencies for different purposes using different evidence specification, collection and evaluation processes. This can result in variable care recommendations for the same condition and consequently possible risks to patient safety. It was also acknowledged that even when there is a single unambiguous guideline or standard there can be risks to patients when knowledge or adoption of the guideline or standard is not widespread.

Within the submissions it was also identified that there is a trend towards the delivery of more complex and invasive care within the community, particularly within the patient's home (e.g. home dialysis, therapeutic devices in situ). This move may require a more complex level of support than the current guidelines and standards provide

There was a call in some of the submissions for a fast-tracking of the development of guidelines for implementation of new technologies, such as online consultations. It was suggested that the implementation of new technologies quite often outpaces the evidence of their effectiveness, as well as the development of relevant guidelines, processes and standards for their use and that this is also a potential safety risk.

In some submissions it was suggested that it is important to develop clinical practice guidelines and standards that reflect the needs of primary health care services, and provide an unambiguous and evidence-based approach to primary health care. In addition to the existence of such guidelines and standards, mechanisms to support easy and timely access to this information are considered necessary. The implementation and usage of guidelines and standards being linked to pay-for-performance schemes was also suggested.

'... confronting primary care physicians is the widespread availability of single disease clinical management guidelines in an environment of rising levels of multiple morbidity. General practitioners need guidelines on caring for people with multiple chronic illnesses so they can effectively treat them in combination...'

Submission to Patient Safety in Primary Health Care consultation

### Access to primary health care services

Access issues — such as provider availability, affordability of services and equity of services — were noted in the submissions as issues which can influence the likelihood of patients seeking care, the type of care that is delivered, the timeliness and, ultimately, the safety of that care.

Access issues are of particular relevance for the most vulnerable groups in the population, such as Aboriginal and Torres Strait Islander peoples, the elderly, children, people from culturally and linguistically diverse backgrounds, and those in rural and remote areas.

For example, a patient safety risk raised in a number of the submissions was that of the high proportion of casual and short-term practitioners and the difficulty of engaging health professionals in rural and remote areas. These can lead to poor continuity of provider care and treatment plans, lack of holistic and patient-centred care, and can act as a disincentive for patients to attend a service. They also contribute to organisational challenges, such as maintaining clear governance and safety systems.

It was proposed in some submissions that changes in requirements for co-payments and service delivery structures in primary health care had the potential to increase the already significant barriers that vulnerable populations can experience when accessing care. This could increase risks to safety and lead to a greater disparity in health outcomes.

'... it is critical that primary care safety requirements take full account of the potential patient safety risks for patients, not only of the primary care that is available to them as close to home as possible, but also the risks of not receiving that care. These include the risks associated with travelling large distances over poor roads or in difficult conditions to receive care, travelling when injured or in ill health, receiving care a long way from home without support of family and friends, or not travelling and therefore not receiving care because it is too distant to be reachable, not affordable or too far from family responsibilities.'

Submission to Patient Safety in Primary Health Care consultation

### Integration and coordination of care

Lack of integration and coordination of care is logically closely linked with communication and communication failures. Integration and coordination are necessary to ensure that patients are guided through the correct care pathway and attend the most appropriate providers in the most appropriate timeframe, and that their treatment considers all relevant health issues.

A clear theme throughout the submissions was that integration and coordination are lacking within primary health care, and between acute, aged and primary health care. It was indicated that there is insufficient collaboration about the patient's journey between the sectors and there are few follow-up systems for patients being seen across multiple providers. Further, it was stated that care pathways are not clear, clinical handover is inadequate, and accountability and responsibility for care is poorly managed.

It was considered — despite wide acknowledgement that multidisciplinary care is effective and important for patients with chronic conditions — that within primary health care there is poor implementation of this type of care. It was suggested in a number of submissions that current systems of support and funding for multidisciplinary care favour a limited number of disciplines and do not encourage genuine collaboration within and across the sector.

One strategy that was identified in the submissions for addressing these issues included the development of coordinated systems and processes to ensure standardised information is transferred between providers at referral, admission and discharge. Other suggestions already noted here also have the potential to improve the coordination and integration of care, including improving health literacy, and building e-health systems and improved communication pathways.

'There is sometimes a dilution of responsibility as the many different services provide a range of care to the one client. There is a tendency to document and react according to one's professional discipline. Effective communication becomes a safety issue...' Submission to Patient Safety in Primary Health Care consultation

### Implications of these themes

The themes identified in the consultation process reflect the broad range of factors that affect safety and quality in primary health care settings.<sup>17</sup> They also highlight synergies and opportunities for improving patient safety in primary health care. The implications of these themes are explored in this section.

## Suggestions to improve patient safety in primary health care

The organisations and individuals providing submissions suggested a range of actions that could be undertaken to improve patient safety in primary health care. These suggestions included activities that could be undertaken at an organisational level to improve capacity to identify, manage and respond to patient safety risks. Actions were also suggested that applied to the health system as a whole.

The identified actions that could be applied by organisations to improve patient safety included:

- developing clinical governance, risk management and quality improvement strategies, including processes to learn from patient safety incidents
- putting in place processes to involve patients and families in discussions about patient safety, such as forming 'critical friends' groups<sup>18</sup>
- providing mentoring and appropriate supervision to ensure health professionals are providing safe care
- being aware of the characteristics of the practice population so that appropriate information can be available for patients (e.g. the presence of specific language groups).

Actions that were identified as relevant at a system level included:

- developing agreed performance indicators for primary health care so as to facilitate the collecting of information about patient safety
- developing standards for clinical software systems to ensure that they are based on the best available evidence and align with up-to-date clinical guidelines
- implementing e-health systems to improve integration of care and support sharing of information.

Although many of the suggestions to improve patient safety were focused on broad system changes, such as e-health, many were focused on actions that could be undertaken in individual practices, community health centres, pharmacies and other settings that deliver primary health care. In some cases information and guidance may be needed to implement these actions. However, many of the suggestions that were made could bring improvements to patient safety in primary health care without significant resource requirements or need for structural changes.

Information about how to improve patient safety in primary health care is already available from a range of sources, both within Australia and internationally. For example, in addition to the accreditation standards for general practice, the Royal Australasian College of General Practitioners (RACGP) has developed a range of tools and education material about patient safety. These include resources about analysing near misses; teamwork, leadership and human factors; infection control; supporting patients to be more actively involved in their own care; undertaking procedures; and regaining trust after an adverse event (www.racgp.org.au).

## Links with existing health policies and priorities

The themes identified in the consultation process reflect a number of the core safety and quality issues in existing health policies and priorities, emphasising the importance of safety and quality as key drivers for reform.

The Australian Safety and Quality Framework for Health Care identifies three core principles for safe and high quality care.<sup>19</sup> These are that care is consumer centred, driven by information and organised for safety. Issues identified in the submissions align with many of the action areas contained in the Framework, including:

- develop methods and models to help patients get health services when they need them
- increase health literacy
- improve continuity of care
- use agreed guidelines to reduce inappropriate variation in the delivery of care
- collect and analyse safety and quality information to improve care
- ensure funding models are designed to support safety and quality
- support, implement and evaluate e-health.

The themes from the consultation also align with key policy priorities identified in the *National Primary Health Care Strategy*<sup>20</sup> and other initiatives that have informed current health reform efforts.<sup>21, 22</sup> These policy priorities

emphasise issues including integration of service delivery, continuity and coordination of care, improving access to services, use of data to improve performance and development of clinical guidelines and standards.

The details of current reform processes within the Australian health system are becoming clearer, and it is evident that the changes are likely to have an impact on the issues raised during the consultation. Goals for both the Medicare Locals and Lead Clinician Groups include providing linkages between different primary health care providers, and between hospitals, aged care and primary health care settings. These structures and groups will also be involved in the dissemination and implementation of clinical standards and guidelines and in ensuring that healthcare services are effective and of high quality. The results of this consultation process reinforce the importance of building safety and quality considerations into the design of health systems.

### **Future directions**

The primary health care sector is large and complex. It was apparent from the variety of professions, affiliations, locations, service types, qualifications and skills of those who were involved in providing submissions to the consultation process that patient safety risks vary considerably, depending on the context and environment in which care is delivered. There is value in, and support for, work to be undertaken at a national level to improve patient safety. However, due to this contextual and environmental variability, this type of work needs to be locally adapted to ensure that it is appropriate and relevant to local services and consumers.

The finding of this national consultation process reinforce the importance of the approach that the Commission takes with all of its work: to work in partnership with organisations and individuals to improve the safety and quality of health care in Australia and achieve better outcomes for patients and consumers. The submissions are a rich source of information about key patient safety issues, and have provided ideas about actions that could be taken to improve patient safety in primary health care. These ideas, together with opportunities that arise from current reform processes, programs and policies from key organisations within the sector, and the Commission's current programs, will provide the basis for an ongoing program of work in this area.

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# Supporting safety in e-health

The implementation of e-health initiatives is of key importance to the Australian health system in its efforts to improve the safety and quality of health care. Examples of the effective use of e-health initiatives include electronic transmission of consistently legible prescriptions, transmission of scans and X-rays to remote practitioners, and tele-psychiatry, all of which contribute to improving patient safety and the quality of health care. *e-health is... 'the combined use of electronic communication and information technology in the health sector.'* World Health Organization

The Australian Commission on Safety and Quality in Health Care (the Commission) is supporting safety in e-health. It's work builds on the development and uptake of electronic clinical systems to optimise and improve safety and quality in health care. The Commission recognises that further work to ensure the safety and quality benefits to patients of e-health implementation needs to be undertaken and will continue to participate in development of this work.

The main elements of the Commission's current support for safety in e-health are:

- optimising safety and quality of clinical e-health system implementation, with an initial focus on discharge summary and hospital medication management programs
- using e-health initiatives to improve the safety and quality of health care
- the secondary use of information agenda optimising the re-use and analyses of data from clinical systems to monitor and drive further improvements in healthcare safety and quality.

In this area, the Commission collaborates with the National E-Health and Information Principal Committee of the Australian Health Ministers' Advisory Council, the National E-Health Transition Authority (NEHTA), the National Health Chief Information Officers Forum, and other relevant agencies to promote the safety and quality agenda within national e-health programs.

Three projects that the Commission has been working on in e-health are:

- *Clinical handover* assessing the safety and quality effects of e-discharge summaries, and producing a toolkit to optimise implementation.
- *Medication safety* providing guidance on safe introduction of electronic medication management systems (EMMS) in hospitals.
- Healthcare associated infection enhancing surveillance and clinical management of healthcare associated infections through structured test requesting and reporting of healthcare associated infections.

### Box 8.1 Collaborative projects: the Commission and the National E-Health Transition Authority

The National E-Health Transition Authority (NEHTA) was established by the Australian, state and territory governments to develop better ways of electronically collecting and securely exchanging health information. Electronic health information (or e-health) systems that can securely and efficiently exchange data can significantly improve how important clinical and administrative information is communicated between healthcare professionals. As a result, e-health systems have the potential to unlock substantially greater benefits for quality, safety and efficiency.

The Commission collaborates with NEHTA on the following projects:

- *Electronic medication management systems (EMMS) in hospitals.* NEHTA and the Commission jointly funded and supported the development of a guide for the safe implementation of EMMS in hospitals.<sup>2</sup>
- Electronic discharge summaries (EDS). The national Continuity of Care Reference Group, which is convened by NEHTA, provides advice and strategic direction on the development and uptake of a self-evaluation toolkit for optimising safe implementation of EDS. Staff from NEHTA's Benefits Realisation and Continuity of Care teams formed part of the project oversight group, providing alignment with concurrent and related national programs and activity.
- Clinical quality registries a national approach.

The Commission is charged with developing national arrangements for clinical quality registries. NEHTA's Architecture Group is working with the Commission and a number of registries to develop options and cost best practice architecture for high priority clinical quality registries.

### **Clinical handover**

Clinical handover is the transfer of professional responsibility and accountability for some or all aspects of care for a patient, or group of patients, to another person or professional group on a temporary or permanent basis. This can occur many times during a patient's visit within the health system, such as during shift changes between ward staff in a hospital or upon discharge from the hospital into the community.

Research shows that a number of patient safety and quality of care risks can arise during clinical handover because of poor communication and variations in quantity and quality of information.<sup>1</sup> A particular highrisk scenario occurs at discharge from hospital to the community. Flowing on from these handover risks is an increase in the incidence of errors, including medication management, which can lead to the incorrect dispensing of medicines and potential patient harm.

The purpose of the Commission's Clinical Handover program is to identify, develop and improve communication practices at clinical handover. This program is supporting the improvement of handover communication across a range of healthcare settings including public and private hospitals and primary and ambulatory care settings.

### Electronic discharge summary systems

The Commission's Clinical Handover program includes supporting the implementation of systems which generate and transmit discharge summaries, electronic referrals and specialist letters. The Commission is supporting the implementation of electronic discharge summary (EDS) systems through a study of the safety and quality impact of EDSs, and the preparation of an EDS readiness selfevaluation toolkit.<sup>3-4</sup>

EDS systems aim to provide accurate, succinct and timely information to the GP and other primary health care providers about a patient's hospital stay, along with recommendations for follow-up, changes to medications, and other patient care information. This should also include the patient being aware of their discharge information and receiving a copy of the EDS.

By facilitating communication of patient information within the primary health care sector, an EDS enables improvements in patient care processes that align with best practice. This, in turn, improves patient safety, patient outcomes and quality of health care through enhanced continuity of care, patient handover, timeliness of receipt of patient information, legibility, consistency of information, and increased security.

A variety of electronic systems have been developed and implemented by healthcare services. This use of different products and versions can create potential problems when implementing a standardised system of recording medical information across numerous institutions. For this reason, the Commission conducted a safety and quality evaluation of EDS systems to ensure their optimal implementation.<sup>3</sup>

The evaluation included testing a variety of assumptions, lessons learned from an implementation in Brisbane, advice from Australian health services which had already implemented such systems, assessment of EDS implementations at sites in Victoria and the ACT, and a review of recent research. The evaluation found that successful implementation of EDS was facilitated by adequate training of people who would be using the technology, effective management and communication throughout the planning and implementation phases, and the use of feedback to reinforce positive changes as they occurred.

The Commission subsequently produced a report scoping the major findings on the safety and quality implications for EDS and a self-evaluation toolkit which provides a practical standardised process for sites to follow when implementing an EDS system.<sup>3,3</sup>

As part of this work, a validation workshop was also held on the EDS self-evaluation toolkit. The workshop participants included representatives from the pharmacy sector, general practice, junior medical officers, information technology and change managers. The workshop was conducted to ensure that the toolkit captured the views and needs of health service users and general practitioners. Following this, the Commission conducted further work to ensure that the toolkit aligns with the guide for implementing electronic medication management systems in hospitals.<sup>6</sup>

This work links with the major national program being undertaken by the Australian Government, the Council of Australian Governments and NEHTA to build a personally controlled electronic health record (PCEHR), which requires the use of EDSs, electronic referral and specialist letters.

The PCEHR is an electronic record of a person's medical history that can be stored and shared in a network

### Box 8.2 The personally controlled electronic health record

The creation of the PCEHR system is being undertaken based on a combination of 'top down' national initiatives and 'bottom up' lead implementation projects. Using this approach, the aim is to achieve successful e-health project outcomes at the healthcare service level whilst ensuring national frameworks and actions are in place to deliver a national electronically integrated healthcare system.

To date, the 'bottom up' implementation of the PCEHR has comprised two waves.

### Wave 1

The first phase of this work involved the Hunter Urban Division of General Practice, GP Partners Limited and Melbourne East General Practice Network Limited. These groups worked with NEHTA to prepare implementation plan proposals for lead implementation projects.

### Wave 2

In this phase of the work, nine lead sites representing a range of environments across the healthcare sector were chosen to develop project implementation plans and testing for the PCEHR.

The key objective of this phase is to involve sites that service a wide demographic across a variety of

of connected systems. Information from a number of different systems is integrated into a single document, allowing healthcare providers to make better-informed decisions about a patient's health and treatment advice. Nine lead sites, which include hospitals and associated general practices, have been funded to become 'early adopters' of the PCEHR (Box 8.2).

The Commission has been working with NEHTA to support the implementation of EDS, electronic referrals and specialist letters at the state, territory and primary health care service level. These patient-centred strategies will provide a robust continuity of care across services offered by the health sector. healthcare sectors (public and private, primary care, aged care and private specialists) to test the broad set of functions the PCEHR will need to provide. These functions involve health summaries, discharge summaries and medications, personal health diaries and consumer portals. In this way, lessons can be learned and a basic foundation built to support the development of national infrastructure.

The outcomes of this testing are also expected to deliver early benefits including improved coordination of care, enhanced continuity of care and improved medication management as well as demonstrating sustainable components in e-health which will enable later integration with the national infrastructure.

The nine organisations selected to develop a project implementation plan are:

- Brisbane South Division Limited
- NSW Department of Health
- Cradle Coast Electronic Health Information Exchange (Tasmania)
- Calvary Health Care ACT Limited
- Northern Territory Department of Health and Families
- St Vincent's Hospital and Mater Health Sydney Limited
- Fred IT Group Pty Limited
- Medibank Private Limited
- Mater Misericordiae Health Services (Brisbane).



# Electronic medication management systems

The Commission's Medication Safety Program focuses on the following five areas:

- · standardisations and systems improvement
- reducing practice gaps
- continuity of medicines management
- using technology
- advocating medication safety and quality by working with the National Medicines Policy Executive and other organisations responsible for national medication safety and quality.

In 2009, the Commission conducted a scoping study that identified the potential for electronic medication management systems (EMMS) to improve hospital medication safety.<sup>5</sup> The outcome of that work was a guide — *Electronic Medication Management Systems: A Guide to Safe Implementation* — to support the implementation of EMMS in hospitals.<sup>2</sup> This guide is intended to reduce duplication of effort as health services prepare for the implementation of EMMS in Australian hospitals. It is also designed to minimise the potential for new types of errors by learning from international and local EMMS experience and by providing tools to support hospitals.

Accurate documentation of patient information and the correct understanding of this information by staff is vital in avoiding errors such as omission or overdose of medicines. EMMS in hospitals are intended to reduce medication errors through:

• improved prescription legibility

- incorporated dose calculation
- enhanced clinical decision support through links to prescribing protocols, drug interaction databases and each patient's laboratory results.

In the hospital medication management process (Figure 8.1), the doctor prescribes, the pharmacist dispenses (as well as conducting ongoing audits and reviews) and the nurse administers. Medication errors remain one of the most common type of medical incident reported in hospitals. Of all medication errors, omission or overdose of medicines occur most frequently. EMMS can aid in reducing medication errors. Reducing all errors will significantly improve patient safety and the quality use of medicines.

While Australian general practices have already achieved a high uptake of electronic prescribing, the adoption of EMMS in hospitals is more complex.<sup>5</sup> Few hospitals in Australia have implemented EMMS to date.

### Successful implementation

E-health programs and systems can significantly improve the safety and quality of health care. However, each clinical system implementation constitutes a massive change and infrastructure project, and there are multiple points of potential failure or risk. Clinical and executive leadership, pre-planning and change management in work practice are vital for the successful implementation of e-health programs that enhance clinical practice.

The Commission-developed guide ensures that implementation of EMMS in hospitals occurs as smoothly as possible. The guide and associated materials builds on good project management practices and previous implementation experiences of hospitals



### Figure 8.1 Hospital medication management process

Source: Australian Commission on Safety and Quality in Health Care. Electronic Medication Management Systems: A Guide to Safe Implementation. Sydney: ACSQHC, 2011.

and primary health care. These resources aim to minimise the incorporation of existing unsafe practices into new systems as well as avoid the introduction of new errors that can arise from poor clinical system implementation.<sup>2,4,6</sup>

The Commission has developed three documents to help hospitals safely specify and implement EMMS:

- Electronic Medication Management Systems: A Guide to Safe Implementation<sup>2</sup>
- Electronic Medication Management Systems: Specialist Functions
- Electronic Medication Management Systems: Implementation Plan.<sup>6</sup>

These tools were developed through detailed consultation, including with four Australian sites that had already implemented EMMS:

- Royal Darwin Hospital and the Northern Territory
- Epworth Hospital, Melbourne
- Concord Repatriation General Hospital, Sydney
- St Vincent's Hospital, Sydney.

### **Project management**

Good project management is a key factor in implementing clinical systems. Pre-empting risks before the implementation of a new system is important to obtaining a successful outcome. There are well established project management methodologies to support transformational work practice redesign like the introduction of EMMS. It is also important that high quality processes exist before implementation begins, including a system of management based on a thorough understanding of the changes required in work practice.

Mapping out current work flows, as well as planning future practice, is essential to identify and mitigate risks before full implementation. Similarly, training in the use of new software and extensive testing of a new system are essential elements of EMMS and EDS implementation, and must be planned and budgeted for. Each risk must be logged, analysed and mitigated, and a detailed infrastructure plan including backup, redundancy and disaster recovery capacities must be in place.

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Features of a successful implementation of an EDS system include:

- identifying and maintaining ownership and leadership of the EDS system
- engaging those taking part in the project
- modifying the EDS system to meet local needs before implementation to reduce the impact of implementation on workflows.

Electronic management of patient information brings with it potential safety and quality risks that can lead to the introduction of new errors. These can arise because of limited flexibility in the electronic systems used by healthcare services. Limitations in the ability to autopopulate sections of the EDS can lead to the potential for transcription errors or the requirement for manual transcription of medications from multiple sources of information into the EDS. Other problems can arise from difficulties locating important patient information within the EDS and system interactions that may affect the accuracy of information transcribed.

### **Future directions**

The implementation of EDS and EMMS in Australian hospitals is underway and initial qualitative evidence suggests the results are promising.

Building accurate and consistent healthcare and medication records around the patient, rather than separately in each healthcare facility, can only enhance each patient's journey. Work with hospitals and GPs already using EDS has highlighted the importance of consistent and accurate recording of prescribed medications for the patient.

Tools for the safe implementation of complex clinical systems need to be used, reviewed and refined. The Commission is working with hospitals implementing EMMS to produce a second edition of *Electronic Medication Management Systems: A Guide to Safe Implementation.* Hospital and GP networks, particularly those involved in the PCEHR rollout, are also helping refine the *Electronic Discharge Summary Systems Self-Evaluation Toolkit.* Building secure and accurate clinical information organised around the patient to inform care is fundamental to a system that is 'consumer centred, organised for safety and driven by information'.<sup>10</sup>

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# Improving surveillance of healthcare associated infection

Patients are at risk of acquiring infection when being treated in the healthcare environment. Healthcare associated infection (HAI) can cause significant patient harm and its prevention is important in improving patient safety and the quality of care. This chapter provides an overview of current approaches to the surveillance of HAIs, and describes how the development and uptake of secure and structured electronic messaging from laboratories to clinicians and health departments can enhance both the clinical management and surveillance of HAIs.

HAI is a relatively common complication that mainly occurs in hospitals — about 200,000 HAIs occur each year in Australia.<sup>1</sup> It is estimated that 2 million hospital bed days per year are lost due to HAI in Australia.<sup>1</sup> Other burdens associated with HAI include family or community suffering, increased use of healthcare resources for diagnosis and treatment, and the development of antibiotic resistance.

The main forms of HAI are usually defined by the type of microorganism, physical location or patient population affected. A report published by the Australian Commission on Safety and Quality in Health Care (the Commission) in 2008 identified four priority HAIs, as causing the most harm in Australian hospitals:

- Staphylococcus aureus blood stream infection (SABSI).
- Clostridium difficile infection (CDI).
- Surgical site infection (SSI).
- Central line acquired blood stream infection (CLABSI).<sup>1</sup>

Although not the most common HAIs, blood stream infections such as SABSI and CLABSI cause significant patient illness and death. It is reported that 17–29% of people who acquire bloodstream infections when in hospital die from these while still in hospital.<sup>1</sup> More than half of these infections are associated with healthcare procedures such as surgery or insertion of intravenous catheters. In addition, more patients with intravenous catheters are now being managed out of hospital, and these infections are increasingly being detected in the community.<sup>1</sup>

Increased attention was brought to the issue of surveillance of HAI in Australia after the results of a study on antibiotic use showed there was a link between the use of avoparcin in animals and vancomycin resistance in humans.<sup>2</sup> The Joint Expert Technical Advisory Committee on Antibiotic Resistance was established in 1998 and released a report in 1999 that made recommendations on the regulation and use of antibiotics.<sup>3</sup> This was followed by a number of initiatives, including workshops and consultations across the healthcare sector, that resulted in HAI being identified as one of five national priority areas in health care. This work identified that the routine collection and analysis of data for HAI in Australia was fragmented. Recommendations that followed emphasised the need for a nationally coordinated approach to improve patient safety and decrease the incidence of HAIs. In 2008, Australian Health Ministers endorsed the Commission's recommendation that all hospitals conduct routine surveillance of HAIs, starting with *Staphylococcus aureus* bloodstream infection and the diarrhoea infection caused by *Clostridium difficile*.

Since 2006, the Commission has been focusing on HAI as a priority program, with the aim of developing national strategies to further reduce HAI.

# The Commission's work on infection prevention and control

Not all HAIs are preventable. However, significantly reducing the rate of these infections in a hospital is possible. Achieving this requires a multi-faceted approach which will provide a reduction in mortality, morbidity and antimicrobial resistance, as well as improved hospital access for planned and unplanned admissions, and more efficient and cost-effective health services.

The Commission has developed five streams of work to support the development of a national approach to monitoring, reducing and preventing HAI in Australian hospitals. The streams are:

- the National Hand Hygiene Initiative
- the Antimicrobial Stewardship Project
- national infection control guidelines
- the Building Clinician Capacity Project
- a National Surveillance Initiative for the Prevention of HAIs.

Each of these streams is considered in the following paragraphs.

The National Hand Hygiene Initiative started in all states and territories, as well as the private hospital sector, in 2010.<sup>4</sup> The objectives of this initiative are to promote and sustain improvements in hand hygiene compliance rates, to reduce HAI, and to measure hospital performance in hand hygiene. Box 9.1 My 5 Moments for Hand Hygiene

Improving hand hygiene among healthcare workers is the single most effective intervention to reduce the risk of hospital-associated infections in Australian hospitals. http://www. hha.org.au/home/5-moments-for-hand-hygiene. aspx

The World Health Organization's My 5 Moments for Hand Hygiene program is a user-focused approach for understanding, training, monitoring and reporting hand hygiene. This approach recommends healthcare workers clean their hands at five critical times:

- before touching a patient
- before clean/aseptic procedures
- after body fluid exposure/risk
- after touching a patient
- after touching a patient's surroundings.

Adapted from the Hand Hygiene Australia web site.<sup>7</sup>



The Antimicrobial Stewardship Project is assessing current antibiotic surveillance processes in Australia with the aim of optimising the use of antimicrobials in hospitals. The Commission published *Antimicrobial Stewardship in Australian Hospitals* in 2011 to assist hospitals in developing and implementing antimicrobial stewardship programs.<sup>5</sup> These programs provide an effective approach to reducing inappropriate antimicrobial use, improving patient outcomes and reducing adverse consequences of antimicrobial use.

The Australian Guidelines for the prevention and control of infection in healthcare were produced by the National Health and Medical Research Council (NHMRC) to ensure their currency and relevance to infection prevention and control across the broad spectrum of healthcare settings.<sup>6</sup> The Guidelines were released for public consultation in January 2010 and were published in October 2010. Workshops to assist with implementation of the guidelines, education modules and other resources have been developed to drive implementation. Along with hand hygiene and surveillance and antimicrobial management programs, infection control is considered a key strategy in decreasing preventable HAI.

The Building Clinician Capacity Project aims to address skill or knowledge-based gaps in infection control professionals across healthcare settings through education modules for rural and trainee infection control professionals. Ten education modules were released in 2010 to support the implementation of the *Australian Guidelines for the prevention and control of infection in healthcare*.<sup>6</sup>

The National Surveillance Initiative for the Prevention of HAIs is exploring options for developing a national surveillance system to monitor HAI. This is to ensure that the messages derived from surveillance data are converted into public health action for better health outcomes. An evidence-based authoritative report compiled by the Commission in 2008 that examined current HAI issues as well as international and Australian surveillance initiatives, has provided the basis for this work.<sup>1</sup>

These streams aim to help staff involved in infection prevention, such as general practitioners, infectious diseases specialists, microbiologists, and infectious control professionals. They also support those who work in private or small hospitals, to identify risk-management strategies to reduce HAI.

# Specific types of HAI and their locations

### Staphylococcus aureus blood stream infection

*Staphylococcus aureus* is the most common cause of blood stream infections in hospitals — about 7000 *S. aureus* infections occur each year in Australian hospitals.<sup>1</sup> These infections are potentially preventable because most of them are associated with medical procedures, such as the use of intravascular catheters.

*S. aureus* infections occur in various units within a hospital, particularly where intravenous catheters and invasive procedures are common. However, immunocompromised people — for example, those on haemodialysis or chemotherapy — and patients in intensive care units (ICUs) are the most susceptible to infection.

Good hand hygiene practice (see Box 9.1) by hospital staff decreases rates of *S. aureus* infection. Improved hand hygiene compliance is the focus of the Commission's National Hand Hygiene Initiative.

### Clostridium difficile infection or diarrhoea

The *Clostridum difficile* bacterium is the most common cause of hospital-acquired diarrhoea in Australia. Almost all patients who acquire this infection have been treated with antibiotics. *Clostridium difficile* infection (CDI) causes significant harm to patients, in particular older patients, and is highly infectious.

*C. difficile* is found in the stools of 15–25% of patients with antibiotic-associated diarrhoea and more than 95% of patients with pseudomembranous colitis, a condition in which the large intestine becomes inflamed.<sup>8</sup> Infected patients in hospitals provide a reservoir of infection, as do facilities themselves which can harbour *C. difficile* spores that have developed resistance to many disinfectants.

This infection creates considerable costs for the healthcare system. Studies from Europe and North America show that patients with CDI stay in hospital one to three weeks longer than expected.<sup>9</sup>

Monitoring the prevalence of CDI is important in order to determine the rate of infection, as well as to ascertain a base level to compare with if extreme incidents occur, such as the emergence of new strains. The emergence of an epidemic strain of *C. difficile* (PCR ribotype 027), which shows increased antibiotic resistance and toxin

production, has resulted in an increase in CDI rates in some healthcare facilities in the USA, Canada and Europe over the last decade or so. $^{10-11}$ 

One reason the Commission prioritised national surveillance was to monitor for the emergence of hypervirulent *C. difficile* strains in Australia. The PCR 027 ribotype has now been identified in Australia (Box 9.2).<sup>12</sup>

Thus, implementing the necessary interventions such as improved surveillance, enhanced hygiene and infection control initiatives and antimicrobial stewardship — is essential to preventing and reducing CDI in hospitals.

### Central line acquired blood stream infection

A central venous catheter, also sometimes called a central line, is a long, thin, flexible tube used to give medicines, fluids, nutrients, or blood products over a period of time, up to several weeks. A catheter is often inserted through the skin into the arm or chest into a large vein. The catheter is threaded through the vein until it reaches a large vein near the heart.

ICUs account for 20–30% of all HAIs.<sup>1, 15-16</sup> Patients in intensive care have a high risk of acquiring an infection. Very few ICU patients do not have a central venous catheter, and most ICU patients are ventilated for at least part of their stay. Both interventions are necessary and highly therapeutic. However, CLABSI and ventilator-associated pneumonia are the two most important infections that occur in this environment.

### Surgical site infection

Infection of a surgical wound is one of the most widely recognised HAIs, and surgical site infection (SSI) surveillance programs were amongst the earliest established elements in monitoring infections in hospitals. These infections have the greatest impact on a patient's length of stay in hospital.

SSIs can be caused by a range of different microorganisms. The most common are infections with species that live on the skin — such as *S. aureus* and coagulase negative staphylococci — following 'clean' procedures. Other surgical procedures that involve the bowel, for example, can result in infection by the microbial species that live in the bowel. One type is gram negative bacteria infection following rectal surgery.

## Box 9.2 The first cases of CDI R027 in Australia

In 2011, Richards and colleagues reported the first case of locally acquired CDI. In January 2010, an 83 year old man underwent aortic valve replacement surgery. While in hospital, he contracted a *Clostridium difficile* infection. However, the severity of his condition led to further investigation. Typing of the sample revealed a strain of CDI not previously diagnosed in Australia as a locally transmitted infection. CDI ribotype 027 produces severe and life threatening symptoms — it is termed a 'hyper-virulent' strain of CDI.<sup>12</sup>

In the same 4 April 2011 issue of the *Medical Journal of Australia* as the first locally acquired case was reported, an editorial noted that there have been further clusters of *C. difficile* ribotype 027 infection centred around residential aged care facilities.<sup>13</sup>

Also in the same journal issue, the Australasian Society for Infectious Diseases (ASID) published national guidelines for the diagnosis and treatment of CDI.<sup>14</sup>

### Surveillance

The Commission is committed to reducing, and where possible, preventing HAIs and the associated costs to patients, the community and healthcare system. The monitoring, reporting and creation of a feedback loop to the hospital are essential elements of a surveillance process that aims to improve quality of care and reduce adverse events and patient harm. However, capturing the detailed clinical information required for surveillance and case management can be time-consuming and burdensome.

Numerous national HAI initiatives reflect the national recognition of the importance of lessening this type of harm and increasing awareness about HAI in hospitals. They build on surveillance programs at state, territory and private hospital level.

 In November 2008, Health Ministers endorsed the Commission's recommendation for the national surveillance of SABSI and CDI in hospitals. In 2009, they endorsed the proposal for routine local reporting of S. *aureus* and *C. difficile* in public hospitals, starting in July 2011. Monitoring these HAI rates is part of the national set of core, hospital-based outcome indicators.

- The National Healthcare Agreement, one of six national agreements incorporated in the current Intergovernmental Agreement on Federal Financial Relations, requires each state to report *S. aureus* infection in hospitals.<sup>17</sup> This agreement contains performance indicators for hospitals, and the rate of S. aureus infection is one of these. The rate of SABSI is required to be no more than 2 per 10,000 occupiedbed days for acute care public hospitals in each state and territory by 2011/12. According to the Report on Government Services 2011 the rates reported by the states and territories currently range between 1 and 2 per 10,000.<sup>18</sup> Expert groups convened by the Commission developed the national definition for healthcare associated SABSI, which states and territories now use.
- The Australian and New Zealand Intensive Care Society (ANZICS) is working with the Commission in leading a national program to decrease CLABSI in Australian ICUs. The project aims to reduce the Australian CLABSI rate to less than 1 per 1000 line days (days patients have a central line inserted). This program began in 2010 and the effectiveness of the campaign will be assessed through monitoring the rate of infection in ICUs. A report on a NSW initiative noted that they achieved a reduction from 3.0 to 1.2 per 1000 line days.<sup>19</sup>

### **Solutions**

Surveillance means tracking the rates and locations of HAIs in and across hospitals. 'Spikes' in a hospital's infection rates signal a change in prevalence and the need for local investigation. Consistently higher rates may reflect a trend of increased infection and harm, and require local investigation and intervention. Surveillance should mean that every hospital monitors its own rates and trends of HAIs, and that the data is reported accurately, routinely and in a timely manner.

The work of skilled infection control professionals is essential in the confirmation of whether an infection is, in fact, healthcare associated. However, surveillance practice in many Australian hospitals is based on detection and manual counting of identified cases. Manual case HAI detection can present some difficulties because these methods are time-consuming, and can result in underestimation of infections, or incomplete capture of required case information.<sup>20</sup>

The Commission is working to improve surveillance by promoting standards across the sector. A range of resources is being made available to facilitate accurate collection and analysis of data for HAI. Good surveillance requires the following:

- Standard, clinically-sound definitions national definitions have been developed for SABSI, CDI and CLABSI.
- Clear specification of criteria, inclusions, exclusions and denominators — the development of a data dictionary by the Commission has provided standard information sets to support local surveillance of specific HAIs, and facilitate consistency between healthcare facilities across different states when working in this area.
- Consistent, reproducible and epidemiologically sound data collection processes — to ensure that different surveillance practitioners will obtain the same result for the same hospital for the same period.
- Best practice statistical and graphical presentation of infection rates — to accurately flag and depict significant variance and trends.

The national HAI data set specification<sup>21</sup> supports consistent data capture from local surveillance programs, whether they use paper-based forms and simple databases, detailed audits, or sophisticated approaches which build on laboratory reports or other clinical systems.

A significant part of what is required to support accurate and sensitive surveillance of HAIs requires information from microbiology laboratory requesting and reporting. The Commission is facilitating the development of detailed clinical and technical standards which will support online ordering and electronic reporting of microbiology results. A standard laboratory request format for microscopic examination of specimens, and a standard format for reporting infection and antibiotic sensitivity, will enhance both clinical management and surveillance.

The Commission's *Consensus Statement and Core Information Components for Structured Microbiology Requests and Reports for Healthcare Associated Infections*<sup>22</sup> identifies best practice advice for microbiology laboratory requesting and reporting (see Box 9.3). In developing this statement, the Commission consulted with its national Healthcare Associated Infection Advisory

### Box 9.3 Consensus statement on HAIs

In August 2010, the Commission convened a national workshop on structured requests and reports for four priority HAIs. The purpose of the workshop was to:

- produce a national consensus statement on structured requesting and reporting for HAIs
- review the core information components for structured microbiology requests and reports for four priority HAIs.

The following consensus statement was endorsed:

Structured requesting and reporting for microbiology is expected to improve clinical management of healthcare associated infections.

Structured microbiology requesting and reporting is considered a best practice element for clinical management and surveillance of healthcare associated infection.

The elements of best practice microbiology requesting and reporting are defined by expert practitioners, and should be taken up as clinical, laboratory and surveillance standards.

Representatives of the following national peak bodies and expert professional groups attended the workshop: Department of Health and Ageing, National Prescribing Service, National Pathology Accreditation Advisory Council, The Royal College of Pathologists of Australasia, National Coalition of Public Pathology, Australian Association of Pathology Practices, Australian Institute of Medical Scientists, The Australian Society for Microbiology, the National E-Health Transition Authority, Australian Infection Control Association, Australasian Society for Infectious Diseases and the Commission's HAI Advisory Committee.

Committee, peak bodies and expert professional groups, to define core information components to support structured laboratory requests and reports for the four priority HAIs (SABSI, CLABSI, CDI and SSI). These core information components define the elements recommended to support laboratory reporting, case management and surveillance. They enable the exchange of information between requesting, reporting, clinical management and surveillance systems.

These recommendations support secure clinical information exchange that is independent of a particular platform or technology, and are intended for implementation in the e-health environment. They can also be applied in paper-based laboratory ordering and manual surveillance systems. However, their implementation in electronic systems would be much more efficient.

The use of standardised, structured requesting and reporting of HAIs will:

• support clinical management and surveillance

- deliver benefits to healthcare providers involved in the request-test-report cycle for the clinical management of HAIs
- ensure that microbiology requests and reports are consistent in meaning and structure
- reduce the need to follow-up missing or incomplete information
- improve communication between healthcare providers
- enable information to be provided in a consistent and comprehensive format
- support decision making for further testing and treatment
- facilitate the secondary use of data for HAI surveillance activities, quality management and research.

Boxes 9.4, 9.5 and 9.6 describe real examples of surveillance based on live feeds from laboratory systems.


## **Future directions**

Prevention and control of HAI is an integral part of patient care. Improved monitoring will lead to reductions in rates of infection, supporting the development of safer, higher quality health care. Surveillance and HAI control will be improved through a range of approaches. This includes harnessing clinical systems and national e-health programs to: reduce the burden of manual case notification; embed best practice in case management; and achieve timely and efficient HAI surveillance.

### Box 9.4 VICNISS Healthcare Associated Infection Surveillance System

The VICNISS Healthcare Associated Infection Surveillance System was established in 2002 and is funded by the Department of Health Victoria.

VICNISS collates and analyses data on healthcare associated infections in public and private hospitals in Victoria, and reports individual hospital and aggregate data back to participants and the Victorian Department of Health. Surveillance activities are targeted to those patients at highest risk of infections.

The VICNISS coordinating centre has developed the SHIINE system (Safer Hospitals Integrated Information Network) to enhance the timeliness, efficiency and accuracy of HAI surveillance. Installed at each hospital and receiving e-messaging from laboratory and hospital information systems, SHIINE is intended to largely eliminate manual data entry and provide flexible and up-to-date reports. This will surveillance personnel to focus more on infection prevention.

#### Box 9.5 New South Wales Health — Notifiable Diseases Database

Laboratories, doctors and hospitals around New South Wales notify a range of Scheduled Medical Conditions (SMC) to the Public Health Network. Tuberculosis, cholera, meningococcal and mumps are some of the conditions that laboratories and health workers are required to notify under the *Public Health Act 2010* (NSW).

Traditionally, laboratory reports are sent directly from laboratories to Public Health Units. Cases are manually entered into a database and the appropriate surveillance for each condition is implemented based on the condition, its location and specific control guidelines.

A team at NSW Health has been developing a process to load electronic laboratory reports directly into the Notifiable Conditions Information Management System (NCIMS) so as to manage notifications and the resulting surveillance workflows. In late 2011, NCIMS will begin receiving microbiology reports directly from notifying laboratories using a secure messaging service. This will mean that the transmission of the results are recorded in a consistent format to authorities in near real-time. Surveillance and follow-up workflows can then be initiated, guided by the specific requirements for each condition and managed as workflows within the NCIMS.

The piloting of electronic laboratory reporting involves a private sector laboratory that provides approximately 18% of all notifications in NSW. It will then be joined by a further four laboratories, bringing the proportion of electronic notifications to 45%. A further seven laboratories reporting electronically in 2012 will bring the proportion of electronic notification in NSW up to 70%.

#### Box 9.6 Queensland Health — Centre for Healthcare Related Infection Surveillance and Prevention

The prevention, monitoring and reporting of healthcare associated infections (HAI) is part of efforts to reduce preventable harm in Queensland Health hospitals.

The Centre for Healthcare Related Infection Surveillance and Prevention (CHRISP) monitors and reports on the rates of HAI within Queensland Health facilities. Queensland public hospitals contribute to the CHRISP surveillance dataset by collecting and manually entering data into a local database application called eICAT.

CHRISP is preparing to enhance the process of capturing and reporting HAI data with an innovative new surveillance system that will increase the sensitivity, efficiency and timeliness of HAI surveillance. When fully implemented, a single Queensland Health infection surveillance information system will provide local, network and state level reporting in near-real-time. CHRISP's new HAI surveillance system will connect with the state pathology system and will automatically receive, in near-real-time, requests and results from microbiology and serology services.

Every laboratory request will be assessed against HAI surveillance criteria in the CHRISP surveillance system. If a match is made, an electronic notification is automatically triggered to the individual hospital's Infection Control Practitioner team for review and, if appropriate, investigation.

Any changes subsequently made to lab requests or results will be automatically updated in the new surveillance system.

This system will improve the timeliness and specificity of responses to individual exposures and to rising trends or outbreaks. Automating data entry from Queensland Health Patient Administration and laboratory systems improves patient care by:

- reducing the notification burden for clinical staff, enabling a greater focus on patient care and infection management, and
- enhancing the accuracy and timeliness of surveillance data entering the system from all across Queensland.

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