

Recognising and responding to clinical deterioration

Project Plan

25 June 2009

Version Control

DATE	VERSION	SUMMARY OF VERSION	AUTHOR
17/7/2008	1	Base initial document	Nicola Dunbar
21/7/2008	2	Revisions following comments from Christine Jorm	Nicola Dunbar
9/9/2008	3	Revisions following comments from Commission, IJC and PHSC	Nicola Dunbar
3/11/2008	4	Changes to scope and purpose of observation chart initiative	Nicola Dunbar
3/12/2008	5	Changes to governance arrangements and scope and purpose of all initiatives	Nicola Dunbar
27/03/2009	6	Changes to title, scope and purpose of initiatives following first Advisory Committee meeting	Nicola Dunbar
25/06/2009	7	Revision to scope of specific settings initiative, other activities and to initiative timeframes	Alex Sonsie

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Introduction

The characteristics of patients in Australia and internationally are changing. Acute care hospitals now have an increasing proportion of patients with complex problems who are more likely to be or become seriously ill during their hospital stay (1, 2). Warning signs often precede serious adverse events such as cardiac arrest, unplanned admission to intensive care, and unexpected death (3, 4). However, there is consistent evidence that these warning signs are not always identified; and if they are, they may not be acted on (5).

Ensuring that patients who deteriorate receive appropriate and timely care is a key safety and quality challenge. All patients should receive comprehensive care irrespective of their location in the hospital or the time of day. However survival rates from cardiac arrest are lower on weekends and at night, and mortality rates of patients admitted to intensive care from general wards are higher than those admitted from emergency departments or operating theatres, suggesting that these patients are not receiving optimal care prior to their transfer to ICU (6, 7). These issues are relevant for both adult and paediatric patients (8).

This situation has been known for some time, and there has been considerable work done over almost 20 years to improve the care that patients who deteriorate receive. Nonetheless, problems remain. These problems are visible in the media reports that appear when individuals die unexpectedly in hospitals, reports of serious and sentinel events, and research showing the continuing occurrence of avoidable cardiac arrests (9-12). Even though systems have been introduced to better manage these patients, this area needs to remain a priority while patients continue to experience preventable adverse events because their deterioration is not identified or managed properly.

The factors that contribute to a failure to recognise and respond appropriately to deterioration are complex and overlapping. They include issues regarding knowledge and skills of staff, the way in which care is delivered, organisational systems, attitudes and communication of information (13). All of these factors need to be addressed for patients who deteriorate to consistently receive safe and high quality care.

This program is the Commission's response to the problem of ensuring that patients who deteriorate are recognised and responded to appropriately. The Commission is not in a position to address all of the factors that contribute to failures in this area, and the initiatives included here have been identified as areas where the Commission can use its position as a national leader in safety in quality in Australia to advance this area of work. The main initiatives in this program are the development of:

1. a consensus statement setting out the essential elements for recognising and responding to patients who deteriorate
2. guidelines applying the essential elements in specific settings, namely paediatrics and smaller facilities with no intensive care or limited medical cover
3. guidelines for implementing programs to improve the recognition of and response to clinical deterioration
4. an evidence-based adult general observation chart that supports recognition of deterioration and prompts action.

Objective

The overall goal of this program is to improve the recognition of and response to patients who deteriorate in hospitals and other acute care facilities. This will be done by:

- providing a national focus on patients who deteriorate and the systems used to identify them and provide timely and appropriate care
- defining the essential elements of recognising and responding to clinical deterioration
- developing evidence-based tools to improve the recognition of deteriorating patients, and support timely action to address their needs.

The key outputs of this program will be:

- a nationally agreed consensus statement regarding the essential elements for recognising and responding to clinical deterioration
- guidelines for how to apply these elements in a small number of specific contexts, with the focus on:
 - paediatric patients who deteriorate
 - facilities where there is no intensive care unit, or limited or no medical cover on-site
- a guide for implementing programs to improve the recognition of and response to clinical deterioration
- an evidence-based adult general observation chart that will incorporate features to support the identification of patients who are deteriorating, and prompt action to properly manage these patients.

As part of the program the Commission will also:

- explore the issues regarding recognition and response to clinical deterioration in primary care settings
- explore how it can support the use of clinical judgement and development of expertise in recognising clinical deterioration
- work with a team of researchers to study the prevalence of deterioration in a multi-centre study
- facilitate an interest group of researchers and practitioners interested in issues concerning recognising and responding to paediatric patients who deteriorate.
- convene a national workshop with the NSW Clinical Excellence Commission to showcase solutions to the problem of recognising and responding to clinical deterioration.

Scope

This program is focussed on improving the recognition of and response to patients who deteriorate in hospitals and other acute care facilities. The main outcomes of interest of this deterioration are adverse events that include cardiac arrest, unanticipated admission to the intensive care unit (ICU) or unexpected death. The program covers care provided in all types of acute care facilities, from large tertiary referral centres, to small district and community hospitals, including facilities such as multipurpose services, or the equivalent. The program also covers care provided to all types of patients including babies, children, adolescents and adults.

The program is focussed on recognising and responding to clinical deterioration, as well as the organisational systems that are needed to optimise these processes. These are all broad areas of activity, and the program has selected a small number of issues where it can provide useful and practical outputs in a reasonable timeframe.

The Commission is also looking at issues regarding the recognition of and response to clinical deterioration in primary care settings because there is consistent evidence that the care provided to primary care patients is not optimal (14-17). There are significant differences in the way in which care is delivered in primary and acute care settings, the population it is delivered to, and subsequently in the interventions that can improve the delivery of care. Because of the difficulty of including all of these types of activities in the one program, the main outputs of this program are focussed on acute care settings. As noted later in the project plan, the potential activities for the Commission in improving the recognition of and response to clinical deterioration in primary care settings are still being explored.

Background

Research has consistently shown that there are observable physiological abnormalities prior to adverse events such as cardiac arrest, unanticipated admissions to intensive care and unexpected death (3, 4, 18-20). Abnormalities in vital signs such as blood pressure, consciousness, respiratory rate, heart rate, and oxygen saturation are common prior to the occurrence of these serious adverse events. The existence of observable signs of deterioration prior to an adverse event provides the impetus to put systems in place to identify this deterioration early and attempt to prevent any possible later adverse events.

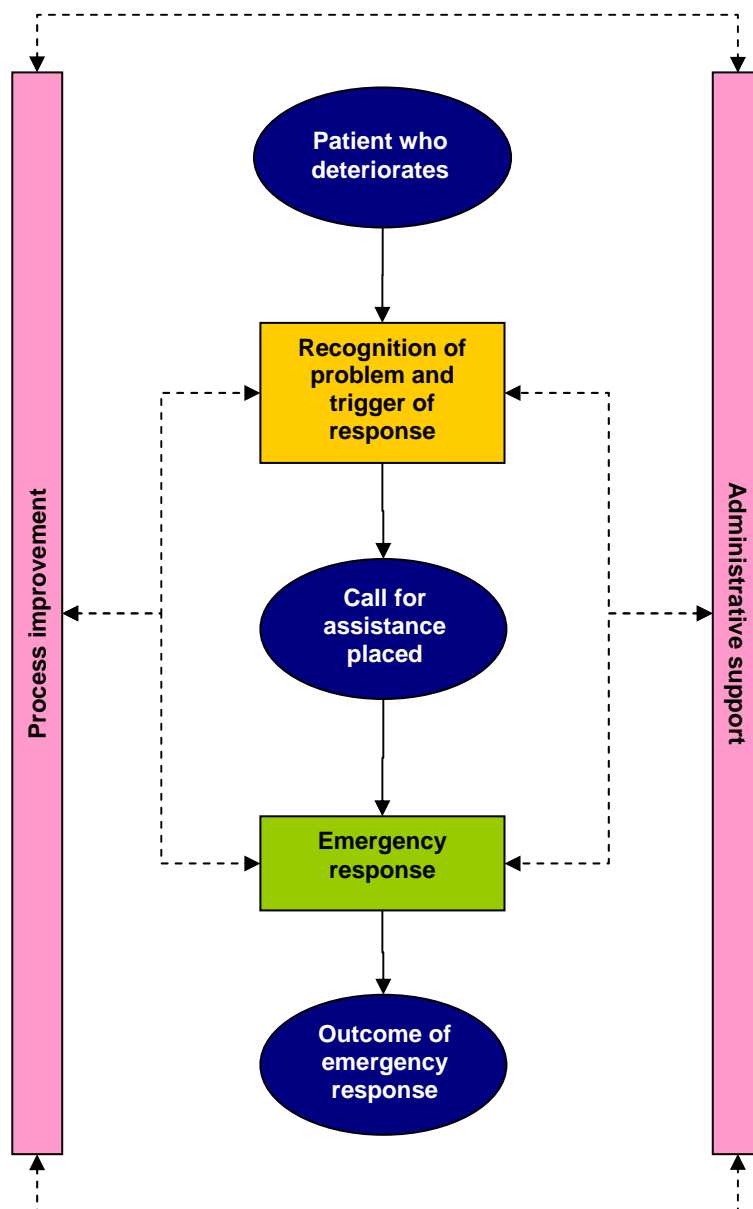
The factors that contribute to a failure to recognise and respond to clinical deterioration are complex and overlapping. Issues that have been identified include (4, 19, 21-25):

- not monitoring vital signs consistently or detecting changes in vital signs
- lack of knowledge of signs and symptoms that could signal deterioration
- failing to recognise the significance of apparent deterioration
- uncertainty about whether assistance should be called
- delays in notifying medical staff of the signs of deterioration
- delays by medical staff in responding to such notification
- lack of skills and knowledge about managing patients who deteriorate among ward medical and nursing staff
- failure of ward staff to promptly seek supervision or advice
- failure to communicate with other staff about concerns, including in handover situations
- failure of essential equipment
- lack of clarity about roles and responsibilities for care of patients who deteriorate.

Systems and processes have been developed to address these issues and to provide a framework for caring for deteriorating patients in hospitals. To be effective, generally these systems need to include the following features (26, 27):

- *Event recognition and response trigger*: this is the process for identifying patients who are deteriorating and triggering an emergency or other response. Included are processes for monitoring vital signs, criteria for triggering a response and mechanisms for triggering the response.
- *Emergency response*: this is the process that is used to respond to the needs of patients who are identified as deteriorating in a timely way. It includes consideration of issues such as who provides the response, and the skills, equipment and resources they need to provide effective care.
- *Process improvement*: this includes mechanisms to collect data and provide feedback to providers, planners, and patients and families to improve the care provided to patients who deteriorate and contribute to prevention of future events.
- *Administrative support*: an administrative structure is required to coordinate these activities. This includes provision of adequate resources, education and training of staff

The following diagram summarises these systems and the way in which they interact to improve the recognition of, and response to patients who deteriorate.



Program initiatives

There are four main initiatives in this program that have identifiable outputs at this stage. These have been identified as key areas where the Commission can use its position as a national leader in safety and quality in Australia to advance this area of work. These initiatives take into account the Commission's role, issues that are of particular importance in Australia, and where there has been limited work done nationally or internationally.

The first initiative will set out the essential elements required for effectively recognising and responding to clinical deterioration. The essential elements of care will inform the other initiatives in the program, which are tools designed to help practitioners improve their recognition of and response to patients who deteriorate in hospitals.

Details of the key tasks and deliverables for each of these initiatives are provided in this section. Detailed work plans will be developed as part of their implementation. Other activities that the Commission will be undertaking as part of this program are also summarised in this section.

1. Consensus statement of essential elements for recognising and responding to clinical deterioration

Much of the development of recognition and response systems to support the care of patients who deteriorate has come from bottom up processes, and a range of different systems have evolved to meet the specific needs of individual hospitals. The use of systems to respond to deteriorating patients is increasing, and in 2005 approximately 60% of hospitals in Australia and New Zealand with an intensive care unit reported having a medical emergency team (28). However the use of a medical emergency team is only one aspect of the recognition, response and organisational supports that are required to provide effective care to patients who deteriorate, and the limited anecdotal information that is available about the wider use of these systems suggests that their implementation and effective use is variable.

The problem of caring for patients who deteriorate effectively is well recognised internationally, and there is an increasing move towards the systematic promotion and implementation of recognition and response systems by health departments and other organisations that support safety and quality. Both the United Kingdom and the United States have national programs that focus on this issue. The only national initiative in Australia has been to promote the use of rapid response systems as part of the Safer Systems – Saving Lives (SSSL) program coordinated by the Victorian Department of Human Services and funded by the former Australian Council on Safety and Quality in Health Care. This project did not continue past the end of its funding in 2007, and the sustainability of the initiatives was limited. Several jurisdictions are now developing and implementing programs regarding deteriorating patients.

There is now scope to build on this work, and also draw on international programs and evidence to maximise and optimise the use of systems to support the recognition of and response to patients who deteriorate. A national approach would support a consistent and coordinated response to the management of clinical deterioration, and also communicate the importance of this as a key safety and quality issue.

There has already been a considerable amount of work done describing the systems that are needed to effectively care for patients who deteriorate, and evaluating their effectiveness. This work will be used to inform a nationally agreed statement that notes the importance of providing appropriate care to patients who deteriorate, and sets out the features of the systems that are needed to recognise and respond to them. The statement will also be developed to be applicable for all types of acute care settings, and for all types of patients. This statement will focus on the broad elements of care required to recognise and respond to patients who deteriorate, and will not specify how they should be achieved. The broad nature of the statement will support the flexibility required for different contexts, but also the standardisation that is an important aspect of the delivery of safe and high quality care.

Health services will be able to use this consensus statement to guide their own work in developing systems for recognising and responding to clinical deterioration. The statement will also be the platform on which the other initiatives in this program are based. The statement could also form the basis of the development of an Australian Health Standard¹.

Purpose

The purpose of this initiative is to develop a national, evidence-based consensus statement about the:

- importance of providing safe and high quality care to patients who deteriorate in hospitals
- systems and processes that are required to recognise these patients, and respond to them appropriately
- organisational systems required to ensure that patients who deteriorate are recognised and responded to.

The statement will be applicable to both paediatric and adult patients, and to services of different size and service mix.

Approach and activities

The overall approach for this initiative is to develop the consensus statement by drawing on existing work in Australia and internationally and consulting with local experts and practitioners.

The key activities to be undertaken for this initiative are to:

¹ The Commission is currently developing a number of preliminary Australian Health Standards as part of the National Accreditation Reform Program. The preliminary Australian Health Standards are in the areas of patient identification, medication safety, infection control and clinical handover.

- Review existing national, jurisdictional and international programs, statements and evidence to develop a draft consensus statement for Australia.
- Gain input from the program Advisory Committee about the draft consensus statement and revise it accordingly.
- Consult with experts, practitioners and policy makers about the draft consensus statement and revise it based on their feedback.
- Finalise the consensus statement and release it nationally.

Deliverables

At the end of this initiative a nationally agreed consensus statement will exist that will describe the essential elements for recognising and responding to patients who deteriorate in all acute care settings.

2. Guidelines for applying the essential elements of care in specific settings

Based on the consensus statement the Commission will prepare more detailed guidelines about how the essential elements in three specific settings: smaller hospitals or facilities (including those without an intensive care unit and with limited medical cover), care of paediatric patients who deteriorate and patients who experience deterioration in psychiatric conditions.

Much of the development of response systems for patients who deteriorate has occurred in large tertiary facilities, and many of these models are based on an emergency medical or nursing service from the ICU. However these models are not practical for smaller hospitals that do not have an ICU, and do not take into account the rural facilities that do not always have on-site medical cover. There have been some reports of response systems using staff from the emergency department, and others have reported the introduction of response systems in smaller hospitals (29-31). However despite these reports there has generally been little specific attention paid to the needs of smaller facilities and rural and remote areas. The systems for recognising and responding to clinical deterioration need to reflect the internal and external resources available, as well as the likely care needs of the patient (such as the possible need to transfer patients if deterioration is identified). The Commission will consult with appropriate members of the Advisory Committee, and other stakeholders to develop specific guidelines for applying the essential elements in rural and remote settings.

While the recognition and response systems developed for adult patients can be applied to paediatric patients, there are some issues that are specific to this population. These include issues such as the limited evidence base regarding normal ranges for physiological parameters, and that children may not as reliably have deterioration in their vital signs before they have a cardiac arrest (32). There is now an increasing focus on developing recognition systems such as early warning scores specifically for paediatric patients (33). The Commission will consult with its new Paediatric Interest Group as well as other stakeholders to develop specific guidelines for applying the essential elements in paediatric settings.

The work on recognising and responding to clinical deterioration has focussed on physiological deterioration. In discussions with the Commission's Standing Committees about the revised scope of the program, it was suggested that it would also be useful to examine the recognition of and response to clinical deterioration in situations where that deterioration related to a patient's psychiatric condition. This issue is not about dealing with physiological

deterioration among mental health patients, but identifying psychiatric deterioration early, and responding to it appropriately. This idea was supported by the National Safety and Quality Partnership Sub-Committee of the Mental Health Standing Committee of the Australian Health Ministers Advisory Council, on which the Commission's Deputy Chief Executive sits. This is a new area that presents specific challenges and considerable scoping will be needed to understand whether and how the elements in the consensus statement could be applied in this context.

Approach and activities

The overall approach for this initiative is to work with experts in the three fields of interest to develop guidelines about how to apply the essential elements for recognising and responding to clinical deterioration in these settings.

The key activities to be undertaken for this initiative are to:

- Identify experts in the three areas of interest who are able to commit to participate in the process of writing the guidelines.
- Have each expert write the guidelines for the respective setting.
- Have the draft guidelines reviewed internally and by the Advisory Committee.
- Undertake wider consultation regarding the guidelines.
- Revise the guidelines based on the consultation process, and release them nationally.

Deliverables

At the end of this initiative three sets of guidelines will exist that will describe how the essential elements for recognising and responding to patients who deteriorate can be applied in the care of paediatric patients, deteriorating psychiatric conditions and in smaller facilities settings where there is no ICU or limited medical cover.

3. Guide to implementing programs to improve the recognition of and response to clinical deterioration

As part of the Commission's National Clinical Handover Initiative the OSSIE Guide to Clinical Handover Improvement has been developed. The OSSIE Guide is a focussed change management framework to support staff seeking to implement standardised clinical handover, and is specifically targeted at clinician-leaders and managers. "OSSIE" stands for the following five phrases:

O = Organisational leadership

S = Simple solution development

S = Stakeholder engagement

I = Implementation

E = Evaluation and maintenance

The existing OSSIE Guide has been the subject of significant research and development. There is potential to gain additional value from this work as the framework provided by the OSSIE Guide can be applied to a wide range of quality and safety areas, including recognising and responding to clinical deterioration. The previous initiatives in this program provide information and tools to assist practitioners understand *what* needs to occur to provide safe and high quality care to patients who deteriorate in hospitals. The OSSIE Guide is focussed on helping practitioners understand *how* they can implement these initiatives.

The Commission will use the existing OSSIE framework to develop a guide for improving the recognition of and response to clinical deterioration. Many of the processes and systems included in the handover guide for developing organisational leadership, engaging stakeholders, developing solutions, implementing and evaluating can be equally be applied to caring for patients who deteriorate. There are differences between these two areas, in that systematic research and solutions for clinical handover is a new area with a limited evidence base. There has been work done on recognising and responding to clinical deterioration over a longer a period of time, and this will need to be taken into account as the new guide is developed.

Purpose

The purpose of this initiative is to develop a guide using the OSSIE framework to support improvement in the recognition of and response to clinical deterioration.

Approach and activities

The overall approach to this initiative is to use the framework from the OSSIE Guide to Clinical Handover Improvement as the basis for developing a guide specifically focussed on the recognition of and response to clinical deterioration.

The key activities to be undertaken as part of this initiative are to:

- Gain advice from the Advisory Committee and other stakeholders about the application of the OSSIE framework to recognition of and response to clinical deterioration, and specific topics that should be included in the draft guide.
- Consult with experts who developed the original OSSIE Guide about how it can be adapted to recognising and responding to clinical deterioration.
- Use the OSSIE framework to prepare a draft guide.
- Consult with key stakeholders about the draft guide.
- Revise the guide based on feedback from the consultation process.
- Release the final guide.

Deliverables

At the end of this initiative a guide will exist to help clinician-leaders and managers to implement initiatives to improve the recognition of and response to clinical deterioration.

4. Evidence-based observation chart to prompt action

One of the factors that can contribute both to poor recording of observations and failure to interpret them correctly is the way in which observation charts are designed and used.

There has been little research on this issue. One study from the United Kingdom examined five different charts used within one hospital and found that the design of the charts had a significant effect on the ability of medical and nursing staff to detect patient deterioration, with detection rates for parameters showing deterioration ranging from 0% to 100% (34). Based on this analysis a new chart was designed, and significant improvements were found in detection rates of parameters that were poorly identified initially, with rates of detection of abnormalities in respiratory rate and oxygenation increasing by 41% and 45% respectively.

There is an increasing focus on the use of observation charts to assist in the identification of clinical deterioration. This can be seen in efforts internationally and within Australia to revise and improve charts, and to incorporate specific features in them (such as early warning scores) to support this identification process (34-36). Some of this work has been conducted or coordinated at jurisdictional level, but much of it is also taking place in isolation in individual hospitals or wards. While there has been increasing research about predictors of deterioration and early warning scores, decisions about observation charts and measurement of vital signs are frequently based on clinical experience, intuition and tradition (37, 38). In undertaking this initiative the Commission wants to build on current approaches with an explicit focus on the application of evidence to the development and use of observation charts to identify clinical deterioration.

One of the areas for which there is a significant evidence gap concerns the human factors associated with observation charts and the recording and use of vital signs. There has been no research done about issues such as the best way to design charts or present information in observation charts to improve recognition of deterioration and prompt action. Queensland Health has also expressed an interest in this issue and the Commission is proposing to work with them to commission research on this topic and apply it to the development of a national observation chart.

While technological solutions regarding recording of observations are currently being developed and will probably eventually become standard, their widespread use is likely to take some time. The Commission can build on existing work on observation charts to develop an evidence based chart to be used while processes to record observations technologically are trialed and implemented.

This initiative is focussed on adult observation charts. There is currently work underway in jurisdictions regarding paediatric observation charts that could be applied nationally. In addition, the results human factors research that will be commissioned as part of this initiative will be able to be applied to both paediatric and adult charts.

Purpose

The purpose of this initiative is to develop a general adult observation chart that will:

- be designed according to human factors and other relevant principles to support accurate recording of information
- incorporate features such as early warning scores to support timely recognition of clinical deterioration
- prompt action based on observed physiological abnormalities.

Approach and activities

The overall approach for this initiative is to conduct research about what makes a good observation chart for identifying clinical deterioration, develop one or more observation charts based on this research and existing charts and pilot the chart at a number of sites.

The key activities to be undertaken as part of this initiative are to:

- Hold a national innovation workshop to identify work that is being done on observation charts in Australia, features of innovative observation charts, gaps in knowledge about the use of observation charts and how they can assist in the identification of deteriorating patients. (Completed November 2008.)
- Work with Queensland Health to commission human factors research about the effectiveness of different observation charts for identifying clinical deterioration. This research will focus on the design of the chart, as well as the effectiveness of different types of early warning system.
- Using the findings of the human factors research, the results of any other research, and existing observation charts, develop a draft general observation chart. The development of this chart would be informed by the Advisory Committee, as well as other practitioners and experts. The key features of this chart will be:
 - a design that supports accurate recording of vital signs
 - early warning scores or other algorithms to assist in the recognition of deterioration
 - capacity to include local information about how to call for assistance in managing the observed deterioration.
- Undertake targeted consultation with key stakeholders on the initial draft chart.
- Revise the chart based on the feedback from the consultation process.
- Pilot the chart. Pilot sites will be selected to include a range of different environments.
- Consider whether the final chart should be submitted to Health Ministers for endorsement.

Deliverables

At the end of this initiative a nationally agreed, evidence-based observation chart will exist that will assist staff to identify clinical deterioration and prompt action in response to observed physiological abnormalities.

5. Other activities

In addition to the initiatives and deliverables described above, there are a number of other activities being undertaken as part of this program. These are described in this section.

Explore the issues regarding recognition and response to clinical deterioration in primary care settings

The Commission is also looking at issues regarding the recognition of and response to clinical deterioration in primary care settings because there is consistent evidence that the care provided to primary care patients is not optimal (14-17).

There are significant differences in the way in which care is delivered in primary and acute care settings, the population it is delivered to, and subsequently in the interventions that can improve the delivery of care. For this reason the recognition of and response to patients who deteriorate is more complex than in an acute care environment.

One of the defining characteristics of primary care is that it is the first level of health care that is directly accessible to individuals and communities. Because of this front line role the range of problems and health issues that is dealt with in primary care is broad. This means that generally the range of factors that can affect patient outcomes is larger, and the ability to control these factors is lower, in primary care compared to the acute care sector. Factors that can affect health outcomes include, but are not limited to, access to services, psychosocial and environmental factors, and integration with other services. All of these factors can interact and contribute to the occurrence of adverse outcomes for patients in primary care. In hospitals the adverse outcomes of interest have generally related to patients who suffer a cardiac arrest, have an unplanned admission to intensive care or die unexpectedly. However in primary care, adverse outcomes can also include, among other things, increased burden of illness, increased care requirements, decreased functional capacity and unexpected hospitalisation.

Programs, strategies and activities to improve the identification and management of patients at risk in primary care cover a large and diverse range of topics and exist at all levels within the health system. Despite the extent of these programs initial consultations and examination of the literature on this topic identified a large number of potential gaps, including, but not limited to:

- the importance of coordination and integration of care between providers
- identification of patients with complex needs and use of technology to support their care
- examination of ways to support and facilitate partnerships to prevent hospitalisations
- the importance of health literacy and self-management in chronic disease management
- systems to support effective chronic disease management in primary care
- the specific needs of particular parts of the population such as people in rural areas and people with a low socioeconomic status
- the importance of clinical risk management in primary care
- the use of electronic health records to support communication between providers

- triage and screening processes in primary care to ensure patients receive the care they need in a timely way.

There is clearly a need for continuing and additional efforts to improve the identification and management of patients at risk in primary care. However it is not yet clear how the Commission can best add value to existing work in this area.

To take this work forward the Commission has commissioned a literature and policy review on one specific topic of relating to patients who deteriorate in primary care: potentially preventable hospitalisations.

The literature and policy review will have two purposes. It will produce a public report regarding the current status of work in this area that will be of use to the Commission's stakeholders, and will also inform any possible future work of the Commission regarding primary care.

The main areas of interest for the review are proposed to be:

- What are the patterns of occurrence for potentially preventable hospitalisations?
- What is known about why potentially preventable hospitalisations occur?
- What is the evidence regarding primary care based strategies to reduce potentially preventable hospitalisations?
- What are the current Australian primary care based policy initiatives and drivers that can be brought to bear to reduce potentially preventable hospitalisations?
- Are there any gaps between what is known about successful prevention strategies and work that is currently underway in Australia?

The reason for focussing only on unnecessary, unexpected or potentially preventable hospitalisations is that the range of possible adverse outcomes for patients who deteriorate in primary care is too broad to allow a meaningful review and analysis within a reasonable timeframe. However unexpected hospitalisations can be a particularly useful marker of patients who are deteriorating as this type of hospitalisation is more likely to occur when there are also other underlying factors such as decreased functional capacity or increased burden of illness.

The public and private hospital sectors have long had a focus on preventing hospital admissions as a way of reducing demand, and most State and Territory health departments have programs in place to address this issue (such as the Hospital Admission Risk Program (HARP) in Victoria). However preventing unnecessary hospitalisations is also a priority for primary care as there is evidence that outcomes for patients are improved when care is provided in a coordinated way and with a strong primary care component.

This literature review will commence in early April 2009 and be complete in late June.

Explore the use of clinical judgement and development of expertise in recognising clinical deterioration

For many emergency response systems clinicians are able to call for assistance if they are worried about the patient. One Australian study found that of 713 MET calls, over one third were called because of clinician worry, and 12% were based on clinician worry alone (39). Most calls for emergency assistance are initiated by nurses, and therefore their use of clinical judgement regarding their patients is an important aspect of recognising clinical deterioration (39, 40).

There are a number of education packages that have been developed to improve the recognition of and response to patients who deteriorate. These have largely been focussed on developing critical care skills and understanding of the importance of taking observations, and the meaning of derangements in these observations (41). Individual hospitals have also developed successful education programs to support the implementation of the emergency response systems (42). There has been a less systematic focus on developing the use of clinical judgement in making decisions about the patient, and whether to call for emergency assistance, and the use of such education has been recommended (40). This is particularly important given the changing nature of the nursing workforce, and the increasing use of less skilled enrolled nurses and nursing assistants to take observations.

As part of this work the Commission will undertake a scoping exercise regarding existing work in this area, and where it could usefully add value. A scoping paper on the topic will be provided to the Advisory Committee in June, and will inform future activities on this topic. Options could include a seminar or workshop for interested researchers and practitioners, the development of an education module on specific aspects of this issue or commissioning research to add to the evidence base.

Work with researchers to study the prevalence of clinical deterioration

In 2008 the Commission was approached to be a partner on a NHMRC partnership grant application with Cabrini Health to conduct a multi-centre prospective study to assess the prevalence of undetected medical emergencies and activation triggers of medical emergency teams. While this partnership grant application did not proceed, the Commission has committed some funds to conduct the study in 2009.

The specific aims of the study are to:

1. Determine the prevalence of patients at risk of a medical emergency in acute care settings by assessing the prevalence of cases where patients fulfil commonly used criteria for MET activation
2. Assess the frequency of failed and delayed MET activation by relating the number of cases where MET criteria are reached to the number of actual MET activations.
3. Determine whether the presence of MET criteria is associated with an increased 30 or 60 day mortality, unplanned admissions and cardiac arrests.

The study involves eight sites in Melbourne, two of which are private hospitals. The study will involve assessment of the vital signs of all acute inpatients (other than those in psychiatric wards or intensive care) in these hospitals on one day in August 2009.

The study is being lead by Professor Tracey Bucknall from Cabrini Health and Deakin University. Other investigators are Dr Daryl Jones (Austin Health and Monash University), Dr Jonathon Barratt (Cabrini Health), Professor Rinaldo Bellomo (Austin Health and University of Melbourne) and Dr Rasa Ruseckaite (Cabrini Health and Deakin University).

As well as being published in the academic literature, the results of this study will be available to inform the Commission's program during 2009. Having an understanding of the prevalence of patients at risk has implications for issues such as regarding workforce, and the nature of the response deteriorating patients.

Facilitate an interest group regarding paediatric patients who deteriorate

As noted earlier, there are specific issues regarding the recognition of and response to deteriorating paediatric patients. While there has been some work done specifically on paediatric patients, this is still a developing area.

At the workshop in November 2008 regarding observation charts, Dr Kevin McCaffrey from the Royal Children's Hospital in Brisbane presented research about the development and validation of a paediatric trigger system. There was considerable interest in this research and paediatric issues in general at the workshop.

To support this interest the Commission has established a Paediatric Interest Group. The purpose of this group is to provide a forum for researchers and clinicians with an interest in issues regarding the identification and management of paediatric patients at risk to share information and ideas and identify issues that could be addressed by the Commission or other organisations doing work in this area. The Commission will support this group in terms of providing a venue and secretariat services.

It is envisaged that this group will be able to provide specialist input about paediatric issues, both for the specific paediatric guidelines, but also across the other initiatives in this program. The group met for the first time on 19 March 2009, and is planning to meet again later in 2009 when a number of current Australian research studies have results to discuss.

Convene a national workshop with the NSW Clinical Excellence Commission

The NSW Clinical Excellence Commission has been conducting work on the deteriorating patient for a number of years. As part of their Between the Flags program, the CEC is developing a number of tools to assist clinicians improve their processes to recognise and respond to clinical deterioration. Because of the alignment between this program and the Commission's program, these two organisations want to work closely to achieve their objectives.

To build on the current energy in this area, and to promote the work of the CEC, Commission and other organisations, the Commission and the CEC have agreed to co-host a national workshop in this area. The purpose of the workshop would be to showcase current approaches and practical solutions to the problem of properly recognising and responding to patients who deteriorate in hospital. It is anticipated that the workshop would be on a cost-recovery basis, and that papers based on the contents of the workshop would be subsequently be published as a supplement in the Medical Journal of Australia. The Commission has conducted a number of successful cost recovery workshops in the area of clinical handover and would use a similar model in this case. A small working party will be convened to oversee the planning of the workshop.

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