The deteriorating adult patient:
Current practice and emerging themes

DRAFT

Draft discussion paper
February 2016
Contents

Introduction ........................................................................................................................................... 3
A national approach to adult patient deterioration .............................................................................. 3
Evidence summary – what the literature says ......................................................................................... 4
Sector interviews .................................................................................................................................... 4
  Patient or family/whānau escalation ................................................................................................. 9
  Governance of rapid response systems (RRS) .................................................................................. 10
  Goals of treatment ............................................................................................................................ 12
  Conclusion .......................................................................................................................................... 13
Appendix A: Interview template for the deteriorating adult patient .................................................... 15
Appendix B: Organisations, national groups and experts contacted as of January 2016 .......... 18

Common abbreviations used in this paper:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCOT</td>
<td>Critical care outreach team</td>
</tr>
<tr>
<td>DHB</td>
<td>District health board</td>
</tr>
<tr>
<td>ED</td>
<td>Emergency department</td>
</tr>
<tr>
<td>EWS</td>
<td>Early warning score</td>
</tr>
<tr>
<td>ICU</td>
<td>Intensive care unit</td>
</tr>
<tr>
<td>MET</td>
<td>Medical emergency team</td>
</tr>
<tr>
<td>PAR</td>
<td>Patient at risk service</td>
</tr>
<tr>
<td>RRS</td>
<td>Rapid response system</td>
</tr>
<tr>
<td>RRT</td>
<td>Rapid response team</td>
</tr>
<tr>
<td>VSC</td>
<td>Vital signs chart</td>
</tr>
</tbody>
</table>

In this paper, ‘clinicians’ includes medical, nursing and allied health professional staff.
Introduction

This paper provides a ‘snapshot’ of current practice in the recognition and management of the deteriorating adult inpatient in New Zealand.

The information has been informed by:

- extensive interviews\(^1\) and engagement with the health and disability sector
- an evaluation of contemporary international evidence on the deteriorating patient\(^2\)
- the advice of the expert advisory group (EAG) established to guide this work.

The paper includes emerging themes in the international literature and health sector views on the subject.

It is part of an ongoing project by the Health Quality & Safety Commission\(^3\) (the Commission) to understand the potential for a consistent, national approach to reducing patient harm in this area.

Our discussion with the health sector is ongoing, so the themes we outline in this document are not final and will continue to evolve. All feedback is welcome (see page 14 for contact person).

All sector feedback and international evidence will help to shape the programme proposal to be submitted to the Commission board in April 2016.

A national approach to adult patient deterioration

Ensuring patients who deteriorate receive appropriate and timely care is a key quality and safety challenge, which has been identified through the international literature and by the health sector in New Zealand.

The Commission has been exploring a potential national deteriorating adult patient\(^4\) programme since December 2014. There is significant support for a national approach from frontline clinicians, national professional groups and other health care professionals, based on feedback we have received.

Our most recent adverse events report\(^5\) discussed how opportunities to identify and manage patient deterioration are often missed.

According to New Zealand experts, a national approach would benefit numerous people, including patients who have potential for deterioration on presentation to emergency departments in smaller centres, especially those who may need to be transferred between hospitals.

---

\(^1\) The interview questions are in Appendix A.

\(^2\) The evidence summary will be published on the Commission website.

\(^3\) The Commission works with clinicians, providers and consumers to improve health and disability support services through quality improvement and patient safety initiatives. Our programmes use quality improvement methodology, and incorporate the development of process and outcome measures which allow us to evaluate their impact.

\(^4\) The scope of the proposed national programme is currently limited to adult patients, although we recognise there is potential value in rolling out the programme to other areas in future.

A national approach would help to ensure all patients who deteriorate during hospital admission receive comprehensive care regardless of geographical location, location within the hospital or time of day.

**Evidence summary – what the literature says**

We analysed the international literature, with the support of an expert advisory group, whose members are widely representative of the sector and were chosen following an open call for applications in August 2015.

Six key themes emerged from the international literature, which we include in this paper in our discussion of current practice. These themes are helping us to shape the proposed national programme. Our analysis of these themes allowed us to understand current practice, develop an evidence summary and devise a format for sector interviews. The themes are:

- standardisation of the early warning score (EWS) and vital signs chart (VSC)
- guidance for rapid response teams (RRT)
- governance of rapid response systems (RRS)
- patient and family/whānau escalation
- goals of treatment
- recognition and response to sepsis.

**Sector interviews**

We gathered sector feedback through a series of semi-structured telephone interviews.

Initial questions were based on the themes identified from the international literature, guidance from our expert advisory group and thematic analysis of adverse events.

We interviewed two groups of people:

- clinicians working with deteriorating patients within each New Zealand district health board (DHB). To date, almost every DHB is represented, covering rural, urban and tertiary centres across the country
- individuals working within intensive and critical care units, patient at risk or critical care outreach teams, emergency care and general medicine.

We requested copies of any documents identified by interviewees during consultation and collated these for analysis.

Our engagement with national groups and organisations identified through interviews has started and is ongoing. As the programme develops, we will present all feedback to our expert advisory group and internal steering committee for evaluation by a diverse group of clinical and process governance experts.

Our key findings are discussed below.

---

6 For members, see Appendix C
7 Clinician may be a doctor, nurse or any allied health professional.
8 Participants to date are listed in Appendix B.
Current use of the EWS and VSC in New Zealand

Most New Zealand DHBs use an EWS that is the same throughout each DHB hospital, alongside a standardised VSC.

DHBs reported the local impetus for implementing the EWS was reporting an adverse event, or a critical Health and Disability Commissioner report. Two clinicians said their EWS systems had been developed to support early identification of sepsis. Several medical specialists were unaware how their local EWS was chosen or validated and by whom (a few stated such systems predated their clinical appointment).

Many reported their EWS/VSC were developed and led by nursing teams with varying degrees of senior medical officer support.

The most common EWS/VSC in use (in five DHBs) is the system Capital & Coast DHB implemented\(^9\) after the Health and Disability Commissioner’s ruling on ‘patient A’ in 2007.\(^{10}\) Another DHB uses the English ‘national early warning score’ VSC.\(^{11}\)

Other VSC and EWS systems in New Zealand are based on examples adapted from Australian models, or have evolved over time within individual DHBs.

There is considerable variability in the vital signs scored, the scores assigned to different levels of physiological deterioration, the VSC design and the documentation of vital signs. This remains unchanged from the findings of a study conducted in October 2011.

Some clinicians felt their local escalation criteria were too sensitive, with the threshold for critical care involvement set too low. Others considered a low trigger for critical care outreach team intervention a preventative measure.

Clinicians in smaller or rural centres consistently said triggers for intervention may be different in their setting, though most described using an EWS developed by their tertiary referral centre.

Most clinicians said they are waiting for national guidelines on the use of EWS/VSC. Many described their DHB as having developed EWS systems as a ‘stop-gap’ pending formal direction, which they described as a ‘national EWS chart.’

Recognition of sepsis

Clinicians supported the use of systems for the recognition of sepsis. They described this as one of several common conditions that may cause a patient to trigger escalation. They agreed the EWS was the most important factor for identifying patients at risk of sepsis, alongside good clinical assessment and appropriate management.

Most clinicians said any national focus on sepsis should include support for junior staff in how to effectively manage sepsis as a time-critical process.

---

\(^9\) See the Wellington Hospital EWS and VSC online resource library [http://ews.wellingtonicu.com/](http://ews.wellingtonicu.com/).


Most New Zealand emergency departments (EDs) reported they had developed a sepsis identification tool or bundle for recognition of sepsis at triage, with subsequent allocation of a high triage score as part of normal process.

Some departments reported they collected data on the recognition of sepsis, including markers reported in similar international quality improvement programmes, such as ‘time to antibiotic administration’ from presentation.

**Suggested minimum criteria for EWS charts**

Many clinicians said speciality services used ‘add-ons’ to core VSC, including:

- specific neurological observations (eg, Glasgow Coma Score (GCS) documentation, focal neurology documentation)
- pain charts (patient controlled analgesia and epidural documentation)
- fluid balance charts (with some integrated into routine documentation of patient vital signs).

Most suggested a national chart should have a minimum vital sign set that included oxygen saturation, supplemental oxygen administration, respiratory rate, heart rate, blood pressure, temperature and AVPU\(^\text{12}\) score. They also said early engagement with speciality teams in each DHB would be needed to ensure their needs were recognised and included in any proposed standardised documentation.

Several clinicians recommended any national programme be future-proofed to include emerging technology solutions, such as the electronic capture and recording of patient vital signs. Two New Zealand DHBs are already introducing such a system.\(^\text{13}\)

Clinicians supported an approach that allows for standardised data collection and reporting so large data sets can be collated. This would allow for future testing of the sensitivity and specificity of any proposed standardised EWS as well as ensuring a national system is ‘fit for purpose’ in New Zealand.

**Rapid response team (RRT) models**

Where EWS systems recognise patient deterioration, RRTs are the hospital’s response to such individuals. Consultation shows that the composition and function of RRTs varies significantly both within and across DHBs, especially with regard to who responds to this high-risk group.

Most clinicians said they are trying to build workforce capability in this area, and organisational support for different response models varies.

Clinicians interviewed described variation in team composition and availability over certain times of the day/night and day of the week. In larger centres, most RRTs are led from the intensive care unit (ICU), mostly by nurse specialists or managers with some senior medical

\(^{12}\) Alert, voice, pain or unresponsive. This is a simple system by which health care professionals can assess a patient's level of consciousness. AVPU is a simplification of the GCS, which assesses a patient's best response within three domains: eye, voice and motor components (either spontaneously or to painful stimulus). The AVPU scale is simpler and as such shows less interoperator variability than the GCS.

\(^{13}\) One began in November 2015 and another will follow shortly.
support. In smaller centres, the RRT is usually led from the ED. Both centres report a predominant multidisciplinary response (of both nursing and medical staff).

The RRT models identified fell within three groups:

- cardiac arrest teams – these respond to patients who have suffered a cardiorespiratory arrest. Team composition may vary and in smaller centres be limited to two or three staff.
- critical care outreach teams (CCOT) or patient at risk (PAR) teams – these are nurse-only teams, often (but not exclusively) based within critical care or high dependency areas. Their role may be limited to reviewing patients discharged to the ward from such areas, and supporting and educating ward staff. In some centres, they form part of the escalation pathway for deteriorating patients.
- medical emergency teams (MET) – these are usually medically led although most are multidisciplinary. They may include doctors from either a critical care area, medical specialty (often general medicine or cardiology), or both. Typically (but not exclusively), teams may include a CCOT or PAR nurse (if present).

Geographical context of response systems

Rural clinicians described several challenges in managing deteriorating patients that are unique to their environment. These included:

- reduced access to diagnostics (particularly computerised tomography and echocardiography, with some services either not on-site or only available during office hours)
- reduced on-site specialty services
- maintaining related skills due to infrequency of exposure
- suboptimal governance structures
- workforce constraints.

Clinical and operational leads in rural areas suggested that, although senior staff have the necessary skills, they rely on direction and support from metropolitan centres to manage patient deterioration. They said good collegial relationships and communication were essential in supporting them with the ‘what to do’, rather than the ‘how to do it’.

There was support in some larger centres for formal governance to support smaller hospitals within a geographical area or sub-region. One group of three DHBs (consisting of a rural, moderate metropolitan and large tertiary centre) reported working as part of an informal critical care network to optimise capacity across their three sites. They reported a shared governance process that included the adoption of standardised EWS and VSC. This was felt to contribute to safer, timely inter-hospital transfers and improved patient flow. Such a system was felt to be beneficial to all three sites – the smaller rural centre had support for patients requiring more advanced critical care, and the tertiary centre could free up resources to meet their specialist elective surgical requirements with enhanced flow-back to the other two hospitals.
Patient deterioration and transfer

Most staff in non-metropolitan areas said early identification of deterioration was important in deciding when to transfer patients for specialty care. Clinicians agreed with international evidence supporting appropriate early transfer to a critical care area as a key factor in improving patient outcomes. Two hospitals have integrated a transfer trigger into their EWS to specifically identify and manage this subset of deteriorating patients.

Inter-hospital transfer processes vary significantly in the competencies and availability of appropriate staff and equipment; several clinicians said guidance in this area is a key requirement of a national approach.

Interviewees described considerable national variation in the process and quality of communication between tertiary/metropolitan and secondary or rural hospitals. Most clinicians agreed a national EWS that included standardised communication tools such as ISBAR\textsuperscript{14} would help to create a ‘national language’ when discussing patient deterioration. Good communication and collegial relationships were again described as key success factors in managing patient deterioration well.

Centres using telemedicine suggested this technology, combined with an effective detection and local response, is optimal. Clinicians repeatedly stated telemedicine allowed enhanced clinical assessment by tertiary colleges, involved patients and families/whānau in the process, and, in many cases, prevented unnecessary (and often costly) inter-hospital transfers.

Most clinicians expressed concerns that national recommendations must include flexibility to meet local needs. They were concerned that organisational leads in larger centres lacked understanding of the challenges of identifying and managing patients outside their institution.

Roles, responsibilities and skills

The skill set of RRT members was described as variable and inconsistent. Skills were predominantly determined by professional role and availability. In rural areas, immediate responders were usually a nurse and/or junior doctor (usually a house surgeon), with a senior doctor on-call for support. This may be a resident ED senior medical officer during working hours, becoming non-resident (but available within 15 minutes’ call-back) out-of-hours.

All DHBs have a cardiac arrest team with significant variability in composition. This ranged from an ED nurse and house surgeon in one centre to a six-person team (incorporating a cardiology, anaesthetic and ICU registrar) in another. In many centres the cardiac arrest team also functions as the RRT; in some this occurs only out-of-hours. In smaller centres both teams are ED led and can involve as few as two people.

Most large centres have a standalone MET or RRT as well as a cardiac arrest team, and it is usually multidisciplinary. Clinicians in smaller centres expressed concern that, similar to the

\textsuperscript{14} ISBAR is an acronym for Identify (yourself), describe the clinical situation, provide background, your assessment and your recommendation. It is a simple communication tool that has been shown to facilitate prompt and accurate handover of information between professionals, particularly during crisis.
experience of larger ICUs, this leaves the ED exposed to clinical risk as their staff are occupied elsewhere in the hospital, often for considerable lengths of time.

Most clinicians expressed concern over the variation in their local service, advocating for organisational support for consistent 24/7 RRT. This would include education and training in the clinical skills required to respond to deterioration alongside technological resources.

The feedback suggests a national approach must acknowledge variability in local resources while standardising the skills required by members of response teams. Some clinicians described this as a ‘national skills framework for rapid responders’, suggesting it should include both technical and non-technical skills (the latter being currently not part of mandatory resuscitation training).

**Funding and resourcing response models**

Several of the rapid response models described required investment in or reconfiguration of the nursing workforce. A number of (nursing) response arms reported funding was allocated when variations in mortality were identified within Health Roundtable data. This had led to increased service provision during identified ‘at-risk’ periods, namely out-of-hours and over the weekend.

Several larger centres reported concern over the impact of their increased RRT activity on medical staffing of their ICUs. None had received additional funding to critical care areas to provide this additional service. One clinician expressed concern that an increased demand for inter-hospital transfers combined with increasing RRT calls (both requiring the presence of an ICU registrar, often simultaneously) had led to increased junior medical staff absence from the ICU for long periods of time. This was described as a safety concern for the critically ill within the unit and impacted upon the training of doctors due to a consequent reduced exposure to ICU patients.

One DHB reported using a nurse practitioner-led service, with the introduction of the EWS system and nurse-led response arm resulting in a reduction in cardiac arrest rates.

Several clinicians (both doctors and nurses) said the expansion of scope and recognition of the value of advanced nursing practice was increasingly important. Clinicians supported advanced nursing roles in this area, suggesting they provide clinical support, expertise and value for money. Several clinicians said skills are retained better by more constant senior nursing staff than junior medical staff who change every 3–6 months.

**Patient and family/whānau escalation**

We asked clinical staff how patients or their families/whānau were currently able to escalate concerns they may have about clinical deterioration. Most said this was ‘business as usual’, usually done through the nursing team. One hospital is researching barriers to escalation for patients and families/whānau, which may help to inform the proposed national programme.

There was a difference of opinion across professional groups about the value of patient and family/whānau escalation being part of a national programme. Most nursing leads encouraged it as a response arm. Medical staff expressed concerns, such as potential operational difficulties, lack of clarity around patient ‘ownership’ and some professional groups being more supportive than others. Some said such a system may contribute to
‘burnout’ of senior medical staff, as it may provide increased avenues for complaint about them.

Everyone agreed competent triage of calls would be essential for patient and family/whānau escalation to be successful. This required a skilled assessor available 24/7 to decide when to escalate and to whom.

Some clinicians in smaller centres said patient and family/whānau escalation may increase complexity and distress, as resident staff are likely to be those the family have already tried to escalate to, often unsuccessfully. Other clinicians from similar-sized centres suggested patient and family/whānau escalation may be easier, is already working (and therefore not formally required), or may not be as necessary to implement compared with larger centres. They suggested longer-term therapeutic relationships (more likely present between patients and their nursing and medical staff in smaller centres) enhance communication and benefit patients. They suggested there is significant benefit to the longer-term therapeutic relationship (more likely present between patients and their nursing and medical staff in smaller centres) that enhances communication.

A frequently expressed concern regarded ownership of the response. There was a general consensus this should sit with the parent team. Some suggested quality managers would be best placed to respond (as they are usually tasked with dealing with patient complaints). Some CCOT nurses suggested this should be a two-tier activation process requiring an assessment first by someone else, before clinically relevant concerns are escalated to them. This was consistent with their view of them being supporters and facilitators, and not ‘taking over’.

**Governance of RRS**

Clinicians described diverse systems of governance, reflecting the variability in ownership of RRS across the sector.

Some clinicians suggested patient deterioration is part of clinical practice and, as such, events may not be reported well using current systems by parent teams.

Larger centres described governance of RRS within specific multidisciplinary groups, which often evolved from previously named ‘resuscitation committees’ that had overseen cardiac arrest processes within the hospital. Often these groups were ad hoc with little institutional support.

One centre, which had launched an RRS 10 years previously, described a system-wide approach to patient deterioration. The approach was described as ‘continually evolving, using a quality improvement research-based approach and being continually refined as limitations were identified’. The centre had organisational oversight and support at executive level, which was viewed as essential to accepting culture change.

Smaller centres described governance of patient deterioration taking place through ED morbidity and mortality meetings, with some linking into the wider DHB clinical quality system. Some clinicians were unable to comment on the quality markers used to assess the efficacy of their systems, either because they were unaware of them or because the markers were non-existent.
Feedback into wider organisational or national governance processes was described as variable. Many clinicians acknowledged that Severity Assessment Code (SAC) 1 and 2\(^{15}\) events relating to patient deterioration may not always be reported.

Some essential components of RRS governance were suggested, including:

- strong oversight and leadership
- multiprofessional clinician input
- a collaborative approach across networks
- robust feedback and after-action review or debrief mechanisms.

Clinicians who described a system they felt was ‘good’ also discussed the importance of senior managerial support for governance systems in this area. This was usually determined to be a key role for the executive team, and many suggested it should be led by the chief executive.

**Data collection**

Clinicians agreed systems could only be said to ‘work well’ when there was high-quality data collection and analysis, although they described wide variability in such practices. In the absence of a recommended minimum data set and standardised reporting, some DHBs collect minimal amounts of data.

Many clinicians thought their current system ‘works well’ but did not collect data to support this assertion.

There were significant variations between the data medical leads thought should be collected and data actually collected.

Nursing leads collected both quality outcome and operational data in larger centres.

Only a single centre reported medical-led data collection, analysis and reporting.

**Training and education**

Training and education for response teams varies across the sector and includes:

- NZRC\(^{16}\) level 6 minimum
- NZRC level 7 for medical staff
- specific training courses such as the ‘ALERT’ deteriorating patient course
- simulation training (both in-situ and in simulation centres)
- critical thinking and assessment skills
- team training and training in non-technical skills
- EWS training during induction of new staff.

Only one centre described providing non-technical skills, team training and specific MET training for their ICU medical staff who attend calls.

There was universal agreement that a key development area was a national recommendation for a clinical skill set for response team members. Many clinicians stated

---


\(^{16}\) New Zealand Resuscitation Council
this should include non-technical as well as technical skills, and be embedded in pre- and post-graduate education, as well as clinical credentialing.

**Goals of treatment**

Clinicians were asked what systems, if any, existed within their DHB to address the ‘grey area’ between full active treatment with curative intent and ‘do not resuscitate’ (DNR) orders.

Several clinicians and quality leads described recent implementation of ‘treatment escalation plans’ to address specific treatment modalities that should be discussed with patients alongside the appropriateness of their use and likelihood of success should they be implemented. Examples given included antibiotics for infection, intubation for respiratory failure and non-invasive ventilation. Most interviewees also said compliance with this documentation was very poor, and audits supplied by clinicians in two DHBs supported this view. Several contributory factors were identified, including time pressures, unclear lines of responsibility, level of confidence and lack of experience or knowledge of the staff expected to initiate these conversations with patients.

Many clinicians described a change in focus of treatment triggered by an RRT review. These commonly included treatment limitation, as further escalation was deemed inappropriate or futile. Several felt a national approach to goals of treatment would improve patient-focused care by not offering futile treatments, and increasing patient and family/whānau participation in decision-making. Several staff expressed moral distress about having witnessed or participated in treatment or resuscitation of patients for whom they believed this was inappropriate with no chance of success.

Clinicians described occasional unrealistic expectations of patients or their families/whānau. These increased in patients with low health literacy or chronic disease where there were often limited prior conversations in primary care or specialist outpatient clinics about likely disease courses. These situations were described as particularly challenging to support and manage.

Differing perceptions around the meaning of DNR forms, often among junior staff, were also highlighted. These included interpretations of DNR being a continuum from ‘no observations or escalation at all’ to ‘everything except cardiopulmonary resuscitation’ (but this may also include ‘limited defibrillation’ or ‘cardioversion’).

Several clinicians described occasions where aggressive treatment was inappropriate but had been provided because there had been no prior discussion about patient expectations, and this conversation is extremely difficult to conduct during an acute deterioration.

**Descriptions of goals of treatment versus advance care planning**

Interviewees recognised that patients who may benefit from goals of treatment planning may be distinct from those for whom advance care planning may be beneficial.

‘Advance care planning’ was described as a process by which patients are asked to discuss their wishes when they are well and, mostly, resident in the community.

‘Goals of treatment’ was described as an alignment between the clinician’s ‘medical plan’ and the expectations of the patient on admission to hospital, often acutely. This definition was supported by our expert advisory group and was informed by the high prevalence of
treatment limitation found to occur during or immediately after RRT review. As such, it was felt that advance care planning was largely within the domain of primary or outpatient care, and, although it informed goals of treatment planning acutely, the two processes are otherwise separate.

In short, advance care planning is what the patient wishes to happen; goals of treatment matches that with appropriate treatment to achieve those goals acutely, informed by the clinician’s assessment of likely outcomes.

Collaboration and a national approach

Most clinicians supported a national framework for collaboration, including expert recommendations for different levels of intervention. This was described as a collaborative approach that would support a national dialogue, ensure an ethical patient-centred focus for treatment escalation and facilitate early transfer if indicated. Early access to palliative care expertise when indicated was highlighted as the gold standard. Clinicians suggested standardisation in this area may overcome some of the challenges presented by a mobile medical workforce, locums and the training needs these impose on each DHB. Any collaborative approach would require representation from all relevant professional groups.

The most contentious issue raised with regard to collaboration related to ownership of the process. Significant variability in ICU influence was reported. ICU clinicians said they were the 'limiting step' with regard to patient escalation. They recognised this may be in part due to them being the 'gatekeeper' to a limited resource and also more experienced with outcomes from certain interventions (eg, the chance of being successfully weaned from a ventilator). Some reported infrequent conversations with their ward-based colleagues regarding limitations on referred patients. Others stated this was a daily occurrence.

Clinicians agreed patients goals of treatment are best met through quality conversations rather than multiple ones. Quality of communication and training of clinicians in 'difficult conversations' with patients and their families/whānau were identified as key focus areas. It was also recognised that mandating junior staff to have conversations around goals of treatment without adequate training may be potentially harmful for both patients and clinicians.

Conclusion

Interviewees described consistent similarities in many aspects of the recognition and management of deteriorating adult patients in New Zealand hospitals.

Conversely, they also described significant variability in responses to such events, which is largely determined by the availability of local resources. Such resources may vary with the time of day, or day of the week.

Many rapid response systems are nurse-led, with variable medical involvement around governance processes despite junior medical staff being involved in the response arm.

Some nursing models have received funding for additional resources; no medical responders reported having done so.

Several hospitals have adopted novel processes (such as treatment escalation plans) to improve the management of patient deterioration.
A consistent theme that emerged from smaller centres was seeking collegial support from their nearest tertiary hospital but also requesting an understanding of their unique (often resource-limited) situation.

Based on sector feedback, a national approach, specifically a national EWS and VSC, and guidance on governance and response teams that accounts for geographical differences would be supported by health care professionals. This requires organisational support and regional approaches to system development.

Experts in clinical practice support an approach that works in partnership with patients and families/whānau experiencing deterioration in acute illness. Proposals from the sector for a national programme include a standardised approach to goals of care/treatment, recognising multi-professional input and enabling patients and families/whānau to escalate concerns about patient deterioration.

The scoping process for the proposed national programme is ongoing and feedback is welcome. Please contact Commission senior advisor Jo Wailling (jo.wailling@hqsc.govt.nz) if you would like to take part in an interview or discuss anything you feel is missing or misunderstood with regard to current New Zealand practice.

This draft discussion paper will be reviewed and published on the Commission website to ensure all interested parties in the sector have a chance to contribute to the discussion.
Appendix A: Interview template for the deteriorating adult patient

Introductory questions

1. Explanation of project (adult limitation – paediatric and maternity out of scope).
2. Can you tell me about your role in regards to patient deterioration/goals of care/amber?
3. Who are the key people to talk to in your organisation for this project?
4. Can you tell me about how you manage critically ill patients from an operational perspective? How does this fit within your sub-region?
5. How many hospitals is your DHB responsible for and who can we talk to in the smaller hospitals about how patient deterioration is managed?

Standardised EWS

Can you tell me about your current process for recognising patient deterioration in your DHB?

Probes

1. Do you have a standardised EWS across your DHB?
2. How did you choose your parameters for recognition and response – how have you communicated this?
3. Are there standardised VSC across organisation or do you have multiple charts?
4. Who owns/leads your EWS system?
5. Have you made changes to your EWS since implementation? Why?
6. Can you tell me about how this was implemented, any key lessons learnt from this? What were your problems/successes?
7. Do you have or are you currently looking at technological solutions to support detection?
8. How are you measuring success/what would you suggest would be key measurements for success?
9. What precipitated the introduction of your EWS? Is there a single critical case or multiple incidents/anecdotes?

Identification and response to patient deterioration

Can you tell me about your current process for responding to deteriorating patient?

1. Tell me about ownership of this process.
2. Tell me about the leadership of the response.
3. Do you have a MET team? What does this look like? What else are they responsible for?
4. Is this nurse/doctor led?
5. How long has this been in place?
6. How are you measuring success/what would you suggest would be key measurements for success?
7. If you don’t have one how do you know your current process is working?
8. Tell me about your experience of implementation and lessons learnt – is there anything you would do the same or differently?
9. What initial and ongoing training have you implemented as part of the implementation?
10. Do you have any additional governance structures/policies around patient deterioration/MET teams and can we have copies?

**Family/Patient-activated response**

**Probes**

1. Do you have a system for family or patient activation for deterioration?
2. If YES how does this work? What have been your successes/pitfalls/problems? How have you overcome these?
3. How are you measuring or intending to measure this was a success?
4. If NO have you thought about this and why didn’t you implement?
5. What are your thoughts about implementing this as a recognition arm?

**Treatment escalation/Goals of care**

*May require explanation of how this relates to the project.*

Can you tell me about your current process for determining goals of care for patients?

1. Do you have anything other than a DNR form in place for limiting treatment – if so what do you call it? If not what is your experience of current practice in your organisation?
2. If you do can you tell me how it works and please can I have it (policy and form)?
3. Who makes decisions about escalation of care/treatment limitation in your organisation?
4. What do you see as the ideal process?
5. How does this relate to deteriorating patients and do you have anything specific in place to reduce MET calls for end-of-life care?

What has been your experience of implementation and lessons learnt?

**Identification and response to sepsis**

Can you tell me about your current process for recognising and responding to sepsis?

**Probes**

1. Do you have a protocol/bundle? If so what does this look like and where is this implemented (ED/ward/whole DHB)?
2. Who owns this in your organisation?
3. Are/How are you measuring success of this implementation?
4. What has been your experience of implementation and lessons learnt?
5. If you are not measuring this how do you know it’s working?
6. How are you currently measuring outcomes in relation to sepsis?

**Wrap-up and member check**

Our aim today was to discuss how your DHB is recognising and responding to patient deterioration. Do you think there is anything we have missed?

Do you know of any key influencers in your DHB? Who are they? Any key barriers you foresee?

Do you have any other hospitals in your network and who should we talk to?
Appendix B: Organisations, national groups and experts contacted as of January 2016

Auckland District Health Board
Australasian College for Emergency Medicine (New Zealand branch)
Bay of Plenty District Health Board
Dr Michael Buist
Canterbury District Health Board
Capital and Coast District Health Board
College of Emergency Nurses (New Zealand)
College of Intensive Care Medicine (New Zealand branch)
Counties Manukau District Health Board
Hawke’s Bay District Health Board
Hutt Valley District Health Board
Lakes District Health Board
Mid Central District Health Board
National Telemedicine Group
Nelson-Marlborough District Health Board
New Zealand College of Critical Care Nurses
New Zealand Palliative Care Network
New Zealand Resuscitation Council
New Zealand Rural Hospitals Network
Northland District Health Board
South Canterbury District Health Board
Southern District Health Board
Tairawhiti District Health Board
Taranaki District Health Board
University of Otago
Victoria University of Wellington
Waikato District Health Board
Wairarapa District Health Board
Waitemata District Health Board
West Coast District Health Board
Whanganui District Health Board
Appendix C: Deteriorating Patient Programme Expert Advisory Group members

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gabrielle Nicholson</td>
<td>Senior Portfolio Manager (Chair of EAG)</td>
<td>Commission</td>
</tr>
<tr>
<td>Dr Alex Psirides</td>
<td>Clinical Lead (and intensivist at CCDHB)</td>
<td>Commission</td>
</tr>
<tr>
<td>Martine Abel</td>
<td>Consumer</td>
<td>Consumer Network</td>
</tr>
<tr>
<td>Jo Wailling</td>
<td>Senior Advisor/ Subject Matter Expert (and previously intensive care CNS at Wairarapa DHB)</td>
<td>Commission</td>
</tr>
<tr>
<td>Dr David Tripp</td>
<td>General Physician (and Intensivist)</td>
<td>Capital &amp; Coast DHB</td>
</tr>
<tr>
<td>Carolyn Bennison</td>
<td>Nurse Educator - Emergency Continuum, HDU/AAU</td>
<td>Nelson Marlborough DHB</td>
</tr>
<tr>
<td>Dr Jane Hardcastle</td>
<td>Nurse Consultant</td>
<td>St George's Hospital</td>
</tr>
<tr>
<td>Dr Ulrike Buehner</td>
<td>HOD Intensive Care Unit and Consultant Anaesthetist</td>
<td>Lakes DHB</td>
</tr>
<tr>
<td>Dr Emma Merry</td>
<td>Intensivist and Medical Lead, Outreach and Goals of Treatment Project, Clinical Education Advisor</td>
<td>Hawkes Bay DHB</td>
</tr>
<tr>
<td>Colleen Hartley</td>
<td>Nurse Manager Critical Care Services</td>
<td>Waikato DHB</td>
</tr>
<tr>
<td>Prof Maureen (Mo) Coombs</td>
<td>Professor in Clinical Nursing</td>
<td>Vic University and Capital &amp; Coast DHB</td>
</tr>
<tr>
<td>Dr Seton Henderson</td>
<td>Clinical Director, Department of Intensive Care</td>
<td>Canterbury DHB</td>
</tr>
<tr>
<td>John Hewitt</td>
<td>Clinical Nurse Specialist, Project Clinical Lead, Quality and Patient Safety</td>
<td>Canterbury DHB</td>
</tr>
<tr>
<td>Charlotte Firth</td>
<td>Clinical Charge Nurse</td>
<td>Waitemata DHB</td>
</tr>
<tr>
<td>Lesley Kazula</td>
<td>Clinical Resource Nurse</td>
<td>Counties Manukau Health</td>
</tr>
<tr>
<td>Kathy Glasgow</td>
<td>Senior Nursing Advisor, Office of Chief Nurse</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>Dr Will Perry</td>
<td>RACS General Surgery Trainee / Senior Registrar, General Surgery (previously at Bay of Plenty DHB) Also an external consultant to the Patient Safety Programme, WHO Geneva.</td>
<td>Canterbury DHB</td>
</tr>
</tbody>
</table>
In attendance from the Commission:

- Karen Orsborn, General Manager
- Dr Iwona Stolarek, Medical Advisor
- Gillian Bohm, Principal Advisor Quality Improvement
- Emma Forbes, Senior Project Manager
- Catherine Proffitt, Senior Analyst (until Dec 2015)
- Prem Kumar, Quality Improvement Advisor (from Dec 2015)