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The Implementation of an Early Warning System to a Sub-Acute Unit

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Project Dissertation

The Implementation of an Early Warning System to a sub-acute unit

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Glossary of Terms and Definitions:

**Acute Healthcare Facility:** A hospital or other healthcare facility providing health care services to patients for short periods of acute illness, injury or recovery.

**Early Warning System (EWS):** An Early Warning measures the patient’s routine physiological observations, thus providing an indication of the overall status of the patient’s condition, acting as a reliable indicator of impending or actual critical illness (McQuillan et al (1998)).

**Early Warning System Score:** is a bedside score and track and trigger system, calculated by nursing staff from the observations taken to indicate early signs of patient deterioration. It is a multi-parameter aggregate scoring system allowing both identification and progress monitoring of at risk patients (McQuillan et al (1998)).

**Escalation Protocol:** the protocol sets out the organisational response required different early warning scores identified or other observed deterioration. The protocol applies to the care of all patients at all times.

**HSE:** Health Service Executive

**CR:** Clinical Reasoning

**PDSA:** Plan-Do-Study-Act

**TQM:** Total Quality Management

**OD:** Organisational Development

**HIQA:** Health Information and Quality Authority

**SWOT:** Strengths- Weaknesses-Opportunities- Threats

**SBAR:** Situation- Background- Assessment- Recommendation
Abstract

Changes in legislation and regulation in Ireland have resulted in significant care of the elderly beds being incompatible with Health Information and Quality Authority (HIQA) standards regarding aging infrastructure. To ensure organisational viability, alternative deployment of these beds to sub-acute care, in line with Government policy is necessary. Additionally, hospitalised patients are in danger of experiencing deterioration at many points during their stay, a fact further compounded by this change in designation with lack of policy, procedure or protocol further exasperating patient risk. This change project outlines the introduction and implementation of an Early Warning System (EWS) to a twelve bedded sub-acute unit, utilising the Health service Executive (HSE) change model, based on the organisational development approach. A transformational leadership system is employed to establish this concept, progressing the team through training, development and reflection whilst engaging externally utilising an appropriate improvement framework. The change is then evaluated via a multi-method approach, outlining action necessary for future, further dissemination. The implementation of the EWS facilitated recognition of abnormal physiological considerations and prioritisation of care, enveloping the concept of continuous quality improvement by means of improved clinical reasoning skills and interdisciplinary communication. However, the success of the initiative was heavily dependent on considerable training, development and support over a two month period. To facilitate subsequent successful implementation elsewhere, will necessitate the allocation of specific resources, ensuring context driven interventions, training and evaluation. Such evidence will determine the effectiveness of the EWS in improving patient safety and preventing unsavoury patient outcomes, demonstrating the hospital’s ability to adequately care for this category of patient, standardising patient care and ensuring organisational sustainability in line with present Government strategy.
Acknowledgements

The writer wishes to express her gratitude to all of those who contributed generously of their time, knowledge and experience in the implementation of this change project. Specifically, the members of the Early Warning System Project Group who adopted an ongoing collaborative management of the change utilising a problem solving approach to the implementation of the Early Warning System. In addition, the input of the staff of the sub-acute ward is recognised, who engaged in this project positively and enthusiastically in the belief that it would deliver holistic, patient centred, safe care. It is refreshing to note that in a time of considerable challenge and negative press in the healthcare area, the dedication and steadfastness of organisational staff was paramount when an opportunity to improve patient outcomes was presented. Lastly, the writer would like to recognise the encouragement and assistance provided at the RCSI, specifically from the facilitator and the members of the Action Learning Set who have validated the action learning approach of planning, action, reflection and evaluation as a means of integrating performance improvement at every level in the pursuit of individualised care for hospital patients.
Chapter 1
Leaders and managers working in healthcare today are faced with considerable, multifaceted challenges which, commonly, are compounded by constrained resources, recruitment restrictions and patients presenting with complex, multi-system pathologies. Despite working in this chaotic, constantly changing environment, leaders and managers must continue to provide dynamic, responsive, safe, high quality services. The writer’s workplace, a voluntary care of the elderly facility which originated as a hierarchal military hospital is currently facing great challenges. In addition to the unstable climate outlined above, the changing demographics, social environment and advances in technology, communication and information, the hospital is also facing issues influencing care delivery to the local elderly population. The recently published Future Health (DoH 2012), Better, Safer Care (HIQA 2012) and the Health Service Executive (HSE) Service Plan (HSE 2012) all reveal extensive modifications to how future care of the elderly services will be delivered and financed and combined with other external competitive forces pose significant dangers to organisational viability. Clearly, to survive, the organisation must embrace two enduring strategies ensuring competitive advantage in today’s fractured political and economic environment- external reengineering and internal reengineering. This change management project seeks to capture the process involved to ensure the success of the latter concept, primarily focussing on implementing an Early Warning System (EWS) to a newly formed twelve bedded sub-acute area. Chapter 1 outlines the nature, rationale and context of this change whilst clarifying the aims and objectives of the project as an entity.

1.1  Nature of the change

As a significant number of current long-term beds in the writer's organisation, do not currently meet HIQA (Health Information and Quality Authority) standards relating to the hospital's aging infra-structure, it is necessary to reconfigure approximately 40% of present beds to short stay sub-acute, integrating local acute and community care, corresponding to the Care of the
Elderly Clinical Care Programme (HSE 2012b), Future Health (DoH 2012), the HSE Service Plan (2012) and HIQA regulations by January 2015. As part of this initiative, a service level agreement was developed in November 2012 outlining the establishment of a sub-acute 12 bedded ward determining the feasibility of the future proposed initiative. Characterised by patients with complex pathology, this setting contrasts to relatively stable elderly care, likely to be, or to become seriously ill during hospitalisation (Bright et al 2004). Currently, no processes, systems or procedures exist to guide staff in patient deterioration management, placing patients, staff and the organisation at unacceptable risk. The writer therefore, is seeking to introduce an Early Warning System (EWS) to the newly opened 12 bedded sub-acute ward ensuring safety and quality of services provided, whilst demonstrating this option as a feasible business strategy, complying with HIQA standards. Finally, it is hoped this initiative will drive a person centred establishment, capable of meeting unrelenting and accelerating internal and external challenges, gaining competitive advantage whilst ensuring organisational sustainability and future growth.

1.2 Rationale for the change:

The current hospital-centred care model in Ireland cannot deliver the quality of care required by the population at a financially viable rate that the country can afford. Government Policy dictates the creation of a new integrated care model, enabling patient treatment at the lowest level of complexity that is safe, timely, efficient and as close to home as possible (DoH 2012). Transferring the emphasis from sporadic, reactive care to holistic, individualised, patient centred care, facilitates evaluation, determining impact on patient outcomes corresponding to recent legislative emphasis on quality and safety (HIQA 2012). Forming the foundation of a licensing system to be operated by HIQA, these standards also outline minimum requirements defining physical infrastructure for elderly care commencing January 2015 with 40% of current beds deemed incompatible. To address this issue, bridging the gap between acute and community care, the newly opened twelve bedded unit provides short term sub-acute care to patients historically treated in the local acute sector. This patient designation alteration, however, with complex patient pathology, significantly increases the possibility of patients becoming acutely unwell during hospitalisation, with deterioration occurring prior to staff recognising and responding
to abnormal physiological signs (NICE 2007a). Implementing an EWS, addressing this significant concern is therefore paramount to maintaining patient safety, reducing staff and organisational risk, in addition to ensuring organisational viability corresponding to legislative, regulatory and present Government policy (DoH 2012).

1.3 Context of the change:

HIQA’s presence, the increasing focus on individualised patient safety and the imminent introduction of licensing places legislative accountability on the writer as Responsible Person in addition to her role as Director of Nursing of a voluntary, care of the elderly, ex-military hospital. The new patient designation of sub-acute care, however, requires systems to effectively address potential patient adverse events. The introduction of the EWS will be limited for the duration of this project to the newly opened twelve bedded sub-acute unit, facilitating individualised monitoring of clinical progress whilst allowing a graded response strategy to achieve high sensitivity and specificity.

1.4 Aims and objectives

The vision and shared direction reflect the overall ambition of the change project and served as the basis from which the change approach was developed.

Figure 1.1: Vision of change project

By 31st March 2013, our distinctive ability to provide optimum care for patients at risk of deterioration utilising the EWS will demonstrate our ability to provide evidenced based sub-acute care.

The primary aim of this project was to successfully introduce an EWS to a twelve bedded sub-acute unit by 31st March 2013. Four SMART objectives emerged, based on interrelating areas presenting organisational risk relating to deterioration.
1. **Ensure the Prioritisation of Care for deteriorating patients by 31\textsuperscript{st} March 2013 utilising:**

   - Clinical judgement – applying preceding and acquired knowledge and skills ensuring early deterioration recognition.
   - Effective decision making skills.
   - Guidelines and escalation protocol.
   - An appropriate, timely response.

2. **Ensure demonstration of Clinical Reasoning (CR) skills of nursing staff by 31\textsuperscript{st} March 2013 through:**

   - Recognition and interpretation of abnormal, clinical observations and appropriate care escalation.
   - Comprehending necessity and relevance of vital signs relating to underlying patient physiology.
   - Understanding investigation results.
   - Recognising own limitations.

3. **Ensure suitable referral of patients 31\textsuperscript{st} March 2013 by:**

   - Assessing potential acuteness of deterioration.
   - Recognising necessity for specialist assistance.
   - Identifying appropriate environment as per escalation protocol.

4. **Improving communication and team working by 31\textsuperscript{st} March 2013 by:**

   - Promoting the utilisation of an effective interdisciplinary communication forum and team working.
   - Communicating patient conditions effectively, appropriately and promptly.
   - Developing and implementing individualised patient action management strategies.

1.5 Summary

The change in patient designation to sub-acute signifies the presentation of patients with complex pathologies, more likely to become seriously ill during hospitalisation.
The absence of a guiding system outlining prompt appropriate management has resulted in unacceptable patient, staff and organisational risk. Failure to detect or manage physiological warning signs has resulted in EWS implementation in acute areas however as EWS effectiveness is reliant primarily on dynamic vital sign monitoring by nursing staff, it is vital to critically analyse current nursing observation practice by conducting a methodical literature review. Chapter 2 will analyse factors that hamper and encourage effective observation practice. Utilising this information, will thus facilitate the design and implementation of appropriate education and support systems to ensure success of the initiative leading to improved patient outcomes.
Chapter 2
2.1 Introduction

Hospitalised patients are at risk of clinical deterioration at many instances during their inpatient stay, however it is well recognised that patients who become acutely unwell may not receive the optimum care because their deterioration is not recognised or appreciated promptly resulting in a delay in seeking assistance (NPSA 2007). Nurses have a pivotal role in recognising the premonitory signs of deterioration, identified by several studies as being present in significant patient numbers and responding aptly to prevent deterioration occurrence, ultimately, improving patient outcomes (Schein et al 1990, Franklin and Mathew 1994, Smith and Wood 1998, Liaw et al 2011, Jones et al 2009) Several studies demonstrate suboptimal patient care due in part to nurses ability to detect, overlook or poorly manage physiological symptoms of deterioration (Hillman et al 2002, Buist et al 2002, McQuillan et al 1998). As effective observation is the first action in the detection and management of the deteriorating patient, it is critical that an appreciation of nurses observation practice is achieved which aims to positively impact patient outcome by preventing and promptly detecting deterioration which may lead to grave illness, patient transfer to the acute setting and even death. The literature review, aims to critically analyse general ward nursing practice in detecting and managing the deteriorating patient prior to the introduction of an EWS to a 12 bedded sub-acute setting.

2.2 Search Strategy

An integrative exploration methodology was utilised to identify, critically analyse and amalgamate research findings, establishing current knowledge, relating to nurses’ role in detecting deterioration in hospitalised patients (Burns and Grove 2011). The search was conducted using four central sources: online databases, key reports, expert advice and reference lists. Five electronic data bases were searched: CINAHL, MEDLINE, COCHRANE, EMBASE and King’s Fund between 1990 and December 2012. 1990 was selected as the cut off date as this was when the 1st study summarising the concept of the deteriorating patient was published (Schein et al 1990). Three considerable search categories were utilised in the database search: physiological deterioration, hospitalised patients and nursing observations. A combination of various keywords assisted this process including: adverse events,
sub-acute care, nursing role, nursing concern, clinical decision making, pre-arrest period, vital signs, inpatient, early recognition, emergency assistance and deterioration. The inclusion and exclusion criteria are presented below with 31 studies meeting the inclusion criteria (appendix 1).

Table 2.1: Inclusion and Exclusion Criteria:

<table>
<thead>
<tr>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Published between 1990 and 2012</td>
<td>Studies conducted in psychiatric units, obstetric/ paediatric units, intensive care.</td>
</tr>
<tr>
<td>Primary research related to nursing observation on adult patients in general clinical setting</td>
<td>Studies outlining the effectiveness of treatments /interventions necessary to treat deteriorating patients.</td>
</tr>
<tr>
<td>All intervention and outcomes (excluding those in exclusion criteria)</td>
<td>Studies evaluating the effects of the medical emergency team.</td>
</tr>
<tr>
<td>All research/guidelines/reports associated with recognising and responding to deteriorating or acutely ill patient</td>
<td>Editorials and case reviews</td>
</tr>
</tbody>
</table>

2.3 Review themes

A manual thematic examination was utilised to identify and categorise into four main themes: detection, recording and reviewing, reporting and responding. These themes portray how nurses observe patients prior to deterioration occurrence.

2.3.1 Detection

Even though the literature indicates that nurses have significant roles detecting the subtle signs of patient deterioration (Hogan 2006), deterioration is difficult to identify leading to a delay in seeking assistance (McQuillan et al 1998, Buist et al 2002, Hillman et al 2002). Additionally, Cioffi (2000b), found that nurses did not deal routinely with acute situations. Further research by Cioffi et al (2006), reported that the non-recognition of vital signs was interlinked to nurse experience, with
inexperienced nurses unable to appreciate the significance of abnormal vital measurements to appropriate prompt corrective action. Further studies acknowledged that less experienced nurses tended to wait for assistance, thus delaying vital treatment (Gazarian et al 2010, Williams et al 2011). Tremendous workload which thwarted nurses’ attempts to adequately assess and take action was also identified as a contributory factor. (Duchscher 2008, Olson 2009). Chellel et al (2002) described how 12% of patients on general wards were of a sufficiently high dependency to deteriorate, which has ramifications for the success of the 12 bed sub-acute unit. This report was further strengthened by Cutler (2002) and Hogan (2006) who found the presence of highly dependent patients led to increased workloads and stress levels in nursing staff resulting in difficulties recognising and reporting to deterioration. This stressful workload and significant interruptions highlighted by time pressures and constraints resulted in Nurses only able to complete the required task at hand (Burger et al 2010).

The evidence suggests that nurses detect deteriorating patients through three routes: (table 2.2)

<table>
<thead>
<tr>
<th>Table 2.2: The detection of deterioration by Nursing staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Instinct which utilises an intuitive hunch that something is amiss based on two concepts:</td>
</tr>
<tr>
<td>➢ Knowing the baseline of the patient from previous contact and recognising subtle changes (Gazarian et al 2010, Minik and Harvey 2003, Kenward and Hodgetts 2002, Cioffi 2000a, Cioffi 2000b)</td>
</tr>
<tr>
<td>➢ Illness trajectory and pattern recognition following past exposure to similar situations (Gazarian et al 2010, Williams et al (2011), Minick and Harvey (2003), Cioffi (2000a), Cioffi (2000b))</td>
</tr>
<tr>
<td>• Concerns from family (Cioffi 2000a)</td>
</tr>
<tr>
<td>• Awareness of deterioration through routine observation</td>
</tr>
</tbody>
</table>
Intuition based on the above enabled nurses to recognise variations from routine patterns, accounting for the most common process of deterioration detection. This concern led to assessment of vital signs thus confirming suspicions, enabling prompt action. The vital role played by family in detecting subtle changes was briefly outlined, however, the least reported method to discover deterioration was during routine observation. This aspect warrants further exploration in relation to the introduction of an EWS for the detection of patient deterioration.

2.3.2 Recording and Reviewing:

Vital sign recording is usually undertaken via two routes- routine observation recording and individual recording taken to substantiate intuitive concerns that deterioration is occurring (Cioffi 2000a). Routine recording has been observed by Wheatley (2006) as habitual, a task orientated occupation routinely undertaken by care assistants, who may lack the necessary training and expertise to apply CR skills in the presence of subtle signs of deterioration (McBride et al (2005), Chellel et al (2002). Further studies reported a lack of clarity regarding the delegation of vital sign recording although it was evident that it was the responsibility of the nurse to act if the patient was deteriorating (Cutler 2002, Hogan 2006). Additionally, little conformity existed regarding the frequency of vital signs recording with Chellel et al (2002) reporting such recordings as being absent or infrequent. Registered nurses recognised a habitual dependence on vital signs in the assessment process, to the detriment of a holistic approach (Endacott et al (2007), Cox et al 2006). Observations were perceived as routine but a lack of education and experience existed as to how to effectively assess the overall physiological state of the patient, appreciating the significance of such measurements potentially leading to missed clues in deterioration detection (Wheatley 2006). Such intensified vital sign recording was alluded to by Wheatley (2006) as contributing to increased workload especially in inexperienced nurses who lacked the ability to prioritise and organise. Kielpikowska (2006) and Cioffi et al (2006) acknowledged that this overwhelming workload was described by nurses as physically and emotionally exhausting placing both patients and nursing staff in jeopardy. Gazarian et al (2010) reported how inexperienced nurses tended to wait for assistance instead of escalating care thus delaying treatment. This deduction is consistent with findings of other studies (Duchscher (2008), Olson (2009), Fink et al (2008)) recognising that this linear thinking, inability
to interpret and limited CR all contributed to the subtle signs of deterioration going unrecognised with medical interventions being started too late or not at all.

Gazarian et al (2010) reported that equipment concerns greatly influenced nurses’ assessment of patients with issues such as faulty machinery, limited access, missing accessories, unfamiliarity with replacement equipment, lack of maintenance and quality control all affecting the accuracy of the patient assessment and consequential decisions. There was also an over-reliance on equipment with Cox et al (2006) and Hogan (2006) reporting a lack of awareness of its limitations.

2.3.3 Reporting:

The relationship between doctors, nurses and managers in the management of adverse events was multifaceted. Registered nurses reported difficulties in articulating subtle changes in patient condition, more likely to use social language in communicating deterioration. Nurses feared damaged professional credibility if intuitive concern was communicated to doctors using poorly articulated medical language (Kenwood and Hodgetts 2002, Cioffi 2000b). This lack of clarify resulted in doctors seeking further evidence to enable decision making, viewed by nurses as a delaying tactic, leaving nurses unsupported and distressed (Kielpikowska 2006). These negative approaches were credited by Nurmi et al (2005) as causing delays and non-compliance with best practice with Williams et al (2011) articulating delays in raising the alarm, non observance with calling criteria and lack of knowledge regarding the hospitals outlined escalation protocol.

The EWS was recounted by Andrews and Waterman (2005) as infusing confidence and the authority to articulate concerns when describing subtle changes of deterioration. This collaborative approach between doctors and nurses, utilising an agreed tool, accelerated the assessment process resulting in an improvement in the patient’s condition, strengthening the nurses’ use of the escalation process (Williams et al 2011).

2.3.4 Responding:

It is clear that nurses of all experience valued medical support when dealing with complex patient situations. Endacott et al (2007) reported incomplete staff resource, particularly at nights and weekends, was a critical factor when dealing with adverse
events and was the main obstruction when receiving necessary assistance for a patient demonstrating signs of deterioration. Allusions were made to how nurses initiated treatment such as increasing intravenous fluids or commencing oxygen prior to informing medical staff (Cutler 2002). This action was defended by nursing staff as warranted due to inexperience and lack of knowledge of junior medical staff however it could be construed as stepping outside the scope of practice (Cutler 2002). Conflict also arose as nurses felt they were being asked to advice on treatment and medication by junior doctors. Cioffi (2000b) also accounted that nursing staff would decide not to evoke the escalation protocol if they felt patients were not suitable such as in cases such as chronic respiratory disease even if referral criteria were met. This process demonstrated developed CR skills, more common in experienced staff possessing ability to interpret cues, process information and comprehend situations facilitating intervention implementation, analysis and reflection allowing learning for future action. (Burger et al (2010), Levett- Jones et al (2010)).

2.4 Implications for the change project

It is clear that Nurses are struggling to effectively detect and adequately manage deteriorating patients, and are prevented from providing optimum care due to extreme workload, lack of knowledge and experience. The literature review indicates that Nurses rely heavily on intuitive reasoning in deterioration detection but underestimate the significance of information gained, thus leading to caution, indecision and late intervention (Thompson et al (2007), Williams et al (2011), Endacott et al (2007), Ranse and Arbon (2008)). Nurses also refer to vital signs when assessing for deterioration but findings showed omissions were apparent in observation charts, lacking empirical evidence preferred by doctors to assess and advice further action. The review also highlighted ineffective communication between nursing and medical staff with problems experienced communicating complex information between different disciplines (NPSA 2007). Ward surroundings were reported as busy, noisy and distracting with inexperienced nursing and medical staff caring for patients with complicated, critical needs. Vital observations were considered routine, low priority
tasks and those ward settings who had EWS in situ found that they were often inaccurate and completed at irregular intervals.

The success therefore of introducing an EWS, relies heavily on the resolution of the influencing factors outlined above. It is vital that a work environment is promoted that encourages and educates nurses how to express their concerns. The organisation must endorse shared decision making, acknowledge team dynamics, and open communication across disciplines through appropriate educational programmes. Levett-Jones et al (2010) recommend a CR educational programme emphasising specific physiological measurements as significant early warning signs in patient deterioration. Emphasis is also placed on patient outcomes and recognition, that failure to act promptly can occur when subtle signs go unrecognised, unactioned and when possible treating medical interventions are commenced too late.

A shared structured communication tool such as Situation-Background-Assessment-Recommendation (SBAR) is also recommended which assists the development of critical thinking, crucial for complex interdisciplinary information transfer and teamwork (Mikos 2007) (appendix 1b).

Other issues also need examination: adequate ward staffing levels, the level of knowledge and experience, developing intuitive reasoning skills and critical assessment techniques including the monitoring and analysis of subjective in addition to objective data.

2.5 Summary

The timely detection and appropriate management of deteriorating patients has gained recognition, however this review reveals a multifaceted process, influenced by many aspects. The education and experience of the Nurse, interdisciplinary communication, ward environments, workload and culture together with an uninspired belief in the EWS are recognised as significant potential barriers to managing this pivotal aspect of care. Clearly, EWS will not reach full potential unless the influencing dynamics outlined above are appreciated and incorporated ensuring robust patient observation and timely deterioration detection. Chapter 3, therefore will critically discuss and appreciate the multifarious nature of change prior to justifying the model selected with reference to the complex, interrelated factors
identified, demanding actual behavioural change to health service organisation and delivery relating to deterioration.
Chapter 3
3.1 Introduction

It is widely accepted that to survive in today's volatile, complex healthcare arena, organisations must implement major incremental changes involving system and structure adjustment, additional to transformational change involving fundamental alterations to business development and conduction (Higgs and Rowland 2007). Despite widespread acceptance of change necessity, 70% of initiatives fail due to an effective leadership deficit throughout the process (Kotter 1990, Hammer and Champny 1993, Gill 2003) Management directive curtails risk thus maintaining the status quo whilst change by definition necessitates the creation of new order, demanding a leader (Kotter 1995). However, Lewin (1948), clarified field theory, change and consistency as relative concepts simultaneously present in the organisation, requiring effective leadership to balance resulting tension thus allowing continuous long term adaptation. As leader, it is necessary to champion this new order, finding practical ways to overcoming barriers to change outlined in chapter 2. The qualities of various leadership styles have been debated at length but general consensus suggests moving from hierarchical, military style, to actually considering leaders as inspirational participants leading to a more effective, efficient organisation (McCallin (2003), Murphy (2005), Manley et al (2008)). The success of the newly established sub-acute ward will determine potential business potential for current HIQA incompatible beds, however as this is a new speciality with associated hazards and risks, organisational governance demands the presence of a robust system to deal effectively with potential patient deterioration. The literature review indicated failure to detect and deal promptly with deterioration was due to interrelated, complex factors requiring action, ensuring project outcomes. An appropriate change model tailored to suit individual organisational needs, distilled from actual experience is necessary. Utilising core concepts from existing models may assist the leader deal with individual situations, avoiding change fatigue perils, thus promoting and sustaining successful change (NICE 2007b). Thus, chapter three will commence by critically reviewing approaches to change determining the most appropriate model to ensure successful implementation of the EWS. The rationale for the model selected will be provided by determining the type of change being undertaken, thus matching strategy to approach. Incorporating the literature review findings, the outline of the
change process will be provided. The chapter will conclude by outlining the strengths and limitations of the project.

3.2 Critical review of change approaches

*Top down versus bottom up:*

Todnam (2005) argues that little empirical evidence has been provided supporting different change process theories and approaches. Early change tactics supported a planned, linear approach, utilising a centrally directed process, unfreezing the current situation, moving to the desired position and refreezing the situation to remain in the required state (Lewin 1948). Burns (2004) maintains the planned change model remains one of the most widely respected ways of viewing the process, however, it attracted criticism recently relating to appropriateness and effectiveness in today’s business world. Dawson (1994), Kanter et al (1992), Wilson (1992) and Stacey (1993) all argue that planned approaches are too naive, unsophisticated and mechanistic for the modern world where change is a continuous, open ended process. The continuous need for employee flexibility, structural adaptation, dealing with chaotic, shifting goals, sporadic activities and surprising events are ignored (Cummings and Huse (1989)). However, Kippenberger (1998) disputes this notion; arguing that early theorists understood stability limits comparing organisations to running streams, open to constant change, rates of which vary according to individual environments. Hendry (1996) agrees, top down approaches viewed change not as conventional but complex processes, where stability was at best quasi static, where outcomes cannot be predicted because of complicated forces involved. However, Kanter et al (1992) accused this approach as being strategically hierarchal, ignoring situations requiring change from the bottom up. Reineck (2007) maintains that it clearly gives no room for co-creation or other forms of true participation and the linearity of Kotter’s model can lead to wrong assumptions. Bargal et al (1992) and Dickens and Watkins (1999) advocate this is overly simplistic. Lewin (1948) clearly recognised that change could be commenced from the top, down or middle but what was vital was the dynamic, equitable contribution from all involved in the process. Responding to criticism of the planned model, the emergent model of change materialised, driving bottom up change, advocating the open-ended continuous process of adaptation to differing situations.
and conditions (Burns 2004). This emphasised the developing, erratic change nature, encompassing multiple inconsistencies such as power, politics, context, culture and consultation intrinsic within an organisation (Hatch (1997), Pfeffer (1992), Wilson (1992)). Ashmos (2002) argues however, that although participation is generally portrayed as purely positive in the change process, extensive contribution from stakeholders does carry financial costs, negative time consumption effects and potential resistance. Responding to this intricacy, Pettigrew and Whipp (1991) engaged five interconnected activities: environmental analysis, relating strategic to operational change, leadership, and consistency in human resource progression. Thus, organisations are equipped to deal with the attainment, analysis, and processing of information from external environments, coping with this challenge by embracing open-ended learning systems, developing strategy and change materialising from information gained (Pettigrew and Whipp 1991).

*Mixed planned/ emergent*:

According to Burke and Trahant (2000), change should be seen as departing from normal processes, responding to external and internal changing conditions and as such would be better viewed as systems of moving cycles based on complex, vibrant structures. Thus, change is natural, inevitable and urgent administered by skilled, effective leadership (Champagne 2002). This formula combines various models embracing assorted roles: a futurist accomplished in strategy, crisis management and opportunity (strategic leadership), charismatic, astute, uniting individuals (psychological model), fastidious planning (rational model), favouring flexible models accommodating emerging change (contingency approach), motivating and contributory (organisational development) and proficient networking negotiators (political model) (McAuliffe and Van Vaerenberg 2006). Nadler (1998) thinks in terms of a staged 3 phase model transitions, from true current state understanding, imaging the desired state and determining how the organisation will reach that state. Viewing change initiatives in this manner, presuppose that they have a clear beginning and end. Pettigrew and Whipp (1991) disagree, stating the main change challenge is co-ordinating successions of interrelated, emergent changes often running parallel and in sequence. The former view, whilst useful, views change as a single, isolated event, limiting understanding of more complicated aspects of change.
processes (Meyer and Stensaker 2006). Bates’s (1999) framework emphasises the cultural fit necessary between organisations and the external environment. What emerges is the need to incorporate planned approach in conjunction with emergent changes to ensure improvement of the organisations functioning (McAuliffe and Van Vaerenberg 2006).

Organisational Development:

Emerging from the approaches above materialised developing awareness that the process of change itself is as important as its content. Organisational development (OD) is an approach to long-term, planned organisational change, utilising Goleman’s (1998) behavioural science to facilitate organisations, to both learn about themselves and develop change skills (Hanson and Lubin 1995). It combines process, content and theory of change developing and communicating the organisation’s vision, emphasising team-culture configurations and applied behavioural science. It has some distinguishing characteristics necessitating examination to determine project suitability; table 3.1:

<table>
<thead>
<tr>
<th>Table 3.1: Distinguishing characteristics of Organisational Development (Buchanan and Boddy (1992), French and Bell (1999), Argyris and Schon (1996), Senge (1990)).</th>
</tr>
</thead>
<tbody>
<tr>
<td>• It implicitly emphasises processes ensuring the organisation’s ability to change</td>
</tr>
<tr>
<td>• It deals with long term change, viewing the organisation as a whole in addition to individual parts</td>
</tr>
<tr>
<td>• Management are supportive and involved in the process,</td>
</tr>
<tr>
<td>• The role of change agent is undertaken by a facilitator,</td>
</tr>
<tr>
<td>• It embraces the theory and practice of the behavioural sciences,</td>
</tr>
<tr>
<td>• The process is adaptable to changing situations even though it focuses on the planned approach</td>
</tr>
</tbody>
</table>
OD may be examined on a number of measures. Clarke (1994) and Johnson (1990) advocate commencing the process through destabilizing individuals to detach them from the old order- in short creating a crisis. Ferlie and Bennett (1993) acknowledge this crisis may not be viewed as an opportunity but reducing energy, creativity and flexibility. Farquhar et al (1989) recognised that crisis can lead to decreased outcomes when what is needed is time to trigger the build of the momentum necessary for larger scale radical change.

OD is upheld as a change approach to cope with situations of soft complexity, where goals are unclear together with the measures necessary to achieve them (Senior and Fleming 2006). However, situations occur that appear of soft complexity but are inhibited by prearranged regulatory and legislative standards. It would appear that in these situations, a hard model of change is appropriate, however, this ordained change is likely to result in considerable resistance (Sirkin et al 2005). Thus, even though OD may be suitable, an action plan to implement, assess and reinforce the change is vital.

3.3 Rationale for the change model selected

Dawson (1994) and Harris (1985) maintain that planned approaches to change such as those advocated by Lewin (1948) and Kotter (1995) are not relevant to the sweeping, transformational change necessary in today’s fractured economic environment but are instead limited to simplistic, remote change projects. Gill (2003) demonstrated the human, political features of change are often neglected, contributing to high failure rate of change processes. However, effective emotional and behavioural leadership without possessing a compelling vision, utilising strategic thinking is misguided, dangerous to the success of the EWS (Sirkin et al 2005). Ensuring patient safety in the sub-acute unit is a radical transformational change differing significantly in structure, process, culture and strategy. Thus, a holistic view employing a comprehensive, transformational leadership approach of why, what and how for addressing organisational change, linking content, context process and outcome is necessary (Nasim and Susil 2011, Donabedian 1988, Ransom et al 2008). The organisation must support staff gaining knowledge, skills and confidence improving the prospect of an optimum outcome. This holistic view concurs with the new hospital strategic direction, encompassing qualitative and legislative
requirements (DoH 2012). The writer therefore recommends the utilisation of the HSE change model combined with the application of the holistic, culture sensitive approach of Total Quality Management (TQM), effecting total integrated performance improvement (appendix 4). Employing applicable core concepts from both hypothesis, developing a framework sensitive to organisational strengths and limitations, realistically appraising the current situation whilst possessing an academic, practical foundation, sufficiently comprehensive to facilitate evaluation will yield valuable insight into problems and their resolution locally (Burke and Trahant 2000). However, several issues require consideration to ensure cohesive fit to both the voluntary sector and the culture of an ex-military hospital (Table 3.2)

Table 3.2: Factors requiring consideration to ensure cohesive fit of Change model to voluntary sector and culture of ex-military hospital

- The voluntary sector has several authoritative decision makers, multi-layer accountability and reporting relationships (Senior and Fleming 2006). There are several stakeholders: the public, government agencies, interest groups, patients and staff making it difficult to gain support and approval for the change initiative and to guide OD to completion as these groups may obstruct the process.

- There are fundamental differences between the values of OD and that of a voluntary bureaucratic ex-military hospital with strong observance to military norms and behaviour patterns. The application of OD will therefore be difficult, sensitive but not impossible.

- Any financial support may be difficult to obtain as funding is limited and also requires agreement from differing sections. The immense variety of diverse and often contradictory interests, political adherences, reward structures and norms may also make OD as a system difficult to employ thus potentially threatening the project.

- Decision making in voluntary organisations can tend to be directed at senior management which can be at contrast with OD objectives seeking to increase self control and self direction of organisation members.
The public sector is becoming more privatized in outlook, particularly, regarding outcome management (DoH 2012). However, encompassing organisational complexity with constant change, characteristic of the external environment, demands incorporation of the soft side of change. No matter how well a system or solution is conceived, designed and executed, if staff do not engage, it will fail (Shay 2003). The model must then reflect Goleman’s (1998) work on emotional intelligence, effectively negotiating and influencing others, communicating openly, resolving conflict, motivating and engaging proactively toward a shared vision utilising group energy and passion. The HSE change model which has its foundation, the OD approach, deals with the soft issues outlined above but additionally, adheres to a clear project management approach, adding structure and discipline to the process.

3.4 HSE change model

Initiation: Preparing to lead the change

The purpose of this initial preparation and investigation was building the case for change, ensuring a sense of shared responsibility amongst those involved in the implementation of the EWS, establishing a solid foundation and urgency from which to build the process (Kanter et al. 1992). As the individual with overall responsibility for co-ordinating and leading the EWS project in the hospital, the writer set up an EWS project group in December 2012, utilising Sovie’s (1992) vital elements of a high performing team, representing all staff affected by the change, overseeing implementation and evaluation on the unit. It was felt a multi-disciplinary team of healthcare professionals, managers and educators linking local structures and processes would positively influence initiative delivery, making superior decisions, building an improved service for deteriorating patients, producing a more engaged workforce compared with individuals working alone (Ouchi 1981, Pascale and Athos 1982) Likewise, prompt information sharing, measuring baselines, monitoring improvements following interventions and co-ordination of tasks was deemed vital, a process which was slower and prone to errors in the traditional linear style of
The driving need for change was presented by outlining the vision, translated into a meaningful description of what the change will look like at local level juxtaposed with the current position as presented in chapter 1. This generated creative, problem solving tension, motivating intrinsically and extrinsically of the organisation, assessing drivers and the degree of urgency of the change, utilising external factors in the wider environment and internal organisational team processes. This provided an important motivator for focused action. The climate for change was evaluated by conducting a methodical Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis, identifying and scrutinizing factors external to the organisation, relating them to the hospital's capabilities and thus allowing effective future implementation of the change (appendix 1c). However, to prevent bias, ensuring thorough specific analysis, a TOWS matrix was utilised, building directly on the information obtained from the SWOT to demonstrate the relationship of critical variables (appendix 1c) (Weihrich 1982). A 6 step process was employed to deal with the present environment, considering the present and future situation relating to the external environment, followed by consideration of internal hospital resources and finally strategy development to achieve the organisations objectives, linking the change project to the overall organisational objective. It became clear that to survive, the hospital must embrace a new designation and to do so successfully necessitated the implementation of the EWS. The organisations previous history of resistance to change initiatives was acknowledged and examined assisting the development of a gradual, non-threatening, participative process (Dalziel and Schoonover 1998).
**Agreeing the mandate:**

Agreeing authorisation with the executive team in December 2012, gave authority and integrity to the change process demonstrating to staff at operational and strategic level that the introduction of the EWS had buy in from executive and senior teams due to the current level of unacceptable clinical risk additional to the business link to future organisational strategy. It also profiled the scope and nature of the change required both at clinical level, to deal promptly and effectively with deterioration and also at business level relating to future organisational viability.

**Clarifying leadership roles:**

Occurring in tandem with the SWOT analysis, was defining the project leadership roles, key strategists, implementers and recipients, creating the vision of desired outcome, embracing core leadership competencies and personality types to excel in certain situations. Identification of key leaders and stakeholders by systematically gathering and analysing qualitative information, determining whose interests should be taken into account when implementing the change was facilitated by utilising the HSE template (Table 3.1). This information informed project planning, implementation and evaluation commencing with a methodical 4 step process to identify, classify, prioritise and integrate stakeholders (Shirley 2012).

![Figure 3.2: Steps undertaken in stakeholder analysis- Shirley (2012)](image)

The realisation that the organisation is an environmentally dependent alliance of differing interests, dependent on motivating managers at the hospital core to effect stakeholder reconciliation, suggested the perspective of the individual completing the
analysis, may be fundamental (Mitchell et al 1997). Thus, although the writer could reasonably identify stakeholders based on their possession of power, legitimacy and urgency, it was hospital managers who could efficiently determine which stakeholders were significant, necessitating priority management attention. Consequently, a focus group, consisting of 4 members of the EWS group, brainstormed this concept, outlining stakeholder influence, interests and attributes to effect valuable categorisation (Reed et al 2009). Mapping the stakeholders onto a stakeholder grid based on their stake (horizontal axis) and influence (vertical axis) relative to the change initiative indicated the relevant management strategy for each one (appendix 3).

Figure 3.3: Stakeholder mapping matrix (Gambles 2009)

Having Importance

High Importance

Low Influence

- CEO
- Board of Directors
- Chief Financial Officer
- EMT

Low Importance

Low Influence

- Domestic Services
- ICT

Tell: Monitor 1 way communication

High Influence

Low Importance

- Care Staff
- Service Users
- IDT
- SDU
- Acute Sector

Consult: Keep Informed 2 way communication

Manage-keep satisfied
Engage: manage closely

- High Importance
- Low Importance

- High Influence
- Low Influence

- EWS Project Team
- Medical Officer
- Nursing Staff
- Risk Co-ordinator
- Practice Development

Low Stake
Stake
High

High influence
Employing Clarkson’s (1995) principles of stakeholder management, whilst acknowledging and actively monitoring concerns, facilitated conflict minimisation capable of disrupting the implementation of the EWS, thus, integrating stakeholder analysis and mapping to direct communication strategies (appendix 3). Depending on the location of the stakeholders on the matrix determined the differentiated communication strategy and stakeholder management principles to follow (Table 3.3).

In addition to Gambles’ (2009) recommendations, it was useful to complete a stakeholder typology for investigating stakeholder relationships relating to the change, identifying necessary actions, reducing potential negative impact (Muller and Turner 2010)(appendix 3). Plans for effective communication and engagement were outlined (table 3.3). An EWS e-mail group was organised to ensure input of all stakeholders necessary to influence and shape the nature and approach of the change, additional to realising that change in one organisational area can impact in different ways, at different levels. The interdisciplinary representative agreed to manage this particular concept, collaborating with medical and nursing colleagues. Having mapped each of the stakeholders groups it was possible to profile each of the groups involved based on the assessment of interest and change impact. This shaped the level of communication and engagement required with nursing and medical teams being of primary significance followed closely by policy and audit, risk co-ordination, interdisciplinary representation and practice development.
Table 3.3: Targeted stakeholder and leader communication strategies to achieve successful change

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Matrix Quadrant</th>
<th>Stakeholder Analysis</th>
<th>Roles in process</th>
<th>Stakeholder Typology</th>
<th>Action by writer</th>
<th>Action Plan and process of engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO</td>
<td>Manage</td>
<td>High Importance Low Influence</td>
<td>Keep Satisfied</td>
<td>Psychological support</td>
<td>Partner</td>
<td>Sell project through outline risk &amp; business link with strategy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Agreement reached on what constitutes regular, acceptable update and who delivers same.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Short, concise updates at weekly senior meetings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Brief one to one conversations</td>
</tr>
<tr>
<td>Chief Financial Officer</td>
<td>Manage</td>
<td>High Importance Low Influence</td>
<td>Manage</td>
<td>Co-operator</td>
<td>Passive</td>
<td>Outline financial savings and risk reduction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Brief executive summaries delivered 4-6 weekly</td>
</tr>
<tr>
<td>Executive management team</td>
<td>Manage</td>
<td>High Importance Low Influence</td>
<td>Manage</td>
<td>Co-operator, communicator, co-ordinator</td>
<td>Golden Triangle</td>
<td>Concrete responsibilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Short concise updates at weekly senior meetings</td>
</tr>
<tr>
<td>Board of Directors</td>
<td>Manage</td>
<td>High Importance Low Influence</td>
<td>Manage</td>
<td>Psychological support</td>
<td>Waverers/ passives</td>
<td>Sell project</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Executive summary of progress to date at 6 weekly meetings</td>
</tr>
<tr>
<td>Trustees</td>
<td>Manage</td>
<td>High Importance Low Influence</td>
<td>Manage</td>
<td>Psychological support</td>
<td>Passives</td>
<td>As above</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>As above</td>
</tr>
<tr>
<td>EWS Project Team</td>
<td>Engage</td>
<td>High Importance High Influence</td>
<td>Co-ordinator, co-operator, communicator, conflict resolution &amp; psychological support.</td>
<td>Golden Triangle</td>
<td>Concrete responsibilities</td>
<td>Regular weekly meetings to discuss progress and monitor outcomes. Sub group development to progress EWS policy, escalation protocol, evaluation methods. Crafting presentations for training purposes.</td>
</tr>
<tr>
<td>Nursing Staff</td>
<td>Engage</td>
<td>High Importance High Influence</td>
<td>As above. Minor resistance present.</td>
<td>Golden triangle, moaner, passives, zealots.</td>
<td>Moaners act as EWS. Otherwise as above</td>
<td>Training and support sessions utilising COMPASS and CR skills development training. Daily support to unit during implementation. Evaluation stage: involvement in focus groups and questionnaire. Allowing time to feedback and reflect.</td>
</tr>
<tr>
<td>Care Staff IDT Acute Services SDU</td>
<td>Consult</td>
<td>Low Importance High Influence</td>
<td>As above. Some resistance present</td>
<td>As above</td>
<td>As above</td>
<td>Two way interaction at IDT meetings and on unit to ensure awareness &amp; seek feedback. Weekly updates- project leader. Satisfy and motivate with updates at SDU meetings. Utilise relationships with Acute sector to deliver message.</td>
</tr>
</tbody>
</table>
Assessing readiness and capacity for change:

Having formed the EWS project group, identifying leaders and influencers in the process, it was necessary to identify if individuals involved could undertake process requirements, outlining the supportive role required of the project lead. By assessing readiness and change capacity, resistance was anticipated, increasing motivation, additional to outlining organisational commitment level to effect actual process. The HSE assessment template was utilised by the EWS project group to self-assess (appendix 5) which indicated, although the change was believed urgent, with service user focus, as per HIQA regulations and Future Health (DoH 2012), available resource level was limited with past change experiences indicating particular input was necessary regarding organisational culture. This information was vital to assist the planning process regarding the provision of support increasing readiness and confidence when leading and delivering the change.

Attending to organisational Politics:

Hill (1994) advocates that proper balance must be reached between power utilisation ensuring order compliance and time usage to build commitment. A review of internal hospital politics was analysed as a function of three variables: diversity, interdependence and competition for scarce resources. The interdependency between clinical teams was noted; however frequent evidenced-based communications regarding necessity and benefit of the EWS together with weekly project team meetings, focussing on relationship construction and leadership capabilities of individual team members assisted to resolve this issue positively. Additionally, the interdisciplinary divergence was negated through the presence of an interdisciplinary representative responsible for change development, progressing communication. Externally, the culture was enhanced by the project leader through communications with the HSE, the Acute Sector, the Special Delivery Unit (SDU) who supported the initiative to ensure safe care for all patients discharged from the acute sector and treated within the hospital.

Identifying the leverage points and opportunities for change:

The completion of the SWOT analysis and the TOWS matrix identified strengths and opportunities, enabling the introduction of the EWS whilst outlining weaknesses and
threats that would act as barriers to the process. The change built in particular on the close alliances between medical and nursing colleagues who were open to innovation, recognising the necessity of EWS implementation to provide safe, individualised care.

Initial assessment of the impact of change:

In order to gain insight into the project attention, planning and resources requirements, a generalised impact assessment was completed with the EWS group who explored the possible change impact at various organisational levels. Consensus generally indicated agreement, the EWS would play a significant role in alerting staff of deterioration but that it relied on a system of robust vital sign monitoring. It was noted that considerable training and education was necessary with further educational needs, of nursing staff particularly, possibly emerging as the project developed. The introducing of a communication tool- SBAR was felt vital; enhancing the care delivered at service level by streamlining interdisciplinary communication consistently, an emergent theme from both the literature review and group feedback. This impacted on the wider organisational environment, by demonstrating clinical competency in the change of patient designation.

Initial objectives and outcomes of change:

The information gained from the impact assessment assisted in clarifying and outlining change aims and objectives, presented in chapter 1.

Initial resource requirements:

A preliminary resource assessment was completed, identifying sourcing of appropriate support, guidance and expertise from within the system ensuring initiative success. Training and educational impact was paramount to achieve objectives but this resource could be provided operationally in house utilising nationally approved training means EWS project group members. Additionally, development and approval of the EWS organisational policy including the escalation pathway protocol required formation of a sub-group of the EWS group, ensuring attainment of operational requirements (appendix 2). Utilising this option ensured efficient use of existing resources which were revisited at regular intervals during the process.
Initial business case for change:

The EWS project group produced a brief outline document (appendix 6) presenting the relevant data generated to date. Presented to the executive committee in December 2012, ensured preliminary approval for proceeding with the change and was continually utilised ensuring fulfilment with initial objections and desired progress.

3.4.2 Planning:

To create support, ensuring clear purpose and resolve, required the determination of the specific detail of the EWS for the organisation. The focus therefore in the planning stage was to build organisation wide commitment, momentum and capacity.

Building commitment:

Building, communicating a shared vision:

The vision, (chapter 1), was juxtaposed with the current position of patient, staff and organisation risk. Through a series of EWS project meetings and a series of educational and communication sessions with operational staff, awareness emerged of vision comprehension for individual groups, the teams they manage and the service they provide. The initiative was translated, adapted in monthly team briefs with departmental managers by the senior team ensuring, development of a forum, exploring the relevance of the business case developed at the previous stage. Opportunities were provided to contribute ideas, views and solutions to problems emerging from a whole system approach (Plan-Do-Study-Act (PDSA)). The vision was communicated at several different occasions utilising numerous methodologies employing the comprehensive stakeholder engagement plan, facilitating the open receipt of feedback regarding possible impact and necessary action arising.

Increase readiness and change capacity:

Building on the foundation in section 1, individuals were supported, developing, skills, knowledge and competencies, by utilising an in house COMPASS training provided in group sessions, and monitored during operational follow up support on the unit (appendix 7, McKay 2012). However, as nurses with poor CR skills often fail to detect impending patient deterioration, CR was viewed as an essential component
of both nurse competence and project success (Banning 2008). This served as
incentive for developing an educational model, utilised in conjunction with
COMPASS training, enhancing CR skills and consequently, ability to identify and
appropriately manage at risk patients (appendix 8). Individual competencies,
achieving change level necessary, were assessed via peer review with line
managers identifying necessary further training, whilst facilitating communication of
individual fears and concerns in relation to both the EWS and SBAR.

_Demonstrating that change is underway:_

Through constant, strategic communication of the change, it was possible to
demonstrate that previous operating practices, relating to the deteriorating patient
were changing whilst simultaneously acknowledging the legacy and good care of the
past. The EWS project group scanned utilisation of EWS tools, the change plan
operation ensuring appropriate fit and activity priority. Potential increased time
anticipated, particularly by nursing staff to competently implement the system,
ensuring effective workforce planning and adequate functioning equipment was also
acknowledged, actioned and communicated through forum, focus group and
educational session utilisation.

_Determining the detail of the change:_

The SWOT analysis and TOWS matrix assessed the current situation, determining
change detail, outlining current supporting structures. From information gained, a
gap analysis was undertaken supporting the vision at service delivery level, clarifying
what needed initiation and discontinuation. (appendix 9). Clinical practice
benchmarking with a local acute sector was also completed, involving structural
comparison and sharing of best practice regarding the management of patient
deterioration (appendix 9b)(Ellis 2000). This activity assisted the change process,
providing a quality assessment, identifying areas requiring improvements by utilising
a continuous quality improvement approach which supported the developing of
quality care in relation to patient deterioration (table 3.4).
### Table 3.4: Benefits of Benchmarking theory to Change Process

<table>
<thead>
<tr>
<th>Benefits to organisation of utilising Benchmarking theory built upon performance comparison gap with acute hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assisted the understanding of current strengths and weaknesses of change project in line with current demand and market conditions</td>
</tr>
<tr>
<td>Allowed the realisation of performance possibility by comparison with acute sector and the improvement achieved there in relation to deterioration.</td>
</tr>
<tr>
<td>Improved competitive advantage/standards by stimulating continuous improvement to ensure optimum performance/outcome in relation to deterioration.</td>
</tr>
<tr>
<td>Assisted in establishment of new clinical, business and communication standards and goals thus satisfying stakeholder needs for quality, cost, product and service.</td>
</tr>
<tr>
<td>Promoted change being undertaken, emphasising improvements in quality, productivity and efficiency.</td>
</tr>
<tr>
<td>Established innovative ideas to influence practice cost effectively and timely.</td>
</tr>
<tr>
<td>Further enhanced staff motivation, by emphasising change success in acute sector.</td>
</tr>
</tbody>
</table>

This analysis involved a cross section of staff at all levels, responsible for change delivery and those impacted by it. However, to ensure effectiveness required senior management approval, trained individuals to conduct the analysis (two EWS team members) and relevant employee time to analyse and action.

**Developing the implementation plan, assessing impact of same:**

Achievement of the change vision, necessitated the EWS group, undertaking a detailed design of the organisation, service and cultural changes (appendix 10). Building on the initial business case for change, gap analysis and local benchmarking, it was possible to set out what the change would mean at different organisational levels. The possible impact on strategy, policy, structure, processes, culture and working relationships was investigated and addressed through regular
engagement with the project group, the staff directly affected by the process, providing regular, comprehensive feedback to both the senior and executive teams. Implementation plan impact was assessed by completing the HSE impact assessment template (appendix 11). This analysis ensured an integrated approach outlining change design modifications required with the escalation protocol and policy before implementation (PDSA). Thus, corrective action was agreed at the appropriate level and momentum was maintained.

Following information processing from previous sections, a detailed implementation plan was outlined (appendix 12) detailing sequenced action necessary, responsibility and accountability of said actions, timeframe for completion, resources required, key risk factors and how communication and feedback would be managed. This plan was presented to the executive team in January 2013 and following approval was communicated to all relevant individuals as a key reference point for monitoring adherence to fundamental actions agreed. Initial objectives were revisited to ensure validity and a decision was made by EWS project group to continue to implementation stage.

3.4.3 Implementation:

Implementing change and maintaining momentum:

Following initiation and planning, the organisation was equipped to implement the EWS, attending to factors assisting in longer term sustainability. The EWS observation chart with supporting documentation was introduced to the unit in early February 2013 when 100% of staff had received training relating to the system and contributing factors regarding deterioration (appendix1b). To realistically support individuals through the actual process, assistance was provided to their reactions to change, both positive and negative.

Todam (2005) concurs that without resistance, no productive change is occurring. Thus questioning, scepticism and resistance further opened possibilities for realising change resulting in an effective, useful structure (Mento et al 2002). Kotter and Schlesinger (2008) methods for dealing with resistance were utilised during the initiation, planning and implementing stages. The resolution of this resistance however, depended on identifying the source and on the leader’s ability to be both
task orientated, strategically and tactically whilst addressing the relationship orientated individualised resistance to change (Senior and Fleming 2006). Rashford and Coghlan (1989), Clarke (1994) and Nortier (1995) conclude individuals undergoing change face shock and denial prior to acknowledgment and adaptation. The utilisation of three approaches: education and communication, participation and involvement and facilitation and support reinforced the concept that change can bring new and positive opportunities as outlined in the vision. Thus, education and training dealt with inaccurate information and analysis in relation to the completion of the EWS observation chart, resulting in staff on the unit assisting with the implementing of the change and becoming champions to colleagues. Participation and involvement was commenced at the onset with the formation of the EWS project group as the change leader recognised personal limitations, resulting in the integration of relevant information on inception, fostering commitment, acknowledging triggers and drivers for the introduction of the EWS. Regular group and individual facilitation and support from the EWS project group was utilised to deal with resistance due to adjustment problems relating to fear of the unknown, dislike of uncertainty and ambiguity and perceived lack of skills for the new situation.

Closely related to this role of transformational leadership in improving quality and safety was the role in the organisation of an effective patient safety culture (Davies et al 2000). Ginsberg et al (2010) assert that the constructs of organisational leadership of patient safety and patient safety culture are intimately related and the perception of leadership for patient safety and quality of care, can be reasonably framed as both a leadership concept as well as a key dimension of patient safety culture. Thus, in order to effect necessary structural reorganisation and system reform, necessitated provoking an organisational culture in which excellence was continually promoted by providing an environment of communication, teamwork, openness and transparency (Donaldson and Gray 1998, Wachter 2008). Whilst some argue that culture cannot be influenced but that patterns simply emerge over time, evidence demonstrates culture can be adapted by conscious effort, benefiting the quality effect through the utilisation of four strategies: action of founders and leaders, aligning artefacts with the desired culture, introducing culturally consistent rewards and attracting, selecting and socialising employees: table 3.5 (Davies et al 2000).
Table 3.5: Utilisation of four strategies to adapt culture to ensure success of the EWS

Transformational leadership advocates the development of a visionary as powerful role model for others to follow, developing a competitive, cost focussed but compassionate culture reflecting the leader’s personality. The introduction of the EWS whilst safeguarding residents, staff and the organisation also had a wider business function. This was continually emphasised by the EWS group, in team briefs to all disciplines and on the unit with individual staff members.

Creating memorable events symbolised the cultural values that the project wanted to develop and maintain. Developing a patient centred individualised approach in relation to potential deterioration aligned artefacts with the desired culture whilst reinforcing a holistic, patient focussed approach (HIQA 2012).

Introducing culturally consistent rewards through the introducing of precise measures of vital sign monitoring and outlining regular performance objectives around those metrics were facilitated by holding brief weekly unit meetings facilitated by senior nursing staff where staff were held accountable for previous goals. These regular reviews positively impacted overall relations and drove staff to focus on the behaviours necessary to meet the challenges that lay ahead in the pursuit of the change initiative. These actions thus, reinforced a more disciplined performance orientated culture (Donaldson and Gray (1998)).

Utilisation of the attraction-selection-attrition theory ensured the recruitment of individuals to the EWS group with values and personality traits consistent with the new organisation character, resulting in a more homogeneous organisation and a stronger culture (Schneider 1987).

Mainstreaming:

*Making it the way we do our business:*

In order to entrench the EWS as an integral part of everyday activity it was necessary to strengthen relationships and connections, sustaining the project, incorporating the change into the future business plan, ensuring the inclusion of
patient deterioration management in performance review processes at both individual and team level on the unit. System wide integration was also deemed essential establishing success both within the organisation and externally with key stakeholders – the HSE, the SDU, the Board of Directors and the Trust. This indicated hospital wide response to the needs of the local community, present Government policy and the constantly changing environment.

Evaluating and learning:

This step in the change process focussed on methods to evaluate and learn from the change undertaken facilitating the organisation’s alacrity for future change and identifying possible improvements in the process in line with the new organisational reality. This is undertaken in chapter 4.

3.5 Strengths and limitations of project

The implementation of any healthcare intervention will have certain factors supporting and hindering the change process and the realisation of aims and objectives. The literature review indicated significant patient numbers experiencing deterioration undergo delay resulting in negative patient outcome. The implementation of the EWS to the sub-acute unit was deemed vital to ensure safety and optimum care of the patient, reducing staff and organisational risk. Additionally, recently published DOH (2013) guidelines, directs a national EWS utilisation, ensuring standardisation in the assessment of acute illness severity, facilitating prompt, consistent response. This initiative was relatively cost effective utilising in-house training, manpower and technology requirements. This concept, combined with the future business implications ensured buy in from key stakeholders in the system, securing authority and credibility to the process. The utilisation of a transformational leadership style and effective governance arrangements from the senior team also acted as enablers, ensuring effective implementation. Interdisciplinary standardisation of approach recognised and ensured a common taxonomy in emergency situations, enabling the concept of the right patient in the right place at the right time. However, as in any change process, a degree of resistance was experienced due to insufficient information, regarding operational benefits and fear of increased workload in an already stressed working environment. This was incorporated into the OD approach where overall structures, process,
systems and culture enveloped and embraced the concept of patient safety and continuous quality improvement. Additionally, significant focus was placed on initiation and planning stages, utilising an integrated leadership and quality framework, improving and standardising patient care using a system approach. However, the project was also conducted operatively in a 12-bedded unit over a two month period and whilst preliminary findings may indicate a positive outcome it should be interpreted in light of the fact that the context may differ from that in other units and in other hospitals. Additionally, the short time span of the project indicates uncertainty of long term sustainability of positive effects, requiring further input.

3.6 Summary

Transforming an organisation is fraught with challenges. The literature emphasised the vital importance of communicating the vision, of changing organisational culture and employee attitude but what was also apparent from implementing the EWS is that change projects fail to initiate if the hard facts of change such as project phase length, performance veracity, project team abilities, employee commitment and additional necessary effort are not considered or neglected (Sirkin et al 2005). The apprehension between hierarchal transformational change of an ex-military hospital and participatory approaches was observed in addition to change project failures, occurring as a result of neglect of either approach (Beer and Nohria 2000). Legislation and Governing bodies demand the delivery of a holistic care model but to ensure, future competitive advantage in the external market, the organisation must succeed in the change initiative outlined, to survive and prosper. Thus, to determine if the change can be replicated across the organisation to effect larger scale improvement, it is necessary to conduct a detailed evaluation utilising a mixed method approach. Chapter 4 will evaluate the change project as an entity, determining if pre-determined objectives were achieved in addition to gaining valuation insight into the change process utilised.
Chapter 4
4.1 Evaluation

4.2 Introduction

The shift toward implementation and evaluation of evidenced based practice in health care has arrived in a time of strong interest in categories of quality assurance from the past two decades (Redfern et al 2003). The government is focussing on quality evaluation both as reform instruments and as a means of achieving best value for money (DoH 2012, HSE Service Plan 2012). Quality improvement initiatives are encouraged across health services through national schemes, viewed as productive innovations as they are critical to improving healthcare outcomes (DoH 2013). Conducting detailed evaluation of the change project, therefore, is key to understanding which methods and innovations worked to improve patient outcomes or if the change can be replicated across the organisation to effect improvement to deteriorating patients on a larger scale. However, evaluating implementation of the EWS, designed to improve patient outcomes in the sub-acute unit is complex and challenging. The change process utilising the OD model was emergent in nature, operating in an evolving organisational context. The presence of multiple stakeholders, requiring information related to individual disciplines, created ongoing tension regarding data interpretation. The EWS project group agreed, where possible, that data collection methods should be designed to improve workflow, assisting in quality improvement. The appropriateness of rigid evaluation approaches and the strength of theory underpinning EWS were questioned but the consensus was a collaborative approach to evaluation design as part of the change project enabled a more productive tool than when designed independently. Consequently, a mixed method approach was utilised determining if objectives outlined in chapter 1 were achieved, additional to gaining valuable insight into the change process. The aim of the evaluation was therefore to: Table 4.1:
**Table 4.1: Evaluation Aims**

<table>
<thead>
<tr>
<th>Aim</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluate the impact of the introduction of the EWS on the knowledge, attitude and confidence of qualified staff in the identification and management of the clinically at risk patients</td>
<td></td>
</tr>
<tr>
<td>Explore qualified nurse perceptions regarding the impact of the EWS on their working practice</td>
<td></td>
</tr>
<tr>
<td>Explore clinical reasoning skills regarding the reasons for any observed changes</td>
<td></td>
</tr>
<tr>
<td>Measure the completeness of data collection and accuracy of scoring using the EWS observation charts, utilisation of the escalation protocol and the time taken to escalate care to the appropriate level.</td>
<td></td>
</tr>
<tr>
<td>Evaluate the utilisation of the communication forum and team working across health care professionals regarding the deteriorating patient.</td>
<td></td>
</tr>
</tbody>
</table>

### 4.2 Evaluation methods and tools

To obtain a balanced insight, several evaluation methods were employed, utilising both qualitative and quantitative approaches. These included, questionnaires and focus groups conducted pre and post project, an audit of observation charts and a retrospective audit of the potential relationship between observation quality and patient outcomes.

*Pre and post review utilising questionnaires:*

Prior to deciding questionnaire utilisation as a data collection method, the writer consulted the literature, determining appropriate evaluation questions and ascertaining if a validated questionnaire existed which investigated the topic. An existing instrument developed by Featherstone et al (2005) was adapted for the purpose of this evaluation due to reliability and validity of rigorous testing during the design phase, allowing comparison with data derived from other studies whilst recognising current limited time and resources (appendix 13)(Boynton & Greenhalgh
To ensure optimum data, response rates and anonymity it was necessary that the target audience was clearly defined and identified, the majority of respondents were perceptive to what was asked of them and that the focus of the questionnaire was quantitative (Jack and Clarke 1998). Additionally, to authenticate dependability and legitimacy of the questionnaire, to remove flaws, ensuring usable data via analysis, a pilot study was conducted utilising junior managers involved in the initiative but excluded from the main evaluation (PDSA cycle) (appendix 13b).

Utilising the staff rota yielded all staff nurses working on the sub-acute unit, inclusive of all shift patterns. Evidence based data collection approaches were employed to maximise response rate (Edwards et al 2002) Questionnaires were distributed to staff prior to the initiative, including a covering letter outlining time needed to complete the questionnaire and requesting the completion of a following questionnaire at a later date, allowing comparative examination. In December 2012 and January 2013, training was delivered on three separate occasions in approximately 2 hour cycles by the writer, outlining causative factors and corrective response to patients experiencing deterioration additional to an overview of EWS observation chart, the accompanying scoring chart, escalation protocol and the CR cycle. In addition to emphasising the unacceptable organisational risk currently in situ and operational and strategic triggers for implementing the new system, staff were encouraged to ask questions, expressing any concerns regarding detection and deterioration management. Due to workload pressures affecting staff attendance availability, a further session was held to ensure 100% attendance.

In early February 2013, following 100% attendance, the new monitoring charts were introduced to the unit. For the next three weeks, daily visits were made to the unit by a member of the EWS team, addressing concerns and providing additional support.

Approximately eight weeks following the introduction of the new system, nursing staff completed the same questionnaire enabling comparative dissection relating to self assessed knowledge, attitudes and confidence in the recognition and response to deterioration. Due to the comparatively small size completing the questionnaire, a high response rate was achieved, with 100% completing the pre-initiative questionnaire and 88.6% completing questionnaires eight weeks following the introduction of the EWS. Responses were entered on to SPSS Windows 16,
comprehensive, interactive general purpose package for data analysis, possible errors in data entry or coding were corrected and a dataset was completed which included only data from respondents who has completed both questionnaires. The response rates for each group are provided in table 4.2:

Table 4.2: Questionnaire Response rate by group

<table>
<thead>
<tr>
<th>Group</th>
<th>Staff attending training</th>
<th>Before questionnaires returned</th>
<th>After questionnaires returned</th>
<th>Paired responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>16</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

Characteristics of respondents are shown in table 2, indicating that although 4 staff are relatively junior, the majority of staff are moderately mature in terms of age and years since registration.

Table 4.3: Characteristics of respondents

<table>
<thead>
<tr>
<th>Gender:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male:</td>
<td>2</td>
</tr>
<tr>
<td>Female:</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean:</td>
<td>47</td>
</tr>
<tr>
<td>Range:</td>
<td>23-64</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years since registration:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean:</td>
<td>25</td>
</tr>
<tr>
<td>Range:</td>
<td>0-42</td>
</tr>
</tbody>
</table>
Audit of observations charts:

An audit of observation charts was completed in April 2013 approximately 8 weeks following the introduction of the EWS, to determine the completeness of the recording of observations and the accuracy of calculations determining the total EWS score. A convenience sample was utilised comprising of the following from the sub acute ward:

- 20 observation charts
- 10 EWS scoring charts

Pre and post focus groups exploring staff perception regarding EWS impact and effectiveness of the communication tool SBAR:

To explore nursing staff perceptions regarding the impact of the EWS and SBAR on everyday practice, to determine the presence of operational disadvantages and to investigate actual utility, focus groups were employed to capitalise on group interaction eliciting rich experiential data (Asbury 1995). By focusing on staff interaction, data was accessed that would not emerge if other methods were utilised. Additionally, participants’ contribution could be confirmed, reinforced, or contradicted within the group setting (Krueger 1994). However, to maintain a sense of the whole group within the analysis and to prevent discussion domination the writer reflected on the issues, challenges and skills by the moderator (Morgan (1995), Macleod Clark et al (1996), Sim (1998), Kitzinger and Barbour (1999).

Consequently, the following questions formed the foundation for group interactions, exploiting the method chosen for maximum benefit (Stevens (1996)). Table 4.4:
Table 4.4: *Focus for group interaction*

<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>How closely did the group adhere to the issues presented for discussion?</td>
</tr>
<tr>
<td>Why, how and when were related issues raised?</td>
</tr>
<tr>
<td>What statements seemed to evolve conflict?</td>
</tr>
<tr>
<td>What were the contradictions in the discussion?</td>
</tr>
<tr>
<td>What common experiences were expressed?</td>
</tr>
<tr>
<td>Were alliances formed among group members?</td>
</tr>
<tr>
<td>Was a particular member or viewpoint silenced?</td>
</tr>
<tr>
<td>Was a particular view dominant?</td>
</tr>
<tr>
<td>How did the group resolve disagreement?</td>
</tr>
<tr>
<td>What topics produced consensus?</td>
</tr>
<tr>
<td>Whose interests were being represented in the group?</td>
</tr>
<tr>
<td>How were emotions handled?</td>
</tr>
</tbody>
</table>

A focus group was convened prior to the initiative and eight weeks following the introduction of the new system to the unit. Purposive sampling was employed ensuring a range of staff, relative to status and experience. 9 nurses and 1 medical officer were recruited to participate. Utilising Stevens (1996) questions as a basis for group interactions, a schedule was developed to investigating issues applicable to the objectives established in chapter 1 (tables 4.5, 4.6).

Table 4.5: Prior to implementation of EWS

- Perspectives on the existing care of the patient at risk of adverse events
- Value of the present observation chart in relation to deterioration
- Insight of possible advantages / disadvantages of adapting the EWS in sub-acute unit
- Insight of possible advantages/disadvantages of COMPASS/ CR training
Table 4.6: Post implementation of EWS

- Perception on value and influence of the change on nursing procedure
- Insight regarding advantages /disadvantages of utilising EWS in sub acute unit
- Possible interpretation for changes in knowledge, skills or attitudes regarding the detection and management of deteriorating inpatients.
- Insight of possible advantages/disadvantages of COMPASS/ CR training/ SBAR

The focus groups records were assessed and analysed by the evaluation team consisting of the writer, Policy/ Audit representative and Practice Development. The resulting data was reallocated, analysing identifying key theme areas utilising a pragmatic approach of thematic structure analysis adapted to evaluation regarding specific questions, limited time frame, a pre-designed sample and priori issues (Srivastava & Thomson (2009). Data was examined in accordance with key issues and themes using five steps: familiarization; identifying a thematic structure; indexing; charting, mapping and interpretation. This provided a useful tool assessing the new initiative at operational level (Richie and Spencer 1994). Additionally, the Kirkpatrick (1996) 4-level model was employed to evaluate the combined COMPASS and CR training.

Emergent findings were considered in combination with the questionnaire data, to contest and develop focus group findings. The emergent themes are presented in table 4.7:
Table 4.7: Emergent themes identified in structure analysis

<table>
<thead>
<tr>
<th>Focus group 1: prior to introduction of EWS</th>
<th>Focus group 2: post introduction of EWS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observation:</strong></td>
<td><strong>Experience of EWS:</strong></td>
</tr>
<tr>
<td>• Vital signs</td>
<td>• Effect on existing workload</td>
</tr>
<tr>
<td>• Observing the patient</td>
<td>• Detecting deterioration promptly</td>
</tr>
<tr>
<td>• Awareness of patient baseline</td>
<td>• Interdisciplinary communication-</td>
</tr>
<tr>
<td></td>
<td>utilisation of SBAR</td>
</tr>
<tr>
<td><strong>Experience and skills:</strong></td>
<td>• Clinical reasoning skills</td>
</tr>
<tr>
<td>• Confidence of nursing staff</td>
<td>• Confidence and authority</td>
</tr>
<tr>
<td>• Experience of illness trajectory &amp;</td>
<td></td>
</tr>
<tr>
<td>pattern recognition</td>
<td></td>
</tr>
<tr>
<td>• Length of time since registration</td>
<td></td>
</tr>
<tr>
<td><strong>Support and leadership</strong></td>
<td><strong>Support</strong></td>
</tr>
<tr>
<td><strong>Education:</strong></td>
<td><strong>Facilitation at unit level</strong></td>
</tr>
<tr>
<td>• COMPASS &amp; CR training</td>
<td></td>
</tr>
<tr>
<td><strong>EWS: worries and concerns</strong></td>
<td><strong>Adaptability</strong></td>
</tr>
<tr>
<td><strong>Interdisciplinary communication</strong></td>
<td><strong>Interdisciplinary communication</strong></td>
</tr>
</tbody>
</table>
Retrospective audit of the potential relationship between observation quality and patient outcomes:

To explore possible links between observation quality and patient outcomes, an audit sample of patient notes was completed, focusing on two patients transferred to the acute sector due to deterioration whilst in the unit. Both patients had their observations completed as per the EWS, triggering an alert, leading to the initiation of the escalation protocol and prompt transfer to the acute sector for emergency treatment. In both cases, the time taken to conduct a medical review and subsequent action was within recommended timeframes and was adequately documented. Feedback from the medical officer indicated a collaborative approach using evidenced based data. However, as this is a limited audit sample, the positive findings would have to be interpreted with caution.

4.3 Evaluation results and discussion of findings

Questionnaire results: Nursing staff rated their level of knowledge and experience as greater than 5 on 1-10 scale preceding the change project. Their confidence to manage patients experiencing adverse events was borderline although concern was raised regarding prompt detection of deterioration. The total number of concerns articulated prior to the intervention was 5 out of a possible ten. Following the initiative, all scores measuring the self assessed knowledge and confidence relating to time, response, vital signs and assistance regarding deterioration increased together with a significant reduction in the number of concerns expressed to 3 out of a possible ten (figure 4.1,4.2,4.3).
A comparative analysis was conducted between the before and after data to determine if differences were statistically significant which indicated that at least three of the changes noted established a reasonable clinical effect size. Whilst the response rate of 87.5% was better than anticipated it demonstrated that the majority of staff were represented. Additionally, considering the changes in scores were moderate, it may reflect the overall experience of the unit workforce who had reasonable scores overall, prior to the commencement of the initiative. However, caution must be advised when interpreting the data due to the limited size of the sample and the fact that the ward staff appeared to recognise the relevance of the issues being explored.
There were no indications that the introduction of the EWS had caused undue stress and findings indicated that time taken to complete them was also not a negative factor. In summary, the prevailing finding to emerge from the analysis of the questionnaire is that the implementation of the EWS did have a positive impact on the self assessed knowledge, skills and confidence of nursing staff when managing the deteriorating patient in the sub-acute unit.

*Emergent themes from focus group 1:*

Nurses articulated that completing vital signs was the key method of determining deterioration, findings which were supported by responses to question 3 of the questionnaire. Alternations to physiological state such as altered respirations or changes to diet or fluids were also suggested as symptoms of worsening condition. Significant workload pressure, which resulted in inadequate observation, was also a concern for some respondents corresponding to question 4 of the questionnaire where ward surroundings were reported as being busy, noisy and distracting, catering for patients with complex pathology. Closely linked to clinical observations, was individual patient baseline awareness and concerns were expressed when patients were unfamiliar or unknown to staff with uncommon pathology requiring specialist skills and knowledge. Nurse experience, length of time qualified and exposure to patients with complex pathology were also interlinked to non detection of deterioration with corresponding effects on Nurse confidence. This was also associated with ability to utilise the EWS and effective interdisciplinary communication. Amount and degree of experience was cited as relevant, portrayed

Figure 4.3: Pre /Post Questionnaire
as an amalgamation of intuition, clinical reasoning skills, length of time qualified and speciality familiarity. The relationship between experience and intuition was also acknowledged, noting that intuition enabled Nurses to recognise variations from standard patterns which enabled experienced nurses to prioritise and organise corrective action. Staff also expressed how utilisation of clinical judgement combined with intuition played a significant role when dealing with deterioration, articulating concerns that clinical judgement may be impeded by utilising the EWS. Length of time qualified and exposure to clinical speciality was conveyed necessary with an awareness that exposure to clinical situations and specialities was necessary to develop confidence in developing clinical knowledge. Concerns were expressed relating to length of time spent by experienced Nurses working in elderly care with recent lack of exposure to sub-acute patients relating to identification of potential problems. However, support, knowledge and leadership of senior staff were acknowledged particularly by junior staff in managing deterioration with team work and support for the team being described as vital. Anxieties were articulated regarding the utilisation of clinical judgement in conjunction with the proposed EWS with acknowledgement that the ability to do this would depend on clinical experience, intuition, familiarity of the patient and illness trajectory. However, overall, staff did recognise that the EWS may assist in managing deterioration promptly with nurses who had previous experience of the tool articulating that it would assist in developing clinical experience, the quality of observations and CR skills. Additionally, early identification of deterioration was recognised as potentially reducing subsequent workload and ultimately improving patient outcomes. Interdisciplinary communication was a concern with junior staff anticipating difficulties receiving a timely medical response. However, experienced staff, expressed that objective, evidenced based information from the EWS would enable appropriate articulation of deterioration to medical staff, thus developing nursing experience, confidence and ability.

Emergent themes from focus group 2: post implementation of EWS:

The intensive training provided was appraised according to the Kirkpatrick (1996) model, which comprised reaction, learning, behaviour and results via the questionnaire and focus group 2. The interest, motivation and attention level of staff attending was high with both the questionnaire and focus group 2 indicating raised knowledge and skills relating to both confidence and physiological deterioration.
Nursing staff feedback indicated the educational sessions were viewed as empowering with emphasis placed on the development and demonstration of appropriate knowledge and skills, in assessing patients thoroughly, utilising CR competencies to comprehend physiological findings, articulating those findings to medical staff, ensuring prompt corrective action. Confidence was expressed relating to these skills utilisation in the workplace with corresponding effects on finance, business and morale. All Nursing staff indicated that the EWS had ensured consistency and clarity relating to the escalation protocol and had improved practice through increased focus and clarity regarding observation and action. The use of colour to highlight deterioration, the inclusion of new physiological considerations also prompted staff, detecting deterioration earlier. Additionally, the escalation protocol and SBAR enabled clear delivery of objective evidenced based information when urgent action was necessary helping to develop critical thinking for effective handover and teamwork SBAR, was thus viewed as relevant (level 1), assisting in the prioritisation of relevant information (level 2), resulting in behavioural changes at individual, team and organisational level (level 3), which indirectly impacted patient safety (level 4). This objective information enabled Medical staff to prioritise their workload particularly when off site and was collaborated by questionnaire feedback demonstrating concern reduction relating to Medical response. The EWS was viewed as a tool supporting clinical practice, with Nursing staff reporting that their fears relating to clinical judgement were unfounded as they found that the EWS was not restrictive relating to individual patients. Past medical history, experience, knowledge and intuition again emerged as important when assessing patients but the emphasis was now on the ongoing and cyclical nature of clinical encounters and significance of evaluation and reflection.

Audit of observation charts:

Generally, the clinical observation charts were completed to an acceptable standard. Scoring was also accurate on the clinical observation charts but information relating to the action triggers was not as well recorded with lower scores recorded for time of trigger and time of notification to Medical officer.

Due to limited time span and patient number in the unit this audit could only relate to a sample of 25 charts. No assumptions could be made at this stage that this finding
could be replicated in other clinical areas. However, the results would suggest that in the sub-acute unit the charts seem to be completed fully and the scoring system accurate.

Financial Impact:

Ideally an economic evaluation linking EWS effectiveness with the appropriate response and estimated incremental costs per quality-adjusted life year (QALY), incorporating length of stay, mortality risk and quality of life is desired. However, data to convincingly inform such evaluation is largely absent and would particularly depend on individual response strategy impact on health related quality of life. However, considering critical care cost (£1716 per day) and the necessary acute ward day numbers following critical care discharge, it seems probable that the economic effectiveness of implementing the EWS to a sub-acute unit is significant (NICE 2007a). However, comparisons detailing alternative options for the sub-acute patient group to determine cost effectiveness warrants exploration.

4.4 Summary

Previous research has provided insight into the merits and prevalence of EWS relating to patient outcomes and staff perception. However, this evaluation was not designed to appraise the effect of the EWS per se, but rather the change process as an entity. It therefore cannot be utilised to make any judgement regarding the effectiveness of EWS but does provide valuable insight into the experience of implementing the EWS into a 12 bedded sub-acute unit over a 2 month period. A key strength of this evaluation was its mixed-method approach with findings from each stage strengthening and verifying findings from other stages. However, it involved one small ward in one hospital and whilst the implications may be useful when considering if the change can be replicated organisation wide effecting improvement, it requires interpretation in light of the fact that the context of this ward differs from that of the main hospital and the evaluation dealt with change which was introduced over a relatively short time frame. To clarify if the positive effect could be sustained over a longer period, determination of organisational impact is necessary. Chapter 5 will identify management implications of the change in addition to outlining recommendations for future improvement.
Chapter 5
5.1 Introduction

The significance of this project can be considered from many viewpoints. The recognition and subsequent management of deterioration is a multifaceted process, susceptible to various interrelated factors, building on significant developments driven by the Safer Patient Initiative and the Institute of Healthcare Improvement (Benn et al 2009). The knowledge, experience and CR skills of the Nurse, the ward environment, the working interdisciplinary relationship and the conviction of the EWS effectiveness all played significant parts in producing constructive data utilising a multi-method approach, focussed on the actual issues determining initiative success. The consequence of prompt, apposite recognition and management of deterioration has become increasingly recognised, receiving significant recent media attention. The implementation of the EWS has resulted in inclusive comprehension and awareness of the necessity of early recognition which indirectly benefits patients and the treating clinical team to target interventions prioritising care. However, this project has demonstrated the essential significance of adequate initiation and preparation when introducing a system to care for deteriorating patients and the likely factors impacting upon it. Interventions based on physiological assessment are not enough. Education in more advanced assessment skills including the interpretation of subjective and objective data and the development of intuitive CR play a significant role, warranting further exploration. The utilisation of the HSE change model, in conjunction with the PDSA quality tool, emphasised employee participation in developing awareness of challenges internal and external to the organisation, discovering and implementing solutions, utilising collaborative, transformational leadership. This facilitative process, utilising a systems perspective, considering all organisational aspects emphasised its interrelated parts and had implications for organisational management when viewed in combination with external pressures.

5.2 Implications of the change for management

Enhanced monitoring of patients implies improved care but past reviews suggested that the effect of the EWS warrants further testing in large, randomized clinical trials to indicate effectiveness (Kyriacos et al 2011). However, the implementation of the EWS to the sub-acute unit utilising the HSE change model has generated sufficient
indication that it facilitated recognition of abnormal physiological considerations of deterioration, forewarning staff to the need for intervention, consequently facilitating optimum care of this new patient designation. Thus, the project would seem to indicate that the re-designation of some elderly care beds to sub-acute care is distinctly possible in the future business plan and strategy incorporating legislative and regulatory standards. However, the success of the initiative was heavily dependent on considerable training, development and support particularly in the enhancement of CR skills in the detection and management of abnormal physiological parameters indicating the necessity for timely intervention. For the duration of this project, significant training input was invested by the EWS project team but going forward to ensure momentum and subsequent successful implementation in other clinical areas will demand the allocation of specific resources ensuring context driven interventions, training and evaluation. Such evidence will be indispensable to determine EWS effects in improving patient safety and preventing unnecessary transfers to the acute sector and may be utilised to demonstrate the hospitals ability to adequately care for this category of patient in line with current government policy (DoH 2012, DoH 2013).

In addition, a mixed-method evaluation approach was employed, considering social factors to determine why various aspects of the system worked or did not work in specific situations. The literature review indicated that the reasoning for patient deterioration management is complex, with interrelated and interdependent factors demanding actual behaviour change to health service organisation and delivery. Likewise, the system orientated OD approach, emphasising the culture of intact work teams and other team configurations recognised the organisation is linked by interconnected and interdependent elements. This element demanded significant input from both the EWS project group and the writer in particular. It is recommended that further dissemination of the EWS in clinical areas will necessitate considerable input to guide and facilitate the process which will require considerable resource implications going forward. However, this input will lead to an improvement in clinical practice and financial viability which will not only directly develop the provision of optimum care for deteriorating patients but facilitate the change in designation needed if the hospital is to continue to function effectively and efficiently within the current fractured economic and political environment.
5.3 Recommendations for future improvements

The utilisation of the EWS without the essential development of advanced assessment skills and intuitive CR may fail to predict the commencement of deterioration. Clearly, disseminating this system to a larger clinical area will require significant training relating to the development of such skills in addition to facilitation and support to maintain project momentum ultimately improving patient outcomes. Irrespective of the scoring system in place, focus should be placed on significant essential aspects of care provision such as providing support for junior Nursing staff from experienced co-workers, adequate staffing levels to deal with complex pathologies and a workforce that is experienced with the specialty of sub-acute care where possible. The effectiveness of engaging Nurses in designations outside of their specialised area of long term elderly care is also an issue that requires consideration in relation to two particular areas: Are specialist skills and Nursing knowledge engaged in elderly care transferable to short-term acute particularly in relation to the detection and management of deterioration? Secondly, will specialist care of the elderly skills and knowledge be relevant in providing the optimum care of patients who are receiving care in a sub-acute unit which may not have the specialist skills pertinent to their presenting condition? The implementation of the change project would seem to indicate a positive outcome but it is an issue that requires further consideration if the organisation is to engage in this new service delivery whilst demonstrating its ability to adequately detect and manage clinical deterioration.

Additionally, it was apparent that deterioration occurrence can result in conflict between professional groups as they attempt to work toward positive outcomes. Traditional barriers associated with gender, hierarchy and the balance of power between disciplines continue to impact communication and teamwork which has a significant influence when caring for deteriorating patients. The obvious solution to ensure successful patient outcomes is for the organisation to foster good working interdisciplinary relationships involving development of mutual, trusting, empathic relationships, additional to inter-professional education in relation to deterioration, CR and professional accountability. The OD change approach reinforced this concept, utilising behavioural science knowledge to affect the planned intervention.
Finally, ongoing audit and evaluation should continue to determine the completeness of observation charts, to assess the time taken for review when patients have triggered, to gauge the degree to which the frequency of observations complies with local protocols and to determine if improvements in confidence have been sustained additional to examining if standards of documentation have improved over a significant time frame.

5.4 Conclusion

The establishment of the sub-acute unit, whilst being an alternative source of revenue to facilitate necessary organisational expansion and development does expose the hospital to significant clinical risk relating to patient deterioration. The establishment has however, recognised the equal necessity of shaping and developing systems, procedures and protocols to ensure full compliance with national guidelines and evidenced based practice in preparation for licensing and to drive optimum care standards for deteriorating patients (DoH 2013). The evaluation of the change project indicated improved awareness and recognition of abnormal physiological considerations in deteriorating patients, forewarning staff to the need for intervention, consequently facilitating optimum care and evidence that the organisation can safety care for this category of patient, previously limited to the acute sector. Present government focus encourages quality improvement initiatives across healthcare both as instruments of reform and as a means of achieving the best value for money. The introduction of the EWS utilising the OD approach of the HSE change model, can thus be viewed as a productive innovation on the grounds that in addition to reconfiguring current services to meet external challenges, it is critical to improving healthcare outcomes in line with legislative and regulatory standards (DoH (2013), DoH (2012), HSE service Plan 2012). Whether the positive effect observed at evaluation will be sustained over a longer period is currently unknown, however the process involved in building a strong business case for change, communicating effectively with key stakeholders whilst tactically altering organisational structures, processes and procedures in relation to deterioration, has yielded positive rewards. The implementation of the EWS, which generated positive patient and organisational outcomes, demonstrated the true potential of the organisation to influence the transformation of the Irish healthcare system of the future.
References


Burns, N., Grove, SK. (2011) *Understanding Nursing Research; Building on Evidenced-Based Practice*, 5th edition, Elsevier Saunders, St Louis, MO.


*Health Service Executive Service Plan* (2012), HSE. Dublin.

Health Service Executive. (2012b). *Care of the Elderly Clinical Care Programme.* HSE. Dublin.


Appendix 1

Literature Review- Summary of Reviewed Studies
<table>
<thead>
<tr>
<th>Study</th>
<th>Aim</th>
<th>Sample</th>
<th>Method</th>
<th>Major Findings</th>
<th>Strengths &amp; limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Williams et al (2011)</td>
<td>Examine nurses’ recollections regarding their encounters with rapid response teams.</td>
<td>Small community hospital (156 beds). Medical and cardiac care wards. 13 nurses.</td>
<td>Qualitative - focus group utilised</td>
<td>Combined, integrated approach valued. Recognised detection of deterioration through intuition. Some negative reactions experienced by RNs</td>
<td>1 hospital. Small sample. Possible investigator bias, convenience sampling. Focus group may have had domination of participants.</td>
</tr>
<tr>
<td>Gazarian et al (2010)</td>
<td>Illustrate influencing factors regarding decision making in the pre-arrest period.</td>
<td>13 female RN. 4 medical units. 747 bed training hospital.</td>
<td>Qualitative –interviews, field notes, medical record review.</td>
<td>RNs recognised time pressures, importance of knowing baseline, previous experience, trusting relationships, avoided contact with inexperienced team members.</td>
<td>1 hospital. Small sample. Possible bias.</td>
</tr>
<tr>
<td>Endacott et al (2007)</td>
<td>Recognise detection and communication of deterioration by nurses and doctors</td>
<td>220 bed Australian regional hospital. 11 nurses &amp; 14 doctors.</td>
<td>Qualitative – semi-structured interviews ward focus group, chart audit.</td>
<td>Participants recognised influence of nursing expertise, concerns regarding staffing, time constraints. Vital signs considered more important than holistic assessment.</td>
<td>As above</td>
</tr>
<tr>
<td>Study</td>
<td>Aim</td>
<td>Sample</td>
<td>Method</td>
<td>Major Findings</td>
<td>Strengths &amp; Limitations</td>
</tr>
<tr>
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</tr>
<tr>
<td>Andrews and Waterman (2005)</td>
<td>Investigate how staff utilise vital signs &amp; warning signs to determine and react to deterioration.</td>
<td>30 RNs, 7 Doctors, 7 HCAs. Teaching hospital. UK.</td>
<td>Qualitative. Interviews &amp; observation.</td>
<td>RNs noted anxiety regarding peer derision. Recognised need for evidence base when expressing deterioration concerns. Link between same and RN experience, confidence, education.</td>
<td>1 hospital. 2 wards. Mixed method utilised. Self reported bias.</td>
</tr>
<tr>
<td>Kenward and Hodgetts (2002)</td>
<td>Recognise reasons for RNs concern regarding patient condition and possible predicting factors.</td>
<td>1 specialist RN in acute medicine.</td>
<td>Qualitative. In-depth interview.</td>
<td>Concern regarding reception of RNs concerns to Medical colleagues. RN experience acknowledged in detecting and interpreting deterioration. Family contact useful.</td>
<td>1 participant only. Location not reported. Self reported bias.</td>
</tr>
<tr>
<td>Study</td>
<td>Aim</td>
<td>Sample</td>
<td>Method</td>
<td>Major Findings</td>
<td>Strengths &amp; Limitations</td>
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</tr>
<tr>
<td>King and Macleod Clark (2002)</td>
<td>Investigate RNs experience and use of intuition in surgical settings.</td>
<td>61 RNs. 3 hospitals in UK.</td>
<td>Qualitative. Observation &amp; semi-structured interviews.</td>
<td>Restricted knowledge &amp; experience affected ability to detect &amp; decipher signs of deterioration.</td>
<td>Multiple sites and large sample size. Limited to setting and time of situation occurred.</td>
</tr>
<tr>
<td>Chelli et al (2002)</td>
<td>Survey to outline patient numbers at each level of care &amp; nature of services being offered.</td>
<td>82 wards, 4 UK hospitals, 1873 patients.</td>
<td>Qualitative. Survey.</td>
<td>55% of Patients had not had their respiratory rate recorded. 12% patients' level 1, 2% level 2, ≤1% level 3.</td>
<td>Large sample size. Limited to time of survey.</td>
</tr>
<tr>
<td>Nurmi et al (2005)</td>
<td>Review of effectiveness of documented observational practice to detect vital sign anomalies 8 hours prior to physiological deterioration.</td>
<td>110 patients, over 18 months in 4 Finish hospitals.</td>
<td>Quantitative survey over 18 months.</td>
<td>51% patients arrested on ward. 54% of this number, had abnormal vital signs charted approx 4 hrs prior to arresting. Of this number, 13 did not receive any intervention, 8 received intervention within 1 hr, 9 received intervention after 1 hr.</td>
<td>Large sample size over multiple sites. Large time span.</td>
</tr>
<tr>
<td>Kenward et al (2001)</td>
<td>Determine effect of educational programme on respiratory rate recording</td>
<td>132 patients, UK.</td>
<td>Quantitative review of chart records</td>
<td>Increase in recording of respiratory rate from 27% to 89% post training.</td>
<td>1 hospital.</td>
</tr>
<tr>
<td>Cutler (2002)</td>
<td>Investigate RN experiences &amp; identify educational needs of RNs caring for acutely ill patients in general wards.</td>
<td>7 RNs in 1 surgical ward, UK.</td>
<td>Qualitative study utilising semi-structured interviews.</td>
<td>Interdisciplinary differences regarding supposed roles of Nurses &amp; Doctors. Gap identified between educational need of RNs and educational provision.</td>
<td>1 hospital. Small sample size.</td>
</tr>
<tr>
<td>Study</td>
<td>Aim</td>
<td>Sample</td>
<td>Method</td>
<td>Major Findings</td>
<td>Strengths &amp; Limitations</td>
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<tr>
<td>Cioffi (2000a)</td>
<td>Outline patient characteristics and process utilised by RNs to detect deterioration.</td>
<td>32 RNs with ≥ 5 years experience in 2 hospitals in Australia</td>
<td>Qualitative, interviews.</td>
<td>Nurses depended on 4 patient factors to detect deterioration: not feeling “right”, colour, agitation &amp; observations. Detection was achieved through intuition, experiences, patient observation, listening, feeling.</td>
<td>Small sample size. Self reported bias.</td>
</tr>
<tr>
<td>McBride et al (2005)</td>
<td>Examine effects of introducing a new vital sign chart and EWS integrating respiration rate.</td>
<td>6 general wards, UK.</td>
<td>Qualitative, before and after study examining effects of introducing a new vital sign chart and EWS integrating respiration rate.</td>
<td>Respiratory rate recording improved significantly following introduction of EWS. Education regarding same further improved result.</td>
<td>Large sample size.</td>
</tr>
<tr>
<td>Hogan (2006)</td>
<td>Explore nurse’s beliefs, values regarding patient monitoring within context of care.</td>
<td>1 hospital, UK.</td>
<td>Qualitative, focus groups.</td>
<td>4 major factors associated with paveity of patient monitoring, organisation of nursing care, clinical decision making process, equipment management issues &amp; nursing observation skills.</td>
<td>1 hospital.</td>
</tr>
<tr>
<td>McQuillan et al (1998)</td>
<td>To examine the prevalence, nature, causes, and consequences of suboptimal care before admission to intensive care units, and to suggest possible solutions.</td>
<td>A large district general hospital and a teaching hospital, 100 patients, UK.</td>
<td>Qualitative- Prospective confidential inquiry on the basis of structured interviews and questionnaires.</td>
<td>The management of airway, breathing, and circulation, and oxygen therapy and monitoring in severely ill patients before admission to intensive care units may frequently be suboptimal. The main causes of suboptimal care were failure of organisation, lack of knowledge, failure to appreciate clinical urgency, lack of supervision, and failure to seek advice. Major consequences may include increased morbidity and mortality.</td>
<td>Moderate sample size on 2 sites.</td>
</tr>
<tr>
<td>Study</td>
<td>Aim</td>
<td>Sample</td>
<td>Method</td>
<td>Major Findings</td>
<td>Strengths &amp; Limitations</td>
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<td>---------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Buist et al (2002)</td>
<td>To determine whether earlier clinical intervention prompted by clinical instability in a patient could reduce the incidence of and mortality from unexpected cardiac arrest in hospital.</td>
<td>300 bed tertiary referral teaching hospital</td>
<td>Qualitative-A non-randomised, population based study before (1996) and after (1999) introduction of the intervention.</td>
<td>In clinically unstable inpatients, early intervention significantly reduces the incidence of and mortality from unexpected cardiac arrest in hospital.</td>
<td>Large sample over long time frame. Before and after design within a hospital and with a historical control. Self reported bias,</td>
</tr>
<tr>
<td>Hillman et al (2002)</td>
<td>To document the characteristics and incidence of serious abnormalities in patients prior to admission to intensive care units.</td>
<td>551 patients, in three acute-care hospitals.</td>
<td>Quantitative follow up study</td>
<td>In over 60% of patients admitted to intensive care potentially life-threatening abnormalities were documented during the 8 h before their admission. This may represent a patient population who could benefit from improved care at an earlier stage.</td>
<td>Large sample in 3 sites.</td>
</tr>
<tr>
<td>Duchscher (2008)</td>
<td>To investigate the new nurse’s transition experience into acute care</td>
<td>14 RNs from 2 cities in Canada.</td>
<td>Four qualitative studies spanning 4 years. Demographic survey face-to-face interviews &amp; focus groups. Use of Pre-interview questionnaires.</td>
<td>Educational institutions must provide preparatory education on transition as well as extended, sequential, and structured orientation and mentoring programs that bridge senior students’ expectations of professional work life with the reality of employment.</td>
<td>Self reported bias, Small sample size, multi-method evaluation.</td>
</tr>
<tr>
<td>Olsen (2009)</td>
<td>Investigate the reality of the novice nurses clinical practice</td>
<td>12 RNs, over 1 year. USA.</td>
<td>Qualitative interpretive longitudinal study that utilized phenomenology as the philosophical and context method to illuminate the perceptions of millennial novice nurses</td>
<td>Unfamiliarity with acute pathologies was a barrier as RNs attempted to assimilate knowledge to clinical practice.</td>
<td>Self reported bias, small sample size, limited evaluation method.</td>
</tr>
<tr>
<td>Study</td>
<td>Aim</td>
<td>Sample</td>
<td>Method</td>
<td>Major Findings</td>
<td>Strengths &amp; Limitations</td>
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<td>----------------------------------------</td>
</tr>
<tr>
<td>Fink et al (2008)</td>
<td>Identify graduate nurses experience at operational level</td>
<td>12 teaching hospital sites.</td>
<td>Qualitative analysis open-ended questions on the Casey-Fink Graduate Nurse Experience Survey instrument</td>
<td>Graduate nurses experience role conflict and stress as they begin practice in work environments of high complexity, nurse shortages, and expectations to become competent rapidly.</td>
<td>Large survey, multiple sites.</td>
</tr>
<tr>
<td>Levett-Jones et al (2010)</td>
<td>Develop educational model to enhance nursing student’s ability to identify and manage clinically at risk patients.</td>
<td>N/A</td>
<td>Overview provided of clinical reasoning model based on literature review to underpin the models development.</td>
<td>Competent professional practice requires both psychomotor and affective skills in addition to complex thinking processes.</td>
<td>N/A</td>
</tr>
<tr>
<td>NPSA (2007)</td>
<td>To illustrate why deterioration incidents occur and to assist staff working in hospital to improve patient safety</td>
<td>Analysis of 576 deaths reported to National Patient Safety Agency during 2005</td>
<td>Qualitative- semi-structured interviews, aggregate root cause analysis, ethnographic analysis, literature review, &amp; focus groups.</td>
<td>Consistent and effective detecting and responding to patient deterioration is complex issue – consisting of series of potential failures- inadequate observations, failure to detect early signs, poor communication, failure to respond promptly.</td>
<td>Large study, multiple sites, multi-method evaluation, adequate time span.</td>
</tr>
</tbody>
</table>
Appendix 1a- SBAR (Mikos 2007)
SBAR Report Competency Check Off

BEFORE Calling the Medical Officer:

- Assess the patient.
- Review the chart for the appropriate medical officer to call.
- Read the most recent medical and nursing notes.

- Admitting Diagnosis: ________________________________
- Resus Status: _______  Allergies: ______________________
- Sub cut Fluids: __________________________
- Significant Labs: __________________________
- Significant Test Results: __________________________

Every SBAR report is different. Focus on the problem. Be concise. Not everything in the outline below needs to be reported – just what is needed for the situation.

Situation
- ___________ Name __________________________ Unit _______
- ___________ Patient Name __________________________ Room # ___________
- ___________ I am concerned about __________________________

Background
- ___________ The patient is in the hospital because ________________

- ___________ Vital signs are __________________________
- ___________ The pulse ox is _______ and patient is on _________ oxygen.
- ___________ The patient is complaining of __________________________
- ___________ The patients physical assessment demonstrates __________________________

Assessment
- ___________ My assessment of the situation is __________________________
- ___________ Might be happening.
- ___________ Tell the doctor if the problem is severe and may be life threatening.

Recommendation
- ___________ I think the following needs to be done:
  - Medication __________________________
  - _________Tests __________________________
- ___________ Doctor needs to come now and assess the patient.
- ___________ Do you want me to call you back for any reasons?

Name: __________________________ Department/Unit: __________________________
Date: __________________________ Time: ___________ Doctor: __________________________
Did the employee demonstrate competency in SBAR: Yes No
Signature of Reviewer: __________________________
Appendix 1b-Early Warning System
### Early Warning Score (VitalPAC™ Early Warning Score - ViEWS) Key

<table>
<thead>
<tr>
<th>Score</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiration Rate (breaths per minute)</td>
<td>≤8</td>
<td>9-11</td>
<td>12-20</td>
<td>21-24</td>
<td>≥25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peripheral Oxygen Saturations (SpO₂ %)</td>
<td>&lt;91%</td>
<td>92-93%</td>
<td>94-95%</td>
<td>≥96%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspired Oxygen</td>
<td>Air</td>
<td></td>
<td></td>
<td></td>
<td>Any Oxygen Therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Rate (BPM)</td>
<td>≤40</td>
<td>41-50</td>
<td>51-90</td>
<td>91-110</td>
<td>111-130</td>
<td>≥131</td>
<td></td>
</tr>
<tr>
<td>Systolic BP (mmHg)</td>
<td>≤90</td>
<td>91-100</td>
<td>101-110</td>
<td>111-249</td>
<td>≥250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVPU / CNS response</td>
<td>Alert (A)</td>
<td></td>
<td></td>
<td></td>
<td>Voice (V) / Pain (P) / Unresponsive (U)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature (°C)</td>
<td>≤35.0</td>
<td>35.1-36</td>
<td>36.1-38.0</td>
<td>38.1-39.0</td>
<td>≥39.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Where systolic blood pressure is ≥ 200mmHg, Request a Doctor to review the patient.

**If AVPU/CNS response scores 3 then a Glasgow Coma Score is required. A Neurological Chart must be completed in addition to this – see page 7.**

### Escalation Protocol Flow Chart

<table>
<thead>
<tr>
<th>SCORE</th>
<th>Minimum Observation Frequency</th>
<th>ALERT</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12 Hourly</td>
<td>Nurse in Charge</td>
<td>Nurse in Charge to Review if New Score 1</td>
</tr>
<tr>
<td>2</td>
<td>6 Hourly</td>
<td>Nurse in Charge</td>
<td>Nurse in Charge to Review</td>
</tr>
<tr>
<td>3</td>
<td>4 Hourly</td>
<td>Nurse in Charge, Medical Officer</td>
<td>MO to review within 1 Hour if on site.</td>
</tr>
</tbody>
</table>
| 4-6   | 1 Hourly                     | Nurse in Charge, Medical Officer | 1. Medical Officer to review within ½ Hour if on site.  
|       |                              |       | 2. If no response to treatment within 1 Hour contact Medical Officer.  
|       |                              |       | 3. Consider continuous patient monitoring.  
|       |                              |       | 4. Consider transfer to higher level of care – acute sector |
| ≥ 7   | ½ Hourly                     | Nurse in Charge, Medical Officer or on call Medical Officer | 1. Medical Officer to review immediately if on site.  
|       |                              |       | 2. Continuous patient monitoring recommended.  
|       |                              |       | 3. Plan to transfer to higher level of care.  

**Note Single Score Triggers**

| 2     | HR ≤ 40 (Bradycardia) | ½ Hourly | Nurse in Charge, Medical Officer on call | Medical Officer to review within ½ Hour if on site. |

*3 in any single parameter

½ Hourly or as indicated by patient’s condition. Nurse in Charge & Team/On-call Intern/SHO

1. Medical Officer to review immediately if on site.  
2. If no response to treatment or still concerned contact MO.  

* In certain circumstances a score of 3 in any single parameter may not require ½ hourly observations i.e. some patients on oxygen.

When communicating patient’s score inform relevant personnel if patient is charted for supplemental oxygen.

Document all communications and Management Plans at each Escalation Point in medical and nursing notes.
<table>
<thead>
<tr>
<th>Consultant:</th>
<th>Ward</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (Day/Month/Year)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (24 hour clock)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Respiration (breaths per minute)</th>
<th>3</th>
<th>25 Above</th>
<th>2</th>
<th>21-24</th>
<th>1</th>
<th>12-20</th>
<th>0</th>
<th>9-11</th>
<th>3</th>
<th>8 Below</th>
<th>25 Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Respiration Score</th>
<th>0</th>
<th>96 Above</th>
<th>1</th>
<th>94 – 95</th>
<th>2</th>
<th>92 – 93</th>
<th>3</th>
<th>0 – 91</th>
<th>96 Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral Oxygen Satuations (SpO₂) %</td>
<td>0</td>
<td>96 Above</td>
<td>1</td>
<td>94 – 95</td>
<td>2</td>
<td>92 – 93</td>
<td>3</td>
<td>0 – 91</td>
<td>96 Above</td>
</tr>
<tr>
<td>Insert Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SpO₂ Score</th>
<th>0</th>
<th>180</th>
<th>1</th>
<th>161-170</th>
<th>2</th>
<th>151-160</th>
<th>3</th>
<th>141-150</th>
<th>3</th>
<th>131-140</th>
<th>180</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen Therapy</td>
<td>Route: Tracheostomy Mask (T) Nasal Cannulae (NC) or Face Mask (F) or Room Air (R)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Oxygen scores 3 otherwise score 0</td>
<td>0</td>
<td>Room Air</td>
<td>3</td>
<td>Any O₂</td>
<td>Room Air</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O₂ Route</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>O₂ Score</th>
<th>3</th>
<th>Above 180</th>
<th>2</th>
<th>161-170</th>
<th>1</th>
<th>151-160</th>
<th>3</th>
<th>141-150</th>
<th>3</th>
<th>131-140</th>
<th>180</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Important:**
1. If the response is not carried out as above the CNM/Nurse in Charge must contact Medical Officer.
2. If you are concerned about a patient, escalate care at any stage regardless of the score.
3. Inform medical staff if the score includes the fact that the patient is on Oxygen.

Escalation protocol may be stepped down as appropriate and documented in the management plan.
<table>
<thead>
<tr>
<th>Blood Pressure (mmHg) Must Plot Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>41-50</strong></td>
</tr>
<tr>
<td><strong>40 and Below</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Heart Rate Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>250 Above</strong></td>
</tr>
<tr>
<td><strong>231-240</strong></td>
</tr>
<tr>
<td><strong>221-230</strong></td>
</tr>
<tr>
<td><strong>211-220</strong></td>
</tr>
<tr>
<td><strong>201-210</strong></td>
</tr>
<tr>
<td><strong>191-200</strong></td>
</tr>
<tr>
<td><strong>181-190</strong></td>
</tr>
<tr>
<td><strong>171-180</strong></td>
</tr>
<tr>
<td><strong>161-170</strong></td>
</tr>
<tr>
<td><strong>151-160</strong></td>
</tr>
<tr>
<td><strong>141-150</strong></td>
</tr>
<tr>
<td><strong>131-140</strong></td>
</tr>
<tr>
<td><strong>121-130</strong></td>
</tr>
<tr>
<td><strong>111-120</strong></td>
</tr>
<tr>
<td><strong>101-110</strong></td>
</tr>
<tr>
<td><strong>91-100</strong></td>
</tr>
<tr>
<td><strong>81-90</strong></td>
</tr>
<tr>
<td><strong>71-80</strong></td>
</tr>
<tr>
<td><strong>61-70</strong></td>
</tr>
<tr>
<td><strong>51-60</strong></td>
</tr>
<tr>
<td><strong>41-50</strong></td>
</tr>
<tr>
<td><strong>40 and Below</strong></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>AVPU Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alert (A)</strong></td>
</tr>
<tr>
<td><strong>Verbal (V)</strong></td>
</tr>
<tr>
<td><strong>Pain (P)</strong></td>
</tr>
<tr>
<td><strong>Unresponsive (U)</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature °C Insert Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>39.1 Above</strong></td>
</tr>
<tr>
<td><strong>38.1-39</strong></td>
</tr>
<tr>
<td><strong>37.5-38</strong></td>
</tr>
<tr>
<td><strong>36.1-37.4</strong></td>
</tr>
<tr>
<td><strong>35.1-36</strong></td>
</tr>
<tr>
<td><strong>35 Below</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature Score</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Total EWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EWS as per medical set parameters</td>
</tr>
<tr>
<td>Healthcare Record No.:</td>
</tr>
<tr>
<td>------------------------</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<table>
<thead>
<tr>
<th>Pain Record</th>
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</thead>
<tbody>
<tr>
<td>Rest</td>
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<tr>
<td>Movement</td>
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<tr>
<td>Numerical Tool</td>
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<tr>
<th>Urinalysis Record</th>
</tr>
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<tbody>
<tr>
<td>Urinary Output</td>
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<tr>
<td>Catheter Insitu</td>
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<td>Specific Gravity</td>
</tr>
<tr>
<td>pH</td>
</tr>
<tr>
<td>Protein</td>
</tr>
<tr>
<td>Blood</td>
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<tr>
<td>Glucose</td>
</tr>
<tr>
<td>Nitrates</td>
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<tr>
<td>Ketones</td>
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<tr>
<td>Healthcare Record No.: ____________________________</td>
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**Neurological**

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<thead>
<tr>
<th>Date</th>
<th>Other: Specify</th>
<th>Initials</th>
<th>Nurse / Grade</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Eyes Open</th>
<th>Best Verbal Response</th>
<th>Best Motor Response</th>
<th>Total Glasgow Coma Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spontaneously 4</td>
<td>To verbal command 3</td>
<td>To Pain 2</td>
<td>Eyes closed by swelling = C</td>
</tr>
<tr>
<td></td>
<td>To verbal command 3</td>
<td>Orientated 5</td>
<td>Disorientated 4</td>
<td>Endotracheal tube = ET</td>
</tr>
<tr>
<td></td>
<td>To verbal command 3</td>
<td>Inappropriate words 3</td>
<td>Incomprehensible sounds 2</td>
<td>Tracheostomy = TT</td>
</tr>
<tr>
<td></td>
<td>No response 1</td>
<td>No response 1</td>
<td>No response 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes closed by swelling = C</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COMA SCALE**

<table>
<thead>
<tr>
<th>Size</th>
<th>Reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right</td>
<td>+ reacts - no reaction C = eye closed</td>
</tr>
<tr>
<td>Left</td>
<td></td>
</tr>
</tbody>
</table>

**Pupils**

<table>
<thead>
<tr>
<th>Arms</th>
<th>Normal power</th>
<th>Mild weakness</th>
<th>Severe weakness</th>
<th>Spastic flexion</th>
<th>Extension</th>
<th>No response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legs</td>
<td>Normal power</td>
<td>Mild weakness</td>
<td>Severe weakness</td>
<td>Spastic flexion</td>
<td>Extension</td>
<td>No response</td>
</tr>
</tbody>
</table>

**Initials**

<table>
<thead>
<tr>
<th>Nurse / Grade</th>
</tr>
</thead>
</table>

98
Appendix 1c- SWOT Analysis/ TOWS matrix
Appendix 1c - Strengths / Weaknesses / Opportunities / Threats - SWOT analysis

In order to form a basis against which to generate strategic options and assess the future course of action, it was necessary to analyse the external environment and the capabilities of the organisation to gain an overall image of the strategic position of the organisation (Johnson et al 2011). The aim therefore of the analysis was to identify the extent to which the strengths and weaknesses identified are relevant to the changes taking place in the external environment and how this may affect the implementation of the change project (DoH 2012).

Strengths:

- Conductive relationship between acute sector and voluntary organisation with support for the development of the EWS.
- Record of holistic, patient centred care which supports the introduction of the EWS.
- Support from management and governing bodies with inclusive, open relationships.

Weaknesses:

- History of previous resistance to change due to fear of the unknown.
- Moratorium on staff recruitment resulting in staff having to expand their roles.
- HIQA feedback indicated poor documentation in relation to patient care and observation.
- Currently no processes, systems or protocols in place to deal with the deteriorating patient thus exposing patients, staff and organisation to unacceptable risk.

Opportunities:

- A growing number of adverse healthcare outcomes and high profile elderly abuse cases in Irish residential have underscored the need for improvement and vigilance in the area of clinical governance.
Increased focus on quality and standards through the establishment of HIQA has resulted in the need for the hospital to make changes to the infrastructure of the organisation by 2015.

Demand for seamless care and value for money (DoH 2012) has led to the organisation developing strong relationships with key stakeholders.

Uncertainty surrounding the future healthcare landscape in Ireland is leading to the organisation building relationships with key decision makers at HSE and DOH level.

Education and research play an important role in ensuring clinical excellence.

National Clinical Programmes: The national Care of the Elderly Clinical Care Programme has recently been established in the HSE Clinical Strategy and programme Directorate. This initiative aims to restructure how older patients are managed in our health service and will focus on a co-ordinated, intra-disciplinary and holistic patient focussed approach. The focal point of this programme will be that every patient has quick access to the right care, integrating acute and community services for the elderly, incorporating appropriate services from both the private and voluntary sectors. This will include a dedicated off site sub acute rehabilitation service (HSE Service Plan 2012).

New focus will be customer centeredness, exceptional fiscal performance and steady organisational growth through the reconfiguration of present services in line to the external environment.

Change in population profile-2011 census indicates that, 11% of the population are greater than 65 years making it vital to reconfiguration present hospital services to accommodate sub acute care with EWS in situ.

Projected shortage of 237 sub acute beds in Dublin mid Leinster in 2016 (DoH 2012).

Conducive relationship between acute sector and voluntary organisation with support for the development of the EWS system.
Threats:

- Reduction in public capital expenditure indicating that 68 beds currently deemed unsuitable for long term care due to aging infrastructure will not be accommodated with capital spend.
- Increased emphasis on quality and safety with national recommendations to outlining expected care of deteriorating patient (DoH 2013). Currently no processes, systems or protocols in place to deal with the deteriorating patient thus exposing patients, staff and organisation to unacceptable risk.
- Legislative Emphasis on Quality and Safety indicate that a significant number of beds do not meet HIQA standards in relation to the hospital’s aging infrastructure- thus the viability of the hospital is under threat.
- Uncertainty regarding the future of Fair Deal scheme threatening future viability of the hospital.
- Previous history of resistance may threaten success of the initiative
- Competition from similar organisations in relation to sub acute care market.

For the SWOT analysis to be useful, Johnson et al (2011) maintain that the analysis is not complete but relative to its competitors. On utilising this concept, it is clear that the hospital is currently outperforming its main competitor but is potentially vulnerable to changes in legislation and HIQA regulation in 2015 in addition to not currently being able to demonstrate safe care of the deteriorating patient in the sub-acute unit as recommended nationally.

The SWOT analysis generated a list of strengths, weaknesses, opportunities and threats of the organisation currently, however, to prevent preconceived, inherited and biased views and to ensure prioritisation of issues it was necessary to utilise a TOWS matrix to identify options that address different components of the internal and external factors (Weihrich 1982, Johnson et al 2011).
## TOWS Matrix (Weihrich 1982)

<table>
<thead>
<tr>
<th>Internal Strengths:</th>
<th>Internal Weaknesses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Record of holistic patient centred care which supports the implementation of EWS</td>
<td>• HIQA feedback indicating poor documentation of patient care and observations</td>
</tr>
<tr>
<td>• Conclusive relationship between acute sector and hospital with support for sub acute unit and EWS</td>
<td>• No process/protocols/procedures in place to detect and manage deteriorating patients</td>
</tr>
<tr>
<td>• Inclusive, open relationship between staff and management</td>
<td>• History of previous resistance to change</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External Opportunities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increase focus on quality and standards (HIQA)</td>
</tr>
<tr>
<td>• Key relationships with key stakeholders, HSE, DoH in situ</td>
</tr>
<tr>
<td>• National clinical programmes focusing on co-ordinated, ID and holistic patient focused approach with dedicated off site sub acute unit.</td>
</tr>
<tr>
<td>• Change in population profile</td>
</tr>
<tr>
<td>• Projected shortage of 237 sub acute beds in 2016</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• HIQA. 2014. 68 Care of the Elderly beds will no longer be fit for purpose</td>
</tr>
<tr>
<td>• Reduction in capital expenditure therefore no accommodation of above with capital spend</td>
</tr>
<tr>
<td>• Increase emphasis on quality and safety with HSE initiative re EWS for deteriorating patients</td>
</tr>
<tr>
<td>• Uncertainty re future of Fair Deal</td>
</tr>
<tr>
<td>• Competition from Local Heath</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SO</th>
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<tbody>
<tr>
<td>• Incorporate National Clinical guidelines recommendations, Future Health (2012) and HSE Service Plan (2012) to develop dedicated sub acute unit with evidenced data of detecting and managing deterioration</td>
</tr>
<tr>
<td>• Continue to build on inclusive relationships between hospital and acute sector focussing on facilitation of above</td>
</tr>
<tr>
<td>• Communicate plan to staff to incorporate them into change process and prevent resistance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WO</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Introduce EWS to demonstrate detection and management of deteriorating patient and documentation of same</td>
</tr>
<tr>
<td>• Develop strategies to deal effectively with resistance</td>
</tr>
<tr>
<td>• Communicate business plan to staff and key stakeholders</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 68 beds not fit for care of the elderly in 2014. Plan to develop 68 beds for sub acute care with EWS in situ</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Change designation of 68 beds from care of the elderly to sub acute with EWS in situ to demonstrate quality and safety</td>
</tr>
<tr>
<td>• Reduce threat of competition through demonstration of optimum care and competitive costs</td>
</tr>
</tbody>
</table>
Appendix 2- EWS Escalation Pathway (DoH 2013)
Appendix 2: EWS escalation pathway

Deteriorating Patient Escalation Pathway
(DoH 2013)

**Initial Assessment – A B C D E**

Problems with
Airway
Breathing
Circulation
Deterioration – Neurological
E – Pyrexia/Hypothermia

**EWS 3**

Notify Nurse in Charge & Medical Officer

**Initial Management**

Consider:
- Oxygen
- Airway Adjuncts
- IV Access
- Blood Sugar Level

**EWS 4-6**

Call for Help

Nurse in Charge/Medical Officer

**Patient Improving**

Do you have a diagnosis?

YES

Definitive Management Plan

NO

Special Investigations
Inform Medical Officer

Plan to transfer to higher level of care

Consider transfer to Acute Sector

Definitive Care
Appendix 2b- EWS Organisational Policy
Appendix 2b:

EWS policy for hospital

1.0 Policy Statement

1.1 This policy supports the implementation of the Health Service Executive (2011):

*Guiding Framework for the use of a National Early Warning Score System to recognise and respond to clinical deterioration*

1.2 (Hospital Name) is committed to ensuring that patients at risk of clinical deterioration are promptly identified and managed according to their clinical need.

1.3 Patients admitted to (Hospital Name) are entitled to the best possible care and need to be confident that should their clinical condition deteriorate that they will receive prompt and effective treatment.

1.4 The purpose of this policy is to ensure a standardised approach to the use of the escalation system, utilising the Early Warning System and Early Warning Score escalation protocol.

1.5 All healthcare staff must apply the Early Warning Score system using EWS Protocol for escalation, as outlined in this policy.

2.0 Purpose

2.1 To improve patient outcomes by detecting and acting upon early signs of deterioration in patients. This will in part be achieved through the implementation of the Early Warning Score (EWS) system that:

* Identifies trends in patient vital signs observations*
• Ensures that timely patient review and appropriate treatment occurs
• Improves the documentation and communication of patient observations

2.2 To provide clinical staff with clear guidelines on the measurement of EWS vital signs and the escalation and communication of triggered Early Warning Scores to the appropriate medical personnel.

3.0 Scope

3.1 This policy applies to all patients in sub-acute care facility (Hospital Name). This includes:
• All inpatients on initial assessment, and as per clinical condition and clinical treatment in sub-acute unit.

3.2 It applies to clinicians and managers responsible for the development, implementation and review of the Early Warning Score System in (Hospital Name).

3.3 The policy also applies to training and education of support staff involved in delivery of the COMPASS© education programme.

4.0.1 Legislation/other related policies

• Health Service Executive (2011) A Guiding Framework for the use of an Early Warning Score System to recognise and respond to clinical deterioration. HSE, Dublin.
• An Bord Altranais (2000) *Scope of Nursing and Midwifery Practice Framework*
• An Bord Altranais (2002) *Recording Clinical Practice Guidance to Nurses and Midwives*
• Data Protection Act (2003)
• NHO (2007) *Code of Practice Standards for Healthcare Records Management*
• Hospital Name-Local Haemovigilance policies
• Hospital Name-Local Resuscitation policies
• Hospital Name-Local ‘Do Not Resuscitate’ policies
• Hospital Name-Local medication management policies
• Hospital Name-Local infection prevention and control policies

4.1 **Glossary of Terms and Definitions**

**Early warning score (EWS):** An early warning scoring system is designed to measure the patient’s routine physiological observations thus providing an indication of the overall status of the patient’s condition and acts as a reliable indicator of impending or actual critical illness. (McQuillan et al 1998).

**Escalation protocol:** The protocol that sets out the organisational response required for different early warning scores identified or other observed deterioration. The protocol applies to the care of all patients at all times. Minor local modifications may be required based on available resources.

**HSE:** Health Service Executive

**SBAR:** a mnemonic to encourage consistent language and to improve multidisciplinary communication. SBAR correlates to:

  o **SITUATION:** What is the current situation, concerns, observation, EWS.
  o **BACKGROUND:** What is the relevant background? This helps set the scene to interpret the situation above accurately.
o **ASSESSMENT**: What do you think the problem is? This requires the interpretation of the situation and background information to make an educated conclusion about what is going on.

o **RECOMMENDATION**: What do you need them to do? What do you recommend should be done to correct the current situation?

**An Early Warning Score** is a bedside score and track and trigger system that is calculated by nursing staff from the observations taken, to indicate early signs of a patient’s deterioration. It is a valuable additional tool that will be utilised in conjunction with clinician’s clinical judgement about the patient’s condition, to facilitate detection of a deteriorating patient. The score is a multi-parameter aggregate scoring system which allows both identification and progress monitoring of at risk patients. It includes respiratory rate, oxygen saturations, inspired oxygen, temperature, blood pressure, heart rate, level of consciousness. A score is attributed to each of these parameters, with one score per parameter, and the scores are then totalled to calculate the Early Warning Score. If a score is 3 in any parameter or an aggregate score of 3 or more is attained the EWS protocol is activated.

**An EWS does not replace the clinical judgement of the healthcare professional.**

**Monitoring plan**: A written plan that documents the type and frequency of observation, to be recorded in the patient’s medical records and progress notes in the healthcare record.

**Primary Medical practitioner or medical team**: The treating doctor or team with primary responsibility for caring for the patient.

**Track and Trigger**: A ‘track and trigger’ tool refers to an observation chart that is used to record vital signs or observations graphically so that trends can be
‘tracked’ visually and which incorporates a threshold (a ‘trigger’ zone) beyond which a standard set of action is required by health professionals if a patient’s observations breach this threshold (DoH (2013)).

**Treatment-limiting decisions:** Decisions that involve the reduction, withdrawal or withholding of life-sustaining treatment. These may include no cardiopulmonary resuscitation’ (CPR), ‘not for resuscitation’ and ‘do not resuscitate orders.

**5.0 Roles and responsibilities:**

5.1 All healthcare staff must comply with this policy.

5.2 Key roles and responsibilities are outlined in the HSE (2011):

> Guiding Framework for the use of an Early Warning Score System to recognise and respond to clinical deterioration for guidance.

5.3 The EWS system is a physiological ‘track and trigger’ clinical assessment tool and cannot replace the clinical judgement of a qualified member of staff. If there are concerns regarding a patient’s condition, nursing/therapy professionals/medical staff should not hesitate in contacting a senior member of the patient’s medical team to review the patient, irrespective of the EWS.

**6.0 Procedure**

**6.1 Vital signs assessment**

The minimum vital signs to be recorded with each set of vital signs include:

- respiratory rate
- oxygen saturations (SpO2)
- heart rate
• blood pressure
• temperature
• level of consciousness and
• inspired oxygen (if appropriate) FiO2

6.2 Other specific observations pertaining to adult patients follow.

6.3 A clear monitoring plan needs to be documented on each patient including the frequency of observations, taking into account the patient’s diagnosis and proposed treatment. This should be decided in consultation between nursing, medical staff and therapy professionals as appropriate.

6.4 The patient’s diagnosis, the presence of co-morbidities and the treatment plan for the patient must be taken into account when determining the frequency of observations. Certain patients require more regular observations in the acute setting as per clinical condition and protocol.

6.5 A full set of vital signs should be documented on all patients at the following times:
• On admission and at time of initial assessment
• Post procedure as ordered
• Minimum of 4/24 for 24 hours on any patient admitted from the Emergency Department or Acute Sector. Minimum of every 12 hours on all patients unless otherwise specified.

6.6 In addition:
• As directed by the medical team
• If the patient’s condition deteriorates
• Family member or carer concern, as appropriate
• As per EWS Escalation Protocol
• As per other standard operating, (Subcutaneous Infusions)
• Following administration of an opioid.
Prior to administration of medications that will directly affect the vital signs (e.g. cardiac medications).

6.7 If a single parameter is rechecked to assess the effect of an intervention (i.e. oxygen saturation if oxygen has been applied, or temperature) a full set of vital signs should be done within 30 minutes.

The vital signs are to be documented on the relevant observation chart, the design of which is based on the national EWS model Patient Observation Chart template, and must include the national EWS parameters, as outlines in appendix 1b.

Any decrease in frequency of vital sign measurement must only be done on the direction of the CNM/Nurse-in-charge in consultation with the medical practitioner and must be documented in the patient's healthcare record.

6.8 Where a patient has an Early Warning Score of 3, Nursing staff should increase the minimum observation frequency to 4 hourly, alert the Nurse in charge and Medical Officer. The Medical Officer should review the patient within 1 hour and/or escalating care if determined by patient need and/or clinical judgement. (A Score of 2 Heart Rate ≤ 40 (bradycardia) requires the Nurse to do half hourly observations, alert the Nurse in charge and the Medical Officer who should review immediately).

7.0 Early Warning Score

The EWS is to be applied when patient observations are taken.

7.1 An Early Warning score is to be calculated each time a set of observations is
Observations to be scored include:

- respiratory rate
- oxygen saturation
- inspired oxygen (FiO2)
- blood pressure
- pulse
- temperature,
- level of consciousness: AVPU

7.2 All observations require scoring if they fall on a coloured area of the chart. Enter a score for each observation (including zeros) in the relevant box. Add up the score for each observation: (Respiratory Rate, SpO2 Rate, Pulse Rate, Blood Pressure, Temperature, and AVPU, and in addition include the score for inspired oxygen (FiO2), if appropriate. This equates to the total Early Warning Score (EWS). Review the EWS score in line with the EWS Protocol for escalation.

7.3 The EWS may track higher scores because of individual patient’s pre-existing conditions (e.g. chronic lung disease, dialysis patients). This should be noted in the patient’s management plan.

7.4 The initial frequency of the EWS calculation and vital signs assessment, appropriate to clinical need, is determined by the registered nurse in collaboration with the medical team, and in view of the EWS Escalation Protocol. This must be documented in the patient’s healthcare record, and communicated in the nursing notes.

7.5 The blood pressure score of 111 – 249 attracts a score of 0. The BP range is weighted based on the Research of Prytherch & Smith et al
It doesn't mean that extreme BPs are unimportant and do not need a doctor's involvement - just as the fact that a nurse is ‘merely’ worried about a patient should not exclude a review. Where a patient has a systolic blood pressure of greater than or equal to 200 mm/Hg they should be reviewed by a doctor.

7.6 There may be times when the usual SBP may change for a patient during the admission (e.g. started on an antihypertensive). If this occurs the time and date of the change and the reason for the change should be documented in the clinical record.

7.7 Lying and Standing Blood Pressure: For patients who require lying and standing blood pressure, chart both on the EWS chart and label accordingly.

7.8 Note: A manual reading should be obtained if the automated blood pressure reading is outside the patient’s usual range (high or low), if known, or if the patient has an irregular heart rate. If the electronic reading does not measure on the second attempt use a manual cuff.

8.0 Level of consciousness is assessed in the EWS by using the AVPU score - Is the patient Alert; Responding to Verbal Stimulus; Responding to Painful Stimulus; Unresponsive (AVPU)) (Note that neurological deterioration is the second most important marker of acute deterioration in acutely ill patients). All patients who present with a possible neurological pathology or any suspicion of Meningococcal disease should have Glasgow Coma Scale vital signs undertaken in conjunction with the EWS. A supplemental neurological observations chart may be used alongside the patient observation chart to record the Glasgow Coma Scale (GCS).

8.1 There are also patients in whom the use of EWS may be inappropiate, such as during the end stages of life, advanced palliative care. Although the
majority of patients will benefit from utilisation of EWS the clinicians own clinical judgement dictates whether s/he requires the patient to be regularly scored. Where the Medical Officer's decision is that a EWS score is not appropriate then this should be clearly written onto the front of the observation chart. An annotation should also be made in the patient’s healthcare record documenting why the decision was made not to use EWS.

8.2 Additional observations:

All patients require urinalysis and weight recorded on admission. These should be repeated as clinically indicated.
The assessment of pain should be recorded routinely, if appropriate and as clinically indicated. The type of pain assessment tool and chart may be decided locally.

8.3 The vital signs assessment triggers for the EWS do not detail the specific physiological parameters for the early detection of sepsis. However, the escalation protocol prompts consideration of Sepsis where the following signs are present: Temperature > 38C or < 36C, Respiratory Rate > 20 bpm, or PaCO2 < 4.3 KPa, Heart Rate > 90 bpm, White blood cell count > 12 or < 4, this information is outlined on the front of the Observation Chart, with appropriate actions recommended.

8.4 When a patient is being continuously monitored using electronic technology, a full set of vital signs must be documented on the observation chart, as per Escalation Protocol.
9.0 EWS Protocol for Escalation of Treatment

9.1 The purpose of the Early Warning Score is to support clinical staff in monitoring the condition of patients and to improve communication with the medical team so that an appropriate treatment plan can be promptly implemented for the patient.

9.2 Once a patient has an Early Warning Score of 3 in any parameter or an aggregate score of 3 or greater than 3 the EWS Escalation Protocol must be adhered to. (A Score of 2 HR ≤ 40 Bradycardia requires the Nurse to do half hourly observations, alert the Nurse in charge and the Medical Officer who should review immediately.

9.3 Trigger score: a total EWS of 1-2 is the trigger point for Nurse in Charge review as per EWS protocol, with escalated notification at EWS 3 to ≥ 7. If the EWS is 3 in any single parameter; or a Score of 2 HR ≤ 40 (bradycardia); or if the patient is not improving, a senior doctor should review the patient.

9.4 Any patient with a EWS of 3 or above should have a clearly documented monitoring plan which includes required frequency of observations and Early Warning Scoring, and agreed parameters for review, if different from those stated in the escalation protocol. This must be written in the patient’s healthcare record.

9.5 If a medical review is not received within the specified time period, the medical team should be reminded. If response is not carried out as per EWS Escalation Protocol the CNM/Nurse-in-charge is advised to document and contact the Medical Officer. This should be reported to Senior Nursing Management as appropriate and clinical risk management using appropriate reporting mechanism.
9.6 The EWS system is a clinical assessment tool and does not replace the clinical judgement of a qualified healthcare professional. If there are concerns regarding a patient’s condition, staff should not hesitate in contacting a senior member of the patient’s medical team to review the patient, irrespective of the EWS.

(Refer also to HSE (2011) *A Guiding Framework for the use of The National Early Warning Score System to Recognise and Respond to Clinical Deterioration* for further guidance).

10.0 Procedure for Communication in relation to the deteriorating patient

10.1 The recommended procedure for effective verbal communication between clinical staff, about the deteriorating patient, is to utilise the Situation, Background, Assessment and Recommendation (SBAR) technique in delivering communication (Text box 1). On contacting the doctor the nurse must provide information on the reason for the elevated score, current vital signs, recent procedures undergone by the patient. A record of this communication should be recorded in the patient’s healthcare record including who was contacted, by name, and at what time.

10.2 Appropriate documentation must be maintained and updated in the patient’s healthcare record, to support continuity of care and transfer of essential communications relating to the patient’s condition and treatment. This includes the patients monitoring and management plan. Once a patient is reviewed a clear medical plan must be documented and communicated to nursing staff looking after the patient. This also must be recorded in the patient healthcare record.
<table>
<thead>
<tr>
<th>SBAR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Situation</strong></td>
</tr>
<tr>
<td>• What is the current situation, concerns, observations, EWS etc</td>
</tr>
<tr>
<td><strong>Background</strong></td>
</tr>
<tr>
<td>• What is the relevant background? This helps to set the scene to interpret the situation above accurately</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
</tr>
<tr>
<td>• What do you think the problem is? This requires the interpretation of the situation and background information to make an educated conclusion about what is going on.</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
</tr>
<tr>
<td>• What do you need them to do? What do you recommend should be done to correct the current situation?</td>
</tr>
</tbody>
</table>

10.3 When documenting a medical entry always document:

H – History  
E – Examination  
I – Impression/diagnosis  
P - Management plan

10.4: Management plans should include:

- Observation orders – specification of the frequency of observations.  
- Nursing orders – detail of more intensive monitoring etc.  
- Therapy professionals’ orders.  
- Change in therapy orders.  
- Investigations/intervention orders.  
- Notification orders – guidance for when to call team.

Appropriate handover of information pertaining to the clinically deteriorating patient, including EWS scores, must be made at shift handover.
10.5 The EWS Patient Observation chart is for continuous use during a patient admission period.

10.6 If the patient is transferred to another ward the chart must be continued in use. It should be filed in the patient healthcare record when completely filled or on discharge.
Appendix 3- Stakeholder Analysis
Appendix 3- Stakeholder Analysis

To ensure objectivity, the stakeholder analysis was commenced utilising a logical 4 step process to identify stakeholders, classify by creating stakeholder map, prioritise by identifying allegiance and manage by creating stakeholder management strategy (Shirley 2012).

Following this process, stakeholder mapping matrix was completed to clarify the position of the hospitals stakeholders based on their stake and influence relative to the implementation of the EWS

The lower portion of the matrix includes the Tell and Consult quadrants. The Tell (lower left) quadrant included individuals whose stake in the decision was low and
who had little influence regarding the introduction of the EWS. This quadrant included Domestic Services, ICT, Procurement services, catering.

The lower right consult quadrant included individuals with a large stake in the project outcome but little influence to affect outcomes associated with the project. This group included Care staff, the interdisciplinary team, service users, the special delivery unit and the acute sector.

The upper left manage quadrant, held the most dangerous stakeholder group, who although possessing a low stake in the decision, had a high level of influence and thus could derail the project (Gambles 2009). This quadrant included the CEO, Chief Financial Officer, the Board of Directors, the Trust and the Executive Team.

Finally, the upper right engage quadrant, contained the stakeholders with the most vested interest who would shape and direct decisions relative to the change initiative. This group included the EWS project team, nursing staff, risk co-ordinator, medical officer, policy and audit representative, practice development and senior physiotherapist. Utilising Clarkson (1995) principles, it was possible to facilitate desired change outcomes whilst simultaneously preserving vital stakeholder relationships (Table 6.1).

Table 6.1: Principles of Stakeholders Management (Clarkson 1995)

<table>
<thead>
<tr>
<th>Principle</th>
<th>Management Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acknowledge and actively monitor concerns of all stakeholders</td>
</tr>
<tr>
<td>2</td>
<td>Listen and openly communicate with stakeholders about their concerns</td>
</tr>
<tr>
<td>3</td>
<td>Adopt processes and models of behaviour that are sensitive to stakeholder concerns</td>
</tr>
<tr>
<td>4</td>
<td>Recognise the interdependence of efforts and rewards among stakeholders</td>
</tr>
<tr>
<td>5</td>
<td>Work cooperatively with other entities to minimise risk and harm</td>
</tr>
<tr>
<td>6</td>
<td>Avoid altogether activities that may jeopardise relationships with the various stakeholders</td>
</tr>
<tr>
<td>7</td>
<td>Acknowledge potential conflicts between stakeholders and use open communication to address conflict when necessary</td>
</tr>
</tbody>
</table>
Utilising Clarkson (1995) principles, it was possible to facilitate desired change outcomes whilst simultaneously preserving vital stakeholder relationships.

To complete a stakeholder typology, the focus group was again employed, facilitating rapid, cost effective and adaptable discussion on complex stakeholder categories that required group consensus (Reed et al 2009). Utilising Muller and Turner’s (2010) typology, the completed stakeholder matrix, Kolb’s (1976) experiential learning theory and the Myers-Briggs Type Indicator (Myers and Myers 1980), problem solving styles and stakeholder differences in how information was gathered, appraised and processed and its effect on decision making ability in relation to the change project was analysed and assimilated, determining effective, individual stakeholder engagement. Significant support was revealed for the EWS from experienced clinical staff classified in the golden triangle category, necessitating the delegation of concrete responsibilities to initiative and support normative thought in the change process. However, there was some concern from nursing staff, whilst being in favour of developing a formal structure articulated concern at possibly a further workload increase in an already stressed environment. The remainder of the stakeholders were mainly classed as passive demanding strong leadership and evidenced based communication strategies to demonstrate potential advantages and improved patient outcomes to foster enthusiasm and support.

It was clear that the medical and nursing teams in particular needed to work collaboratively together to achieve the change required and that there was a high level of dependency between both of these groups and the change process. On a secondary level, due to the level of risk outlined and the introduction of a new system, close collaboration was required between the risk co-ordinator and the policy and audit committee to ensure the system outlined as reflected in the policy and escalation protocol dealt appropriately with the level of risk outlined from a patient, staff and organisational level and that it was evaluated and audited to demonstrate compliance with national standards.
Appendix 4 – Total Quality Management
Appendix 4:

**Fundamental elements of Total Quality Management (TQM)** (Pollitt 1996)

1. Strong emphasis on leadership and management involvement- to drive changes necessary and to understand the work processes necessary
2. TQM viewed as a continuous, integrated activity and not as an isolated event.
3. Focus is on systems of continuous improvement- does not advocate individual blame culture.
4. Data is a key tool for the analysis of variability in work processes and outcomes.
5. As the process continues, distinct stakeholders may emerge in the emergence of the optimum quality concept.
6. The concept that the majority of individuals want to work effectively and are internally well motivated.
7. The emphasis of multi-disciplinary, multi-functional teams capable of identifying and solving quality improvement issues.
8. Alternating cycles of change followed by review.
9. Ensuring the integration of internal and external customers to meet customer needs.

(Arndt and Bigelow (1995), Pollitt (1996))
Appendix 4b- Plan-Do-Study-Act
Appendix 4b

Plan-Do-Study-Act

The Plan-Do-Study-Act approach implicates a suggestion for improvement which is then tested prior to the adaptation of widespread change (Berwick 1998, Varkey et al. 2007). It necessitates the collection of sufficient data to ascertain if an improvement has occurred, using a logical sequence of four repetitive steps, allowing trial and discarding defects. Various small cycles of change can then accumulate together to produce a collective and correlated improvement in quality (Ransom et al. 2008).

The advantages of this approach is that it utilises the resourcefulness of staff on the ground, allowing low risk testing at local level which can lead to prompt improvements in everyday routines (Langley et al. 1996). It also requires minimal time and resources which cannot be underestimated in the current climate of financial instability (Dopson and Fitzgerald 2005). However, it may be at odds with the organisations strategic objectives and changes may be frustrated due to cross departmental processes and silos (Savage and Scott 2004). As in Kotter’s (1995) change model, experience in health care has also indicated that there may be a tendency to skip vital steps leading to the eventual failure and un-sustainability of the initiative.

Figure 6.1: Plan-Do-Study-Act
Appendix 5- Assessing Readiness and Capacity for Change
## Appendix 5: Assessing readiness and capacity for change

<table>
<thead>
<tr>
<th>Activities for Change</th>
<th>Readiness</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Overall readiness and capacity of leaders to bring about change</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Level of responsiveness to urgency of change</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>The level of shared understanding for vision of change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of focus on service users, communities and local population</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The effectiveness of communication process both internally and externally</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orientation toward team working and working across boundaries</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>The level of engagement and partnership working based on experiences to date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Culture of continuous learning and evaluation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The level of resources available to support change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The capacity to balance stability and change</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 6- Business Case for Change
### Vision

BY 31st March 2013, our distinctive ability to provide optimum care for patients at risk of deterioration utilising the EWS will demonstrate our ability to provide evidenced based sub-acute care.

### As an evidenced based care of the elderly hospital with a strong enduring reputation we strive to:

- Create, advance and disseminate knowledge in relation to physiological signs and symptoms of deterioration
- Provide a stimulating environment that supports the developing of clinical reasoning skills
- Sustains reputation for delivery of safe care and professionalism

### Our stakeholders – including staff, patients, partners in acute/private/public sectors expect the hospital to:

- Deliver safe holistic patient centred care using evidenced based practice
- Be recognised for high standards of safety and reduction of risk when dealing with deteriorating patients
- Provide a stimulating environment that supports personal development of clinical reasoning skills

### Key Themes

- Respond to needs of local community
- Integrate Future Health (DoH 2012), Better Safer Care (2012) and HSE Service Plan (DoH 2012)
- Innovate to create impact from holistic, patient centred care
- Work with businesses, public, and third sector partners to create patient, social and economic benefit
- To deliver holistic, patient focussed individualised care
- Communicate strategy
- Develop clinical reasoning skills centred on detection and management of deteriorating patients

### Strategic Enablers

- Provide viable organisation to deal with external challenges
- Manage risk, costs and resources to deliver change project
- Deliver holistic, patient centred care
- Financial Sustainability
- Align evidenced based and financial viability in sub-acute unit
- Grow and diversify sources of potential income to invest in future
- Valuing and developing all staff of sub-acute unit

### A sustainable, effective and efficient organisation

Deliver effective, efficient and standardised process when dealing with adverse events

### Values

- Professionalism
- Inclusiveness
- Holistic, patient centred care
- Integrity
- Community

### Appendix 6: Business Case for Change

- Promote organisational well being through reduction of risk
- Develop clinical reasoning by engaging staff in the change process

- Align evidenced based and financial viability in sub-acute unit
- Grow and diversify sources of potential income to invest in future
- Valuing and developing all staff of sub-acute unit
- Deliver effective, efficient and standardised process when dealing with adverse events
Appendix 7- COMPASS Educational Programme

McKay (2012)
Appendix 7:
Compass Education Programme
COMPASS programme

The National Early Warning Score Project and associated Education Programme is a work stream of the Acute Medicine Programme in association with other National Clinical Programmes, Quality & Patient Safety, Patient Representative Group, Office of the Nursing and Midwifery Services Director, Clinical Indemnity Scheme, the Assistant National Director, Acute Hospital Services – Integrated Services Directorate, Irish Association of Directors of Nursing and Midwifery (IADNAM) and Therapy Professionals.

This is an interdisciplinary education programme, designed to enhance our understanding of patients’ deteriorating and the significance of altered observations. It also seeks to improve communication between health care professionals and enhance timely management of patients. The programme has been developed in conjunction with the National Early Warning Score which incorporates the VitalPAC™ Early Warning Score (ViEWS), vital sign parameters.

Early Recognition of the Deteriorating Patient Project
ERDP is an initiative resulting from the work of the Clinical Review Committees Clinical assessment and management of patients as the #1 risk Conducted:
• Focus groups
• Audit
• Literature review

Suboptimal Care
• Examined the prevalence, nature, causes & consequences of suboptimal care in 100 emergency admissions to ICU
• 54 patients received suboptimal care, 69% admitted late to ICU
• Suboptimal management of oxygen therapy, airway, breathing & circulation dysfunction and monitoring

Causes
➢ Failure of organisation
➢ Lack of knowledge
➢ Failure to appreciate clinical urgency
➢ Lack of supervision
➢ Failure to seek advice

Aim of Compass

To enable health care professionals:
• To recognise the deteriorating patient
• To initiate appropriate interventions
• To initiate timely interventions

Objectives
• For participants to understand the importance and relevance of observations and the underlying physiology
• For participants to be able to recognise and interpret abnormal observations
• For participants to be able to communicate effectively to the right people and at the right time.
Objectives

- For participants to feel confident in recognising and managing deteriorating patients.
- To facilitate teamwork within the multi-disciplinary team
- To enable nurses, doctors, and physiotherapists to develop management plans together.

NICE Clinical Guideline 50-Acutely ill patients in hospital
http://guidance.nice.org.uk/CG50/Guidance

➢ Observations should be recorded and acted upon by staff who have been trained to understand their clinical relevance
➢ Track and trigger systems should be used to monitor all adult patients
➢ A graded response strategy for patients identified as being at risk should be agreed and delivered locally

Chain of Oxygen Delivery
This equation calculates the amount of oxygen delivered to the tissues per minute

\[ \text{DO}_2 = (SV \times HR) \times (HB \times \text{SaO}_2 \times 1.39) + \text{PaO}_2 \times 0.003 \]

Arterial Saturation depends on –

- Airway
- Breathing
- Circulation

DO\textsubscript{2} depends on Adequate airway and ability to Protect the airway

DO\textsubscript{2} depends on effective lung mechanics- neurological and muscular

DO\textsubscript{2} depends on functioning lung tissue
**Chain of Oxygen Delivery**

\[
\text{DO}_2 = (SV \times HR) \times (Hb) \times \text{SaO}_2 \times 1.39 + \text{PaO}_2 \times 0.003
\]

**Haemoglobin**

- Normal Adult range
- Concentration (anaemia: causes)

**Airway & Breathing**

- Decreased oxygen delivery at the tissue level
  - Anaerobic metabolism
  - Lactate production
  - Acidosis
  - Stimulates respiratory drive
  - Increases the Respiratory rate

**Points to Note:**

- An increase in respiratory rate can occur with a normal \( \text{SaO}_2 \)
- Patients die of hypoxia not high CO2
- Do not remove supplemental oxygen when taking ABG’s
Airway & Breathing

Points to Note-
• Some patients with Chronic Obstructive Pulmonary Disease (COPD) and are “CO₂ retainers”, i.e. do not respond to raised CO₂, do respond to low O₂
• In COPD if pCO₂ ≥ 8kPa but hypoxic (pO₂ ≤ 8kPa) – DO NOT TURN O₂ DOWN
• Don’t rely on machines!

Circulation

Decreased BP can be a result of:
• Decreased intravascular blood volume
• Decreased contractility of heart
• Decreased Peripheral Vascular Resistance

BP = Cardiac Output x Peripheral Vascular Resistance

• Cardiac output falls from low stroke volume
• Stroke volume falling causes tachycardia
• To maintain BP, peripheral resistance rises

Hypotension, cool hands & signs of heart failure
- Cease fluids
- ICU/CCU consult

The Hypotensive Patient

Why is it important to treat hypotension promptly?

How does poor perfusion to the vital organs manifest clinically?

RENAL PERFUSION = POOR MAN’S CVP

Seagull Sign

The Hypotensive Patient

Consider which is most likely cause for your patient….

➢ Reduction in preload (volume loss)
  (e.g. haemorrhage, sepsis, vomiting)
➢ Reduction in cardiac contractility (pump failure)
  (e.g. MI, heart failure)
➢ Reduction in afterload (vasodilation)
  (e.g. sepsis, overdose)
Hypotension & Organ Perfusion

Look, listen and feel....
➢ Cerebral hypoxia-agitation, confusion
➢ Renal impairment-reduced urine output
➢ Myocardial ischaemia-angina, MI
➢ Gut ischaemia-abdominal pain, nausea
➢ Peripheral ischaemia-cool limbs

The Hypotensive Patient

How do you assess the effect of a fluid bolus?

Look, listen and feel....
➢ Heart rate and rhythm
➢ Peripheral pulses
➢ Capillary refill
➢ Limb temperature
➢ Central pulses
➢ BP
➢ Urine output: poor man's CVP
➢ Oxygen saturations

The Hypotensive Patient

Caution with patient with suspected cardiac disease

Look, listen and feel.....
• Respiratory rate
• Oxygen saturations
• Colour
• Pulse
• Chest auscultation
• JVP

The Patient with a Disordered Conscious Level

Airway, Breathing, Circulation
Don’t forget the Glucose

• AVPU
• Pupils
• Blood Glucose

The Patient with a Disordered Conscious Level

Glasgow Coma Scale

Patients best response to stimuli out of 15 3 components

• Eye opening       Range 1-4
• Best motor response Range 1-6
• Best verbal response Range 1-5

The Patient with a Disordered Conscious Level

Glasgow Coma Scale

• Assess after resuscitation is complete
• Monitor GCS regularly
• If GCS falls by > 2 points, call medical staff
• If GCS falls below 9, call ICU or anaesthetic staff as intubation may be required
Urine Output

- Urine output should be greater than 0.5mls/kg/hr
- Small window when oliguric to prevent acute renal failure
- Do not give Frusemide for low urine output unless other causes are ruled out & the patient is clinically fluid overloaded

EWS

- Physiological Track & Trigger Warning System
- Used in UK extensively & some sites in Ireland
- Simple bedside tool
- Indicates early signs of deterioration
- Structure for communicating
- Assists doctors in triaging
- Escalation policy
- Provides support for inexperienced staff

In the event of a cardiac or respiratory arrest activate cardiac arrest system

- Some patients may require immediate medical review but will not trigger a high EWS.
- The protocol is activated with a score of 3 or more in any single parameter or total score of 3. (See Escalation Protocol Flow chart)
- EWS does not replace clinical judgment when staff are concerned about a patient.

Hypothermia (35°C)

- Sepsis
- Hypoadrenalism, hypopituatism, hypothyroidism
- Aggressive fluid resuscitation
- Exposure to low temperatures (Intra-operatively)
- Neurological (stroke, trauma, tumour)
- Skin disease (burns, dermatitis)
- Drug induced (sedatives)
- Neuromuscular insufficiency

Hypothermia

- HR, RR & metabolic rate decreases
- Confusion
- Arrhythmias
- Cardiac Arrest

Responsibilities

- Notify the CNM/Nurse in Charge and/or medical personnel as appropriate.
- Increase observation frequency as identified in escalation protocol.
- Escalation protocol may be stepped down as appropriate and documented in management plan.
- If you are concerned about a patient escalate care regardless of Early Warning Score.
- If the response is not carried out as per escalation protocol CNM/Nurse in Charge must contact the Registrar or Consultant.
Responsibilities

Escort requirements out of the ward area
Consider expertise of personnel & equipment required for safe transport

Sepsis

- Sepsis “is a hyper-reactive inflammatory response” (Smith, 2003).
- Sepsis is caused by bacteria, fungi or viruses

Classifications of Sepsis:
- SIRS (Systemic Inflammatory Response Syndrome)
- Sepsis
- Severe Sepsis
- Septic shock

Patient Assessment

- Look.. Listen.. Feel...ABCDE
- Record full set of vital signs including GCS and Glucometer
- Is there pallor/ flushing/ cyanosis/ rashes/ wound/ posture
- Can you hear crackles on chest examination
- Any complaints of pain / abnormal posture
- Peripheries….are they warm/cold to touch
- Feel a pulse for rate / quality

SIRS (Systemic Inflammatory Response Syndrome)

- 2 or more features present:
  - Heart Rate >90bpm
  - Respiratory Rate >20pm
  - Temp >38°C or < 36°C
  - WCC raised / lowered (>12, <4)

Sepsis=SIRS and evidence of confirmed infection by:
- CXR / Urinalysis
- +VE Blood Cultures
- CT SCAN

Sepsis is a medical emergency

Initial Management SEPSIS SIX Address simultaneously; Target time 1 hour from recognition

- 100% Oxygen: Give 15L/min via Non Re-breather Mask unless oxygen restriction necessary
- IV FLUIDS: Give a 500ml - 1000ml bolus of crystalloid (0.9% Saline or Hartmann’s Solution) over 30 minutes. If patient does not stabilize, continue resuscitation and involve your senior doctor at registrar grade and above
- BLOOD CULTURES: Obtain Blood cultures before starting antimicrobials. Do not significantly delay antimicrobial administration. Also send sputum culture/ wound swabs etc as appropriate (if not already done)
- IV antimicrobial: Begin IV antimicrobial as early as possible and always within the first hour of recognizing sepsis and severe sepsis
- Insert a Urinary Catheter. Send urine for C&S if not already done.
  Monitor urine output hourly. Start fluid balance chart
- LACTATE, Hb, OTHER TESTS & ACTIONS: if not already done, request FBC, U&E, LFTs, Blood Sugar, coagulation screen, amylase, CRP, ABGs, & lactate levels. Arrange blood transfusion if Hb ≤ 7.0 g/dl
- Formally evaluate patient for focus of infection
- Consider treatment (e.g. abscess drainage, etc)
- Order appropriate radiological tests
Sepsis

Following initial diagnosis and intervention within one hour, institute organisation’s guidelines / protocols / policies for the management of sepsis, severe sepsis and septic shock.

Communication, Management Plans & Teamwork

Management Plans

• Each member of the team will have strengths and weaknesses

• The aim is to work together to ensure the best care is delivered to the patient

Gather Information

• Verbal
• Notes—medical, nursing, therapy professionals
• Observation charts
• Fluid charts
• Medication charts
• Compare current to previous

Learning Objectives

• To be able to communicate clearly and concisely
• To understand the use of ISBAR
• To be able to understand the importance of teamwork
• To be able to participate in the development of management plans

Management Plans

• Gather information
• Integrate this into this patient’s presentation – what is actually happening to this patient?
• Communicate your concerns
• Address each team member’s concerns
• Formulate, document and communicate the management plan
• Put it into action
• Reassess
Integrate the information

- Understand why the change has occurred
- Think back to the CD
- Refer to individual sections in the manual

Communicate your concerns

- ISBAR Communication Tool

Adequate Response to Concerns

- Each team member has different priorities
- Reflect if things could have been done better
- Have your concerns been addressed adequately
- Has other team members concerns been addressed
- Ask for HELP!!

Management plans

- Observation orders
  - Nursing orders
  - Physiotherapy orders
  - Change in therapy orders
  - Investigations/Interventions
  - Notification orders

Action the plan

- Ensure everyone knows their role & responsibilities
- Ensure the plan has made a difference to the patient
- Don’t “pass the buck”
- You are accountable

Reassess

- Always follow up to see if the patient is improving
- Applies to everyone student nurse, RGN, CNM, Therapy Professionals, Intern, SHO, Registrar and Consultant
- If they are not improving, start again!!
Documenting

• Helps the flow of information, shift to shift & day to day
• Medico legal requirement
• Concrete plan, no assumption
• Remember if you didn’t write it you didn’t do it!
• 5 years from now is it enough for you to justify your action
  • Approved abbreviations only

Communication

• Recognise there is a problem
• Communicate to other team members RGN, CNM/Nurse in charge, Therapy Professionals, Intern, SHO, Registrar, Consultant
• Convey concerns to the next shift with outstanding issues to ensure follow up occurs

When Communicating

• Who is the most appropriate person to inform about deterioration
• Communicate as much relevant information as possible
• Document the communication and what actions have been taken

H – History
E – Examination
I – Impression/diagnosis
P – Management Plan
Always document a provisional working diagnosis!!!

ISBAR
• Identify-Yourself, who you are talking to, which patient
• Situation-What is the current concern, relevant observations, EWS, why are you seeking help…..
• Background-What is the relevant background- history, recent procedure, medications…
• Assessment-What do you think the problem is…
• Recommendation-What do you need them to do? What do you recommend should be done to correct the current situation…
Why use ISBAR?

- To reduce the barrier to effective communication across different disciplines and levels of staff
- ISBAR creates a shared mental model across all patient handovers and situations requiring escalation, or critical exchange of information
- ISBAR is a memory prompt, easy to remember and encourages prior preparation for communication
- ISBAR reduces the incidence of missed communications

**State the facts - Stop the waffle!**

How can ISBAR help me?

- Easy to remember
- Clarifies what information needs to be communicated quickly
- Points to action
- Brings patients safety to the forefront
- Protects staff

Communication Exercise

**ISBAR**

Ann Smith is a 75 year old lady with a history of IHD admitted with a fractured neck of femur, 12 hours post operatively she complains of chest pain and her O₂ sats have fallen 88% on 2 L oxygen via nasal prongs.

She has an EWS of 6. You are her nurse and are concerned that she is acutely unwell and needs attention.

**Take home message for participants**

- Vital signs are vital
- Understand why they have changed
  - Teamwork
- Management plans
- Communications: ISBAR
- Ask for help
- Documentation
- You can make a difference to a patient’s outcome
Case Studies
- Think about why the observations have changed (back to the CD again)
- Remember the ISBAR communication strategy
- Use the flow chart
- Work as a team!
- Set your management plans

Airway
- Maintaining own airway?
- Open & clear
- Head tilt/chin lift
- Call for HELP

O2

Breathing
- Look, listen & feel rate – volume & symmetry, work of breathing & pattern
- High concentration O₂ (100%)
- Monitor SpO₂
- Call for HELP

Circulation
- Pulse rate/volume, rhythm/character
- Skin colour & temperature
- Capillary refill
- Blood Pressure
- Urine output
- IV access
- IV fluids
- Call for HELP

Disability/CNS
- AVPU
- Blood Glucose
- Pupil reaction
- Call for HELP

Environment/Examination
- Temperature
- Review charts, ECG
- Interpret investigations & results
- Call for HELP
• Remember assess and manage A before moving to B etc.
• Re-assess.....re-assess.....re-assess
Appendix 8- Clinical Reasoning Educational Model
Clinical Reasoning Educational Model utilised to enhance nurses’ ability to identify and manage deteriorating patients.

Clinical reasoning has been defined by Tanner (2006) as the method by which clinicians make clinical judgements by choosing from alternatives, weighing evidence, utilising intuitive reasoning and pattern trajectory and recognition. Hoffman (2007) builds on this concept, outlining a reasonable process by which indications are analysed, information processed, interventions are planned and implemented according to individual patient condition, outcomes are evaluated allowing reflection and learning from the process. It is thus not a linear cycle but like the change model utilised, can be thought of as a cycle of associated clinical encounter.

Nurses with poor clinical reasoning skills often fail to detect patient adverse events promptly resulting in poor clinical outcomes (Aiken et al 2003). However, as modern educational strategies do not always enable the facilitation of the necessary level of
CR skills, the writer felt it necessary to incorporate the CR educational model to enhance CR skills in the clinical setting and thus develop ability to detect and appropriately manage patients at risk of deterioration.

Effective utilisation of the clinical reasoning (CR) model of education and its application in practice is directly linked to the five rights of clinical reasoning so it is vital that nurses have the ability to assemble the right indications and undertake the right action for the right patient at the right time and for the right reason (Levitt – Jones et al (2010)). This factor was examined in detail during the training sessions in an effort to improve and ensure optimum CR skills when faced with deterioration.

*Right indications:*

The recognition of physiological or psychosocial changes faced by individual patients, recognised through examination and assessment implicit to a particular knowledge base is the basis of CR (Tanner 2006). This process is influenced by many issues: increased workload, experience and knowledge base of assessor, confidence, anxiety and time pressures (O'Neill et al 2005). It refers to accessible information: patient history, notes, investigative results, nursing /medical reviews, current vital signs and it necessitates widespread knowledge of physiology, pharmacology, culture, care context, law, ethics (Levett-Jones et al 2010). Typecasting, assumptions and preconceptions can often hinder the collection of cues (McCarthy 2003). Thus, educational sessions must embrace the comprehension of the gathering and analysing of relevant indicators, how they influence clinical decisions and the connection between this process and patient outcomes in addition to allowing opportunities for reflection on acquired assumptions and prejudices which may negatively influence the processing of vital clinical information (Benner 2001, Schuurmans et al 2001).

*Right Patient:*

As nurses are often the first contact between the identification of at risk patients and consequent rescue, it is vital that they recognise at risk patients promptly (Clarke and Aiken 2003). The EWS utilises physiological parameters to identify patients who are at risk of deterioration and Jacques et al (2006) identification and categorisation of early and late warning signs were utilised in conjunction with the CR model and
COMPASS to facilitate the development of Nurses ability to recognise patients at risk of adverse events thus assist appropriate timely action.

Right time:

Timely response is crucial when utilising CR skills when caring for a deteriorating patient (Levett-Jones et al 2010). Failure to identify patients experiencing adverse events and failure to undertake consequent clinical interventions promptly will lead to negative patient outcomes which have been shown to be associated with nurse experience and ability to prioritise (Hamers et al 1997). For this reason, educational sessions included numerous opportunities to engage in CR, in particular with the 4 junior nurses working on the unit.

Right action:

The intervention subsequent to a clinical decision is referred to by Thomas and Dowding (2002) as nursing action. In his table of adverse events, Jacques et al (2006) outlines that late warning events are often the result of inaction of documented abnormalities. This inaction to the presentation of critical signs and symptoms has been presented by Levett-Jones et al (2010) as a result of both inadequate CR skills in addition to the absence of a framework to distinguish clinical information from facts that indicate deterioration. Thus education sessions focussed on the development of CR skills, the utilisation of the EWS as an appropriate tool to assist in the early detection of deterioration and on effective communication between healthcare professionals through the implementation of ISBAR to streamline the transfer of critical patient data between all professionals (Mikos 2007).

Right reason:

The right reason refers to not only the reasoning processes employed but also the ethical, professional and legal knowledge underpinning the decision (Levett-Jones et al 2010). Cioffi (2002) advocates that this process cannot be separated from the experience and confidence of the decision maker and may be prejudiced by factors such as individual characteristics, orientation to present role and the culture and context of the unit. For that reason, it was necessary to examine and discuss both
the ex military culture with its emphasis on task completion together with the external triggers driving the change and the changing patient designation with resulting increases in clinical and organisational risk (Dempsey 2004).

As Nurses are responsible for significant decisions relation to the recognition and rescue of the deterioration patient (50 in one 8 hour shift in medical assessment unit), it is vital that the staff introducing and implementing the EWS in the sub acute unit not only possess psychomotor and affective skills but also thinking processes capable of making multiple, complex judgements in limited time frames. The five rights of clinical reasoning and the clinical reasoning process and cycle was presented as a model to increase preparedness for the introduction of the EWS to a changing designation of patient.
Appendix 9- Gap Analysis
## Appendix 9: Gap analysis

**Gap Analysis:**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Current Standing</th>
<th>Deficiency</th>
<th>Action Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Ensure demonstration of clinical reasoning skills by 31&lt;sup&gt;st&lt;/sup&gt; March 2013.</td>
<td>- 11% of inpatients experience failure to rescue which is related to poor clinical reasoning skills (Levett-Jones et al 2010) - Change of patient designation from long term care to sub acute will increase likelihood of experiencing adverse events (Levett-Jones et al 2010) - unacceptable current risk</td>
<td>- Adequate clinical reasoning skills - Recognition and interpretation of abnormal clinical observations and escalation of care as appropriate - Comprehending the necessity and relevance of vital signs in relation to patient pathology - Understanding investigation results - Recognising own limitations</td>
<td>- COMPASS training with 100% attendance rate prior to introduction of EWS - Clinical reasoning cycle education • Collect cues • Process information • Identify problems • Establish goals • Take action • Evaluate outcome • Reflect on process and new learning • Consider patient situation</td>
</tr>
<tr>
<td>3. Ensure suitable referral of patients by 31&lt;sup&gt;st&lt;/sup&gt; March 2013</td>
<td>New patient designation, no policy, procedure, protocol in place to outline action</td>
<td>- Potential inability to assess acuteness of adverse event - Potential inability to recognise need for specialist assistance - Potential inability to identify most appropriate environment as per escalation protocol</td>
<td>As in objective 2</td>
</tr>
<tr>
<td>4. Improving communication and team working by 21&lt;sup&gt;st&lt;/sup&gt; March 2103</td>
<td>No communication tool in situ to ensure appropriate, timely exchange of patient information. Literature review indicated that poor communication between disciplines contributes to patient deterioration.</td>
<td>As in current standing</td>
<td>ISBAR: Communication tool to ensure communication of patient condition effectively and promptly. Develop and implement action plan for individualised patients.</td>
</tr>
</tbody>
</table>
Appendix 9b- Benchmarking with local acute hospital
Appendix 9b: Benchmarking with local acute hospital

Figure: Clinical benchmarking cycle for continuous quality improvement toward best possible practice regarding the deteriorating patient.
Appendix 10- Designing Detail of the Future State
**Appendix 10: Designing Detail of the Future State**

<table>
<thead>
<tr>
<th>Vision</th>
<th>Purpose</th>
<th>Structure</th>
<th>Strategic Enables</th>
<th>Communication and Decision Making</th>
<th>Key Performance Indicators</th>
</tr>
</thead>
</table>
| BY 31st March 2013, our distinctive ability to provide optimum care for patients at risk of deterioration utilising the EWS will demonstrate our ability to provide evidenced based sub-acute care. | As an evidenced based care of the elderly hospital with a strong enduring reputation we strive to:  
- Create, advance and disseminate knowledge in relation to physiological signs and symptoms of deterioration  
- Provide a stimulating environment that supports the developing of clinical reasoning skills  
- Sustains reputation for delivery of safe care and professionalism | **Emphasising Superordinate Goals**  
EWS valued by management and Staff, attainment is beyond the resources and effort of either party alone | **Reducing Differentiation**  
Create common backgrounds, rotate staff across different units to ensure common knowledge/experience of deterioration | **Clarifying Procedures**  
The use of SBAR, EWS Policy, Escalation Protocol, Observation Charts, EWS Scoring System | **Financial Sustainability**  
- Sub acute unit to align optimum evidenced based care with financial viably to deal with external challenges  
- Costs and resources internally managed to deliver change project and reduce risk  
- Training and facilitating resources necessary  
- Agreement (funding and direction) of new initiative with HSE | **Redesign of Existing Service**  
- Sub-acute unit success dependant on outcome of change project  
- Outcome of change project will determine future business plan and redesignation of beds currently non HIQA compliant  
- Develop formal agreement with HSE to ensure funding and agreement of new service | **Internal Redesign**  
- Education and support to equip staff for enhanced roles  
- Employ strategy to affect organisational culture  
- Transformational leadership  
- Create memorable events (eg patient focused)  
- Induce culturally consistent rewards  
- Use of attraction-selection-attrition theory  
- Deal with resistance (Kotter and Schlesinger (2008)) | **All communication and decision making in line with SBAR to ensure clarity and transparency across all disciplines relating to deteriorating patient** | **100% compliance with new observation charts** | **Improved communication across disciplines regarding deteriorating patient** | **Development of clinical reasoning skills centred on detection and management of deteriorating patient** | **Appropriate detection and management of deteriorating patient** |
Appendix 11- Impact Assessment Template
## Appendix 11:
Impact Assessment Template

<table>
<thead>
<tr>
<th>Description of current situation</th>
<th>Transition from current to future</th>
<th>Description of future vision</th>
</tr>
</thead>
</table>
| - Legislative and regulatory emphasis on quality and safety (HIQA)  
- Future Health (DoH 2012) advocating integrated care  
- 39% of current beds do not meet HIQA regulations in relation to aging infrastructure  
- Necessity to change 39% of beds, designation to sub-acute to ensure organisational viability  
- Currently no systems / procedures / policies/protocols in place to deal with patients at risk of deteriorating | | By 31<sup>st</sup> March 2013, our distinctive ability to provide optimum care for patients at risk of deterioration utilising the EWS will demonstrate our ability to provide evidenced based sub-acute care. |
| | Organisational  
- 12 bedded sub-acute unit opened Nov 2012  
- Change of designation from long term care to sub-acute  
- Increased risk to patient/staff/organisation due to lack of protocol/procedure/policy in relation to deteriorating patient.  
- Necessary to introduce and implement EWS to demonstrate ability to provide appropriate timely care for this category of patient  
- Necessitate changes to show observations are taken/now this information is perceived and communicated to ensure improved patient outcome  
- Will necessitate training/input/support utilising organisational development approach | Local community  
- Safer, evidenced based care for patients experiencing deterioration  
- Recently published Department of Health Guidelines (DoH 2013)  
- Significant media attention  
- Evidence can be utilised as marketing tool to attract future business in line with government initiative (DoH 2012)  
- Change will further enhance relationships between acute sector and community care  
- Appropriate care for appropriate patient in the community  
- Positive effect on A&E numbers, elective surgery  
- Focus on holistic patient centred care | Individual staff member  
- Training and support in relation to EWS and deteriorating patient will develop CR skills  
- Improve communication and teamwork between disciplines  
- Protocol, procedure, policy will provide framework and support to deal with deteriorating patient  
- Focus on holistic patient centred care  
- Future opportunities for training and development  
- Individualised support for staff members |
Appendix 12: Implementation Plan

EWS Implementation Guide in Sub-Acute Unit

Initial Planning Stage

Stage 1 + 2 of HSE Change Model

Description: Introduction of EWS to 12 bedded sub-acute unit by 31st March 2013

Drivers

Increase integration of Elderly Care Services. Legislation & Regulation.
(Future Health 2012, HSE Service Plan, 2012, HIQA 2012),


Vision:

By 31st March 2013, our distinctive ability to provide optimum care for patients at risk of deterioration utilising the EWS will demonstrate our ability to provide evidenced based sub-acute care.

Objectives:


2) Ensure demonstration of clinical reasoning skills of nursing staff by 31st March 2013.

3) Ensure appropriate referral of patients whose condition deteriorates by 31st March 2013.

4) Improve communication and team working by 31st March 2013.
Identify Key Leadership Roles to co-ordinate and lead EWS project in organisation

- Nursing Admin – Lead
- Medical Officer- change agent
- Policy and Audit- sub group
- Practice Development-sub group
- Risk Co-ordinator
- Nursing Representation
- Senior Physiotherapist

Project Group – to oversee implementation and evaluation on site.

EWS Project Group

- December 2012 – mandate agreed with Senior team
- December 2012 Outline vision/aim and objectives, Drivers for change. Conduct stakeholder analysis, SWOT analysis & TOWS.
- Timelines agreed for implementation. Confirm clinical area. Initial assessment of change impact completed. Set up EWS email group. Identify resource requirements, training, support

Develop and approve EWS policy for hospital – Escalation Pathway and training plan.

- Training commences January 2013
- Consult widely
- Adapt EWS to suit local needs Escalation Pathway per nationally agreed EWS

Feedback to clinical area by EWS project group

IDT, Policy and Audit, Risk Practice Development

Sub group Practice Development, Nursing Representatives Risk co-ordinator.
February 2013
EWS observation chart, scoring chart
Escalation Protocol introduced on unit
100% of staff trained

Staff identified on unit to reinforce training.
Written material and website link provided
on unit desktop for further guidance

Schedule of continuing training sessions
outlined, Certificate provided

Ward posters developed by project group
EWS, ISBAR, Escalation Protocol

Observation chart audit, Focus group,
questionnaire
April 2013

April 30th 2013
Evaluate outcome
Create action plan for improvement –
May 2013

Leadership and change management
training provided by project leader to
CNM’s and EWS project group
Appendix 13- Evaluation Questionnaire
Appendix 13

A Questionnaire to determine detection and intervention of deteriorating patients in hospital. (Featherstone et al (2005))

This confidential questionnaire will take between five to ten minutes to complete.

1. On a scale of 1 to 10, outline your degree of experience in detecting and managing a patient on your unit who is deteriorating.

1             2            3            4   5    6            7            8              9              10
(no experience)                                                                                    (considerable)

(Circle appropriate response)

2. On a scale of 1 to 10, describe your knowledge in relation to the detection and management of the deteriorating patient on your unit.

1             2            3            4        5        6         7           8             9              10
(limited)           (considerable)

(Circle appropriate response)

3. Outline how you currently detect that patient on your unit is experiencing an adverse event.

__________________________________________________________

__________________________________________________________

__________________________________________________________
4. Outline your individual anxieties and concerns regarding detecting deterioration in one of your patients.

5. On a scale of 1 to 10, how confident are you that you are competent to:
   
   a. Detect deterioration in one of your patients:
   
   1  2  3  4  5  6  7  8  9  10
   (Little confidence)     (very confident)

   (Circle appropriate response)

   b. Recognise when to contact a more senior staff member regarding a patient who is deteriorating clinically:
   
   1  2  3  4  5  6  7  8  9  10
   (Little confidence)     (very confident)

   (Circle appropriate response)

   c. Know who to contact regarding a clinically deteriorating patient:
   
   1  2  3  4  5  6  7  8  9  10
   (Little confidence)     (very confident)

   (Circle appropriate response)
6. How confident are you regarding **reporting abnormal physiological observations** concerning a patient experiencing deterioration to a senior staff member?

1 2 3 4 5 6 7 8 9 10

(Little confidence) (very confident)

(Circle appropriate response)

7. How confident are you requesting a senior staff member to **assess** a patient experiencing deterioration?

1 2 3 4 5 6 7 8 9 10

(Little confidence) (very confident)

(Circle appropriate response)

8. Please indicate if any of the following cause you concern when caring for a patient who is deteriorating clinically.

- Inadequate information regarding the patient
  - Yes
  - No

- No formal diagnosis
  - Yes
  - No

- Rapid deterioration
  - Yes
  - No

- Inadequate prior experience
  - Yes
  - No

- Remaining calm
  - Yes
  - No

- Ensure all appropriate observations are complete
  - Yes
  - No

- Unable to get help when needed
  - Yes
  - No
Inadequate knowledge  Yes  No

Not knowing who to inform  Yes  No

Getting a timely response from senior staff  Yes  No

9. From above list, please choose the three issues which cause the most concern when dealing with a deteriorating patient on your unit.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

10. On a scale of 1 to 10, how difficult is the new observation chart to complete?

1 2 3 4 5 6 7 8 9 10

(Not difficult)  (very difficult)

(Circle appropriate response)

11. On a scale of 1 to 10, how difficult is the EWS chart to complete?

1 2 3 4 5 6 7 8 9 10

(Not difficult)  (very difficult)

12. On average, how long does it take to complete the new clinical observation chart?

- Less than 1 minute
- Between 1 and 5 minutes
- More than 5 minutes
13. On average, approximately how long does it take to complete the EWS chart?

- Less than 1 minute
- Between 1 and 5 minutes
- More than 5 minutes

14. Has the introduction of the new clinical observation chart or the EWS chart resulted in any difficulties on the unit?

15. To complete evaluation, it is necessary to collect some demographic details. Please indicate:

- Your age:
- Your gender:
- Years qualified:

16. Please give any comments you wish to make:

Thank you for taking the time and trouble to complete this questionnaire.
Appendix 13b- Pilot Study
Appendix 13b:

Pilot study to determine authenticity, dependability and legitimacy of the questionnaire (Featherstone et al 2005)

To authenticate the dependability and legitimacy of the questionnaire, to remove any flaws, ensuring usable data via analysis, a pilot study was conducted utilising junior managers involved in the initiative but excluded from the main evaluation.

A sample framework was outlined utilising junior managers involved in the initiative. The instrument developed by Featherstone et al (2005) was modified for the purpose to evaluate the change process undertaken. A numerical, range, scoring confidence, clinical ability and knowledge describing the detection and management of adverse events was completed by 5 clinical nurse managers. Closed and open questions were incorporated to include quantitative and qualitative information regarding participants.

Participants were requested to outline any difficult questions or issues that required clarification. Time taken to complete the questionnaire was also requested.

In January 2013, prior to initiation of the project and the training sessions regarding same, questionnaires were distributed to all 5 clinical nurse managers. Following completion of COMPASS and CR educational session, the same questionnaire was again distributed with 100% response rate. Following same, a focus group was held with 5 participants to determine if further alterations were necessary. Feedback indicated a number of minor modifications to clarify ambiguous areas relating to wording utilised. The final questionnaire is presented in appendix 13.
Appendix 14- Project Poster
An Early Warning System Implementation to Sub-Acute setting

Student ID: 11105203
MSc in Leadership and Management Development
Institute of Leadership, Royal College of Surgeons in Ireland

Introduction and Background
International literature demonstrates 11% of hospital deaths can be attributed to non-recognition of patient deterioration.1 An Early Warning Scoring System (EWS) is designed to measure patients' routine physiological observations thus, acting as a reliable indicator of impending critical illness, enabling support, treatment and improved outcome.1

Challenges facing Healthcare Providers
- Legislative and Regulatory emphasis on quality and safety
- Current reconfiguration of services and re-designation of beds complying with Legislative and Regulatory standards, bridging acute and community care gap.2
- Unacceptable organisational risk due to absence of system approach to deal with deteriorating patient.

Aim and Objectives
Aim: To introduce EWS to sub-acute unit by 31st March 2013. Four objectives emerge:
- Prioritisation of care for deteriorating patient in sub-acute setting
- Nursing demonstration of clinical reasoning skills development
- Appropriate referral of patients who are deteriorating
- Improvement in communication and team working

The Change Process
Initiation: Conclusions from SWOT, TCWS, stakeholder analysis and readiness assessment built business case establishing strong foundation and urgency for EWS

Planning
Formation of EWS project group with focus of building commitment momentum and capacity. Vision outlined utilising gap analysis and clinical benchmarking to share best practice and outline difficulties.

Implementation
Plan outlined action, responsibility, timeframes, dealing with resistance and cultural changes using quality approach.4

Mainstreaming
Strengthened new relationships and connections. EWS incorporated into future business plan, performance review and external environment

Evaluation
Mixed method approach: focus groups, questionnaires, audit.
- Increased awareness of signs of deterioration and prioritisation of care
- Improved clinical reasoning skills of nursing staff
- Improved interdisciplinary communication

Pre/Post Change Project Questionnaire

Organisational Implication
- EWS facilitated recognition of abnormal physiological considerations
- Re-designation of Long Term Care to sub-acute is possible
- Significant training & support vital

Conclusion
Introduction of EWS, in addition to reconfiguration of current services to meet external challenges, was critical to improving healthcare outcomes in line with legislation and regulatory standards.

References