



**Project Title:**

**Nurses experience of activating a rapid response system in general rural hospital wards**

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### **Abbreviations**

BTF	Between the Flags
EEN	Endorsed Enrolled Nurse
EN	Enrolled Nurse
ICU	Intensive Care Unit
MET	Medical Emergency Team
NSW	New South Wales
RRS	Rapid Response System
RRT	Rapid Response Team
RN	Registered Nurse
SNSW LHD	Southern New South Wales Local Health District

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## **Abstract**

The aim of the research project was to develop an understanding of the positive or negative perceptions which influence nurses in their decision to activate a Rapid Response System (RRS) when patients experience clinical deterioration.

A hermeneutic phenomenology study, where nurses employed on general rural hospital wards invited to attend one of three focus groups. Participants of the focus groups were asked to describe their experiences of activating a RRS and reflect on the emotions the experience evoked. Audio recordings of the meetings were transcribed and analysed to identify core categories and properties of those categories. The findings were reviewed by an independent reviewer to confirm the identified themes.

The results found nurses used words such as worried, scared, anxious and frustrated to describe activating a RRS. The themes identified were:

- Communication breakdown around lack of observation variances and 'Not for resuscitation' orders, which caused confusion and in delays in activating the RRS
- Nursing in isolation, due to negative feedback, causing them to feel as though their judgment was doubted, they were wasting time, or isolated in their concern for patients.
- Time; related to time until help arrived or time taken to call for help
- Positive experiences of activating a RRS aligned with severity of the patient's condition and improved patient outcomes.

While all nurses reported activating the RRS, as required by policy and as part of doing the right thing for patients, less experienced nurses described reluctance, and nurses employed for longer periods ignored negative feedback.

The results highlighted that the decision making process of when to activate a RRS is influenced by previous experiences. Nurses reported a number of factors which prevented spontaneous activation of the RRS, resulting in time delays from recognition of a patient with clinical deterioration to activation of the RRS. Results support action to improve embedding the local track and trigger system and education of responders to provide positive feedback to the nurses who activate the RRS.

**Keywords:**

Rapid response, medical emergency team, nurses' experiences, deterioration, rural wards

**Executive Summary****Introduction**

Rapid Response Systems (RRS) are a proactive approach to the management of patients experiencing clinical deterioration. The Between the Flags (BTF) program which includes a RRS was introduced into metropolitan and rural NSW hospitals in 2010 NSW (NSW Health 2010). Without early detection and management of their clinical deterioration patients are at risk of an adverse event, including unplanned admission to an intensive care unit or unexpected death (Lee. et.al 1995). Multiple studies have identified delays in the activation of the RRS (Hodgetts et.al. 2002, McGloin et.al 1999, DeVita et.al. 2006, Considine et.al. 2004, Daffurn et.al. 1994, Crispin et.al. 1998, Endocott et.al. 2007, Wynn et.al. 2009). Improved patient outcome is reliant on timely activation of the system, and reasons for delays to activation need to be recognised and overcome. As nurses are usually responsible for activating the RRS it is important to understand their experiences. Studies have identified that nurses employ a decision-making process based on either intuition, ways of knowing, or past experiences (Cioffi 2000a, Cioffi 2000b, Andrews & Waterman 2005). Understanding their experiences of activating a RRS may explain these time delays.

**Findings**

Hermeneutic phenomenology relies on participants' words to develop understanding of their experience (Crotty 1998). During the focus groups participants used words such as; worried, scared, anxious, frustrated, panic, confused, terrifying and annoyed. These words provided negative connotations of participants' experiences, which were supported by the main themes identified from the data.

The first theme was breakdown in communication around the management of patients with chronic conditions or end-of-life care. The second theme was the sense of nursing in isolation, which was experienced by nurses when they received negative feedback around activating the RRS. This isolation caused anxiety for less experienced nurses and annoyance for experienced nurses. The third theme was time; which related to time until help arrived or time taken to call for

help. A fourth theme identified as nurses' positive experiences of activating a RRS, these experiences aligned with severity of the patient's condition and improved patient outcomes

## **Discussion**

The difficulties of activating a RRS identified by the focus group participants were (a) lack of clear communication around clinical observation variances and 'not for resuscitation' orders, leading to inappropriate or delayed activation of the system; and (b) negative feedback causing feelings of isolation which subsequently led to delay in activating the system. Less experienced nurses expressed anxiety and worry in relation to the lack of team work. Experienced nurses demonstrated high levels of frustration and resignation to the burden they carried due to lack of team work. The breakdown in communication and the feelings of isolation contributed to the third theme which was time. This theme referred to the time delays that occurred between recognition of patients with clinical deterioration until the RRS was activated, or the amount of time from activation of the RRS until the response team arrived. The fourth theme related to nurses' positive experiences of activating the RRS, although these were limited in comparison to the negative feedback they provided insight into how almost any feedback if not negative was viewed as positive by the nurses.

The BTF program was introduced into Southern New South Wales Local Health District (NSW LHD) 18 months prior to the research project. The immaturity of the system may explain the breakdown in communication and the delayed activation of the rapid response system (Downey et.al 2008, Jones et.al 2006). During the implementation stage the program was driven from a critical care perspective; an approach that has been recognised for not meeting the needs of staff on general wards (Considine et.al. 2004, Jones et.al 2006b).

The BTF program was developed and implemented into tertiary, metropolitan and rural hospitals as a standard. The findings may also be due to lack of recognition of the rural hospitals' culture, including the medical-nursing relationships, a factor that has been identified as a barrier to implementation (DeVita et.al. 2006).

Strategies to enhance teamwork and improve communication between the ward nurse and the responding medical officer in rural general wards must be employed to ensure patients with clinical deterioration receive timely and effective interventions. To achieve the expected outcomes of the BTF program further review and restructure of the program in rural sites is required. Undertaking redesign locally will allow for recognition of local cultures and the refining of the program to meet the needs of the patients and health professionals

The research supports the need for further education to improve communication of the patient's plan of care including acceptable clinical observation ranges and expectations of patients with 'not for resuscitation' orders. Responders need to provide positive feedback to nurses who activate the RRS as it is clear from the current study that negative feedback leads to delays in activating the system and increases feelings of isolation and anxiety in nursing staff (DeVita et.al. 2006).

## **Conclusion**

Time delays from recognition of patient clinical deterioration until activation of the RRS are linked to the nurse's decision making process. This process is influenced by breakdown in communication and feelings of being unsupported and isolated in their role. To improve teamwork in rural hospitals and ensure timely activation of the RRS the BTF program needs to be adjusted and implemented to meet the cultural norms of the rural hospitals.

## **Introduction**

Rapid Response Systems (RRS) are a proactive approach to the management of patients suffering clinical deterioration. The Between the Flags (BTF) program, a track and trigger system, which includes a RRS was introduced into metropolitan and rural NSW hospitals in 2010 NSW (NSW Health, 2010) Without early detection and management of their clinical deterioration patients are at risk of an adverse event, including unplanned admission to an intensive care unit or unexpected death (Lee et al., 1995). Many studies have shown delays in the activation of the RRS (Hodgetts et al., 2002, McGloin et al., 1999, DeVita et al., 2006, Considine and Botti, 2004, Daffurn et al., 1994, Crispin and Daffurn, 1998, Endocott et al., 2007, Wynn et al., 2009). Improved patient outcome is reliant on timely activation of the system therefore delays to activation need to be recognised and overcome. As nurses are the health professional most likely to be present when patients have signs of clinical deterioration they are more likely to be responsible for activating the RRS, therefore it is important to understand factors that contribute to these delays. One factor maybe nurses decision making processes. Studies have identified nurses use a decision-making process based on either; intuition, ways of knowing, or past experiences (Cioffi, 2000a) (Cioffi, 2000b) (Andrews and Waterman, 2005). Understanding the nurses experiences of activating a RRS and how this informs their decision making process may explain these time delays.

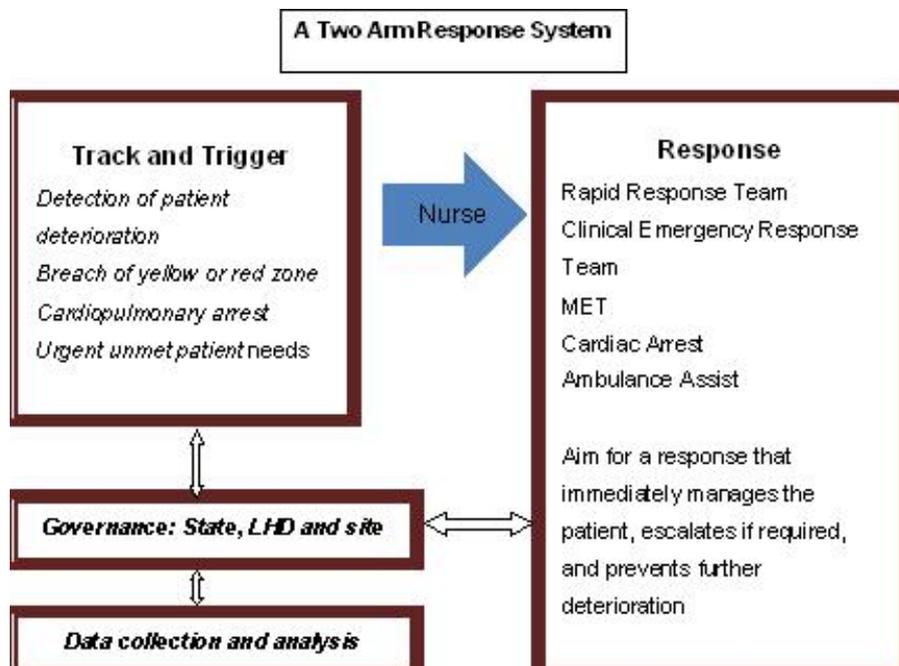
## **Background**

RRSs are a proactive approach to the detection and management of patients in acute care setting experiencing clinical deterioration. Without early detection and management of their clinical deterioration patients are at risk of an adverse event, including unplanned admission to an intensive care unit or unexpected death (Lee et al., 1995). RRS have been developed around the concept that most patients experience physiological changes prior to suffering an adverse event associated with clinical deterioration. In 1990 the first RRS; the Medical Emergency Team (MET) was introduced into a NSW hospital. The aim of the MET was to improve patient outcomes and reduce the number of in-hospital deaths (Lee et al., 1995). To achieve these aims research and practice changes have continually centred on system improvement and improved patient outcomes. These evolutions lead to the implementation of the BTF program into NSW hospitals in 2010 (NSW Health, 2010). After twenty years of development and refinement it could be expected that the system has grown into a robust scheme capable of meeting the deteriorating patient's needs. Review of the literature identified

concern related to the link between recognising the patient who is experiencing clinical deterioration and the activation of the system for medical review and management for the patient. As the health care clinicians who spend the most amount of time with the patient, general ward nurses are the most frequent activators of RRSs (Considine and Botti, 2004, Buist et al., 2002)

The BTF program which was introduced into local hospitals is a two tiered RRS. The term Rapid Response System describes a whole system, including the afferent and efferent arms (DeVita et al., 2006). In 2005 an International Conference on Medical Emergency Teams was convened to form consensus related to the concept of RRS. The consensus paper describes the two arms of the RRS (DeVita et al., 2006). The afferent arm includes the detection and triggering component; these are the signs or evidence of clinical deterioration that represent the triggering criteria for calling a rapid response. The efferent arm is the crisis response component which includes the personnel and the equipment to assess and manage the patients experiencing clinical deterioration (DeVita et al., 2006). The two arms are linked by raising an alarm; often a phone call made by the bedside nurse.

**Figure 1: Two Arm Response System**



Developed from the Afferent Efferent Limb Concept (DeVita et al., 2006)

### **Literature review:**

Many studies have shown delays in the activation of the rapid response team (Hodgetts et al., 2002, McGloin et al., 1999, DeVita et al., 2006, Considine and Botti, 2004, Daffurn et al., 1994). Although these papers recognise delays between 2 and 16 hours some also highlight that not all patients with clinical deterioration have a response system activated. During the MERIT study Hillman (2005) found that only 30% of patients who had signs of deterioration that met the calling criteria actually had a rapid response system activated. Improved patient outcome is reliant on the activation of the system therefore delays or non-compliance of the activation need to be recognised and overcome. As the nurse is usually the link between the afferent and the efferent arms of the RRS this literature review has been undertaken to provide understanding of the nurses role in the activating the RRS.

All qualitative or quantitative papers were included in the review if they were published in English and described a RRS, noting the general ward nurses' experiences. Exclusion was any papers relating to the evaluation of the RRS calling criteria as the BTF has evidence-based calling criteria to support the recognition of patient deterioration.

The CIAP databases, Google scholar and reference lists were used to access literature for the review. Broad search categories for example: patient deterioration, rapid response systems, medical emergency teams, were used. The results were then limited to nursing and general wards. The search included the years 1990 to 2010; 1990 was chosen as it represent the introduction of MET into an Australian hospital. Papers were reviewed against the inclusion criteria with fourteen recognised as meeting the criteria. One paper was excluded as it presented results in a summarised format of the author's original study. One literature review, (Odell et al., 2009) was included, that paper had its own inclusion criteria and some, though not all of the studies contained in that paper met the inclusion criteria for this review.

Appendix A: a summary of all studies included in the review.

All of the studies recognised that delays occur between when the patient had documented evidence of clinical deterioration according to the RRS calling criteria and when the system was activated (Downey et al., 2008, Cioffi, 2000a, Cioffi, 2000b, Considine and Botti, 2004, Crispin and Daffurn, 1998, Daffurn et al., 1994, Endocott et al., 2007, Jones et al., 2006a, McGloin et al., 1999, Wynn et al., 2009). The delays found depended on the measuring criteria used by the researcher. Endocott (2007) reviewed the medical notes of patients with unplanned admission

to Intensive Care Unit (ICU) and found 56% had indicators of deterioration for more than two hours prior to ICU admission. McGloin (1999) reported that 19% of patients had abnormal vital signs for three days prior to an unplanned admission to ICU. The remaining studies reported the delay in hours until the RRS was activated. Wynn (2009) reported 34% of patients had documented signs of deterioration for greater than two hours prior to system activation and 15% had signs of deterioration for up to eight hours before activation. Similarly Downey (2008) reported 30% of patients had a delay in the activation of the system with a mean time greater than 13 hours. When considering the amount of time involved in some delays it is possible to consider that the delay in activation of the system is related to the individual nurse. Most nurses work eight hours shifts, therefore times approaching or greater than eight hours could indicate change of staff before the RRS was activated.

Crispin and Daffurn (1998) suggest that nurses recognise signs of deterioration however they do not consistently respond accordingly and activate the RRS. Delayed activation of the RRS was associated with an increased risk of death (Downey et al., 2008), and not activating the RRS further increased the risk of a serious adverse event and poor outcome for the patient experiencing clinical deterioration.

In a retrospective survey of the medical records of 178 patients, who required review by the Rapid Response Team (RRT) medical records, Crispin and Daffurn (1998) reported that only 68.4% had a RRS call. Indicating the remaining 31.4% did not have the RRS activated. The suggestion that not all patients with signs of clinical deterioration consistent with the RRS calling criteria had activation of the system is further supported by Cioffi (2000b), Considine (2004), Daffurn (1994) and Jones (2006).

Some studies recognised the delay or non-activation of the RRS and tried to determine the contributing factors (Jones et al., 2006a, Cioffi, 2000b, Endocott et al., 2007, Odell et al., 2009, Wynn et al., 2009). Issues identified within the literature that may impede the process of the nurse activating the RRS include; poor skill mix, casual and part time staff, local policies hierarchical issues (Endocott et al., 2007), and lack of experience and education (Daffurn et al., 1994, Odell et al., 2009, Wynn et al., 2009). The majority of the issues raised represents hypotheses developed by the researchers and therefore lack evidence to support the extent of their bearing. To understand the experiences of ward nurses activating a RRS Cioffi (2000b) undertook a descriptive study. The study used a purposive sample of 32 Registered Nurses with more than five years nursing experience. Although the findings provided possible hypothesis for further research the sample was not reflective of the general ward nursing mix and therefore did not provide a true sample. General wards within the local health service include Registered

Nurses (RN) from new graduate to very experienced, Enrolled Nurses (EN) and Assistants in Nursing and all are expected to activate the RRS when a patient breaches the calling criteria or when they are worried about a patient.

The literature referring to delays in activation of the RRS includes the nurses' decision-making as contributing to the delays. Although Daffurn (1994) reported all nurses who had activated the RRS stated they would call a RRS again, studies since have indicated a reluctance of nurses to call (Jones et al., 2006a, Cioffi, 2000b, Endocott et al., 2007, Odell et al., 2009, Wynn et al., 2009). Despite policy, when the patient had recognised signs of clinical deterioration the nurse used clinical decision-making and discretion to determine activation of the RRS (Jones et al., 2006a). Using decision-making skills to determine the activation of a RRS may present major difficulties as nurses' decision-making is often complex and reliant on previous experiences (Cioffi, 2000b). This is further compounded when considering many of the studies reported negative experiences or feeling associated with activating a RRS. Andrews and Waterman (2005) reported that nurses had a 'fear of 'looking stupid' a concept repeated in Jones et al. (2006) who reported that nurse had a fear of criticism, and Cioffi (2000b) a 'concern about doing the right thing'. If these negative experiences influence nurses' decision-making process it is possible that even with the built in, easy to recognised calling criteria of the BTF RRS and the communication tool the nurse will decide not to activate the RRS.

Recommendations from the studies reviewed included the need for further research to fully understand the problems or obstacles that hinder the activation of RRS by nurses on general wards. Considine (2004) recognised that through the reduction of barriers the use of RRS would become more effective and that further research was required to accurately determine the barriers. Similarly, Downey (2008) identified the need for further research.

## **Hypothesis**

Nurses are required to activate a rapid response system to get help for patients experiencing clinical deterioration. To activate a rapid response system nurses employ a decision making process which is influenced by positive or negative perceptions. The rationale for nurses on the general wards in rural hospitals developing these perceptions is poorly understood and described within the nursing literature.

## **General Aim**

To develop an understanding of nurses' experiences of activating a rapid response system on general wards in rural hospitals.

## **Specific Aims**

1. To understand the positive perceptions nurses in rural hospital wards have towards activating a rapid response system
2. To understand the negative perceptions nurses in rural hospital wards have towards activating a rapid response system
3. Develop concepts related to the nurse's decision making process for activating a rapid response system.

## **Methodology**

The project was qualitative research using a hermeneutic phenomenology methodology (Crotty, 1998). Phenomenology was identified as the most appropriate research methodology as it allows the researcher to lay aside as best they can any prevailing understanding of the experience which allows for new meaning to emerge or at least an authentication of former meaning. This was important as the researcher had developed some ideas from her own experiences and observations, which were not supported by the literature. The idea of using hermeneutic phenomenology was to recognise that nurses use reflection in their daily practice and therefore the words they used to describe their experience would be the medium for the researcher to develop an understanding of those experiences. This methodology allowed the researcher to use an interpretive approach and derive meaning from the participants' words (Danuta and Swanson, 2007). After the meanings were identified the researcher was able to develop an understanding of the phenomena in the context of working in rural general hospital wards. To ensure a robust approach to data interpretation the ten steps described by Wertz were used (Finlay, 1999).

Identifying and using a robust approach to the data analysis was important for two reasons, firstly the researcher's close association with the BTF program. The researcher is an intensive care nurse and nurse educator with a Master's Degree in Nursing. Due to the perceived benefits of the BTF program which included reduced admission to intensive care and reduced unplanned deaths she had been instrumental in the development and roll out of the BTF program. This included working with local champions at each of the hospitals, providing staff education and

training during implementation phase of BTF and auditing the results. The second reason was the lack of previous experience in collecting and analysing qualifying data.

## **Method**

Focus group meetings were chosen as the method most appropriate for the data collection. The use of focus groups allowed the nurses who attended to support each other while they told their stories in a non-threatening environment. Three focus group meetings were organised, each one at a different rural hospital within the local health district. Due to the high profile of the researcher in association with the BTF program the use of a convener for the focus group meetings provided an approach that decreased the risk of participants knowing the convener and developing a preconceived idea of the convener's expectations for the meeting outcomes. The convener was selected for her ability to run meetings, her employment within the LHD and her dissociation from the hospitals where the focus groups were held. The convener had no previous relationship with the focus group participants.

The convener for the meetings asked the participants to provide a detailed picture of their lived experiences of activating a rapid response system and the emotions invoked by activating the system. Three questions were developed for the focus groups. These questions were piloted with a small group of experienced clinicians and nurse educators. This pilot provided the opportunity to refine the questions to improve the participants' understanding and gather the data required to answer the hypothesis.

A number of risks for participants were identified, to minimise these risks the exclusion criteria was developed, a group confidentiality clause was included on the consent form and the local staff counselling service was contacted to enable the supply of their literature and phone number to participants.

## **Focus Group Procedure**

A set guide was developed for the focus group facilitator, this included the following steps:

1. Introduction of facilitator and researcher
2. Describe the project and process of the meeting
3. Identify inclusion and exclusion criteria and if applicable ask anyone meeting exclusion criteria to leave
4. Seek written consent from the participants

5. Ask participants to complete the participant demographics form (Appendix B)
6. Ask the following three open ended questions, allowing fifteen minutes per questions for discussion (guide to ensure meeting stayed within timeframe)
  - a. Describe the experience of being involved in the care of an unwell patient requiring activation of a rapid response system?
  - b. Reflecting on the experience of activating a rapid response system, what feelings were evoked?
  - c. A patient meets the calling criteria, what are the key issues that influence the decision to escalate to a rapid response call?
7. Participants were asked to write down three dot points on post-it notes identifying their main perceptions of activating a rapid response system.
8. Researcher to use topics noted butcher's paper recap on the meeting and ask for clarification as required of participants stories

### **Setting**

The setting was three rural public hospitals located in the SNSW LHD. The SNSW LHD has an estimated resident population of 197,656, with 18.9% aged 0-14 and 16.1% aged over 65 years. The population is projected to increase to 216,995 by 2016. It covers an area of 44,529 sq/km with a population density of 4.2 residents per square km. There are 13 Hospitals within the health district ranging in size from Multi-Purpose Services to base hospitals, all sites had implemented the Between the Flags program 18 months prior (NSW Health, 2010). Two of the three hospitals had a doctor in the Emergency Department overnight only and the third site had no doctor on-site overnight. All hospitals use the same referral hospital which is located external to the LHD, and is a minimum travelling time of an hour.

### **Participants**

Nurses employed on the general wards of each of the rural hospitals selected for the focus group meeting were invited to attend the local focus group meeting. The meetings were held in rooms located within the hospital. Recruitment of participants was non-selective, flyers advertising the meetings were placed in strategic positions throughout the hospital and personal invitations for all nurses were left on the general wards. The invitation included a copy of the research protocol (Appendix C), a participant information sheet (Appendix D) and a participant consent form (Appendix E). Nurses with an interest in attending were asked to contact an

independent person to ensure adequate catering for each meeting; this also provided the researcher with an idea of attendance numbers.

Two nurses who arrived at one focus group meeting left following explanation of the process and the consent form. Due to confidentiality no none participants were present for any of the focus groups.

The exclusion criteria included all nurses who fulfilled a manager or supervisor role, either fulltime, part-time, casual or relief. Although the nurses who fulfil these roles may have contributed to the research, the researcher felt their presence at the focus group meeting would limit the storytelling of the bedside nurse and therefore hinder the research outcome. At one focus group meeting one nurse was asked to leave due to her role as a unit manager.

### **Sample Size**

Although five hospitals were identified as possible sites for the focus group meetings only three sites were required to achieve data saturation. Data saturation occurs when the researcher is no longer receiving new information (Webb and Kevern, 2001).

The aim was for each focus group meeting to be attended by a minimum of four people, to allow for effective discussion and provide participant privacy. The maximum number of any one focus group was identified as 12. A larger group would have limited the ability of the facilitator to ensure group involvement and discussion.

### **Data Collection**

Data from the focus groups was collected in three ways;

1. the meeting was audio recorded using a digital recorder,
2. butchers' paper was used by the researcher to record the main issues, and
3. participants wrote their three main points on post-it notes.

A participant demographics survey was used to collect individual's designation, years of experience and beliefs of the BTF program effectiveness.

The researcher maintained field notes from each meeting and discussed each meeting with the facilitator in relation to the atmosphere and level of reflection the nurses who attended had applied to their experiences.

## Data Analysis

Due to a malfunction of the audio recording one of focus group meetings included too much static to allow for accurate transcribing. The audio recordings from the other two meetings were transcribed and then analysed using the ten phases of data analysis described by Wertz (1983). The following table describes these ten phases.

### The ten phases of data analysis:

1.	Aiming to emphasise; the research starts by immersing himself or herself in the tape or transcript, repeatedly listening to the participant's description of his or her world. The researcher aims to empathise, to feel the participant's situation. Care is taken to gain a sense of the whole – a gestalt – by listening to both the verbal and non-verbal communication
2.	Delineating units of meaning: The researcher engages in a rigorous process of dividing the transcript into phrases ( or 'Meaning units') to allow a focus on the content .
3.	Taking time and dwelling: The researcher takes time with description, focusing on selected chunks of the meaning units to begin to divine what certain aspects mean to the participants. The researcher slows down. Care is taken to stay with the data, and even with the literal words, rather than jump into premature analysis.
4.	Lingering and amplifying : When the researcher lingers over what seems to be a meaningful excerpt, its significance is brought to the fore and probed further.
5.	Suspending belief and employing intense interest: The researcher takes a step back and begins to think interestedly about where the participant is, how he or she got there, what it means to be these, and so on. Connections start to be made.
6.	Turning towards meanings: The researcher focuses on the way the situation appears to the participant and what objects or events mean to him or her. Sometimes it helps to interrogate the analysis using questions like: <ul style="list-style-type: none"><li>• What does it mean to this person? Who does he or she think he or she is?</li><li>• What does he or she think about?</li><li>• Where does he or she experience his or her day? Are some places safer than others?</li><li>• How does he or she experience his or her day? Is it pressured, slow or discontinuous?</li><li>• How does he or she feel about relating to others?</li></ul>
7.	Reflecting: The researcher probes more deeply, for instance: (a) penetrating implicit horizons (that is, things not said); (b) dwelling on contradictory, vague and opaque aspects; (c) seeing relationships between themes; and (d) using 'imaginative variation' to determine essential characteristics, such as asking "What if ....?" Or envisaging a scenario played out over time.
8.	Focusing on existential dimensions of identity, sociality, corporeality, spatiality and temporality but does not artificially impose them.
9.	Finding words: The researcher puts a name to themes, phases, relationships and distinctions, using his or her own words to seek to capture the life world.
10.	Testing and reformulating: The researcher constantly returns to the original description to try to stay 'true' to the phenomenon and modifies or elaborates themes or sub-themes accordingly. At this point, the researcher resists packaging the themes too neatly; instead, incomplete, ambiguous or contradictory data are prized. (Finlay, 1999)

During the data analysis of the two transcribed focus groups the researcher kept the data separate until phase nine of the process. Prior to undertaking this step the data from the two groups were combined, the post-it notes, butcher's paper information from the three meeting were used to ensure accuracy or interpretation and data saturation. Phases nine and ten were undertaken with the data from both focus groups combined.

This method of data analysis was used to find the insight, recognition and extraction of the meaning, establishing themes, interpreting the themes and then testing and reforming the findings. In the phase of testing and reforming the themes the researcher used the main points captured on the butcher's paper and post-it notes to provide clarification and validity. This approach to the data analysis was rigorous with the researcher immersing herself in the data, by repeatedly listening to the audio tapes and reading the transcribing. The original transcripts were peer reviewed to increase the validity and reliability of the analysis.

The participants were not provided with the transcriptions of the focus group meetings. The findings were presented using a powerpoint presentation during the time allocated for in-service at each hospital where a focus group was held. The staff were invited to attend and provide feedback around the findings. The participants of the in-services supported the general findings of the research.

### **Ethical Approval and Considerations**

The research was given ethical approval in January 2011 by the Greater Southern Area Health Service (GSAHS) Human Research Ethics Committee (HREC), approval reference HREC/10/GSAHS/44. Three Site Specific Assessments approvals were received in March 2011; references: SSA/11/GSAHS/7, SSA/11/GSAHS/8, SSA/11/GSAHS/9. Normal ethical considerations such as transparency, informed consent, honesty, right to withdraw without consequences, confidentiality and storage of data were maintained.

## Results

### Participant Demographics

The focus groups were attended by 18 participants, with group sizes ranging from five to seven.

**Table 1:** Participant Demographics

Demographics	Number
<b>Designation</b>	
RN	10
EEN	3
EN	4
Student	1
<b>Post Graduate Qualifications</b>	3
<b>Years in facility</b>	
< one year	3
1-3 years	3
3 – 10 years	9
> 10 years	3
<b>Gender</b>	%
Male	20 %

The participants were asked to indicate if they believed the BTF program was beneficial for managing patients with clinical deterioration. Fourteen participants believed the Between the Flags program was beneficial, two were unsure and one disagreed.

### Findings

The reach methodology of hermeneutic phenomenology uses the words of the participants to develop understanding of their experience. The participants of the three focus group meeting used the following words to describe their experiences of activating a rapid response system: worried, scared, anxious, frustrated, panic, confused, terrifying and annoyed. Two of the three groups had reflected on the experience of activating the RRS and presented rationales around issues. For example they recognised that time takes on a different meaning while stressed and waiting for assistance, they also recognised that the response team and the time till responders arrived differed between night compared to day shifts. One group had not reflected on the experience and therefore their descriptions of their experiences were very emotional without recognition of circumstances or contributing factors that may have provided some rationales for their experiences.

The data findings are reported under four main themes. While negative experiences dominated the stories told at the focus group meetings there were some positive and these have been included as a theme to ensure an accurate representation of the groups. The four themes are:

1. Communication breakdown around lack of observation variances and 'Not for resuscitation' orders, which caused confusion and in delays in activating the RRS
2. Nursing in isolation, due to negative feedback, causing them to feel as though their judgment was doubted, they were wasting time, or isolated in their concern for patients.
3. Time; related to time until help arrived or time taken to call for help
4. Positive experiences of activating a RRS aligned with severity of the patient's condition and improved patient outcomes.

To maintain confidentiality the quotes used to support the themes are described with participant designation; RN, EEN or EN, the focus group code and the page number from the focus group transcript from which the quote was taken.

### **Communication Breakdown**

Breakdown in communication between the medical and nursing staff referred to not setting observation variances and lack of clarity around 'not for resuscitation' orders which impacted on the management of patients with clinical deterioration. As described in the introduction the BTF program includes a track and trigger system which is a colour coded observation chart. The policy states that when the patient's observations fall into the red zone the nurse activates the RRS. These observation zones have been developed on the findings of the SOCCER study (Jacques et al., 2006) and relate to acute physiological changes. When patients have chronic diseases they may have observations that normally fall within these zones. The observation charts include an area for documenting acceptable observation variances for individual patients. Knowing the patient's medical history and measuring the observation and finding what could be expected due to chronic disease processes but having no variations set cause confusion for the nursing staff.

*...even though the person is known by that medical officer to have a low blood pressure or have a variable heart rate or have a co-morbidity; and so therefore if there's no variance, under policy, you have to respond (RN 1:5)*

*Yeah, well a lot of our patients would come into the yellow zone and to the red zone and these would be normal observations (EEN 3:8)*

The confusion related to observation variances not being documented lead to frustration and became a time consuming chore for the nurse.

*it's frustrating that there's nothing documented and then you've got to get on the phone, .....it's frustrating, time consuming and frustrating (RN 3 :9)*

Participants of the third focus group discussed issues around inappropriate observation variances being set. They felt that some variances were too broad and this caused confusion around the calling for help and the expectation of patient management

*Sometimes, and you've got unrealistic levels of the variances set (RN 3:8).*

The second major concern which caused a breakdown in the communication around patient management was 'not for resuscitation' orders. This included patients with or without 'not for resuscitation' orders.

Nurses expressed concern and anxiety related to caring for a patient who they felt should have been 'Not for Resuscitation'. They discussed one patient who had required a number of rapid response calls over a period of four days prior to a plan of action being initiated. They felt very concerned that this patient had been mismanaged and that the patient's wishes were not met.

*You know he'd been unwell on the Sunday, you know he's been reported; Monday he's been reported; Tuesday he's been reported; you know, Thursday he was airlifted out, and died, in (Referral Hospital)*

*Mm.*

*So it was all, all too much too late really. So it would have been better off to know whether he was for resus and kept him here and kept him comfortable. But nup, didn't happen.*

*So there are issues around not really knowing whether he was up for resus or not? (RN 1:13).*

This discussion was supported at another focus group

*It's sort of like deep down you knew what they wanted and you can't, you can't not do it (activate the RRS) (RN 3:5).*

The communication breakdown around the 'Not for Resuscitation' orders also involved getting the appropriate help for the patient which may therefore have required a rapid response call. Examples of this were when patients developed a new acute condition such as sepsis or if nursing staff were unable to control the patient's pain and could not access a medical officer.

*Yes, I know it's like.....they're, like they're dehydrated or that they're showing signs of sepsis. I mean 'not for resuscitation' doesn't mean not for care... (RN 1 :15 )*

*It means not for resuscitation. 'Not for resuscitation' is totally different from, from 'not for responding.' It doesn't mean not for response, it means not for resuscitation (RN 1 :16 )*

Throughout the discussion around issues such as the setting of observation variances and not for resuscitation orders the nurses recognised the amount of time that was lost between recognition of patients' clinical deterioration and activating the RRS to get help.

Time was extremely important to the nurses when caring for patients with clinical deterioration. Time delays occurred prior to activating the system. These time delays were related to confusion around the medical management plan and expectations for the patients. Once the decision was made to activate a rapid response the nurses then waited anxiously for the help to arrive.

*Then in that one it was like frustrating and like, 'Where the hell is everybody?' (EEN 3:6)*

*Sometimes it can be the longest two minutes of your life though (RN 3:7)*

*and they're having to ask questions regarding background while you're trying to respond to a deteriorating patient, if that makes any sense, that it's rather than a rapid response it becomes a moderately quick... (RN 1:1)*

### **Nursing in isolation**

The reviewer of the transcripts described this theme as nurses feeling unsupported. The researcher reviewed the field notes from each meeting and decided that due to the amount of anguish expressed by the nursing staff around this theme that to stay true to the participants the word 'isolation' more accurately described the nurses' experiences. Nursing in isolation includes two sub themes, the effect of negative feedback from the rapid response leader and the nurses' years of experience.

The participants reported negative feedback that ranged from being shouted at; *Yeah, they're shouted at (EN1:12)* to being abused *...and you get the, 'Why the \*\*\*\* have you woken me up at two o'clock in the morning (RN1:11)*

The negative feedback impacted on the nurses causing them to feel as though their clinical knowledge and skills were being doubted.

*...well you just wonder whether they're doubting that your assessment of the patient is fair dinkum or... (RN1:17)*

The negative feedback impacted on the time taken to activate a rapid response call; for example one EEN reported that when she asked the RN to activate the system the response was

*'Oh, can you keep... you ring the doctor because I've had to ring him already and they've growled,' or something like that, and I've thought you know, I'm sorry 'cause that's, I can't, that's your job. But the sad thing is that they feel like that (EEN 1:12)*

*Yeah, is it like you take a breath ..... you do... you sort of go, 'Oh...' because it has the culture where the doctors are like... like it was a pointless call or, you know, 'Why did you call me, wake me in the middle of the night?' And some of the calls have been for rapid response to be called when you've like paged doctors to say like, this is happening with this patient, like, you know, post-op or whatever, their blood pressure's dropping or urine output is dropping off and you just don't, you don't... (RN3:6)*

In describing how the negative feedback made her feel one nurse sadly stated

*You're a small....inadequate (RN 1:3)*

The negative feedback has impacted on the teamwork, leaving the nurses who have experienced it feeling isolated in their clinical role.

*Yeah, they're intimidated and you know, we're supposed to be a team (EEN1:8).*

The participants recognised that the isolation felt by the nurses impacted on patient care,

*...and yet when something happens they don't want to be compliant. Well they're their patients...so you think that the... those feelings may affect the patient? Well, it might, mightn't it... the outcome might... (EN1:12)*

And there is a need for teamwork

*Oh look, I... I'd be annoyed with the doctor...Mm...because I think everyone should feel happy to ring a patient's doctor... (EN1:12)*

The impact of negative feedback on individual nurses depended on their level of experience within the hospital. This level of local experience rather than level of nursing experience was demonstrated in the following quote

*You talk to people who, you know sort come into hospital and you've got lots who work here, and they can't cope with the fact that they haven't got those doctors there when they need them. They... and quite often they will leave because of that they don't feel that support that, that they need (EN1:7).*

The years of nursing experience also impacted on how the nurse reacted to negative feedback and the feelings of isolation that were evoked.

*But for me I'm probably more hyper-aware of my own inexperience. I'm just trying to think where I'm aware like with things I don't know but I always know where that little red button is, because I am worried that someone is going to die on me. (RN 3:3)*

*But if you're a new grad or someone who's not experienced, you know, it's a big responsibility to take on. (RN3:11)*

*Well I'm a new graduate and I think it's terrifying sometimes, coming in here and you know, it's me and another new graduate on the floor, and I just think 'holy cow' if something happens.. you know it's just us (RN1:10)*

*We do engender fear in each other, which is really quite wrong (EN3:15)*

The nurses with more experience in the local sites were resigned to the negative feedback

*I'm over it. It's .....arrgh (RN 1:10)*

*Well I feel ....., as long as I can back my decision with solid clinical knowledge..... then I've done all I can, yeah..(RN1:10)*

The ENs and EENs recognised that the senior staff often receiving negative feedback and the effect of that feedback was daunting

*They wear the flack (EN 1:9)*

## **Time**

Time as a theme included to subcategories, the first was the time lost from recognition of abnormal vital observation until activation of the RRS and second the amount of time it took the RRT to arrive after the activation of the RRS.

The time delays from recognition of vital sings which represented clinical deterioration until activation of the RRS were often presented as a chore which was frustrating when these delays related to communication breakdown

*it's frustrating, time consuming and frustrating (RN2:9)*

The recognition of time as a theme around the time taken activation of the RRS until the RRT arrive the expressed emotions such as anxious, worried and scared, all of which related to the outcome for the patient.

Sometimes you get like, you're guarding your patients like if you try and get someone to come and with the patient you think, please, get here in time (EN2:6)

Sometimes it can be the longest two minutes of your life though (EN2:7)

One focus group identified long time delays in which the nurses initiated treatment while waiting for the doctor

*it may take a period of time up to half an hour or longer for the medical officer to actually attend (RN1:2)*

rather than a rapid response it becomes a moderately quick...(RN1:1)

## Positive Feedback

Positive experiences were reported when the nurses perceived good outcomes for the patient; they received positive feedback or the patient required complex care.

*For the benefit of patients .....The patients.....For the benefit of patients.....For getting help, getting more people. (RN3:7)*

Positive feedback was minimally reported and required little recognition or response from the team leader to be taken as positive:

*she was happy with what I had sort of done (RN 3:13)*

*he said he was impressed with the documentation, it was fantastic. So that made me feel good that I had documented all of that because if I hadn't documented anything through this whole process, how do they know what I've done, (RN 3:13)*

*....and they came and started blood gases and taking blood and things like that. And it ended up being he had a leaking anastomosis ..... and it was ..... he went to ICU was intubated and thing like that and ventilated (RN3:13)*

## Discussion

The participants used words to describe their experiences of activating a RRS. They described the level of confusion they felt in relation to the breakdown of communication around the setting of observation variances and lack of clarity about 'not for resuscitation' orders. The communication breakdown caused time delays from the time patients were recognised as suffering clinical deterioration until the activation of the RRS. Time as a theme also related to the length of time taken for the RRT to respond to activation of the RRS. Nursing in isolation was the theme derived from the participants' words and the emotions they used to describe the experience of receiving negative feedback. Less experienced nurses expressed levels of anxiety and worry to describe how they felt about the lack of team work. Experienced nurses demonstrated high levels of frustration and resignation to the burden they carried due to lack of team work.

The positive experiences nurses reported related to doing the right thing for the patient, a good outcome for the patient, and the severity of patients' condition. The clinical deterioration the patient suffered and the subsequent interventions required were seen as justifying activating the RRS by the nurse.

The BTF program was introduced into SNSW LHD 18 months prior to the research project. The immaturity of the system is proposed as one explanation for the breakdown in communication and the delayed activation of the system (Downey et al., 2008).

The MET and RRS Consensus Meeting, for the defining of two tier response systems, recognised that the inclusion of subjective calling criteria would assisted to reduce the communication barriers as well as provide teaching opportunities (DeVita et al., 2006). The BTF program includes subjective calling criteria, which includes the graphing of observations within either a yellow or red zone. According to the results of this research the inclusion of subjective criteria has not removed the communication barriers.

Triggering a RRS response should not be associated with negative feedback and reinforcing the benefits of a RRS should be the responsibility of the responders (DeVita et al., 2006). The nurses who participated in the research communicated a perception that negative feedback was frequently received.

The BTF program was initiated and driven from a critical care perspective with little understanding of the ward/ rural hospitals culture and the impact the system would have in these environments (Considine and Botti, 2004, Odell et al., 2009). This notion of the need for local development and implementations is supported by DeVita et.al. (2006) who recognised barriers, which identified six main themes. One of these themes was titled Culture of Professional Norms, which identified disengagement between doctors and nurses, and lack of empowerment of frontline healthcare professionals to activate the system. The limitations need to be recognised and additional research based solutions sought. Factors that must be considered in an altered approach include the fact that rural hospital culture differs from the larger metropolitan hospitals. The doctors are often local GPs who run their surgery and support the hospital in a visiting capacity, and how the time to critical care services and the transport system impacts on patient care.

The findings of this research did not support reactive activation of the RRS. The participants consistently describe issues and emotions that delayed activation. These findings provide meaning to previous studies which identified time delays around activation (Downey et al., 2008) (Cioffi, 2000a, Cioffi, 2000b) (Considine and Botti, 2004, Crispin and Daffurn, 1998, Daffurn et al., 1994, Endocott et al., 2007) (Jones et al., 2006b, McGloin et al., 1999, Wynn et al., 2009).

Within this study the previous experiences of the participants usually included negative feedback which through reflection developed feelings of isolation and confusion. Other studies identified negative feedback which included 'fear of 'looking stupid'' (Andrews and Waterman 2005) or fear of criticism (Jones et al. 2006a) all of which led to anxiety, worry and frustration when nurses are 'concerned about doing the right thing' (Cioffi 2000b).

A study in 2006 identified that despite policy nurses used clinical decision-making to determine activation of the RRS (Jones et al., 2006a). Using decision-making present major difficulties as nurses' decision-making is often complex and reliant on previous experiences (Cioffi, 2000b).

Activating a RRS was a highly emotive process requiring nurses to overcome barriers (Considine and Botti, 2004), and increase confidence (Cioffi, 2000a). Those barriers may include the poor skill mix, casual and part time staff, local policies, hierarchical issues (Endocott et al., 2007), lack of experience and education (Daffurn et al., 1994, Odell et al., 2009, Wynn et al., 2009). These identified barriers are minimalised when the nurses responsible for activating the system perceive poor communication, isolation and negative feedback as the norm.

### **Limitations of the study**

The main limitation of the current study was the small sample size and the small number of facilities included. This limits generalisability. It may also be that the participants self-selected on the basis of negative experiences of activating the RRS and that the results are therefore negatively skewed. The positive aspect of the participants self-selecting is the number who attend the focus groups and the amount of discussion they generated, providing a rich data set. The loss inability to transcribe the data from one focus group due to clarity of the recording limited the amount of data included in the development of themes and the provision of quotes.

### **Application to clinical practice**

Strategies to enhance teamwork and improve communication between the ward nurse and the responding medical officer in rural general wards must be employed to ensure that patients with signs of clinical deterioration receive timely and effective interventions. Time from recognition of clinical deterioration until activation of the RRS is lost due to breakdown of communication around the setting of observation variances and clarification of 'Not for Resuscitation' orders. This suggests the need for further education of the medical team to ensure understanding of the need to clearly communicate the patient's plan of care, including acceptable observation ranges and expectations for patients with 'not for resuscitation' orders.

Improved communication will assist to overcome teamwork barriers which currently nurses perceive as working in isolation. To further enhance teamwork the medical officer e when must respond appropriately preferably with positive feedback when nurses activate the RRS

To achieve the expected outcomes of the BTF program further review and restructure of the program in rural sites is required at local level. Undertaking redesign at local sites will allow for the recognition of local cultures and adaption of the program to meet the needs of the patients and health professionals

### **Conclusion and recommendations**

Time delays from recognition of patient clinical deterioration until activation of the RRS are linked to the nurse's decision making process. This process is influenced by breakdown in communication and feelings of being unsupported and isolated in their role. To improve teamwork in rural hospitals and ensure timely activation of the RRS the BTF program needs to be adjusted and implemented to meet the cultural norms of the rural hospitals.

Meeting the cultural norms and implementing a local procedure will require education of the nursing and medical staff to improve communications and team work. This is especially important around the setting of observation variances and 'not for resuscitation' orders. The medical staff need to have increased awareness of the impact of negative feedback on the nursing staff and how their perception of activating a RRS impact on the care of patients experiencing clinical deterioration.

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**Appendix A** Table 1 A Summary of all studies included in the review.

Study Reference	Study Design	Sample	Results
Andrews and Waterman (2005)	A grounded theory using interviews and observation over an 11 month period. Aim to study how ward based staff use vital signs and the Early Warning Score to ensure successful referral to doctors	44 nurses, doctors and health care support workers, from one medical and one surgical ward in a UK hospital	Nurses pick up that patients have deterioration through intuitive knowing. Patient information needs to be made credible and communicated in a way that grabs medical attention
Cioffi (2000a)	A qualitative, exploratory study using interviews. Aim to describe patient characteristic and the process nurses use to recognise patients about whom they are seriously worried.	Purposive sample of 32 Registered Nurses with more than five years experience in two NSW hospitals. The nurses were required to have a history of calling a MET	Nurses relied on four patient characteristics that met the 'seriously worried about the patient' criteria; feeling 'not right', colour, agitation, and observations marginally changed or not changed at all. Information was obtained through touch, observation, listening, feeling or sensing, and 'knowing'. Nurses relied on past experiences and knowledge to detect differences in patient conditions
Cioffi (2000b)	Descriptive study using interviews to explore the experiences of ward nurses calling the Medical Emergency Team.	Purposive sample of 32 Registered Nurses with more than five years experience in two NSW hospitals. The nurses were required to have a history of calling a MET	Nurses recognised patient deterioration from feeling that 'something was wrong' but would not be able to articulate what was wrong. There was concern with 'doing the right thing' when calling the emergency team and felt nervous and anxious. Recognition of deterioration involved knowing the patient and past experiences.
Considine and Botti (2004)	Literature review and discussion. Aim to examine the role of nurses in adverse event prevention, using cardiac arrest as an example, from the perspective of physiological safety; that is, accurate physiological assessment and the early correction of physiological abnormality.	Literature review using three criteria. 1. physiological abnormality as a predisposing factor to adverse events 2. Summary of research relating to failure to recognise or treat physiological abnormality as a predisposing factor to	These findings suggest that nurses and other health professionals need to be more aggressive in the recognition and correction of physiological abnormalities if adverse events are to be averted. Research has highlighted that although nurses document the presence of physiological abnormalities, there is often a reluctance to initiate interventions or activate the MET.  Overall

		adverse events 3. Age as a predisposing factor to adverse events	This discussion highlights the pivotal role that nurses can play in reducing or preventing in-hospital adverse events.
Crispin and Daffurn (1998)	A retrospective survey of medical records. Aim to assess the responses of nurses in the presence of preset Medical Emergency Team warning signs	Medical records of 178 patients who required a MET assistance during 1994 in a large teaching hospital in NSW	MET call occurs in the general wards (50%), emergency department (42.3%) and other areas (7.7%). The four main categories comprised cardiac arrest (35.6%), airway/breathing problems (22%), decreased level of consciousness (20.8%) and 'other' including prolonged chest pain, fitting and hypotension (31.6%). The predominant response to a clinical antecedent was to call the MET (68.4%). Other responses resulted in delays of 1 hour (18%) and up to 3 hrs (8%) on some wards before treatment specific to the clinical antecedent commenced. A need to educate health professionals regarding the warning signs of acute severe illness and when to summon assistance has been identified.
Daffurn et al. (1994)	Methodology was a survey using a questionnaire with four hypothetical clinical situations. Aim to determine Registered Nurses' opinions, knowledge and use of medical emergency teams,	141 general nurses rostered on the chosen study day in an urban NSW hospital	There was a positive attitude to the MET, but low awareness regarding the availability of the MET information booklet. 53% of nurses had called the MET in the last 3 months; all would call the team again in the same circumstances. The correct response in three of the four hypothetical situations presented was to call the MET. The number of correct responses varied between scenarios from 17% to 73%. Hypotension did not appear to alert nurses to summon emergency assistance. Some nurses, despite the presence of severe deterioration and patient distress, called the resident rather than the MET. Concluded that obvious patient distress appeared to be the trigger compelling most nurses to call the MET
Downey et al. (2008)	Retrospective analysis of medical records. The aim was to describe the characteristics and outcomes of patients receiving a medical	Two cohorts of 100 patients for each of the MET syndromes of acute change in	An acute change in conscious state leading to a MET call carried a greater risk of death than activation due to arrhythmias. Delayed activation was common for

	emergency team review of the MET syndromes of acute change in conscious state or arrhythmia and to assess the effect of delayed MET activation on their outcomes	conscious state of arrhythmia in an Australian teaching hospital	both syndromes and was independently associated with an increase risk of death
Endacott et al. (2007)	Mixed methods case study design. Aim to identify the cues that ward nurses and doctors use to identify patient deterioration and, secondly, examine the assessment and communication of deterioration in patients on acute wards.	Patients admitted to ICU from a general ward in a regional hospital during a 24 hour period. Doctors and nurses who had provide care to the patient group. Regional hospital is a 220 bed, with an ICU	The results demonstrate reliance on vital signs for nurses and doctors for initial identification of patient deterioration. Subsequent to this, nurses relied on assessment of the patients physical capabilities whilst doctors undertook additional clinical investigations. Admission category and co-morbidities increased clinicians identification of deterioration but the extent of assessment was dictated by 'usual practice' for the regional hospital, the ward or particular patient category. A lack of timely referral to more senior clinicians was identified. Chart audit found that 76% of patients had clinical markers prior to ICU admission and 56% had these markers for >2hrs in the previous 24hrs.
Galhotra et al. (2006)	Methodology was a simple questionnaire The study aim was to understand nursing perceptions about medical emergency teams and their impact on patient care and the nursing work environment.	300 staff nurses at two units, at an acute care teaching hospital in USA.	Ninety-three percent of nurses reported that medical emergency teams improved patient care and 84% felt that they improved the nursing work environment. Veteran nurses (with at least 10 years experience) and new nurses (< 1 year experience) were more likely to perceive an improvement in patient care than other nurses. Nurses who had called a medical emergency team on more than one occasion were more likely to value their ability to call a team. Nearly 65% of respondents said they would consider institutional MET response as a factor when seeking a new job in the future. Only 7% suggested a change in the team response process and 4% suggested a change in activation criteria
Jones et al. (2006)	Methodology was a modified personal interview, using a 17-item likert agreement scale	351 ward nurses employed in a university affiliated hospital	The nurses value the MET service and appreciate its potential benefits. The major barrier to calling the

	questionnaire. Aim to assess whether nurses value the MET service and to determine whether barriers to calling MET existed.	in Vic. Half the number of ward nurses employed in the hospital	MET appears to be allegiance to the traditional approach of initially calling parent medical unit doctors, rather than fear of criticism for calling the MET service. A further barrier seems to be underestimation of the clinical significance of the physiological perturbations associated with the presence of MET call criteria
McGloin et al. (1999)	Panel audit of patient charts. Aim firstly to determine the incidence of unexpected death occurring on general wards and whether any were potentially avoidable and secondly to assess whether the quality of care prior to unexpected ward death or ICU admission affected subsequent outcome	All unexpected deaths and referral to ICU of patients on a general ward during a six month period.	Patients with obvious clinical deterioration can be over looked or poorly managed on the ward. This may lead to potentially avoidable unexpected deaths or to a poorer eventual outcome following ICU admission.
Odell (2009)	A systematic literature review. Aim to identify and critically evaluate research investigating nursing practice in detecting and managing deteriorating general ward patients.	Literature search between 1990 and 2007 using four sources, electronic databases, reference lists, key reports and experts in the field.	Fourteen studies met the inclusion and quality criteria. The findings were grouped into four main themes: recognition; recording and reviewing; reporting; and responding and rescuing. The main finding suggested that intuition plays an important part in nurses' detection of deterioration, and vital signs are used to validate intuitive feelings. The process is highly complex and influenced by many factors, including the experience and education of the bedside nurses and their relationship with medical staff. Greater understanding of the context within which deterioration is detected and reported will facilitate the design of more effective education and support systems,
Wynn et al (2009)	A descriptive correlation design. The aim was to examine the relationships between nurse educational preparation, years of experience, degree of engagement and the Rapid Response Team call status (independent vs dependent)	Sample of 75 staff nurses at an academic medical centre who cared for a patients for whom a RRT was called.	Independent callers were 5 times more likely to have a BSN degree, and almost 4 times more likely to have more than three years experience, than did RNS who called because someone asked them to call.



## Appendix C Research Protocol



### Research Protocol For Nurses' experiences of activating a rapid response system in general rural hospital wards

#### The Study

Nurses' experiences of activating a rapid response system in general rural hospital wards

#### Hypothesis

Nurses are required to activate a rapid response system to get help for patients experiencing clinical deterioration. To activate a rapid response system nurses employ a decision making process which is influenced by positive or negative perceptions. The reasoning for nurses on the general wards in rural hospitals developing these perceptions is poorly understood and described; the rationales provided within the nursing literature are based on assumptions.

#### General Aim

To identify the issues which influence the nurses' decision to activate a rapid response system on general wards in rural hospitals.

#### Specific Aims

1. To identify the positive perceptions nurses in rural hospital wards have towards activating a rapid response system
2. To identify the negative perceptions nurses in rural hospital wards have towards activating a rapid response system
3. Develop concepts related to the nurses decision making process for activating a rapid response system for further research

#### Design

The qualitative research will be a hermeneutic phenomenological study, participants will be asked to provide a detailed picture of their lived experiences of activating a rapid response system and then they will be asked to provide meaning to their actions.

#### Participants

Nurses employed on general wards of rural hospitals will be invited to attend the focus group meetings.

Exclusion criteria will be nurses who fulfil a manager or supervisor role, either fulltime, part-time, casual or relief. Although the nurses who fulfil these roles may be able to contribute to the research, the impact their presence at the focus group meeting may limit the discussion of the bedside nurse which could hinder the research outcome

#### Sample Size

Data saturation occurs when the researcher is no longer receiving new information. The expectation is that data saturation will occur with three focus group meetings with a total

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number of participants twelve. If on completion of three focus group meetings data saturation has not occurred two more focus group meetings will be conducted.

### Data Collection

Data will be collected in the forms of audio tapes of the focus group meetings, forms with demographics and butchers' paper and post-it notes with the main themes of the focus group meetings.

Participants will be asked to complete a demographics form prior to commencing group discussion. The group will be given approximately 15 minutes per question to discuss and answer each of the three following questions.

1. Describe the experience of being involved in the care of an unwell patient requiring activation of a rapid response system?
2. Reflecting on the experience of activating a rapid response system, what feelings were evoked?
3. A patient meets the calling criteria, what are the key issues that influence the decision to escalate to a rapid response call?

Participants will then be given a post-it note and offered time to write down what they consider to be the three main points in relation to activating a rapid response system.

### Data Analysis

Data analysis will be rigorous with the principle researcher immersing herself in the data, this will include repeatedly listening to the audio tapes and undertaking the transcribing. The data from each focus group meeting will be analysed prior to the next meeting. The ten phases of data analysis described by Wertz (1983) will be used to find the insight, recognise and extract the meaning, establish themes and then test and reform the findings. The original transcripts will be reviewed by the mentor to determine the level of trustworthiness of the main themes.

Wertz F (1983) From everyday to psychological description: analysing the moment of a qualitative data analysis. *Journal of Phenomenological Psychology* Vol 14 no 2 pp 197-241

Appendix D Participant Information Sheet



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**PARTICIPANT INFORMATION SHEET**

**Nurse' experiences of activating a rapid response system in general rural hospital wards.**

**Invitation:** You are invited to participate in a research study which aims to describe nurses' experiences of activating the clinical emergency response system. This is your opportunity to provide insight into the nursing decision making process of calling for help when patients are experiencing clinical deterioration

The study is being conducted by:  
Dot Hughes,  
CNC Intensive Care, Critical Care Services  
Contact via email: [Dot.hughes@qsahs.health.nsw.gov.au](mailto:Dot.hughes@qsahs.health.nsw.gov.au) or phone 0419433869

The study is supported by the Education & Training Institute Rural Division, Rural Research Capacity Building Program  
Before you decide whether or not you wish to participate in this study, it is important for you to understand why the research is being done and what it will involve. Please take the time to read the following information carefully and discuss it with others if you wish.

**1. 'What is the purpose of this study?'**

The purpose is to investigate nurses' experience of making the decision to activate a rapid response system, with the aim that this information will assist embed the Between the Flags program.

**2. 'Why have I been invited to participate in this study?'**

All nurses working on the ward, who do not fulfill a supervisor role are invited to participate in the study.

**3. 'What if I don't want to take part in this study, or if I want to withdraw later?'**

Participation in this study is voluntary. It is completely up to you whether or not you participate. If you decide **not** to participate, it will not affect your role or future employment within the hospital or NSW Health. If you wish to withdraw from the study once it has started, you can do so at any time without having to give a reason.

**4. 'What does this study involve?'**

This study will be conducted on the Medical Ward of Bega Hospital on Tuesday 28<sup>th</sup> June 2011 from 1345 to 1445. If you agree to participate in this study, you will become part of a focus group to discuss activating a rapid response system. If you wish to participate you will be asked to sign a consent form with a confidentiality statement; this will be sent to you prior to the meeting and also be clearly explained to you by the researcher at the focus group meeting prior to you signing.  
The Focus group meeting will include three parts;

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### Part One (approximately 10 minutes):

- Introduction of the convener
- identification of how the meeting will proceed,
- the rules surrounding group discussion and maintaining confidentiality,
- the level of difficulty related to reflection and the recalling of a highly emotive experience, which includes the experience of caring for a patient with clinical deterioration

At this stage participants who wish to stay and contribute to the meeting will complete the consent form and the demographics form.

### Part Two (approximately 45 minutes)

- The convener will ask three questions, one at a time allowing approximately 15 minutes per question for discussion and responses,
- The main themes will be recorded on butchers' paper
- On completion of this part all participants will be given the opportunity to jot down their three main points from the session.

### Part Three (approximately 10 minutes)

- Summary and conclusion
- Group debriefing
- Opportunity to provide feedback on either the focus group meeting or the research project.

### 5. 'Will I benefit from the study?'

This study aims to further nursing knowledge about the decision making process involved in activating the rapid response system. An understanding of this experience will assist embed the Between the Flags program into local hospitals, which will help keep our patients safe.

### 6. 'Are there risks to me in taking part in this study?'

If you decide to participate in the study, you need to be aware that you will be required to reflect on a highly emotive episode of nursing care. The level of reflection may be stressful and cause emotional stress.

The researcher has an extensive background in post-graduate teaching and will take all possible steps to assist in reducing the risks associated with the process of reflection.

The Employee Assist Program will be available to any participant who feels the need for professional counseling.

As with any research, there may also be risks associated with the research that are presently unknown or unforeseeable.

### 7. How will my confidentiality be protected?

Any identifiable information that is collected about you in connection with this study will remain confidential and will be disclosed only with your permission, or except as required by law. Only the researchers named above will have access to your details

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All participants will be required to complete and sign the consent form which includes a confidentiality statement. The confidentiality statement is included to help maintain the confidentiality of all participants.

### **8. 'What happens with the results?'**

If you give us your permission by signing the consent form, we plan to discuss/publish the results in areas where the information will assist to minimize the risk for patients with clinical deterioration. This may include the Clinical Excellence Commission, the Australian Commission of Safety and Quality in Health Care and other conferences and peer reviewed journals. Feedback will be provided to the Rural Research Capacity Building program and the HREC for monitoring purposes. However, in any publication, information will be provided in such a way that you cannot be personally identified. Results of the study will be provided to you, if you wish.

### **9. 'What happens if I suffer harm, injury or complications as a result of the study?'**

If you suffer any harm or complications as a result of this study, you should contact the researcher as soon as possible, who will assist you in obtaining appropriate counseling.

### **10. 'How is this study being paid for?'**

The study is sponsored by Rural Research Capacity Building Program which pays for the researcher to be backfilled for one day per week for a period of two years. All of the money is managed by GSAHS Human Research Ethics staff. No money is paid directly to individual researchers.

### **11. 'Will taking part in this study cost me anything, and will I be paid?'**

Participation in this study will not cost you anything apart from your time, for which we thank you. You will not receive any monetary payment. To thank you for your time and participation you will be provided with a light meal prior to the focus group meeting.

### **12. 'What should I do if I want to discuss this study further before I decide?'**

When you have read this information, the researcher Dot Hughes will discuss it with you and any queries you may have. Please do not hesitate to contact her on 0419 433 869.

### **13. 'Who should I contact if I have concerns about the conduct of this study?'**

This research project has been approved by Greater Southern Area Health Service Human Research Ethics Committee. If you have any complaints about the conduct of this project, please contact the committee through:

The Complaints Officer  
GSAHS HREC  
Locked Bag 10  
Wagga Wagga  
NSW 2650

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Tel 02 6933 9186 Fax 02 6933 9188

**Thank you for taking the time to consider this study.  
If you wish to take part in it, please contact Dot Hughes  
This information sheet is for you to keep.**

## Appendix E Consent Form



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RURAL DIVISION



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### Consent Form

**Title of study:** Nurses' experiences of activating a rapid response system in rural general wards

**Research Design:** A qualitative study using phenomenological method with focus group meetings.

**Principal Researcher:** Dot Hughes, Clinical Nurse Consultant employed by GSAHS and sponsored by Clinical Education and Training Institute, Rural Division.

**Background information:** As a nurse working on the general ward you are the person most likely to recognise a patient who is deteriorating and then actively seek help by calling for the emergency response team. To ensure the Between the Flags is a robust system I would like to explore nurses' experiences of calling for help. I believe an understanding of this experience will assist to reassure staff about the process of activating the system, provide insight into education needs and identify any problems requiring resolution.

**Recording:** Information will be recorded on an audio-tape and butchers' paper.

**Focus group meetings:** The Focus group meeting will include three parts;

Part One (approximately 10 minutes):

- Introduction of the convener
- identification of how the meeting will proceed,
- the rules surrounding group discussion and maintaining confidentiality,
- the level of difficulty related to reflection and the recalling of a highly emotive experience, which includes the experience of caring for a patient with clinical deterioration

At this stage participants who wish to stay and contribute to the meeting will complete the consent form and the demographics form.

Part Two (approximately 45 minutes)

- The convener will ask three questions, one at a time allowing approximately 15 minutes per question for discussion and responses,
- On completion of this part all participants will be given the opportunity to jot down their three main points from the session.

Part Three (approximately 10 minutes)

- Summary and conclusion
- Group debriefing
- Opportunity to provide feedback on either the focus group meeting process or the research project.



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**Possible risks or benefits:** The risk identified for this study include is the stress of actively reflecting on a clinical emergency which may have been very emotional or distressful. The employee assistance program details are supplied to each participant and can be accessed anonymously if required. The benefits include the opportunity to undertake meaningful reflection in a group situation while providing helpful insight into the experience of activating a rapid response system. The results of the study may assist to embed the Between the Flags program and provide improved care for patients experiencing clinical physiological deterioration.

**Right of refusal to participate and withdrawal:** You are free to choose to participate in the focus group meeting. You may also withdraw at any time from the focus group meeting without any acknowledgement or repercussions. You may refuse to answer some or all the questions if you don't feel comfortable with the questions.

**Confidentiality:** The information provided by you will remain confidential. Nobody except principal researcher will have access to it. The aim throughout the focus group meeting is to avoid using names, titles or identifying characteristics, if there is a breach of this rule all identifiers will be removed during transcription or you may ask for the tape to be stopped to allow for re-winding and removal of the identifier. Your name and identity will not be disclosed at any time.

Focus group meetings will be held in a minimum of three hospitals allowing for comparison of findings and data saturation. Specific information including the name of the hospital will treated with a similar level of confidentiality.

The research project will be submitted to the ethic committee for approval and data gathered will be used to inform a written report which will be submitted to the Clinical Education and Training Institute, Rural Division and a possible journal publication.

**Group participation:** Focus group meeting have been arranged to collect information related to the experience of activating a rapid response system they are a means of helping individual nurses feel supported during the often difficult process of reflection. To maintain the group and the individual's confidentiality all participants are request to respect their colleagues and not reveal the identities of other participants or relay in any manner specific comments or discussions from the meeting.

**Available Sources of Information:** If you have any further questions please contact Dot Hughes, by Ph 0419 433 869, or Email [Dot.hughes@esahs.health.nsw.gov.au](mailto:Dot.hughes@esahs.health.nsw.gov.au)

**Authorisation:**

I have read and understand this consent form and I volunteer to participate in this research study. I understand participation is voluntary and I have the right to withdraw at any time. I am aware the meeting will be audio-taped and all information collected will be safe guarded as outline to ensure participant confidentiality. I understand that I will not be identified in any report or publication that is a result of this research project. I agree to abide by the meeting rules to protect the rights or confidentiality of other participants.

Participant's Name (Printed or Typed):

Participants signature:

Date: