

## Failure to Rescue: The Nurse's Impact

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**F**ailure to rescue (FTR), which is rapidly becoming a national health care crisis, is the “inability of clinicians to save a patient’s life by timely diagnosis and treatment when a complication develops” (Gephart, McGrath, & Effken, 2011, p. 275). Patients display signs and symptoms of impending arrest as early as 72 hours prior to the arrest (Subbe & Welch, 2013). Failure to rescue occurs when health care providers do not recognize these signs and symptoms and subsequently fail to take appropriate action to stabilize the patients.

According to Moldenhauer, Sabel, Chu, and Mehler (2009), four impediments to recognition and intervention for clinical deterioration are: “(a) failure to recognize clinical deterioration; (b) failure to communicate and escalate concerns; (c) failure to physically assess the patient; and (d) failure to diagnose and treat appropriately” (p. 165). Al-Qahtani and Al-Dorzi (2010) offered other possibilities, including organizational failure, provider lack of knowledge and failure to realize clinical injury, lack of supervision, and failure to get advice. Nurses have immense opportunities to impact these areas of weakness within organizations because they form the hub of personalized health care (Friese & Aiken, 2008). However, “nurses contribute to failure to rescue events when they do not recognize, act on, or report the signs of clinical deterioration” (Schubert, 2012, p. 467).

Nurses can implement four activities to prevent FTR events: (a) surveillance, (b) timely identification of complications, (c) taking action,

*Failure to rescue is a major cause of mortality in acute care settings. Several factors contribute to this problem, and nurses hold a significant key to addressing the issue. Using bell curves to analyze patient assessment data enables nurses to recognize indicators of impending crisis and act expediently to safeguard the health of the patient.*

and (d) activating a team response (Gephart et al., 2011). They must be able to complete thorough assessments, critically think about the findings, and take appropriate action to initiate a team response; that is, they must implement clinical judgment. A key question nurses should consider when identifying changes in assessment is, “Is this change benign or pathological?” Some early assessment findings in a deteriorating patient are very subtle and may be attributed easily to benign causes. However, nurses should consider changes in cardiac output and hypoxia as two potential causes, and attempt to exclude these possibilities before assuming the cause is benign. Evaluating assessment trends is a key early warning practice to prevent failure to rescue. Nurses must be vigilant to detect trends in assessment changes that can signify a critical event. They then must take action regarding assessment findings, including physician and team notification and communication. Of the four elements above, nursing surveillance (assessment) is the most

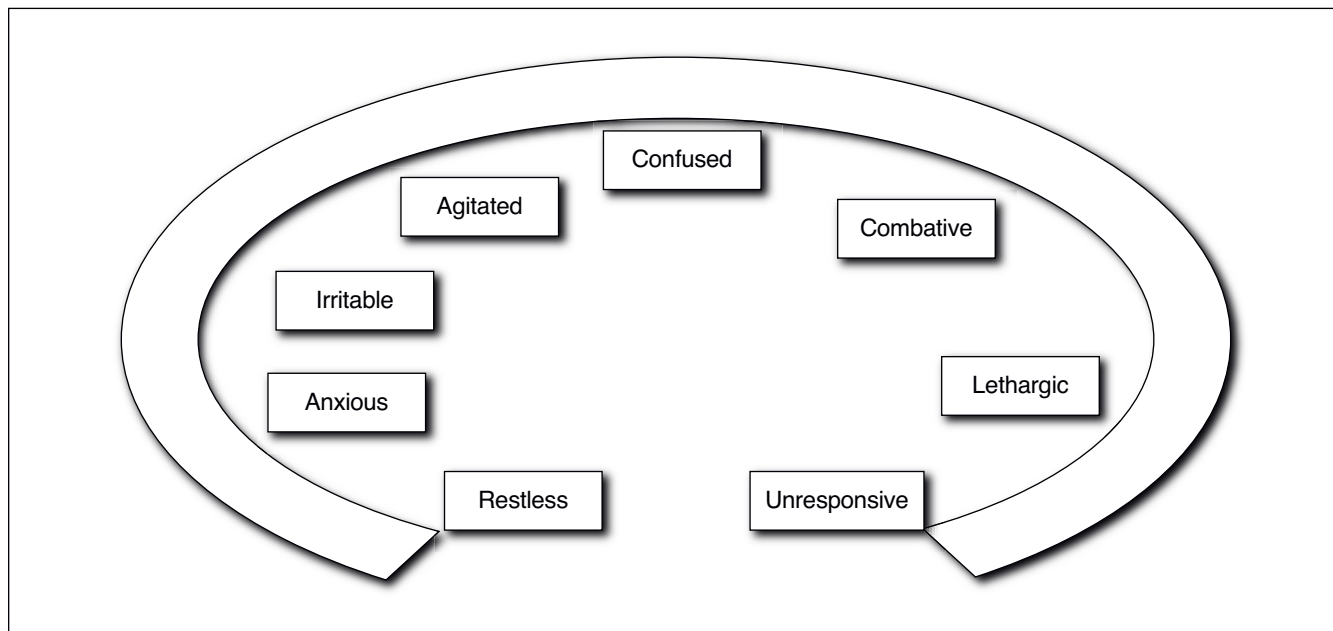
important (Schubert 2012). The progression and trending of assessment changes when a patient is deteriorating clinically are highlighted in the following section.

### The Bell Curves

To provide visual aids for FTR instruction, the author created bell curves of physiological changes seen in clinical deterioration due to hypoxia and/or hypoperfusion. These diagrams show physiological signs, symptoms, and trends for the neurological, pulmonary, and cardiovascular systems during clinical deterioration. The left side addresses early, subtle signs and symptoms often overlooked in clinical assessments. These signs typically occur due to compensation for hypoxia or hypoperfusion. The peak reveals the first major change in each body system. Finally, the right side of the curve addresses specific changes commonly seen when arrest is imminent. This section will portray bell curves of major body system changes during clinical deterioration, relate them to FTR, and discuss nurses’ impact on the prevention of FTR.

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**FIGURE 1.**  
**Neurologic Bell Curve**



**Sources:** Dennison, 2013; Schubert, 2012

### The Neurologic Bell Curve

The first change is restlessness (see Figure 1). The patient may be moving constantly in the bed and might say, “I just can’t get comfortable.” In this author’s experience, the patient’s hands are in constant motion, and the patient begins to pick at his or her intravenous (IV) dressing or telemetry leads. Restlessness is followed quickly by anxiety. The patient seeks reassurance from health care team members, especially nursing staff. The patient prefers to not be left alone and will employ various techniques to keep staff in the room; use of the call light may increase during this time. The health care provider must determine if this is a benign change (e.g., baseline anxiety or anxiety related to a procedure or test) or a pathological change related to hypoperfusion or hypoxia (Dennison, 2013).

As the patient’s clinical state deteriorates, the patient moves from anxiety to irritability and agitation (Dennison, 2013). Whereas the patient previously sought to keep health care staff in the room, the patient now wants them to

leave. The patient may become less cooperative and demonstrate frustration with assessments or care requirements, possibly appearing to be annoyed with supplemental devices (e.g., oxygen masks, IV therapy devices). Nurses may remember caring for a patient who refused to keep the oxygen mask or nasal cannula in place, saying, “Take it off! I can’t breathe with that on!” Any attempt to explain the purpose of the device is unsuccessful. This conversation is a red flag the patient’s symptoms may be progressing to the peak of the bell curve – confusion (Dennison, 2013).

Confusion is a blatant sign that prompts health care providers to recognize a clinical problem. The patient demonstrates obvious lack of orientation to person, place, and/or time, becoming increasingly resistant to care and eventually combative. This is a dangerous occurrence because the patient is compromised severely, but expending more energy and using valuable cardiac and pulmonary reserves in this combative state. If the situation is not recognized and treated quick-

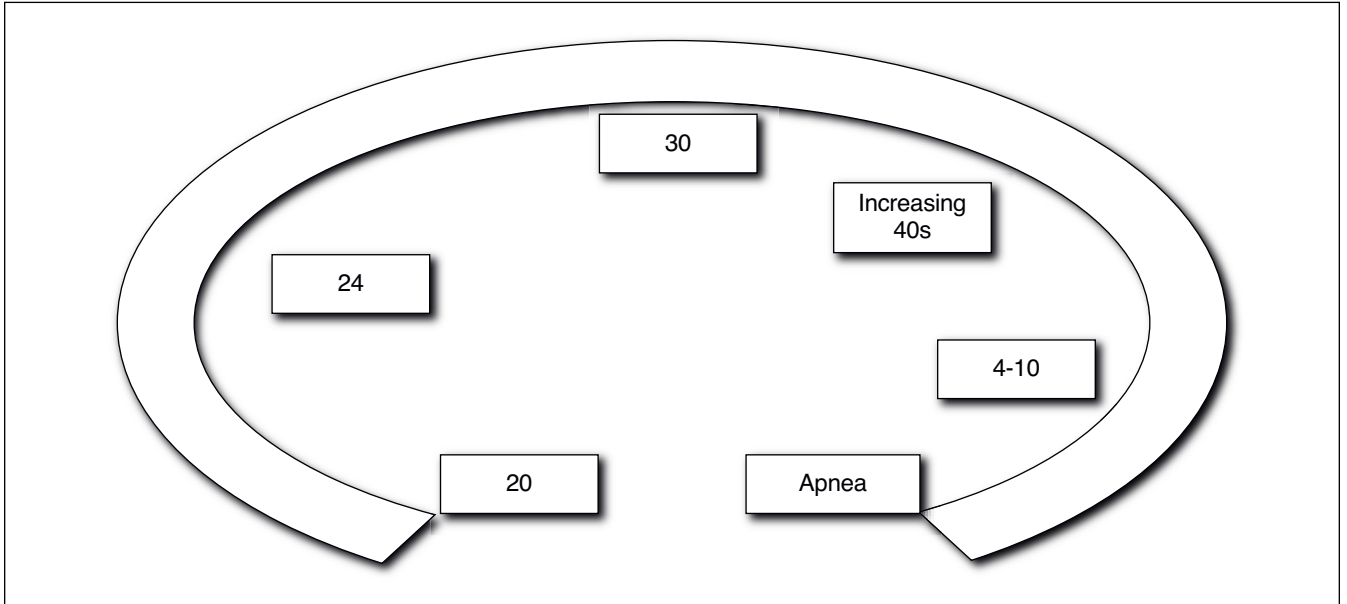
ly, the patient may become lethargic and eventually unresponsive; these signs may be a precursor to cardiac arrest (Dennison, 2013).

Through 60 medical record reviews, the author found the neurologic bell curve (especially related to anxiety) was the one most frequently missed by health care team members. According to Schubert (2012), “Patient safety is often compromised by nurses who do not perform accurate assessments (vigilance), do not detect clinical changes (surveillance), or do not display critical thinking (recognition that something is wrong)” (p. 467). For example, a nurse who fails to think critically about the source of a neurologic change may medicate the patient with an anxiolytic or similar medication. In this situation, an FTR event with respiratory and cardiovascular compromise may occur with deadly consequences.

### The Respiratory Bell Curve

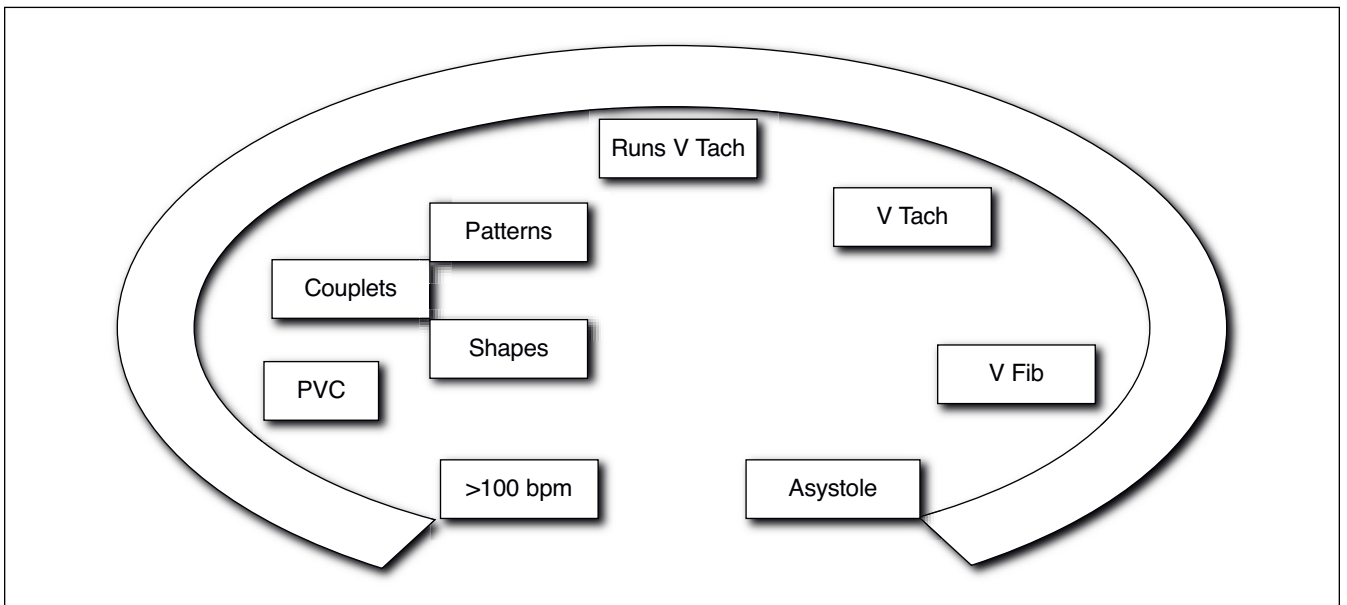
Respiratory rates are a valuable indicator of clinical instability (see Figure 2). A respiratory rate of 20

**FIGURE 2.**  
**Respiratory Bell Curve**



Sources: Dellinger et al., 2012; Dennison, 2013

**FIGURE 3.**  
**Cardiac Bell Curve**



Sources: Dennison, 2013; Huff, 2011

Note: V Tach = ventricular tachycardia; V-Fib = ventricular fibrillation

# Instructions For Continuing Nursing Education Contact Hours

## Failure to Rescue: The Nurse's Impact

Deadline for Submission:  
June 30, 2017

MSN J1507

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2. Evaluations must be completed **online** by June 30, 2017. Upon completion of the evaluation, a certificate for **1.0** contact hour(s) may be printed.

**Fees – Member: FREE Regular: \$20**

### Objectives

This continuing nursing educational (CNE) activity is designed for nurses and other health care professionals who are interested in failure to rescue. After studying the information presented in this article, the nurse will be able to:

1. Describe failure to rescue in the health care environment.
2. List three bell curves of physiological changes seen in clinical deterioration due to hypoxia and/or hypoperfusion.
3. Discuss nursing's impact on failure to rescue.

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# CNE

breaths/minute is one of the earliest indicators of clinical instability (Dellinger et al., 2012). Through 60 medical record reviews, the author found respiratory rates of 24 to be an indicator of escalating clinical instability ( $n=41$ ); respiratory rates of 30 fall at the peak of the bell curve ( $n=40$ ). As the patient continues to decline, respirations often increase to approximately 40 breaths per minute, then rapidly decrease until the patient is apneic and experiences respiratory failure (Dennison, 2013).

Through interactions with participants during the monthly "Failure to Rescue" class, the author found approximately 80% of nurses ( $n=144$ ) interviewed do not count the respiratory rates of their patients. The most commonly identified reasons for this practice is nurses depend on unlicensed care personnel to obtain accurate vital signs, including respiratory rates, and do not have time to count patients' respiratory rates. Nurses did note an exception by stating they will count respirations if the patient appears to be in distress or is unstable. When asked how they chose the respiratory rate to document, the nurses stated they usually documented 16-20 "because that is normal." Nurses were surprised to learn the respiratory rate of 20 is one of the earliest signs of instability (Dellinger et al., 2012).

### The Cardiac Bell Curve

The ventricles are an exceptionally accurate and timely predictor of clinical instability or an impending adverse outcome (see Figure 3). The ventricles require four main elements to maintain stability and function efficiently: (a) oxygenation, (b) perfusion, (c) electrolytes, and (d) acid-base balance (Huff, 2011). When one or more of these elements are not optimal, ventricular instability occurs and results in premature ventricular complexes (PVC). When the nurse observes PVCs on the monitor, he or she again must ask the question, "Is this a benign change (e.g., baseline PVCs) or a pathologic change resulting from alterations in oxy-

genation, perfusion, electrolytes, or acid-base balance?" The nurse can answer this question by quickly assessing for one or more of the above elements; when an element is found, the change becomes pathologic and the nurse must intervene.

In the early stage of deterioration, patients display PVCs. As the condition worsens, the PVCs begin to show patterns like bigeminy, pairs or couplets, or multiformed shapes. At the peak of the bell curve is runs of ventricular tachycardia. Each time the nurse sees increasing patterns, shapes, or frequencies, he or she knows the ventricles are becoming more unstable and losing electrical stability. Finally, the patient displays sustained ventricular tachycardia, ventricular fibrillation, and asystole (Huff, 2011).

### Nurses' Impact on Failure to Rescue

Nurses can make a difference in the care of at-risk patients. "As nurses, we do monitor patients carefully, recognize complications, take action, and rally a team to meet the needs of patients and protect them from harm" (Gephart et al., 2011, p. 275). Nurses are at the patient's side for extended periods of time, often for 12-hour shifts. "Nurses' continuous presence at the bedside puts them in a privileged position to recognize signs of clinical deterioration and to take action" (p. 275). Nurses evaluate constantly for trends in assessment data and vital signs, enabling them to identify the bell curves of patient assessment. Nurses also typically work 3-5 days per week; this allows an even more extensive picture of the patient's progress. Because most patients begin to display the bell curves 48-72 hours prior to an adverse event, nurses are key in the discovery and anticipation of these events.

### Conclusion

Patients often display signs and symptoms of impending arrest up to 72 hours earlier (Subbe & Welch, 2013). The bell curves developed by the author provide evidence of

impending crisis and serve as a valuable tool to help nurses analyze assessment data. Nurses and other health care personnel can use the three bell curves to track assessment changes and promptly intervene to prevent FTR events. **MSN**

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