



# Health Care Protocol: Rapid Response Team

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INSTITUTE FOR CLINICAL  
SYSTEMS IMPROVEMENT

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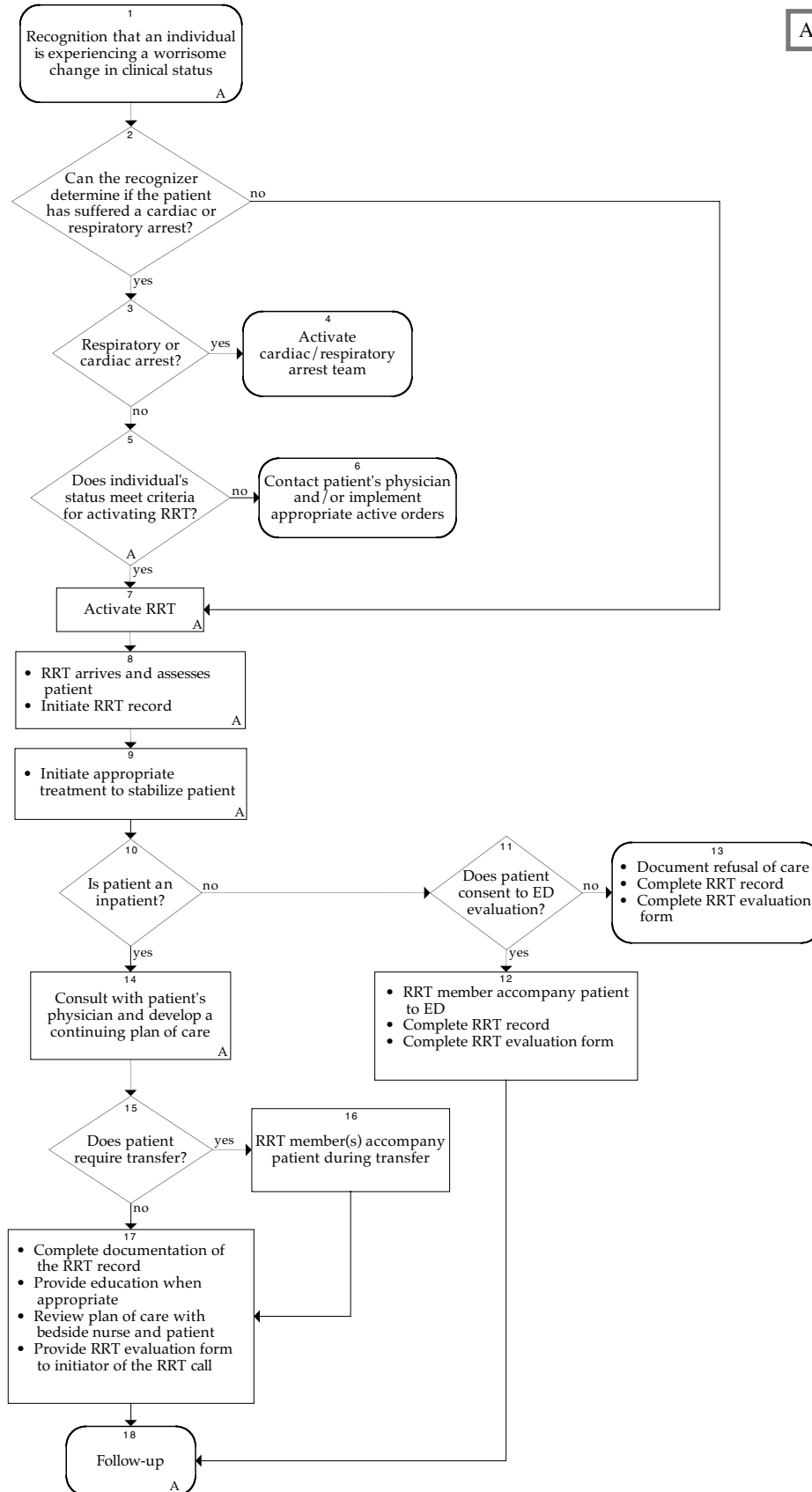
- physicians, nurses, and other health care professional and provider organizations;
- health plans, health systems, health care organizations, hospitals and integrated health care delivery systems;
- medical specialty and professional societies;
- researchers;
- federal, state and local government health care policy makers and specialists; and
- employee benefit managers.

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- copies may be provided to patients and the clinicians who manage their care, if the ICSI Health Care Protocol is incorporated into the medical group's clinical order set program.



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# Foreword

## Scope and Target Population

This protocol will include key elements of the rapid response team process:

- A flow diagram of the process that includes criteria for activation
- An example of an order set for clinical interventions during the response
- Tools for documentation and evaluation of the response

A rapid response team (RRT) may be summoned in a health care setting at any time to assist in the care of an individual who appears acutely ill, before he/she has a cardiac arrest or other life-threatening event.

## Clinical Highlights and Recommendations

1. When choosing RRT members, consider skill set, communication skills, attitude and behavior. (*Annotation #8*)
2. When the person who initiates the RRT is the patient's bedside nurse, that nurse becomes a key member of the team. (*Annotation #8*)
3. Create feedback mechanisms for the initiator such as a debriefing and/or an evaluation. (*Annotation #18*)

## Priority Aims

1. Increase early intervention and stabilization to prevent clinical deterioration to any individual prior to cardiopulmonary arrest or other life-threatening event.
2. Decrease the number of codes for cardiopulmonary arrest that occur, excluding the ICU and ED.
3. Increase patient, family and staff satisfaction.

## Key Implementation Recommendations

The following system changes were identified by the protocol work group as key strategies for health care systems to incorporate in support of the implementation of this protocol.

1. Implementation of a rapid response team involves changing professional behavior patterns and requires support from all levels of the health care organization.
2. Additional areas that need to be considered prior to implementation include:
  - a. Determine team composition
  - b. Develop criteria for calling the RRT
  - c. Determine the mechanism for calling the team (e.g., team pagers, overhead page)
  - d. Provide education and training to senior leaders, physicians, team members, health care facility staff members, patients, visitors and families
  - e. Develop documentation tools/forms
  - f. Determine communication and feedback processes

3. A two-pronged marketing strategy should be developed. The first phase is for the initial roll out of the team and involves building the case for the team's existence. The second phase is focused on sustaining awareness and is best rolled out over an extended period of time.
4. If the hospital has multiple patient care units, piloting the process of activating and responding to RRT calls is recommended. Test the process for either a specific period of time or number of calls.

## **Disclosure of Potential Conflict of Interest**

No work group members have potential conflicts of interest to disclose.

ICSI's conflict of interest policy and procedures are available for review on ICSI's Web site at <http://www.icsi.org>.

## **Introduction to ICSI Document Development**

Each guideline, order set and protocol is developed by a 6- to 12-member work group that includes physicians, nurses, pharmacists and other health care professionals relevant to the topic, along with an ICSI staff facilitator. Ordinarily, one of the physicians will be the leader. Most work group members are recruited from ICSI member organizations, but if there is expertise not represented by ICSI members, one or two members may be recruited from medical groups or hospitals outside of ICSI.

Prospective work group members are asked to disclose any potential conflicts of interest relevant to the topic of the document; disclosure forms are reviewed for unacceptable conflicts. At the beginning of each work group meeting, the potential conflicts of interest that have been disclosed are reviewed by the work group.

The work group meets for four to five three-hour meetings to develop the protocol. A literature search and review is performed and the work group members, under the coordination of the ICSI staff facilitator, develop the algorithm and write the annotations and literature citations.

Once the final draft copy of the protocol is developed, the protocol goes to the ICSI members for review and comment.

### **Review and Comment Process**

The purpose of the review and comment process is to provide an opportunity for the clinicians in the member groups to review the science behind the recommendations and focus on the content of the protocol. Review and comment also provides an opportunity for clinicians in each group to come to consensus on feedback they wish to give the work group and to consider changes needed across systems in their organization to implement the protocol.

All member organizations are encouraged to provide feedback on protocols; however, responding to review and comment is not a criterion for continued membership within ICSI.

After the review and comment period, the work group reconvenes to review the comments and make changes, as appropriate. The work group prepares a written response to all comments.

## **Approval**

Each guideline, order set and protocol is approved by the appropriate steering committee. There is one steering committee each for Respiratory, Cardiovascular, Women's Health and Preventive Services. The Committee for Evidence-Based Practice approves guidelines, order sets and protocols not associated with a particular category. The steering committees reviews and approves each guideline based on the following:

- Member comments have been addressed reasonably.
- There is consensus among all ICSI member organizations on the content of the document.
- To the extent of the knowledge of the reviewer, the scientific recommendations within the document are current.
- Either a critical review has been carried out, or to the extent of the knowledge of the reviewer, the changes proposed are sufficiently familiar and sufficiently agreed upon by the users that a new round of critical review is not needed.

Once the guideline, order set and protocol has been approved, it is posted on the ICSI Web site and released to members for use. Guidelines, order sets and protocols are reviewed regularly and revised, if warranted.

## **Document Revision Process**

ICSI scientific documents are revised every 12-36 months as indicated by changes in clinical practice and literature. Every six months, ICSI checks with the work group to determine if there have been changes in the literature significant enough to cause the document to be revised earlier than scheduled.

Prior to the work group convening to revise the document, ICSI members are asked to review the document and submit comments. During revision, a literature search of clinical trials, meta-analysis and systematic reviews is performed and reviewed by the work group. The work group meets for one to two three-hour meetings to review the literature, respond to member organization comments, and revise the document as appropriate.

If there are changes or additions to the document that would be unfamiliar or unacceptable to member organizations, it is sent to members to review prior to going to the appropriate steering committee for approval.

## Evidence Grading System

### A. Primary Reports of New Data Collection:

- Class A: Randomized, controlled trial
- Class B: Cohort study
- Class C: Non-randomized trial with concurrent or historical controls  
Case-control study  
Study of sensitivity and specificity of a diagnostic test  
Population-based descriptive study
- Class D: Cross-sectional study  
Case series  
Case report

### B. Reports that Synthesize or Reflect upon Collections of Primary Reports:

- Class M: Meta-analysis  
Systematic review  
Decision analysis  
Cost-effectiveness analysis
- Class R: Consensus statement  
Consensus report  
Narrative review
- Class X: Medical opinion

# Protocol

## **Recognition that an individual is experiencing a worrisome change in clinical status (see Annotations #1, 5)**

- The individual may be anyone in the health care facility.
- If the recognizer is a health care professional, a quick assessment should be made to determine if the individual is in cardiac or pulmonary arrest.
- The health care professional should also determine if the individual's status meets the criteria for activating the Rapid Response Team (RRT).
- If the recognizer is not a health care professional, he/she should activate the RRT regardless of the individual's status.

## **Activate the RRT (see Annotation #7)**

- Each organization should consider a communication system that notifies the appropriate RRT personnel.
- Each organization should use a communication system that is efficient and reliable.
- Each organization must determine when the patient's physician (if known) will be contacted.
- Organizations should consider establishing a mechanism for patients and families to directly activate the RRT.

## **RRT arrives and assesses patient (see Annotation #8)**

- A response time of less than five minutes is expected.
- Team members should be selected based on the clinical skill set of the individual.
- Good communication skills and use of situation, background, assessment, recommendation (SBAR) format is recommended.
- A positive attitude and respectful and supportive behavior are recommended.
- The composition of the RRT is based on the institution's resources and needs.
- The RRT record must be initiated; it will be part of the patient's permanent medical record.

## **Initiate appropriate treatment to stabilize patient (see Annotation #9)**

- RRT members should be trained to initiate interventions needed to stabilize the patient.
- If the patient is not currently an in-patient, the patient may need transfer to the emergency department.
- An order set may be helpful in initiating treatment.

## **Consult with the patient's physician and develop a continuing plan of care (see Annotation #14)**

- Once the patient is assessed and/or stabilized, it is recommended that the patient's physician be contacted and given an update, unless the physician has already been contacted and/or is present.
- The update to the physician should be in SBAR format.
- Determine with the physician if the in-patient needs to be transferred to a higher level of care.



**Protocol**

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**Complete documentation, education and follow-up (see Annotation #18)**

- Complete documentation of the RRT record.
- Provide education when appropriate to the staff at the event.
- Review plan of care with bedside nurse and patient.
- Provide RRT evaluation form to the initiator of the call.
- RRT has a debrief of the event.
- A member of the RRT should follow-up in person with the patient to assess their status and their response to the interventions.

# Algorithm Annotations

## 1. Recognition That an Individual Is Experiencing a Worrisome Change in Clinical Status

A individual may be anyone in the facility such as:

- inpatient,
- outpatient,
- staff member,
- visitor/family member,
- volunteer, or
- student.

## 5. Does the Individual's Status Meet Criteria for Activating RRT?

Below are suggested criteria to activate the Rapid Response Team. Each organization should tailor these to its own needs.

Pediatric criteria taken from American Association of Critical-Care Nurse (AACN) P.A.L.S.

**Employee/and or family member concerned** – Significant change in vital signs or status. He/she doesn't "look right."

### Respiratory status

Significant change in individual's baseline respiratory rate.

OR

#### Adults

- Consider rates less than 8 or greater than 30-32 breaths per minute
- Consider pulse oximeter unexpected reading less than 85%-90% for more than five minutes.

#### Peds

- Infant: less than 30 or greater than 60 breaths per minute
- Child: less than 18 or greater than 30 breaths per minute

### Heart Rate

Significant change in patient's baseline heart rate.

#### Adults:

- Consider ranges of less than 40 or greater than 160 beats per minute
- Or greater than 140 beats per minute with symptoms

## **Algorithm Annotations**

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### **Peds:**

- Infant: less than 85 or greater than 190 beats per minute
- Child: less than 60 or greater than 140 beats per minute
- Adolescent: less than 40 or greater than 140 beats per minute

### **Blood Pressure**

Significant change in patient's baseline blood pressure

#### **Adults:**

- Consider ranges of less than 80 or greater than 200 systolic,
- greater than 100 diastolic

#### **Peds:**

- Lower range of systolic blood pressure in children 1 to 10 years of age is 70 mmHg plus (child's age in years x 2) mmHg

### **Neurological Changes**

Significant change in patient's baseline neurological status

- Alteration in level of consciousness
- Acute mental status change
- Unexplained onset of lethargy and/or agitation
- Seizure
- Symptoms of stroke:
  - Sudden loss or change in speech
  - Sudden loss of movement (or weakness) of face, arms or legs
  - Numbness and tingling

### **Chest Pain**

- Unresponsive to nitroglycerin

Significant acute change in:

- pain
- fluid status
- skin color (pale, dusky, blue)

Uncontrolled bleeding

Behavioral emergency

## **7. Activate RRT**

Each organization should use a communication process and system that is efficient and reliable, and that has a minimum number of steps.

Consideration should be given to the communication system that notifies the appropriate personnel (RRT) to respond.

Each organization must determine when the patient's physician will be contacted. Points to consider in making this determination include:

- physician preference,
- physician availability, and
- composition of the RRT.

The work group suggests that organizations think about providing a mechanism for patients and/or families to directly activate the RRT. When contemplating such a process, it is recommended that the following be taken into consideration:

- Develop a brochure that describes the RRT, the reason they would use the RRT and how to go about activating the team
- Include in the instructions that patients and/or families are encouraged to discuss their concerns with the bedside nurse or physician if readily available prior to activating the team
- Expect the team to "check in" with the charge nurse or patient's nurse before entering the patient's room
- How the team will differentiate between a staff activation and a patient/family activation
- Because patient/family activations are very rare, it is recommended that the team periodically test the process
- The team may wish to consider including a patient representative as part of the RRT on the patient-family-activated calls

## **8. RRT Arrives and Assesses Patient/Initiate RRT Record**

The work group recommends an expected response time of less than five minutes.

Each organization must choose their team members based upon their resources and their institution's needs. When selecting team members, the following should be considered:

- **Skill set:**
  - ACLS certification
  - PALS certification
  - Critical care experience
  - Critical thinking skills
  - Rapid and accurate assessment skills
  - Ability to troubleshoot and correct problems

## **Algorithm Annotations**

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Ability to recognize when they are unable to provide assistance and/or recommendations and contact the appropriate resources for interventions.

- **Communication skills**

It is recommended that the SBAR format be utilized when communicating with all health care professionals.

- **Attitude and Behavior**

When the organization is selecting its RRT members, it is important to keep in mind that the attitude of the team members toward the bedside staff, patient and families has a direct link to the overall success of the RRT program. The responding staff coming to the aid of the patient and initiator of the call should remain pleasant and calm during the event. It is imperative for the responders to keep in mind that "all RRT calls are warranted." If the bedside staff member does not feel respected and appreciated, or is intimidated by the responding staff, he/she may be reluctant to call RRTs in the future.

Each RRT is a potential opportunity for the more experienced staff members to educate other staff members.

### **Team Composition and Roles**

The following list consists of suggested team members of the RRT:

#### **Bedside staff nurse** (if the call occurs at the patient's bed)

- Able to provide patient's medical history
- Able to provide reason for activating call, i.e., "What has changed with the patient?"
- Able to assist other members of the RRT

The charge nurse or other staff members temporarily should take over responsibility of the bedside nurse's other patient assignment during the call. This will enable the nurse to provide the requested information to the other team members, provide support to the patient and/or their family members, act as a resource for the team members, and to have a learning opportunity.

#### **In-house physician or resident** An emergency room physician may be an appropriate resource.

- Assess and diagnose patient's condition
- Able to provide orders for immediate interventions
- Interpret test results
- Contact the primary care or the appropriate physician to provide an update on patient status when appropriate or to obtain further information and/or orders

The physician should take the lead role in the RRT. If a physician is not readily available 24 hours a day, seven days per week to contact for orders regarding necessary immediate interventions, an order set may be beneficial.

#### **Critical care nurse or a flying squad nurse**

- Able to assess patient's condition
- Able to implement appropriate interventions
- Able to initiate ACLS or PALS protocols

## **Algorithm Annotations**

- Able to transport patient to higher level of care as necessary

The critical care nurse should support the other team members and the patient. They should take the lead role in the RRT when a physician is unavailable.

### **Respiratory therapist**

- Able to assess patient's respiratory status
- Able to assist in maintaining patient's airway
- Able to assist in providing oxygen therapy
- Able to assist in providing positive pressure ventilation
- Able to provide recommendations for and administer nebulizers

The respiratory therapist's role is to support the patient, as well as the other team members.

### **Initiate the RRT Record**

The Rapid Response Team Record is the document used by the team to capture a variety of pieces of information about the call. This document may be paperbased or may be incorporated into the electronic health record. In either case, it should become a part of the patient's permanent medical record. At a minimum, the elements to be included in the record are:

- patient name;
- location of patient at time of call;
- date and time of call;
- time of team arrival and departure;
- reason for the call, including past medical history and events leading up to the team's activation (the best source of this information is the individual activating the team);
- interventions;
- outcome of the call;
- event note using SBAR (Situation – Background – Assessment – Recommendation) methodology; and
- patient's physician notified.

Additional elements may also be captured by individual facilities to aid in the detection of process improvement opportunities.

See Appendix A, "Sample Documentation Form" for more information.

## **9. Initiate Appropriate Treatment to Stabilize Patient**

It is recommended that if the RRT does not have a physician team member who responds to every call, that the team be given an order set. These orders should be unique to the facility and the skill set of the members of the team. See Appendix B, "Rapid Response Team Order Set" for an example.

If the RRT members are ACLS or PALS certified, and the patient's condition deteriorates to a cardiopulmonary arrest, they may initiate ACLS or PALS protocols prior to the code team arrival. The team may also implement any of the patient's active orders.

## **14. Consult with the Patient's Physician and Develop a Continuing Plan of Care**

It is strongly recommended that the patient's physician be contacted and an update provided. Based on the organization's preference, the patient's physician may or may not know the team has been called until the patient has been assessed and stabilized.

The update should be provided using the SBAR format and include the team's recommendation for next steps. The plan may or may not include transferring the patient to another unit within the hospital or to another facility. During this consultation there should be a discussion about contacting the patient's family and/or significant other and who will be performing that role.

The agreed upon plan of care must be documented in the patient's medical record.

## **18. Follow-Up**

It is the recommendation that a member of the RRT follow up with patients to assess their status, their response to the initial interventions, review the plan of care and assist in the determination if additional interventions should be implemented.

A follow-up in person with inpatients, as well as those patients who were evaluated in the emergency department (and possibly admitted), at two to four hours following a RRT and again at 12-24 hours (if they were not discharged) is recommended. If a patient declines treatment or transport to the emergency department, a follow-up is not necessary.

The follow-up evaluation is preferred to be conducted in person rather than with a phone call. This allows an opportunity to have a conversation directly with the patient and/or the family, as well as the bedside nurse. It may also be a chance for a teaching moment with the bedside nurse or other staff members.

It is recommended that an evaluation or satisfaction survey about the RRT call be provided to the activator of the call. This tool can provide feedback in order to improve the RRT if needed. See tool Appendix C, "Sample Evaluation/Satisfaction Survey."

# Appendix A – Sample Documentation Form

## (RRT) Rapid Response Team Care Record

Event Date \_\_\_\_\_ Admit Date \_\_\_\_\_  
 Time Called \_\_\_\_\_ Code Status \_\_\_\_\_  
 Arrival Time \_\_\_\_\_ Primary MD \_\_\_\_\_  
 End Time \_\_\_\_\_  
 Staff Responding: \_\_\_\_\_

Last Name: _____
First Name: _____
Date of Birth: ____ / ____ / ____
Age: _____
ID# _____

### Indicators for RRT Call (Circle all those that apply)

Respiratory	Heart Rate	Neurological Status	Blood Pressure	Chest Pain	Fluid Status	Staff/Family Concerns
New Dyspnea O <sub>2</sub> Sat ____ New requirement for (O <sub>2</sub> )	Rhythm:	Lethargic Confused Unresponsive Agitated/restless		New  Recurring	Intake > output Lasix needed Wet lung Urine output	Not looking right color/appearance New pain

History:  COPD  CHF  Diabetes  HTN  Cardiac  Recent Surgery  Neuro  Other

**Situation:**

**Background:**

**Assessment:**

**Recommendations/Interventions:**

Patient Outcome:  Stayed on Floor  Transfer to ICU  Code Called

Physician notified (Initials) \_\_\_\_\_ Date/Time \_\_\_\_ / \_\_\_\_ / \_\_\_\_ : \_\_\_\_

Follow-Up:

(2-4 hrs.) \_\_\_\_\_

(12-24 hrs.) \_\_\_\_\_

Status: \_\_\_\_\_ Alive \_\_\_\_\_ Deceased



## Appendix B – Rapid Response Team Order Set

Scope: This order set pertains to those orders initiated by the rapid response team and does not include orders that pertain to the patient's condition outside of the interventions of the rapid response team.

### Patient Information (two identifiers required)

Last Name: \_\_\_\_\_

First Name: \_\_\_\_\_

Date of Birth: / /

Age: \_\_\_\_\_

ID#: \_\_\_\_\_

#### Legend:

- Open boxes are orders that a clinician will need to order by checking the box.
- Pre-checked boxes are those orders with strong supporting evidence and/or regulatory requirements that require documentation if not done.

### Vital Signs (initially and as indicated)

- Blood pressure, heart rate, respiratory rate, temperature
- O<sub>2</sub> saturation

### Nursing Orders

- Blood glucose P.O.C.
- Cardiac monitor

### Respiratory

- Clear and maintain airway
- O<sub>2</sub> therapy to stabilize patient and maintain O<sub>2</sub> of \_\_\_\_\_% saturation via  nasal cannula  mask
- Ventilation assistance with positive pressure ventilation

### IV

- Patent IV access  
IV fluid:  
 Normal saline at \_\_\_\_\_mL/hour

### Medications (per health institution's protocol)

- Albuterol \_\_\_\_\_mg nebulizer as needed for respiratory distress
- Nitroglycerin 0.4 mg sublingual for chest pain. May repeat every 5 minutes for total of 3 doses
- Naloxone (for narcotic reversal) (0.2-0.4 mg)  IV  IM or  subcutaneously as needed for respiratory depression
- Flumazenil (benzodiazepine reversal) 0.2 mg IV; may dose every 60 seconds for a total of 4 doses as needed for respiratory depression (maximum is 1 mg)
- D50 IV or  other hypoglycemic agents
- Other: \_\_\_\_\_

**Appendix B – Rapid Response Team Order Set**

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**Lab/Diagnostic Tests**

- Chest x-ray (*AP Portable*) indication \_\_\_\_\_
- Other imaging studies indication \_\_\_\_\_
- EKG
- HGB/HCT
- CBC
- Glucose
- Electrolytes ( $Na^+$ ,  $K^+$ ,  $Cl^-$ ,  $CO_2$ )
- BUN/Creatinine
- Arterial  Venous blood gases

Authorized Prescriber Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_ : \_\_\_\_

## Appendix C – Sample Evaluation/Satisfaction Survey

### Rapid Response Team Interaction Satisfaction Survey

For Statements 1-5, check the appropriate box next to the question

	Disagree	Disagree Slightly	Neither Agree or Disagree	Agree Slightly	Agree
1. The rapid response team arrived in a timely manner.					
2. The rapid response team was respectful and helpful.					
3. Your needs and the needs of the patient were met by the rapid response team.					
4. I would recommend calling the rapid response team to my peers.					
5. It felt “safe” calling the rapid response team.					

6. The one thing I would like to change about the team would be:

7. Or compliment the team on would be:

8. Other comments/observations you would like us to know about:

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*The next scheduled revision will occur within 12 months.*

### Availability of references

References cited are available to ICSI participating member groups on request from the ICSI office. Please fill out the reference request sheet included with your protocol and send it to ICSI.

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Online at <http://www.ICSI.org>

## **Brief Description of Evidence Grading**

Individual research reports are assigned a letter indicating the class of report based on design type: A, B, C, D, M, R, X.

A full explanation of these designators is found in the Foreword of the protocol.

## References

Bellomo R, Goldsmith D, Uchino S, et al. A prospective before-and-after trial of a medical emergency team. *Med J Aust* 2003;179:283-87. (Class C)

Buist MD, Moore GE, Bernard SA, et al. Effects of a medical emergency team on reduction of incidence of and mortality from unexpected cardiac arrests in hospital: preliminary study. *BMJ* 2002; 324:387-90. (Class C)

MERIT Study Investigators. Introduction of the medical emergency team (MET) system: a cluster-randomised controlled trial. *Lancet* 2005;365:2091-97. (Class A)

Quality Letter, The. Buying time, saving lives: hospital rapid response teams find ways to reduce mortality outside the ICU. *The Quality Letter for Healthcare Leaders*, 2004. (Class R)

Simmonds TC. Best practice protocols: implementing a rapid response system of care. *Nursing Management* 2005;36:41-42, 58-59. (Class R)

This section provides resources, strategies and measurement specifications for use in closing the gap between current clinical practice and the recommendations set forth in the protocol.

The subdivisions of this section are:

- Priority Aims and Suggested Measures
  - Measurement Specifications
- Key Implementation Recommendations
- Knowledge Resources
- Resources Available

## **Priority Aims and Suggested Measures**

1. Increase early intervention and stabilization to prevent clinical deterioration of any individual prior to the event of cardiopulmonary arrest or other life-threatening health event.

Possible measures for accomplishing this aim:

- a. Number of calls to the rapid response team
- b. Number of unplanned transfers to a higher level of care
- c. Number of preventable codes (failure to rescue)

2. Decrease the number of codes for cardiopulmonary arrest that occur, excluding the ICU and ED.

Possible measures for accomplishing this aim:

- a. The number of codes for cardiopulmonary arrest that occur, excluding the ICU and ED
- b. Number of days lapsed between codes
- c. Survival rate to discharge among coded patients
- d. Average ICU length of stay for post-RRT ICU transfers
- e. Average ICU length of stay for post-cardiac arrest ICU transfers

3. Increase patient, family and staff satisfaction.

Possible measures for accomplishing this aim:

- a. Patient satisfaction
- b. Staff satisfaction
- c. Staff turnover rate



## **Measurement Specifications**

### **Possible Success Measurement #1a**

Number of calls to the rapid response team.

### **Data of Interest**

Total number of calls to the RRT.

### **Measurement Period**

Monthly. Data will be submitted during the month following collection.

(Initially, teams should also internally track the weekly number of calls to the RRT. Once the RRT is more established, data tracking may transition to monthly sampling.)

**Priority Aims and Suggested Measures**

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**Possible Success Measurement #2a**

Number of codes for cardiopulmonary arrest that occur excluding the ICU and emergency department.

**Population Definition**

All patients for whom codes are called due to cardiopulmonary arrest and who are not in the ICU or emergency department.

**Measurement Period**

Monthly. Data will be submitted during the month following collection.

**Definition of Terms**

Code: Patient requiring cardiopulmonary resuscitation or intubation.

Cardiopulmonary Arrest: The sudden cessation of the heart's pumping action or pulmonary function, resulting in failure of circulation of blood throughout the body, breathing, and other body functions.

**Comments**

- Rapid response teams generally support all hospital units, excluding the emergency department and ICU. Thus, codes from the ICU and emergency department are omitted from the measurement.

**Priority Aims and Suggested Measures**

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**Possible Success Measurement #2b**

Number of days elapsed between codes.

**Population Definition**

All patients who code, excluding those who code in the emergency department.

**Data of Interest**

Number of days elapsed between codes.

**Measurement Period**

None. The measurement unit is a day. The purpose of the measure is to assess whether the time period between the occurrence of codes increases with the implementation of a rapid response team.

**Definition of Terms**

Code: When a patient requires cardiopulmonary resuscitation or intubation.

Priority Aims and Suggested Measures

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**Possible Success Measurement #2c**

Survival rate to discharge among coded patients.

**Population Definition**

All patients who code, excluding those who code in the emergency department.

**Data of Interest**

Survival rates to discharge among patients who coded during their stays, excluding patients who coded in the emergency department.

Numerator: Number of coded patients discharged alive during the measurement period in question.

Denominator: Total number of coded patients discharged (alive or deceased) during the measurement period in question.

Survival rate (%) =

$$\frac{\text{Number of coded patients discharged alive during measurement period}}{\text{Total number of coded patients discharged (alive or deceased) during measurement period}}$$

**Measurement Period**

Monthly. Data will be submitted within 60 days following the month in question.

**Definition of Terms**

Code: When patients require cardiopulmonary resuscitation or intubation.

**Comments**

- With the implementation of a rapid response team, the survival rate to discharge among coded patients is expected to increase. With an RRT system in place, more patients who show signs of cardiac and/or respiratory arrest will be moved to a unit of higher care (e.g., ICU). Then, if these patients do code, they are more likely to have better survival rates to discharge than patients who code outside the ICU.

## Key Implementation Recommendations

The following system changes were identified by the protocol work group as key strategies for health care systems to incorporate in support of the implementation of this protocol.

1. Implementation of a rapid response team involves changing professional behavior patterns and requires support from all levels of the health care organization.
2. Additional areas that need to be considered prior to implementation include:
  - a. Determine team composition
  - b. Develop criteria for calling the RRT
  - c. Determine the mechanism for calling the team (e.g., team pagers, overhead page)
  - d. Provide education and training to senior leaders, physicians, team members and health care facility staff members
  - e. Develop documentation tools/forms
  - f. Determine communication and feedback processes
3. A two-pronged marketing strategy should be developed. The first phase is for the initial rollout of the team and involves building the case for the team's existence. The second phase is focused on sustaining awareness and is best rolled out over an extended period of time.
4. If the hospital has multiple patient care units, piloting the process of activating and responding to RRT calls is recommended. Test the process for either a specific period of time or number of calls.

## Knowledge Resources

### Criteria for Selecting Resources

The following resources were selected by the Rapid Response Team protocol work group as additional resources for providers and/or patients. The following criteria were considered in selecting these resources.

- The site contains information specific to the topic of the protocol.
- The content is supported by evidence-based research.
- The content includes the source/author and contact information.
- The content clearly states revision dates or the date the information was published.
- The content is clear about potential biases, noting conflict of interest and/or disclaimers as appropriate.

### Resources Available to ICSI Members Only

ICSI has a wide variety of knowledge resources that are only available to ICSI members (these are indicated with an asterisk in far left-hand column). In addition to the resources listed in the table, ICSI members have access to a broad range of materials including tool kits on CQI processes and Rapid Cycling that can be helpful. To obtain copies of these or other Knowledge Resources, go to <http://www.icsi.org/knowledge>. To access these materials on the Web site you must be logged in as an ICSI member.

The Knowledge Resources list in the table on the next page that are not reserved for ICSI members are available to the public free-of-charge.

## Resources Available

*	Title/Description	Audience	Author/Organization	Web Sites/Order Information
*	RRT Action Group Summary Report: describes the key activities conducted in the 2005-2006 collaborative, highlights the results achieved by the participating action group members.	Health Care Professionals	ICSI	<a href="http://www.icsi.org">http://www.icsi.org</a>
*	RRT 2 Action Group Summary Report: describes the key activities conducted in the 2006-2007 collaborative, highlights the results achieved by the participating action group members.	Health Care Professionals	ICSI	<a href="http://www.icsi.org">http://www.icsi.org</a>
*	RRT Action Groups: materials and presentations from each action group meeting.	Health Care Professionals	ICSI	<a href="http://www.icsi.org">http://www.icsi.org</a>
*	RRT Tool Kit: contains a variety of implementation tools developed by ICSI members who participated in a RRT action group. Example of tools include: hospital policies and procedures; documentation feedback and evaluation forms; satisfaction survey, code audit tool and thank you notes.	Health Care Professionals	ICSI	<a href="http://www.icsi.org">http://www.icsi.org</a>
*	Rapid Response Teams: Overview and Implementation Strategies.  Presentations by Michael Leonard, MD, Physician Leader for Patient Safety, Kaiser Permanente; Nicolette Mininni, RN, University of Pittsburgh Medical Center; and Kathy Duncan, RN. Presentations were conducted at the June 2, 2005 RRT Information Session.  (DVD or videotape)	Health Care Professionals	ICSI	<a href="http://www.icsi.org">http://www.icsi.org</a>
*	Reliability in Safe Clinical Care.  Presentation by Michael Leonard, MD, Physician Leader for Patient Safety, Kaiser Permanente, from the January 25, 2007 RRT Action Group.	Health Care Professionals	ICSI	<a href="http://www.icsi.org">http://www.icsi.org</a>

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## Resources Available

*	Title/Description	Audience	Author/Organization	Web Sites/Order Information
*	<p>Systems Approach to Patient Safety and Tools for Change.</p> <p>Presentation by Jeff Norton, Director of Clinical Services, Catholic Health Initiatives, from the January 25, 2007 RRT Action Group.</p> <p>(DVD or videotape)</p>	Health Care Professionals	ICSI	<a href="http://www.icsi.org">http://www.icsi.org</a>
	100K Lives Campaign; Describes focused initiatives for patient safety. Talking points, including rationale and tools for implementation.	Health Care Professionals	Institute for Healthcare Improvement	<a href="http://www.ihl.org">http://www.ihl.org</a>
	Rapid Response Team order set	Health Care Professionals	ICSI	<a href="http://www.icsi.org/knowledge">http://www.icsi.org/knowledge</a>
	IHI Getting Started Kit; How-to Implementation guide for hospitals.	Health Care Professionals	Institute for Healthcare Improvement	<a href="http://www.ihl.org">http://www.ihl.org</a>
	RRT Toolkit; Implementation tools collected from the hospital teams that participated in an ICSI Rapid Response Team Action Group. Institute for Clinical Systems Improvement (ICSI), Minnesota Hospital Association (MHA), and the HealthPartners Simulation Center for Patient Safety at Metropolitan State University partnered through a Robert Wood Johnson grant to support the Minnesota Rapid Response Team Learning Network.	Health Care Professionals	Minnesota Alliance for Patient Safety (MAPS)	<a href="http://www.mnpatientsafety.org">http://www.mnpatientsafety.org</a>
	Rapid Response Team Video and Discussion Guide; A compelling seven-minute DVD that depicts one caregiver's interactions with a worried mother of a hospitalized infant. The purpose of the DVD is to illustrate the confluence of factors that influence the decision to call the Rapid Response Team. Caregivers viewing the DVD and reviewing the discussion guide have the opportunity to critically assess their own thought process and reflect on the positive outcomes of changing professional behavior patterns.	Health Care Professionals	Children's Hospitals and Clinics of Minnesota	<p>Video can be viewed on the Web site <a href="http://www.childrensmn.org">http://www.childrensmn.org</a> or purchased for \$10 by contacting:</p> <p>Mary R. Hauck, PhD, RN Senior Clinical Improvement Advisor Center for Care Innovation and Research 2525 Chicago Ave South Minneapolis, MN 55404 612-813-6678 <a href="mailto:mary.hauck@childrensmn.org">mary.hauck@childrensmn.org</a></p>

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**Resources Available**

*	Title/Description	Audience	Author/Organization	Web Sites/Order Information
	Sorell King's speech at the IHI conference on October 11, 2002 on hospital errors and patient safety. Video and the written speech are available.	Health Care Professionals	Josie King Foundation	<a href="http://www.josieking.org">http://www.josieking.org</a>
	Rapid Response Teams practice in "real-life" scenarios designed to fit the patient populations served.	Health Care Professionals	HealthPartners Simulation Center for Patient Safety at Metropolitan State University	Simulation Center 700 East Seventh Street St. Paul, MN 55106 651-793-1393 <a href="http://www.hpsimcenter.com">http://www.hpsimcenter.com</a>

\* Available to ICSI members only.