The Development and Implementation of a Rapid Response Program at a Regional Facility
Lethbridge

Chinook Regional Hospital

• 276 Bed facility
• Serves population of 150,000
Chinook Regional Hospital ICU

- Serves Adult and Pediatric population
- 14 beds
- 7 RNs per shift
- Mixed ICU:
  - Medical
  - Surgical
  - Cardiac
  - Renal
  - Stroke
Safer Healthcare Now!
SHATTERING THE SILENCE
Voices of Advocacy in CRITICAL CARE NURSING
R.A.T. Team: Do We Need One?

- Evidence suggests there is a window of opportunity to “catch” 50% of patients prior to becoming critically ill.
- 70% of patients show evidence of deterioration up to 8 hours prior to arrest:
  - SBP less than 90 mmHg
  - MAP less than 60 mmHg
  - HR less than 45 or greater than 125 bpm
  - RR less than 10 or greater than 30 breaths/min
  - Chest pain
  - Altered mental status

These are the patients the RAT Team is designed to assist.

Franklin & Mathew, 1994
“Hospitals traditionally provide a cardiac arrest team to care for patients on the brink of death. In many cases, patients outside of the ICU deteriorate for many hours prior to their cardiac arrest, without access to critical care expertise or equipment. Patient deterioration often goes unrecognized until severe signs of impending death are obvious. Even when deterioration is noted earlier, ward staff often experience delays in getting physicians to the bedside to abort the path to cardiac arrest.”

Canadian Resuscitation Institute, 2006
The R.A.T. Team....

- “ICU without Walls” designed to respond to potentially critically ill adult patients wherever they are in the hospital

- “…a safety net to catch deteriorating patients before they suffer preventable harm”

Canadian Resuscitation Institute, 2006
Development Team

- Unit Manager ICU
- Manager Respiratory Therapy
- Unit Manager Medicine
- Unit Manager Surgical Unit
- Clinical Educator Critical Care
- Clinical Educator Respiratory Therapy
- Clinical Educators Medicine
- Clinical Educators Surgery
- Internal Medicine Group

Ongoing collaboration and ‘buy-in’ crucial to ensure team success
Development Process

• Develop team objectives structure and goals
• Secure commitment from senior leadership
• Establish criteria for activating team
• Develop structured approved treatment protocols
• Develop structured documentation tools
• Establish ‘top of mind awareness’ (posters, cards, etc.)
• Provide education: facility wide, multi-disciplinary
• Establish feedback mechanisms
• Measure effectiveness
• Consider future expansion
Unique Challenges

• **No** additional resources (dollars or staffing) allocated to develop and/or support the Team

• **No** Physicians available to be a regular part of the Team
Physician Involvement

• The R.A.T. Team is **not** intended to bypass regular communication with the patient’s physician or to remove their role.

• Depending on patient need and in the absence of a physician, the members of the R.A.T. Team may initiate approved standardized protocols initial patient management.

• The Team operates under the auspices of the Medical Director of Critical Care.
# R.A.T. Team Policy

| Title: Rapid Assessment and Treatment (R.A.T.) Team Guidelines (Adult) |
|---|---|
| Sponsor: Chinook Regional Hospital Intensive Care Unit | Reference Number: |

Approved By: 

Effective as Of: **September 28, 2011**
Team Availability & Response Time

The R.A.T. Team is available 24 hours a day, 7 days a week and will arrive at the patient bedside within 15 minutes after team activation.
R.A.T. Team Members

- **Two ICU Registered Nurses**
  - One of the RNs is also the Code Blue Team lead
  - Both nurses have patient assignments
- **One Registered Respiratory Therapist (RRT)**

Team support includes:
- Patient’s primary ward Nurse
- Facility Supervisor
Team Goals

Overarching Team Goal: Improve patient outcomes by providing early intervention to adult inpatients who are demonstrating acute changes and/or are progressively deteriorating.

- Share critical care skills and expertise
- Improve communication & relationships
- Facilitate timely patient admission to ICU when required
R.A.T. Team Members Scope of Practice

• RAT Team members are not expected to perform skills or procedures that are beyond their scope of practice while in the ICU

• Practice guided by:
  – Professional Associations
  – Current facility policies
  – R.A.T. Team Protocols
Roles: ICU Registered Nurse

- Brings the R.A.T. Team supply pack
- Performs an initial assessment
- Initiates appropriate care standardized protocol
- Assists with physician(s) communications, obtaining orders and intervention implementation
- Performs ongoing assessments
- Completes documentation
Roles: Registered Respiratory Therapist

- Brings ECG machine
- Performs initial and ongoing respiratory assessments
- Assists in implementation of standardized protocols
RATs Don’t Do Blue......

• In the event of an arrest during a R.A.T. Team call or while waiting for team members to arrive, a Code Blue will be called.

• The R.A.T. Team will help care for the patient until the Code Team arrives.
Provide Education

- Facility wide focus: Nursing (ICU and ward), Respiratory Therapy, Clerks, Diagnostic Imaging, Physiotherapy, Physicians, Students, etc.
- Roles and responsibilities clarified
- Criteria for team activation….. “Call if unsure”
- Communication and teamwork skills
- Brochures, criteria cards for lanyards, stuffed rats, posters, in-house newsletter, team color (orange), MANY inservices
Facility Involvement
Facility Involvement
Facility Involvement
CRH RAPID ASSESSMENT & TREATMENT (R.A.T.) TEAM

CRITERIA FOR CALLING:
- Concerned/worried about the pt
- Threatened airway
- RR less than 8
- RR greater than 30
- Acute change in O2 sats: less than 90% despite O2 greater than 6 lpm
- Pulse less than 40 & symptomatic
- Pulse greater than 150 & symptomatic
- Systolic BP less than 90 & symptomatic
- Systolic BP greater than 200 & symptomatic
- Acute change in level of consciousness
- Prolonged seizures
- Acute change in urinary output to less than 30 mL in 4 hours in a non-renal impaired patient

HOW TO CALL:
- Call Switchboard (dial 0) & say “We need the R.A.T. Team”
- State the exact patient location
- Team will be paged & will respond within 15 min

If the pt condition deteriorates to a Cardiac or Respiratory Arrest, call a Code Blue immediately
Calling the R.A.T. Team

- A MD order is **not** required to activate the R.A.T. Team
- Ward staff will contact the pt’s attending MD regarding:
  - Patient’s condition
  - Activation of the R.A.T. Team
- If the primary physician cannot be reached, the R.A.T. Team will contact the Internal Medicine physician on call

**Staff are encourage to not delay calling the R.A.T. Team while attempting to contact the primary MD**
How the Team is Called

- Any health care professional caring for adult inpatients may activate the R.A.T. Team by calling the Switchboard.
- Switchboard activates the following R.A.T. pagers:
  - ICU RN
  - ICU Educator
  - RRTs
  - Facility Supervisor
- There is no overhead page.
- Response time is within 15 minutes.
The Initial Assessment assists in choosing and implementing the most appropriate treatment protocol.
Criteria for Immediate ICU Transfer

The R.A.T. Team may transfer pts immediately to the ICU if any of the following criteria are met:

- Glasgow Coma Scale score less than 10 with acute change of greater than 1
- Seizures not controlled with 2 doses of antiseizure medication
- Systolic blood pressure less than 90 mmHg and unresponsive to two 500 mL IV fluid bolus administrations
- Typical cardiac chest pain unrelieved by nitrates or associated with systolic blood pressure less than 90 mmHg
- Airway requiring support (adjunct or manual) or otherwise unstable
- Inability to maintain oxygen saturation greater than 90% (if this represents an acute change)
- Acute acidosis (respiratory or metabolic) with pH less than 7.25
R.A.T. Team: Protocol List

- Chest Pain
- Stroke
- Respiratory Distress
- Anaphylaxis
- Symptomatic Bradycardia
- Symptomatic Tachycardia
- Symptomatic Hypotension
- Symptomatic Hypertension
- Decreased LOC
- Hypoglycemia
- Seizures
- Poor Urine Output
# Rapid Assessment and Treatment Team

**Respiratory Distress Protocol**

<table>
<thead>
<tr>
<th>Date (yyyy-mm-dd)</th>
<th>Time (hh:mm)</th>
<th>Unit/Room</th>
<th>Vital Signs</th>
<th>Assessment / Treatment / Medications</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

- Maintain airway and assist ventilation
- O2 to maintain sats greater than 92%; If history of COPD maintain sats 88–92% if appropriate
- IV 0.9% sodium chloride at 30 mL/hr
- Cardiac monitor (using ECG machine)
- 12 Lead, 15 Lead ECG if Inferior (II, III, aVF) or Posterior (ST depression V1/V2) changes observed
- STAT ABGs (including lactate)
- STAT Labs: Cardiac Set (CBC, lys, creatinine, urea, glucose, CK, troponin, magnesium, lipids, PTT, INR)
- STAT Labs: Sepsis Set (venous lactate, CBC, lys, creatinine, urea, glucose, total bilirubin, blood cultures x 2)
- STAT Portable CXR

### If Sepsis suspected: send STAT Cultures:

- Blood x 2 (part of Sepsis Set)
- Urine
- Sputum
- Wound
- Other

  - Time (hh:mm) __________  Initial ________

### If fluid overload suspected:

- Lasix 40 mg IV STAT

  - Time (hh:mm) __________  Initial ________

- Insert foley catheter

### If bronchospasm suspected:

- Salbutamol MDI 10 puffs

  - Time (hh:mm) __________  Initial ________

  May repeat in 20 minutes if indicated

  - Time (hh:mm) __________  Initial ________

### Post Call Patient Disposition

- Assessment completed; no intervention needed
- Patient stabilized; no transfer
- Telemetry initiated
- Transferred to ICU
- Death
- Other

### Rapid Response Team Call Completion

- Call completion time (hh:mm)
- Report hand off to
- Comments
Respiratory Distress

- Maintain airway and assist ventilation
- O2 to maintain sats greater than 92%; If history of COPD maintain sats 88–92% if appropriate
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- STAT Portable CXR
# Respiratory Distress

## If Sepsis suspected: send STAT Cultures:

- Blood x 2 *(part of Sepsis Set)*
- Urine
- Sputum
- Wound
- Other

- Time *(hhmm)*  
- Initial

*Do not repeat cultures if previously completed for this acute episode*

## If fluid overload suspected:

- Lasix 40 mg IV STAT
- Time *(hhmm)*  
- Initial

- Insert foley catheter

## If bronchospasm suspected:

- Salbutamol MDI 10 puffs
- Time *(hhmm)*  
- Initial

*May repeat in 20 minutes if indicated*

- Time *(hhmm)*  
- Initial
The End of the Call

<table>
<thead>
<tr>
<th>Post Call Patient Disposition</th>
<th>Rapid Response Team Call Completion</th>
</tr>
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<tbody>
<tr>
<td>□ Assessment completed; no intervention needed</td>
<td>Call completion time (hh:mm)</td>
</tr>
<tr>
<td>□ Patient stabilized; no transfer</td>
<td>Report hand off to</td>
</tr>
<tr>
<td>□ Telemetry initiated</td>
<td>Comments</td>
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<tr>
<td>□ Transferred to ICU</td>
<td></td>
</tr>
<tr>
<td>□ Death</td>
<td></td>
</tr>
<tr>
<td>□ Other ___________________________</td>
<td></td>
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</table>

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• The individual who initiated the call receives a thank you note signed by the Medical Director of Critical Care
• Copy also sent to the individual's Manager

Dear Manager,

Enclosed you will find a copy of a letter of thanks which was sent to _________ (staff member name.) As his/her Manager, I thought perhaps you would want to place a copy of the letter in their employee file.

Please congratulate and thank this person for his/her quick action and recognition of her/his patient’s changing condition.

As you know, the Rapid Assessment and Treatment (R.A.T.) Team is available around the clock, for adult patients outside of Emergency and the Intensive Care Unit. If there is a need to rapidly assess or stabilize a patient, the R.A.T. Team should be called. Early identification of these at-risk patients will decrease Code Blues and improve patient survival.

Thank you for encouraging your nurses to watch for their patient’s changing condition, and thank you for your support of the Rapid Assessment and Treatment Team.

Sincerely,

Dr. Ernest Janzen, MD
Chair, Rapid Assessment and Treatment (R.A.T.) Team Committee
Feedback Mechanisms

- Each call is reviewed by the ICU Unit Manager
- Ward staff interviews
- Ward staff evaluation form
  - Delivered at each call
- R.A.T. Team and evaluation form
- Physician interview
- Calls reviewed by R.A.T. Development Team every 4-6 months
- *Safer Healthcare Now!* measures
Evaluation

- Components:
  - Clarity of calling process
  - Communication
  - Professionalism of Team
  - Impact on patient’s plan of care
  - Suggestions for improvement

<table>
<thead>
<tr>
<th>What events led to the team being called?</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The criteria for activating the R.A.T. Team were clear and concise.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. The ICU RN and RT arrived in a timely manner.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. The ICU RN and RT listened to my report.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. I was encouraged to participate in the care of my patient.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. Communication between all health care providers was professional and effective.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. The ICU RN and RT treated me with respect.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>7. The needs of the patient were met by the ICU RN and RT.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8. The ICU RN and RT were professional.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>9. The patient’s care plan was become more clear due to the ICU RN and RT assistance.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10. I have gained knowledge in managing patients with deteriorating conditions.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11. I have gained confidence in managing patients with deteriorating conditions.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>12. The ICU RN and RT supported my decision to call.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>13. I would feel comfortable calling the R.A.T. Team in the future.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

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

15. A compliment for the team would be:

16. Other comments/observations I would like you to know about:
What Happened

- The R.A.T. Team was launched in October 2011
- Since that time, the R.A.T. Team has responded to **195** calls hospital wide:
  - 68% on Medical Units
  - 31% on Surgical Units
What Happened

• **Call criteria include:**
  – Acute change in oxygen saturations: saturations less than 90% despite oxygen delivery greater than 6 lpm (36%)
  – Systolic blood pressure less than 90 mmHg & symptomatic (15%)
  – Acute change in level of consciousness (12%)
  – Threatened airway (10%)
### Patient Disposition Post R.A.T. Call

<table>
<thead>
<tr>
<th>Disposition</th>
<th>2011-2012</th>
<th>2012-2013</th>
<th>2013-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Treatment Needed</td>
<td>5</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Stabilized on ward</td>
<td>29</td>
<td>43</td>
<td>7</td>
</tr>
<tr>
<td>Telemetry</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Direct transfer to ICU</td>
<td>22</td>
<td>38</td>
<td>8</td>
</tr>
<tr>
<td>Death</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Change in Level of Care</td>
<td>10</td>
<td>10</td>
<td>1</td>
</tr>
</tbody>
</table>
Immediate ICU Transfer

Approximately 30% of the patients assessed by the R.A.T. Team are immediately transferred to the Intensive Care Unit for further care.
R.A.T. Measurements

1. Reduction of inpatient Code Blues per 1000 inpatient discharges
2. Reduction in percentage of Code Blues outside of ICU
3. Utilization of the Rapid Assessment Team

Safer Healthcare Now!
Inpatient Code Blue

Code Blues Outside ICU Pre and Post R.A.T. Team Implementation

Median Code outside of ICU April 2010 to October 2011 (before R.A.T. Team Implementation): 4
Median Code outside of ICU from October 2011 to present (after R.A.T. Team Implementation): 3

R.A.T. Team Implemented Here
# Team Utilization

<table>
<thead>
<tr>
<th>Title</th>
<th>Rapid Assessment and Treatment Team Utilization</th>
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</thead>
<tbody>
<tr>
<td>Definition</td>
<td>The Number of calls to the Rapid Assessment and Treatment Team over time</td>
</tr>
<tr>
<td>Goal</td>
<td>Increase the use of the Rapid Assessment and Treatment Team over time</td>
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<thead>
<tr>
<th></th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
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<th>Dec</th>
<th>Jan</th>
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<th>Mar</th>
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<tbody>
<tr>
<td>2011-2012</td>
<td>8</td>
<td>12</td>
<td>13</td>
<td>16</td>
<td>12</td>
<td>1</td>
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<tr>
<td>2012-2013</td>
<td>12</td>
<td>10</td>
<td>19</td>
<td>8</td>
<td>7</td>
<td>7</td>
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The Future

- Protocols have become adopted at other sites within Alberta
- Continue to celebrate accomplishments
- Continue facility involvement
- Review Code Blue incidences to assess if the R.A.T. Team could have assisted prior to patient arrest
- Develop Pediatric Response Team
Questions?

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Kathy.Sassa@albertahealthservices.ca

CDs containing policies, protocols, education supports, posters, etc. are available to those interested.