Implementation of Rapid Response System

-Education is a strong power changing the world-

Aichi Meidical University
Center for Disaster Medical Sciences
Takamitsu Kodama, MD
Introduction

- The interest in safety and clinical outcomes of inpatients has been growing all over the world since 1990s.

- In the USA, “100,000 Lives Campaign” was conducted from 2005 to 2006, and “5 Million Lives Campaign” was held from 2006 to 2008.

- Rapid Response System (RRS) is one of the main methods to improve inpatient care.
Introduction

- Some of Asian countries are behind with the implementation of RRS compared to the Western countries.

- It is hard to implement the RRS, even after reading papers and/or textbooks.

- Verification systems are still insufficient and an educational system has not been established.
Introduction

Current situation in 2011

Investigation

The member institutes provide councilors to Japanese Society for Emergency Medicine (JSEM)

New trial since 2010

Conduct

RRS Workshop (RRS-WS)
Fundamental Critical Care Support (FCCS)
Introduction

Overview of RRS-WS

- Developed in 2010 by the Japanese Society of Education for Physicians and Trainees in Intensive Care (JSEPTIC)
- Half-day off-the-job training course
- Workshop consisting of didactic lectures and skill station and round-table discussion
Introduction

Program of RRS-WS

✧ Didactic Lectures
  ❖ Outline of RRS
  ❖ Preparing for RRS
    introduction
  ❖ Activation criteria of RRS
  ❖ Feedback system for RRS
  ❖ Activity record of RRS
  ❖ Case introduction
  ❖ System modification
✧ Skill station
  ❖ Simulation training for MET
✧ Round-table discussion
Introduction

Overview of FCCS

- Developed in 1994 and launched in 1996 by the Society of Critical Care Medicine
- Two-day off-the-job training course
- Originally designed to educate mainly physicians who had not completed a formal fellowship training in critical care medicine
- Implemented in 5 languages at over 250 training sites in 36 countries
Method

- Designed to be similar in concept to other standardized courses, such as ACLS, ATLS and ABLS

Program of FCCS

- Didactic Lectures
  - Recognition and Assessment of the Seriously Ill Patients
  - Diagnosis and Management of Acute Respiratory Failure
- Mechanical Ventilation I
- Mechanical Ventilation II
- Basic Hemodynamic Monitoring
- Diagnosis and Management of Shock
- Acute Coronary Syndromes and Special Considerations
- Neurologic Support
- Electrolytes and Metabolic Disturbance
- Life Threatening Infections
- Ethics in Critical Care Medicine
- Overview of Rapid response System

- Skill Stations
  - Mechanical Ventilation
  - Noninvasive Positive Pressure Ventilation
  - Line
  - Airway
  - Shock
  - Medical Emergency Team
Methods

- Distributed surveillance questionnaires to 253 institutions to which the councilors belong in Japan.

- Conducted 7 RRS-WSs and 37 FCCS courses, then distributed surveillance questionnaires to 82 participants and 1,684 participants respectively.
Methods

Surveillance questionnaire items

A. Current situation

1. Does your institute have the RRS?

2. Does your institute have the verification system?

3. Does your institute use the established educational methods?
Methods

Surveillance questionnaire items

B. After conducting the courses

1. Occupation

2. Did you understand the RRS concept?

3. Does the RRS decrease the number of inpatients for unexpected cardiopulmonary arrest?
Results

A. Current situation

1. Does your institute have the RRS?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>98</td>
<td>27</td>
</tr>
</tbody>
</table>

98 (78.4%) | 27 (21.6%)

n = 125 (Recovery Rate = 49.4%)

Does your institute have any multiprofessional team?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>121</td>
<td>4</td>
</tr>
</tbody>
</table>

121 (96.8%) | 4 (3.2%)
Results

A. Current situation

2. Does your institute have the verification system?

Yes

No

Does your institute manage the data?

Does your institute have the recording paper?

n = 125 (Recovery Rate = 49.4%)
A. Current situation

3. Does your institute use the established educational methods?

n = 125 (Recovery Rate = 49.4%)

Yes: 58 (46.4%)
No: 67 (53.6%)
No Res: 80 (64.0%)

Does your institute require the proper educational system?

Yes: 19 (15.2%)
No: 26 (20.8%)
No Res: 80 (64.0%)
Results

B. After conducting the courses

1. Occupation

**RRS-WS**

- Physician: 58 (70.7%)
- Nurse: 16 (19.5%)
- Others: 8 (9.8%)

**FCCS**

- Physician: 509 (30.2%)
- Nurse: 71 (4.2%)
- Others: 1,104 (65.6%)

n = 82 (Recovery Rate = 100.0%)  
n = 1,684 (Recovery Rate = 100.0%)
Results

B. After conducting the courses

2. Do you understand the RRS concept?

**RRS-WS**
- Very Well: 1 (1.2%)
- Well: 10 (12.2%)
- Neither: 1 (1.1%)
- Poorly: 36 (43.9%)
- Very Poorly: 35 (42.7%)

**FCCS**
- Very Well: 4 (0.2%)
- Well: 19 (1.1%)
- Neither: 137 (8.1%)
- Poorly: 801 (47.6%)

n = 82 (Recovery Rate = 100.0%)  n = 1,684 (Recovery Rate = 100.0%)
Results

B. After conducting the courses

3. Does the RRS decrease the number of inpatients for unexpected cardiopulmonary arrest?

**RRS-WS**
- Very Well: 27 (32.9%)
- Well: 37 (45.1%)
- Neither: 11 (13.5%)
- Poorly: 7 (8.5%)
- Very Poorly: 13 (0.8%)
- No Res: 645 (38.3%)

**FCCS**
- Very Well: 185 (11.0%)
- Well: 104 (6.2%)
- Neither: 7 (0.8%)
- Poorly: 11 (13.5%)
- Very Poorly: 185 (11.0%)
- No Res: 645 (38.3%)

n = 82 (Recovery Rate = 100.0%)  
n = 1,684 (Recovery Rate = 100.0%)
Discussion

Situation

- At the time of this survey in late 2010, implementation of the RRS in Japan was delayed compared to Western countries.

- Moreover, the firm base to implement and manage said system was not established in Japan. We believe strongly the proper educational tools to implement and manage the RRS is required.

- Currently however, reported cases of introductory education for RRS either took an enormous amount of time, or involved short-term, partial education.
Discussion

Experiences

- Educational Objectives of FCCS:
  - Prioritize assessment needs for the critically ill patients
  - Select appropriate diagnostic tests
  - Identify and respond to significant changes in unstable patients
  - Recognize and initiate management of acute life-threatening conditions
  - Determine the need for expert consultation and/or patient transfer and prepare the practitioner for optimally accomplishing transfer
Discussion

Experiences

Educational Objectives of FCCS:

- Prioritize assessment needs for the critically ill patients
- Select appropriate diagnostic tests
- Identify and respond to significant changes in unstable patients
- Recognize and initiate management of acute life-threatening conditions
- Determine the need for expert consultation and/or patient transfer and prepare the practitioner for optimally accomplishing transfer

“Afferent component” of the RRS

Crisis detection

Triggering mechanism
Discussion

Experiences

- Educational Objectives of FCCS:
  - Prioritize assessment needs for the critically ill patients
  - Select appropriate diagnostic tests
  - Identify and respond to significant changes in unstable patients quickly
  - Recognize and initiate management of acute life-threatening conditions
  - Determine the need for expert consultation and/or patient transfer and prepare the practitioner for optimally accomplishing transfer

“Efferent component” of the RRS
Discussion

- Skill Station - Medical Emergency Team
  
  ✦ Focus on debriefing
  ✦ Facilitate the discussion
Discussion

- Skill Station - Medical Emergency Team
  - Focus on debriefing
  - Facilitate the discussion

Look back on their practice

“Process improvement component” of the RRS
Discussion

- Skill Station - Medical Emergency Team

- Focus on debriefing
- Facilitate the discussion

“Administrative component” of the RRS

Develop the practice system
Discussion

Since around 2011

Education
- RRS-WS
- FCCS

Academic Conference
- Taken up at the conference
- Number of abstracts is increasing
- Holding the WS and FCCS

Each Institute
- PDCA
- Develop and Improve
Conclusions

- In Japan, implementation of the RRS has been delayed compared to Western countries.

- Proper educational methods would lead to increased success in the implementation of the RRS.

- We must disseminate and deploy the basic established education and provide and reinforce medical safety guidelines and practices.
Additional Remarks

- Today, academic societies support to introduce and develop the RRS.

- Japanese Society of Intensive Care Medicine
- Japanese Society for Emergency Medicine
- Japanese Association for Medical Simulation
- Japanese Society of Emergency Pediatrics

- Japanese Patient Safety Act
  - Japan Medical Association
  - Japan Dental Association
  - Japanese Nursing Association
  - Japan Pharmaceutical Association
  - Japan Association for Clinical Engineers
  - Japanese Society for Quality and Safety in Healthcare
Additional Remarks

- Nowadays the RRS has been gaining general acceptance at many institutions.

- The RRS has improved healthcare providers awareness on medical safety for inpatients.

- In Japan, multi-institution registration for the RRS has been started.