MANAGING CRITICALLY ILL PATIENTS – EXPLORING CHALLENGES AND SOLUTIONS
(Handout – 8 pages)

Combined Sections Meeting 2014
February 3rd – 6th, 2014 – Las Vegas, Nevada

Slides will be available following the conference.

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Rehabilitation interventions for patients with critical illness being managed in the ICU are associated with many beneficial outcomes including decreased days of mechanical ventilation, decreased ICU and hospital lengths of stay, decreased episodes of delirium, and improved short and long-term physical function and quality life. With the growing recognition of the importance of rehabilitation interventions for patients in the ICU, there is an increasing demand for critical care rehabilitation programs. Physical therapists are central members of critical care rehabilitation teams and thus there is an increased demand for physical therapists to implement effective critical care rehabilitation interventions. This course will examine current challenges associated with critical care physical therapist practice and suggest potential mechanisms to address these challenges. Particular emphasis will be placed upon quality improvement, clinical competence, education of students, and selection of outcomes measures. Participants will engage in real-time surveys, self-assessments, and discussion.

After this session participants will be able to:

A. Describe the challenges associated with the following issues related to critical care physical therapist practice and identify potential solutions:
   i. Implementing an ICU-based critical care rehabilitation program
   ii. Ensuring physical therapist competence for critical care practice
   iii. Preparing entry-level physical therapists for critical care practice
   iv. Identifying outcome measures for use in critical care practice

B. Describe the future of rehabilitation of patients with critical illness

This symposium encourages audience participation through real-time surveys, self-assessments, and discussion. Each core topic will consist of 15 minutes of presentation followed by 10 minutes of facilitated discussion and interaction with the audience.

**Symposium Schedule**

<table>
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<th>Time</th>
<th>Session</th>
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<td>11:00 – 11:10</td>
<td>Welcome and Introduction to Current Challenges of Managing People with Critical Illness</td>
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<tr>
<td></td>
<td>Barbara K Smith, PT, PhD</td>
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<tr>
<td>11:10 – 11:25</td>
<td>Implementing a Critical Care Rehabilitation Program: Quality Improvement Approach</td>
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<td>Amy Nordon-Craft, PT, DSc</td>
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<td>11:25 – 11:35</td>
<td>Facilitated discussion</td>
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<td>11:35 – 11:50</td>
<td>Ensuring Physical Therapist Critical Care Clinical Competence</td>
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<td>Jennifer Ryan, PT, MS, DPT, CCS</td>
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<tr>
<td>11:50 – 12:00</td>
<td>Facilitated discussion</td>
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<tr>
<td>12:00 – 12:15</td>
<td>Preparing Entry-level Physical Therapists for Critical Care Practice</td>
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<td>Patricia J Ohtake, PT, PhD</td>
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<td>12:15 – 12:25</td>
<td>Facilitated discussion</td>
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<td>12:25 – 12:40</td>
<td>Identifying Critical Care Patient Outcomes Measures</td>
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<td>Michelle Kho, PT, PhD</td>
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<td>12:40 – 12:50</td>
<td>Facilitated discussion</td>
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<tr>
<td>12:50 – 1:00</td>
<td>Future of the Rehabilitation of Patients with Critical Illness</td>
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<td>Daniel Malone, PT, PhD, CCS – President of the Cardiovascular and Pulmonary Section</td>
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Welcome and Introduction to Current Challenges of Managing People with Critical Illness

Barbara K Smith, PT, PhD

Overall objectives of this educational session:
1. Describe the challenges associated with the following issues related to critical care physical therapist practice and identify potential solutions:
   a. Implementing an ICU-based critical care rehabilitation program
   b. Ensuring physical therapist competence for critical care practice
   c. Preparing entry-level physical therapists for critical care practice
   d. Identifying outcome measures for use in critical care practice
2. Discuss the future of rehabilitation of patients with critical illness

Format of the educational session:
1. Presentation of four critical care challenges, by five content experts
2. Interaction is encouraged
   a. Open discussion after each content area
   b. PollEverywhere technology – real-time audience polling via text messaging
3. Schedule will be maintained; additional questions may be possible at the end of the session

General Introduction to PollEverywhere
1. Text a response code to 37607 OR to http://PollEv.com
2. Standard text fees apply if respondents do not have a text plan
3. Responses are anonymous, and Poll Everywhere does not contact participants

Implementing a Critical Care Rehabilitation Program:
Using Quality Improvement Concepts to Implement Change

Amy Nordon-Craft, PT, DSc

1. Recent Quality Improvement Projects in ICU
   a. Institute for Healthcare Improvement
      ii. Model for Improvement (http://www.apiweb.org/API_home_page.htm)
         1. Fundamental questions
            a. What is your primary purpose/aim?
               i. Time specific
               ii. Measurable
               iii. Population or system
            b. How will you know the change has occurred (measures)
            c. How do you select the change?
               i. Internal stakeholders
               ii. New or borrowed
   2. Plan Do Study Act
      a. Plan: who, what, where, when and data
      b. Do: small scale, document problems/barriers and the unexpected, begin to analyze
      c. Study: need time to analyze and reflect upon the results
      d. Act: what will be the next step?
3. Systems Theory of Change (Six Sigma Blackbelt)
   a. Consider how this change will impact other processes in PT
   b. Consider how this change will impact others in your organization

b. Recent Examples (Engel HJ)
   i. Wake Forest, Johns Hopkins, and University of California San Francisco
      1. Time Lines
      2. Identified Barriers
      3. Measures
      4. Specifics for each program
   ii. University of Colorado Denver
      1. Time Line
      2. Retrospective Chart Review
      3. Pilot
      4. Measures
      5. Changes

   a. Working Groups
      i. Parallel interdependence
      ii. Work alone but “assume” someone is coordinating care
   b. Working Teams
      i. Reciprocal interdependence
      ii. Work together; patient’s care is actively coordinated
   c. Suggestions
      i. Team Setup
         1. Small
         2. Interprofessional
      ii. Team Communication
         1. Leader facilitates communication
         2. Socratic method
         3. Environment
      iii. Team Dynamics
         1. Boundaries
         2. Skill development
   d. Other work on Team development (Six Sigma Blackbelt)
      i. Team Stages
1. Forming
2. Storming
3. Norming
4. Performing
5. Adjourning
6. Recognition

ii. Conflict Resolution
1. Nominal Group technique
2. Effort Impact

<table>
<thead>
<tr>
<th>Low Effort</th>
<th>High Effort</th>
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<tbody>
<tr>
<td>High Impact</td>
<td>High Priority</td>
</tr>
<tr>
<td></td>
<td>Biggest bang for your buck</td>
</tr>
<tr>
<td>Low Impact</td>
<td>Low yield</td>
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<td></td>
<td>May incorporate into another process</td>
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Key References and Resources
1. Institute for Healthcare Improvement
   http://www.ihi.org/knowledge/Pages/HowtoImprove/ScienceofImprovementTestingChanges.aspx
5. The Plan-Do-Study-Act (PDSA) cycle was originally developed by Walter A. Shewhart as the Plan-Do-Check-Act (PDCA) cycle. W. Edwards Deming modified Shewhart’s cycle to PDSA, replacing "Check" with "Study." [See Deming WE. The New Economics for Industry, Government, and Education. Cambridge, MA: The MIT Press; 2000.]

Ensuring Physical Therapist Critical Care Clinical Competence
Jennifer M Ryan, PT, DPT, MS, CCS

Topics to discuss include:

Physical therapists need to be sure to bring something unique and comprehensive to the patient’s care. The primary things to consider and areas to be competent in are:

1) Muscle physiology and the role of exercise
   a) the role that the therapist can and should serve beyond getting the patient out of bed
   b) used to promote recovery: AROM vs RROM, weight bearing (full and partial) postures that promote ongoing activity (longer duration with low intensity and higher frequency) as well as exercise that truly overloads the muscle
2) Multisystem physiology/pathophysiology in relation to postulated need for exercise and their response
3) Understanding of lines, tubes and drains
   a) Ventilator settings adjustments with exercise
4) Vital sign interpretation to determine readiness to participate and need to terminate exercise
   a) Vital sign interpretation of an exercise response
5) Exercise response in the presence of common medications
6) Measurement of competence in the above topics can be done in a variety of ways:
   a) Mentor-mentee relationship with co-treating or discussion post examination and intervention
   b) Written exams
   c) Role play
7) Interprofessional roles and dialogue
   a) Rounds participation
   b) Grand rounds presentation

Key References

Preparing Entry-level Physical Therapists for Critical Care Practice

Patricia J Ohtake, PT, PhD

The current shortage of high-quality physical therapy clinical education placements in acute and critical care is compounded by the growing demand for rehabilitation services in these settings, especially in the intensive care unit (ICU).

Question: How do we meet the demand of providing high quality acute and critical care physical therapy student clinical education?

We will examine novel approaches to clinical education, including different mentor to student ratios and high-fidelity immersive simulation.

1. Increase the utilization of alternative clinical education models – which ones are effective?
   a. Collaborative model
   b. Team model
   c. Combined collaborative model
   d. Peer tutoring
2. Increase the use of simulated learning environments – does this translate into clinical practice?
   a. Replace 10-50% of clinical time with time in simulated learning environments
   b. Ratio of simulation hours to clinical time hours (1:1, 1:2, 1:4)

**Key References**

**Identifying Critical Care Patient Outcomes Measures**

*Michelle Kho, PT, PhD*

This session will include the following:
1. Discuss clinical considerations for outcome measures in the critical care setting
2. Review measurement characteristics of outcome measures
   - Reliability, validity, responsiveness to change
3. Identify commonly used outcome measures in patients with critical illness
   - Classify outcome measures using the World Health Organization International Classification of Function Model
   - Discuss strengths and weaknesses of common critical care outcome measures
   - What outcomes support use of rehabilitation?
4. Discuss use of outcome measures across the continuum of function and settings

**Key References**

### Current Pitfalls and the Future of the Rehabilitation of Patients with Critical Illness

_Daniel Malone, PT, PhD, CCS_

Results from recent “Physical Therapy in the ICU: A National Survey” will guide this discussion. Previous topics will be used to create discussion.

1. Topics to discuss include:
   a. **Staffing Patterns and Prioritization Policies**
      i. Differences exist regionally and differ depending on hospital type (community hospital versus academic hospital)
      ii. Why does the “squeaky” wheel always get the grease? Should we question departmental prioritization practices?
   b. **Training & Competence**
      i. Majority of ICU training is “informal” and training occurs “on-site”
      ii. Significant percentage of physical therapists report no ICU based training
      iii. Who, where, and when? Physical therapists have many unanswered questions regarding ICU based training and preparation.
   c. **Barriers to Implementing ICU rehabilitation**
      i. Common barriers are universal and include: insufficient PT staffing; prioritization practices; consultation variability; training/competency; PT role ambiguity; patient factors
   d. **Who is the optimal patient?**
      i. Should all patients be consulted?
   e. **What is the optimal intervention?- the “black box” of physical therapists practice**
      i. To walk or Not To Walk?: Now that is a good question!
      ii. Use of technology to advance patient care

### Key References