PICS
Post Intensive Care Syndrome
Paul Lubinsky MD
Critical Connections

Clinical Spotlight
Strategies to Ensure Long-Term Quality of Life in ICU Survivors

Over the past several decades, there has been an improved understanding of critically ill patients and the effects of critical illness on patients and their families. Despite advances in technology and patient care, many patients and their families continue to experience long-term physical, psychological, and social challenges. The long-term effects of critical illness can be significant, affecting patients’ quality of life and their ability to return to work, home, or other daily activities.

In This Issue...
Managing Post-intensive Care Syndrome in the ICU

1. Understanding the impact of critical illness on patients
2. Strategies to improve quality of life for ICU survivors
3. Long-term outcomes and support for ICU survivors

About Critical Connections
A complete news source for critical care professionals, Critical Connections is published biweekly and provides up-to-date information on the latest trends and developments in critical care medicine.
Outcomes after ICU stays are sobering and dismal. Less than 9% of patients who require prolonged mechanical ventilation have functional independence at one year. Regardless of why a patient needed critical care or whether mechanical ventilation was necessary, recovery to an individual’s baseline is difficult, and in some cases impossible.

Opportunities to ameliorate PICS are not yet well studied, although good research is being completed on reducing deconditioning, delirium, and time on the ventilator. But as a patient whose experience has intersected with these research-based “theoretical” issues, I have seen many potential opportunities to affect the ICU survivor’s quality of life. Unfortunately, many of these opportunities may be underappreciated or missed altogether by practitioners worried about the crises that punctuate the ICU stay.
• Long-term survivors of ARDS describe a good overall health-related quality of life.

• Major impairments in mental health domains of health-related quality of life are associated with the development of posttraumatic stress disorder and are a possible result of traumatic experiences during ICU therapy.

Crit Care Med 1998; 26:651-659

1 yr fu of 126 consecutively enrolled Adult ICU pts

• 56% alive
• 84% not functionally independent
• 44% cognitively impaired
• Overall quality of life poor
• High ongoing health costs

• Definitive pediatric data, lacking
• What are the effects of permissive hypoxemia and hypercapnia on the developing brain?

ICU Acquired Muscle Weakness

- Physical debility is common after critical illness with self-reported muscle weakness and general physical limitations
  - Up to 90% with acute respiratory distress syndrome and sepsis
    - Deconditioning
    - Corticosteroid-induced and critical-illness-associated myopathy and polyneuropathy
    - Entrapment neuropathy
    - Heterotopic ossification
ICU Acquired Muscle Weakness

- During and following ICU
  - 33% of all patients on ventilators
  - 50% of all patients admitted with sepsis
  - Up to 50% of patients who stay in the ICU for at least one week
  - Recovery may take up to a year
    - Partial deficits
    - Compromised activities of daily living

- Early Mobilization
- Minimize neuromuscular paralyzing agents
Diaphragmatic Weakness

- Exercise Respiratory Muscles

Pulmonary Dysfunction

- Intrinsic pulmonary morbidity (5%):
  - Pneumonia
  - Bronchiolitis obliterans
  - Majority of patients do not have significant long-term pulmonary dysfunction at 1 and 2 years after ICU discharge

Extrapulmonary diseases: Cognitive deficits

- 2/3 ICU Survivors
- Emotional and physical stress and/or direct CNS injury
- Depression, anxiety, and posttraumatic stress disorder
- Impaired executive function

Delirium

- Delirium = organ dysfunction.
- ICU Delirium as an entity studied for just over a decade.
- Iatrogenic components...Sedation
  - Duration of ICU delirium is an independent prognostic indicator of:
    - Mortality
    - Time on ventilator
    - Re-intubation
    - Length of stay
    - Long term cognitive impairment
    - Discharge to long term care facility
    - Cost

- Sedation Protocols

Crit Care Med 2012 Vol. 40, No. 4
Cognitive Dysfunction

- All Critically ill patients acutely
  - Disease process and medications, ("iatrogenic")
  - 33-80% post discharge
  - Recovery over first year, many with residua ??
  - Approximately 50% return to work within the first year.

  - Other Mental Health Problems
    - Sleep disturbances
    - Nightmares, unwanted memories
    - Memories may produce physical and/or emotional reactions
    - Depression, Anxiety, PTSD

PTSD

- Hypervigilance
- Anxiety
- Arousal
- Trauma
- Psychological trauma
- PTSD
- Military combat
- Indicators
- Psychological trauma
- Reactive stress
- Hypocampus
- Accidents
-筛选
- Exposure
- Treatment
- Acute
- Psychological trauma
- Emotional numbing
- Combat
- Intervention
- Drink
- Loose
• Post-traumatic stress disorder (PTSD) first appeared in the DSM-III in 1980.

• Symptom clusters in PTSD:
  – Present >1 month
    • Persistent re-experiencing of the trauma
      – Awake and asleep
    • Avoidance of traumatic reminders
    • A general numbing of emotional responsiveness and chronic physiological hyperarousal
**THE CAUSES OF PTSD BEGIN WITH A TRAUMATIC EVENT SUCH AS:**

- An attack or assault
- A serious accident
- A natural disaster
- A terrorist attack
- Combat
- The death of a loved one

**NOT EVERYONE WHO EXPERIENCES A TRAUMATIC EVENT WILL DEVELOP THE DISORDER. PTSD IS MORE LIKELY TO ARISE IF:**

- The person was directly exposed to a trauma as a victim or a witness.
- During the event, the person believed they or a loved one was in danger.
- The person had a severe reaction during the event, such as crying, shaking, vomiting, or feeling apart from their surroundings.
- The trauma is long-lasting or severe.
- The person experienced additional trauma early in life.
- The person felt helpless during a trauma.
- The person was seriously hurt during an event.

**WHEN WE ARE EXPOSED TO DANGER, OUR BODY UNDERGOES SPLIT-SECOND CHANGES.**

- Such as increased heart beat and raised adrenaline levels, to help us cope.

**SYMPTOMS OF PTSD INCLUDE:**

- Flashbacks
- Emotionally numbing
- Anger
- Violent outbursts
- Depression
- Anxiety
- Insomnia
- Avoiding things related to the trauma
- Feeling times of isolation
- Frightening thoughts
- Nightmares

**SYMPTOMS CAN BE TRIGGERED BY PEOPLE, PLACES AND THINGS RELATED TO THE TRAUMA.**
Posttraumatic stress disorder in children and their parents following admission to the pediatric intensive care unit

- Following admission to the pediatric intensive care unit, both children and their parents have high rates of trauma exposure, both personally and secondary exposure via other children and their families, and subsequently are reporting significant rates of posttraumatic stress disorder.
- To effectively treat our patients, we must recognize the signs of posttraumatic stress disorder and strive to mitigate the negative effects.

PTSD Treatment

• Early intervention is essential
  – Cognitive-Behavioral Therapy (CBT)
  – Play therapy
  – Group therapy
  – Eye Movement Desensitization and Reprocessing (EMDR)
  – Exposure Therapy
    • re-imaging events in a safe environment
  – Medications
    • No supportive data

• Survivorship care must begin on the first day a patient spends in the ICU.

• Success must be measured by return to pre-ICU functional abilities

• Fragmented, compartmentalized, system of care

• Continuum of care does not end upon transfer from the ICU or Hospital discharge.

• Goal is full functional recovery
• Functional recovery in only 52% after 5 years

• Only small preliminary studies but demonstrate improved outcomes with

• Multicomponent acute and follow-up rehabilitation programs.

Crit Care Med 2012 Vol. 40, No. 4
How Can Family Lower The Chances of Developing PICS?

• If you are well, you have the physical and emotional strength to support your family member and feel good about it.

• Care for yourself, the patient and family.
  • Eat well, rest and exercise
  • Seek support.

How Can Family Lower The Chances of Developing PICS?

Take time to understand your family member’s illness and treatment options.
  – Having this information will help feel confident about the decisions you make, and reduce stress.
  – Ask questions
  – Keep a journal.
  – Recognize and respect your family member’s wishes, values, and preferences as much as possible.
Patient Support

• Participating in patient care helps support your family member and reduce stress.
  – Help the patient stay oriented
    • Talk about familiar things, people and events.
    • Talk about the day, date and time.
    • Bring in favorite pictures and items from home.
    • Read aloud at the bedside.
  – Participate in positioning, mobilization, and strengthening exercises

2040

• Hospital
  – Preventative Protocols
  – Prospective Identification
  – Intervention
  – Initiation of Discharge plan
• Post Discharge
  – Treatment Plan
    • Medical Home Resources
    • End point
  – Support network
Resources

- [http://www.myicucare.org](http://www.myicucare.org)
- [http://www.icusteps.org/](http://www.icusteps.org/) online support group