

Early Mobilization of Intensive Care Unit Patients: An Interdisciplinary Approach

Early mobilization of patients in the intensive care units (ICUs) is a significant advancement in the treatment of critically ill ventilated patients. Early mobilization culminates in the act of getting patients out of bed while in the intensive care unit and while they are still on ventilator support, instead of waiting to do so until after they leave the unit. This progressive approach is changing the culture and the mindset of the ICU team. Without early mobilization, patients that have survived a prolonged ICU course due to critical illness are at higher risk for mental health problems (including anxiety, depression and post-traumatic stress disorder), and decreased ability to perform activities of daily living (ADLs) up to one year after discharge and neuromuscular abnormalities up to 5 years.¹ The literature has shown that early mobilization results in earlier independence with ADLs, increased strength, improved ambulation, decreased ICU delirium days, decreased ventilator days, and decreased ICU acquired paresis.^{2,5} This approach requires significant coordination among the members of the interdisciplinary team (IDT) and increased therapist time devoted to the ICU patients, which is why it is part of a larger effort to keep patients awake and off sedatives. For ICU staff, this is a significant culture and process change, and issues of culture need to be addressed for the program to be successful.

In the spring of 2014, an IDT at Thomas Jefferson University Hospital (TJUH) developed and implemented an early mobilization program, with the goal of reducing ventilator days and decreasing ICU length of stay. This program was developed based on the current literature and adapted from the practices at Vanderbilt University Medical Center in Nashville, TN, as the practices from Vanderbilt were an easy-to-

use digestion of all the available literature on prevention of long-term sequelae of an ICU stay.^{3,5} The criteria for patient participation and progression in The Early and Progressive Mobility Protocol were created utilizing objective testing and mobility grading to ensure IDT carryover and patient safety in the program (Table 1).³ The interdisciplinary team consists of physicians, nurses, pharmacologists, respiratory therapists, physical therapists, occupational therapists, speech therapists, and case managers. This effort was part of a larger initiative to reduce

length of stay and sedative use in the ICUs called the ABCDE bundle (Spontaneous Awakening Trial, Spontaneous Breathing Trial, Choice of Medical Therapies, Delirium, Early and Progressive Mobility).^{3,5} The IDT conducts rounds daily on each patient to address the components of the ABCDE bundle and determine patient specific goals for the day. During the process of implementation, one of the authors (NSA) noticed that the education process was taking place in silos instead of in an interdisciplinary manner, and that not all units were using daily IDT rounds. She

Table 1: Criteria for Early Mobilization

Early and Progressive Mobility Protocol Level	Protocol
Level 1 Unconscious Patient	Passive Range of Motion twice daily Turn every 2 hours
Level 2 Conscious Patient, progress levels as tolerated	Active Assisted and Active Range of Motion Turn every 2 hours Sitting Position 20 minutes three times daily
Level 3 Conscious Patient, progress levels as tolerated	Active-Assisted and Active Range of Motion Turn every 2 hours Sitting Position 20 minutes three times daily Sitting on Edge of Bed
Level 4 Conscious Patient, progress levels as tolerated	Active-Assisted and Active Range of Motion Turn every 2 hours Sitting Position 20 minutes three times daily Sitting on Edge of Bed Active Transfer to Chair 20 minutes per day Ambulation (marching in place, walking in halls).

Absolute Contraindications: Venous-Arterial Extracorporeal Membrane Oxygenation with Femoral Cannulation; Skeletal/Buck's Traction for Unstable Fractures or Any Unstable Fracture; Unstable Spine per Orders; Untreated or Suspected Cardiac Tamponade; and Intra-Aortic Balloon Pump with Femoral Insertion.

CONTINUED ON PAGE 2

facilitated the development of a half-day interprofessional workshop that was held in conjunction with the Jefferson Center for Interprofessional Education (JCIPE) that incorporated TeamSTEPPS⁴ training along with brainstorming of barriers and possible solutions. Based on surveys, the participants felt more confident in implementing the bundle after the workshop.

Once a patient is conscious, early mobilization starts. Physical and/or occupational therapists will perform an evaluation to determine the patient's current strength, functional mobility, ability to perform ADLs, and cognitive status. Vital signs and patient symptoms are closely monitored to determine how the patient is tolerating the session and if he/she is able to progress to the next level of early mobility. The treatment sessions are geared towards improving strength, balance, cardiopulmonary endurance, patient/family education, patient's ability to participate in ADLs, and cognitive retraining. It is also the role of the rehabilitation team to assist with discharge planning by identifying what services or supports the patient will require

after hospitalization. Often times, this patient population benefits from a rehabilitation stay after hospital discharge. The goal of the program is for early mobility to be the standard of care in a protocolized fashion, so there is no need for Physical Medicine and Rehabilitation (PM&R) physician involvement for routine cases. When cases are more complex, especially for patients with pre-existing disability or new neurologic deficits, the PM&R physicians are utilized to assist with developing a clear picture of the medical and functional goals and a plan of care.

Since the JCIPE interprofessional workshop, IDT rounds in the medical ICU now include physical and occupational therapy in addition to respiratory therapy, nursing and physicians. The Cardiovascular ICU and the Surgical ICU have also implemented IDT rounds with multiple disciplines present since the JCIPE interprofessional workshop. This demonstrates increased team cohesion, as there is improved communication during daily IDT rounds and the IDT members' understanding of the benefits of early mobility based on anecdotal reports by therapists. A culture shift has been observed

on the floors by the rehabilitation team, with the ICU teams developing enthusiasm for mobilizing these patients earlier in their hospital stay; previously it was difficult to obtain their help and buy-in. Throughout the development and implementation of this protocol, data collection is ongoing to determine the overall impact on TJUH ICU patients. The goal is to continue to adjust our approach in response to patient outcomes in order to meet the needs of our clientele in an ever-changing healthcare system.

Erica Rao, DPT *Advanced Clinician II*
Thomas Jefferson University Hospital
Rehabilitation Medicine Services
Erica.Rao@Jefferson.edu

Nethra Sridhara Ankam, MD *Assistant Professor*
Director of Undergraduate Medical Education
Director of Consultation Service
Department of Rehabilitation Medicine
Sidney Kimmel Medical College
at Thomas Jefferson University
Nethra.Ankam@Jefferson.edu

REFERENCES

1. Parker AM, Sricharoenchai T, Needham AM. Early rehabilitation in the intensive care unit: preventing impairment of physical and mental health. *Curr Phys Med Rehabil Rep*. September 2013. doi:10.1007/s40141-013-0027-9.
2. Schwiebert WD, Pohlman MC, Pohlman AS. Early physical and occupational therapy in mechanically ventilated, critically ill patients: a randomized control trial. *The Lancet*. 2009; 373: 1874-1882.
3. ABCDEF's of prevention and safety. ICU Delirium Web site, Vanderbilt University Medical Center. <http://www.icudelirium.org/>. Accessed January 27, 2015.
4. TeamSTEPPS®: National implementation. U.S. Department of Health and Human Services, AHRQ Web site. <http://teamstepps.ahrq.gov/>. Accessed January 27, 2015.
5. Balas MC, Vasilevskis EE, et al. Effectiveness and safety of the awakening and breathing coordination, delirium monitoring/management, and early exercise/mobility (ABCDE) bundle. *Crit Care Med*. May 2014; 42(5): 1024-1036. doi: 10.1097/CCM.0000000000000129.