

# Increasing Critically Ill Children's Mobility

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## Description

In a pediatric intensive care unit, the objective of this quality improvement project was to enhance mobility procedures. There were three interventions: A mobility progression guideline created by the staff that includes the use of activity goal posters, Physical Therapy (PT) and Occupational Therapy (OT) referrals for all patients who are expected to be in the hospital for more than three days and patient mobility phase identification using animal images. Before and after the project was implemented, the nurses' confidence in mobilizing patients, the number of PT and OT referrals and the frequency of mobility activities were compared. The median number of daily mobility activities performed on each patient (1.5-4.0), the number of PT and OT referrals (an increase of 43% and 61%, respectively) and nurses' confidence in mobilizing patients all improved as a result of the protocol's implementation. Pediatric intensive care unit admissions are associated with adverse effects such as physical weakness and delirium for adults and children. Implementation of an interprofessional mobility quality improvement project improved mobility practices. After being discharged from an intensive care unit, up to one-third of children have physical impairments and 13% have persistent impairments two years later. The primary objective of the study was to increase the median number of daily mobilization activities completed per patient encounter. Traditionally, children in a pediatric intensive care unit (PICU) are sedated. Increasing nurse confidence in mobilizing patients and increasing referrals for physical therapy and occupational therapy during hospitalization were secondary objectives. The portability convention was created and used to achieve these objectives and result goals.

The inter-professional team identified the following current mobility practices: The absence of PT and OT referrals early in the 50 encounters before implementation, with 20 patients and the 52 encounters after implementation, with 19 patients. Before implementation, 18 out of 50 encounters included a patient referral to PT or OT; after implementation, 41 out of 52 encounters included a patient referral. After implementation, 41 out of 52 encounters included a patient referral. After the project was implemented, patients had at least one activity box checked on their goal in 33% of encounters (17 out of 52). This interprofessional quality improvement project was successful in improving the mobility practices of critically ill children. The project's objectives of standardizing mobility procedures, expanding mobility activities, boosting nurses' confidence in

patient mobilization and including patients and their families in efforts to mobilize them were met.

## Early Mobilization

The development and application of the mobility progression guideline led to the standardization of mobility practices. From to, the average number of daily mobility activities performed per encounter rose. In pediatrics, the term "Early Mobilization" (EM) has only recently been defined. Within the first 72 hours of a patient's Pediatric Intensive Care Unit (PICU) stay, EM was defined as "the implementation of therapeutic interventions aimed at patients, including those patients on positive pressure and mechanical ventilation." However, stating that EM is a set of interventions to encourage walking may not be sufficient for pediatrics, as ambulation is not the ultimate goal for infants and the age range of admission to the PICU typically ranges from one month to seventeen years. As a result, a "set of interventions aimed at mobility" is suggested. Children, in contrast to adult patients, require special consideration when it comes to mobilization and mobility interventions because of their chronological age, cognitive maturity and level of sedation. A heterogeneous population necessitates specialized protocols of evidence-based EM2 due to the variability of pathophysiology's, which can affect seriously ill children.

The patient's clinical condition has been impeded by a number of factors, including clinical instability; difficulties in clinical diagnosis and disease severity; risk of devices being moved (such as cannulas and catheters in the trachea); excessive or inadequate dosage of analgesia; physical limitations; obesity; unsatisfactory nutrition; lack of enthusiasm among some children for EM activities; including others. Multi-professional performance and family involvement, on the other hand, have been shown to improve EM outcomes and reduce mobilization barriers for sick children in recent studies.

## EM Program

At the time of admission to the unit, it is recommended that every patient in the PICU be evaluated by a physiotherapist for the possibility of participating in an EM protocol. The protocol should begin within three days of the patient's stay in the PICU, with levels and degrees of complexity based on the patient's clinical condition and functional capacity.

Studies<sup>1,8</sup> and 9 have shown that EM improves physical function, shortens the length of stay in the PICU, reduces mechanical ventilation time and delirium frequency, improves the sleep-wake cycle, lowers costs associated with hospitalization, improves family satisfaction and improves multi-professional team satisfaction.

Scales that take into account muscular strength and mobility (body function), such as the Medical Research Council (MRC) scale score and handheld dynamometers, are among the evaluation and monitoring measures that are suggested to be implemented. as well as motor and cognitive ones, such as the Functional Status Score for the ICU (FSS-ICU); the evaluation of the level of sedation, such as the Ramsay scale or COMFORT, with the goal of maximizing sedation and avoiding delirium (all critically ill children can be evaluated for delirium using the

Preschool Confusion Assessment Method (psCAM, 6 months to 5 years) (CAPD; both hypoactive and hyperactive delirium can be effectively identified using either the pediatric Confusion Assessment Method (pCAM, for children aged 5 and up) or both.

Checking of different markers, for example, serum lactate and creatine phosphokinase might be fundamental in additional serious cases in which there is no sure development (gain of useful autonomy) or in those with utilitarian demolishing after the beginning of the EM program. In these instances, nutritional and electrolyte evaluation should be taken into consideration, particularly for calcium, sodium, magnesium, phosphorus and vitamin D, which show correction with loss of muscle mass and function. Clinical studies are needed because the literature does not yet provide a complete definition for these measures.