The Patient Mobilization Framework

A multidisciplinary communication algorithm improves early mobilization in critically ill patients.

Cees W. Casteleijn PT, BSc a, Connie van Erp MPt, Arend-Jan Meinders MD d, Peter Bruins MD, PhD c

a. Department of Physiotherapy, St Antonius Hospital, Nieuwegein, The Netherlands
b. Department of Physiotherapy, Hofpoort Hospital, Woerden, The Netherlands
c. Department of Anesthesiology, Intensive Care and Pain Management, St Antonius Hospital, Nieuwegein, The Netherlands
d. Department of Internal Medicine and Intensive Care, St Antonius Hospital, Nieuwegein, The Netherlands

mail: c.casteleijn@antoniusziekenhuis.nl

Introduction
Early mobilization reduces the adverse consequences on both the neuromuscular and cardio respiratory system as well as the psychosocial condition of the patient during a period of long immobilization.
There is no objective reproducible score known of a relation between the intensity of the mobilization states in relation to the highly variable course of illness on the seriously ill patient.
Furthermore doctors, nurses and physiotherapists should co-operate in a multidisciplinary approach to assess the optimum time and extent to which a patient can be mobilized.
PMF defines mobilization as a passive or active change of posture of a patient, either in the bed or from the bed. The purpose of this change of posture is to promote healing of several organs.
Organs that benefit from moving are: cardiovascular-, respiratory-, neuromuscular systems, joints, bones and psycho social (brains).

Description
For this purpose we introduce the Patient Mobilization Framework (PMF). The PMF is a multidisciplinary algorithm that serves as an easy-to-use tool to identify the patient’s ability to mobilize during a (prolonged) ICU-stay.
A component of the PMF scoring system is the physical load capacity [1] based on straightforward biomedical criteria that allows the attending physician to discriminate between three stages of illness, corresponding with three levels of physical load.
Three stages are present in the diagnostic frame:
stage A, a phase of severe illness;
stage B, a phase of stabilization and / or slight recovery;
stage C, a phase of stability and continuing recovery
These three stages are combined with the other component namely, four levels of consciousness.
0. no reaction
1. reaction but, does not perform commands
2. perform commands
3. entirely co-operative

Levels of consciousness and physical load phase are placed together into a matrix, from which it is possible to successively identify any disease stage, to determine the estimated level of mobilization and to provide the right training stimulus at the right time. In the two therapeutic frames for each phase the physiotherapy and nursing activities are described.

The algorithm consists of two diagnostic and two therapeutic frames (figure 1). The physician determines physical load stages; all three disciplines determine the level of consciousness. Moreover, the combination of these two components forms the base for mobilizing activities of the nurse and the physiotherapist.

Aim of the PMF:
- To optimize the mobilization process of the patient
- Clarity to all involved disciplines what mobilization entails
- Clarity of the contributions to the mobilization of the medical, nursing and physiotherapy staff

In a transparent way, this multidisciplinary approach both clearly defines the responsibilities and provides a clear set of tasks for all team members, i.e. physician, nurse, and physical therapist.

During the last two years, PMF improved the balance between the possibilities for mobilization for each individual patient with various disease severities and corresponding physical and psychological limits. 20 ICU’s in The Netherlands use this PMF now to promote and control early mobilization in critically ill patients.

Discussion
There is need for an objective system for different disciplines in the ICU to assess the possibility for early mobilization in critically ill patients. PMF could play a role in identifying the physical and mental ability of the patient to mobilize by providing an easy and effective tool to communicate between team players in a busy multidisciplinary environment. The cost-effectiveness of the algorithm needs further investigation.
Figure 1

2 diagnostic frames (white and green) and 2 therapeutic frames (blue and yellow)
