

Beyond survival: optimizing the rehabilitation pathway after critical illness

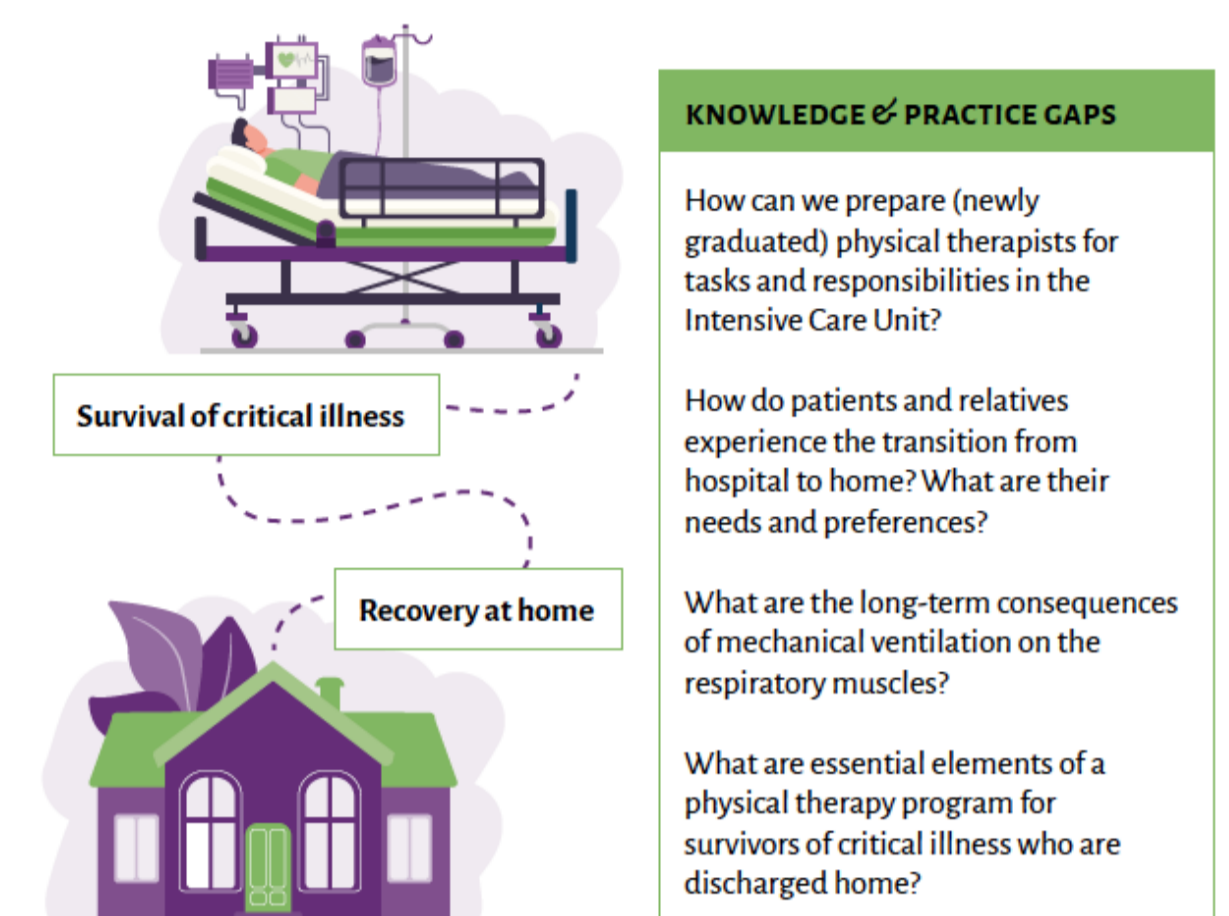
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PhD thesis, Faculty of Medicine, University of Amsterdam

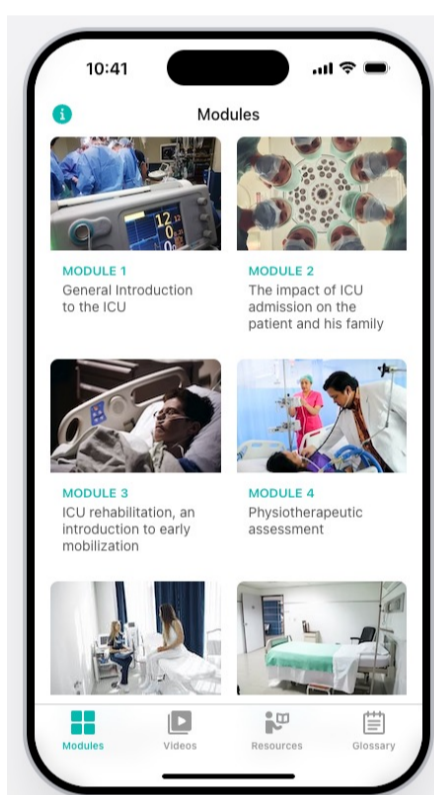
Promotor: Prof. Dr. Raoul Engelbert, Copromotores: Dr. Marike van der Schaaf, Dr. Stephan Ramaekers

Yearly, 65.000-80.000 critically ill patients are admitted to an intensive care unit (ICU) in the Netherlands.

- In 70% of the patients, muscle mass and muscle dysfunction cause long-term physical impairments;
- In 25-50% ICU-acquired weakness is present;
- Post-Intensive Care Syndrome (PICS) occurs in 50-70% and may last 5-15 years;
- 50% of the patients, do not (completely) return to work;
- Patients have an increased chance of developing new and chronic diseases.



Knowledge gap 1: How to prepare new physical therapists (PTs) for clinical work in ICU?



Study design: mixed-method proof of concept study

Aim: to investigate the feasibility of preparing PT students for clinical work in ICU through e-learning

Population: undergraduate students and clinical experts

E-learning is a feasible method to prepare students for clinical tasks in ICU and should be offered close to or during the clinical rotation, coinciding with the practice of patient handling and clinical reasoning.

Knowledge gap 2: Wat are the needs and preferences of patients and relatives when transitioning home?

Study design: qualitative grounded theory study

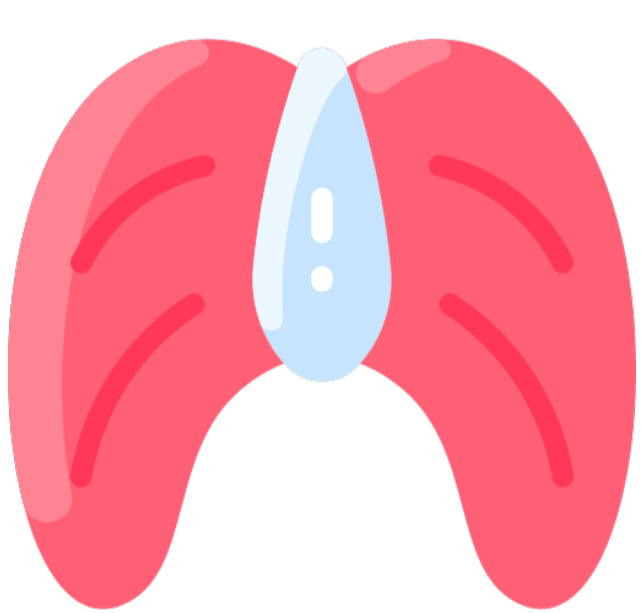
Aim: to investigate transition experience after critical illness and ICU admission

Population: Former ICU-patients and their relatives

During transition from hospital to home or rehab center, patients' and relatives physical and psychological needs are often overlooked leading to suboptimal aftercare.



Knowledge gap 3: What are the long-term consequences of mechanical ventilation on the respiratory muscles?



Study design: prospective cohort study with 6-month follow-up

Aim: to investigate the course of recovery of respiratory muscle weakness (RMW) and associations with functional outcomes

Population: survivors of critical illness who received ≥ 48 hours mechanical ventilation

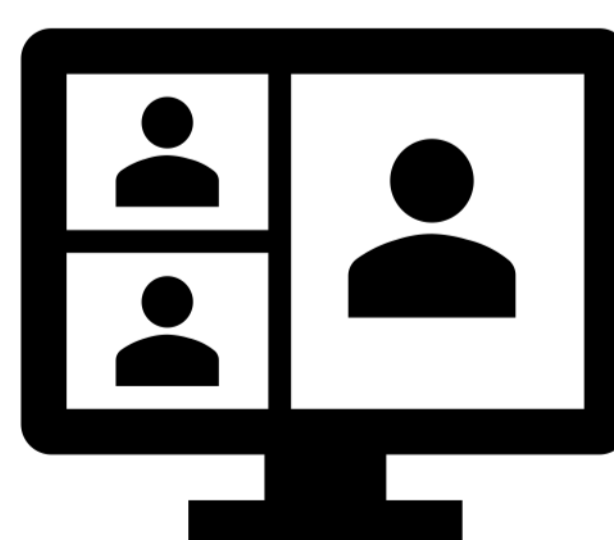
RMW was present at hospital discharge, significant 6-month recovery was seen for all outcomes. RMW was associated with other physical outcomes. Severely deconditioned patients might well have persisting respiratory muscle weakness and may benefit from inspiratory muscle training.

Knowledge gap 4: What are essential elements of a PT program for survivors of critical illness?

Study design: two separate Delphi studies

Aim: to obtain consensus on a core outcome set and critical components of PT interventions for patients with PICS

Population: a national and international expert panel



Study design: a mixed-method, non-randomized prospective pilot study

Aim: to investigate the feasibility of an interdisciplinary home-based rehabilitation program for patients with PICS

Population: survivors of critical illness who received ≥ 48 hours mechanical ventilation



While high level evidence is lacking, expert consensus on a core outcome set for clinical practice and PT interventions was achieved and a framework proposed.

Early, home-based rehabilitation interventions for patients with PICS is feasible, leads to increased patient satisfaction and potentially reduces costs.

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