

## Early Physical Therapy Improves ICU Patient Outcomes



According to a Johns Hopkins Medicine-led study, quality improvement processes for delivering early physical rehabilitation in an intensive care unit (ICU) that were sustained during a five-year period resulted in improved patient outcomes. These processes spurred major changes in clinical practices for treating critically ill patients by encouraging early physical therapy in the ICU. The findings are published in the *Annals of the American Thoracic Society*.

The study covered a single medical ICU at Johns Hopkins and researchers worked closely with both hospital management and staff to ensure the sustainability of their quality improvement project. Key steps were undertaken such as: removal of barriers, further interdisciplinary education and communication, and the continued participation of over 20 physical therapists who worked in the medical ICU after the quality improvement period.

To quantify the effects of the quality improvement project, the investigators compared data that had been collected from a prospective cohort study (pre-quality improvement) with data that were collected beginning a year after commencing the quality improvement project (post-quality improvement). Patients in both pre- and post-quality improvement groups suffered from acute respiratory distress syndrome, which is an archetype of critical illness.

The research team, led by Dale M. Needham, MD, PhD, medical director of the Critical Care Physical Medicine and Rehabilitation Program at Johns Hopkins, reported these key findings:

- Amongst ICU survivors, a higher proportion of patients received physical therapy in the ICU: 89 percent post-quality improvement versus only 24 percent pre-quality improvement.
- There were fewer days before starting physical therapy in the ICU — a median of four days post-quality improvement versus 12 days pre-quality improvement.
- 64 percent of post-quality improvement patients could stand or walk while in the ICU, compared with only 7 percent of patients before the quality improvement project.

“We had dramatic changes after the quality improvement project compared to before the project,” said Dr. Needham. “None of these results happened by accident, and if hospitals use a structured approach to creating this change, they can be successful too.”

For Dr. Needham, that structured approach included making the business case to hospital administrators that investing in early rehabilitation programmes could improve patient outcomes while also reducing hospital costs (i.e., patients had shorter lengths of stay).

Sustaining such a quality improvement project, the doctor noted, is really about changing culture. “Most people who work in an ICU were trained to think that we should deeply sedate patients and give them bed rest,” he said. Introducing active physical therapy even while patients are on mechanical ventilation “really takes everything we’ve known — including how we’ve designed our intensive care units — and turns it on its head.”

Given both the advances in critical care and the ageing population, there is a growing pool of ICU survivors who often suffer with physical impairments for years after the ICU. As a result, these patients may delay returning to work and may utilise the healthcare system more. “The key to addressing these issues is to start rehabilitation early,” Dr. Needham said.

A multisite quality improvement project seems like the next logical step, although running such a project is not easy. “Each ICU considers these changes over its own time frame,” said Dr. Needham. Notably, his team tries to do its best to help other ICUs change practice to adopt early physical therapy, including an annual critical care rehabilitation conference at Johns Hopkins for practitioners from all over the world, now in its fourth year.

Source: [Johns Hopkins Medicine](#)  
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