

Barriers and Challenges to the Successful Implementation of an Intensive Care Unit Mobility Program

Understanding Systems and Human Factors in Search for Practical Solutions



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KEYWORDS

• ICU mobility • Quality improvement • Intensive care unit • Critical illness

KEY POINTS

- All change is difficult. Focusing on the environment in which people work, taking an inventory of beliefs held by workers, and assessing the degree of understanding about the change proposed can make facilitating change a more concrete and understandable process.
- Identifying waste, overburden, and inconsistencies is key to improving an environment in order to implement new practices or procedures successfully.
- Appreciating the regulative, normative, and cultural forces at work within an organizational structure is important. In facilitating change, it is vital to address each of these factors.
- The people within an organization need to be accounted for at each step in change implementation, including the leaders of the organization, the champions of the innovation in question, and the end users of that change; in medicine, these include hospital staff, physicians, and patients they care for.

INTRODUCTION

Recent advances in intensive care medicine, combined with an aging population, have led to an increase in the number of survivors following a period of critical illness. However, many of these patients are left with significant sequelae of disease despite surviving the acute phase of their illness. Often patients return home with an inability to function or live as fully as before. Others leave the intensive care unit (ICU) setting but experience prolonged physical disability, permanent loss of

function, or the need for repeated hospitalization and ongoing supportive care. The most ill of these critical illness survivors become hospital dependent or chronically critically ill (**Table 1**).^{1,2} There is a significant increase in 1-year morbidity for this cohort of patients, despite their having recovered from their critical illnesses.

Although there are many factors that contribute to debility and decline following a period of critical care, one that has a large negative impact on recovery is the development of ICU-acquired weakness.^{3,4} Patients who have ICU-acquired

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Table 1
Hospital dependency and chronic critical illness

Hospital-dependent Patients	Chronically Critically Ill Patients ^a
Multiple chronic conditions	Continuous need for life-sustaining equipment
Precipitous flares of their disease	Cognitive dysfunction
Decreased physiologic reserve	Neuromuscular weakness
Need for intensive monitoring	Endocrinopathy
Need for immediate medical response	Malnutrition/anasarca
—	Skin breakdown
—	Symptom distress

^a A chronically critically ill patient has 1 or more of the characteristics of hospital-dependent patients plus at least 1 of the conditions in the right-hand column.

Data from Nelson JE, Cox CE, Hope AA, et al. Chronic critical illness. *Am J Respir Crit Care Med* 2010;182(4):446–54; and Reuben DB, Tinetti ME. The hospital-dependent patient. *N Engl J Med* 2014;370(8):694–7.

weakness have higher rates of muscle wasting and weakness,⁵ prolonged dependency on mechanical ventilation,⁶ and even an increase in complications during their ICU stays, up to and including an increase in mortality.⁷ ICU-acquired weakness also has several key elements making it a ready target for intervention: it has a known cause (severe inflammatory illness combined with immobility and possible adverse effects from some medications) and a known intervention (early and aggressive physical therapy and mobility during the period of acute illness) that mitigates its effects.^{8,9} In addition, this proven intervention is not cost prohibitive¹⁰ and does not carry significant risk to the patient.¹¹ However, despite clinicians having identified a problem with significant consequences as well as a potential solution, implementation of early physical therapy and mobility lags behind the evidence for doing so. The questions are therefore these: why are early mobility programs not up and running in all medical and surgical ICUs in this country? What are the barriers to implementing an early mobility program? How can the barriers be overcome?

THE CHALLENGE OF EARLY INTENSIVE CARE UNIT MOBILIZATION AS A CHANGE INITIATIVE

Instituting a new initiative is challenging. The barriers to change in the health care setting are ever more present and intimidating and may contribute to the nihilistic perception that there is an eternal and unbridgeable gap between what is considered best practice and what happens in the real world. There are many pertinent examples in the ICU of practices that are demonstrably good for patients but difficult to get physicians and staff to fully and readily adopt, ranging from hand hygiene to

sedation practices. The issue related to early mobilization of ICU patients is another salient example of expert panels and guideline development seemingly disconnected from bedside adoption of new recommendations. Within the 2013 clinical practice guideline recommendations from the American College of Critical Care Medicine Taskforce, early mobilization of adult ICU patients was strongly endorsed as a way to reduce incidence and duration of delirium.¹² As outlined earlier, studies have shown early mobilization to be safe, feasible, and beneficial by improving delirium days and discharge functional status. Although there is a paucity of data pertaining to true practice patterns surrounding ICU mobilization in the United States, point prevalence studies from other countries show that widespread adoption has been painstakingly slow. For example, in Germany, only 24% of the 783 mechanically ventilated patients among 116 participating ICUs were mobilized out of the bed (defined as sitting on the edge of the bed or higher level of mobilization) on a single survey date.¹³ A similar single-day survey study in Australia and New Zealand among 38 participating ICUs reported that none of the 222 mechanically ventilated patients were mobilized out of bed (ie, sat out of bed, stood up, or ambulated), although lesser intensities of mobilization, such as sitting at the edge of the bed or in-bed exercises, occurred with variable frequency over the course of the day.¹⁴

How can evidence-based change best be cultivated, adopted, and promoted in the health care environment? Although addressing knowledge deficits is a key determinant, focusing on education alone is insufficient to achieve behavioral change.¹⁵ Understanding concepts related to systems and institutional behavior, as well as behavioral psychology, that help to elucidate barriers and motivations at an individual level can be

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