

# 2015 Acute Care Lecture Award: Solidifying the Future of the Physical Therapy Profession in ICU: The Time Is Now!

Physical therapists working with patients in the intensive care unit (ICU) face immense and complex challenges. An important clinical scenario found in patients during an ICU stay is the limitation and deterioration of functional status. For selected patients, early mobility and physical activity can lead to an increase in functional capacity and improve quality of life. It is also possible to have an associated decreased length of hospital stay and subsequent reduction in hospital costs. To realistically establish the role of physical therapy in the ICU, we need to understand the best way to implement our skills, from patient selection and therapy techniques to choice of outcome measures. The intention of this lecture is to inspire physical therapy clinicians and researchers to reflect on and understand the clinical principles that promote best practices in the ICU. Solidifying the future of physical therapy in the ICU is essential. The time to act is now.

## OBJECTIVES

- Understand the challenges for clinical practice and research in the ICU.
- Recognize the importance of outcome measures for patients receiving physical therapy in the ICU.
- Discuss ways to advance the profession and improve quality of care for patients in the ICU.

First, I would like to thank each of you for being here today. I am deeply honored for the recognition and for the privilege of presenting the 2015 Acute Care Lecture Award. I want to thank the Nominating Committee of the Acute Care Section, as well the colleagues who nominated me. In addition, I would like

to express my sincere gratitude to all the patients I have cared for. I have learned so much from them and each patient has been a gift to me. My mission here today is to open your eyes to the challenges we face as we provide physical therapy to patients in acute care and in the ICU across the country and abroad. It is also my mission to open your eyes to the amazing opportunities we have to influence outcomes and quality of life for acutely ill patients.

From the moment I heard about my nomination for this award, I have been asking myself: Why me? If anyone told me 30 years ago I would be here today, I would never believe it. This lecture has given me an opportunity to reflect on several aspects of my personal and professional life. It allowed me to relive the steps since my graduation as a physical therapist up to where I am in the profession today. I carefully chose the topic for this lecture to address a specific area in acute care physical therapy practice. The lecture will focus on critical care because I have invested a significant portion of my life to it and this is a great passion of mine. Ultimately, this lecture is not about what I am going to tell you, but rather what you will be able to take home with you when you leave tonight and, although I will be speaking about critical care in particular, I challenge you to apply these principles to the particular acute care area in which you practice.

In order to talk about the future, I feel I have to briefly mention the past. I would like to start by sharing with you a little about my journey. In 1981, I received a Bachelor's degree in Physical Therapy in Brazil, and for 3 years, had a challenging experience as a young new grad working as a clinical instructor for students and supervising physical therapy services in 2 acute care hospitals. Then, a physical therapy school in my hometown offered me a position to help in the curriculum development and a teaching career in their program. At the same time, I had an opportunity to come

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to the United States. I had to make a choice. Staying in Brazil would offer me a predictable educational career and job security, which was a rare opportunity at the time. Moving to a different country would be a much less predictable future. I did, however, made the decision to come to the United States and arrived here with my husband exactly 30 years ago, in February of 1985. After a few weeks, I realized that my dream was to practice as a physical therapist here. That was the beginning of a long, challenging, and uncertain career path for me in this country.

The process of getting a physical therapy license was a struggle as a foreigner. After 2.5 years, I was able to get my license to practice in the state of Texas. Then the Houston Methodist Hospital sponsored me to work in this country, and for this, I will be eternally grateful to this institution. When I started working at this hospital, my first choice was chest physical therapy in the ICU for a very special reason: that was the “safest” place for me to work because of my limited ability to speak the language. The majority of patients were on a ventilator and could not talk. The communication with physicians and nurses was limited to the bedside; families were rarely present, and most important of all: I did not have to talk on the phone. Five years later, I experienced being the mother of a critically ill infant for several months. That unfortunate experience taught me invaluable lessons on how to deal with the family members of my own patients. One year later, due to a high-risk pregnancy, I spent 6 months on complete bed rest. Once again, I learned from this experience and was able to really understand the extreme physical and psychological discomfort along with loss of autonomy associated with an extended period of bed rest. As soon as I returned to work, I was determined that all of my efforts would be focused on increasing my patient’s mobility.

By the early 1990s, I was very fortunate to work with ICU nurses and physicians who had the compelling view that if patients got out of bed and walked, they would get better much faster. These nurses and physicians challenged me to try different therapeutic interventions to achieve the goal of improving a patient’s functional mobility. As a physical therapist, even without the appropriate knowledge and training in critical care, I accepted that challenge. Initially, I was extremely hesitant because I was well aware of my knowledge limitations and the lack of a physical therapy mentor to guide my practice because I could not find any published information on this topic. I then turned to the literature on bed rest. Although I knew the detrimental effects of bed rest, reading the literature on the topic convinced me that early mobility and physical activity in these patients was the right thing to do and it would improve the functional outcomes of selected patients with critical illness. I continued to

be personally and professionally passionate about this practice, but reluctant at times to try different therapeutic approaches because of the absence of literature and my lack of clinical experience in critical care. Over the years, I saw remarkable results from therapeutic interventions I used for patients on prolonged mechanical ventilation and I felt obligated to share my positive experiences. I started with posters, platform presentations at the American Physical Therapy Association conferences, and lectures to physical therapists, nurses, and medical students in Houston. Then, in 2006, I published an article addressing early mobilization in the ICU and included a picture of a patient walking using a portable ventilator.<sup>1</sup> That was the first picture in the literature illustrating early mobility and walking in the ICU since the 1970s.<sup>2,3</sup> After that, I continued to write articles, conducted simple research studies, and now I have the opportunity to teach colleagues nationally and internationally. This a short glimpse of my journey as a physical therapist with exclusive practice in acute and critical care. All of these life experiences have brought me to where I am today—and still working every day to improve the outcomes for patients in the ICU.

Let me take you back in time for just a moment. When I started working in Texas, ICU physical therapy in most hospitals was primarily focused on chest physical therapy and exercises. I personally did passive range of motion as the sole therapeutic intervention, sometimes twice/day in the same patient. I remember that, at that time, it was also an acceptable acute care practice to provide hot pack, ultrasound, and massage twice/daily for inpatients with low back pain. Patients stayed in the acute care hospital as long as they needed to recover from an acute illness. The reimbursement at that time was fee for service and there were no questions asked in regard to the type or frequency of physical therapy interventions. That was the reality 3 decades ago. Now, let me jump forward and talk about the present.

*The first objective for this lecture is that physical therapists will understand the challenges for clinical practice and research in the ICU.* The science of critical care has become increasingly complex, costly, and it is important to be aware of the issues associated with the escalating cost of health care. Because of the emerging literature in the past few years, physical therapy with focus on early mobility is now largely used in ICUs throughout this country. The goal of a physical therapy program for patients with critical illness is to promote recovery of functional mobility and prevent complications related to bed rest. The focus of care is to improve muscle strength or motor control to promote increased function, improve endurance, and progressively improve functional mobility.<sup>4</sup> It is possible to accomplish these goals with early

physical activity and rehabilitation in patients with a possibility of recovery from the critical illness. However, there are currently several challenges that may impact physical therapy in critical care practice and outcomes. They include:

1. *ICU culture that promotes sedation and bed rest.* The reality is that, unfortunately, the practice of deep, prolonged sedation and bed rest is still present in a large number of critical care units worldwide. To change this practice, a care process model needs to be established but it may take several years for its implementation.<sup>5</sup> A culture change in the ICU regarding this issue is crucial to maximize mobilization efforts and to improve patient's functional mobility.
2. *Severity of illness in ICU patient population.* Critical illness presents with diverse physiological mechanisms that may lead to life-threatening situations and result in significant morbidity or mortality. It is a complex syndrome caused by a large variety of diseases and conditions, and, most importantly, it may have an unpredictable clinical course. Several factors may contribute to a critical illness at different times. I always look at my critically ill patients as being a different patient every day, they can be better or worse, but it is very unlikely they will be the same from one day to another or even in the same day. Any time the patient presents differently, we must then provide different therapeutic interventions. It becomes a challenge when trying to establish universal protocols or guidelines to manage weakness and functional deficits in critically ill patients with fluctuating medical status.
3. *Lack of complete understanding about skeletal muscle weakness in critical illness.* Skeletal muscle weakness is a common consequence of critical illness, can affect all parts of the motor unit, and is associated with a variable extent of neuromuscular involvement. The specific pathophysiological mechanism causing this neuromuscular failure is unclear. It is linked with ventilator weaning failure, prolonged rehabilitation, hospital mortality, and significant short-term and long-term functional impairments. The acute skeletal muscle wasting in critical illness leads to impaired physical function with an unpredictable recovery course, resulting in immense challenges for physical therapists working in the ICU and across the continuum of care. It has been recently reported that muscle wasting occurs early and rapidly in the first week of critical illness, and is more severe in patients with multi-organ failure compared with single-organ failure.<sup>6</sup> A variety of prevention and therapeutic approaches have been proposed, but unfortunately, we currently

do not have any specific solutions or answers for the management of this complex phenomenon. I often ask myself about the possibility of potentially affecting the muscle cells in a negative way by providing aggressive exercises in the early stages of critical illness when the body is trying to support failing vital organs. It concerns me even further when I read published studies reporting a single intervention being associated with prevention of such a complex process, which, as I mentioned earlier, is still not clearly understood. The term "ICU-acquired weakness" has been largely used in the literature to address the presence of weakness without any possible cause other than the critical illness. ICU-acquired weakness and delirium have been even addressed in the literature as an iatrogenic risk with epidemic proportions.<sup>7</sup> Today, I am particularly concerned about widespread use of the term "ICU-acquired weakness" by a large number of authors in the literature. This terminology may negatively impact reimbursement for rehabilitation and hospitals in the future. We cannot forget the reality that third-party payers are increasingly denying reimbursement for many hospital-acquired conditions.

4. *A multidisciplinary team is required to mobilize patients in the ICU.* No single health care professional alone can accomplish the task of mobilizing patients with critical illness. An interdisciplinary health care team approach ensures patient safety.<sup>8</sup> The team includes not only multiple professions but also the patient and family. Physical therapists should be an integral part of the ICU team. It is essential that the specific roles of every team member be clearly defined. Changing the thought process, behaviors, and culture of ICU professionals toward a team approach will definitively promote success and improve outcomes.
5. *Unclear roles and responsibilities of physical therapy in the ICU.* It is a fact that, to this date, there are not national and worldwide-defined standards for the roles and responsibilities of the physical therapist in the ICU. It is also important to note that, internationally, most of the time the primary focus of the physical therapy profession in the ICU is on respiratory care. This is largely because respiratory therapy is an established and licensed profession only in North America,<sup>9</sup> Saudi Arabia, and in the Philippines. It is very difficult for other health care professionals to understand what we do as physical therapists if, as a physical therapy profession, we still cannot clearly define our roles and responsibilities in the ICU.
6. *Lack of specific physical therapy training in critical care.* Early mobilization of critically ill patients on mechanical ventilation is an advanced

physical therapy practice and requires specific knowledge and skills.<sup>4</sup> The limited number of trained professionals available to provide physical therapy in the ICU in this country is also a challenge. Unlike specific education developed for physicians and nurses practicing in critical care, inconsistent training is a reality in physical therapy programs and can be a challenge. It is of special concern to me that, even without a clinical internship in the ICU or acute care, physical therapists in the United States are allowed to care for critically ill patients as soon as they are licensed to practice in any state. Similarly, in some facilities, clinicians practicing in outpatient settings are expected to treat complex acute care patients on the weekends, and sometimes even in the ICU, despite their lack of training or clinical experience in this area. The need for advanced training for physical therapists practicing in the ICU has become evident; however, the education process up until recently was not clearly defined. I am very fortunate to be part of the development team and now faculty member of Houston Methodist Hospital's Critical Care Fellowship program for physical therapy, which became the nation's first program to be accredited by the American Board of Physical Therapy Residency and Fellowship Education. Two other programs are now available in this country and hopefully several more will be offered in the future. This is a huge step toward moving the profession in the right direction. New to the horizon, and another huge step forward, is the approval for the development of acute care residencies, which will provide much needed education for new graduates, as they learn the complexities of acute care of practice. We now must work together to develop and implement residencies and fellowship programs, which offer a similar set of knowledge, skills, and competencies.

7. *Limited specialized physical therapy equipment and resources.* In order to provide early mobility and physical activity to patients in the ICU with best outcomes, we need to have adequate equipment and resources. It is common to have limited support from the leadership to provide the necessary resources. Patients and staff members are at risk for developing activity-related injuries in the ICU. Special mobility equipment such as stretcher chairs, lifts, and special walkers are necessary to promote adequate mobility activities. Most importantly, a single professional is unable to complete these tasks. There are a large number of opportunities to explore the vital role and feasibility of physical therapy technicians or aides as well as the use of different equipment to assist in the mobilization of such complex patients.

8. *Inconsistent physical therapy practice in the ICU.* Despite all of the recent published literature and the widespread use of physical therapy services in ICUs, multiple and inconsistent practice patterns persist for physicians, nurses, and physical therapists. In addition, rotating staff every few months is routine practice in acute care for many institutions in this country. This can lead to inconsistent physical therapy care and may limit the development of rapport and trust with the other ICU team members. Several studies have shown that mobilizing patients in the ICU is safe, feasible, improves physical function, and reduces the length of hospital stay, costs, and delirium.<sup>10-12</sup> However, the evidence for specific therapeutic interventions, frequency, and intensity to achieve the above outcomes remains inconclusive. All of these factors cause variability in practice patterns, which may influence outcomes.

*The second objective for this lecture is for physical therapists to recognize the importance of outcome measures for patients receiving physical therapy in the ICU.* As the medical status of patients can improve or deteriorate, the functional status will also change. We must ask ourselves questions that may help us reflect on the effectiveness of practice of physical therapy. We need to ask what constitutes progress, how we measure the progress when we prescribe different therapeutic interventions, and how we know that the therapeutic strategies used make a difference or have any lasting effects.

There is an urgent need to have reliable outcome tools that will objectively quantify the mobility status of patients at a specific moment in time, detect changes over time during the course of an ICU stay, and ultimately standardize the assessment of mobility status for these patients. There are currently a few tools available: the Physical Function Outcome Measure,<sup>13,14</sup> Functional Status Score for ICU,<sup>15</sup> ICU Mobility Scale,<sup>16</sup> the Chelsea Critical Care Physical Assessment Tool (CPAx),<sup>17,18</sup> and the Perme ICU Mobility Score. Each one of these tools has particular strengths and limitations. The development of an outcome measure tool for physical therapy in the ICU has particularly intrigued me for more than 2 decades and I always had a significant interest in finding the answers to all the aforementioned questions. For this reason, I developed the Perme ICU Mobility Score (Perme Score).<sup>19,20</sup> The Perme Score is a novel ICU-specific tool to measure a patient's mobility status, starting with the ability to follow commands and culminating in the distance walked in 2 minutes. It is a practical tool for clinical and research purposes in the ICU patient population, and it takes just a few minutes to complete. The Perme Score has been found

to be a reliable tool to assess mobility status of ICU patients in a specific moment in time.<sup>20</sup> Ultimately, it is important that clinicians have a variety of tools available because the measurement of mobility status has important implications and will help clinicians when documenting response to different therapeutic strategies.

*Let us now focus on the future. The last objective for this lecture is to discuss ways to advance the physical therapy profession and improve quality of care for patients in the ICU.* So as I began to address the earlier objectives, the need for solutions became more apparent. We must advance the profession and achieve excellence in the management of complex patients with rapidly changing medical status. In my view, any solution has to include outcomes and goals in the following areas: education, research, and delivery of physical therapy services.

I will start with *education*, which is essential and a priority. Education will support the necessary knowledge to provide safety and quality care for patients. Limited knowledge and understanding of critical illness, ICU environment, and equipment can potentially limit outcomes and increase safety risks for these patients. In order to educate our students, our acute care physical therapists, and our ICU team members, we must develop education goals and expectations for their specific needs. The use of simulators as an education tool can help standardization of advanced training, evaluation, and testing of students, residents, fellows, and mentors. The development of web-based tools is also essential to support education. In the future, these 2 above options may become the most important components of training in critical care. They will assist not only with training but also with the ability to evaluate clinical skills and knowledge.

When we look at ways to provide better education to our physical therapy students, we must look at increasing their awareness of the roles and responsibilities of physical therapy profession in the ICU. We need to provide adequate learning opportunities in cardiopulmonary topics, in the classroom and clinically, with focus on ample understanding of oxygen delivery, consumption, and cardiopulmonary diseases. In addition, specific entry-level education is necessary toward the assessment of patient with critical illness and decision making in complex clinical situations. The creation of postprofessional clinical experiences through acute care residencies and critical care fellowships will enable clinicians to be fully educated in the complexities of acute care and critical care.

The approach to further educate acute care licensed physical therapy professionals involves in-depth knowledge and essential critical care skills to practice competently with this patient population. The

clinicians need to be supported by continuing education, observations, and mentored practice, which goes well beyond the basic competency procedures of orientation processes currently available in most institutions. As far as the mentors, we should not forget the importance of addressing the specific qualifications for professionals providing mentorship in critical care. We definitively need more fellowships across the country that are designed and equipped to provide training for advanced practice in critical care physical therapy.

In order to effectively teach our critical care colleagues, we need to address the specific educational needs of each member of the ICU team. We have a duty to educate our ICU team members primarily to increase their awareness of the negative side effects of prolonged sedation and bed rest, as well as the benefits of early mobility and adequate physical therapy use. Furthermore, we must strive to have all members of the ICU team include patient mobility as part of their daily plan of care.

As part of the maturing process as a profession, physical therapists with a common interest in critical care medicine must work together with the goal of determining areas of *research priorities*. Our colleagues, researchers and clinicians, must consistently seek answers to clinical questions. It is very exciting to know that we currently have several opportunities to network globally with different critical care professionals who share similar interests. As a result, there are several articles recently published with international cooperation.

Research studies addressing physical therapy interventions in the ICU must be performed using valid and comparable outcome measures. When designing clinical studies, it is of utmost importance to consider the heterogeneity in the critically ill patient population, their similarities versus their differences, and related factors such as multiple organ involvement, severity of illness, age, and pre-morbid functional status. Other factors to be considered include the large variety of available therapeutic interventions, frequency, intensity of physical therapy treatments, skill level of the professional providing physical therapy, and the fact that these patients may present with a variety of clinical situations from day to day and, sometimes, even in the same day.

It is important to reflect on the possibility of reproducing the research study and achieving the same results in other institutions. Another aspect is the likelihood of applying the same research protocol into the clinical setting in large scales. As an example, we should consider the feasibility of having physical therapy provided by a consistent team (mobility critical care nurse, physical therapist, and an aide), cotreatments by physical and occupational therapists,

or providing one specific therapeutic intervention (ie, bicycling) for each patient, every day, in every the ICU. Undoubtedly, there is an absolute need for research in the area of physical therapy in critical care to both delineate and advise clinicians on the best way to manage the care for these patients.

As far as the *delivery of physical therapy services*, our goal is to increase the physical therapy service coverage in the ICU through adequate staff availability and training. Doing our jobs well also means identifying staff members who have an interest and aptitude for treating complex critically ill patients. Of utmost importance is the provision of appropriate physical therapy services that include consulting, examination, evaluation, and treatment. Patients with critical illness are different from one another, so the interventions we provide should be different. Every time we choose a therapeutic intervention, it must be based on the patient's condition and goals, and ultimately because the physical therapy clinician believes that is the right intervention for that specific patient at that particular time.

Physical therapists must recognize the difference between a "patient in the ICU" and a "patient with a critical illness." The ICU is a centralized location where we keep the sickest hospitalized patients, usually when there is a threat to the delivery and consumption of oxygen that sustains life. The critically ill patients with life-threatening conditions will always be in the ICU; however, for many different reasons, patients can be in the ICU and not have a critical illness. Therefore, it should be clear to every physical therapist that, for clinical and research purposes, treating a patient in the ICU can be quite different from treating a critically ill patient. Physical therapists also need to reflect on and understand some of the key principles that promote best practices. My opinion is that the most important skill for a physical therapist practicing in the ICU is to recognize when to initiate, delay, progress, and terminate treatment in patients with critical illness.

We must also encourage every physical therapist to apply evidence-based practice as a standard daily practice. Evidence-based practice involves a systematic and sensible use of the best available evidence to assist with clinical decisions and improve outcomes. There are currently a large number of published studies on early mobility and physical therapy in the ICU, but clinicians must be able to critically appraise the literature with special attention to the clinical relevance, validity, and applicability for different critical care units.

When looking toward the future, there are multiple challenges that must be addressed. I think empowerment and consistency are the keys for the success of the physical therapy profession in the future. We must

come together with our fellow critical care colleagues to support each other as a team. This is the only way we can advance and continue to deliver excellent quality of care for our critically ill patients. Above all, acute care physical therapy must be firmly recognized as a specialty with a well-defined role, core knowledge competencies, and training. It is imperative that we maintain leadership in this area. The practice of physical therapy for patients experiencing neuromuscular weakness associated with critical illness in every setting needs to evolve in order to continue to lead in the constantly changing world of medicine. As the experts in this field, physical therapists should be the consultants of choice for any issues associated with muscle weakness, nerve dysfunction, and impaired function. We must continuously improve and innovate in order to promote optimal recovery and the best possible outcome. Our task is to continue toward our goals, while at the same time, being open and responsive to new ideas.

In order to consistently improve functional outcomes, perhaps we must focus on functional reconciliation where every team member is well aware of the patient's mobility status before ICU admission. We then need to think about the implementation of simple mobility measures that can be incorporated and sustained in any ICU. An example of one such measure is emphasis on a strong nurse mobility program to prevent negative side effects of bed rest, and maybe propose that every ICU patient should be out of bed by a certain time every day unless there is a need for a prescribed, mandated bed rest. The reasons for bed rest should be clear to everyone, never a default order, but rather an exception with specific consideration for each patient on a daily basis. Each member of the critical care team must consider out-of-bed activities for patients not meeting specific criteria for bed rest, even before physical therapy is involved in the case. Another simple measure would be to incorporate active movement of extremities as part of the routine care as soon as patients are awake and able to follow simple commands. These active exercises should be encouraged by every member of the ICU team and considered a priority. We should strongly reflect on additional simple physical activities these patients could do throughout the day. It is important to be aware that proposal of new initiatives will involve culture and behavioral changes, which can definitively present with additional challenges. Throughout my career I have prescribed "homework" for all my patients. As an example, I usually prescribe for patients to perform 100 leg lifts/day, not at once, of course, but they have all day to complete the task. Some patients do it, others do not. In any case, the expectation is the same. It is interesting that over the years several nurses have adopted

that practice and routinely expect their patients to do the same. Sometimes we can solve complex problems with simple solutions; we just have to find the solutions. All members of the ICU team must also recognize that early mobility in the ICU does not equal physical therapy in the ICU. Early mobility is everyone's job!

As we prepare for the future, physical therapists must be able to understand why the practice of physical therapy for patients with critical illness is important. We should ask ourselves: What is the product that the physical therapy profession sells in the ICU? Where do we go from here? I do not have any specific answers to any of the questions, challenges, and problems I mentioned in this lecture. Readiness for the future and a long journey of excellence must include a clear understanding of what sets us apart from everyone else as well as the concept that patients must always be at the center of our decisions. In addition, if it is worth doing, it is worth doing well.

I have a very positive view of the future and I have confidence that our message will be accepted. Ultimately, I do have a vision that we can and we should become the leaders in the functional recovery for patients during and after surviving a critical illness. But, how do we do that? My vision is that in the future every physical therapist practicing in the ICU will, before anything else, have adequate knowledge of ICU equipment and critical care issues, use evidence-based practice, identify appropriate patients for our services, be able to understand mechanical ventilation to make suggestions about different ventilator settings to minimize work of breathing during mobility activities, and will also synthesize the information from other team members to make their own clinical decisions.

In order to solidify the role of this physical therapy practice, we need to understand the best way to implement our skills, from patient selection to choices of therapeutic interventions and outcome measures. We have to make a decision. Do we want to be seen as the professionals who just do the passive range of motion in the ICU, get patients out of bed, and walk patients on ventilators when told to do so? Or, alternatively, do we want to be recognized as noninvasive practitioners with strong clinical reasoning and clinical skills who can significantly influence outcomes for critically ill patients? We must choose the latter option.

Each one of us needs to look at ourselves, our methods, and the way we practice. We need to challenge ourselves to modify our routine, help develop respect for the physical therapy profession, and have the right knowledge, skills, attitudes, and behaviors. We have to set standards for the role of the profession

in critical care, be present and have an opinion any time that weakness or neuromuscular involvement in the critically ill is addressed. Every day we must also strive to provide the best physical therapy care and meet the specific needs of every patient throughout the entire continuum of care, not only in the ICU. We must be able to concisely explain to the public, legislators, payers, and our health care colleagues who we are and what we do. We must also move forward with our research efforts to determine effectiveness of our interventions and development of new treatment strategies.

In conclusion, it is my sincere hope that we will never forget the essence of what physical therapists do in any clinical setting, which is to restore function. Only with that self-confidence and understanding in mind we will mature, succeed, and reach the ultimate goal to help patients in the ICU and the ones who survive a critical illness regain their independence and reintegrate in the society.

Solidifying the future of physical therapy in the ICU is essential. The time to act is now!

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