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# Advancing Academic Capacity in Physical and Rehabilitation Medicine to Strengthen Rehabilitation in Health Systems Worldwide

## *A Joint Effort by the European Academy of Rehabilitation Medicine, the Association of Academic Physiatrists, and the International Society of Physical and Rehabilitation Medicine*

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Rehabilitation is the health strategy of the 21st century.<sup>1,2</sup> In retrospect, the 19th century was the century of prevention, resulting in an almost doubling of life expectancy by improving the availability of clean water, sewage, sanitation, vaccination, and nutrition and making these services available to the entire population in developed countries. The 20th century added additional years of life with emergency services and surgery leading to increased survival of previously lethal injuries, pharmacological treatments including antibiotics, immune suppressants, and cancer treatments that turned previously major infectious conditions such as HIV and a range of cancers into chronic diseases. The challenge of the 21st century is now to optimize functioning in people with acute and chronic conditions and aging—“adding life to years.”

According to the World Health Organization’s (WHO) global estimates of the need for rehabilitation based on the global burden of diseases study of 2019,<sup>3</sup> 2.41 billion individuals live with

conditions that can benefit from an improvement in functioning by means of rehabilitation. To address the universal need for rehabilitation for people living with functioning limitations, the WHO in 2017 launched the call for action Rehabilitation 2030. Keys to the successful strengthening of rehabilitation in health systems worldwide are (1) the mainstreaming of rehabilitation as a public health strategy under universal health coverage, (2) the integration of systematically collected functioning information into health information systems, and (3) the demonstration of the social return on investment of rehabilitation.<sup>4</sup>

The European Academy of Rehabilitation Medicine (EARM) has recently discussed the implications of the emergence of rehabilitation as a public health strategy at center stage for shaping the health systems of the 21st century.<sup>5</sup> This included a recognition of the need to “think outside of the box” of our medical specialty and engage in health systems thinking. Toward this goal, the first fellow of the EARM has developed a policy framework “Supporting government policies to embed and expand rehabilitation in health systems in Europe: a framework for action.”<sup>6</sup>

In light of this framework, it is clear that it is the responsibility of academic organizations—in Europe the EARM, in the United States, the Association of Academic Physiatrists (AAP), and

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internationally the International Society of Physical and Rehabilitation Medicine (ISPRM)—to help develop the workforce needed to expand and strengthen the quality of rehabilitation services. To achieve these related goals, it is essential to enhance academic capacity in universities and academic departments and to have the support of nonacademic professional organizations. Beyond the classical triad of the medical profession in research, education, and clinical practice, academic capacity also entails academic leadership and academic career development. Figure 1 illustrates the various factors that influence academic capacity in PRM.

Building academic capacity can also benefit capacity building outside of the medical specialty of physical and rehabilitation medicine (PRM; also known in some countries as physical medicine and rehabilitation [PM&R] or rehabilitation medicine [RM]). The EARM, AAP, and ISPRM, working in concert, aim to contribute to the strengthening of rehabilitation in global health systems in response to the WHO’s Call for Action by means of a joint effort to advance academic capacity in Europe, the United States, and countries worldwide. The objective of this document is to develop a common understanding of academic capacity in PRM from different perspectives and grounded in experience that demonstrates that the best foundation for strengthening academic capacity for rehabilitation is strengthening it for the underlying medical foundation. We discuss some of the most important aspects of advancing academic capacity in an attempt to inform younger professionals thinking about a career in academics, professional societies that could include advancing academic capacity in their mission, and

policymakers whose decisions can make a substantial difference in setting priorities and allocating resources.

### The Importance of Promoting PRM as a Medical Specialty to Strengthen Rehabilitation in Health Systems Worldwide

Although all health strategies have functioning as the eventual objective, the primary and defining aim of rehabilitation is to optimize functioning.<sup>7-9</sup> The complex nature of PRM as a discrete medical specialty, and the challenge that it creates academically, can be addressed more effectively given our understanding of the scope and aim of rehabilitation. This can inform the task of developing and sustaining academic capacity for PRM research and clinical practice and ultimately for academic leadership and career development. As mentioned previously, more than 2.4 billion individuals can potentially benefit from rehabilitation,<sup>3</sup> and these individuals experience a vast range of physical and mental health conditions (permanent or temporary)—as well as the natural reduction of functioning associated with the aging process. From a life-course perspective, in short, everyone is a beneficiary of PRM.

This wide range of beneficiaries and underlying health conditions, however, requires an equally wide range of competencies and skillsets for the PRM physician (also known as physiatrists). Moreover, although discrete, and in that sense specialized, PRM is also an inherently collaborative area of medicine. Physical and rehabilitation medicine physicians work with other

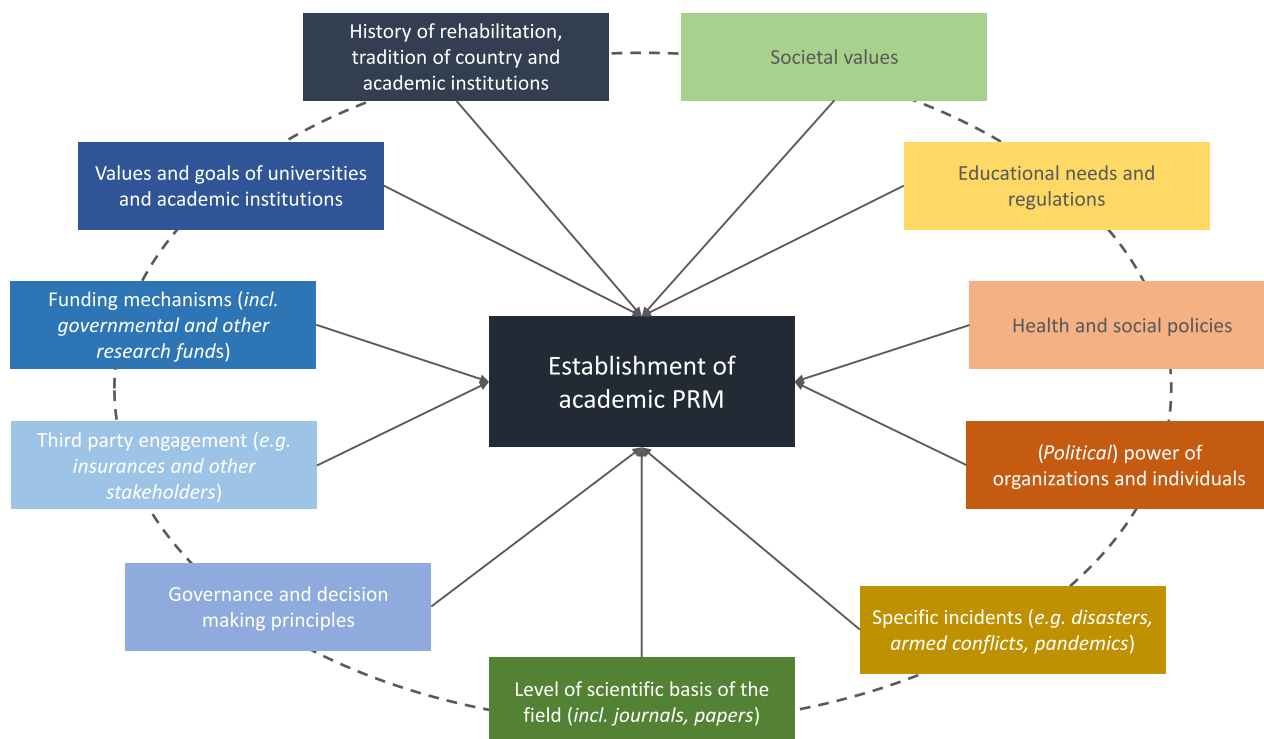


FIGURE 1. Factors influencing the development of academic PRM.

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medical specialists and adopt techniques usually associated with the promotive, preventive, and even curative health strategies to best serve their patients. Physical and rehabilitation medicine physicians can also contribute to public health by implementing rehabilitation strategies, such as the promotion of exercise, at the level of the population. From the point of view of academics, this feature of PRM presents the challenge: as the essential core competencies of PRM are developed to a professional standard, the invaluable collaborative linkage with other areas of medicine must be forged to create a synergetic unity both in teaching, clinical practice, and research. Furthermore, a strong collaborative association with other rehabilitation professionals creates an important synergy that benefits students, trainees, and patients.

Given the daunting range of health conditions during the course of which rehabilitation services can be beneficial to the well-being of patients, PRM clinical education and training must draw upon a substantial medical knowledge base derived from scholarly activity and scientific research. For its part, PRM research is inherently, not merely multidisciplinary, but interdisciplinary. To secure the collaborative outcome, it draws in results across scientific disciplines—not only biomedical but also biomechanical, and social—and integrates these to create an evidence base that is relevant to the practice of PRM.

## The Long-Term Perspective: Academic Careers in PRM

### The Academic Lifecycle

It is important to take a long-term perspective when thinking about a career in academic PRM.<sup>5</sup> An academic career is divided into several phases, and each has different requirements. The best opportunity to start thinking about an academic career in PRM is in medical school or residency training, an ideal time to explore the two fundamental activities of an academic career: research and education. Universities and academic medical centers are typical workplaces for those interested in an academic career. These environments are characterized by the search for excellence, where the very best clinicians, physician-scientists, and educators work, learn, and share their ideas.

The various stages of an academic career can be briefly described as follows:

The early years of an academic career are dedicated to the development of excellent skills—clinical, scientific, and educational—getting to know your colleagues and peers and developing a reputation for performing high-quality work. The identification of mentors and role models is an essential step in this stage. Midcareer academicians continues to work on their skills and knowledge, but at this stage, there is a need to expand academic activities beyond the home institution. Participation in international activities, peer review, journal editorial board, and lecturing in congresses become more important. Writing and publishing also become essential when academic advancement and promotion is an aspiration. Finally, senior academicians, professors, and department heads, who have achieved a high level of distinction in the academic world, must nonetheless continue to be active and productive in research and education. This is the time when an academician becomes a mentor and role model for the younger generation of researchers and educators.

## Facilitators and Barriers

It must be acknowledged that a successful academic career is dependent not only on the talents and qualities of an individual but also on the presence of environmental factors that could facilitate or impede the achievement of professional goals. One of the most important facilitators of an academic career is the presence of mentors and role models. The relationship between a mentor and a mentee is a two-way professional and personal relationship. Mentors support younger PRM physicians in making career decisions, managing obstacles, and dilemmas and making the right choices. Younger academicians can have more than one mentor who should be recognized as successful academicians themselves. A mentor does not have to be a PRM physician. Role models, on the other hand, do not need to have a personal relationship with the young academician, and it is possible to have different role models for various competencies (eg, research, lecturing, and writing skills).

Another important enabler of a successful academic career is the maintenance of a healthy lifestyle and balance between the demands of family life and those of an academic environment. This is particularly important in the case of women PRM physicians because of unequal family demands. The competitive nature of an academic environment, long working hours, and the constant pursuit of high productivity can impact negatively personal health and family life. Time commitment is significant and includes hours beyond the daily normal schedule. This situation contributes to burnout, which has been frequently described as a risk, although this phenomenon is not limited to a career in academic PRM. Some institutions have more resources to support academic faculty than others, and some of that support is dedicated to making the daily routine easier. Although many of these considerations apply to other types of jobs and working environments, young academicians must understand these details before making a final decision.

## Education, the Basis for Research and Practice

Education is an important component of academic capacity building efforts.<sup>10</sup> Ideally, this process should start during medical school encouraging talented students to consider PRM as their choice of medical specialty and academic institution as the place to work.<sup>11</sup> Physical and rehabilitation medicine graduate medical education is a pivotal stage in the transformation of medical students to specialists, who are providers of patient care, and scholars, who discover new knowledge that adds to the body of evidence supporting the practice of PRM. Knowledge, skills, and attitudes learned during training eventually shape clinical practice patterns and styles. Although there are differences in healthcare settings around the world, there are universal components of PRM care detailed in training program requirements, which attempt to standardize PRM education. Examples are the program requirements of the Accreditation Council of Graduate Medical Education in the United States and the Core Curriculum and Competencies of the ISPRM.<sup>12</sup> Another example of standardized curriculum is the European Board of PRM Standards for Postgraduate Medical Specialist Training.<sup>13</sup>

Various entities provide oversight of sustained clinical competency through continuous certification, such as the one implemented by the American Board of PM&R and the Section and Board of the UEMS-PRM, in addition to mandated possession

of medical licensure. In many countries, psychiatrists are required to demonstrate efforts for lifelong learning through participation in professional meetings and congresses and self-study using online resources and journals, among others. New knowledge generated by research efforts must be integrated into these educational activities. Agencies such as the Accreditation Council of Graduate Medical Education and the European Accreditation Council for Continuing Medical Education hold graduate medical education programs accountable for the quality of PRM education and training through annual surveillance as part of the accreditation process.

The clinical settings in which graduate medical education takes place are also fertile ground to develop inquiry and curiosity, which spawn research that helps better understand pathophysiology of various conditions, discover new treatments, and validate existing clinical practices. Hence, PRM departments typically include research strategies that are in line with their clinical strengths. The accreditation requirements expect faculty and trainees to participate in scholarly activities, including research. Training programs not only educate on PRM clinical care but also educated on research. While only a small fraction of trainees become PRM researchers, knowledge of research methodology and critical reading of articles help assess scientific validity of studies and help practitioners ground their clinical decision making on sound scientific methodology. Because of national legislation, national standards may differ in contents, training methodology, and duration of specialist training. Training sites in many countries are university departments; in other countries, this also includes certified training sites outside universities.

As these programs aim at clinical skills at specialist level as well as qualification for research, university chairs in PRM also are responsible for undergraduate education of medical students and trainees in other medical specialties. Here, the goal is that all medical students and residents in other specialties understand the basic principles of rehabilitation, functioning, and disability. In addition, they must be capable to assess rehabilitation needs and to refer patients to specialized rehabilitation services. Finally, they need to understand the principles of rehabilitation interventions and how to apply them in places where no specialized rehabilitation services are available (eg, in community health services).

## Research: The Sine Qua Non for Building Academic Capacity

To build academic capacity, special attention must be given to research. The conduct of research is the sine qua non for a life in academia.<sup>14</sup> The outcomes of successful research efforts have contributed significantly to the betterment of society in the last few centuries. Thus, leaders in the world of rehabilitation must encourage, promote, and support its conduct.

In relation to health care, the main purpose of scientific research is to generate new knowledge that can help us address fundamental gaps in our understanding of health, illness, injury, and functioning.<sup>15</sup> The survival, growth, and evolution of the field of PRM depend, to a significant degree, on the performance of research and the translation of research findings into practices that become standards of clinical care in health systems. At least two important priorities must be considered: (1) developing a scientific research agenda and (2) building research capacity.

This was articulated by the South African philosopher Palle Yourgrau<sup>16</sup> when explaining how to make scientific discoveries:

“Two elements are crucial. One must have an insight into which problems are ripe for resolution, and one must then have the craft—or invent it—to solve the problem one has had the audacity to recognize as solvable.”

It can be suggested that the identification of the “solvable problems” is the scientific agenda, and the “craft” is the research capacity.

## Scientific Research Agenda

The scientific agenda must be defined based on the knowledge gaps in rehabilitation and the needs of persons experiencing disability.<sup>17</sup> Basic science research in rehabilitation must be supported and integrate approaches that are common to other medical specialties. Clinical and translational research must occupy a special place in the research agenda. In other words, we need to translate basic science findings into clinical knowledge useful and applicable in health delivery systems along the rehabilitation continuum of care for the benefit of people with disabilities and the general population who can benefit from rehabilitation. The field of PRM should take advantage of the dramatic increase in scientific knowledge in the last few decades to enhance our efforts in rehabilitation research. It is also important to conduct research that will inform health policy and decision makers in both the private and public sectors as well as to apply rehabilitation expertise in measuring and optimizing function to strengthen the scientific agenda in population health studies. Finally, we need to promote the conduct of “secondary research” including systematic reviews and meta-analysis as well as qualitative research. Such efforts may identify gaps in knowledge that could be addressed by basic and clinical research efforts.

Because of its relevance to a clinical discipline, it may be relevant to base the development of a research agenda on a model that highlights the importance of an integrative model of human functioning.<sup>18</sup> The backbone of this model is the WHO International Classification of Functioning, Disability, and Health. Furthermore, the research activity based on this model can be characterized as translational because it emphasizes the quest for information that will directly benefit human health.<sup>4,17</sup> To enhance the quality of the research, methodological issues are also being addressed.<sup>19</sup>

## Research Capacity

Building research capacity requires several specific actions and elements.<sup>14</sup> First and foremost, it is essential to bring together a cadre of researchers with the background, talent, and motivation to generate new knowledge and address relevant questions that need to be answered to advance the field. Senior researchers must work closely with more junior investigators who need to be mentored and invite their students to join their projects. It must be noted that the retention of this research workforce is as important as its recruitment. To attract young talent, we must highlight the relevance of rehabilitation as well as the excitement that comes with finding ways to enhance human functioning.

Second, rehabilitation researchers must work in an institution that recognizes the importance of this activity for the

future of mankind. This recognition should be demonstrated by an institutional culture that values research as part of its mission. Furthermore, the institution must commit significant resources to build the infrastructure that is needed to conduct innovative and creative research.

The third important element of this effort is the formation of partnerships. It is true that when people share a common scientific or clinical interest, they can work together and come to a quick understanding of a problem they both know well. Partnerships should include other rehabilitation professionals conducting research as well as researchers whose area of expertise may be outside of rehabilitation. They will come to the conversation with a “fresh look” and a set of skills that may be helpful in addressing some research problems. Ideas and solutions that may be familiar to them may not have been considered by rehabilitation researchers. The concept of a “clinical rehabilitation team” that is ubiquitous in the delivery of patient care in rehabilitation units, clinics, and community should inspire us to find research partners (other team players) whose training and experience may be in other scientific disciplines. Furthermore, these partners may have access to equipment that may not be available elsewhere.

Financial resources are always needed to conduct quality research. These resources may be available in the researcher’s institution but quite often must come from outside sources. Therefore, it is important to educate government funding agencies, philanthropists, and potential industry partners on the importance to include rehabilitation in their funding priorities.<sup>17</sup>

In every endeavor, and research is no exception, it is important to identify the metrics that will help us keep track of the activities and evaluate the progress made. These metrics can apply to each of the four elements of research capacity discussed above. Although the field of PRM has not systematically kept track of these metrics, one of many outcomes that may be of interest is the number of research projects under the category of clinical trials. It has been noted recently that the number of published randomized controlled trials and also of systematic reviews related to rehabilitation topics is outpacing similar metrics in other health-related fields.<sup>20</sup>

## Translating Academic Capacity Into Quality of Care

In academia, healthcare providers have a unique opportunity to pragmatically accelerate the pace of medical discovery within the setting of clinical care delivery.<sup>21</sup> Each patient encounter represents a useful data set, where hypothesis testing is implicit in the design of a treatment plan of care. Simultaneously, learners are alongside master clinicians, rapidly expanding the dissemination of new knowledge. The team-based structure that is inherent to PRM also enhances the ability to incorporate knowledge into care as team members learn from each other and should serve as a model for healthcare systems evolving into effective learning health systems.<sup>22</sup> Transforming the immense clinical data sets that are already collected into research data will advance care more rapidly than traditional clinical trials. This naturally engages the patient as a stakeholder in the development of new knowledge, helping ensure that research is responsive to the needs of the populations that we serve.

As an example of how learning health systems are needed to advance academic capacity, spine care is one of the most common

and costly challenges facing modern health care.<sup>23</sup> However, traditional research has resulted in only modest improvement in outcomes. In academic institutions, research programs in spine care are now insightfully involving clinician, patient, and support group stakeholders in the design process, to ensure that the technology developed is responsive to the needs of the end users to ensure adoption in clinical delivery systems. For example, diverse consortia are underway to perform in depth phenotyping of chronic low back pain in an effort to facilitate an approach that is more patient specific, in other words, more aligned with a patient centered approach. Large interdisciplinary registries have been created to allow “learning while doing” with each clinical encounter providing information to guide future clinical decision making. Incentivizing the collaboration of clinicians from different subspecialties with scientists who are adept at handling large data sets will be critical for the development of novel treatment algorithms.

The COVID-19 pandemic is a contemporary example of the success of this type of approach, leveraging the delivery of health services into the production of quality evidence. In academic institutions, the evaluation by clinicians and scientists of data generated from clinical records rapidly produced improved understanding of the disease, its magnitude and consequences, as well as the most successful interventions. The dissemination and comparison of these results across locations quickly supported decisions on the allocation of financial, technological, and human resources and generated indicators on the quality of services. The successes realized during the pandemic reinforce the argument in favor of the intersection between high-quality services, scientific research, workforce training, and health services management within the context of the epidemiological situation, resource availability, and the social characteristics of each community.

The information and technologies available offer many possibilities, but they also require focus when analyzing treatment efficiency, effectiveness, outcomes, and costs. We must develop and use enhanced information and communication technologies and artificial intelligence to increase patient engagement and give healthcare professionals more time to listen to their patients’ narratives. Finally, we should take advantage of ubiquitous and less intrusive measurement devices (eg, wearables) that could lead to the development of approaches that could serve as predictors to prevent, minimize, and treat disability.<sup>24</sup>

As identified by the WHO, the increasing numbers of individuals who can benefit from PRM approaches necessitate rapid and broad translation of new knowledge to make it available to society and positively impact care. The COVID-19 experience has removed many barriers, creating a more-nimble adoption of newly acquired knowledge into clinical practice to benefit patients in real time. All conditions, which affect function, will benefit from such an approach, and PRM teams are perfectly positioned to create learning health systems to expand academic capacity.

## Building an Academic Workforce From Scratch Within a Quarter of a Century: The Malaysian Example

Ten million Malaysians (of 32.7 million)<sup>25</sup> can benefit from rehabilitation within the health service.<sup>3</sup> This has been made

possible mainly through the rapid growth of the RM academic workforce between 1980 and 2005 (see Table in the Appendix, Supplemental Digital Content 1, <http://links.lww.com/PHM/B737>, for a detailed timeline). The home-grown residency master of rehabilitation medicine<sup>26</sup> was key; the number of rehabilitation physicians, rehabilitation teams, residents, patients, research activities, and collaborations have since multiplied many times over.

Seventeen years of meticulous strategic and innovative human capital building were positioned before the first batch of five residents were admitted. For 15 yrs, the pioneer rehabilitation physician concentrated on human capital building for an academic base, earning the title of mother of rehabilitation. Multidisciplinary teams were established with orthopedic surgeons, pediatricians, internal physicians, and social obstetricians. Interdisciplinary teams were formed at the University Malaya Medical Center by unifying multidisciplinary resources of the rehabilitation unit<sup>27</sup> with others from clinical and supporting departments. Four teams of nurses, physiotherapists, and occupational therapists were sent to world-renowned facilities for special interdisciplinary teams training in stroke, spinal cord injury, pediatric, and upper limb rehabilitation. Transdisciplinary team training of nurses in diabetic foot care was conducted in house by podiatrists. Rehabilitation technology courses and services were upgraded. Multidisciplinary team, interdisciplinary teams, and transdisciplinary team approaches were structured into daily practice and enhanced by regular continuing professional development programs.

Pioneering the residency master of sports medicine and rehabilitation in 1996 was a bonus; the resources allocated were shared with master of rehabilitation medicine. When the master of rehabilitation medicine was launched in 1997, a full spectrum of rehabilitation sciences from basic, through clinical to community-based rehabilitation was fully accessible despite having only two core academic staff. Academic and clinical multidisciplinary team, interdisciplinary teams, and transdisciplinary team contributed toward preparing and implementing the curriculum. Contributors from the international and national network that has been built over two decades were leveraged. Local resources included persons with disabilities and their empowerment advocates, social security organization, special schools, and the social welfare department.

In Malaysia, a medico-bio-psychosocial approach in academia was deeply rooted in leprosy rehabilitation since 1930<sup>28</sup> and the University Malaya medical school plan since 1963. The systematic incubation of leadership has helped. Two decades after

the first master of rehabilitation medicine graduation of five residents, 100 more have done so. The successful ones now helm the National Rehabilitation Service, Ministry of Health, University Malaya Medical Center, University Technology MARA Medical School, RM departments of six medical schools, three private practices, and many have established international academic collaborations.

A more detailed account of these events is presented in the Appendix (Supplemental Digital Content 1, <http://links.lww.com/PHM/B737>).

### University Chairs: A Tale of Two Neighboring Countries

In this section, we describe and compare the differences in the development of the field of PRM between two countries in Europe, the Netherlands and Germany. Although these countries share a similar cultural, historical, economic, religious, and political background, the development of PRM within the universities and academic hospitals varies significantly. There is a large difference between the number of academic chairs in Germany and the Netherlands. In the Netherlands, there are seven PRM chairs in seven university medical centers, whereas in Germany, there are three chairs in 38 public medical faculties. In Germany, a number of academic chairs in rehabilitation sciences exist. This is an important difference because the number of professorial positions is an indicator of the integration of a medical specialty in the academic community. A professorial chair represents an independent department with its own budget for patient care, research, and education. It must be recognized that the models and systems used to appoint chairs and professors may vary among universities and countries. Table 1 summarizes some of the differences between the two countries. The reasons for the large differences in academic development in Germany and the Netherlands are numerous and diverse. Table 2 list some of these variables.

The development of rehabilitation in the teaching hospitals in the Netherlands started in the 1990s when a coalition was formed between the government, the rehabilitation centers, and PRM physicians. There was agreement to bring PRM to a higher (scientific) level. A multiyear plan was developed to invest in the training of clinical researchers, financing chairs and researchers, structural cooperation between the university and rehabilitation centers, research grants, and programs. This investment convinced the universities of the

**TABLE 1.** Summary of differences and similarities between Germany and the Netherlands

Parameter	Germany	The Netherlands
Academic career opportunities	Limited	Comprehensive
Contribution to recent medical developments	Limited	Comprehensive
Medical students receive education in RM	All students	All students
Specialists (in training) get to know and work with PRM physicians	Limited	Extensive
No. PRM physicians with a PhD degree	Limited	Growing (PhD required >5 international peer reviewed articles)
No. international publications in peer reviewed journals	Limited but growing in university departments	Top 5 international
Access to university and external grants	Limited	Favorable

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**TABLE 2.** Some reasons for differences in academic development between Germany and the Netherlands

Variables	Germany	The Netherlands
Topography	Rehabilitation centers mainly outside large cities	Rehabilitation centers in large city centers
Integration in general and university hospitals	Limited presence	In each hospital, a rehabilitation department led by a PRM physician
Cooperation between rehabilitation centers and university centers	Established only for specific patient groups	Formation of academic networks. Financial support for research and education
Relationship with government	Due to government structures, ministries of state (not federal entities) relations vary substantially	Ministry of Health (care) and Ministry of Education and Science (training and research)
Decision on appointment of academic chairs	Universities/faculties (autonomous)	State
Traditions of rehabilitation services	Originated in health resorts, condition-specific approach	Strong role of evidence-based medicine. No tradition of complementary medicine
Insurance for rehabilitation care	Mainly by pension and accident insurance, secondarily integrated in health insurance	Full and compulsory national health insurance
Specialty training	Fully recognized medical specialty (since 1995), organ-specific rehabilitation often led by respective organ specialty	Recognized medical specialty. No recognition option after abbreviated training. Physical and rehabilitation medicine physician is always head of the department
Salary	PRM in in-patient services have fixed salary, departments and heads of departments profit from private insured patients	All PRM physicians are in paid employment. No private practice

important contribution of a fully developed academic PRM department headed by a PRM physician to academic patient care, student education, and scientific research.

In Germany, the history of rehabilitation goes back to the late 19th century. It has different roots including rehabilitation for workers, rehabilitation for children with congenital impairment, and rehabilitation for war victims (early 20th century). Rehabilitation centers for chronic and postacute rehabilitation developed from the tradition of health resorts. Pension insurance is the largest funding organization for rehabilitation, which traditionally is based on organ-specific concepts. Modernization and a booster for rehabilitation research happened in the 1990s, resulting in multiprofessional approaches and a number of chairs for rehabilitation research (most of them led by social scientists). As PRM only was established in 1995, its involvement in this process was rather limited, and up to now, funding and impact of PRM research in Germany are rather low, which is a vicious circle with a lack of academic chairs. The recently published new regulations on the standard medical curriculum underline the need for academic chairs in PRM.

Finally, this description of the situation in two European countries is only an illustration of the various factors, facilitators and barriers, that may come into play at the national level. A thorough and complete analysis using predefined categories of the conditions prevalent in a country can be a starting point for the development of academic capacity at the local and national level.

## The Way Forward

We have argued for the importance of enhancing academic capacity in the medical specialty of PRM in universities and academic departments and why it is the responsibility of the EARM, AAP, and ISPRM, working in concert, to take the lead in achieving this as a contribution to WHO's goal of strengthening rehabilitation in global health systems. It is important, though, not to see this as a one-time call for action: we need more discussion,

more research, and more action. It is also essential that this not be viewed as a PRM agenda exclusively; because without cooperation and active collaboration between all professional societies and rehabilitation professionals, it will not be possible to create the advocacy energy required to build academic capacity to the point where it is sustainable. The WHO made it clear in its Rehabilitation 2030 call for action that an essential component of strengthening rehabilitation is building a highly skilled and knowledgeable workforce. However, without the academic capacity to provide that training and knowledge, that will not be possible. As we look forward to the likelihood in 2023 of a statement by the World Health Assembly of the WHO that supports strengthening worldwide, all rehabilitation professionals should join the EARM, AAP, and ISPRM to flag academic capacity building as the key to strengthening rehabilitation.

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