Challenges and Growth of Physical Medicine and Rehabilitation Around the World

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Abstract

Physical Medicine and Rehabilitation (PM&R) is a critical medical specialty that improves function, reduces disability, and decreases healthcare costs. However, many low- and middle-income countries (LMICs) have minimal or absent PM&R services. Recent World Health Organization resolutions call for the scaling up of PM&R, presenting a unique opportunity to address disability on a global scale. Successful PM&R integration requires a multi-pronged approach involving governments, healthcare systems, employers, and patients. Investing in PM&R is not just a humanitarian imperative; it's sound economic policy. Policymakers must act now to incorporate PM&R into healthcare systems in LMICs, leading to healthier populations, reduced disability, and stronger economies.

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Introduction

When a person becomes ill or injured it is intuitive that expert neurologists, orthopaedic surgeons, oncologists, and other organ-based specialists are called on to diagnose and treat. It is less intuitive to recognize a point where they have failed to cure.

At this point transfer of care to Physical Medicine and Rehabilitation (PM&R) experts is indicated. Research has shown that management by PM&R specialists on a medical rehabilitation ward results in less death, fewer complications, faster discharge, more independence, early return to work, less family burden, better quality of life and decreased cost compared to similar patients cared for only by organ-based specialists.

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PM&R owns no organ system, but rather takes responsibility for 'functioning'. It is absent or in critical shortage in many parts of the world. Expansion requires a general understanding of the specialty, its place in the health care system, and its impact on society. Strategies must follow the financial and political value chain that drives or restricts growth.

How does PM&R work?

In the acute hospital the PM&R consultant fills gaps. They detect and treat secondary problems that will interfere with rehabilitation, such as a focal nerve injury in a trauma patient, pre-morbid depression in a stroke patient, impending contractures and pressure ulcers in a spinal cord patient, or a seizure drug impeding consciousness in a brain injury patient. They piece together a plan: Is the social support system strong? Are there environmental or financial barriers? What goals fit individual's pathology, strengths, weaknesses, and desires? They prepare the patient for transfer to a rehabilitation unit or hospital.

Strict rules are what make rehabilitation wards special. Patients cannot be admitted unless they are committed to a discharge plan and they are medically stable enough to benefit from rehabilitation. If they fail, they are discharged. The ward is run by a team of trained rehabilitation professionals including PMR consultants and rehabilitation nurses who provide services along with a multidisciplinary team of physiotherapist, occupational therapist, speech-language pathologist , social worker, psychologist, orthotists, prosthetics, recreational therapist and others. From day one a Tentative Date of Discharge is estimated along with preliminary details regarding medical stability, functional abilities, patient and family competency, home modification, equipment and supplies. The quality of the PM&R physician's leadership has a direct relationship to length of stay and discharge functioning.

In some countries most PM&R physicians care for outpatients. They manage back and neck pain, sports injuries, chronic neurological disorders, various forms of arthritis and persons with any manner of illness who are challenged to return to work or sport. Often PM&R physicians are the electrodiagnostic experts performing

variety of electrodiagnostic procedures like nerve conduction studies, electromyography, visual and somatosensory evoked potentials . Studies show that outpatient PM&R management decreases spine surgical rates[1] doubles return to work for chronic disability[2,3], and improves the lives of adults and children with disabilities[4,5] , .

How has the field grown so far?

Wars and natural disasters create people who look at their future without functioning legs or arms. The idea of passively accepting that fate is unacceptable. So for millennia these victims, their family, creative friends and their healthcare providers have worked on solutions. A more formalized approach to building the specialty began around World War II, as antibiotics and advanced medical care brought a huge number of injured soldiers back to their home countries.

Dr. Howard Rusk, an American Army Air Corps physician began to help return these soldiers to functioning.[6] A skilled politician, he gained support from philanthropists and government to build the first American PM&R training programmes. Dr. Rusk then set out on a mission to build PM&R throughout the world. By 1955 he had formed the World Rehabilitation Fund and he set out to train physicians and allied health professionals.[7] Many countries in Asia, Latin America and Europe attribute their PM&R beginnings to pioneering local doctors who trained with Dr. Rusk and the World Rehabilitation Fund.[6] At one point the World Rehabilitation Fund was in over 100 countries.

Unfortunately, Dr. Rusk left no strong succession plan, so despite various leaders the World Rehabilitation Fund has shrunken to the point where it only serves existing programmes in 1 or 2 countries. Several other organizations worked to build rehabilitation internationally. Often, they took consumer perspectives or advocated for specific allied health professions such as physical therapy or prosthetics.

During this time the World Health Organization (WHO) felt there were not enough resources in low-income countries to train specialists, so family members and community health workers were trained in Community Based Rehabilitation (CBR). Unfortunately, CBR without PM&R leadership was never shown effective and the 'bottom up' approach never drove health systems to build the sophistication that PM&R and rehabilitation centers bring.

This failure was illustrated in a 2009 expose' that found only 7 PM&R specialists to cover the 750 million people living in sub-Saharan Africa.[8] Published simultaneously in 5 international medical journals it helped inspire the WHO's 2011 World Report on Disability.[9] A landmark WHO Resolution, EB148.R6, followed in 2021, obligating signers to build medical rehabilitation centres and train specialists, not just community health workers.

The business of building PM&R

The WHO resolution showed a need. But it did not provide the strategy to expand the field rapidly and exponentially. With hundreds of thousands of PM&R specialists in industrialized countries and in many less developed countries, there remain dozens of nations without a single specialist and other nations where the handful of experts are sequestered in one or two hospitals.

Rehabilitation is cost effective and saves money in the long term. Busch and colleagues demonstrated that multidisciplinary rehabilitation programmes with a focus on work return proved effective in reducing long-term sickness absences for those with chronic back and neck pain. Individuals who participated in this type of rehabilitation had significantly fewer days of sickness absence over a 10-year period compared to those receiving standard treatment. This type of intensive multidisciplinary rehabilitation also demonstrated greater cost-effectiveness in comparison to physiotherapy or cognitive behavioral therapy alone.[10] But 'society' does not have a bank account. Government, industry and consumers hold the purse strings.

Governments stand to gain the most from rehabilitation, with decreased healthcare costs, increased employment, and less societal burden. They listen to the disability community, but this group typically excludes the PM&R inpatients who are often in emotional shock, if not intubated. So, PM&R is often overlooked. Although PM&R saves money, most government budgets do not support investment in one area (ministry of health) that saves money in others (commerce, tax, social services).

The military stands as a primary beneficiary of Physical Medicine and Rehabilitation (PM&R) services. The costs associated with healthcare, lost productivity, retention, and morale of injured soldiers – even with conditions such as back pain – are borne by the military. Consequently, PM&R is often more advanced within military systems compared to public sectors in many countries. However, to extend the benefits of rehabilitation to society at large, it is crucial to expand PM&R training programmes within both public and private healthcare sectors. .

Ministries of health may find value from decreased

hospital length of stay, decreased return visits to the hospital, and improved efficiency of valuable surgeons. Yet shifting money and hospital beds away from surgical wards often comes with a political cost that local leaders cannot overcome despite the benefit.

There must be training programmes. Prior attempts to train clinicians overseas often lead to 'brain drain'. So, in Africa International Rehabilitation Forum (IRF) worked with universities, ministries, and others to build a 2-year mostly on-line fellowship that allowed local physicians to become certified in the field without leaving home.[11] In-country training attracts candidates who do not want to leave, keeps them engaged in their local medical community, and ensures that their training reflects local resources. The trainees must be freed up from other work, yet even as trainees they save money by implementing rehabilitation in the hospital. This programme is not ideal compared to the 4-year training programmes in other countries, however the quality of candidates has been exceptional. IRF has successfully graduated physicians in Ghana, Ethiopia, Cameroon and South Africa, all of whom are now clearly on the path to becoming their nation's leaders. Each country will take on its own training programme when they have a critical mass.

PM&R physicians must have a career path. The early pioneers in each country are incredibly committed regardless of finance. However, this is not a strategy for growth. Salaries and prestige matter. Still, the specialty has proven itself so valuable in the outpatient arena that a physician simply 'hanging out their shingle' on the private side is likely to succeed.

For private and charity hospitals the benefit of PM&R can be substantial. Dr Haig along with economist Paul Clyde found that a Ugandan hospital that offered sophisticated PM&R services (as opposed to simple physiotherapy) could charge a premium to wealthy and middle-class persons who would otherwise receive no services or travel to Europe for care.[12]

Major employers are another source of sustainability. The non-medical costs of work injury are as much as 5 times the medical bills, yet PM&R programmes can cut time off work in half. Non-PM&R physicians typically have less interest and training in areas of physical conditioning, work ergonomics, functional capacity, and psychology of disability. They typically have less training in musculoskeletal diagnosis and injection procedures. Corporations that want to prevent time off work may catalyze or support PM&R in their community, sometimes with special incentives.

Finally, the financial math for patients is clear: A future of unemployment and family members taken up caring for them vs. a few weeks in rehab and perhaps a prosthetic leg or wheelchair. But the investment is clear only if they do the math and see the benefits. Especially for the poorest people, creative financing is needed, through micro-loans, jobs in sheltered workshops, charity, and other mechanisms.

The challenge—the crisis in many countries—is the need to exponentially build the field. With perhaps 20% of communities living with untreated disability, PM&R must grow for the sake of society, national economies, and the people who suffer from disabling disorders.

References

1. Fox J, Haig AJ, Todey B, Challa S. The effect of required physiatrist consultation on surgery rates for back pain. Spine (Phila Pa 1976). 2013 ;38(3):E178-84. doi: 10.1097/BRS.0b013e31827bf40c.
2. Khan I, Bydon M, Archer KR, Sivaganesan A, Asher AM, Alvi MA, et al. Impact of occupational characteristics on return to work for employed patients after elective lumbar spine surgery. Spine J. 2019;19:1969-1976. doi: 10.1016/j.spinee.2019.08.007.
3. Koopman FS, Edelaar M, Slikker R, Reynders K, van der Woude LH, Hoozemans MJ. Effectiveness of a multidisciplinary occupational training program for chronic low back pain: a prospective cohort study. Am J Phys Med Rehabil. 2004;83:94-103. doi: 10.1097/01.PHM.0000107482.35803.11.
4. Feuerstein M, Menz L, Zastowny T, Barron BA. Chronic back pain and work disability: Vocational outcomes following multidisciplinary rehabilitation. J Occup Rehabil. 1994;4:229-51. doi: 10.1007/BF02331618.
5. Rogers M, Hogan D. Family Life With Children With Disabilities: The Key Role of Rehabilitation. Journal of Marriage and Family 2003;65: 818-833. https://doi.org/10.1111/J.1741-3737.2003.00818.X.
6. Blum N, Fee E. Howard A. Rusk (1901-1989) from military medicine to comprehensive rehabilitation. Am J Public Health. 2008;98:256-7. doi: 10.2105/AJPH.2007.120220.
7. Kevorkian CG, Bartels M, Franklin DJ. To believe in humanity and in rehabilitation: Howard A. Rusk, MD, and the birth of rehabilitation medicine. PM R. 2013;5:247-54. doi: 10.1016/j.pmrj.2013.03.024.
8. Haig AJ, Im J, Nelson VS, Adewole A, Krabek B. The Practice of Physical Medicine and Rehabilitation in Africa and Antarctica: A White Book or a Black Mark? J Rehab Med. 2009;41:401-5.
9. PM & R.2009;1:421-6, European Journal of Physical & Rehabilitation Medicine.2009; 45:185-91, Disability and Rehabilitation 2009 31:1031 – 1037. Chinese Journal of Rehabilitation Medicine. 2009; 24:385-389. Simultaneous publication with consent of all journals.
10. World Health Organization [and] The World Bank. World Report on Disability. Geneva, Switzerland :World Health Organization, 2011.
11. Busch H, Bodin L, Bergström G, Jensen IB. Patterns of sickness absence a decade after pain-related multidisciplinary rehabilitation. Pain. 2011 ;152:1727-1733. doi: 10.1016/j.pain.2011.02.004.
12. Tannor AY, Nelson MES, Steere HK, Quao BO, Haig AJ. Building PRM in subSaharan Africa. Front Rehabil Sci 2022. 3.910804, doi: 10.3389/fresc.2022.910841.
13. Clyde P, Haig A, Jhaveri E, Karazja M,Leroueil PR, Ranganathan K,

et.al. 25 Years of Health Care Delivery in Low- and Middle-Income Countries. William Davidson Institute, the University of Michigan, 2018. At: https://wdi.umich.edu/wp-content/uploads/WDI-25-Years-of-Health-Care-Delivery-in-Low-and-Middle-Income-Countries-WEB.pdf