

## SHORT COMMUNICATION

# Rethinking Neurological Rehabilitation: From Recovery Services to Health-System Strategy

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## ABSTRACT

Neurological disorders are now the leading cause of disease burden worldwide, affecting billions of people and placing unprecedented pressure on healthcare systems. Traditionally viewed as a post-acute intervention focused on recovery, neurological rehabilitation is increasingly being recognised as a strategic component of sustainable healthcare delivery. This perspective explores how rising neurological disease burden, ageing populations, workforce challenges, community-based care models, and digital innovation are reshaping neurorehabilitation. Using contemporary policy and service developments as examples, the article argues that neurorehabilitation should evolve beyond a recovery-focused service to become an integral element of health-system planning. The implications for physiotherapy practice, workforce development, and education are discussed, highlighting the need to prepare future physiotherapists for increasingly complex, community-oriented, and digitally enabled models of care.

## KEYWORDS

• Neurorehabilitation • Physiotherapy • Community Rehabilitation • Neurological Disorders • Workforce Development • Digital Health

## INTRODUCTION

Imagine two individuals living with neurological conditions.

The first experiences a stroke and receives rehabilitation during hospital admission

before being discharged home. The second is living with Parkinson's disease and requires ongoing support over many years to maintain mobility, participation, independence, and quality of life.

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Although their conditions differ, both individuals highlight an important reality: neurological rehabilitation is no longer confined to the period immediately following illness or injury. Increasingly, rehabilitation is becoming a lifelong process that supports people to live well with neurological conditions.

This shift is occurring against the backdrop of a growing global neurological burden. According to the Global Burden of Disease (GBD) 2021 study, neurological disorders affected approximately 3.4 billion people worldwide and accounted for 443 million disability-adjusted life years (DALYs), making them the leading cause of disease burden globally.<sup>1</sup> These findings have significant implications for healthcare systems, rehabilitation services, and the physiotherapy profession.

Traditionally, neurorehabilitation has been viewed as a specialist service focused on restoring function after neurological injury. However, changing population demographics, rising prevalence of long-term neurological conditions, and increasing healthcare demands suggest that this traditional model may no longer be sufficient. Instead, neurorehabilitation is increasingly emerging as a strategic component of sustainable healthcare systems.

### **The Growing Global Neurological Challenge**

Advances in healthcare have improved survival for many neurological conditions. While this is undoubtedly positive, it has also resulted in increasing numbers of individuals living with long-term disability and complex rehabilitation needs.<sup>1,7</sup>

Future neurology service reports have consistently highlighted growing demand for neurological services, increasing healthcare costs, workforce shortages, and challenges in ensuring equitable access to care.<sup>2,3</sup> These pressures are not unique to any one country; they represent a global challenge affecting healthcare systems with varying levels of resources and infrastructure.

The challenge facing modern healthcare is therefore not simply how to treat neurological conditions, but how to support individuals across the continuum of care—from diagnosis and rehabilitation to long-term management and participation in society.

In this context, rehabilitation should not be viewed as an optional adjunct to medical care. Rather, it should be recognised as an essential health service capable of reducing disability, maintaining independence, and improving quality of life.

### **From Hospital-Based Rehabilitation to Community-Based Care**

Historically, neurological rehabilitation has often been associated with specialist inpatient units and outpatient services. However, healthcare systems worldwide are increasingly recognising the value of providing care closer to home.

Community-based neurorehabilitation offers several advantages. It enables rehabilitation to occur within meaningful environments, supports continuity of care, promotes self-management, and facilitates participation in everyday activities. Importantly, it also aligns with broader healthcare priorities that seek to reduce unnecessary hospital utilisation and improve patient-centred care.<sup>4,5</sup>

Recent community neurorehabilitation pathway recommendations emphasise integrated services that support patients throughout their rehabilitation journey rather than at isolated points of care.<sup>5</sup> Such models require effective coordination between acute care providers, rehabilitation professionals, primary care teams, and community services.

For physiotherapists, this evolution presents opportunities to contribute across the entire continuum of neurological care rather than solely within traditional rehabilitation settings.

### **Physiotherapists as Leaders in Future Neurorehabilitation**

The future of neurorehabilitation will depend not only on clinical expertise but also on leadership, innovation, and workforce transformation.

Several workforce reports have identified shortages of healthcare professionals as a significant challenge for future neurological services.<sup>4,6</sup> Meeting increasing demand will require new approaches to service delivery, enhanced multidisciplinary collaboration, and expanded professional roles.

Physiotherapists are uniquely positioned to contribute to this transformation. Their expertise in movement, function, physical

activity, participation, and long-term condition management enables them to play important roles beyond direct clinical care.

Future physiotherapists may increasingly contribute to:

- Advanced clinical practice
- Service redesign and quality improvement
- Care coordination across settings
- Community-based rehabilitation programmes
- Health promotion and prevention of secondary complications
- Workforce education and mentorship

Such developments reflect a broader shift from viewing physiotherapists solely as rehabilitation providers to recognising them as key contributors to health-system transformation.

## Digital Innovation: An Enabler of Modern Neurorehabilitation

Digital technologies are increasingly influencing how rehabilitation services are delivered. Telehealth, remote monitoring, wearable technologies, and digital self-management platforms have created new opportunities to support patients beyond traditional clinical environments.

While technology cannot replace human interaction or clinical reasoning, it can enhance accessibility, continuity of care, and patient engagement. Digital approaches may be particularly valuable for individuals living in remote areas, those with mobility limitations, or patients requiring long-term follow-up.

The future of neurorehabilitation is therefore unlikely to be exclusively face-to-face or entirely virtual. Instead, hybrid models integrating in-person and digital approaches may offer the greatest potential to improve access while maintaining high-quality care.

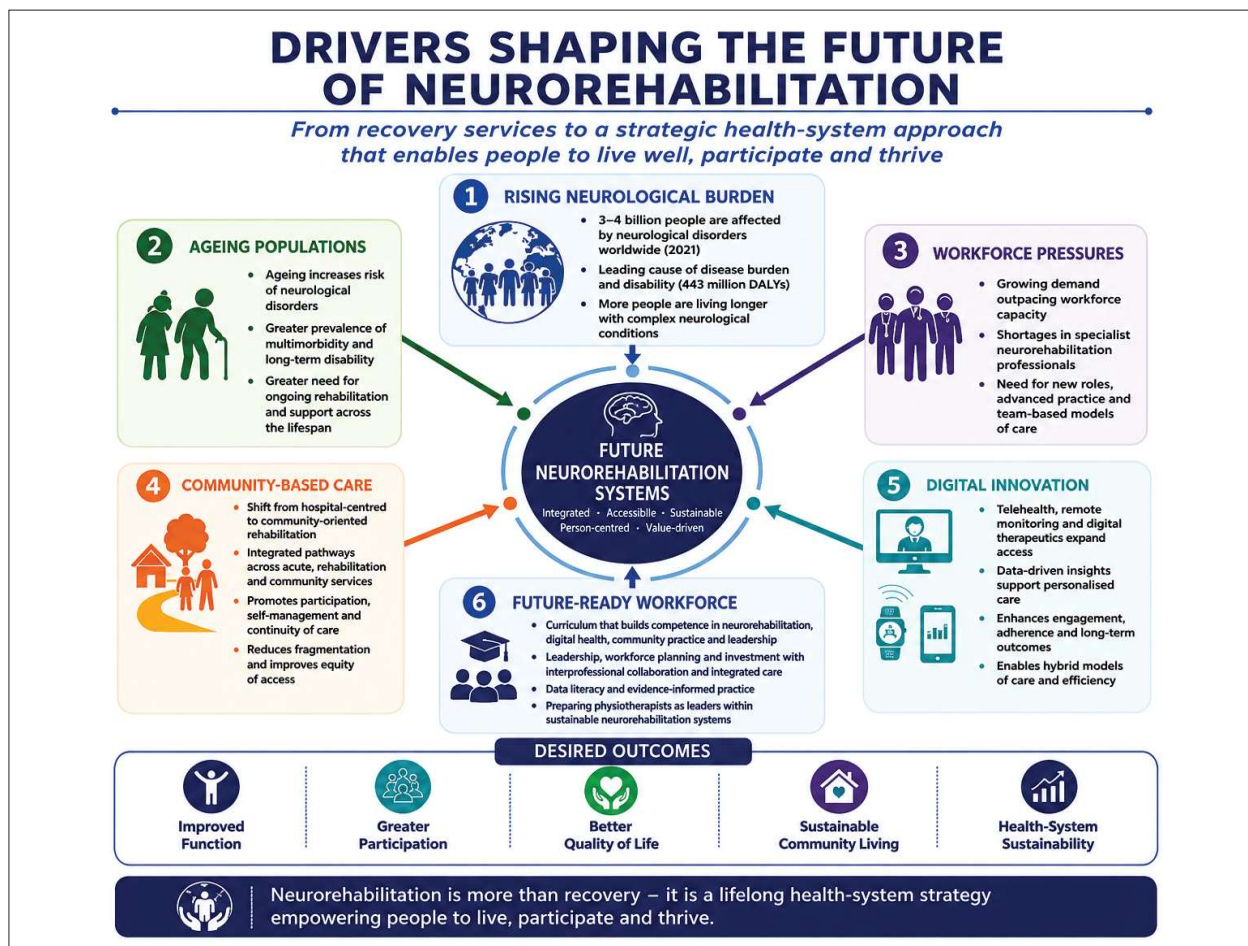


Figure 1: Drivers shaping the future of neurorehabilitation

Key demographic, workforce, service-delivery, and technological factors driving the transition towards integrated, person-centred, and sustainable neurorehabilitation systems.

### **Preparing the Future Neurorehabilitation Workforce**

As neurorehabilitation evolves, physiotherapy education must evolve alongside it.

Future graduates will require competencies that extend beyond traditional impairment-focused rehabilitation. Alongside strong clinical foundations, emerging physiotherapists may need skills in digital health, telehealth communication, community-based practice, integrated care pathways, leadership, and service improvement.

Educational programmes may also need to provide greater exposure to community rehabilitation settings and interdisciplinary learning opportunities. Such experiences can help prepare graduates for increasingly complex healthcare environments where collaboration, adaptability, and innovation are essential.

Preparing future physiotherapists for these evolving roles is not merely an educational challenge; it is a workforce imperative.

### **CONCLUSION**

The growing global burden of neurological disorders presents one of the most significant healthcare challenges of our time. In response, neurorehabilitation must evolve beyond its traditional role as a recovery-focused service.

Increasingly, neurorehabilitation should be viewed as a strategic component of sustainable healthcare systems—one that supports independence, participation, community living, and long-term health outcomes. Community-based care, workforce innovation,

and digital technologies will all contribute to this transformation.

For physiotherapists, the future presents both opportunity and responsibility. By embracing leadership roles, contributing to service redesign, and preparing the next generation of practitioners, the profession can help ensure that neurorehabilitation becomes not simply a service delivered after illness, but a cornerstone of modern healthcare.

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