Fostering Clinical–Research Partnerships to Advance Physiotherapy Practice: The Role of an Innovative Neuro-Rehabilitation Clinic

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The challenges to safe, independent mobility and engagement in physical activity after stroke and brain injury are well recognized. New knowledge gained through research has the potential to advance practice and patient outcomes, but translating research to the clinical setting remains slow and challenging. In this editorial, we describe how an innovative clinic that integrates researchers and clinicians in a neuro-rehabilitation setting has resulted in shared learning; implementation of innovative, evidence-informed physiotherapy practices; and improved patient outcomes.

CLINICAL–RESEARCH DIVIDE

Physiotherapists report positive attitudes toward,¹ but limited application of, research in clinical decision making.² Health care professionals have cited research's lack of real-life relevance and an inability to apply research findings to the unique characteristics of individual patients.¹ Research knowledge is often privileged over the clinical knowledge acquired through experience;^{3,4} practitioners are expected to align their practice with new research evidence to engage in best practice.⁴ In addition, research is largely conceptualized and executed by researchers, whereas practitioners act as consultants or data collectors rather than being centrally involved in identifying a clinical problem.⁴ Furthermore, research and clinical activities typically occur in isolated settings.

The importance of meaningful clinician–researcher partnerships to advance practice is not new;⁵ it is embedded in what the Canadian Institutes of Health Research has termed *integrated knowledge translation* (iKT).⁶

In iKT, researchers and knowledge users collaborate throughout the research process (developing research questions, planning methodology, and interpreting and disseminating findings) to yield meaningful knowledge that is relevant to the needs of knowledge users. Although there is evidence of the value of fostering clinician–researcher partnerships to benefit rehabilitation practice,⁷ how to form and sustain these partnerships in the presence of competing priorities in the research and clinical realms is less clear.

OUR SETTING

Toronto Rehabilitation Institute—University Health Network (TRI-UHN) is an academic hospital specializing in adult rehabilitation, complex continuing care, and long-term care. The Brain and Spinal Cord Rehabilitation Program is one of six clinical programmes, and it includes a dedicated Stroke and Brain Injury Rehabilitation Service. Research within TRI-UHN is divided into 11 teams, 1 of which is the Mobility Team. Before 2009, research and clinical care occurred largely in isolation, in separate environments within the hospital. This prompted senior leadership to discuss strategies to maximize collaboration among settings. Clinical leaders, front-line staff, and Mobility Team scientists and trainees were informally collaborating and networking in areas of mutual interest with respect to balance, mobility, and fitness practices. Therefore, the time was right to align organizational priorities and to build on clinical and research expertise and these developing collaborations. We proposed the establishment of an innovative clinic (the Balance,

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Competing Interests: The authors thank the Toronto Rehabilitation Institute – University Health Network for its support. Equipment and space were supported by grants from the Canada Foundation for Innovation, Ontario Innovation Trust, and Ministry of Research and Innovation. Avril Mansfield is supported by a New Investigator Award from the Canadian Institutes of Health Research (MSH-141983). Nancy M. Salbach is supported by Canadian Institutes of Health Research New Investigator and Ontario Ministry of Research and Innovation Early Researcher Awards. When the clinic was being developed, Elizabeth L. Inness was supported by a Canadian Institutes Health Research Fellowship (Health Professions). The views expressed do not necessarily reflect those of the funding agencies.

Mobility, and Falls Clinic) to integrate researchers and clinicians into a team within our neuro-rehabilitation setting.

THE CLINIC

The goal of the clinic is to accelerate the development and implementation of evidence-informed, feasible practices and programmes to optimize patient balance, mobility, and fitness-related outcomes. The clinic has been developed in an iterative manner, but key features embedded in the model facilitate its goals.

Shared clinical–research leadership and accountability

Organizational support, resource provision, and synergy between partners are key facilitators of the sustained implementation of new practices.⁸ An integrated Clinic Steering Committee is led by members of both the clinical programme (ELI, MB, JZ) and the research team (WEM, AM), who share accountability for developing, implementing, and evaluating clinical priorities as well as ongoing strategic planning.

An integrated team

An integrated team of clinicians and researchers is embedded in the clinic, which, in turn, is embedded in the neuro-rehabilitation setting. A full-time clinic lead (ELI) and two part-time physiotherapists (since inception, LB, KB, VP, and CJD) assume knowledge broker roles.⁹ These roles are designed to support the development, implementation, and evaluation of evidence-informed, clinically feasible practices by facilitating interactions among researchers and front-line clinicians and sharing research and clinical knowledge throughout the process. The knowledge brokers, with the front-line physiotherapists, participate in developing clinical questions for ongoing research.

Research scientists with expertise in the area of balance and mobility are integrated into the clinic as key team members (WEM, AM). Research trainees (and health care students) are incorporated into the team to support priority areas of practice and research. Research team members act as resources for current research knowledge, and they provide leadership and support for clinically driven research activities, grant writing, and publishing.

Clinical and research team members share responsibility for engaging in knowledge exchange activities (e.g., formal and informal meetings, case reviews) and for disseminating knowledge, clinical tools, and practices to external settings.

Shared space

Face-to-face communication is a primary facilitator of partnership building and the effective and reciprocal exchange of ideas.¹⁰ Thus, the clinic is a shared space: Assessment and treatment areas are used for both clinical and research activities. The clinic, therefore, serves as

a hub for communication and interaction between clinicians and researchers.

Shared assessments and detailed database of the “everyday” patient

Since implementation, the clinic has integrated standardized assessments (clinical and technology-based measures of balance, gait, and aerobic fitness) into routine patient care, and these assessments can be leveraged for research. A detailed database has been developed that can be accessed to answer clinical questions related to the recovery and outcomes of the diverse and everyday patients in our care.

CATALYST FOR THE UPTAKE OF NEW PRACTICES

Our experience with this clinical model and the clinical–research partnership has been positive. It provides a catalyst for the development and uptake of new practices, which have improved the quality of rehabilitation and patient outcomes. For example, through the clinic, we have collaboratively implemented technology-based balance and mobility measures¹¹ and new methods to measure balance recovery responses in routine patient assessments.¹² An analysis of the data in our clinic’s database and prospective research led to the identification of key measures that are predictive of falls^{13,14} as well as features that could be targeted in physiotherapy. This new knowledge informed a collaboration with physiotherapists in the Stroke and Brain Injury Rehabilitation Service to develop new balance training methods (perturbation-based training) for routine care, and these methods have since been found to be effective in falls reduction after patients are discharged from the hospital.¹⁵

Building on the known benefits of aerobic exercise and physical activity after stroke, clinicians and researchers collaboratively developed fitness programming (structured aerobic exercise assessments and training)¹⁶ that is feasible for use with patients in the early stages of stroke rehabilitation. Follow-up research revealed that individuals were not maintaining physical activity after being discharged;¹⁷ as a result, this knowledge informed a new patient programme that aimed to build exercise self-efficacy, address individual barriers, and maintain long-term engagement in exercise in the community after rehabilitation.¹⁸

The clinic’s impact raised institutional awareness of the benefits that such a clinical–research collaboration could have for advancing neuro-rehabilitation practice. This important change in culture has fostered similar clinical–research partnerships in other areas of practice.

CONCLUSION

A clinic that partners clinicians and researchers in a neuro-rehabilitation programme has led to accelerated learning and problem solving in our setting. The clinic

provides a platform to address clinically relevant questions, trialling new innovations with the everyday patient, sharing perspectives and learning, and enabling the timely development of new clinical practices. The shared vision and commitment of both clinical and research settings, from leadership to front-line physiotherapists, has been critical to its sustainability and success.

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DOI:10.3138/ptc.69.3.GEE