Knowledge Broker Study Report

Version 2, August 2009

Moving Motor Growth Research into Clinical Practice: Do Knowledge Brokers Make a Difference?

The Knowledge Broker Study has been a great success!

The Knowledge Broker Study is now finished and we are excited to share the results with you. Twenty-five knowledge brokers (KBs) and 122 physical therapists (PTs) from 28 pediatric organizations in Ontario, Alberta and British Columbia provided us with very important information about the experience of having a KB at their sites and we have discovered some interesting results. We would like to take this opportunity to share with you what we have learned and outline our next steps.

What is Knowledge Brokering?

Knowledge brokering is the process of "bringing people together, to help them build relationships, uncover needs, and share ideas and evidence that will let them do their jobs better. It is the human force that makes knowledge transfer (the movement of knowledge from one place or group of people to another) more effective" (CHRSF newsletter, 2003). KBs have been described in the literature as having strong skills in research, facilitation, and problem solving. In our study, we placed particular emphasis on the role of the KB in applying research. This differs somewhat from the role traditionally described in the literature which also includes a focus on the KBs' skills in research appraisal and synthesis.

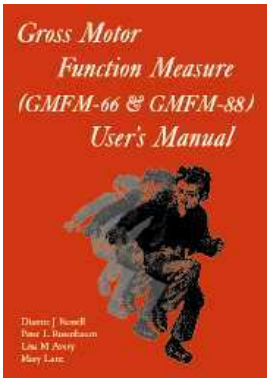
Why did we do this study?

We know from the literature that research evidence is not always used in clinical practice. Different ***Knowledge Translation*** (KT) strategies for moving evidence into practice, such as publications, presentations, distribution of educational materials, tailored messaging, and audit and feedback, have been tried with varying success. One promising strategy that has been suggested is the use of a 'local champion' or Knowledge Broker (KB). However, little is known about the effectiveness of a KB or even the kind of activities that a broker should undertake.

What did we want to know?

We were interested in answering several questions:

a) Would having a KB (as part of a 6 month multi-faceted KT intervention) have an impact on physiotherapists' (PT) ***knowledge*** and ***use*** of a group of evidence-based measures of gross motor function (the "motor measures", see Fig. 1) for children with cerebral palsy (CP)?

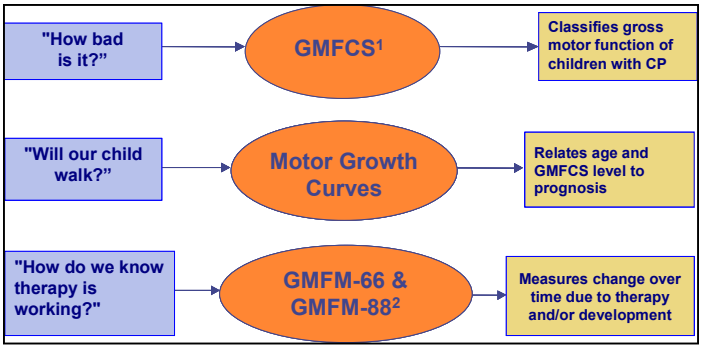


b) Would the brokering intervention be modified or mediated by factors such as regional differences or organizational support?

c) What do KBs, PTs and administrators think about the utility of the KB role, and the brokering process?

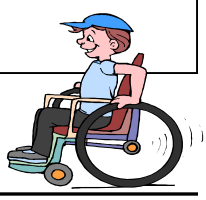
d) What types of activities do brokers undertake during the active brokering intervention?

Figure 1: Parents' questions and ways the motor measures can help answer these...



[1] GMFCS: Gross Motor Function Classification System

[2] GMFM: Gross Motor Function Measure



How did we begin?

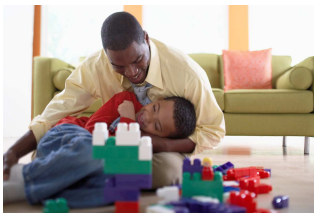
The KB Study began in May 2006 with the recruitment of **25 physiotherapist KBs** from 28 pediatric rehabilitation organizations in Ontario (East), Alberta and British Columbia (West) (three KBs brokered to regional sites in addition to their own organizations). We also recruited **122 physiotherapists** and **27 administrators**. One year following the active brokering intervention, 24 (96%) KBs, 95 (78%) PTs, and 24 (86%) administrators continued to be involved in the study - a key measure of the success of the project!

What was done?

- KBs attended an initial workshop to encourage networking with each other and learn about their role.
- KBs were given interactive training materials and evidence-based resources regarding the motor measures.
- KBs identified potential supports and barriers at their organizations for moving these evidence-based measures into practice and discussed ways to address challenges and build upon the strengths of their organizations.
- KBs actively brokered to participating physiotherapists at their centres for six months, tailoring their information to meet the needs of their colleagues.
- KBs participated in three teleconferences with other KBs and the study team to share strategies, successes and challenges.
- KBs had access to the study team, the study coordinator (acting as a "broker to the brokers"), additional electronic resources (PowerPoint presentations, journal articles) and an intranet site for ongoing dialogue and sharing resources.

What did we measure?

KBs and PTs completed **online surveys** about their ***knowledge*** and ***use*** of the motor measures at each of four time points: prior to and immediately following the intervention, as well as 6 and 12 months post-intervention. Analysis of these data allowed us to look at the effect of the intervention over time and to explore possible mediators and regional differences.

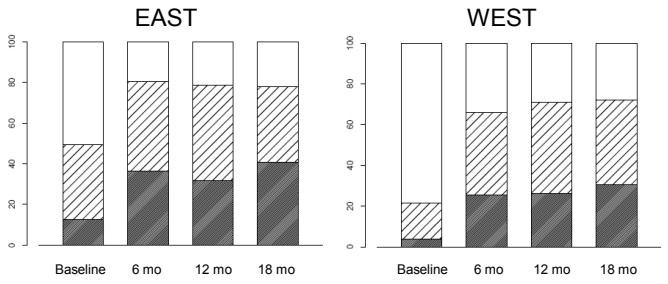


All of the KBs, one randomly chosen PT from each site, and site administrators participated in **telephone interviews** immediately following the intervention and one year later, where they provided feedback about their perceptions of the KB role. Using a thematic analysis approach, major themes were identified and then verified through member checking. KBs also completed weekly **log books** describing the activities they carried out during the brokering.

What did the online surveys tell us about Change in Practice?

- PT ***attitudes*** towards use of measures were high at baseline
- PT ***knowledge*** of all measures increased at six months and was maintained one year later
- PT ***use*** of the measures increased following the intervention (see Fig. 2 for an example) and the effect remained one year later, with the exception of one measure (the GMFM-88)
- Both regions (East/West) showed significant increases, even though PTs in the East had higher familiarity and use at baseline
- Organizations with a strong research culture and supervisor expectation for use of measures had a significant impact on therapists' use of the GMFCS but not the other motor measures

Figure 2: Change in use of GMFM-66 by PTs



These graphs demonstrate the increase in use of the GMFM-66 by PTs during the six-month brokering period and continued use one year following the end of the brokering period.

What did the interviews tell us about the experience of being involved?

What did we hear from KBs?

Themes identified from the KB interviews:

- **Linkage and Exchange**: Value of connection and networking with colleagues & researchers
- **Context-Sensitivity**: Importance of understanding the practice context
- **Organizational Factors**: Impact of organizational support and resources on knowledge transfer
- **Engagement**: Motivation and enthusiasm from KBs and PTs
- **Dialogue with Families**: Experiences sharing information from the motor measures with families
- **Protecting Time**: Need to dedicate time and formal support for the role

What did we hear from Administrators?

Themes identified from the administrator interviews:

- **Efficient and Effective**: KT strategies must be efficient, effective and relevant to practice
- **Committed and Respected KBs**: KBs' knowledge & expertise are critical factors to success
- **Stimulating Peer-to-Peer Learning Environment**: Promoted excitement, team work
- **Sharing Beyond**: Brokering extended to other service providers, administrators, families
- **Organizational Beliefs and Values**: Culture of organization an important influencing factor
- **The Dilemma of Moving Forward**: Challenges to implementation of KB role remain

What did we hear from PTs?

Themes identified from the PT interviews:

- **Positive and Flexible KB**: KB enthusiasm and willingness are key factors to success of role
- **Bridging to Practice**: KB ability to make information relevant; knowledge of context important
- **Availability**: Value of a dedicated person who is readily accessible and available
- **Learning Together**: Group learning facilitated accountability, sharing of experiences
- **Organizational Factors**: Influence of organizational structure, resources, culture
- **Change**: Changes in awareness, practice, comfort with KB role

"…..the key now is to keep the ball rolling with the enthusiasm we've been able to accomplish... to try and find ways that we can continue branching out from here and looking at other motor measures and just that... yeah, the sky's the limit perhaps."

- Knowledge Broker

"I think the opportunity to participate in something that keeps them up-to-date [and] provides them with knowledge based on the latest research is really beneficial because that's difficult for us to access unless we're, you know, attending conferences or those kinds of things. But to have someone directly to turn to who is trained and something that's being used internationally… was a real benefit to us and developing a consistent approach across agencies and across the country."

-Administrator

"I think it was definitely helpful to have a Knowledge Broker. It was a lot easier to relate and use the research information in our specific setting. It was nice to, you know, have an actual person explain the measures instead of just having to read or watch a video. You could get your questions answered and there was much more give and take…"

- Physical Therapist

What did the log books tell us about the brokering process?

- KBs brokered, on average, 2 hours per week, and the type and format of activities varied substantially across KBs and during different phases of brokering.
- Examples of brokering activities include: formal education sessions, facilitation of small group problem-solving discussions, one-on-one review of clinical cases, preparation of resource binders, development of educational flyers, use of the intranet site to network with KBs and researchers, discussions with administrators, and liaison with technology support.
- All on-site KBs brokered directly (face-to-face) with their colleagues at least once per month, ranging to as many as 10 times per month. Regional KBs maintained regular contact indirectly via phone or e-mail.
- The frequency of direct contact was higher overall than indirect contact but indirect methods were still well used, ranging from one to eight times per month. When brokering to regional sites, the use of indirect contact was higher than direct.
- All KBs interacted "one-on-one" with PTs, with a range from one to six times per month.
- KBs also brokered to PTs in groups, brokering slightly less often than to individuals, ranging from two occasions to approximately four times per month.
- In addition to brokering to PTs within the study, all KBs brokered to individuals outside of the study (such as occupational therapists, speech language pathologists, pediatricians, orthotists, recreation staff, social workers, board members, executive directors, and students) on at least two occasions.

What do these results mean?

- The KB strategy was effective in increasing knowledge and use of evidence-based measures following an intervention of **two hours per week** over a six-month period.
- There was a lot of **enthusiasm** for the KB role from KBs, therapists, and administrators.
- Our KB model emphasized the **application** of research where the evidence had been synthesized and packaged. A greater resource commitment would be necessary when substantial research gathering, appraisal and synthesis are required or when evidence is less well established.
- The intervention was effective across regions in which there were differences in baseline knowledge indicating that the KB strategy was effective for therapists at different points along the knowledge/use continuum.
- There is no "one size fits all" method of brokering. It is important for KBs to assess varied needs and develop workable strategies and brokering activities to meet those needs.
- The KB role may work best within a **community of practice** and when supported by the organization.
- Important KB characteristics include: enthusiasm, flexibility, and willingness to adapt. Facilitation skills and context knowledge are also important.

Why are the results from this study important?

- This is the first study demonstrating the **effectiveness** of the KB strategy in this clinical context.
- Information gathered from this study increases our understanding of the **utility of the KB strategy** and helps to highlight elements that may be critical to the success of the role.
- Common **barriers** to and **strategies** for communicating the results of the motor measures with families were identified.

WHAT'S NEXT?

Moving forward, it will be important to:

- Continue to **engage** clinicians, administrators, and other key stakeholders to problem-solve issues related to the implementation of the KB role more broadly
- **Replicate** this research using the KB model with other evidence-based materials
- Investigate the cost-effectiveness of the KB role and the impact of this strategy on service delivery and health outcomes
- Develop **educational materials** to support therapists' ability to share the results from measures, including prognostic information, with families

WE HAVE GOOD NEWS TO SHARE!

- We have been successful in securing a small grant from the Canadian Institutes of Health Research (CIHR) to fund dissemination and discussion of our study findings with our target audiences.
- The grant will be used to support the production of user-friendly materials describing the results of the KB Study for audiences including KBs, therapists, administrators, and policy decision makers.
- Individuals from these target audiences will also be invited to participate in an interactive teleconference where individuals from centres across Ontario, Alberta, and British Columbia will come together to discuss the implications of the study findings within their local context and share ideas about if and how to implement KB roles in the future.

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ALBERTA
Alberta Children's Hospital
Glenrose Rehabilitation Hospital

BRITISH COLUMBIA
BC Centre for Ability,
Central Okanagan Child Development Association
Fraser Valley Child Development Centre
Kelowna School District
Nanaimo Child Development Centre
NONA Child Development Centre
Prince George Child Development Centre
Queen Alexandra Centre for Children's Health
Ridge Meadows Child Development Centre
Sunnyhill Health Centre for Children

ONTARIO
Bloorview Kids Rehab
Children's Treatment Centre of Chatham-Kent
Children's Developmental Rehabilitation Programme
Cochrane Temiskaming Children's Treatment Centre
ErinoakKids
Five Counties Children's Centre
Grandview Children's Centre
Hôpital Regional de Sudbury Regional Hospital's Children's Treatment Centre
John McGivney Children's Centre
KidsAbility - Centre for Child Development
Kingston Child Development Centre
Lansdowne Children's Centre
Ottawa Children's Treatment Centre
Pathways Health Centre for Children
Thames Valley Children's Centre

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