Knowledge Translation in a Collaborative Approach:
Development of the Treadmill Loan Program and the Supported Treadmill Exercise Program Sacramento State-Easter Seals

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PROGRAM CONCEPT
By combining the resources of an academic and a clinical setting, two parallel programs designed to provide treadmill intervention free of charge were successfully implemented:
The Treadmill Loan Program and the Supported Treadmill Exercise Program Sacramento State-Easter Seals (STEPS).

Eligibility criteria (determined by treating PT)
Law
- Child’s ability to sit for 30 seconds without support
- Child’s ability to take 5-7 steps when supported
- No medical contraindications for walking/standing activities

TREADMILL LOAN PROGRAM
- Administered by Easter Seals Superior, CA.
- Six portable pediatric treadmills were purchased via fundraising by Easter Seals Guild.
- Treadmills are loaned out for 6-8 week intervals to child’s home.
- Eligibility is based on the child’s motor status and is timed during a developmental crucial stage of walking readiness.
- Treadmills are used daily or twice daily based on evidence-based protocols.
- Treadmills are removed when child takes independent steps.

Program Utilization
- 15 families (November 2013- August 2014)
- Multiple diagnoses (n=4 genetic syndrome, n=3 cerebral palsy, n=4 developmental delay, n=1 autism, n=1 lissencephaly)
- Mean age 19.3 (14-27) months
- Mean loan period 6.9 (3-16) weeks

STEPS
- Administered by Sacramento State, CA.
- Twice weekly access to pediatric treadmills in a group setting for 14 weeks.
- Offered in spring and fall semester of the academic year.
- Summer-STEPS was offered for 8 weeks in 2014.
- Initial funding via an internal university grant. Additional funding via a dedicated Easter Seals fundraising event.
- Run by Doctor of Physical Therapy students with supervision of the pediatric faculty or Easter Seals PT.
- Children are assessed at program onset and end-of-program.

Program Utilization
- 14 families (September 2013-May 2014)
- Multiple diagnoses (n=6 genetic syndrome; n=5 cerebral palsy; n=1 infantile spasms, n=1 temporal lobe astrocytoma, n=1 cytomegalovirus)
- Mean age 29.7 (19-47) months
- Program attendance mean of 1.54 sessions/week
- Mean time walked/ week of 27.3 minutes

Results
- Significant improvements in
  - GMFM Dim D (p<0.001)
  - Dim E (p=0.002)
  - PEDI (p=0.001)
  - 10MWT (p=0.049)

Background
Parents of young children with a chronic neurological condition place a high priority on the attainment of walking and often request as much assistance as possible in helping their child attain this skill.

Physical therapy (PT) service delivery to young children with neuromotor impairment is usually limited to once weekly sessions, and research supports high-dosage interventions for optimal neuroplastic changes in the developing brain.

In pre-ambulatory children with walking potential with or without an assistive device, research findings support the use of early, intensive treadmill intervention in addition to over-ground walking training.

In order to close the gap between the required and the customarily provided dosage of motor interventions related to walking, two ancillary programs were implemented to increase accessibility to therapist-guided, parent-driven, structured treadmill interventions.

Figs 1. Children walking with the help of DPT students and parents during STEPS; from personal archives, with permission

Figs 2 & 3. Children walking on small treadmills at home with the help of parents; from personal archives, with permission

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Figs 4-8. Children walking with the help of DPT students and parents during STEPS; from personal archives, with permission