



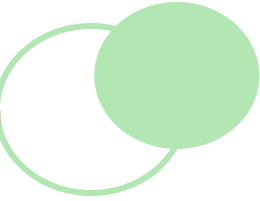
Waiting Times for Rehabilitation Services in Children with Physical Disabilities: Determinants & Consequences



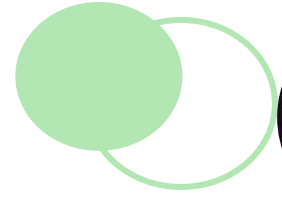
Debbie Ehrmann Feldman, PT, PhD

Evolving in Rehabilitation – A National Perspective
Montréal, October 17 and 18, 2007





Two studies



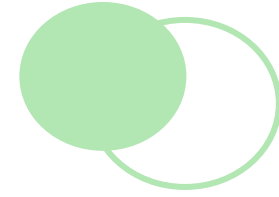
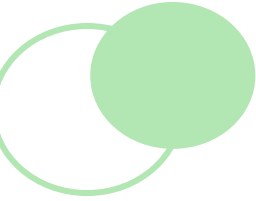
- **1999: Pilot study**

- Montreal Children's Hospital

- **2002-2004: Main study**

- Montreal Children's Hospital and CHU Sainte Justine

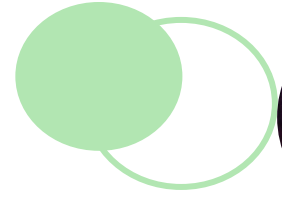
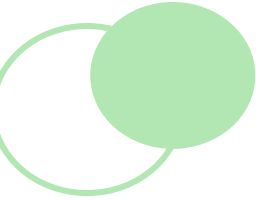




Background

- Early rehab minimizes long-term disability
- Health reform in Québec in the early 90 's shifted pediatric rehab from the hospital into the community
- Personal clinical experience demonstrated practical problems with this policy change

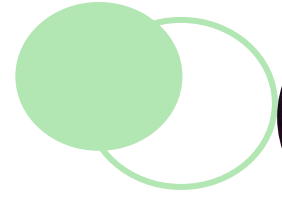
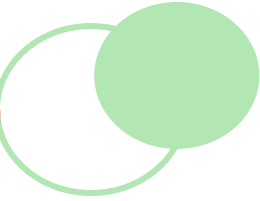




Objectives

- To describe delay times for transfer to rehabilitation
- To determine factors associated with early transfer
- To assess family satisfaction with care



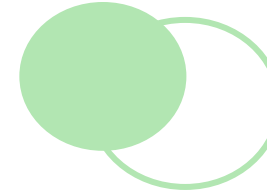
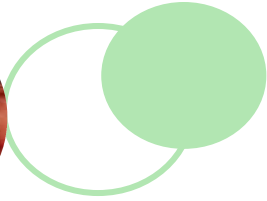


Methods

● Study population

- All children referred from MCH to community rehabilitation between 1/1/99 - 31/12/99
- Residing in Montreal and surrounding area
- Referred to PT or OT for physical disability



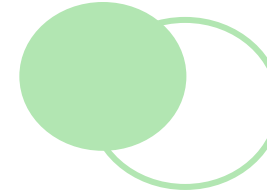
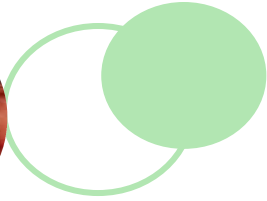


Methods

- Data Collection

- From discharge database: age, diagnosis, place of residence, language, dates of referral and acceptance by rehab.
- From primary caregiver of those who were transferred: satisfaction with services, transfer, continuity of services, feelings of empowerment and enabling/partnerships

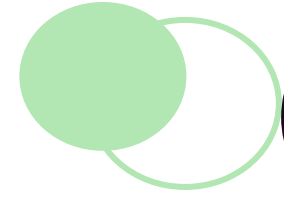
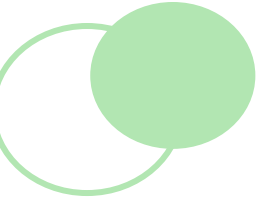




Measures

- Satisfaction
 - Questions from *Client Satisfaction Questionnaire* (CSQ, Larsen 1979, Sabourin 1989)
- Empowerment
 - Service System Subscale *Family Empowerment Scale* (Koren 1992)
- Enabling/Partnerships
 - Enabling and Partnerships Scale, *Measures of Processes of Care - MPOC* (King 1995)

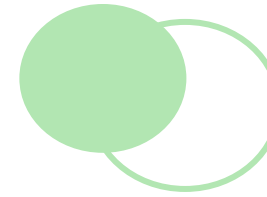
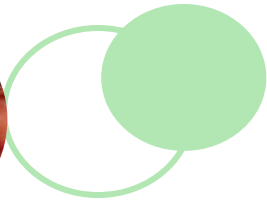




Analysis

- Definition of delay: time between referral to and acceptance by rehab centre
- Survival analysis models to determine factors favouring prompt transfer
- Logistic regression to determine factors associated with early transfer





Results

- 172 children referred to community rehab:
 - 94 to OT &PT, 72 OT only, 6 PT only
- 61% lived on the island of Montreal
- 56% English speaking
- Mean age: 2.5 ± 1.6 years (range of 0.2–9)





Frequency of Diagnoses (N=172)



Diagnosis	N	%
Developmental problems	66	38.4
Cerebral Palsy	25	14.5
Spina Bifida	8	4.7
Trisomy 21	9	5.2
Neuropathologic condition	15	8.7
Other	49	28.5





Waiting time to receive OT & PT

Waiting time	% receiving	
	OT	PT
<30 days	0.0	0.0
30–60 days	0.7	2.7
60–90 days	12.2	18.7
90–120 days	9.5	12.0
120–150 days	13.5	20.0
150–180 days	9.5	10.7
>180 days*	54.7	36.0

*Some children in this category were still waiting for services

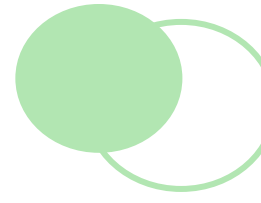
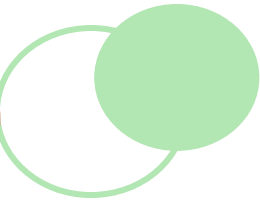




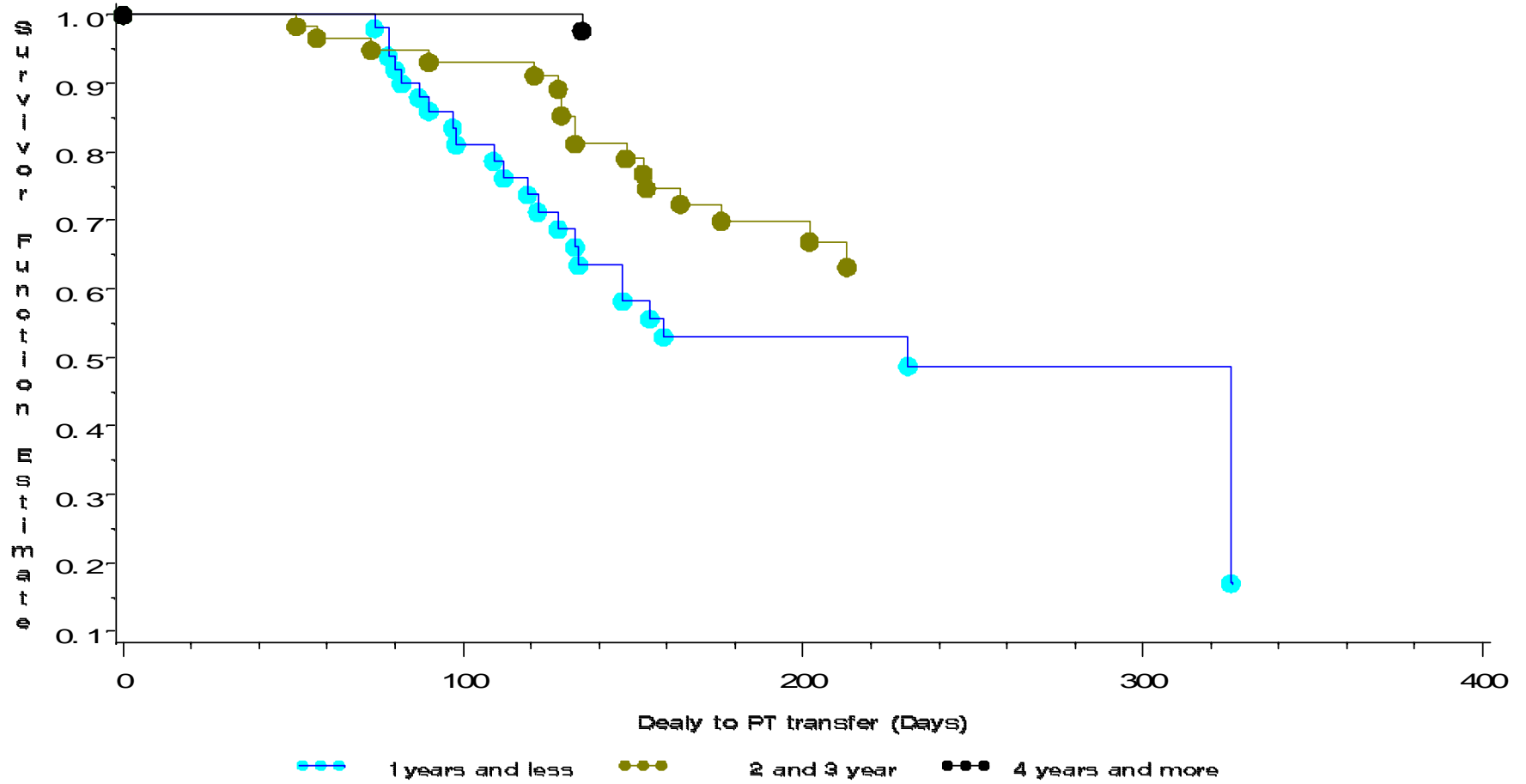
Cox Regression: Delay Until Transfer

Variable	Hazard Ratio OT (95% CI)	Hazard Ratio PT (95% CI)
Age (years)	0.90 (0.76-1.07)	0.46 (0.34-0.62)
Developmental Delay	0.77 (0.47-1.26)	0.77 (0.40-1.47)
Montreal resident	1.50 (0.90-2.49)	1.77 (0.92-3.41)





Delay to PT transfer (Days) by Age





Interviewed Subcohort (N=41)


- Of the 51 children who were transferred by Dec. 31, 1999, 41 primary caregivers were interviewed
- No differences between the 10 nonparticipants and participants (age, gender, residence, language, diagnosis)





Interviewed Group (n=41)

Variable	Mean (SD)	Range
Age (years)	2.9 (1.6)	1-9
Enabling Score	8.7 (1.4)	1-10
Empowerment	3.9 (0.9)	1-5
Perceived delay	174 (105)	21-545
Actual delay OT	173 (48)	78-282
Actual delay PT	178 (100)	57-380






Satisfaction with Services



- 34/41: staff was well-versed in child's condition
- 36/41: satisfied with continuity of care
- 38/41: very or mostly satisfied, overall
- 13/41: expressed problems with process
 - 7 complained of waiting too long
 - 3 complained about quality of care at rehab centre
 - 1 complained of repetitive assessment process
 - 1 complained of a confusing environment for the child
- 15/41 (36.6%) deemed not completely satisfied



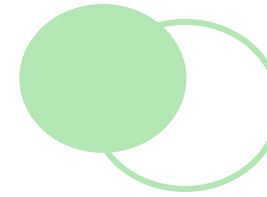
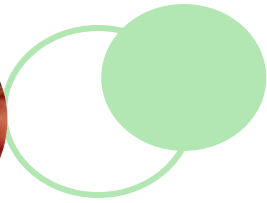


Factors associated with shorter waiting for OT (<6 m), n=41

	Univariate P	Log Reg (OR, 95%CI)
Higher empowerment	0.02	6.58 (1.05-62.0)
Lower parent education	0.56	1.22 (0.21-7.69)
Non-developmental delay	0.74	1.35 (0.28-6.92)
City dweller	0.58	2.19 (0.20-29.03)

*Odds ratios adjusted for all variables in the table

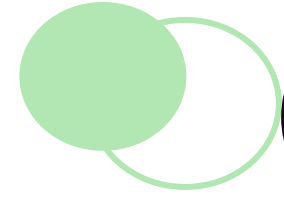
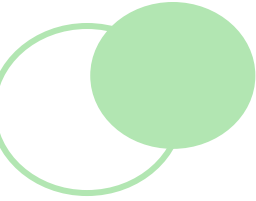




Discussion

- Longer delays for children living off island of Montreal; problem of resources in some areas?
- Younger children admitted sooner; rehab thought to be most beneficial at younger ages
- Higher empowerment linked with shorter delays
 - Perhaps, those who know how to manoeuvre within the system, get services sooner





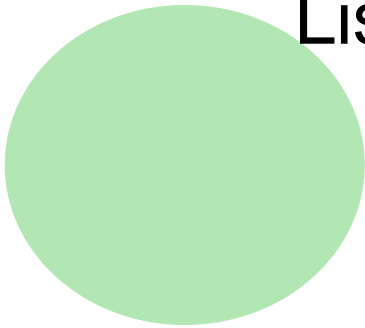

Limitations

- Addressed only one of the two pediatric hospitals in Montreal
- More English-speaking clients in this population
- Only interviewed those who received services
- No measure of severity of the disability





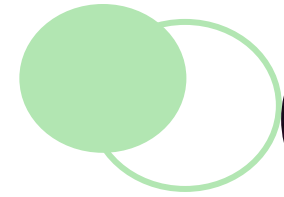
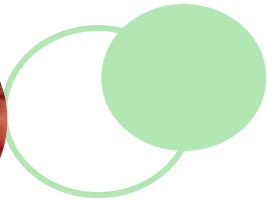
Wait Times for Pediatric Rehabilitation



Lisa Grilli, Debbie Ehrmann Feldman,
Bonnie Swaine, Julie Gosselin,
François Champagne,
Raynald Pineault

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McGill University Health Center: Montreal Children's Hospital
Centre de recherche Hôpital Sainte-Justine

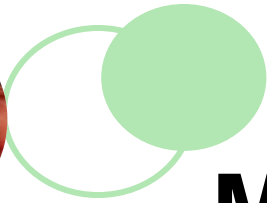




Objectives

1. To describe waiting times to receive PT and OT services at rehab centers for preschool-aged children with physical disabilities
2. To examine factors associated with waiting time (child-related, family-related and service-related)

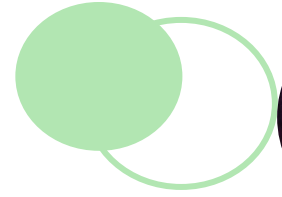
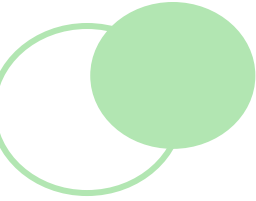




Methods: Study Population

- Parents of preschool-aged children 6-72 months
- Referred from MCH or HSJ to out-patient PT or OT at 5 local rehabilitation centres
- Referred between Sept 1, 2002 and Feb 28, 2004

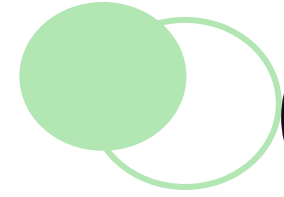
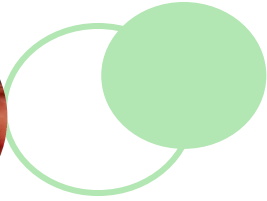




Data Collection

- Identified from hospital referral databases
- Parents contacted by telephone
- Interviews at 3 month intervals
 - Structured study questionnaire
 - WeeFIM

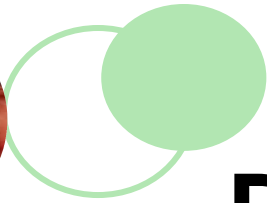




Analysis

- Descriptive statistics of the cohort
- Survival analysis & Cox regression:
 - Association between time to rehabilitation and various factors (diagnosis, child's age, severity, maternal education, rehab center)



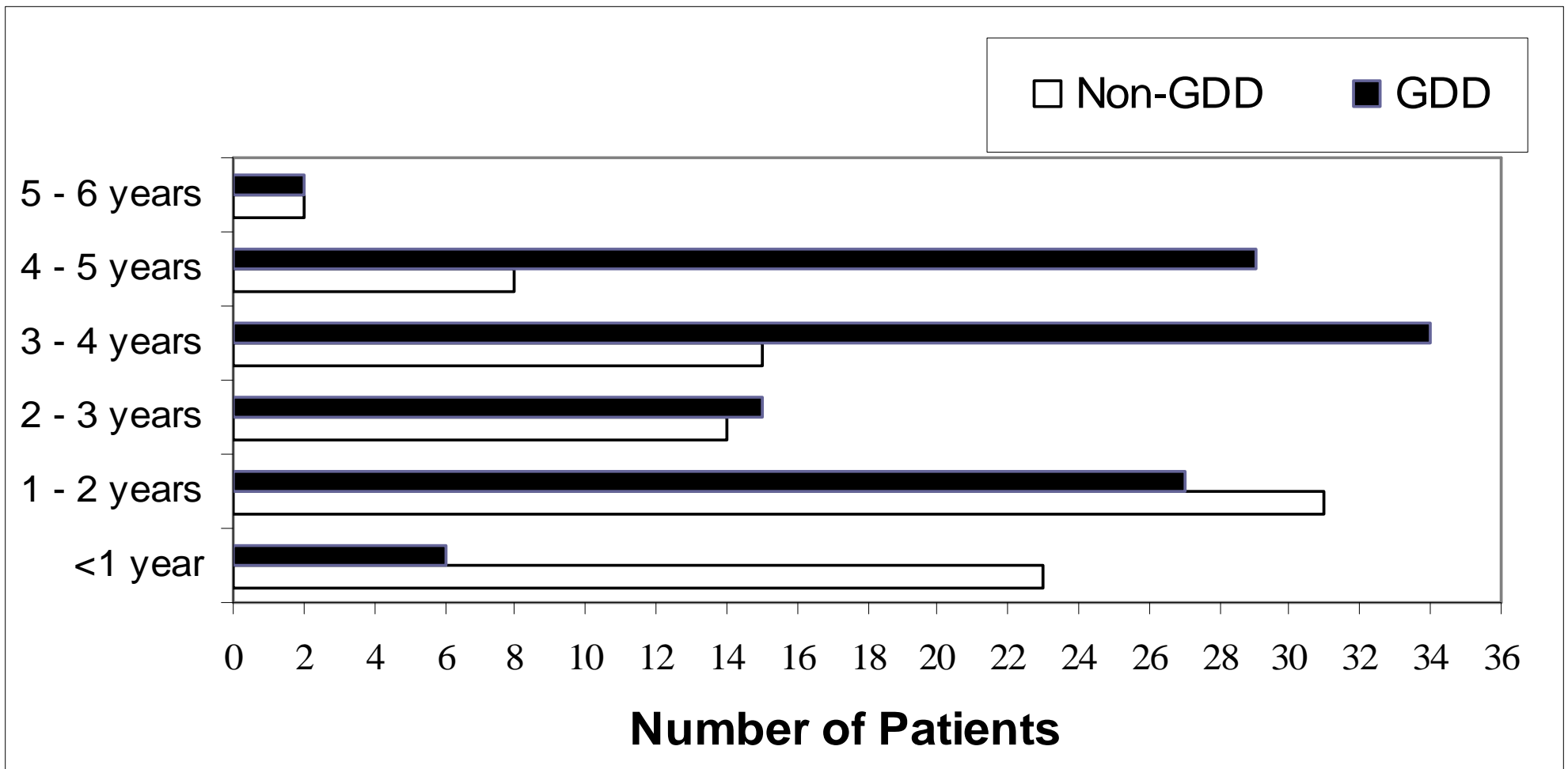


Demographic Data (n=206)

Mean age in months (SD)	31.6 (16.4)
Male Gender (%)	134 (65.0%)
Global Dev Delay dx (GDD)	92 (44.7%)
Maternal education \geq college	124 (60.2%)
Family income \geq \$60K Cdn	55 (27.9%)
City dweller vs suburb	127 (61.7%)
Referred to rehab services	
PT	132 (64.1%)
OT	198 (96.1%)
Both PT/OT	124 (60.2%)

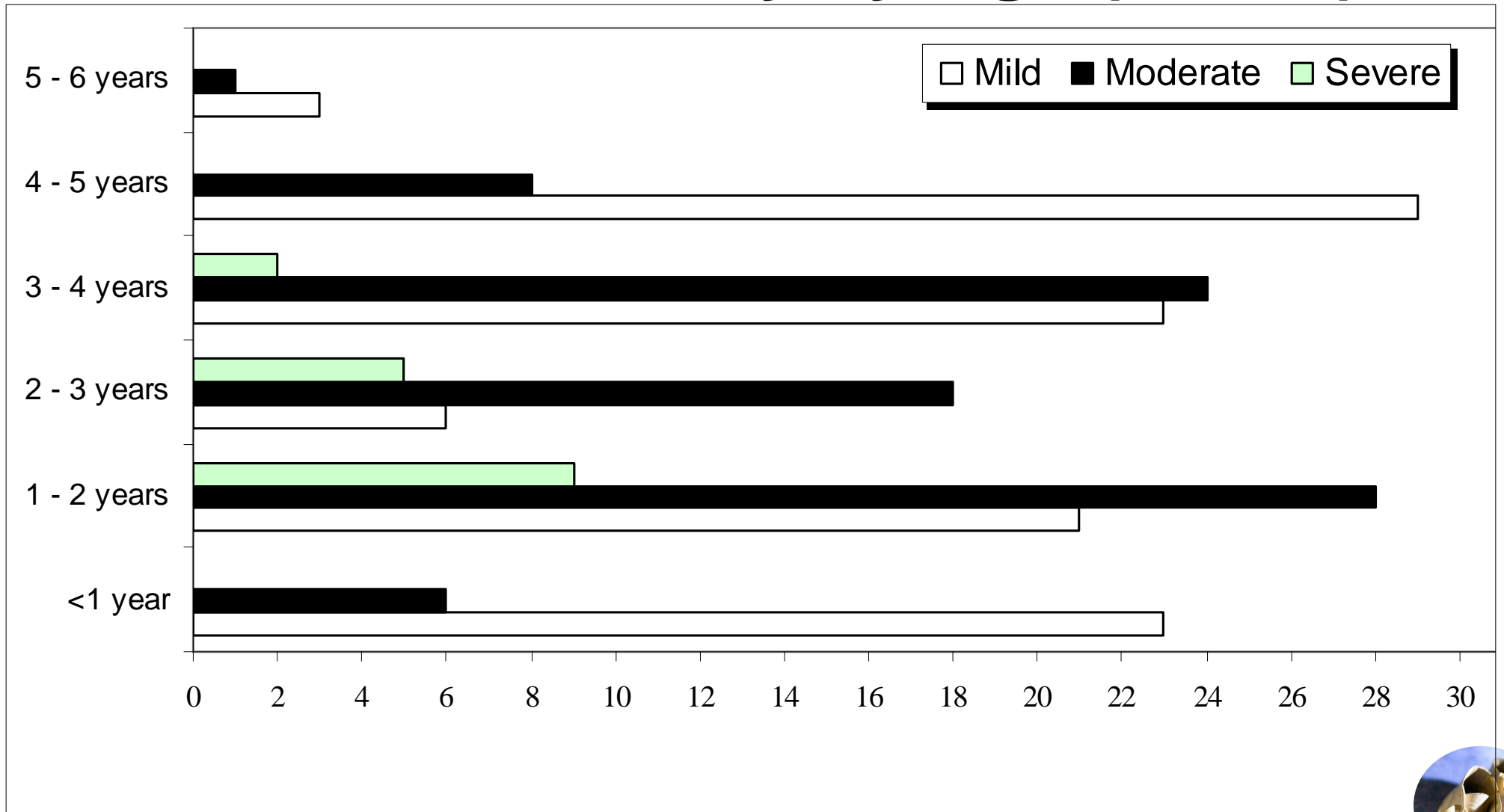


Diagnosis by Age (n=206)



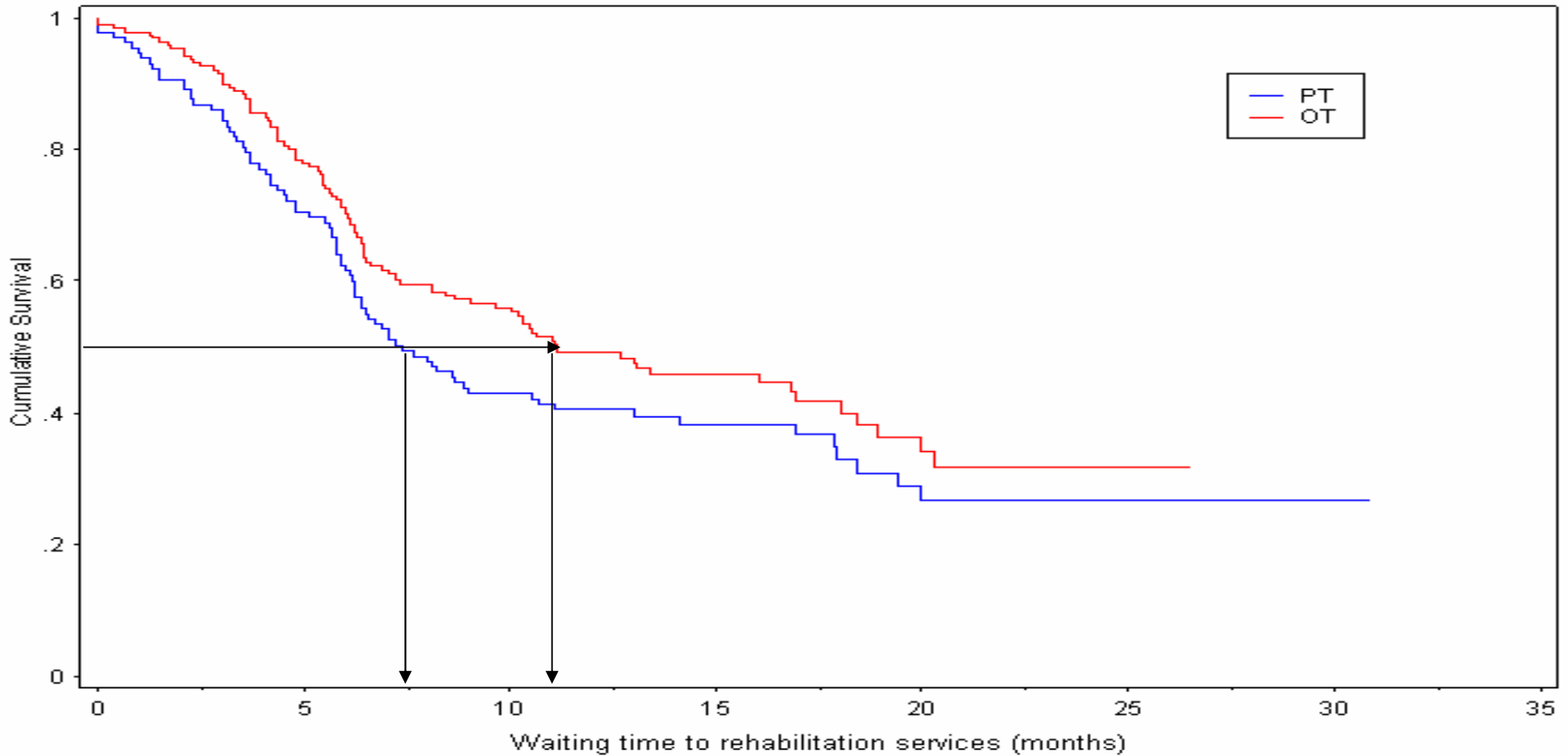


WeeFIM Severity by Age (n=206)





Waiting time for receipt of PT and OT



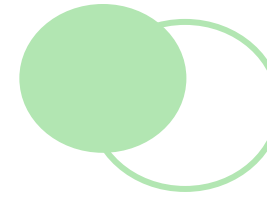
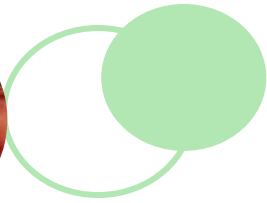
Factors associated with shorter waiting time

Factors	Crude HR (95% CI)	Adj HR (95% CI) ‡
Maternal education > HS	1.21 (0.85 – 1.72)	1.10 (0.76 - 1.56)
Rehabilitation centre (1 vs 3)	2.12 (1.49 – 3.01)*	2.75 (1.74 – 4.36)*
Age (> median)	0.62 (0.44 – 0.88) †	0.55 (0.37 – 0.82)**
City dweller vs suburb	1.53 (1.07 – 2.19) †	0.98 (0.62 – 1.54)
Diagnosis (GDD vs non-GDD)	0.65 (0.46 – 0.91) †	0.73 (0.50 – 1.06)
Severity (mod vs mild)	0.80 (0.57 – 1.14)	0.76 (0.53 – 1.10)
Severity (severe vs mild)	1.6 (0.91 – 2.69)	1.12 (0.63 – 2.0)

‡ Adjusted for the covariates in the table

* p < 0.0001 ** p = 0.003 † p < 0.01

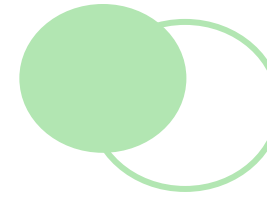
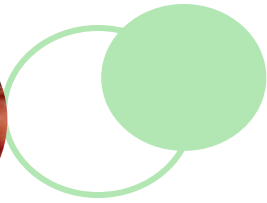




Discussion

- Despite recommendations for coordinated ped. rehab, there was an increase in waiting times
- Long waiting times may:
 - Be detrimental for attainment of pediatric rehab goals
 - Result in over-utilization at the tertiary care facility, possibly increasing therapist caseloads which further increases waiting times (Majnemer et al., 2002),
 - Lead to parental dissatisfaction



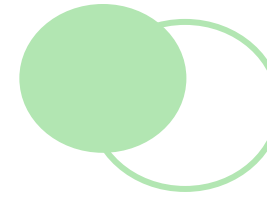
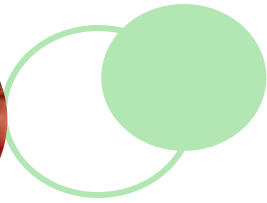


Discussion

- Younger children waited less than older children
 - Children entering regular school may now be placed at the bottom of school rehab waiting list
- Children with a specific diagnosis waited less than children with nonspecific diagnosis of GDD
 - Children with GDD/unspecified etiology may not be identified early enough

(American Academy of Pediatrics, Committee on Children with Disabilities, 2001/ Halfon et al, 2004/ Bailey et al, 2004)

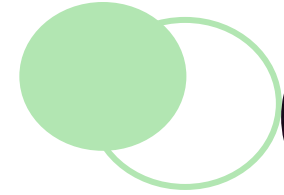
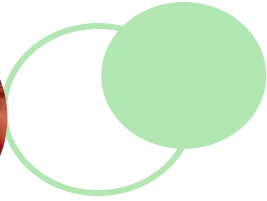




Discussion

- Severity did not influence waiting times
 - Lack of sensitivity of WeeFIM at younger ages
 - Possible interaction with age
 - Referrals are primarily made with respect to the child's diagnosis, rather than the level of severity
- One centre had significantly shorter waits
 - Organizational differences?
 - Referral differences?

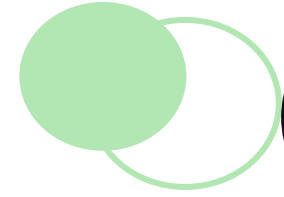
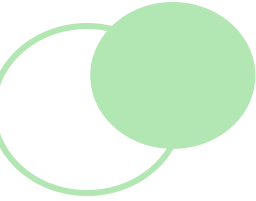




Conclusion

1. Children with physical disabilities waited a long time for PT and OT services
2. Factors associated with longer waiting were: older age, non-specific diagnosis and possibly service provider related







Implications

- Augment PT and OT resources
- Develop alternative models of care delivery
- Implementation of new policies in order to improve accessibility of services



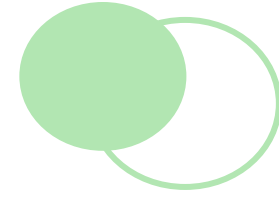
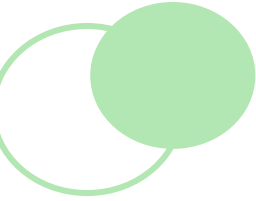


Waiting for Rehabilitation Services in Children with Physical Disabilities: Effects on Child Function & Quality of Life

Université 
de Montréal

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J Gosselin, G Meshefedjian, L Grilli

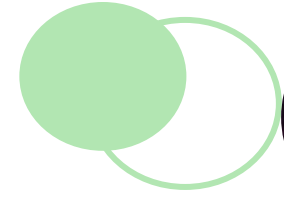
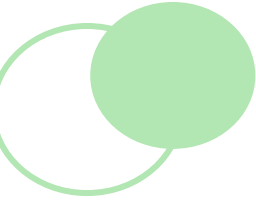




Background

- Early rehab believed beneficial for children with neuro-motor disabilities
- Lengthy delays to receive rehab reported
- Delays may be associated with:
 - Delayed diagnosis, lack of definitive diagnosis, age of the child, severity of the child's condition, service availability and organizational factors

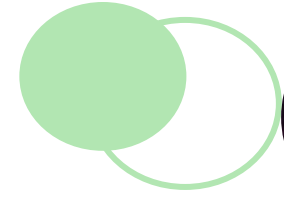
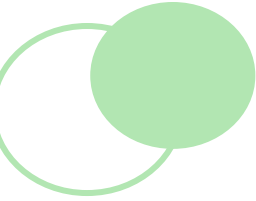




Background

- Care of children with disabilities is physically and psychologically demanding
- Delays in receiving services may impact on both the parents and the child
- Services are insured by the publicly funded health care system in Canada, but parents may pay for private services

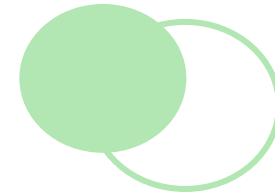
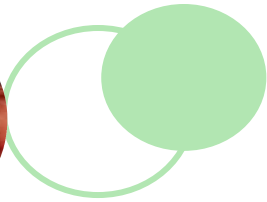




Objectives

- To explore whether longer delays for rehab were associated with decline in child functional status and/or parental perception of child's quality of life
- To assess whether parental empowerment changed over the waiting period

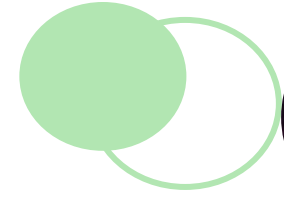
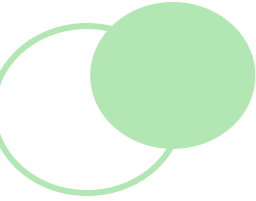




Methods

- Study population: parents of all children (2-9 years) referred over an 18 month period to out patient PT or OT at five local rehab centres
- Children with *only* cognitive problems were excluded
- Participants identified from hospital central referral databases

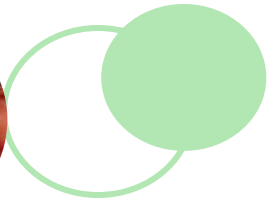




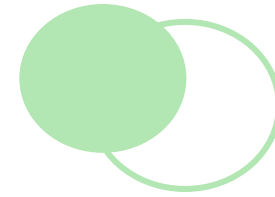
Data collection

- Parents contacted to participate in the study
- Interviewed every 3 months until admission to the rehab program
- First interview face to face; follow-up interviews by telephone



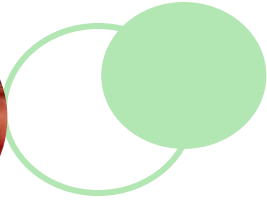


Parent Interviews

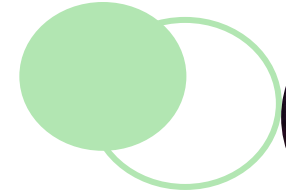


- Study questionnaire: sociodemographics, service utilization
- Functional Independence Measure for children (WeeFIM: quotients for 3 subscales self-care, mobility, cognition)
- PedsQL4.0 – Pediatric Quality of Life Questionnaire (2 subscales: psychosocial and physical health summaries: scale 0-100)
- Family Empowerment Scale: Service System Subscale (12 items)



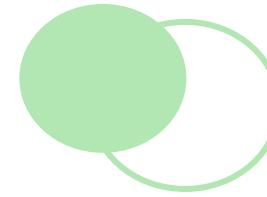
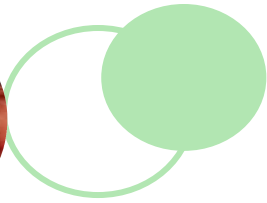


Analysis



- Descriptive statistics
- Multiple linear regression to model change in scores as a function of waiting time, adjusted for diagnosis and use of private services while waiting
- Change in scores: final score minus score at initial interview





Results (n=124)

	n	%
Male	83	66.9
Maternal education > high school	65	53.7
Household income < \$40,000 (Cdn)	47	47.5
Nonspecific dx: Global Dev. Delay	66	53.2
Moderate to Severe disability	60	48.4
Paid for private services	52	41.8



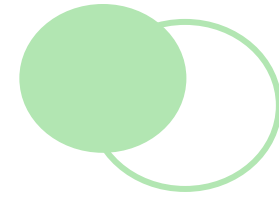
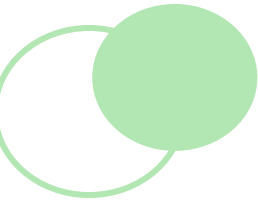
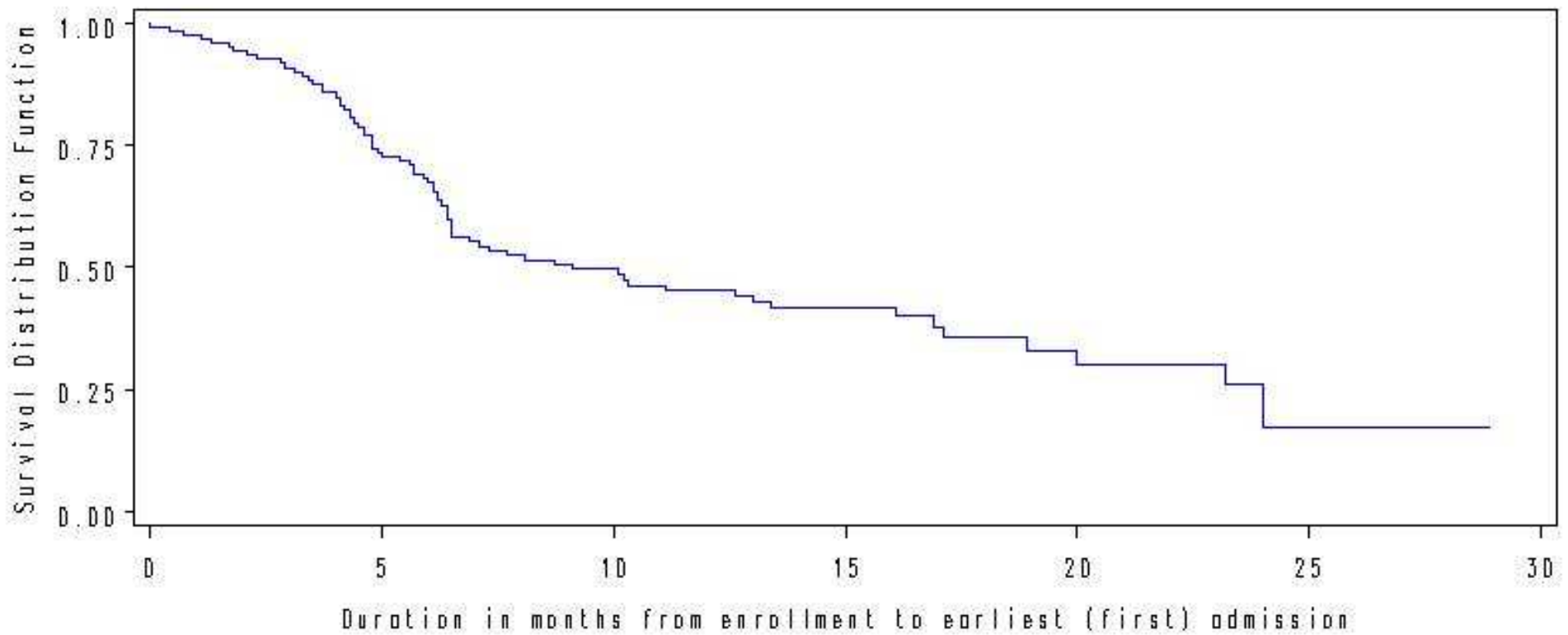


Figure 1. Time (months) from referral to admission among children 2 years and older (n= 124)

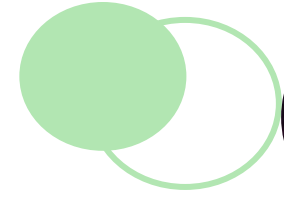
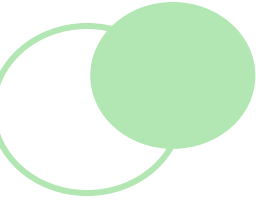




Association between waiting time & change in scores over waiting interval

	Adj β (95% CI)	P
WeeFIM Total	0.51 (0.22,0.80)	<.01
WeeFIM Self	0.42 (-0.11,0.95)	0.17
WeeFIM Mobility	-0.24 (-0.79,0.31)	0.39
WeeFIM Cognition	0.52 (0.03,1.01)	0.04
PedsQL Total	-0.28 (-0.56,0.01)	0.06
PedsQL Physical	-0.20 (-0.59,0.20)	0.33
PedsQL Psychosocial	-0.32 (-0.64,-0.01)	<.05
Parent Empowerment	0.15 (-0.01,0.30)	0.07

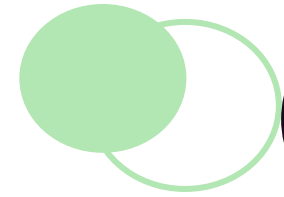
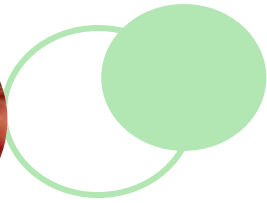




Discussion

- Half the children waited longer than 9 months for rehabilitation
- Function improved but psychosocial aspect of quality of life deteriorated over the waiting period
- There was no significant change in parental empowerment

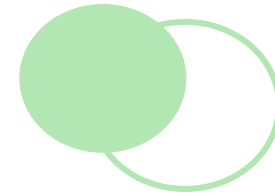
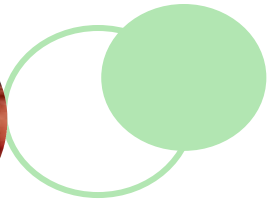




Study Limitations

- Parent self-report
- Length of follow-up for each child depended on when admitted to rehabilitation
 - Adjusted for age and diagnosis but there may be other confounding factors
- Observational study: cannot assume that decreasing waiting times improves quality of life

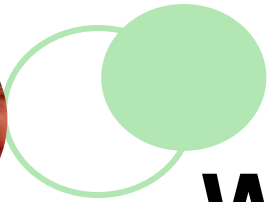




Impact / Significance

- Rehab specialists may need to pay attention to psychosocial quality of life and participation
- Reducing waiting times for rehab will allow these to be addressed in a timely fashion
- Need for implementation and evaluation of rehab strategies on improvement of psychosocial quality of life

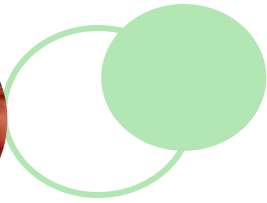




Where do we go from here?

- Develop, implement and evaluate new models of rehabilitation care delivery
- Develop, implement and evaluate rehabilitation strategies to improve psychosocial quality of life
- Influence health policy regarding importance of rehabilitation in pediatrics





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