Association of Student Outcomes and School-based Interventions

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Want to thank the participants in PT COUNTS for assisting in helping to advance our knowledge of school-based physical therapy and the students we serve.
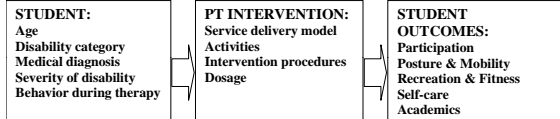

Disclosure Information

Disclosure of Relevant Financial Relationships
We have no financial relationships to disclose.

Disclosure of Off-Label and/or investigative uses:
We will not discuss off label use and/or investigational use in the presentation.

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PT COUNTS Model

STUDENT:	PT INTERVENTION:	STUDENT OUTCOMES:
Age Disability category Medical diagnosis Severity of disability Behavior during therapy	Service delivery model Activities Intervention procedures Dosage	Participation Posture & Mobility Recreation & Fitness Self-care Academics

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Objectives

Upon completion of this session, the learner will:

1. Identify the school-based physical therapy interventions associated with positive student outcomes on standardized and individualized measures.
2. Describe how the SFA and GAS can be used to monitor progress in school settings.
3. Engage in a self-analysis of the value of both *services to the student* and *services on behalf of the student.*
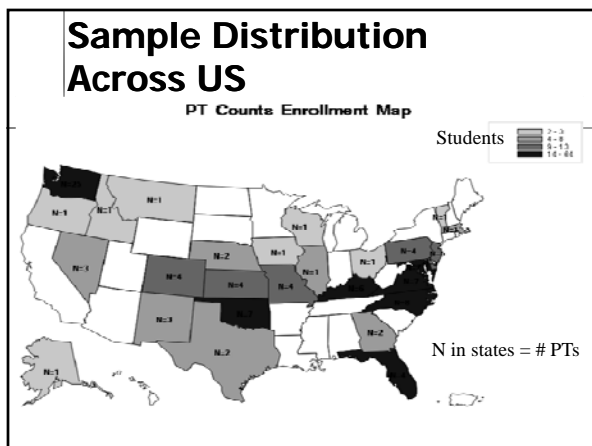4. Create solutions to implement successful interventions to achieve student goals in school-based practice.

Participants

– PTs:
  ▪ Licensed PTs with $\geq$ 1 year experience in school-based practice
  ▪ Recruited from school districts having at least 2 therapists (did not focus on rural areas and large cities)
  ▪ Had to complete ethics training (CITI), SFA, GAS, and S-PTIP training

– **Students:**
  - **Inclusion criteria:**
    - Kindergarten – 6 grade, age 5-12 yrs
    - Receive Special Education & PT services at least monthly
  - **Exclusion criteria:**
    - Progressive disability
    - Family plans to move within year
    - Major surgery planned
    - History of absences > 30% of school days in previous year

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- **Students Participating at End of Study n= 302**

296 students had complete data

PTs Participating

- **PTs Signed Consent Forms**
  - NE 47   SE 55   NW 41   Central 34
  - n = 177
- **PTs Recruited Students**
  - NE 28   SE 36   NW 31   Central 31
  - n = 126
- **PTs Participating at Study End**
  - NE 22   SE 28   NW 31   Central 30
  - n=111

Participants: PTs

Attributes	Participating PTs (n=111)
Female Gender, n (%)	106 (95.5%)
Age in years, Mean (SD)	46.1 (9.09)
White Race, n (%)	107 (96.5%)
Hispanic/Latino Ethnicity, n (%)	2 (1.9%)
Degrees, n (%)	Certification: 2 (1.8%) BS: 60 (54.1%) MPT: 35 (31.5%) DPT: 14 (12.6%)
Time worked, n (%)	75 (67.6%) FT; 36 (32.4%) PT
Average # students/year, Mean (SD)	36.1 (12.6%) *(includes 32% working part-time)*
APTA member, n (%)	57 (52.3%)
PCS, n (%)	9 (8.1%) yes; 8 (7.2%) in process

Sample Distribution Across US

PT Counts Enrollment Map

Students

N in states = # PTs

Participants: Students (5-12 years-old)

Parent-reported data	Students (n=302)
Female Gender, n (%)	131 (43.5%)
Age, Mean (SD)	7.3 (2.01)
White, n (%)	218 (72.2%)
Hispanic/Latino Ethnicity, n (%)	51 (17.3%)
Receive additional therapy outside school, n (%)	97 (32.4%)
Receive school-based OT, n (%)	262 (86.8%)
Receive school-based SLP, n (%)	240 (79.5%)
Receive school-based Adapted PE, n (%)	124 (41.1%)

Participants: Students (5-12 years-old)
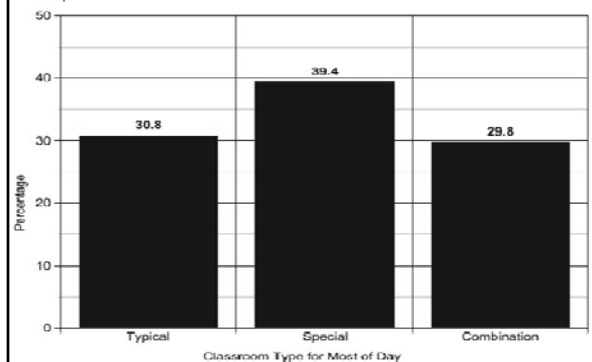
Procedures

Study Start	• Completed sections of the SFA • Identified student goals from IEP 　• Wrote goal in GAS format 　• GAS reviewed by research team 　• GAS categories determined by research team 　• If more than one goal, identified primary goal
During Study	• Completed SPTIP weekly for 6 mo
Study End	• Rescored sections of SFA • Determined students level of goal attainment

Diagnosis Categories	# (%) n=302
Cerebral palsy	102 (34.6%)
Down syndrome	48 (16.3%)
Other genetic syndromes	41 (13.9%)
Global developmental delay	31 (10.5%)
Autism/PDD	22 (7.5%)
Learning disability/ ADHD/SLD/DCD	16 (5.4%)
Developmental delay due to medical issues	15 (5.1%)
Myelomeningocele	8 (2.7%)
Visual &/or hearing impairment	6 (2.0%)
Traumatic brain injury	5 (1.7%)
Limb deficiency	1 (0.3%)

School Physical Therapy Interventions for Pediatrics (S-PTIP)

- S-PTIP Form and Manual further developed by research team from their previous research
- Posted at :
  - http://www.mc.uky.edu/healthsciences/grants/ptcounts

- S-PTIP Reliability
  - Effgen S, McCoy S, Jeffries L, Chiarello L, Smarr J, Bush H, Smith T. (2014). Reliability of the School-Physical Therapy Interventions for Pediatrics Data System. *Pediatric Physical Therapy*, 26(1), 118-119.

Students' Functional Classification

	Total (n=302) n (%)
Gross Motor Function Classification System	
I	117 (38.7%)
II/III	119 (39.4%)
IV/V	66 (21.9%)
Manual Abilities Classification System	
I	53 (17.6%)
II/III	179 (59.5%)
IV/V	69 (22.9%)
Communication Function Classification System	
I	48 (15.9%)
II/III	125 (41.5%)
IV/V	128 (42.5%)

Type of Activity

- Time spent on activities with child:
  - Based on primary intent of intervention
  - Split time between activities if multiple intents
- Estimated duration in ~5 minute increments
- Highest activities were: PE/Recreation, Mobility, and Pre-functional
- TOTAL time spent with the student: Average = 26.8 minutes/week

Services to the Student:

- Reflects how services reported under Activities and Interventions Sections were delivered
  - A. Group vs. individual service
  - B. Time with other Special Ed students, with non- Special Ed students, and/or with the child alone
  - C. Time spent within school activity vs. separate from school activity
  - D. Time spent in co-treatment
    - Indicate "with whom"

Interventions

- List of Interventions used
  - Each is listed once per form
  - Most frequently provided interventions were: neuromuscular, musculoskeletal, mobility, & educational
- Who delivered the service
  - PT, PTA, or both

Services on Behalf of the Student:

- E. Consultation/collaboration time, indicate "with whom"
- F. In-service time
- G. Curriculum development time
- H. Documentation time
- I. TOTAL MINUTES on behalf of student (Sum of E, F, G, H), average of 13.2 minutes/week

Service Delivery Duration

- Four sections:
  - Services to the Student (A-D)
  - Services on Behalf of the Student (E-I)
  - Setting
  - Student Participation/ Engagement Rating
- Estimated duration in ~5 minute increments

- Setting
  - Where services were provided
    - School, home, or another location
- Student Participation/Engagement Rating
  - Indicated the participation/engagement rating for child
  - 0 = Student's participation/engagement during the session was *not at all* conducive to achieving the session's objectives
  - 6 = Student's participation/engagement during the session was *exceptionally* conducive to meeting the session's objectives

How could this method of documentation help you?

- **Discussion:**
  - Research
  - Clinical
  - Teaching
  - Administration

- **ICF-CY activity, participation**
- **Children with disabilities grades K–6**
- **Comprehensive, criterion-referenced, standardized, judgment-based interview to determine child's participation in all aspects of school environment**
- **Used several subsections**

Descriptive Data Results

- Duration: at least 20 weeks
- Number of weeks with no services provided:
  - Mean = 5.4 weeks (3.66)
  - Min-Max: 1-16 weeks
- Reason for No Services:
  - Student absent   36.7%
  - School closed   24.2%
  - PT or PTA absent   17.4%
  - Per IEP   17.1%
  - Other   8.2%
  - Schedule conflict   5.7%

SFA Outcome Results

- **Raw scores converted into criterion scores**
- **Standard error of measurement (SEM) varies by subscale but generally around 5 points (range 2-15)**

Student Participation & Setting

- Student engagement/participation rating   (n=295)
  - 0 (not conductive to session objectives) to 6 (conductive to session objectives) scale
  - Mean (SD): 4.8 (0.92)
    - Min/Max: .8/6
- Setting n=296 (n, %)
  - School   252 (85.1%)
  - School & Other   30 (10.1%)
  - Other totals   14 (4.7%)
- Provider n=296
  - PT only: 260 (87.8%)
  - PT & PTA: 36 (12.2%)

- **Divided outcomes into:**
  - SFA Criterion Change Score below -5
  - SFA Criterion Change Score -5 to 5
  - SFA Criterion Change Score above 5

Data results: SFA Outcomes

Physical Tasks	SFA Criterion Score Below -5 n	SFA Criterion Score -5 to 5 n	SFA Criterion Score Above 5 n
Travel	11 (4%)	157 (53%)	127 (43%)
Maintaining & Changing Positions	9 (3%)	151 (51%)	134 (46%)
Recreational Movement	14 (5%)	155 (53%)	123 (42%)
Manipulation with Movement	9 (3%)	155 (53%)	127 (44%)
Eating & Drinking	18 (6%)	161 (55%)	114 (39%)
Hygiene	23 (8%)	160 (55%)	109 (37%)
Clothing Management	11 (4%)	172 (59%)	111 (38%)
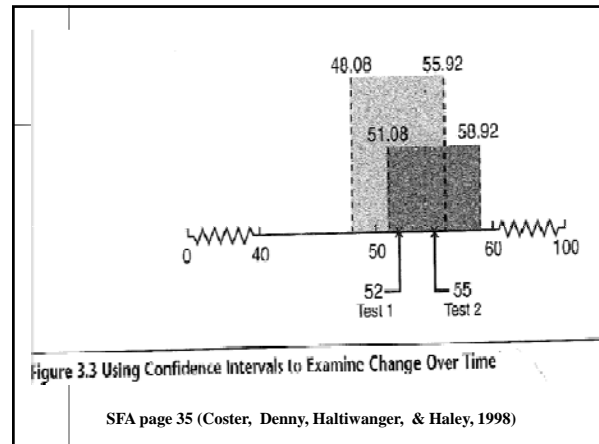
Figure 3.3 Using Confidence Intervals to Examine Change Over Time

SFA page 35 (Coster, Denny, Haltiwanger, & Haley, 1998)

Data results: SFA Outcomes

Physical Tasks	SFA Criterion Score Below -5 n	SFA Criterion Score -5 to 5 n	SFA Criterion Score Above 5 n
Participation	9 (3%)	134 (46%)	148 (51%)
Task Supports: Assistance	24 (8%)	149 (51%)	117 (40%)
Task Supports: Adaptation	5 (2%)	155 (53%)	135 (46%)

However:
- Start of year: Travel raw score=43
- End of year: Travel raw score=47
- 4 point improvement
- ❖ *Moves around room freely with no or infrequent bumping into obstacles or people*
  - Start year: Partial performance (2 pts)
  - End year: Consistent performance (4 pts)
- ❖ *Enters room and takes seat/place without bumping into obstacles or people*
  - Start year: Partial performance (2 pts)
  - End year: Consistent performance (4 pts)

- Example:
  - At beginning of year
    - Travel raw score=43; criteria score=52 SEM=2
    - CI 52+/- (1.96 x 2 = 3.92)
    - 95% CI for student's score = 48.08 - 55.92
  - At end of year
    - Travel raw score=47; criteria score=55 SEM=2
    - CI 55 +/- (1.96 x 2 = 3.92)
    - 95% CI for student's score = 51.08 - 58.92
    - *Was there improvement?*

SFA Outcomes: GMFCS

Physical Tasks	GMFCS Level I	GMFCS Levels II/III	GMFCS Levels IV/V	Level of Significance
Travel				Not significant
Maintaining & Changing Positions			Less Change	p≤ 0.0001
Recreational Movement	Most Change	Middle	Least Change	p≤ 0.0001
Manipulation with Movement			Less Change	p≤ 0.0001
Eating & Drinking			Less Change	p≤ 0.0001
Hygiene			Less Change	p≤ 0.0001
Clothing Management			Less Change	p≤ 0.02

SFA Outcomes: GMFCS

Physical Tasks	GMFCS Level I	GMFCS Levels II/III	GMFCS Levels IV/V	Level of Significance
Participation			Less Change	$p \leq 0.0025$
Task Supports: Assistance	Most Change	Middle	Least Change	$p \leq 0.0001$
Task Supports: Adaptation	Most Change	Middle	Least Change	$p \leq 0.0001$

- **SFA Criterion Change Score Above 5**
  - Improvement beyond SEM range 109 (37%) to 148 (51%) of students
  - Most students improved in *Participation*, followed by *Maintaining & Changing Positions*

SFA Outcomes

- **SFA Criterion Change Score Below -5, Regression**
  - Ranged from 5 (2%) to 24 (8%) of students
  - More regressed in *Task supports (Assistance)* and *Hygiene*

- **Which children had the greatest changes on the SFA?**
  - Children less than 8 years of age
  - More positive changes in:
    - Participation: $p < .01$
    - Maintaining and changing position: $p < .05$
    - Recreational movement: $p < .0001$
    - Clothing management: $p < .01$
    - Hygiene: $p < .05$

- **SFA Criterion Change Score -5 to 5**
  - No change based on SEM, range 134 (46%) to 172 (59%) of students
  - Most improved, but not beyond SEM

Goal Attainment Scaling

- An individualized evaluation tool
- A methodology to measure progress
- A mathematical technique for quantifying change

GAS 5 POINT INTERVAL SCALE

Option of Response for Regression

-2 : current level of performance

-1 : somewhat less than expected performance

0 : expected level of performance after pre determined period

+1: somewhat more than expected performance

+2: much more than expected performance

Collaboration in Determining Goal Attainment

- Collaborated with IEP team for:
  - 78% of primary goals
  - 81% of posture & mobility goals
  - 71% of recreation goals
  - 94% of self-care goals
  - 89% of academic goals

Advantages to Using GAS

- **Useful tool to facilitate coordination and collaboration with parents and teachers**
  - At IEP meetings therapist can engage parents, teachers, and student in discussion to establish goals and set appropriate intervals.
  - May foster greater investment in educational process and student progress

Academic goals: Mean score = -0.3

Mean GAS Score — Posture/Mobility, Recreation, Self-Care, Primary
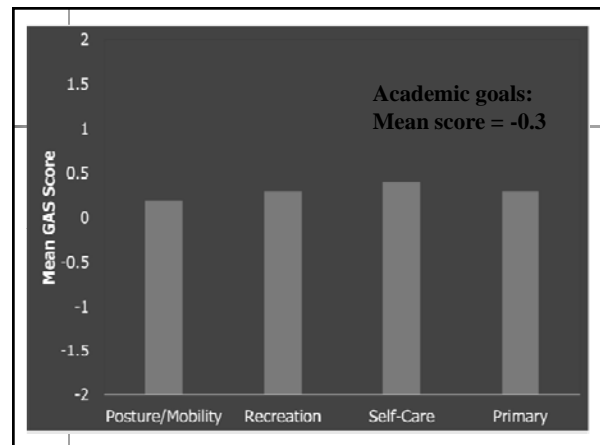
- **Practical for intervention planning and documentation**
  - When working together with families/ teachers, GAS can help therapist focus service delivery on a client /family-centered perspective
  - Reflection on goals helps therapist focus on functional relevance and determining if intervention approach appropriate

Classification of Primary Goals

- **Posture / Mobility   58%**
- **Recreation   33%**
- **Self-care   5%**
- **Academics   4%**

Examples of Goals

- **Posture / Mobility: With verbal cues student maneuvers her manual wheelchair to 3 different locations within the classroom 3/5 observed opportunities.**
- **Recreation: Student climbs the steps to the playground structures and slide down with verbal prompts and close supervision.**
- **Self-care: With contact guard, student pushes pants down for 2 consecutive toileting routines.**
- **Academics: Student follows 2 step signed directions, 7 out of 10 opportunities with only 1 cue over 10 opportunities.**

No significant difference by GMFCS level
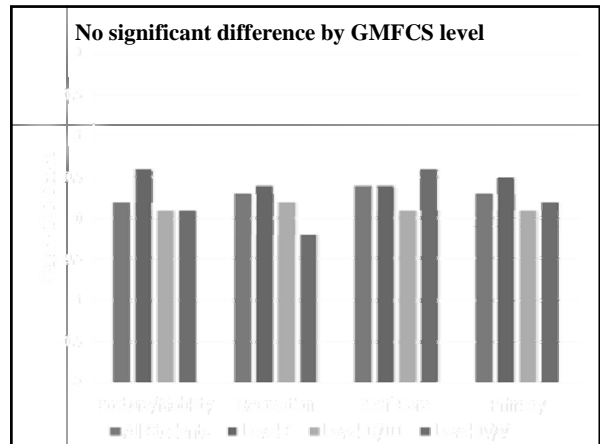
Data results: GAS Outcomes

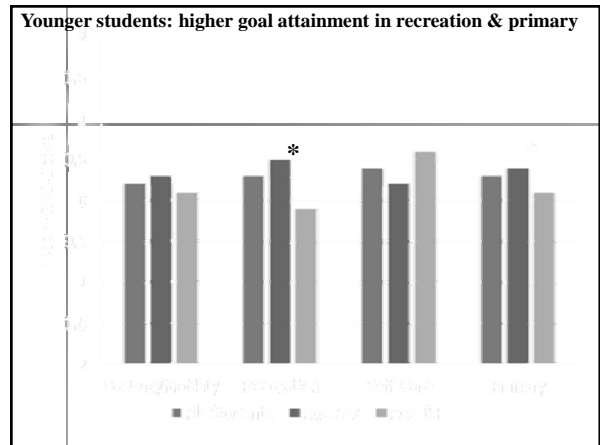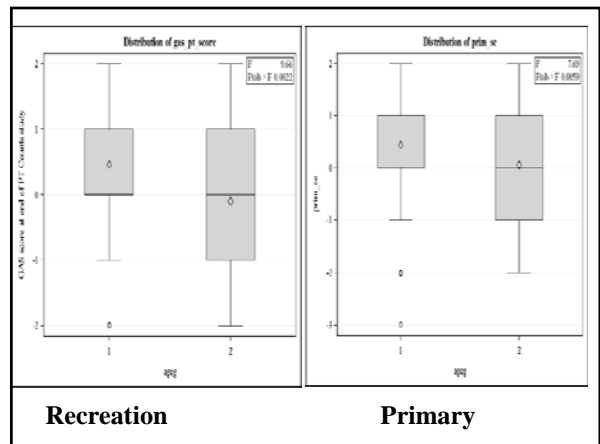| Goal Area	No Change or Regressed n goals	GAS -1 Score *Improved* n goals	GAS 0 Score *Achieved Goal* n goals	GAS + 1 or +2 Score *Exceeded Goal* n goals	Achieved Goal (0/+1/+2) n goals
Primary Goal *(PT selected)* **296 goals**	21 (7%) *1 regressed*	51 (17%)	105 (36%)	119 (40%)	224 (76%)

Younger students: higher goal attainment in recreation & primary

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GAS Outcomes

Goal Area	No Change or Regressed n goals	GAS -1 Score *Improved* n goals	GAS 0 Score *Achieved Goal* n goals	GAS + 1 or +2 Score *Exceeded Goal* n goals	Achieved Goal (0/+1/+2) n goals
Posture Mobility 205 goals	18 (9%) *2 regressed*	41 (20%)	62 (30%)	84 (41%)	146 (71%)
Recreation 161 goals	11 (7%)	28 (17%)	59 (37%)	63 (39%)	122 (76%)
Self-Care 50 goals	1 (2%)	11 (22%)	18 (36%)	20 (40%)	38 (76%)
Academics 82 goals	19 (23%) *1 regressed*	22 (27%)	19 (23%)	22 (27%)	41 (50%)

Recreation   **Primary**

No significant difference by Dx groups

Mean GAS Score chart with categories: Posture/Mobility, Recreation, Self-Care, Primary

Legend:
- All Students
- Cerebral Palsy
- Down Syndrome
- Other Genetic Syndromes
- Global Development Delay
- Other
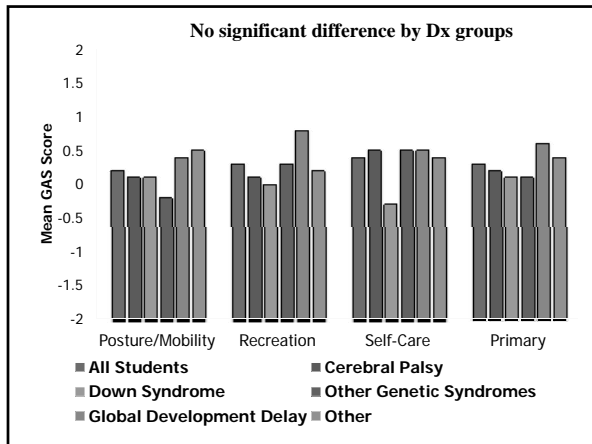
Summary of SFA Outcomes

- **46% to 59% *no* change in criterion scores**
  - **Does <u>not</u> mean no clinically significant change**
  - **Consider tracking key items**
- **Overall, least change for students in GMFCS levels IV/V**
  - **Consider other outcome measures to supplement SFA**

No significant differences by receipt of outside services
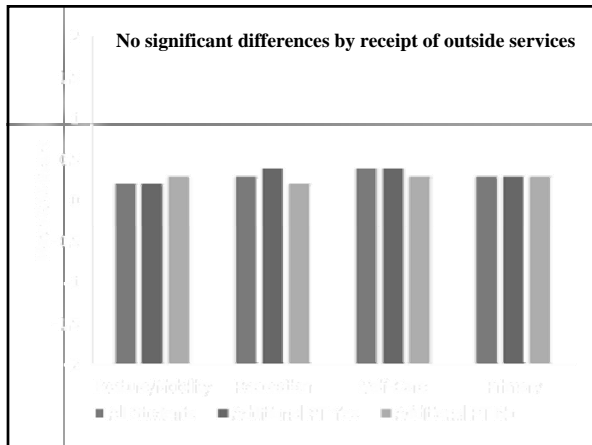
Summary of GAS Outcomes

- **GAS captured progress for more students compared to SFA**
- **Therapists struggled with writing goals but were good at anticipating progress (across GMFCS levels & diagnoses)**
- **For recreation & primary goals, older students had less goal attainment**
- **Few goals in self-care and academics**
- **Progress on student school goals not associated with receiving outside PT services**

Group Discussion

- **PT COUNTS Outcomes Results**
  - **Results: expected or surprised?**
  - **Comparison of SFA and GAS in capturing outcomes?**
  - **Are these tools helpful in documenting services and outcomes and for PT performance appraisals?**
- **So What?**
  - **How does this information help us?**
  - **Comments?**

What therapists told us about the tools

- **92% would use the SFA again, 72% the GAS, and 48% the S-PTIP**
- **GAS training improved goal writing**
- **61% reported use of SFA promoted team collaboration a moderate to a great extent**
- **S-PTP promoted accountability and helped therapist consider a range of interventions both with and on behalf of the student**
- **Student assessment and documentation takes time and is challenging**

Group Discussion

Intervention planning starts with a good outcomes assessment

- **How can we improve outcomes assessment process?**

- **What will be needed to make changes?**

Association of Student Outcomes with PT Services

- **Services**
  - **Amount**: *total minutes of service*
  - **Activity types:** *minutes with student in various activities*
  - **Frequency & rate of various interventions**
  - **Service approaches:** *i.e. individual / group, within or separate from a school activity, services on behalf of the student*
  - **Student engagement during PT sessions**

Our Thoughts

- **Promote collaboration in outcomes assessment and monitoring**
- **Consider developing goals**
  - that reflect student's priorities
  - in context of important school routines / activities
  - integrated across domains
- **Document and chart outcomes (goals, SFA items) for student evaluation, self-evaluation, and program evaluation**

Individualized Outcomes: Goal Attainment Scaling (GAS)

- **Logistic regression: Two groups**
  - **Those who scored -3, -2, -1, 0**
  - **Those who scored +1, +2**
- **Variables in model selected based on differences in services between the two groups**
- **Accounted for GMFCS level and age**
- **Slides for Primary and Posture / Mobility Goal Attainment Associations with Services and summary comparisons / take home messages are not in your handout**

- **Reflect on how older students change, what they need, and how to write meaningful goals**
- **Reflect on how students with more significant motor limitations change in their function / participation, what they need, and how to write meaningful goals**

What goals can you set for yourself to affect change?

GAS: Association of Services to Primary Goal Attainment

- **Final model included:**
  - **Self-care activity minutes**
  - **Total counts of balance, motor learning, and functional strength interventions**
  - **Total counts of mobility training interventions related to halls, doors, stairs, and playground access**
  - **Total counts of cognitive / behavioral training interventions**
  - **Provision of group therapy**
  - **Minutes of services on behalf of the student (consultation/collaboration and documentation)**

GAS: Association of Services to Primary Goal Attainment

- No service variables in the model were significantly ($p<0.05$) associated with exceeding goal attainment
- Minutes of services on behalf of students, $p<0.09$
  - An increase in 100 minutes of services on behalf of the student (5 minutes per week) increases the odds of exceeding goal attainment by 16%

GAS: Association of Services to Posture / Mobility Goals

- Less use of cognitive / behavioral training interventions was associated with exceeding goal expectations ($p<0.05$)
  - Every increase in 1 cognitive / behavioral intervention decreases the odds of exceeding goal expectations by 10%

GAS: Association of Services to Posture / Mobility Goals

- Final model included:
  - Self-care activity minutes
  - Total counts of mobility training interventions related to halls, doors, stairs, and playground access
  - Total counts of cognitive / behavioral training interventions
  - Provision of group therapy
  - Minutes of services on behalf of the student (consultation/collaboration and documentation)

GAS: Association of Services to Recreation Goals

- Final model included: (model refined from handout)
  - Total counts of cognitive / behavioral training interventions
  - Total counts of functional strength and mobility for playground access interventions
  - Provision of group therapy
  - Minutes of services on behalf of the student (consultation/collaboration and documentation)

GAS: Association of Services to Posture / Mobility Goals

- Greater use of the following interventions was associated with exceeding goal expectations ($p<0.05$):
  - Self care activity minutes
    - An increase in 100 self-care activity minutes (5 minutes per week) increases the odds of exceeding goal expectations by 380%
  - Minutes of services on behalf of student
    - An increase in 100 minutes of services on behalf of the student (5 minutes per week) increases the odds of exceeding goal expectations by 24%

GAS: Association of Services to Recreation Goals

- Greater use of functional strength and mobility for playground access interventions was associated with exceeding goal expectations ($p<0.05$)
- Every increase in any one of functional strength and mobility for playground access interventions increases the odds of exceeding goal expectations by 5.6%

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GAS: Services and Self-care & Academic Goals

- Based on group comparisons:
- Self-care: Those who exceeded goal expectation
  - Higher average # of neuromuscular interventions (p<0.04)
  - Less PT service time with no other students (p<0.05)
  - Less documentation time (p<0.02)
- Academic: Those who exceeded goal expectation
  - Higher average # of mobility interventions (p<0.03)

SFA - Participation

- Participation Score changes for a standardized 1 point increase in:

Change in Standardized Participation Score	Grouped activity or interventions	P value
↑ 0.23	Average # of Mobility interventions	0.0002

Association of Services to GAS Outcomes Summary: Your thoughts on the results?

Exceeded primary goal expectations when provided	Exceeded posture / mobility goal expectations when provided	Exceeded recreation goal expectations when provided
	More self-care activity minutes	Greater use of functional strength and mobility for playground access interventions
	More minutes of services on behalf of student	
	Less use of cognitive / behavioral training interventions	

SFA Mobility Composite

- Mobility Composite Score changes for a standardized 1 point increase in:

Change in Standardized Mobility Score	Grouped activity or interventions	P value
↓ 0.16	Total minutes of PE/Rec activity	0.02
↓ 0.16	Average # of Positioning interventions	0.02
↑ 0.15	Average # of Mob Assistive interventions	0.03
↑ 0.19	Total counts motor learning interventions	0.002
↑ 0.16	Total counts aerobic/conditioning interventions	0.004
↑ 0.12	Average student engagement rating	0.04

Standardized Outcome: School Function Assessment (SFA)

- Criterion scores:
  - Participation
  - Mobility composite: travel, maintaining & changing positions, manipulation with movement
  - Recreational movement
  - Self-care composite: hygiene, eating, dressing
- Stepwise multiple regression
- Variables selected based on differences in services between students who improved and those who did not improve
- Adjusted for GMFCS, age, and pre-score

SFA Recreation

- Recreational Movement Score changes for a standardized 1 point increase in:

Change in Standardized Recreation Score	Grouped activity or interventions	P value
↓ 0.19	Average # of Orthoses interventions	0.0005
↓ 0.13	Average # of Equipment interventions	0.02
↑ 0.10	Total counts Sensory processing interventions	<0.05
↑ 0.10	Total counts Playground access interventions	0.04
↑ 0.21	Average student Engagement rating	<0.000

SFA – Activities of Daily Living Composite

- ADL Composite Score changes for a standardized 1 point increase in:

Change in Standardized ADL Score	Grouped activity or interventions	P value
↑ 0.19	Average # of Mobility interventions	0.002
↑ 0.16	Total counts Motor learning interventions	0.005

Services Associated with Similar Individualized & Standardized Outcomes

Area	GAS	SFA
Mobility	More self-care activity minutes More minutes of services on behalf of student Less use of cognitive / behavioral training interventions	More mobility assistive interventions More motor learning interventions More aerobic conditioning interventions
Recreation	More functional strength and mobility for playground access intervention	More sensory processing interventions More mobility for playground access interventions

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Association of Services to SFA Outcomes Summary: Your thoughts on the results?

Better school participation outcome with more	Better mobility outcome with more	Better Recreation outcome with more	Better ADL outcome with more
Mobility interventions	Mobility assistance interventions	Mobility for playground access interventions	Mobility interventions
	Motor learning interventions		Motor learning interventions
	Aerobic conditioning interventions	Sensory processing	
	Engagement of student during therapy session	Engagement of student during therapy session	

How might we change practice?	What will be needed to make changes?
■ Activities	■ Barriers
■ Interventions	■ Solutions
■ Service type	

Group Discussion

- **Comments on PT COUNTS results**
  - Are services associated with individualized outcomes the same or different than services associated with standardized outcomes?
  - Comments?
- **So What?**
  - How does this information help us?
  - How do we change actual practice?

How might we change practice?	What will be needed to make changes?
■ Activities	■ Barriers
– More active practice	– Time for service on behalf
■ Consider engaging others	– Being allowed to be in classrooms/school activities
■ Task specific activity	
■ Engaging the students	
■ Interventions	■ Solutions
– Motor learning	– Getting administration to value service on behalf
– Mobility training, functional strength	– Education & partnership with classroom teachers/staff
– Sensory processing	
– Aerobic exercise	
– Access to environment	
■ Service type	
– Service on behalf	

PT COUNTS

- Engaged PTs across nation in study of school-based practice
- Importance of goal-setting process
- Systematic data collection of student outcomes and services
- Students achieve and sometimes exceed goals and improve on the SFA
- Evidence for mobility interventions
- Overall few interventions associated with outcomes
- Outcomes are complex

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Thank-you! Questions?

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