USE OF VALIDATED PATIENT REPORTED OUTCOME MEASURES TO ASSESS FELLOWSHIP EDUCATION, CLINICAL DECISION-MAKING, MENTORSHIP, AND PROFESSIONAL IMPLICATIONS OF ADVANCED TRAINING

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OF HEALTH PROFESSIONS

eim Evidence In Motion

IFOMPT Teachers Meeting, Hoge School Utrecht, The Netherlands
27 September 2014

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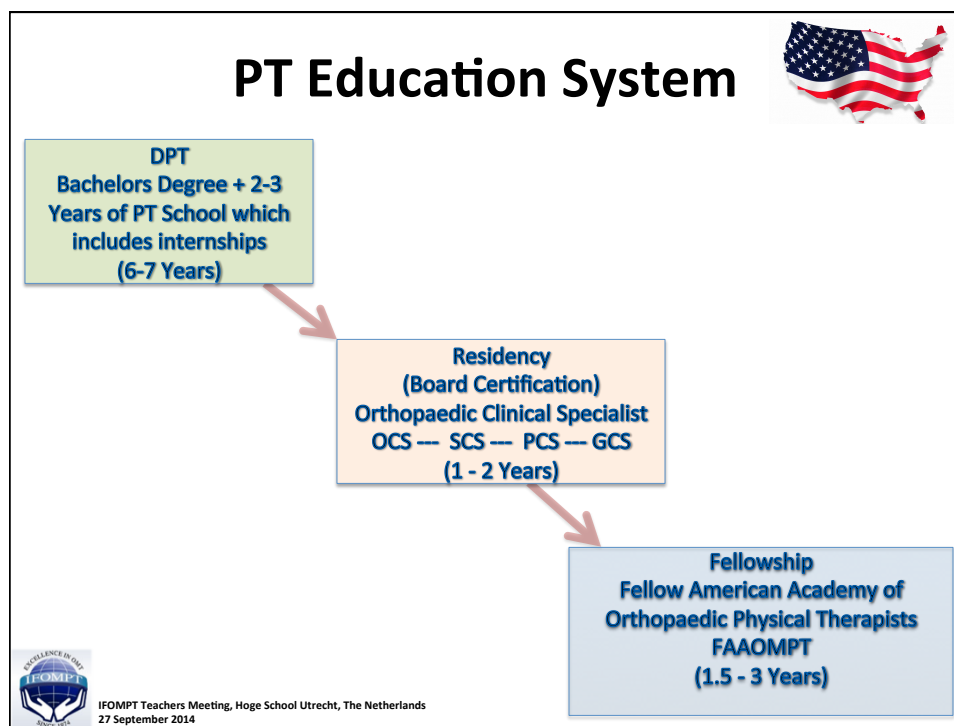OF HEALTH PROFESSIONS

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PT Education System

DPT
Bachelors Degree + 2-3
Years of PT School which
includes internships
(6-7 Years)

Residency
(Board Certification)
Orthopaedic Clinical Specialist
OCS --- SCS --- PCS --- GCS
(1 - 2 Years)

Fellowship
Fellow American Academy of
Orthopaedic Physical Therapists
FAAOMPT
(1.5 - 3 Years)

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**The Impact of Physical Therapy Residency or Fellowship Education on
Clinical Outcomes for Patients with Common Musculoskeletal Impairments**
Rodeghero, Flynn, Cleland, Whitman, Wainner, Wang (In Review)

Study Design   A retrospective cohort design was conducted using data from an electronic survey and an existing commercial outcomes database.

Objective   Investigate the clinical outcomes of patients with musculoskeletal conditions achieved by physical therapists who had completed residency or fellowship programs.

**The Impact of Physical Therapy Residency or Fellowship Education on
Clinical Outcomes for Patients with Common Musculoskeletal Impairments**
Rodeghero, Flynn, Cleland, Whitman, Wainner, Wang (In Review)

Background   There is an increasing focus on specialization through post-professional education in PT residency and/or fellowship programs. **Scant evidence exists that evaluates the influence of post-professional clinical education on actual patient outcomes.**

Methods   Using a national outcomes database PTs were surveyed to determine their level of post-professional education. Outcomes for 25,843 patients with musculoskeletal conditions treated by 363 therapists were extracted from the database from June 2012 – June 2013.
These data were analyzed to identify any differences in the outcomes achieved between therapists with different post-professional education.

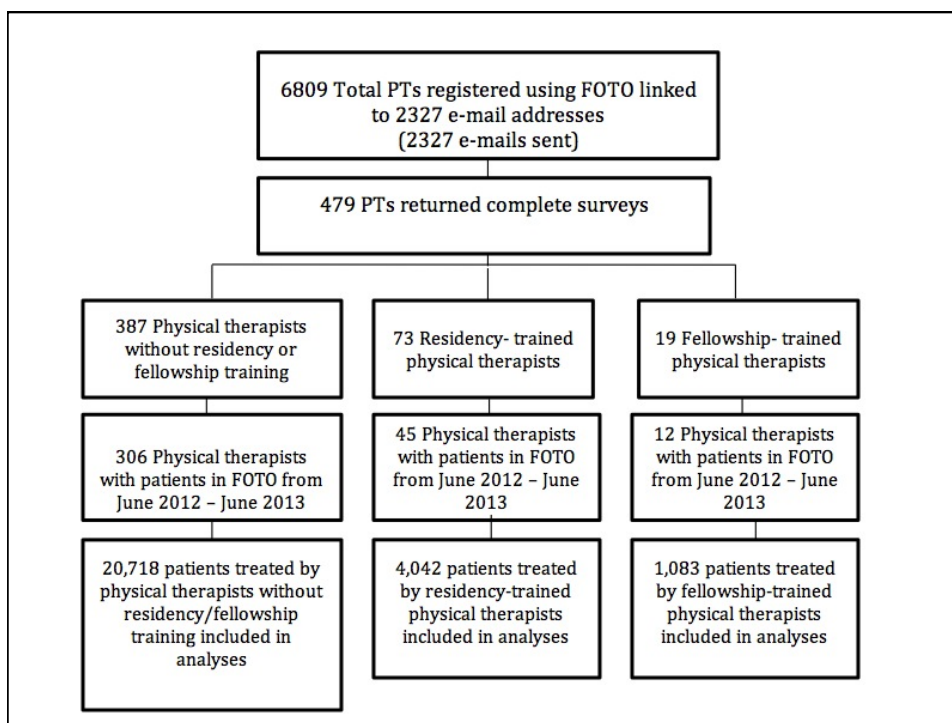---

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MEASURE OUTCOMES • MANAGE QUALITY • MARKET STRENGTHS

- Largest commercial outcomes database

- Used by over 2000 clinics
  - 6,809 registered PT users

- Use in research
  - 77 peer-reviewed studies

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3 KEY VARIABLES

- **Functional Status (FS)**
  – Body region specific for MSK impairments
  – Developed, validated, & reliability established

- **Efficiency**
  – # of visits

- **Utilization Index (FS/# of visits)**
  – 20 point change in 5 visits = 4.0
  – 20 point change in 10 visits = 2.0

6809 Total PTs registered using FOTO linked to 2327 e-mail addresses (2327 e-mails sent)

479 PTs returned complete surveys

| 387 Physical therapists without residency or fellowship training | 73 Residency- trained physical therapists | 19 Fellowship- trained physical therapists |

306 Physical therapists with patients in FOTO from June 2012 – June 2013

45 Physical therapists with patients in FOTO from June 2012 – June 2013

12 Physical therapists with patients in FOTO from June 2012 – June 2013

20,718 patients treated by physical therapists without residency/fellowship training included in analyses

4,042 patients treated by residency-trained physical therapists included in analyses

1,083 patients treated by fellowship-trained physical therapists included in analyses

Results

Patients who received treatment from PTs who completed fellowship training demonstrated **greater improvements** in outcome scores than patients treated by residency trained PTs and those without post-professional training.
Patients treated by fellowship-trained PTs were also more likely to achieve **higher changes** in outcome scores than other PTs.

Functional Status (FS) Measure
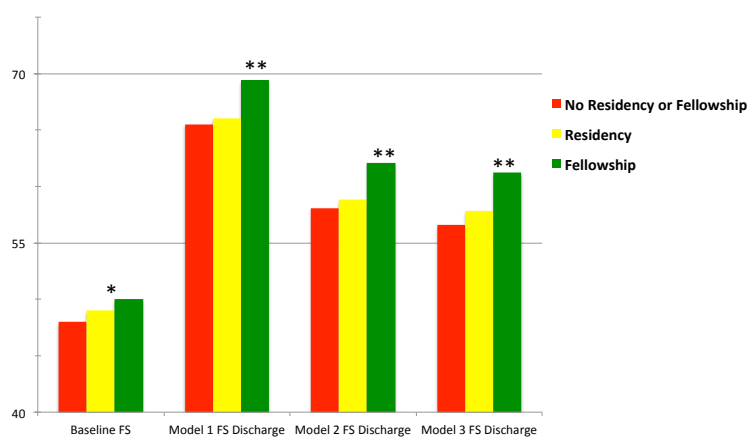
Model 1 – controlling for intake FS
Model 2 – controlling for intake FS and known patient characteristics
Model 3 – controlling for intake FS, known patient characteristics, and known provider characteristics
*Residency and Fellowship baseline FS > No Residency or Fellowship (ANOVA, p < .05)
** Fellowship > Residency (p < .001) & No Residency or Fellowship (p < .001)
No difference between Residency and No Residency or Fellowship (p > .05)

USING OUTCOMES FOR PROGRAMATIC REVIEW

Example- EIM OMPT FELLOWSHIP

Clinical Expertise and Leadership

Julie Whitman- EIM Fellowship Director

PROGRAM LEVEL DATA

Comparing Residents and Fellows
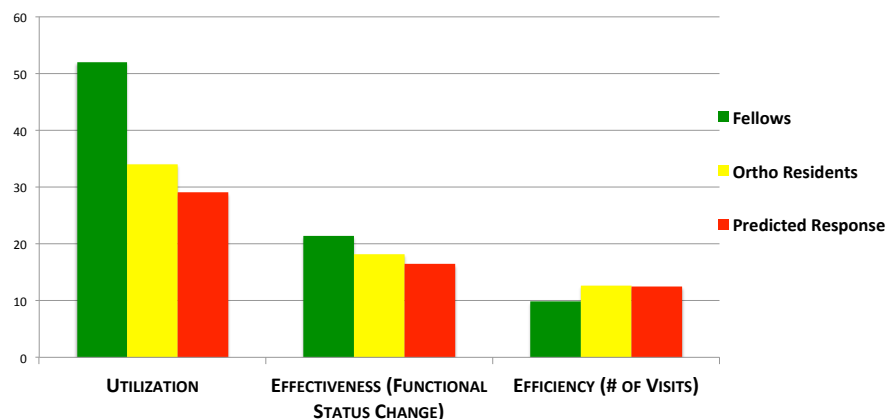
	Number of Cases
	28,840
	70,720
	Millions

USING OUTCOMES TO PROVIDE MENTORING TO A FiT

Example- EIM OMPT Fellow in Training (FiT)

eim Evidence In Motion

Clinical Expertise and Leadership

Individual Level Data

Individual FiT Mentoring

- Quarterly reviews by FMLs - Screencast review of FOTO outcomes or alternate outcomes and recommendations
- Outliers identified for Program Director for further investigation and mentorship
- Program Director investigates as needed, but especially for any FiTs struggling in clinical decision making courses or laboratory training weekends.

Individual Level Data

Example FiT

- January 2011- Starts Program
- June 2012- EBP & Foundation Courses Completed
- July 2012- Starts Advanced Clinical Reasoning Courses
- 2013- Graduates

- Stellar work in academics. Very strong in techniques exams and hands-on skills.

Individual – Sept-Dec '11
Excelling in academics

Conversation with FiT regarding high number of visits

...d, **Yellow**: Within 95% Confidence Interval, **Red**: Outside 95% Confidence Interval, **Blue**: < 5 episodes
...0 complete episodes)

'11 FINAL

Care Type: Impairment	Number of Episodes			Utilization (Info)				Effectiveness			Efficiency	
	In FS	w/_Intake &_Dischge	Comp Rate_(%)	High %	Expect %	Low %	Rank %	FS Change	Predicted	Rank %	# Visits	Predicted
Ortho: All	28	39	72	32	29	39	* 41	18.91	16.62	* 57	16	12.64
Ortho: Shoulder	10	10	100	40	30	30	* 65	18.90	14.58	65	16.70	12.31
Ortho: Elbow	0	2	0	0	0	0	* 0	0	0	* 0	0	0
Ortho: Cervical	1	1	100	0	100	0	* 70	25.20	20.62	* 65	9	11.62
Ortho: Hip	4	5	80	75	25	0	* 79	33.32	24.28	* 78	16.50	16.93
Ortho: Knee	3	5	60	33	0	67	* 9	11.91	16.48	* 27	15.33	12.67
Ortho: Foot/Ankle	4	4	100	0	50	50	* 1	17.34	17.33	* 47	19.50	10.83
Ortho: Lumbar	6	12	50	17	17	67	* 3	12.84	13.83	* 42	13.67	11.69

Individual – Jan-March 2012
Excelling in academics

...d, **Yellow**: Within 95% Confidence Interval, **Red**: Outside 95% Confidence Interval, **Blue**: < 5 episodes
...0 complete episodes)

'012 FINAL

Care Type: Impairment	Number of Episodes			Utilization (Info)				Effectiveness			Efficiency	
	In FS	w/_Intake &_Dischge	Comp Rate_(%)	High %	Expect %	Low %	Rank %	FS Change	Predicted	Rank %	# Visits	Predicted
Ortho: All	38	45	84	0	0	0	26	12.71	16.78	18	13.342	12.471
Ortho: Shoulder	6	9	67	0	0	0	* 45	16.93	20.24	* 29	11	14.611
Ortho: Wrist/Hand	2	3	67	0	0	0	* 1	-0.01	8.19	* 0	9	9.886
Ortho: Cervical	6	6	100	0	0	0	* 10	15.13	17.09	* 55	18.167	11.790
Ortho: Hip	5	6	83	0	0	0	* 41	6.91	15.02	* 1	9.600	11.734
Ortho: Knee	4	4	100	0	0	0	* 69	15.17	14.81	* 43	6.750	15.153
Ortho: Foot/Ankle	4	6	67	0	0	0	* 16	16.75	16.75	* 34	12.750	12.865
Ortho: Lumbar	9	9	100	0	0	0	* 2	8.58	14.69	* 7	19.778	11.984
Ortho: Other	2	2	100	0	0	0	46	28.31	31.90	30	5	8.569

Individual – Apr-June '12
About to start OMPT PMF Jul 1

7/31/12 - I am not sure if you have been watching your FOTO data, but from my perspective it looks like your outcomes are gradually improving. While your overall efficiency values look like there is some room for improvement, the effectiveness values look much better (more green, less red/yellow). Nice job. I can't wait to see how things continue to evolve as you get deeper into the clinical decision making coursework. Let me know if you have thoughts on this, and also how the OMPT Patient Mgt Framework course is going. Julie

Guide to Scorecard

ed, **Yellow**: Within 95% Confidence Interval, **Red**: Outside 95% Confidence Interval, **Blue**: < 5 episodes
10 complete episodes)

2012 FINAL

| Care Type: Impairment | Number of Episodes | | | Utilization (Info) | | | | Effectiveness | | | | Efficiency | |
	In FS	w/_Intake &_Dischge	Comp Rate_(%)	High %	Expect %	Low %	Rank %	FS Change	Predicted	Rank %	# Visits	Predicted
Ortho: All	37	44	84	0	0	0	43	16.94	17.41	33	13.919	13.406
Ortho: Shoulder	5	5	100	0	0	0	* 80	29.58	23.56	* 84	23.800	17.267
Ortho: Wrist/Hand	1	2	50	0	0	0	* 97	12.66	14.13	* 20	4	13.287
Ortho: Elbow	3	3	100	0	0	0	* 74	20.22	18.63	* 53	15.667	16.667
Ortho: Cervical	3	3	100	0	0	0	* 77	8.87	15.47	* 10	8.333	12.465
Ortho: Hip	4	6	67	0	0	0	* 1	-0.80	17.44	* 0	12.250	12.783
Ortho: Knee	5	7	71	0	0	0	* 31	19.94	16.07	* 58	15.600	14.356
Ortho: Foot/Ankle	4	4	100	0	0	0	* 20	16.95	19.66	* 18	15	12.307
Ortho: Lumbar	11	13	85	0	0	0	46	17.22	14.47	58	10.636	11.496
Ortho: Other	1	1	100	0	0	0	* 4	25.46	21.87	* 61	16	10.405

Individual – Jul-Sept '12
Started Advanced Clinical Reasoning- July 1

10 complete episodes)

2012 FINAL

| Care Type: Impairment | Number of Episodes | | | Utilization (Info) | | | | Effectiveness | | | | Efficiency | |
	In FS	w/_Intake &_Dischge	Comp Rate_(%)	High %	Expect %	Low %	Rank %	FS Change	Predicted	Rank %	# Visits	Predicted
Ortho: All	54	66	82	26	43	31	47	8.66	13.36	14	9.667	11.633
Ortho: Shoulder	6	7	86	33	33	33	* 54	10.50	4.45	* 83	11.333	9.881
Ortho: Wrist/Hand	2	2	100	0	100	0	* 42	12.62	4.63	* 91	9	8.880
Ortho: Elbow	0	2	0	0	0	0	* 0	0	0	* 0	0	0
Ortho: Cervical	7	7	100	43	43	14	* 77	11.36	16.41	* 24	7.429	11.136
Ortho: Hip	7	8	88	29	14	57	* 38	10.39	15.66	* 19	12.429	13.053
Ortho: Knee	10	13	77	0	70	30	26	6.09	18.22	1	9.500	13.600
Ortho: Foot/Ankle	5	7	71	40	20	40	* 48	18.20	16.66	* 51	11	14.520
Ortho: Lumbar	17	20	85	29	29	41	40	4.44	11.49	5	8.647	10.189

Individual – Oct-Dec '12
Just finished Advanced Clinical Reasoning

PD Phone Conversation with FiT - 11/12/12 – Bottom line that academics were strong, not coming together in patient outcomes ("outcomes are not what I know you are capable of, and are not what I know you want"– need a detailed plan for 1:1 hours – target 1st hrs with xxx mentors – coordinated with mentors

d, **Yellow**: *Within 95% Confidence Interval,* **Red**: *Outside 95% Confidence Interval,* **Blue**: *< 5 episodes*
0 complete episodes)

012 FINAL

Care Type: Impairment	Number of Episodes			Utilization (Info)					Effectiveness			Efficiency	
	In FS	w/_Intake &_Dischge	Comp Rate_(%)	High %	Expect %	Low %	Rank %		FS Change	Predicted	Rank %	# Visits	Predicted
Ortho: All	40	47	85	35	38	28		57	12.73	16.69	19	9.350	12.560
Ortho: Shoulder	5	6	83	40	60	0	*	83	17.28	21.76	* 23	11.200	15.687
Ortho: Wrist/Hand	1	1	100	0	100	0	*	57	19.76	5.19	* 99	11	8.611
Ortho: Elbow	0	1	0	0	0	0	*	0	0	0	* 0	0	0
Ortho: Cervical	8	10	80	63	38	0	*	93	17.58	12.73	* 85	6.875	10.994
Ortho: Hip	4	5	80	25	0	75	*	18	-0.36	15.35	* 2	12.250	11.025
Ortho: Knee	8	8	100	25	50	25	*	47	17.93	20.37	* 19	11.125	15.103
Ortho: Foot/Ankle	4	4	100	50	25	25	*	81	16.60	19.80	* 28	8.500	13.949
Ortho: Lumbar	10	11	91	30	30	40		46	5.39	14.83	3	8	10.669
Ortho: Other	0	1	0	0	0	0	*	0	0	0	* 0	0	0

Individual – Jan-Mar '13
In Fellow Virtual Rounds

0 complete episodes)

013 FINAL

Care Type: Impairment	Number of Episodes			Utilization (Info)					Effectiveness			Efficiency	
	In FS	w/_Intake &_Dischge	Comp Rate_(%)	High %	Expect %	Low %	Rank %		FS Change	Predicted	Rank %	# Visits	Predicted
Ortho: All	17	20	85	65	29	6		89	19.31	14.19	86	7.588	12.123
Ortho: Shoulder	0	1	0	0	0	0	*	0	0	0	* 0	0	0
Ortho: Cervical	1	2	50	0	100	0	*	52	4.27	6.48	* 40	9	11.175
Ortho: Hip	2	2	100	50	50	0	*	78	23.99	13.65	* 99	9.500	13.856
Ortho: Knee	5	5	100	80	20	0	*	97	25.09	15.59	* 89	8.200	13.015
Ortho: Foot/Ankle	3	3	100	67	33	0	*	99	18.47	16.80	* 48	6	12.455
Ortho: Lumbar	6	7	86	50	33	17	*	71	15.86	13.18	* 61	7	10.794

Individual – Apr- Jun '13
Just finishing Fellow Virtual Rounds

PD Guidance on Mentor: April 2013 – About 40 hrs 1:1 ; June 2013 45 hrs 1:1

13 FINAL

Care Type: Impairment	Number of Episodes			Utilization (Info)				Effectiveness			Efficiency	
	In FS	w/_Intake &_Dischge	Comp Rate_(%)	High %	Expect %	Low %	Rank %	FS Change	Predicted	Rank %	# Visits	Predicted
Ortho: All	26	26	100	77	19	4	95	26.15	17.65	82	8.731	13.464
Ortho: Shoulder	9	9	100	78	22	0	* 96	25.95	17.70	* 88	9.333	13.868
Ortho: Elbow	2	2	100	100	0	0	* 102	36.02	24.81	* 71	10	19.817
Ortho: Cervical	2	2	100	50	0	50	* 51	22.51	22.82	* 48	7	11.416
Ortho: Hip	1	1	100	0	100	0	* 60	7.90	5.57	* 77	8	10.149
Ortho: Knee	6	6	100	67	33	0	* 97	21.26	14.71	* 75	8.333	14.304
Ortho: Foot/Ankle	1	1	100	100	0	0	* 99	20.01	9.91	* 97	10	9.917
Ortho: Lumbar	4	4	100	100	0	0	* 99	29.57	20.08	* 91	8.250	11.339
Ortho: Other	1	1	100	100	0	0	* 99	55.72	20.29	* 99	8	11.554

Individual – Jul-Sep '13
Finishing 1:1 mentorship - Graduate 12/13

PD Guidance on Mentor: 1:1 with mentor – 53 hrs from Jul–Nov '13

11/7/2013 – These scores are looking awesome! Great work! Julie

11/7/2013 - Julie - Finally – all green, about time :)   Thanks

13 FINAL

Care Type: Impairment	Number of Episodes			Utilization (Info)				Effectiveness			Efficiency	
	In FS	w/_Intake &_Dischge	Comp Rate_(%)	High %	Expect %	Low %	Rank %	FS Change	Predicted	Rank %	# Visits	Predicted
Ortho: All	16	16	100	81	19	0	97	24.18	15.52	84	7.688	12.705
Ortho: Shoulder	4	4	100	100	0	0	* 99	19.74	8.76	* 94	7.500	11.262
Ortho: Elbow	1	1	100	0	100	0	* 42	15.95	23.43	* 7	8	16.211
Ortho: Cervical	2	2	100	50	50	0	* 95	25.78	14.70	* 98	8	11.541
Ortho: Hip	2	2	100	100	0	0	* 99	33.80	18.23	* 99	5.500	10.233
Ortho: Knee	4	4	100	100	0	0	* 99	26.91	18.17	* 84	9.500	16.291
Ortho: Lumbar	3	3	100	67	33	0	* 90	21.71	17.12	* 74	6.667	11.105

FiT Reflections on FOTO

*These data are informative and eye opening and a very important aspect to drive change in my clinical practice patterns. I think what this data also demonstrates is that a fellow can complete coursework and even make an "A" in the courses and yet clinical practice patterns can remain unchanged. **In short, knowledge does not carry over to changing clinical practice patterns.***

For me the thing that changed my practice patterns was the clinical decision making course and one-on-one mentorship. *These classes changed the way that I thought, organized patient interventions and therefore improved my patient outcomes which can be seen in the last two quarters data in FOTO.*

FiT Reflections on FOTO

The FOTO data was the first time that I had even seen the effect of my interventions. Or maybe I should say the lack of effect! ***This was the first time in my career that I had the ability to tie my treatment to outcomes and compare those outcomes to other physical therapists.*** *Prior to utilizing FOTO I had no way of comparison and really no reason to drive change in my practice.*

The FOTO data was a wake up call for me because I could not argue with the data. It was my patients, my interventions and it showed that I was not efficient or effective.

*I would have to say that I would not have believed that and **would have predicted that my patients would have had good outcomes.***

FiT Reflections on FOTO

- *The patient management coursework demanded that I re-work my patient exams and patient treatment. It taught me that I was lacking in my clinical reasoning and that I had gaps in my clinical examination. **For me this was the moment when I had to be willing to tear down and let go of my old practice patterns and re-build my clinical practice**. This was the most difficult and painful but had the most amazing pay off. I could have not made this last bit of change without my mentor and their teaching and guidance.*

- *The 1:1 feedback allowed me to fine tune my model during actual patient care. **This is why I wanted to do a fellowship and made the last three years worth all the time, energy and effort. I have to say that this has been one of the hardest and most rewarding things that I have ever done.***

IMPLICATIONS

- Residency & **Fellowship** Training Improves Patient Outcomes and PT Efficiency

- Systematic Outcome Monitoring Can Inform Both Programmatic Level and Individual Level Performance

- The Focus of Monitoring Should be on Patient **Outcomes over Process** Which Has Profound Implications on Standards and Credentialing Nationally & Internationally

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QUESTIONS