Clinical Education Models and Productivity in the Acute care setting.....
Just the Numbers Ma'am?

The Collaborative Model in Physical Therapy Clinical Education and Productivity Study in the Acute Care Setting

Presented by:
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Clinical Education (CE):

• Overall Goal, regardless of profession:
  • Apply theory to patient care
  • Practice effective communication
  • Develop safe skilled therapeutic interventions
  • Develop and practice professional and ethical standards
Clinical Education (CE)

- Commission on Accreditation in Physical Therapy (CAPTE):
  - CE on average 20.4% of total credit hours
  - 29% (almost 1/3) of enrollment weeks of the entire curriculum (CAPTE Fact Sheet, 2015)
- Other have reported up to 44.9% of curriculum is clinical education (McCallum et al, 2013)
- Questions?
  - Is clinical education in Physical Therapy keeping up with the progression and goals of the profession?
  - Is the current, most commonly used model keeping up with demand?
  - What is the best practice in clinical education?
Clinical Education and The state of the Union!

- Primary objective of clinical education in the health profession is to prepare the student for an entry level skill set to enter their profession.

- Multiple models:
  - Integrated – most programs, interspersed within curriculum, varying lengths, number of rotations and levels (no common language)
  - Independent: longer internship after graduation, Residency, common medical model
  - Self Contained: Faculty serve as the CI with mentorship from practicing professionals, nursing and dentistry (1 faculty, many students)
  - Hybrid: combination of all 3: greater interprofessional collaboration

(Ingram and Roesch, 2012)
Challenges

• Increasing number of students
• Decreasing number of clinical sites
• Changing guidelines in reimbursement
• Variety of settings available
• Increased demand on patient case load
• Increased time constraints
• Documentation
• Constant moving target!
Barriers (perceived)

• Quality clinical experience with collaborative model vs.. 1:1
  • Inconclusive evidence regarding what constitutes best practice (McCallum et al, 2013)
• More time to train students
• Decreased productivity
• Administrative support (possible true barrier)
• Competition amongst students
• Different levels of clinical experience inhibit learning and are difficult to manage
• Financial constraints
Barriers – Current CE Practice

- Difficulty placing students in quality clinical education experiences
- Inefficient method of teaching and learning (1:1)
- Inconsistent CE curriculum
- Few incentives for Clinical Instructors (CI) to provide high quality clinical training (EIM, 2012)
- Inconsistent approach to CE by institution, Clinical site and CI
- Administrative support
Research

- CHARMAINE BRIFFA & JUDI PORTER, 2013:
- A Systematic Review of evidence in the collaborative model
- Looking to inform speech language pathology practice
  - Overall quality of evidence not of high standard
  - Multiple methodological flaws in much of the evidence
  - Small sample sizes based on predominantly 1 discipline (Physical Therapy) limits generalization
- Despite limitations, results were relatively consistent regarding advantages and disadvantages of the collaborative model
  - Key advantage: peer-assisted learning
  - Disadvantage: reduced individualized supervision
- Overall finding that the current body of evidence supports the collaborative model of CE
Research

  - Retrospective study
  - Compares student treated vs. staff treated patient outcomes
  - No significant difference in functional gains in the acute care setting.

- Several studies noted productivity as being the greatest barrier to collaborative models of CE. Other factors beside patient care and student supervision were contributors to productivity  
  (Ladychewsky, 1994)

- Another Study by Ladychewsky (1995) demonstrated a positive effect on productivity in the inpatient setting
Research

• Moore et al (2015) performed a study looking the impact of collaborative CE model at US Army-Baylor University Doctoral Program in Physical Therapy

• Findings suggest clinics can accommodate multiple interns and provide high quality education in a collaborative model without a decline in productivity or efficiency.

• Coupled with a year long internship and removal of clinicians from direct patient care.
Where are we now in Research?

- Majority of the evidence is qualitative
- Very few if any studies are quantitative in nature with poor methodology.
- Qualitative data has been gathered via interviews, surveys, feedback from observations and journal entries and other methods without defined construct
- Systematic review (Briffa & Porter, 2013) brought this to light and suggested focusing on higher quality, quantitative data collection
- Raising the level and quality of research in CE will allow us to maximize the opportunity for:
  - highly engaged mentorship,
  - individual attention
  - quality instruction
  - ultimately greater patient outcome
So Now What???

- Physical Therapist Productivity using a Collaborative Clinical Education Model within an Acute Care Setting: A Longitudinal Study

- Patrick S. Pabian PT, DPT, SCS, OCS
- Jamie Dyson PT, DPT
- Carol Levine PT, DPT, CLT
Why do this study?

• Cooperative clinical education (CE) models, have the potential to
  • increase productivity,
  • enhance student learning
  • increase the availability of student placements.

Why do the majority of CE placements continue to reflect the traditional 1:1 model?

(Peri, et al. 2014)
Anecdotal evidence suggests that we pattern from tradition

(Peri, et al.)
Somebody had to try it!!!
Factors Affecting Success of the 2:1 Student: Clinical Instructor Model in Acute Care Settings: A Case Study Analysis

• Placing students in acute care clinical experiences has become increasingly difficult for many physical therapy (PT) programs.
• One possible solution is to adopt a 2:1 collaborative clinical education model, thus decreasing the number of acute care CIs and placements needed.
• Previously reported benefits of the 2:1 model include increased productivity, collaborative learning, and critical thinking.
• Reported concerns include potential of personality conflicts and issues if students have varied levels of clinical skills and confidence.

(Lein et al, 2014)
Perceived challenges in clinical education: Perspectives from various stakeholders

• Reimbursement and changing regulations regarding billing was an uppermost challenge related to the clinical education of PT students.

• CCCE's, CI's, and Clinical Administrators indicated that the variability of the curriculums within PT education on both academic and clinical side.

• 70% of CCCEs, 75% of CIs and 84% of Administrators preferred to take fewer students over a longer period of time as opposed to hosting more students over the minimum time period needed on a given rotation.

• 50% of clinical instructors and administrators felt their facility could take additional students while only 32% of CCCEs felt their facility could take more.

• All three groups felt that staffing was the main reason why they didn’t take more

(Timmerberg and Stolfi, 2014)
Supply and Demand
Preliminary Trends in Supply and Demand of Physical Therapist Clinical Education: A Regional Analysis

• Overall, the supply of clinical education decreased by 146 offered placements between 2012 and 2013 while the demand increased by 169 student placements.

• Beginning or novice clinical education experiences demonstrated nearly a 5% decrease in released placements in 2013 while acute care, outpatient orthopedic and long term care/skilled nursing facility (LTC/SNF) settings showed smaller declines (1-2%).

• Released placements for clinical education experiences in the fall term demonstrated a 4% reduction in 2013. All other clinical experience levels, practice settings and time of year categories maintained constant or increased surplus between calendar years.

(Howman et al.2014)
Total # of Clinical Sites Status (N = 37,403)

- Active Sites 89%
- Inactive Sites* 11%

Active Sites (N = 33,450)  Inactive Sites* (N = 3,953)

*Inactive Sites are identified as Clinical Sites where all Clinical Staff users (Center Coordinators of Clinical Education and Clinical Instructors) at that site have not accessed CPI Web or CSIF Web for four or more years after their last login or record creation date.
Total Number and Percentage of Active Sites* by Classification
(N = 33,093)

*Active Sites are identified as Clinical Sites where at least one Clinical Staff user (Center Coordinator of Clinical Education or Clinical Instructor) at that site have accessed CPI Web or CSIF Web within the past 4 years and is affiliated with an Academic Program.
Total # of CCCEs/CIs Status (N = 102,872)

- Active CCCEs/CIs: 82% (N = 84,117)
- Inactive CCCEs/CIs*: 18% (N = 18,755)

*Inactive Center Coordinators of Clinical Education and Clinical Instructors (CCCEs/CIs) are identified as Clinical Staff users that have not accessed CPI Web or CSIF Web for four or more years after their last login or record creation date or have been identified as no longer being employed at a Clinical Site by the CCCE and no new clinical site information is known for the Clinical Staff User.
Total Number of Student Placements for the 2014-2015 Academic Year

- PT (N = 208): 35,748
- PTA (N = 196): 11,855

Average # of Placements per PT Academic Program in 2014-2015 Academic Year: 172
Average # of Placements per PTA Academic Program in 2014-2015 Academic Year: 60
Experience of Care

Health of a Population

Per Capita Cost

IHI Triple Aim
Study Design

• Longitudinal design involving a retrospective review of physical therapist productivity over a three-year timeframe for services provided at Orlando Regional Medical Center (ORMC).

• ORMC is an 808-bed hospital in downtown Orlando specializing in trauma, critical care, emergency care, cardiology, orthopedics and neurosciences, and is a part of Orlando Health.

• The Institutional Review Boards of both Orlando Health and the University of Central Florida approved the research protocol for this study.
Study Design

- The retrospective review included productivity as the dependent variable, which was measured in “units” of PT services provided and billed each day over three full calendar years.
- All CIs at the hospital had at least one year of clinical experience and six months experience of working in the facility at the time of data collection.
- During this timeframe, the productivity data collected involved a total of twenty physical therapists. The units billed during each calendar day by each PT was recorded into a database.
- This productivity database was cross-referenced with the days in which the PT was not serving as a clinical instructor (CI), and those in which they served as a CI for PT students in either a 1:1 or 2:1 clinical education model.
Study Design

• The productivity units in a given day were included for all days in the three-year period (calendar year) in which the PT was “on the clock” and standardized to an eight-hour work day.

• Days with reduced productivity due to meetings, patient rounds, on-site continuing education, or other non-clinical-related activities were not eliminated from the study. Thus all days in which the PT was paid as an employee, outside of personal time off days, were included.

• PT productivity was excluded from the study if it involved PT assistant students in either a 1:1 or 2:1 model.

• Potential bias was also controlled through inclusion of all PT students, regardless of clinical length, clinical experience, and institution.
<table>
<thead>
<tr>
<th>Physical Therapist Characteristics</th>
<th>1:1 PTs</th>
<th>2:1 PTs</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>APTA Credentialed Clinical Instructor – Basic</td>
<td>15/15</td>
<td>5/5</td>
<td>20/20 (100%)</td>
</tr>
<tr>
<td>APTA Credentialed Clinical Instructor – Advanced</td>
<td>1/15</td>
<td>4/5</td>
<td>5/20 (25%)</td>
</tr>
<tr>
<td>Years of Experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>4.2 (3.9)</td>
<td>8.4 (6.8)</td>
<td>5.25 (4.99)</td>
</tr>
<tr>
<td>Range</td>
<td>1-17</td>
<td>3-20</td>
<td></td>
</tr>
<tr>
<td>Average Years of Experience as Clinical Instructor (SD)</td>
<td>3.2 (3.9)</td>
<td>7.4 (6.8)</td>
<td>4.25 (4.99)</td>
</tr>
<tr>
<td>Physical Therapy Degree</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPT (entry level)</td>
<td>11/15</td>
<td>1/5</td>
<td>12/20 (60%)</td>
</tr>
<tr>
<td>DPT (transition)</td>
<td>2/15</td>
<td>4/5</td>
<td>6/20 (30%)</td>
</tr>
<tr>
<td>MPT</td>
<td>2/15</td>
<td>0/5</td>
<td>2/20 (10%)</td>
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### Clinical Education Facility – Student Distribution

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Total</th>
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<tr>
<td><strong>Total PT Students</strong></td>
<td>55</td>
<td>62</td>
<td>79</td>
<td>196</td>
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<tr>
<td>1st Rotation</td>
<td>14</td>
<td>15</td>
<td>18</td>
<td>47 (24.0%)</td>
</tr>
<tr>
<td>Intermediate Rotation</td>
<td>28</td>
<td>32</td>
<td>37</td>
<td>97 (49.5%)</td>
</tr>
<tr>
<td>Terminal Rotation</td>
<td>13</td>
<td>15</td>
<td>24</td>
<td>52 (26.5%)</td>
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<tr>
<td><strong>Number of DPT Schools Represented</strong></td>
<td>13</td>
<td>14</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Number of DPT Program Affiliations</strong></td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td><strong>Student Cancelations (by PT programs)</strong></td>
<td>14</td>
<td>14</td>
<td>15</td>
<td>43</td>
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</table>
Table 4 – Baseline Productivity: All CIs with no students

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Bound</td>
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<tr>
<td>2:1 Clinical Instructors</td>
<td>2063</td>
<td>16.4234</td>
<td>3.04703</td>
<td>.06709</td>
<td>16.2919</td>
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<td></td>
<td></td>
<td></td>
<td>16.5550</td>
</tr>
<tr>
<td>Non-2:1 Clinical Instructors</td>
<td>3664</td>
<td>16.8135</td>
<td>3.38490</td>
<td>.05592</td>
<td>16.7039</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>16.9232</td>
</tr>
<tr>
<td>Total</td>
<td>5727</td>
<td>16.6730</td>
<td>3.27232</td>
<td>.04324</td>
<td>16.5883</td>
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<td></td>
<td></td>
<td></td>
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<td>16.7578</td>
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ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>200.860</td>
<td>1</td>
<td>200.860</td>
<td>18.816</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>61113.503</td>
<td>5725</td>
<td>10.675</td>
<td></td>
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</tr>
<tr>
<td>Total</td>
<td>61314.364</td>
<td>5726</td>
<td></td>
<td></td>
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<tr>
<td>ClinicalGroup</td>
<td>Mean Difference (I-J)</td>
<td>Std. Error</td>
<td>Sig.</td>
<td>Lower Bound</td>
<td>Upper Bound</td>
</tr>
<tr>
<td>---------------</td>
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<td>-------------</td>
</tr>
<tr>
<td>No Student</td>
<td>-.37216*</td>
<td>.08704</td>
<td>.000</td>
<td>-.5762</td>
<td>-.1681</td>
</tr>
<tr>
<td>2 Students</td>
<td>-4.85503*</td>
<td>.13156</td>
<td>.000</td>
<td>-5.1634</td>
<td>-4.5466</td>
</tr>
<tr>
<td>1 Student</td>
<td>.37216*</td>
<td>.08704</td>
<td>.000</td>
<td>.1681</td>
<td>.5762</td>
</tr>
<tr>
<td>2 Students</td>
<td>-4.48287*</td>
<td>.14285</td>
<td>.000</td>
<td>-4.8177</td>
<td>-4.1480</td>
</tr>
<tr>
<td>2 Students</td>
<td>4.85503*</td>
<td>.13156</td>
<td>.000</td>
<td>4.5466</td>
<td>5.1634</td>
</tr>
<tr>
<td>1 Student</td>
<td>4.48287*</td>
<td>.14285</td>
<td>.000</td>
<td>4.1480</td>
<td>4.8177</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.
Conclusion

• The current study demonstrates the ability for physical therapist productivity to increase in the acute care setting in both a 1:1 and 2:1 clinical education model.

• While the 2:1 model provided the greatest increase in productivity during the three-year timeframe, the productivity of all physical therapists in the study significantly increased with each student.

• As indicated in previous qualitative studies, a supportive atmosphere in the clinical setting with the appropriate level of communication and supervision is warranted for success in all models of clinical education.

• The ability to successfully implement the 2:1 model will be dependent upon the institutional support, training, and experience of the clinical instructor.
Challenges and Rewards of the Collaborative Model

• Tips & suggestions
• Communication
• The Dreaded CPI
Tips for utilizing “Downtime”-

1) Chart review for upcoming patient examination or re-assessment. Can include review of radiology films if available or pharmacological review.

2) Peer review of other students documentation, treatment plan, exercise program, or discharge recommendations. Can meet as a group to discuss findings.

3) Assign both students a skill to practice on each other (i.e. manual techniques, transfers, therapeutic exercise.)

4) Research for in-services.

5) Research a topic to discuss with CI.
6) Critically Appraised Topic- have students develop clinical questions regarding a patient, find related article and write a brief description of the article

7) Observe other professionals if available (OT, SLP, RT, MD etc...)

8) If you are attending a meeting have the student come with you and observe the administrative process if appropriate- ( i.e.- planning meetings, program development etc.)

9) Research a piece of equipment for department- find vendors, get price quotes, research best product etc...

10) Attend available presentations outside the Physical Therapy department- (grand rounds, M and M, social work rounds, nursing rounds etc.)

BE CREATIVE !!!!!!!
## CI Rewards and Challenges

<table>
<thead>
<tr>
<th>Rewards</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotes teamwork/collaboration</td>
<td>Decreased individual attention</td>
</tr>
<tr>
<td>Facilitates Active Learning</td>
<td>Different learning Styles</td>
</tr>
<tr>
<td>Shared Experience</td>
<td>Taking on role of consultant</td>
</tr>
<tr>
<td>Decreased Burn Out</td>
<td>Decreased hands-on care</td>
</tr>
<tr>
<td>Simulation of real world collaboration</td>
<td>Interpersonal conflicts</td>
</tr>
<tr>
<td>Increased teaching time</td>
<td>Student Competition</td>
</tr>
<tr>
<td>Learner independence-ownership</td>
<td>Different Experience Levels</td>
</tr>
<tr>
<td>Increased productivity</td>
<td>Increased paperwork (CPI)</td>
</tr>
<tr>
<td></td>
<td>Balance of independence and collaboration</td>
</tr>
</tbody>
</table>
## Student Rewards and Challenges

<table>
<thead>
<tr>
<th>Rewards</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Promotes learning through peer interaction</td>
<td>• Passive learners may struggle</td>
</tr>
<tr>
<td>• Promotes teamwork/collaboration</td>
<td>• Fear of not receiving adequate feedback</td>
</tr>
<tr>
<td>• Peer Discussion/ Support</td>
<td>• Decreased individual attention</td>
</tr>
<tr>
<td>• Recognition of other students strengths</td>
<td>• Competition</td>
</tr>
<tr>
<td>and limitations</td>
<td>• Interpersonal Conflicts</td>
</tr>
<tr>
<td>• Peer Teaching</td>
<td>• Increased Internship Opportunities</td>
</tr>
<tr>
<td>• Decreased stress</td>
<td></td>
</tr>
<tr>
<td>• Enhanced Communication Skills</td>
<td></td>
</tr>
<tr>
<td>• Greater Sense of Comfort</td>
<td></td>
</tr>
</tbody>
</table>
## Facility (CCCE) Rewards and Challenges

**Rewards**
- Staff Burn-Out
- Incorporation of EBP into facility culture
- Retention recruitment
- “8 week interview”
- Create a culture of teaching and learning
- Increased Staff learning (In-service)
- Increased opportunities for Collaboration with the schools.

**Challenges**
- Facility Space
- Limited Case-Load
- CI vacation/illness
- Increased Productivity
- Inconsistent student population
- Resource Availability (Computers)
CCCE Tips

• 2:1 for experienced CIs
• CI credentialing
• Stagger Start Dates
• School Mix
• Communication with schools (ACCE)
• Communication with CI/students
• Leave a CI open if possible.
• Be flexible
References:


