

## Found 8 Abstracts

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**CONTACT (INSTITUTION ONLY):** Mayo Clinic

**TITLE:** Development of a Unique Triage System for Acute Physical and Occupational Therapy Services

### **ABSTRACT BODY:**

**Background & Purpose :** This administrative case study documents the development of a mechanism by which patients are systematically triaged to therapists in acute care. The primary objective was to improve patient access to medically necessary therapy services.

**Case Description :** A unique triage tool and decision tree was developed for use in determining which acute therapy referrals require skilled services. Therapy referrals for subjects from two large academic hospitals were triaged using the tool, determining which evaluations should be canceled based on six criteria. During the trial period, the predictive ability of individual triage criteria items was analyzed; the tool was modified and validated; and a decision tree was established. Descriptive and chi-square analyses were performed on all variables of interest.

**Outcomes :** The systematic triaging system reduced the number of therapy evaluations that were not appropriate by 29%, resulting in an improvement in the availability of therapy services for patients who required skilled care. Staff satisfaction was not negatively impacted and the average number of patients per therapist per workday decreased from 18.9 to 12.1 and from 15.1 to 12.8, respectively, in the two hospitals.

**Discussion :** A novel systematic triaging system reduced the number of therapy evaluations that were not appropriate resulting in an improvement in the availability of therapy services for patients who require skilled care.

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**CONTACT (INSTITUTION ONLY):** Clarkson University

**TITLE:** Defining Autonomy in Healthcare: A Systematic Review

**ABSTRACT BODY:**

**Purpose/Hypothesis :** A profession is declared through social contract to fill a unique societal need. Law, theology, and medicine are said to be the three original professions based on which standards for what constitutes a profession now exist. A profession's ability to be autonomous is one of these criteria. The American Physical Therapy Association states that by 2020 physical therapy "will hold all privileges of autonomous practice", just as other healthcare groups, such as nursing, have also been striving to achieve this element of being deemed by society a true profession. The dictionary outlines a basic definition of autonomy relating back to the greek roots of the word, 'autos' meaning self and 'nomos' meaning rule, governance, or law. Healthcare professions, however, have each identified their own definitions for autonomy creating lack of understanding between professions and confusion in society's understanding of autonomy. The purpose of this review was to (1) determine if healthcare professions have studied autonomous practice; and (2) determine how healthcare research defines autonomy such that consensus on definition may possibly be reached pertaining to the needs that healthcare occupations provide.

**Number of Subjects :** Not applicable.

**Materials/Methods :** A systematic review of qualitative and quantitative research was performed for articles pertaining to autonomy, particularly professional autonomy. PUBMED/MESH, CINAHL, and PsycArticles data bases were searched in late 2007 and early 2008 with the search open to all healthcare professions from all countries. Hand search of citations was also performed to the point of redundancy. Inter-rater reliability among researchers for data extraction was established by an outside researcher and analysis of data was performed with SPSS statistical suite.

**Results :** Of the 10,399 citations searching "autonomy" and "professional autonomy", 260 were published research representing 14 different healthcare professions and 19 different countries worldwide. Through final data extraction, 10 qualitative studies met all inclusion criteria. Concept analysis (6/10) and grounded theory (2/10) were the most utilized research methods. Four definitions for autonomy were identified through research processes, all published in nursing literature.

**Conclusions :** There is potential in the existing healthcare research for a standardized definition of autonomy in healthcare to provide consistency in interdisciplinary communication, clarity within society and a basis for collaborative study for its measurement.

**Clinical Relevance :** Examination of the evidence related to the definition of autonomous practice is a first step toward systematic clarification of aspects of autonomy that can then be measured at the clinical and professional levels consistently across professions. Interprofessional, collaborative work toward uniform definition and subsequent measurement of autonomy would assist communication between healthcare professionals and help in setting realistic societal expectations for autonomous healthcare practitioners.

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**CONTACT (INSTITUTION ONLY):** UNC at Chapel Hill

**TITLE:** The Delivery of Physical Therapy in the Acute Care Setting: A Population-Based Study

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The primary objective of this study was to describe the delivery of physical therapy (PT) in North Carolina (NC) acute care hospitals using a population-based dataset. A secondary objective was to illustrate how such a dataset can be used to address questions relevant to health policy.

**Number of Subjects :** 2,215,660 individuals who had an acute care hospitalization in NC.

**Materials/Methods :** Cross-sectional analysis of two years (2005-2006) of hospital discharge data from all acute care hospitals in NC (N=122). Each record in the dataset represents a hospital admission/discharge. Data from other sources (e.g., NC Census, Area Resource file, Centers for Medicare and Medicaid Services Provider files) were merged with the hospital discharge data. Records with PT charges were identified. Univariate analyses were conducted to describe the clinical and demographic characteristics of individuals who received PT. Within select diagnoses, multivariate analyses were conducted to determine the extent to which clinical, demographic, geographic, and hospital-related factors explained variation in the intensity of PT use.

**Results :** 496,308 individuals (22% of the population) received PT. Individuals who received PT were predominantly female (58%), white (78%), and >45 years of age (77%). 64% were on Medicare, 16% on private or government insurance, 7% on Medicaid, and 4% were uninsured. Osteoarthritis and stroke were the most common diagnoses for older individuals (>45 years) while lower extremity fracture and back problems were most common for younger individuals. The median length of stay for individuals who received PT was 6 days. 38% of the sample was discharged to home/self care, 28% to SNF/rehab, and 25% to home health. 3% of the sample expired in the hospital. Median total PT charges and PT charges/day were \$542 and \$99, respectively. On average, PT charges were 5% of total hospital charges. Within select diagnoses, the intensity of PT use varied both across and within hospitals. Mean PT charges/day by facility ranged from \$45 – \$458 (interquartile range: \$171 – \$251) for lower extremity joint replacement and from \$55 – \$415 (interquartile range: \$129 – \$212) for stroke. In multivariate analyses, demographic, geographic, and hospital-related characteristics contributed to variation in the use and intensity of PT even after controlling for illness severity and need.

**Conclusions :** Approximately one-quarter of individuals who are admitted to acute care hospitals in NC receive PT. Factors beyond diagnosis, illness severity, and need appear to determine the amount of PT received by individuals. Findings from this study point to potential areas for improving access to and quality of PT in NC acute care hospitals.

**Clinical Relevance :** Understanding the delivery of PT on a population basis is essential for improving the quality of PT care, informing health care policy, and ultimately improving the health of populations.

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**CONTACT (INSTITUTION ONLY):** Brown University

**TITLE:** Benchmarking Outpatient Rehabilitation Clinics

**ABSTRACT BODY:**

**Purpose/Hypothesis :** Assessment of quality of physical therapy care is a new, but important area of research. Payers are currently moving towards value-based purchasing for outpatient therapy, and Centers for Medicare & Medicaid Services is actively exploring alternatives to the therapy caps. Provider profiling has gained popularity as a strategy to evaluate provider performance which can in turn be used to guide value-based purchasing policies and facilitate quality improvement initiatives. We have previously developed multivariate models for risk-adjusting functional status (FS) outcomes and visits. Our objective was to begin implementation of our models by estimating percent of variations in patient rehabilitation outcomes attributable to physical therapists and clinics, and rank clinics by performance.

**Number of Subjects :** This was a prospective, longitudinal, cohort study with population drawn from the Focus On Therapeutic Outcomes, Inc. (FOTO) database. Patients treated between July 1, 2006 and June 30, 2008 were included (N=90,392 treated by 2,040 therapists in 532 clinics with a minimum of 30 patients per clinic).

**Materials/Methods :** Functional status (FS) at discharge was the dependent variable. FS was measured via computerized adaptive testing applications, scaled 0-100 with larger values indicating more functioning. Hierarchical 3-level models (patients nested within therapists; therapists nested within clinics) adjusting for patient case-mix were used to predict estimates of clinic and therapist specific effects. Patient case-mix covariates included sex, age, intake FS, symptom acuity, type of condition (including lumbar, shoulder, knee, cervical, foot/ankle, hip, wrist/hand, elbow, ribs, craniofacial), number of surgeries, number of functional comorbidities, payer. We controlled for the effect of missing discharge FS through inverse probability weighting, or censoring.

**Results :** Clinic effects were larger than therapist effects. After adjusting for patient-level case mix, the clinic effect explained 9% of the total variation, while the therapist explained 2.4%. We used therapist and clinic effect estimates to rank clinics by performance: results show clear and significant differences between clinics. Estimated discharge FS attributable to clinics ranged from 0.4 to 24 units (in the 0-100 scale) and differences between clinic performance for clinics ranked in the lowest and highest performance quartiles was significant at the 99% level. Censoring of discharge FS was 36%, but correcting for censoring had small effects in the rankings of most clinics (although a few clinics had relatively larger changes).

**Conclusions :** Findings suggest profiling models offer an adequate method to benchmark outpatient rehabilitation clinics.

**Clinical Relevance :** Clinic benchmarking can be used as a tool to control costs and evaluate quality. Performance information can help identify good and bad practice processes that can be used to improve service quality and are ready for initial implementation.

**AUTHORS (FIRST NAME, LAST NAME):** Daniel Pinto<sup>1</sup>, M. Clare Robertson<sup>2</sup>, Jose A. Garcia<sup>3</sup>, Paul Hansen<sup>4</sup>, J. Haxby Abbott<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** University of Otago

**TITLE:** Can participants be trusted sources for valuing health resource use in economic evaluation studies?

**ABSTRACT BODY:**

**Purpose/Hypothesis :** Economic evaluations of interventions require that health service use be identified, measured, and valued appropriately. Provider databases are rich in information but often require a difficult navigation through medical bureaucracy. Participant self-reporting is a more attractive option but may be affected by recall bias. We conducted a feasibility study to determine the most efficient means of identifying and valuing health service use for a cost-utility analysis conducted as part of the Management of OsteoArthritis (MOA) trial.

**Number of Subjects :** 50 participants (58% women, age range 55 to 85 years).

**Materials/Methods :** Information on osteoarthritis-related primary care use by trial participants in a 3 month period was obtained from primary care office databases and a review of patient notes at 18 offices in the Dunedin metropolitan area, New Zealand. Using a questionnaire, participants were asked to recall the number of osteoarthritis-related primary care visits in the same 3 month time period and to report their co-payment per visit. Reliability between database results and self-reporting was assessed using the Spearman rank correlation coefficient and intra-class correlation coefficient (ICC). Bland-Altman comparisons were used to determine the degree of agreement between the two data collection methods.

**Results :** Primary care service use averaged 1.2 visits (SD 1.2) from primary care databases and 1.4 visits (SD 1.1) from participant self-reporting. Database results and self-reporting showed fair reliability (Spearman's rho 0.39,  $p < 0.01$ , ICC = 0.32) and moderate reliability of the mean (ICC = 0.48). The Bland-Altman comparison showed a mean difference of -0.18 (CI -0.56 to 0.20). Co-payments for osteoarthritis related primary care showed moderate levels of reliability (Spearman's rho 0.48,  $p < 0.001$ , ICC = 0.45), substantial reliability of the mean ICC = 0.62, yet a significant difference was found between the two reporting methods ( $p < 0.05$ ). The Bland-Altman comparison showed a mean difference of NZD\$10.70 (CI \$2.05 to \$19.31) at 2008 prices.

**Conclusions :** There was no difference in reported osteoarthritis-related primary care use between self-reporting and primary care database results, but there was an over-reporting of co-payments by participants. This may have been due to stating an amount that was sure to be inclusive of the actual co-payment, for example recalling "It would be no more than \$30". A questionnaire can identify primary care use but valuations should be applied by the researcher in order to avoid over-estimating primary health care costs by as much as 30%.

**Clinical Relevance :** An economic evaluation is essential to provide information on value for money for clinically effective treatments. Self-report questionnaires provide good estimates of resource use but may not be reliable for valuing important cost items.

**AUTHORS (FIRST NAME, LAST NAME):** Edward Barakatt<sup>1</sup>, Barbara J. Stevens<sup>2</sup>, Carol Parise<sup>3</sup>, Miranda Campisano<sup>1</sup>, Kathleen Fisher<sup>1</sup>, Anna Tortosa<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** California State University, Sacramento

**TITLE:** Making Clinical Information in Physical Therapy Electronic Medical Records Available for Quality Assurance Programs.

**ABSTRACT BODY:**

**Purpose :** Electronic medical records provide physical therapists with an opportunity to improve clinical information gathering to facilitate evidence based practice and quality assurance programs. The purpose of this investigation was to determine how to improve the frequency and consistency of documentation and reliability of abstracting clinical information from physical therapy electronic medical records.

**Description :** SUBJECTS: Clinical information from the electronic physical therapy records of 156 patients receiving physical therapy for low back pain (LBP) was abstracted retrospectively. METHODS: Approximately 30 clinical characteristics identified in the literature as prognostic of developing or improving from LBP were abstracted from patients' electronic physical therapy records. The first 100 abstractions were performed prior to implementation of a standardized LBP evaluation form. The second 56 were performed after a standardized electronic physical therapy form was implemented for use by the treating physical therapists. Frequency of documentation and reliability of abstraction of the prognostic characteristics was assessed prior to and after implementation of the standardized LBP evaluation form. ANALYSIS: Descriptive statistics were used to report frequency of documentation and reliability of abstracting of the documentation. RESULTS: Eleven prognostic clinical characteristics that were found to be inadequately documented prior to implementation of the standardized LBP evaluation form were found to be adequately documented following implementation of the form. Seven clinical characteristics that were found to be unreliably abstracted prior to the implementation of the standardized LBP evaluation form were found to be reliably documented following implementation of the standardized form.

**Summary of Use :** Implementation of a standardized LBP evaluation form in an electronic physical therapy record improved documentation of prognostic clinical characteristics sufficiently that the electronic medical records will be able to be used to perform quality assurance and evidence based practice studies.

**Importance to Members:** It is important not only to track outcomes of patients with health problems, but to also track patient clinical characteristics and treatments provided. With this information, comparisons of outcomes of patients with similar clinical presentations can be made to assess effectiveness of physical therapy care.

**AUTHORS (FIRST NAME, LAST NAME):** Gina M. Musolino<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** The University of South Florida

**TITLE:** Evaluation of Florida PT Providers Level of Cultural Competence (CC) \*Partially funded by FPTA, Linda Crane Research Grant Award

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The importance of CC for the health professions is evidenced by the Institute of Medicine Report, recognizing health disparities as a national problem. The APTA Guide to PT Practice, Code of Ethics and other core documents support concepts of CC; yet it is unknown, what CC levels are present within PT providers today. Specifically APTA Vision 2020 states that PT providers “will provide culturally sensitive care distinguished by trust, respect and an appreciation for individual differences.” The Florida Physical Therapy Association (FPTA), Board of Directors adopted Vision 2020 in Goal Statements for members to “understand, embrace and promote a culture consistent with this vision.” For the profession of PT the Commission on Accreditation of Physical Therapist Education, includes CC throughout the criteria. Yet it is unknown the level of CC of providers who may serve as Clinical Instructors. The purpose of this investigation is to determine the current CC levels of practicing PT providers that are FPTA members. At present, no study has investigated levels of CC for PT providers; which remains of great importance in the diverse as we become an increasingly diverse nation. The purpose of this study is to examine the CC of FPTA providers through Campinha-Bacote’s Inventory for Assessing the Process of Cultural Competence-Revised (IAPCC-R©) which includes five constructs, Cultural: Awareness, Knowledge, Skill, Encounters and Desire.

**Number of Subjects :** From the FPTA membership of PT providers (PT & PTA) 20% of members were randomly selected from the current FPTA membership of 2,462 PT and 328 PTA’s; with efforts to conveniently include samples to represent each of the 6 Districts(East Central, Northern, Northwest, Southeast, Southwest, and West Central)

**Materials/Methods :** Written permission was obtained from J. Campinha-Bacote, to utilize the IAPCC-R©. Following IRB (exempt status) and informed consent procedures, subjects completed the validated and reliable IAPCC-R©. CC scores are calculated. Utilizing SPSS statistical software, analyses compares overall CC levels and constructs with comparison to other health disciplines and PT students studied.

**Results :** Data collection is currently in process. Overall mean scores will be presented along with de-identified demographic data. IAPCC-R construct results will be compared and discussed, especially related to patient/client care.

**Conclusions :** Baseline data for CC for PT providers will result. These results provide a needs assessment for continuing professional education and a basis for further study.

**Clinical Relevance :** The APTA Guide to PT Practice discusses the importance of patient/client history taking, systems review and patient/client education, yet without CC, data gathered may be limited at best; potentially impeding outcomes, leading to mis-diagnoses, and medical errors. The APTA Guide for Professional Conduct and Code of Ethics, addresses, Principle 1, that PT providers “shall respect the rights and dignity of all individuals and shall provide compassionate patient care.”

**AUTHORS (FIRST NAME, LAST NAME):** Cheryl J. Hickey<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** California State University, Fresno

**TITLE:** Retrospective Analysis of Cultural Disparity Trends in Acute Rehabilitation

**ABSTRACT BODY:**

**Purpose :** Language barriers are one piece of the larger issue concerning cultural barriers. In 1990 congress began advocating for guidelines to deal with the issue of language barriers in healthcare. However, as far back as the Civil Rights Act of 1964, individuals receiving services from any Federally assisted program have been afforded a form of legal protection. The act prohibits discrimination based on many factors including ethnicity and national origins. However, we continue to see differences in access to healthcare for various culturally diverse groups. It is clear from a historical perspective that the bridge between the creation of law, the professional mastery of clinical cultural competency, and the development of health policy, that these factor are not always synchronous in origin nor are they swift in implementation. Research concerning models for cultural competency and how allied healthcare students view cultural competency exist. However studies that examine where disparities exist within allied fields such as physical therapy are less common. The purpose of this study was to examine a large retrospectively collected data set to determine if trends concerning cultural disparity in an acute rehabilitation setting existed.

**Description :** The sample includes 3174 patients who were admitted to the hospital and to rehabilitation during the period of December 2002 to June 2008. Reflective of the vast diversity in California's Central Valley, this group included native speakers of 26 different languages and potential cultures. Although 82.1% of the patients were native English speakers, the next two largest language groups in the sample were Spanish speakers (13.6%) and Hmong speakers (1.9%). All but a few nonnative English speakers were judged to need interpreters for care at the time of admission.

**Summary of Use :** The initial look at this comprehensive database revealed interesting areas to be discussed. Some of which may reflect culturally related differences in care. One major difference was that of gender. There were differences in the male-female ratios of patients in the three main language groups. The native English speakers were 51.5% male, but the Spanish speaking group was 65.1% male and the Hmong group was 59.3% male. The cultural implications and issues of healthcare accessibility to language minority women is an issue that needs continued exploration.

**Importance to Members:** Physical Therapists along with other healthcare providers need to identify where disparities in access to their services exist. The only way inequalities can be addressed is if they are initially identified and understood in the context of the culture of the patient.

## Found 31 Abstracts

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**CONTACT (INSTITUTION ONLY):** Marymount University

**TITLE:** Measuring Professionalism in Physical Therapy

### **ABSTRACT BODY:**

**Purpose/Hypothesis :** The American Physical Therapy Association (APTA) House of Delegates (HOD) adopted Vision 2020, in the year 2000, which advances physical therapy as a profession to a doctoring profession.<sup>3</sup> Professionalism in physical therapy is considered by some to be the most important construct in Vision 2020. In 2002, the APTA identified seven Core Values of professionalism that serve as a definition for practice. Now defined, these Core Values remain challenging to measure. The purpose of this research is to develop a validated survey for measuring professionalism behaviors among practicing physical therapists. A model developed by Venskus which is based upon Glaser's research in ethics development, is the research framework supporting this research.

**Number of Subjects :** Face validation was obtained via a convenience sample of 10 practicing physical therapists representing multiple practice sites. An expert panel of four nationally recognized physical therapist professionalism content experts and one survey design expert participated in initial survey content validation.

**Materials/Methods :** This research utilized a qualitative study design for data collection and survey development. Grounded theory techniques guided development of a common set of indicators in initial survey development. A systematic review of cross-sectional research literature examining general measures of professionalism in physical therapy, medicine and pharmacy was conducted using PubMed, Science Direct, CINAHL, PEDRO, SumSearch, Cochrane Databases of Systematic Review, Proquest Nursing and Allied Health and Google Scholar databases, and American Physical Therapy Association – Physical Therapy journal.

**Results :** 190 articles extracted from the literature produced 316 professionalism survey indicators. Face validation and four rounds of content validation resulted in a 39-item questionnaire designed as a self-assessment for measuring professionalism in physical therapy. In addition, survey indicators are assigned across all levels in the research framework.

**Conclusions :** The new survey for measuring professionalism is unique in the physical therapy literature. The survey is of reasonable length and is designed for easy data collection. APTA Core Values are reflected across the survey. As physical therapy approaches Vision 2020, physical therapist practitioners are expected to demonstrate more advanced professional behaviors in patient/client interactions, among practitioners within and among practices and representing the needs of the community and the profession at the societal level.

**Clinical Relevance :** The results of this study and this new survey contribute to the growing body of literature defining and measuring professional behaviors in health care and may be used to direct academic and professional development programming and substantiate professionalization of physical therapy.

**AUTHORS (FIRST NAME, LAST NAME):** Murray E. Maitland<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** University of Washington

**TITLE:** A TRANS-DISCIPLINARY DEFINITION OF DIAGNOSIS

**ABSTRACT BODY:**

**Abstract Body :** "Diagnosis" is a fundamental abstract reasoning concept in health-care. The definition is evolving and impacts aspects of health care delivery and clinical research. Currently, dictionary definitions of "diagnosis" fall into two broad categories. First, there are definitions that stress the etymology in that there is an understanding of the nature, cause and extent of the patient's health problem. Another set of definitions is based on classifying the patient problem according to labels.

I propose that the definition of "diagnosis" be modified to: "The process of determining the mechanism by which the patient's health condition arises and the conclusions reached by doing so."

Patient care decisions, clinical guidelines, program development, and efficient delivery of services necessitate something that fulfills a problem definition role within interdisciplinary environments. A general professional viewpoint is that medical diagnoses are not a sufficient to justify specific, physical therapy interventions. Some authors have suggested physical therapy-specific diagnoses for particular constellations of patient presentations. Nurses have also endeavored to create a profession-specific nomenclature for diagnoses. However, a professionally independent nomenclature has been difficult to achieve because of the interdependence of pathology, impairments and the patient's role in society. The nursing profession has discussed the differentiation between medical and nursing diagnosis, and the reality that nurses intervene on many conditions that are truly medical diagnoses, and that do not necessitate "renaming" an accepted medical condition. A solution to this dilemma may be to create a bridge between professional diagnoses recognizing the multi-factorial etiology of disability while explicitly stating the context of physical therapy intervention.

Physical therapists have struggled with adopting humanistic, patient-centered, professionally autonomous, team-oriented intervention strategies given that medically-oriented labels are the driving forces for clinical guidelines and programs including evidence-based practice and reimbursement. The "Hypothesis Oriented Algorithm for Clinicians (HOAC)" has been developed for physical therapy clinical care, and has elements that match the recommendations of this paper. Our current practice model suggests that interventions are directed at different points along the mechanism depending on the needs of the patient and role of the therapist to achieve the most favorable outcomes. Interdisciplinary care is coordinated at the same point or different points along the mechanism to potentiate benefits to the patient. As specialists within the overall health-care delivery model, physical therapists recognize that profession-specific care needs to be justified within the overall health context of the patient. An inter-professional definition may improve goal alignment between stakeholders. At a minimum, researchers could assess the practical impact of one definition compared to another.

**AUTHORS (FIRST NAME, LAST NAME):** Ronald D. Barredo<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** Tennessee State University

**TITLE:** The Role of Critical Reflection and Research Evidence in the Development of Best Practice

**ABSTRACT BODY:**

**Purpose :** The purpose of this paper is to provide a pragmatic approach to developing best practice, an approach whose framework revolves around critical reflection (reflective practice) and supportive evidence (evidence-based practice). Toward this end, the following equation is provided: Reflection + Evidence = Best Practice.

**Description :** Critical reflection is the ART of best practice--art, because critical reflection is not exact. It thrives in individuality both in meaning and significance. The ultimate goal of critical reflection is improvement, which begins with a frank analysis of current practice and a search for better, more effective alternatives. Critical reflection helps bring tacit knowledge (i.e., hidden knowledge built from and borne out of experience) to the fore. It helps physical therapists understand what they already know, identify gaps in understanding in order to advance practice, process new information relative to their own professional experience, and guide choices for personal and professional development. On the other hand, evidence-based practice is the SCIENCE of best practice--science, because research evidence provides the empirical data needed to demonstrate the effectiveness of current practice. It thrives in not only in numbers but also in what those numbers mean. With its roots in medicine and medical care, evidence-based practice is a decision making process based on the best available evidence coupled with a consideration for patient goals and characteristics, and clinician expertise. Gone are the days when clinical decision making was based on expert opinion and past practices. Clinical decision making should be guided in part by the presence and strength of empirical evidence.

**Summary of Use :** Critical reflection and research evidence are complementary in nature. Both contribute to personal growth and professional development. In order to function effectively, physical therapists need to learn, practice, and integrate these skills in practice. They need to recognize the role of experience in developing professional wisdom, and they need to value the utility of empirical evidence to make informed decisions. Without professional wisdom, practice cannot adapt to local circumstances and operate intelligently in the many areas in which research evidence is absent or incomplete. Without empirical evidence, education cannot resolve competing approaches, generate cumulative knowledge, and avoid fad, fancy, or personal bias (Bingman, Joyner, & Smith, 2003).

**Importance to Members:** Professionalism in physical therapy includes core values such as accountability, professional duty, and excellence. To achieve these core values, professionalism necessitates the development of best practice. Physical therapists are in a unique position to achieve best practice by incorporating both the art of best practice (critical reflection) and the science of best practice (research evidence).

**AUTHORS (FIRST NAME, LAST NAME):** Karen C. Ogle<sup>1</sup>, Janice M. Kuperstein<sup>2</sup>

**CONTACT (INSTITUTION ONLY):** Central Baptist Hospital

**TITLE:** Assessing and Responding to a Request for Post-Op Day 0 Intervention for Patients Undergoing Joint Replacement

**ABSTRACT BODY:**

**Purpose/Hypothesis :** Due to a change in anesthesia protocol which results in expedited patient readiness for treatment, physical therapy intervention on post op day 0 was requested by the Chair of the Orthopedics Section. A thorough feasibility analysis was undertaken to determine the impact on length of stay, discharge destination, and cost of care, along with patient functional outcomes. Barriers including staffing extended hours, changing department culture, and considering equitable distribution of resources throughout the organization were considered. Hypothesis: Beginning PT on POD 0 will improve patient and organizational outcomes.

**Number of Subjects :** 666 patients who had undergone unilateral hip or knee replacement in fiscal 2008 and first quarter 2009 were reviewed. 483 were treated following the standard protocol and 183 received the new multimodal anesthesia protocol and PT was initiated on POD 0.

**Materials/Methods :** Data were collected and analyzed to consider direct cost per case (OR cost, Pharmacy cost, PT cost, and Total cost per case), average length of stay, discharge destination, and patient functional outcome.

**Results :** Direct cost per case for the group treated under the new protocol decreased in all areas measured. Direct margin per case increased by 62%, average length of stay decreased from 3.86 to 2.50 days. Most notably, 58.5% of patients treated under the new protocol were discharged to home versus 11.6% of the control group.

**Conclusions :** A protocol including a multimodal perioperative anesthetic regimen, paired with initiation of PT on POD 0 resulted in improved patient outcomes, accelerated discharge and decreased cost of care.

**Clinical Relevance :** The aging of the population and growth in the number of joint replacements performed, mostly in Medicare recipients, results in increasing pressure on hospitals to reduce costs while maintaining quality. This change in anesthesia and post-operative rehabilitation protocols resulted in significant cost savings while improving patient outcomes.

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**CONTACT (INSTITUTION ONLY):** Bellarmine University

**TITLE:** Integration of Evidence Based Teaching and Learning in the Classroom with Continued Competency Opportunities for Clinical Faculty

**ABSTRACT BODY:**

**Purpose :** With the rapid expansion of new information and the emphasis on evidence-based practice (EBP), there can be a chasm between students' and clinical instructors' (CI's) knowledge and application of new clinical evidence. The purpose of this project is to 1) describe a rubric for an EBP course assignment for the examination and treatment of spinal disorders in a doctor of physical therapy (DPT) program, 2) provide a forum that connects academic programs and clinical faculty, and 3) offer a cost-effective and interactive continuing education experience for clinical educators to help meet state professional competency requirements for re-licensure.

**Description :** Forty-three DPT students enrolled in a required spinal disorder examination and management course presented critiques on published case reports selected by course faculty. A rubric was provided which detailed student critique and formal presentation requirements based on the quality of the case report, the clinical examination process, interpretation of findings, and the interventions based on current EBP guidelines. Local clinical instructors (CI) were invited to attend student presentations of case report critiques over two 4-hour afternoon sessions. Academic faculty, students and CI's discussed the examination, interventions and outcomes after each presentation. Students received formal evaluation of their presentations and critique from course faculty and student colleagues. All licensed attendees were provided with 8 hours of state approved continued competency hours (0.8 continuing education units) upon completion of the seminar. Academic faculty and CI's completed a follow-up survey that included a forced response format and open ended comments. Survey results indicated that this project enhanced student and CI learning, stimulated critical thinking, linked course instruction to clinical practice, and promoted knowledge of EBP. All CI's rated the seminar as excellent or good.

**Summary of Use :** This project supports multiple goals identified in the APTA Education Strategic Plan (2006-2020) by establishing an innovative collaborative partnership between the academic program and clinical facilities to promote contemporary physical therapy practice (Goal #1), promoting physical therapist (PT) continued professional competence (Goal #2), and PT and student PT use of EBP guidelines (Goal #7). The model presented describes an effective strategy to provide: 1) student practice in reviewing and disseminating professional literature related to current EBP guidelines, 2) a low-cost option for CI's to meet state professional continuing competency requirements, 3) an open forum to discuss contemporary clinical practice standards and expectations, and 4) academic appreciation to CI's for contributions to the training of future clinicians.

**Importance to Members:** Membership gains low-cost professional continued competence as well as knowledge and clinical application of current evidence based practice.

**AUTHORS (FIRST NAME, LAST NAME):** Craig Wassinger<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** University of Otago

**TITLE:** International Professional Licensure: A Tortuous Path to Physiotherapy Registration in New Zealand

**ABSTRACT BODY:**

**Purpose :** Gaining legal authority to practice physical therapy in another country can be a daunting endeavor. Possessing a better understanding of the process leading to international licensure may encourage those considering employment in other countries. The aims of this account are to provide tips and insight on how to prepare an application for registration (licensure) as a physiotherapist in New Zealand and to present a case study of one such application. The physiotherapy board of New Zealand is the governing body of physiotherapy registration. Unlike the United States, where legal authority to practice is determined through examination, students of accredited New Zealand universities are automatically entitled to practice upon graduation. Foreign trained therapists apply for registration by submitting a portfolio detailing their qualifications/education, clinical experience, English language proficiency, disciplinary history, and mental/physical health. The primary focus is to demonstrate how the applicant's training and experience meet requirements outlined in the ten competencies on which New Zealand physiotherapy academic programs are based.

**Description :** An American trained therapist was offered a job in New Zealand, conditional upon gaining registration. Over several months, the applicant compiled a portfolio (~80 total pages) in line with physiotherapy board guidelines, which included an educational curriculum overview, a narrative report linking educational and professional experiences to the physiotherapy board competencies, copies of selected authored manuscripts, copies of various lectures taught, reference letters from employers, and personal and professional letters of good standing. The portfolio was returned to the applicant with a report detailing its deficiencies, such as incomplete academic transcripts and insufficient evidence of meeting New Zealand educational competencies. An amended portfolio (~1000 total pages) was compiled and submitted which included an exhaustive narrative of professional and educational experiences, a complete copy of the applicant's PhD dissertation, handouts of all lectures given to date, copies of all abstracts and manuscripts authored, transcripts, curriculum, and syllabi for all academic coursework, augmented reference letters, and other requisite materials. The second application was accepted and reviewed for three months, after which registration was granted. The time from job offer to start date, which included three contract start date extensions, was over 15 months.

**Summary of Use :** The experience of working internationally can be very rewarding and can provide opportunities for personal and professional growth. However, the particulars involved in gaining authority to practice in a specific jurisdiction must be carefully considered by those interested in this option.

**Importance to Members:** Individuals hoping to take advantage of international employment will be at an advantage by understanding the logistics and timeframe associated with gaining international registration.

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**CONTACT (INSTITUTION ONLY):** St. Catherine University

**TITLE:** Professional Experiences of Foreign-Trained Physical Therapists in the USA

**ABSTRACT BODY:**

**Purpose :** Foreign-trained physical therapists (FTPT) play a role in helping to meet the demand of badly needed rehabilitation services in the U. S. and other parts of the world. There are concerns as to whether or not this phenomenon is a good thing. Brain drain is a term used to describe the migration of trained professionals resulting in a loss of health workers for a given nation. In many countries, the brain drain of educated health professionals is caused by both “push and pull” factors. In the United States, the “grab factor” of foreign-trained medical professionals including physicians and nurses has been discussed yet there is little research on the reality of foreign-trained physical therapists in the academic literature. The moral regard to this issue cannot be ignored. A balance must be met between saturating the market with too many physical therapists and protecting the public from improperly trained clinicians. The dilemma is how to balance personal autonomy, right to economic prosperity, right to personal professional development, and the expectations of the public in relation to adequate health care services in all nations.

**Description :** This research project focuses on a qualitative approach to examine issues faced by foreign-trained physical therapists who are seeking licensure or who have completed the process to practice physical therapy here in the United States of America. Descriptive phenomenological methods were used to analyze interviews of foreign-trained physical therapists on their professional experiences of working in the United States of America. Motivations, issues, and barriers to this phenomenon were explored in this study. Our research questions included:

1. What is the experience of foreign-trained physical therapists working here in the United States?
2. How do these professionals learn to navigate the system of becoming licensed to practice physical therapy here in the United States?
3. What do foreign-trained physical therapists believe have been their greatest challenges in the practice setting here in the United States?

**Summary of Use :** Language proficiency, educational levels, and clinical experience appear to be the greatest are barriers for some foreign-trained physical therapists. Other barriers such as perceived absence of support, lack of equal opportunity, and separateness were also noted. A clinician’s accent or physical appearance may also demonstrate more subtle forms of discrimination against these professionals.

**Importance to Members:** Results from this study may help inform communities and organizations on how to best recruit and retain physical therapy professionals in order to meet the increasing diversity in the patient populations we serve. It is our hope that our research will open the discussion of how to best meet today’s growing demand for a culturally appropriate and diverse workforce that is able to meet the needs of an ever growing diverse health-care environment.

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**CONTACT (INSTITUTION ONLY):** University of Maryland Baltimore, School of Medicine

**TITLE:** The Translation and Use of The Profile of Chronic Pain (PCP:S) to Assess the Impact of Pain on the Lives of Chinese Older Adults Residing in the United States: A Pilot Study

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The purposes of this study were two-fold. The first purpose was to translate a reliable quality-of-life measure (PCP:S) from English to Chinese. By utilizing this translated measure, the second purpose of the study was to ascertain the chronic pain experiences affecting the functional, social, and psychological well-being of native Chinese older adults living in the U.S.

**Number of Subjects :** 25 Chinese ambulatory older adults (X=70.3 years; range = 57-82) attending a community senior center in the mid-Atlantic region participated in the study.

**Materials/Methods :** The PCP:S is a 17-item screening tool that assesses perceived pain severity, emotional burden, and functional limitations. The English version has good reported reliability (Cronbach's  $\alpha = .89-.91$ ; test-retest =  $.77-.85$ ). Due to participants' preferences for Chinese, the PCP:S was translated by the first author for use in this study. To increase tool validity, the Chinese version was reverse-translated by another Chinese-speaking individual and represented an accurate translation. All participants read the informed consent Preamble and completed the PCP:S utilizing the Chinese version. Data were analyzed utilizing SPSS 14.0 for Windows-Student Version. Descriptive statistics were used to analyze the demographics of the participants and responses to 15 of the PCP:S items.

**Results :** Sixty-four percent of participants reported pain in the past 12 months. Means and standard deviations of the three subscales were: Pain Severity (X=18.44, SD=7.45), Pain Interference (X=8.44, SD=10.63), and Emotional Burden (X=6.44, SD=6.44). Regarding functional limitations of the pain responders: 25% had interference with social activities, 31% had difficulty with self-care, and 38% reported pain that impacted home responsibilities. Regarding emotional effects of pain: 44% reported sadness or depression and 69% felt tension, anxiety, or jitters,

**Conclusions :** Chronic pain was a prevalent problem for the Chinese older adults participating in this study; though a majority experienced minimum to moderate pain. Those who had pain in the last 12 months were most concerned that pain decreased their responsibilities at home. The conclusions of this study are limited by several factors, such as sample size and the study of only one geographically similar group of Chinese older adults. In further research, examination of the validity of some PCP:S items for applicability to Chinese older adults and performance of reliability analysis of the translated Chinese version of the PCP:S should be studied.

**Clinical Relevance :** Native Chinese older adults living in the U.S. are frequently seen by physical therapists and other health providers for chronic pain issues. There are many individual and cultural differences between reported pain incidence and behavior and its impact on an older adult's life. Yet, there are few linguistically-appropriate measurement tools and very little research examining the pain experiences of this population.

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**CONTACT (INSTITUTION ONLY):** Boston University Sargent College of Health and Rehabilitation Sciences

**TITLE:** Global Engagement Initiative: A Collaborative Model for Promoting Evidence Based Practice

**ABSTRACT BODY:**

**Purpose :** This presentation introduces a model for global engagement to promote evidence based physical therapy practice in Guatemala City and discusses the process by which physical therapist academicians, students, and clinicians can partner with faculty and therapists in another country to advance clinical practice.

**Description :** Based on a needs assessment done in 2008 to begin to understand the culture, health care structure, barriers, and facilitators to changing practice, a team of academicians from the United States determined how physical therapists and students trained in the United States might engage in a partnership to meet the needs of Guatemalan PT students, clinicians and academic faculty. Guatemalan colleagues identified as high priority the need to advance practice in the care of patients with neurological disorders. The team from the US designed and implemented a 2-day course at the Mariano Galvez University in Guatemala City in March, 2009 that focused on current neuro-rehabilitation principles and treatment approaches to enhance the practice of Guatemalan-trained physical therapists. Evidence was presented on how the brain recovers from neurological injury and how this information shapes examination and treatment of patients with neurological problems. The course's goal was to have participants take this information and incorporate it into their everyday clinical practice.

This event marked the first time that students, therapists and faculty from the four Guatemalan physical therapy schools and area facilities had come together for a course that was designed to advance clinical practice. Some 172 physical therapy students, faculty, and clinicians attended and the course was well received. Participants (n=96) answered the post course question, "Overall, I learned a lot in this course (Likert scale 0-7 complete agreement) at a 6.4. The course content and delivery was in Spanish and at course completion, faculty were given course content electronically to enable them to incorporate content into their curriculum.

**Summary of Use :** A collaborative model that includes faculty, students, and clinicians from both countries is an example of an effective global engagement model to promote practice change and advocate for health care system changes.

**Importance to Members:** Physical therapist faculty, clinicians, and students can effectively engage in an initiative to impact physical therapy practice globally.

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**CONTACT (INSTITUTION ONLY):** St Luke's Hospital

**TITLE:** An Intentional Mentoring program template for staff development.

**ABSTRACT BODY:**

**Purpose :** In today's highly technical and demanding health care environment, appropriate and thorough training of new staff members is imperative. The new graduate is especially prone to lapses of self-confidence and the need for tailored guidance that is close at hand without being constrictive or demeaning. Even the experienced therapist who is hired at a new facility must start at the beginning when learning the policies and procedures peculiar to that institution.

**Description :** Our department recently initiated a program of Intentional Mentoring to supplement our ongoing orientation and casual mentoring programs. We have termed it "intentional" in that we consciously set aside resources of time and personnel for the process.

**Summary of Use :** Our inpatient rehabilitation department functions in a large, busy urban hospital with a Level 3 Trauma Center and accredited Stroke Center and Heart Institute. We have an orientation program for all new hires, and a program of informal, or "casual," mentoring instituted three years ago. In this system, the more experienced therapists are available for questions and watching over the new hires on an as-needed basis. In our Intentional Mentoring program, each new hire is paired with a therapist who has been working in the inpatient rehabilitation department for at least 1 year. The therapist experienced in our facility provides the new hire with a formal program of weekly instruction, periodic chart reviews and case reviews of more challenging patients. The weekly instruction sessions last 45 to 60 minutes and include varied formats such as direct demonstration in patient rooms, round-table discussions, brainstorming, and observation. Intentional Mentoring follows the routine orientation program for the new hire. Both programs utilize checklists to ensure all important topics are covered. The initial response from our staff regarding the Intentional Mentoring program has been exceptionally positive. We feel the cost in manpower hours is more than offset by the increase in staff satisfaction as well as confidence in functioning in our demanding environment. We have conducted group sessions for Intentional Mentoring (one experienced therapist and two or more new hires) and noticed a benefit in this method; ideas and suggestions for improvements in our department seem more readily exchanged in a group format than in a traditional one-on-one setting.

**Importance to Members:** We are sharing this mentoring program with our colleagues in the field as a means of providing a template for intentional staff development. We feel Intentional Mentoring could be easily adapted for use in any clinical setting—inpatient, outpatient, skilled or rehabilitation facility—where there is a mix of more- and less-experienced staff members. Such a program of intentional mentoring sets the new hire up for a successful experience in their new facility, and promotes a higher quality of care provided by them to their patients.

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**CONTACT (INSTITUTION ONLY):** Bradley University

**TITLE:** Chiropractors' Perceptions of Physical Therapy Knowledge and Direct Access

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The purpose of this study is: 1) To initiate an understanding of chiropractors' general awareness of the scope of physical therapy practice; 2) To explore the attitudes of chiropractors regarding direct access to physical therapy; and 3) To determine chiropractors' opinions regarding physical therapists capability to perform joint manipulations.

**Number of Subjects :** One hundred and seven licensed chiropractors

**Materials/Methods :** A demographic form which contains questions regarding practice paradigm, length of practice, exposure to physical therapy, and employment of a physical therapist was accompanied with the informed consent which stated that the return of the survey served as the informed consent to participate in this study. The survey was devised to determine understanding in the phrase "direct access to physical therapy", opinions regarding direct access to physical therapy, perceptions of physical therapy knowledge and capabilities in areas arthokinematics, osteokinematics, joint manipulations, joint manipulations, anatomy, and palpations. Prepaid self-addressed envelopes were coded in case subsequent mailings were necessary.

Informed consent, demographics form, and survey were sent to the sample of convenience extracted from the local phonebook. Potential participants were allotted approximately 3 weeks to respond. Follow up forms were sent to those who did not return survey; these potential participants were given approximately 2 weeks to return survey. Third and final follow-up forms were sent with a 1 week window to return survey.

**Results :** With a return rate of nearly 25%, 70.8% of the participants indicated that a Doctoral degree is necessary for physical therapists to be competent in an autonomous setting; however, 45.8% currently believe that the bachelor's degree is necessary for physical therapy licensure. In regards to direct access, 79.2% were in opposition to direct access to physical therapy services commenting that physical therapist lack knowledge, skills, and educational degree to work in an autonomous setting. Overall, 70.8 % and 83.4% of the participants perceived physical therapists as unaware and unskilled in joint manipulation, respectively.

**Conclusions :** This study reveals that opposition to direct access to physical therapy services is largely due to the lack of knowledge of credentialing of a physical therapist and unawareness of physical therapy education, evaluation/treatment methods and techniques. Hence, the inclination to support the promotion physical therapy in the healthcare industry is not warranted.

**Clinical Relevance :** The profession of physical therapy has much to offer the healthcare industry. It is unfortunate that those who work with, refer to, or employ physical therapist know very little about physical therapy, specifically physical therapy education, knowledge, and capabilities. Thus, in regards to the ongoing transition toward vision 2020, the profession of physical therapy must be more overtly proactive in educating not only chiropractors and other healthcare professionals but the public as well.

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**CONTACT (INSTITUTION ONLY):** Widener Univ

**TITLE:** The Impact of the Re-Introduction of the "75% Rule" on Pennsylvania Patients with Total Joint Arthroplasty

**ABSTRACT BODY:**

**Purpose/Hypothesis :** Medicare regulations control how beneficiaries access different aspects of the health care system while also describing the expectations of the providers. In 1983 the "75% rule" was introduced for inpatient rehabilitation facilities (IRFs). The rule is required that 75% of all patients admitted to IRFs must have a diagnosis from a predetermined list. A study of 2003 Medicare beneficiaries showed that less than 44% of patients admitted to IRFs had diagnoses on this list. The largest group that did not meet the criteria was patients with total hip or total knee arthroplasties (THA/TKA). Due to general non-compliance, the "75% rule" was suspended, revised, and re-implemented. Effective July 2004, some patients with THA/TKA are included in the "75% rule". Those who are eligible include patients over age 85, those with bilateral arthroplasties, or patients who are morbidly obese with a body mass index over 50. These subgroups were selected as they represent the individuals who would most likely benefit from an IRF stay.

**Number of Subjects :** Data were secured from the Pennsylvania Health Care Cost Containment Council (PHC4) for all patients who received THA or TKA during calendar year 2005. This yielded 41,000 Pennsylvanians who received a THA or TKA.

**Materials/Methods :** PHC4 provided patient level data at the acute care hospital level. Data included patient demographics, length of stay, discharge location, hospital, and surgeon. Measures of hospital and physician volume were calculated. Individual patient compliance with the new "75% rule" was also determined. Data analysis included descriptive statistics, ANOVA, Chi square, partitioning of Chi Square as well as statistical models such as a multinomial logistic regression.

**Results :** Average age of all patients was 66.59 years (range 10-98 years) and had an average length of stay of 3.76 days (range 0-64 days). Females represented 62.4% (n=26024) and 57.7% of patients were Medicare recipients (n=24078). Only 3,095 patients (7.4% of total sample) were deemed eligible for IRF and were admitted to an IRF post-hospitalization. There were 7,291 patients (17.5%) who were not eligible under the "75% rule" but were discharged to an IRF anyway. This makes a total of 10,386 patients who were discharged to an IRF (25.3% of sample). The probability of finding a patient who is compliant with the "75% rule" is 29.8% and the probability of finding a patient who is not compliant with the rule is 70.2%.

There was a significant difference in discharge location for Medicare recipients versus other payers. Medicare recipients were more likely to be discharged to an IRF or other inpatient setting, while non-Medicare patients were more likely to be discharged to home. Variations based on hospital and physician volume were also identified.

**Conclusions :** Based on this 2005 data, some hospitals were still working to become compliant with this new regulation.

**Clinical Relevance :** Recent Medicare regulations have essentially removed IRF as an option for some patients after THA/TKA.

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**CONTACT (INSTITUTION ONLY):** KUMC

**TITLE:** Public Perception of Physical Therapist Scope of Practice

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The push for direct access to physical therapists in Kansas places increasing importance on the public's knowledge of services physical therapists provide, as well as what is required to access a physical therapist. Currently, there is a lack of studies examining the public's perception of the scope of the profession. The purpose of this study is to assess the public's exposure to physical therapy and their knowledge of different practice areas of physical therapy that included musculoskeletal, functional mobility, neurological, pain management, modalities, cardiopulmonary, pediatrics, integument system and specializations.

**Number of Subjects :** 115

**Materials/Methods :** A survey collected information from the public on their exposure to physical therapy, knowledge of the level of education required by physical therapists, understanding of access to physical therapists, and awareness of various interventions. 115 people over the age of 18 were randomly selected for survey in Kansas City and Topeka at a health fair, football game, public library, 2 churches and a hospital lobby and cafeteria. Surveys included demographic information, but no means of indentifying participants. Analysis was performed using SPSS 16.0. Linear regression with Bonferroni sequential analysis was performed to discern if there was a relationship between awareness of interventions and age exposure or level of education. Numerical frequency analysis was done to understand the public's first-hand experience with physical therapy, type of exposure to physical therapy, and correct recognition of the scope of physical therapy practice.

**Results :** Respondent ages and level of education were representative of the general population of the area. Linear regression analysis revealed education and age are significantly correlated to knowledge of the scope of physical therapy. The highest knowledge of physical therapy was in the practice areas of musculoskeletal (90%), functional mobility (88%) and neurological (79%) . Likewise, respondents accurately recognized components of care outside of the physical therapy scope (83%). The public was less aware of areas such as cardiopulmonary (64%), pediatrics (53%) and integumentary practice (18%). The highest level of exposure to physical therapy was through second hand information presented by the media or discussion with a physician (18%) or from firsthand knowledge of being a patient themselves (26%).

**Conclusions :** The results of this study demonstrate a relationship between age and education of the public to the amount of knowledge they hold about physical therapy. Additionally, it is shown that the musculoskeletal, functional mobility, neurological and pain management realms of the profession are more commonly recognized, whereas more specialized divisions such as cardiopulmonary, pediatrics and integument lack familiarity.

**Clinical Relevance :** This information can be used to target marketing of the profession to the public sector to increase their awareness of physical therapy.

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**CONTACT (INSTITUTION ONLY):** Oakland University

**TITLE:** Methods By Which Doctor of Physical Therapy Students Finance Their Education.

**ABSTRACT BODY:**

**Purpose/Hypothesis :** Physical therapy education has evolved and most programs now offer the entry-level doctor of physical therapy degree (DPT). Although concerns have been raised regarding financing for DPT education there is limited research. The purposes of this study were to identify how DPT students finance their physical therapy education and investigate the reasons why some graduates may be more in debt than others.

**Number of Subjects :** A sample of convenience with 92 subjects consisting of three classes of DPT graduates from one physical therapy program at a public university.

**Materials/Methods :** A retrospective survey was utilized to collect data on financing DPT education, student debt, and the impact of student debt on lifestyle choices. Subjects were sent a survey and informed consent form. Frequencies, cross tabulations and chi square statistics were calculated.

**Results :** The response rate was 55%. 96% of subjects were female, 4% were male and 76% were 26-30 years of age. To pay for their DPT education 86% of subjects used loans, 69% had job contributions, 57% received family assistance, and 8% had an assistantship or work study. Half of the subjects who reported using loans had over \$60,000 in loan debt. Of those who reported job contributions, only one subject contributed over \$30,000 to their DPT education and 50% contributed less than \$5,000. Of those students who received family assistance over half reported contributions of less than \$10,000. 22% of students received a scholarship of less than \$5,000 and no student received a grant. Estimated schooling costs and loan amount were found to be highly significantly related ( $p < 0.001$ ). There were no significant relationships between having a job, graduation year and amount of debt. There were significant relationships between monthly loan repayment amounts and financial decisions such as the ability to save for the future ( $p=0.016$ ), and lifestyle choices ( $p=0.035$ ). 96% of respondents were currently employed as physical therapists with 59% reporting a salary range of \$50,000-\$60,000. The reasonableness of the debt was examined by looking at the monthly payment as a percentage of pre-tax income. According to the 8% rule, 47.5% of students had loan debt that could be considered unreasonable with 58% having loan repayments over ten years. At the 15% rule only 2.5% of the students had debt that could be considered unreasonable.

**Conclusions :** This study found that the major sources of funding for DPT education were loans, work, and family assistance. Although there were no distinct reasons as to why some graduates had more debt than others there were significant relationships between monthly loan repayment and financial decisions.

**Clinical Relevance :** This study is relevant to students, educators, administrators, policy-makers and employers interested in the methods by which DPT students finance their education and how that may impact their financial decisions after graduation. Advocating for student loan repayment programs, scholarships and grants will benefit future DPT students and the profession.

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**CONTACT (INSTITUTION ONLY):** St. Catherine's Rehabilitation Hospital

**TITLE:** The Effect of Physical Therapy Intensity on Length of Stay and Cost for Patients with Lower Extremity Orthopedic Problems in Post-Acute Inpatient Settings

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The intensity of physical therapy (PT) provided in many post-acute care (PAC) settings is largely determined by third party payers rather than clinicians. As a result, patients with similar clinical and demographic findings may receive very different PT intensity. The impact of PT intensity on length of stay (LOS) and cost is not well documented. The purpose of this study was to examine the effect of PT intensity on LOS and cost in patients with lower extremity (LE) orthopedic problems in two PAC inpatient facilities.

**Number of Subjects :** Forty subjects (mean age 76.03 years, sd 6.81) participated in the study. Sixty-two percent of the subjects were female, 62.5% had a LE joint replacement and 37.5% had a LE fracture. All subjects were living at home prior to admission.

**Materials/Methods :** This was a prospective cohort study. Subjects with LE orthopedic problems who were admitted to either an inpatient rehabilitation facility or a skilled nursing facility were recruited for the study. At baseline, subjects completed a Six Minute Walk Test (6MWT) to measure functional status and the Geriatric Depression Scale (GDS) to determine psychological status. Age and weight-bearing status (WBS) were collected from the medical record. LOS and minutes of PT were obtained from the billing records. The intensity of PT was calculated by dividing total minutes of PT by LOS. Subjects who received  $\leq 35$  minutes of PT per day were classified as low intensity (LO). Those who received  $> 35$  minutes per day were classified as high intensity (HI).

**Results :** Descriptive statistics were calculated to characterize the subjects. Student's t-tests were used to compare the LO and HI groups. Analysis of Covariance (ANCOVA) was used to compare the groups while controlling for possible confounding variables. The LO group averaged 21.56 (sd 5.34) minutes of PT per day compared to 62.17 (sd 7.32) minutes per day for the HI group ( $p < .0001$ ). Eighty-eight percent of the LO group had managed care insurance compared to 34.8% of the HI group ( $p = .0007$ ). The LO group had a longer LOS than the HI group (17.84 vs 12.38 days,  $p = .0483$ ). ANCOVA was used to compare the groups while controlling for age, WBS, GDS and baseline 6MWT. After adjusting for these covariates, the LO group still had a longer LOS than the HI group (17.12 vs 13.09 days,  $p = .0810$ ). Discharge 6MWT was better for the HI group than the LO group (145.87m vs 93.58m,  $p = .0238$ ). Total costs were higher in the LO group vs the HI group, but was not significant. The increase in meters walked per \$100 of cost was 1.44 (sd 1.32) for the LO group and 2.41 (sd 1.49) for the HI group.

**Conclusions :** The results indicate that the intensity of PT in PAC inpatient settings is related to the LOS.

**Clinical Relevance :** Attempts to decrease cost by decreasing amount of PT provided each day does not save cost and may increase cost by increasing the LOS without significant functional gain when compared to patients receiving HI therapy.

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**CONTACT (INSTITUTION ONLY):** Indiana University

**TITLE:** Outlooks and Opinions of Practicing Physical Therapists Regarding Direct Access in Indiana

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The researchers performed a pilot study in 2008 with a small sample size of 151 respondents. In this current study the survey method was modified in order to gain a statistically significant sample size with the goal to gain a more accurate representation of the actual population. The main purpose of this study was to investigate the opinions of licensed physical therapists in Indiana regarding direct access to physical therapist services. The second purpose of this study was to examine the use of high velocity thrust/Grade V mobilization as a physical therapy intervention and survey licensed physical therapists in regards to their views on the importance of maintaining this intervention within their scope of practice.

**Number of Subjects :** 3,350 surveyed, 1,379 respondents

**Materials/Methods :** The researchers used an online program, SurveyMonkey®, to design an 18-question survey. The sample was recruited via a mailing list from the Indiana State Board of Health which included all the licensed physical therapists within the state of Indiana. A letter explaining the purpose of the study including a hyperlink to the survey and a hard copy of the survey was mailed to 3,350 physical therapists. The survey respondents could either choose to complete the survey online via the hyperlink or on the hard copy provided and return via a provided self-addressed stamped envelope for survey return.

**Results :** There were 1,379 respondents which accounted for a 41% return rate. The terminal degrees for the respondents surveyed were varied with the majority, 48.6%, holding a Bachelor's degree. APTA membership was also analyzed with 39.6% of the respondents being APTA members with the remaining 60.4% nonmembers. High velocity thrust/Grade V mobilization was utilized by 21.2% of the respondents at a rate of rarely, 16.8%, and frequently, 4.4%. The collective responses to specific questions were reported by a five-level Likert response. The first question of interest, "I think Indiana should have direct access" elicited a collective response of 4.13/5.00. A subsequent question "I am willing to participate in activities that will help achieve direct access" was a 3.22/5.00. Other questions of interest included physical therapists' confidence in differential diagnoses and their high velocity thrust/Grade V mobilization techniques, as well as, their opinion on professional liability changes in regards to working with direct access.

**Conclusions :** The results of this study strongly demonstrate those surveyed are in favor of direct access to physical therapy services without compromise of the current scope of care. The results also demonstrate that physical therapists in Indiana utilize high velocity thrust/Grade V mobilization as an intervention and do not want to lose it as a part of their scope of care.

**Clinical Relevance :** The results of this study may have implications for health policy regarding direct access to physical therapy services within the state of Indiana. These results also can provide support for the lobbying efforts for physical therapists in Indiana.

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**CONTACT (INSTITUTION ONLY):** The University of South Dakota

**TITLE:** Assessment of On-the-Field Management of High School Head Coaches in South Dakota via Case Scenarios

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The purpose of this study was to assess the decision making skills related to injury management of South Dakota high school (SDHS) head coaches through the use of case scenarios. The objectives were to determine if there were any differences in decision making skills based on sport, school size, community size, coaching experience, educational background, and gender.

**Number of Subjects :** 107/1050 (10.19%) were returned with 94/1050 usable surveys (8.95%) Subjects were recruited using an email database of SDHS sanctioned sport head coaches.

**Materials/Methods :** This study was a non-experimental Web-based survey. A survey was created and reviewed by assistant or retired coaches, certified athletic trainers, and emergency medical technicians. The survey was modified and correct answers were determined based on expert responses and current literature. A cover letter and Web link to the survey was e-mailed to all SDHS head coaches. Data were analyzed using SPSS 17.0.

**Results :** Head coaches were found to be most commonly responsible for the immediate care of injured athletes at both practice (87.2%) and home competitions (72.3%). The highest percentage of coaches felt "prepared" to handle sprains (44.7%) and strains (41.5%). Little to no relationship was found between perceived level of preparedness for treating various injuries, CPR certification, and first aid certification compared to appropriate treatment of various injuries. ANOVA results revealed a significant difference in "preparedness for immediate care for internal organ injuries" based on years of coaching experience ( $P=0.023$ ), as well in "preparedness for immediate care of fractures" ( $P=0.021$ ), "open wounds" ( $P=0.042$ ), and "seizures" ( $P=0.070$ ) based on age. Results indicated no significant difference in "adequate knowledge in up-to-date first aid care" and "preparedness to provide immediate care" for various injuries based on the remaining demographic information. Chi-square analysis revealed a significant difference in appropriateness of case scenario decision based on level of athlete ( $P=.000$ ), with appropriate decisions made 68.9% of the time with starters and 79.3% with non-starters; as well as a significant difference between appropriateness of decision based on event situation ( $P=.000$ ), with appropriate decisions made 66.5% of the time in important events and 76.6% of the time in non-important events.

**Conclusions :** Coaches report feeling prepared to handle the majority of athletic injuries presented in these case studies. However, the results indicate there is little to no relationship between feeling prepared and answering case scenarios appropriately. Areas of concern include proper management of diabetic emergencies, dislocations, concussions, head/neck injuries and internal organ injuries.

**Clinical Relevance :** Continuing education in injury management is necessary for coaches in order to appropriately recognize injuries and correctly manage them. Physical therapists could play an integral part in the education of coaches, as well as the management of acute sport injuries.

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**CONTACT (INSTITUTION ONLY):** Bryn Mawr Rehab Hospital

**TITLE:** The effect that an in-patient multidisciplinary diabetes education series has on long-term diabetes management

**ABSTRACT BODY:**

**Purpose :** Diabetes is a chronic disease associated with increased risk of conditions such as stroke, cardiovascular disease, kidney failure, and retinopathy, and may lead to diminished function and quality of life. The purpose of this presentation is to describe a diabetes education program at an in-patient rehabilitation hospital and the effect that this multidisciplinary tertiary prevention program has on in-patients and the post discharge follow-up.

**Description :** Patients who are admitted to an acute rehabilitation hospital and who have secondary diagnoses of diabetes are identified for the diabetic education series at team meetings comprised of physicians, physical therapists, occupational therapists, speech therapists, nutritionists, nurses and case managers. Educational needs are assessed by: current level of diabetes knowledge obtained from patients, family members, and clinical judgment of involved team members; change in functional or cognitive status; and/or request by patient or family members. Identified patients and family members are enrolled in a tertiary diabetes prevention program comprised of three one-hour classes focusing on disease process, disease management, life style modifications including exercise and nutrition, and resource identification for continued education and disease management. Facilitators, who encompass multiple disciplines including physical and occupational therapy, nursing, social services and dietary, present information related to expertise in an area through various means including lecture, small group discussion and handouts.

**Summary of Use :** Pre and post educational series patients complete an 8-item scale "Self Efficacy for Diabetes" developed by the Stanford Education Research Center. The author has currently been collecting data related to the difference in pre- and post- self efficacy scores for individual items as well as composite scores. Statistical analysis was completed through the use of a paired t-test with one tail. 42 patients were surveyed over an eleven month time frame with statistical significance in 6/8 of the questions surveyed. The author is also formulating data through the use of chart review to assess co-morbidities and a follow-up phone call post discharge to reassess the "Self Efficacy for Diabetes Survey" and an additional five question survey to assess a subject's continued diabetes management.

**Importance to Members:** Diabetes increases the risk of secondary conditions that may decrease a person's functional status and quality of life. Provision of multidisciplinary inpatient tertiary prevention programs that are not specific to admitting diagnosis has the potential to improve communication amongst healthcare providers, enhance educational consistency across the continuum of care, and identify persons with more specific educational needs. Long term follow-up of these patients has the potential to further assist patients to manage their diabetes and to aid in minimizing complications that may occur as a result of mismanaged diabetes.

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**CONTACT (INSTITUTION ONLY):** Florida Gulf Coast University

**TITLE:** The relationship between physical therapists' emotional intelligence and patient satisfaction

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The construct of Emotional Intelligence (EI) is relevant to physical therapist practice since it refers to one's ability to process and understand emotional information and to use this information to optimize clinical decision making and patient interaction. The primary purpose of this study was to determine if there is a relationship between physical therapist emotional intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and patients' overall satisfaction as measured by the Physical Therapy Patient Satisfaction Questionnaire (PTPSQ). Variables of secondary interest such as Experiential Intelligence, Strategic Emotional Intelligence and branch scores measures (Perceiving Emotions, Facilitating Thought, Understanding Emotions, and Managing Emotions) were also examined as measured by the MSCEIT. We hypothesized that there would be a positive correlation of physical therapist EI and patient satisfaction.

**Number of Subjects :** Nine physical therapists from three outpatient physical therapy clinics distributed 180 anonymous surveys to their patients within 30 days of discharge over a four month period. There were a total of 127 patient respondents (70.5%), age 25 to 85 (mean 61.6).

**Materials/Methods :** Patient participant data (n=127) was obtained via anonymous survey. Physical therapists completed the MSCEIT utilizing an online testing site. The Pearson Correlation Coefficient method was employed to analyze the relationship between scores of EI and patient satisfaction, and the relationships between the MSCEIT subscores and patient satisfaction. Physical Therapist MSCEIT scores were compared to general population normative data.

**Results :** No relationship was found between patients satisfaction and a physical therapists' EI, as measured by the MSCEIT and patients' overall satisfaction. In addition, no relationships were found between patient satisfaction and EI Area and branch scores. However, differences in physical therapists' Strategic EI scores and the MSCEIT's normative data for general populations were found. Physical therapists scored higher in the Strategic Area, and on both the branch scores (Managing emotions and Understanding emotions) which comprise the Strategic area score.

**Conclusions :** Higher scores by physical therapists in the Strategic Area could indicate that physical therapists are better at understanding and managing emotions than the general population. Ceiling effect of the PTPSQ, low statistical power, and inability to recruit a significant number of dissatisfied patients may have contributed to not finding a correlation between the variables.

**Clinical Relevance :** Physical therapists may have scored higher in this area because people with higher strategic skills may be attracted to professions which involve social or interpersonal skills. Another possibility is that strategic area skills may have been developed during professional education, and/or post graduation. Future research should further explore these EI attributes of physical therapists.

**AUTHORS (FIRST NAME, LAST NAME):** Derek Chan<sup>1</sup>, Mary Donahue<sup>1</sup>, David Tomsich<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** Henry Ford Health System

**TITLE:** Implementation of staff competency training for rehabilitation of patients after rotator cuff surgery in a large hospital system.

**ABSTRACT BODY:**

**Purpose :** The goal of this initiative was to ensure clinician competence and reduce errors while treating patients with the diagnosis of rotator cuff (RTC) tear after surgical repair. The challenge was to implement an efficient and cost effective teaching and testing procedure within a large health care system.

**Description :** Competencies help ensure a minimum level of understanding of a necessary skill and are a requirement for accreditation; however, there is nothing in the literature to support whether competencies improve patient outcome in a physical therapy setting. At Henry Ford Health System (HFHS), patients with RTC repairs have been identified as a group of patients who are at risk for complications related to the care provided by rehabilitation staff. In-services related to shoulder anatomy, biomechanics, RTC surgery, precautions and rehabilitation were provided and a manual with the same information was made available to clinical staff. Every two years, all out patient clinicians were required to pass a written test at 80% or otherwise had to complete mandatory mentoring by clinical experts.

The initial RTC competency was developed in 2005. At that time, four regional in-services were provided at different central locations; however, some staff still had to drive 10-15 miles to attend. In 2007, the entire procedure was streamlined, clinicians completed all tutorials and testing through HFHS intranet portal called "University". This improved cost-effectiveness as clinicians did not travel to take the in-service or test; an estimated 357 hours of potential patient care time was saved. New information related to RTC repairs and rehabilitation was updated prior to testing to ensure continued evidence based practice.

In 2005, 90 clinicians completed the competency. Tracking of test scores was not done because of the paper format. The second year, 119 clinicians completed the competency with a mean score of 92.6%.

Currently, patient outcome is being tracked using Disability of the arm, shoulder and hand questionnaire (DASH).

Compiled results will be compared six months prior to and after clinician take the next obligatory RTC repair competency. Clinician confidence in treating patients with RTC repair pre and post competency will be tracked via a questionnaire.

**Summary of Use :** Clinical competencies can help ensure a minimal level of knowledge to effectively and safely treat patients. Moreover, new guidelines for the treatment of patients with RTC repair are constantly being introduced into the literature. Leadership in a large health system needs to take an active role in ensuring that clinical staff is aware of new information. This can help improve overall patient satisfaction and outcome.

**Importance to Members:** Clinical competencies can be administered in a large hospital system to help ensure that to clinical staff have minimum levels of understanding when treating patients with diagnoses that have a high risk for complications.

**AUTHORS (FIRST NAME, LAST NAME):** Cheryl J. Hickey<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** California State University, Fresno

**TITLE:** The Effect of Language Barriers on Functional Independence Measures

**ABSTRACT BODY:**

**Purpose :** Federal and State laws have been passed mandating language assistance in medical treatment. In 1990 congress advocated for guidelines for language access provisions. Ultimately, legislation was weakened by allowing hospitals to determine provisions for reasonable application. Research in other fields beyond physical therapy (PT) lead to the recent California state law (California Code of Regulations 2538.1-2538.8) mandating insurance companies provide translator assistance. Research indicates limited English proficiency is not only a barrier to comprehension of physician-patient communications, but that it has resulted in increased risk of adverse reactions to medications. There is limited research in PT regarding the effect of language barriers on treatment outcomes. Survery research showed that PTs perceive language barriers negatively impact patient bonding and patient outcomes. The purpose of this research was to examine if language barriers affect direct patient outcome measures such as Functional Independent Measures scores (FIM™) and if language barriers affected how PTs rated FIM scores for patients with and without a language barrier.

**Description :** The study was a retrospective study. The sample includes 3174 patients who were admitted to the hospital and to acute rehabilitation from December 2002 to June 2008. Paralleling the vast diversity of the Central Valley, this group included native speakers of 26 different languages. Although 82.1% of the patients were native English speakers, the next two largest language groups were Spanish speakers (13.6%) and Hmong speakers (1.9%). Most nonnative English speakers were judged to need interpreters at the time of admission. Exclusion criteria included incomplete file or death prior to discharge where ending FIMS could not be collected.

**Summary of Use :** From the data there emerged an area of interest concerning differences in mean FIM scores, at admission, as goals, and at discharge, for the English speakers compared to the nonnative speakers. For example, the Walk/Wheelchair FIM rating for the two groups was virtually identical at admission (1.63 and 1.61) but English speakers had a higher FIM goal set by the physical therapists (3.89) compared to the non-English speakers (3.69). Both groups had exceeded this FIM goal at discharge (3.92 and 3.83 respectively), but the nonnative speaker group had exceeded their goal by a greater margin. Similar patterns were found for other FIM scores. These results will be discussed in terms of the possibility that somewhat lower expectations may be held by PTs when they were faced with patients with whom they had difficulty communicating.

**Importance to Members:** There is limited literature in PT about the impact of language barriers on treatment outcomes. It is important that therapists clearly define how language barriers may affect practice. With this knowledge, PTs can more meaningfully participate in the discussions and development of health policies affecting patient access and outcomes.

**AUTHORS (FIRST NAME, LAST NAME):** Suzanne R. O'Brien<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** University of Rochester

**TITLE:** Cost-Effectiveness Analysis of Stroke Rehabilitation Conducted in Inpatient Rehabilitation Facilities: A Systematic Review

**ABSTRACT BODY:**

**Purpose/Hypothesis :** Patients with stroke who receive post-acute care (PAC) in an Inpatient Rehabilitation Facility (IRF) typically have multiple motor and/or cognitive impairments that often drive healthcare costs through PAC and beyond. It is necessary to gain a greater understanding of the cost-effectiveness of post-acute stroke rehabilitation in order to ensure hospitals are providing care that meets the expectations of stakeholders, even under reimbursement pressures. The purposes of this project are:

1. To evaluate what is known about the cost-effectiveness of US IRF stroke care.
2. To evaluate the quality of the literature.

**Number of Subjects :** NA

**Materials/Methods :** Cost-effectiveness analysis (CEA) is defined as using the added costs and health outcomes associated with a program for calculation of the incremental cost-effectiveness ratio (ICER) relative to a comparison program. The electronic database Ovid Medline was searched in major subject areas economic evaluation, rehabilitation, and stroke. Articles were included if the following criteria were met: 1. Stroke was included as a diagnosis group; 2. Published between 1990 to 2009; 3. IRF level stroke care was included, 4. Resource use, utilization, or cost-effectiveness of hospital-based inpatient rehabilitation for stroke was addressed.

Two separate guidelines were used to evaluate the quality of the included citations. For the nine cost studies, Luengo-Fernandez, Gray, & Rothwell, (2009), and for the CEA study, the US Panel on Cost-Effectiveness in Health and Medicine, were the evaluative criteria.

**Results :** After combining the three major subject areas, 371 references were examined for fit with inclusion criteria. A final sample of 10 references were included in the review. Only one of the articles performed a cost-effectiveness analysis, the remaining articles analyzed costs only.

The most common cost reported was Medicare payments, but without definition of specific costs included in payments. There was inconsistency in how effectiveness was measured. In the CEA study, IRF costs were subsumed in 6-month PAC costs and could not be identified.

**Conclusions :** Cost-effectiveness analysis of IRF stroke rehabilitation is lacking. Obtaining reliable and valid data with which to conduct CEA between IRFs and other forms of inpatient post-acute stroke rehabilitation would be problematic. Many studies in this review did not separate costs specific to IRF care, but aggregated IRF costs into longer time periods. Present findings include that adequate retrospective data may not exist for potential use in CEA. Further study is recommended to determine accurate IRF stroke care costs. Recommendations are made to improve the quality of this literature.

**Clinical Relevance :** There is data to support that IRF care is the gold-standard for post-acute stroke rehabilitation, but patients with stroke are being sent to different types of inpatient PAC. CEA is the most robust method to determine which intervention has better incremental effectiveness, yet has never been performed.

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**CONTACT (INSTITUTION ONLY):** The University of Montana

**TITLE:** Health Care Consumer Utilization, Knowledge and Beliefs of Physical Therapy in a Rural State

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The APTA vision statement asserts that PTs will be the practitioners of choice for conditions related to movement, function, and health. Little has been published though on the decision making process of health care consumers especially for movement and function related needs or on patients' experiences with physical therapists and knowledge of the profession. The purpose of this study is to determine Montanans' utilization tendencies, knowledge and beliefs about physical therapy and the profession.

**Number of Subjects :** Four hundred randomly selected adult residents of Montana (MT).

**Materials/Methods :** A literature review related to healthcare utilization was conducted to aid in the first draft of a survey to collect data that included demographics, utilization practices, service satisfaction, and understanding of the training, skills and services of physical therapists. The questionnaire underwent 2 more revisions after being piloted to a group of lay individuals and to PTs and marketing professionals. Questionnaires were mailed to subjects that were identified from phone books covering the state. The data was analyzed with descriptive statistics.

**Results :** Return rate was 18.5% (males 46%, females 54%). A majority (62%) had been to a PT. PTs were second to Primary Care Physicians as the provider of choice for movement/function needs (52.7 to 74.3%) A majority of respondents (75-95%) correctly believed a PT in MT could legally treat with exercise, modalities, massage, and mobilizations/manipulations as well as improve performance, determine a POC, and provide a home exercise program. Only 31% believed a PT could perform a physical exam. A majority were very satisfied or somewhat satisfied (91.3%) with PT services compared to 64.3% for other types of providers. A PT's knowledge, pain relief, and increased mobility were the top 3 reasons for satisfaction. Areas of dissatisfaction included cost, and exercises being too difficult to perform on own. Education/training of a provider was "very important" or "important" at a combined 91.9% in helping a respondent decide what type of provider to go to for a movement/function problem. No respondents knew that PT students graduating in MT earned a doctorate degree. Most (51%) thought students were trained at the bachelor's level followed by associate level (27%). Nearly two-thirds did not know or were uncertain of the fact that direct access to physical therapists exists in the state of Montana.

**Conclusions :** Though well positioned, PTs do not appear to be the providers of choice in MT for movement/function needs. Utilization could increase with improvements in the public's knowledge of a Physical Therapist's level of education, ability to perform examinations and Montana's direct access law.

**Clinical Relevance :** This study should inspire future marketing efforts to be based on actual satisfiers/dis-satisfiers, needs and beliefs of regional health care consumers. It may also assist in the pursuit of becoming practitioners of choice and compliment the efforts of the APTA branding campaign.

**AUTHORS (FIRST NAME, LAST NAME):** Nancy F. Mulligan<sup>1</sup>, Barbara A. Tschoepe<sup>1</sup>, Marcia B. Smith<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** Regis University

**TITLE:** A physical therapist model of primary care for chronic neuromuscular disease: A case report.

**ABSTRACT BODY:**

**Background & Purpose :** Charcot-Marie-Tooth Disease (CMT) is the most frequently inherited peripheral neuropathy. CMT is known for its slowly progressive symmetrical weakness that begins distally creating concurrent functional losses. While CMT's progression is documented, few studies have reported long term effects of physical therapist (PT) interventions. Studies suggest strengthening and aerobic conditioning reduce fatigue and improve endurance in the short-term, yet few explore functional gains or long term impact of these efforts. The purpose of this case report is twofold: first, to illustrate the PT's role as primary care provider for a person with a chronic neuromuscular disorder over a 4 year period; second, to describe PT interventions that integrated motor learning and control, incorporated surface electromyography (sEMG) for muscle recruitment, along with manual therapy, strengthening, and aerobic conditioning.

**Case Description :** A 52 yo woman, recently diagnosed with CMT, presented with bilateral distal weakness, imbalance, and inability to ambulate more than 50 ft with walking sticks. Her initial goals were to decrease fatigue, complete professional responsibilities, walk independently from car to office (3000 ft), and improve balance to reduce falls (4 times over previous year). Using a primary care model, the PT guided her plan of care.

**Outcomes :** The Patient Specific Functional Scale was used to progress her goals. Muscle timing, sequencing and amplitudes improved recruitment in lower extremity muscles while other impairment measures of strength, balance, joint mobility and flexibility also improved. Her Physical Performance Test improved from 20/40 to 39/40, 5x sit to stand decreased by 33% and her walking prior to rest improved from 50 to 3000 ft. She completed a 10 k walk without walking sticks and learned to snow ski. Throughout this time, PT served as the primary care provider to educate, measure structural and functional progress, guide intervention priorities and address new symptoms and musculoskeletal complaints related to increasing activity levels and CMT disease progression.

**Discussion :** When referred to a PT, care plans typically address acute episodic events with short term interventions that demonstrate limited functional gains, challenging evidence for the long-term efficacy of PT. This case report illustrates the impact of a comprehensive 4 year PT primary care program that strategically prioritized problems during an extended follow-up period and resulted in significant gains across multiple functional outcomes. The primary focus of this care plan was to identify areas of deficit and to methodically improve trunk, hip and lower extremity recruitment patterns as they related to posture, balance and gait and secondarily to guide an aerobic conditioning program. The PT primary care provider managed the patient's care and referred to her physicians as indicated. The authors encourage colleagues to combine evidence from both neuromuscular and musculoskeletal literature to offer best patient care outcomes for CMT.

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**CONTACT (INSTITUTION ONLY):** Creighton University

**TITLE:** A Descriptive Analysis of the Physical Therapy Benefit in Blue Cross/ Blue Shield Plans, 2009

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The purpose of this study was to describe the structure of the physical therapy benefit in a major, national private insurance program: Blue Cross and Blue Shield

**Number of Subjects :** Blue Cross/ Blue Shield Insurance Plans for each state.

**Materials/Methods :** A survey was conducted of each Blue Cross/ Blue Shield insurance plan to determine the structure of the physical therapy benefit for a fictitious 25 year old, single male seeking health insurance. A zip code for the state capital was used to standardize location. The survey identified the benefit for the least expensive, most expensive and mid- range expensive plan in that state. In most cases, we were able to determine the benefit through an online Web search. When this was not possible, we contacted the plan by toll- free phone number or email to determine the benefit. We recorded the plan type and the physical therapy benefit. We described the benefit by determining the proportion (by expense and census region) of plans which cover physical therapy, the number of plans that include physical therapy in a combined therapy benefit, the proportion using a visit limit and the proportion using plan cost limit.

**Results :** 149 plans were reviewed (Mississippi offered two plans for this person). 128 plans (86%) covered physical therapy. Physical therapy was covered in 74% of the inexpensive plans, 92% of the midrange plans and 96% of the expensive plans. In 70% of the plans, physical therapy is included as part of a combined benefit e.g. with chiropractic, occupational therapy and/or speech therapy. 66 plans (45%) placed a number of visits limit on the benefit. About 1 in 5 plans placed an annual cost limit on therapy services. Plan cost limits are common in the West but little used in the Midwest or Northeast where limiting visits is common.

**Conclusions :** Physical therapy is included in most, but not all, Blue Cross/ Blue Shield Plans. It is most commonly structured as a part of a combined rehabilitation or therapy benefit with a limitation on the number of visits the plan will pay for each year.

**Clinical Relevance :** Private insurance is a major source of funding for OP physical therapy services. The structure and strength of the private insurance benefit has a major impact on the practice of physical therapy.

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**CONTACT (INSTITUTION ONLY):** Creighton University

**TITLE:** Utilization, Expenditures and Funding Sources for Office- Based Physical and Occupational Therapy in the United States, 1996- 2006

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The purpose of this study was to describe the population characteristics and trends of utilization, expenditures and funding sources for office- based physical therapist and occupational therapist services in the United States.

**Number of Subjects :** Summary data tables for the household component of the Medical Expenditure Panel Surveys (MEPS) for 1996- 2006

**Materials/Methods :** The following data was extracted from the summary data tables of the MEPS describing office-based physical therapist and occupational therapist services for each year: total population, % of the population with an expenditure, mean and median per person expenditure, total expense and % distribution of total expense by funding source i.e., out of pocket, private insurance, Medicare, Medicaid and Other. The number of persons with an office- based therapy expenditure was determined by multiplying the total population by the % with an expenditure. Therapy expenditures as a percentage of total health care costs was calculated. The results were graphed and trends determined.

**Results :** The proportion of the population utilizing office- based therapy services increased from 1.7% to 2.7% over the study period. The number of persons with an expenditure increased from 4.57 million to 8.08 million (a 77% increase). Median per person expenditures increased 21% to \$606. Mean per person expenditures increased 14% to \$1097. Total expenditures doubled to \$8.1 billion. As a proportion of national health expenditures, office based therapy costs averaged 0.94% over the ten year period. Out of pocket expenditures have approximately doubled to 18% as a source of funding while the percentage of costs covered by private insurance (the main funding source) has declined from 63% to 44%. Medicare has increased from about 6% in 1996 to 17% in 2006. Medicaid and other funding sources (e.g. casualty insurance or other federal programs) are stable as a percentage of the funding of office- based therapy services.

**Conclusions :** The demand for office- based therapy services has increased 58% as a percentage of population, by 77% in terms of numbers of persons seen and 96% in total expenditures in the last decade. Per person costs have been stable. Most of the increase in total expenditures can be attributed to growth in patient numbers. While still dominant, private insurance has declined as a percentage of funding therapy services. An increased reliance on out of pocket and Medicare funding is evident.

**Clinical Relevance :** These results have implications for practice management and workforce planning. They will assist policymakers with a macroanalysis of the demand for outpatient therapy services.

**AUTHORS (FIRST NAME, LAST NAME):** Cynthia A. Robinson<sup>1</sup>, Deborah Kartin<sup>1</sup>

**CONTACT (INSTITUTION ONLY):** University of Washington

**TITLE:** A Model for Mentoring Rehabilitation Students in an International Setting

**ABSTRACT BODY:**

**Purpose :** The purpose of this program is to provide students in rehabilitation medicine with cultural exposure, an enhanced worldview of healthcare and an opportunity for professional development by integrating them into an established and sustainable interdisciplinary rehabilitation development team which provides clinical care and professional training in an international setting.

**Description :** Successful and sustainable international medical mission work requires cultural awareness, collaboration, partnership, trust, commitment and ongoing assessment of programs. Knowledge of local culture and conditions, including political, socioeconomic, health care, training of health care providers and health needs of society are critical to needs assessment and program development. Application of a conceptual framework provides a consistent structure for program development which can be built upon over time. The International Classification of Functioning, Disability and Health (ICF) and Community Based Rehabilitation (CBR) serve as conceptual frameworks for this program. In advance of travel, students are provided with country and cultural information. They are trained in the application of CBR and the ICF for the identification of teaching topics and audiences and for the development of educational programs.

This program represents a 7-year partnership among the University of Washington (Seattle, WA), Medical Teams International (Portland, OR) and Coram Deo (Chisinau, Moldova). Rehabilitation professionals recruited from the community serve as mentors. Student members are selected based on an application, two references and an interview. Using the conceptual frameworks, students work with professional team members to review academic resources related to clinical settings and to prepare educational materials based on local needs. In country, students work under the direct supervision of US licensed rehabilitation professionals to participate in formal education presentations, to provide hands on clinical care and to observe local professional practice. During and after travel, students engage in formal reflection.

**Summary of Use :** Reflections by 22 student participants over 5 years illustrate self-perceived professional development, improved cultural awareness, and an enhanced worldview of health care. Examples include: 1) "My experience in Moldova taught me to think outside the box... in fact, in Moldova, there is no box." 2) "I have seen how even experienced clinicians are still learning." 3) "This experience...opened my eyes to the deep rooted culture of healthcare in other countries, and the need to respect and honor cultural traditions in order to foster change." 4) "The language barrier, outdated equipment in hospitals, lack of pain medication and other resources made us stretch our thinking."

**Importance to Members:** In conclusion, this program has demonstrated that student participation in an interdisciplinary rehabilitation development team in an international setting contributes to professional development, cultural awareness, and world health view.

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**CONTACT (INSTITUTION ONLY):** Northeastern University

**TITLE:** Risk Management and Evidence-Based Practice with Patient Handling

**ABSTRACT BODY:**

**Purpose/Hypothesis :** Physical Therapists (PTs) use various forms of equipment to ensure patient safety and to prevent injury associated with patient handling. One commonly used piece of equipment is the gait belt which is small, inexpensive, and easy to use. The purpose of this pilot study was to explore the use of gait belts by practicing physical therapists. In addition, we sought to gain an understanding of decision-making regarding the use of gait belts. The data from this study will be used to begin to establish best practice guidelines and to shape academic instruction.

**Number of Subjects :** Subjects of this study were 53 PTs from the greater-Boston area who completed an online survey. Subjects were PTs practicing in inpatient rehabilitation, outpatient rehabilitation, acute care, skilled nursing facilities, and home care.

**Materials/Methods :** A comprehensive literature review was completed to determine what research existed regarding the use of gait belts in physical therapy. Using this information, a 10-question survey was constructed using SurveyMonkey.com and then sent to potential subjects.

**Results :** A review of the literature revealed that the use of gait belts in physical therapy has not been studied; therefore, specific guidelines concerning their use did not exist. Qualitative analysis of the survey results utilizing descriptive statistics was done. A majority of participants, 92.5%, reported that their current place of work has patient safety standards, and 88.5% reported following these standards 75-100% of the time. Gait belts were recommended by 80.8% of these standards. Unavailability of equipment was the most common reason for not following these standards reported by participants

**Conclusions :** Although the results of this study suggested that gait belts are commonly used by PTs, there is little evidence in the literature to support this use or to provide guidelines. More research is needed to examine the value and use of the gait belt during patient transfers and ambulation and to establish best practice guidelines for risk management.

**Clinical Relevance :** Millions of healthcare dollars are spent each year as a result of patient falls and subsequent injury. Prevention of such injury to patients as well as to therapists during patient handling is of primary importance to PTs. There is a critical need for more systematic clinical research on safe and effective methods to manage risk during patient care.

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**CONTACT (INSTITUTION ONLY):** Bellarmine University

**TITLE:** Service Learning as the Classroom for Social Responsibility

**ABSTRACT BODY:**

**Abstract Body :** Social responsibility is one of the seven core values of physical therapy (PT) practice. Indicators of the demonstration of social responsibility behaviors can include individual and societal advocacy for health and wellness, participation in the political process, promoting community engagement and collaboration, and understanding and altering the underlying issues associated with health disparities. The development of social responsibility in the physical therapist student can be facilitated through thoughtful and reflective service learning experiences within the physical therapist education curriculum. In addition, service learning can be used as a tool to address selected components of the APTA Education Strategic Plan, especially those associated with social responsibility, and foster the development and maturation of all PT core values. The purpose of this presentation is to offer a theoretical framework for the development of social consciousness through integrated curricular service learning.

Theoretical frameworks for the use of service learning to foster social responsibility may employ a “working with” or “advocating for” approach. Service learning in the Physical Therapy Program at Bellarmine University has typically employed at “working with” approach to fostering the development of professionally stated social responsibility behaviors in students and graduates. This approach has developed around students identifying and working with local community partners to address an issue of importance to the partner using physical therapist student intellectual capital to engage the partner in a shared project. While this approach has been successful on multiple levels (developing community engagement; fostering scholarship in students; encouraging student self-reflection), it has not demonstrated the development of baseline critical consciousness necessary to understand the social, historical and cultural factors that lead to health disparities and inequities. In this presentation, we propose a praxis-based model for the development of critical consciousness as proposed by Freire to promote awareness of the social, cultural and historical context of health inequities and distribution of economic resources. In this approach service learning is a central component of guided student learning experiences that explore both individual and community partner needs, the context of the creation of the need, and identification of avenues for social change.

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**TITLE:** Exploring Standardized Vocabulary Use for Physical Therapy Exercises: Practice and Perceptions

**ABSTRACT BODY:**

**Purpose/Hypothesis :** The purpose of this research was to explore the use of naming conventions of therapeutic exercises used by physical therapists to determine the variability in physical therapy vocabulary and the perceptions of physical therapists regarding standardized vocabulary.

**Number of Subjects :** 661

**Materials/Methods :** Using the "Find a PT" on the American Physical Therapy Association's (APTA) website members of the APTA were selected by zip code in all 50 United States, Puerto Rico and Washington, D.C. and invited by e-mail to participate in an online survey. The survey was delineated into four sections. The first section was general demographics. The second section asked respondents to name an exercise given a photograph of it. The third section asked respondents to define an exercise given the abbreviation or lay name of it. The fourth section addressed belief statements regarding naming strategies and standardized vocabulary for physical therapy.

**Results :** A total of 661 surveys were completed from physical therapists from across the United States. Respondents were 57.0% female, age ranging from 20 to 65 with the average age within the 35-39 year old group, and years of practice ranged from less than 1 to over 35 years with the average years of practice of 13.30 years. Naming conventions for the exercises showed a lack of consistency among physical therapists when naming physical therapy exercises while looking at a photograph. Survey respondents also showed high variability when naming an exercise and describing it to a patient. A majority of the respondents (561 84.9%) 85%) stated a standardized vocabulary should be used in the field of physical therapy.

**Conclusions :** The highly variable responses coupled with the high percentage of respondents who stated there should be a standardized vocabulary lead us to recommend the development of a standardized vocabulary. The findings of our research provide additional evidence for the need for standardized vocabulary within the field of physical therapy and echo the call of others that have stated the same.

**Clinical Relevance :** Electronic health records (EHRs) has backing from the US government and endorsement of the APTA. Without a standardized vocabulary the success of EHRs will be difficult to achieve. The field of physical therapy should have a standardized vocabulary for successful implementation of EHRs as well as improved communication and potentially better outcomes.

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**TITLE:** Representing the ICF Model as an Electronic Ontology for Use in Physical Therapist Education

**ABSTRACT BODY:**

**Purpose :** Electronic versions of documents can allow for more efficient searching, editing, dissemination, and versatility in displaying information than traditional paper-based documents. The purpose of this project was a proof of concept of representing the International Classification of Function, Disability, and Health Model (ICF) as an electronic ontology for use in a physical therapist education program.

**Description :** The ICF provides a clinically-relevant and standard framework and classification system designed to describe health and health-related domains. The ICF was recommended as a guide for clinical problem solving for physical therapists as early as 2002. With APTA endorsement of the ICF, the profession has embraced a standard language and format and its application in designing comprehensive client care. The ICF can be used to familiarize students with standard healthcare language and context to guide decision-making in physical therapy management. Since the ICF is only a model, it only provides abstract information without specific examples of physical therapy management. Our project involved having physical therapy students work on specific case studies applying the ICF model to drive their decision-making skills and understanding of diagnoses, functional limitations, interventions, and outcomes. The students performed this process on paper. Later, we incorporated all the content produced by the students into one electronic version using Protégé (Protégé is a free, open source ontology editor and a knowledge-base editor developed at Stanford University). The electronic version allows for a richer environment than does paper including the ability to visualize the ICF model from broad abstraction to specific examples. Healthcare topics are most often taught in a linear fashion: one diagnosis is taught including signs and symptoms and treatment options and then a second diagnosis is taught and so on. Because of the separation of topics, students often do not have the time nor do they take the opportunity to see the relationships or commonalities of different topics. A key element in learning is “seeing the big picture.” Ontologies appear a way to show the big picture allowing students to view knowledge in any sequence they wish in any manner of abstraction.

**Summary of Use :** Representing the ICF model as an electronic ontology can be used as a knowledge base of physical therapy by educators, students, and clinicians.

**Importance to Members:** Use of the ontology can provide the user a better understanding of the ICF model, provide a standard vocabulary and format in which to enhance decision-making in physical therapy management, and allow users to view physical therapy content in a richer environment than the traditional paper-based method.