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# Meeting Contemporary Expectations for Physical Therapists: Imperatives, Challenges, and Proposed Solutions for Professional Education

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**Background and Purpose.** Advances in medical science and shifts in the structure of health care have required adjustment of the realities of practice to fit the changing demographics of health, illness, and disability. Emerging changes in health care policy and regulation require continual response to new expectations and accountabilities in clinical practice. The intimate relationship between practice and professional education demands adoption of new teaching and learning strategies to prepare graduates to respond to the contemporary patterns of health and complexities of health care. This position paper advocates change in physical therapist education to enable practitioners to capture opportunities to promote

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the health of our patients via new delivery models—and thus lead the evolution of our profession.

**Position and Rationale.** To lead, physical therapists must (1) demonstrate interprofessional competence in what is certain to be an interdisciplinary industry, (2) assume new roles and accountabilities within new structures of the health care system, and (3) devise models of care, particularly for patients with highly prevalent and chronic conditions, that address movement and function across the full continuum of health and life. In turn, professional education must require (1) early and persistent exposure to, and clinical mentorship by, practitioners in other disciplines; (2) accountability for expected treatment outcomes embedded in the Affordable Care Act; and (3) skill development in community health assessments, health promotion, and prevention of disability and disease across the lifespan.

**Discussion and Conclusion.** The mission of health care is to improve the health of individuals and of populations. As science progresses and a more global view of human health emerges, change in professional education is inevitable and essential to meet this mission. Such change will be a catalyst to create and capture opportunities to use new delivery models to optimize the health of our patients.

**Key Words:** Clinical education, Health promotion and prevention, Curriculum design, Health care reform.

## BACKGROUND AND PURPOSE

The intimate relationship between practice and education in any profession demands an integrated view of the pressures of the work environment and the social culture in which that work lies. The mission of health

care always has been to improve health—first of individuals—and then of populations as science evolved and a more global view of human health emerged.<sup>1</sup> Advances in science and shifts in the structure of health care brought new expectations that shaped how the realities of practice must fit the changing demographics of health, illness, and disability. Currently emerging changes in health care policy and regulation have required physical therapists (PTs) to respond to many new expectations.<sup>2</sup> These changes are catalysts to lead the evolution of practice and capture opportunities to promote the health of our patients via new delivery models. This position paper proposes changes in professional education to allow PTs to respond to the complexities of health and health care, and be full partners in what must become an integrated and interdisciplinary service industry.

## POSITION AND RATIONALE

We address 3 focal areas to drive change in physical therapist didactic and clinical education. First, achieving true interdisciplinary practice demands that physical therapist educators create learning experiences that result in interprofessional competence. This expectation must apply initially and across the entire continuum of professional development. Second, while responding to new accountabilities of the federal Affordable Care Act (ACA) may be stressful for practitioners, there is opportunity to create new approaches to address current stresses in clinical education. We advocate expanding the breadth of clinical education to include experiences in accountable care organizations (ACOs) or patient-centered medical homes (PCMHs) as a strategy for building practice options for care across the lifespan of patients. Finally, providing focused and in-depth education in the care of patients with highly prevalent conditions may prepare graduates to implement new care models and pathways that

transform how contemporary health conditions are managed. Low back pain, obesity, and cancer survivorship are used as examples of conditions that are common in the adult health profile of the United States (US) and about which PTs must be especially well-educated. Effectively managing these conditions requires more than a single episode of care and demands an interdisciplinary approach inclusive of both treatment and prevention. We propose to develop new paradigms of clinical practice by tailoring professional education to achieve an integrated, interdisciplinary approach to health and health care that will meet contemporary needs.

### The Interdisciplinary Environment

Interprofessional education (IPE) is not a new concept, but it is now an imperative. The US was recognized as a leader in IPE in the 1970s<sup>3</sup> and is experiencing a resurgence as health care providers acknowledge the need to be truly interdisciplinary. IPE gained global attention when the World Health Organization (WHO) established its Expert Committee on Medical Education.<sup>4</sup> Additional impetus for formalizing IPE arose in 2002 when the Institute of Medicine (IOM) requested that educators focus on IPE as a core essential.<sup>5</sup> By 2008, the IOM had restated this request as an imperative. The Association for Prevention Teaching and Research (APTR) fueled interest in IPE by creating the Healthy People Curriculum Task Force (HPCTF) in 2002, and then convening the first Institute for IPE Prevention Education in 2007. In this Institute, interdisciplinary team members from the same institution proposed IPE projects.<sup>6</sup> Then, in 2009, the IPE Collaborative (IPEC), comprised of 6 different professional associations, collaborated to publish a report on core competencies for IPE in the health professions.<sup>7</sup> Although not a part of the IPEC, the American Physical Therapy Association (APTA) supports having core competencies in IPE and has embraced the work of defining and promoting interprofessional expectations for physical therapy. At least 10 of the current accreditation criteria for physical therapist education programs address interprofessional competency.<sup>7</sup> However, until multiple professions embed commonly shared IPE terminology and expectations into their accreditation standards, graduates in the health professions will not learn to practice collaboratively, and will not be prepared to advance their patients' health through interdisciplinary clinical care.<sup>7</sup> Leaders of the academy must ensure that IPE is mandated in both didactic and clinical education across all health professions.

Ideally, the goals of IPE are to (1) devel-

op self-role clarity, (2) increase knowledge and appreciation of the roles of other health care professionals, (3) improve health care delivery, and (4) enhance patient outcomes. The literature supports that IPE can achieve the first 2 of these goals.<sup>5,8-10</sup> Methods reported to have been successful in producing such changes include curriculum enhancement,<sup>11-12</sup> simulation,<sup>5</sup> workshops,<sup>9,13,14</sup> university clinics,<sup>15</sup> service learning,<sup>16</sup> training units,<sup>17,18</sup> training wards,<sup>19</sup> videoconferencing,<sup>20</sup> and online education.<sup>21</sup> It is clear that improved attitudes increase communication and teamwork.<sup>17</sup> There is some evidence that IPE can affect other aspects of health care delivery, such as increased patient satisfaction,<sup>19</sup> improved care for cancer survivors,<sup>22</sup> reduced errors,<sup>23</sup> and increased patient safety.<sup>12</sup> Unfortunately, little evidence is available that IPE translates to delivery of evidence-based care.<sup>24</sup> Determining the impact of IPE on health care delivery processes and on patient outcomes will be critical for creating efficient and effective new models of care, and for educating PTs to pursue collaborative practice options. Resources to enable such study must be allocated to document the influence of IPE on practitioner attributes and actions, improved patient outcomes, and cost-effectiveness of health care. Investment by APTA and the Foundation for Physical Therapy (as well as other funding sources) is needed to study the impact of IPE on care in an interdisciplinary environment.

Some authors assert that it is the sole responsibility of academic institutions to provide IPE.<sup>7</sup> We believe it is a shared responsibility between both the academic and clinical health care providers to study, provide, and engage in IPE. Gilbert<sup>25</sup> recommends that learners be immersed in (not just exposed to) an interdisciplinary environment during their last year of study, after they have developed their individual disciplinary identities. IPE that employs academically based strategies during professional education is a first step, but physical therapist education programs appear to be quite inconsistent in how they enable students to build interprofessional competence. A recent (unpublished) survey of IPE initiatives in physical therapy education, conducted by the Task Force on Interprofessional Education of the American Council of Academic Physical Therapy (ACAPT), showed that IPE occurs mostly in the early stages of classroom learning and clinical practica. Although service learning, workplace experience, and postprofessional residency or fellowship may be used to foster IPE, few academic programs actually partner with clinics to provide the immersion recommended by Gilbert.<sup>25</sup> We assert that our profession has not moved interprofessional

education and research into the clinical setting—and thus has not yet fully embraced IPE.

Achieving true interprofessional competency requires not only engaging in IPE during initial professional education, but being committed to its lifelong pursuit through interprofessional continuing education.<sup>26</sup> Regardless of when it occurs, for IPE to be effective we must: (1) address stereotyping that perpetuates power differentials in the health professions<sup>25</sup>; (2) use language that avoids labels such as “allied health,” which blur the unique contributions each discipline makes to the whole of interdisciplinary care; and (3) continually reinforce interprofessional expectations throughout all venues of health care and across all stages of career development. We must see ourselves as “united,” not “allied” health professionals. The study of IPE and the conduct of interdisciplinary practice cannot remain distinct and separated.<sup>4</sup> Although Montgomery<sup>23</sup> professes that professionals need to be educated together to practice together, we believe that students need to practice together to be educated together. As health care evolves, this remains a career-long obligation. We owe it to our patients to unify interprofessional education and interdisciplinary practice.

We would be remiss if we failed to acknowledge the potentially significant barriers to fully implementing IPE in any level of physical therapist education. Academic institutions and clinical sites both encounter such barriers. Beyond the inertia of tradition, standardizing the way(s) students are educated in either didactic or clinical phases of professional education can be compromised by the variety and sizes of both university and clinical settings. The sheer number of students in the various health professions at some universities can outweigh the support and resources available to provide IPE for all students. Especially at a time when university costs are rising, coordinating efforts among academic departments or even among institutions can be prohibitive. The same concern is shared by clinical sites, where providing IPE could challenge budgets at a time when expenses are high and revenue may be decreasing. IPE also may be challenging to deliver in sites with fluctuating staffing patterns and frequent vacancies,<sup>27-29</sup> conditions that make providing well-rounded experiences for students difficult. Recent demographics regarding distribution of PTs across practice venues show 54.0% of PTs currently working in out-patient settings, and only 11.6% working in acute care hospital settings.<sup>30</sup> These demographics may favor access to out-patient clinical experiences, but do not favor pursu-

ing IPE competency. This may be especially true if the profession adopts a year-long internship at a single site where interdisciplinary collaboration is not part of the model of care. However, the special provisions related to interprofessional care included in the ACA may, in fact, help minimize the barriers we currently perceive. With changes in the health care models described below, interprofessional competency will be necessary, and opportunities for professional development and collaboration will be substantially enhanced.

### The Environment of Health Care Reform

Clearly, the profile of American health and health care has changed. Forty-four percent of Americans have at least 1 chronic health condition, and 13% report having 3 or more.<sup>31</sup> Of Medicare beneficiaries, 68% have 2 or more chronic conditions, and 36% have 4 or more.<sup>32</sup> In 2009, average health care expenditures among people with 4 or more chronic conditions were almost double those for people with 2-3 conditions, and 7 times higher than for people treated for 0-1 chronic condition.<sup>33</sup> In a cohort of Medicare beneficiaries with 6 or more chronic conditions, 60% required hospitalization, accounted for 63% of postacute care costs, and demonstrated 30% higher hospital readmission rates.<sup>34</sup> Providing services to these individuals is further complicated by poor coordination across providers of subsequent care following acute episodes of illness and by inadequate access and funding for the 16% of Americans who are uninsured for health care. Rising health care costs, fragmentation of services along the continuum of care, and lack of access and coverage were catalysts for creating the ACA. It is inevitable that the ACA will affect (1) the roles PTs assume and practice settings in which they work, (2) reimbursement structures applied to physical therapy, and (3) accountability metrics that will drive delivery and tracking of physical therapist services. For the benefit of our patients, we must educate PTs to work differently and effectively in the new environment of health care.

The ACA could have a positive impact on the settings in which PTs practice and the roles they perform. This legislation includes the formation of ACOs and PCMHs. Both structures were developed to improve coordination of services across the continuum of care and be accountable for achieving quality care metrics while controlling costs. Both structures also assume that multiple disciplines will partner to achieve these goals. Orszag and Emanuel<sup>35</sup> state that the ACA establishes provider structures that are dy-

namic, flexible, and able to respond to real-time system changes. For PTs to respond, didactic and clinical education must educate students to (1) recognize macro-level changes in the health care system that affect how care is delivered, (2) develop strategies that allow for rapid adjustment in processes and delivery models, and (3) build the role of case manager into one's career. Delivery of content about health care structures, analysis of case management scenarios, and training in interprofessional communication are important, but experience during clinical education is essential to prepare graduates to meet these goals. Because PTs are permitted to work within a single ACO or participate in multiple ACOs simultaneously, full-time clinical education rotations within ACOs or PCMHs should be implemented and required. Practitioners must master the regulations and quality indicators for each ACO in which they are members. In their roles as clinical instructors (CIs), they must hold students accountable for streamlining care using standardized assessments to support required outcome measures. CIs will need to be trained to mentor students in aspects of care that exceed the boundaries of the typical patient-therapist treatment session and must accept the dual accountability of responsiveness to both the patient and the health care organization. Multiple elements of the current Clinical Performance Instrument (CPI)<sup>36</sup> already address health system expectations (eg, documentation accountabilities, effective communication, and assurance of patient safety) that are applicable to practice in traditional or in new health care structures. Even so, the expectations suggested above may need to specifically be incorporated into the CPI for change to occur in practice patterns through the work of our graduates.

Provisions in the ACA for expanding coverage for basic preventive health care also may have an impact on the functions PTs perform and the settings in which they practice. O'Connor et al<sup>37</sup> propose 4 opportunities to ensure that prevention emerges as a key component of health care reform. These include (1) leading the way to implement community health assessments (CHAs), (2) linking clinical and community prevention, (3) supporting the development of payment mechanisms that reimburse for prevention, and (4) serving as a community resource for coordinating care and building the nontraditional workforce. We believe that PTs must partner with public health authorities or local health care facilities to conduct these CHAs and must consider serving as intermediaries between public health and social service departments. Because the public health system is poised to develop and implement primary

prevention strategies outside the typical office or clinical setting, professional education must mandate mastery of prevention concepts and provide experience within public health departments or at sites offering community prevention programs. This may mean embracing mentorship of PT students by non-PT practitioners during substantial parts of clinical education. Academic programs also should consider creating their own prevention-based service lines to supplement other options for clinical education. Creating partnerships with insurers to implement community-based prevention programs would facilitate new levels of collegial relationships among students and faculty, as well as benefit consumers. United Healthcare, for example, has offered an alternative payment model and partnered with the YMCA to deliver diabetes prevention programs that promote lifestyle changes in those who are at risk or have prediabetic symptoms.<sup>37</sup> This kind of initiative would manifest a real commitment to delivering care in new ways to the people whose health can be influenced positively by physical therapy.

Alterations in reimbursement models embedded in the ACA are expected to have an impact on traditional patterns of clinical education. Bundled payment models place an emphasis on quality and efficiency of care. These models provide a fixed rate of reimbursement for a given condition, often across the continuum of care, and create strong incentives for entities to control administrative burden.<sup>38</sup> Responding to these incentives may reduce the number and type of clinical experiences offered to students, due to reductions in staffing. In the same manner, clinical education experiences in free-standing outpatient physical therapy clinics may become less available if these facilities have difficulty partnering with acute care institutions to provide postacute care services. For practitioners who are grouped together to receive bundled payments, coordinating care among providers will be essential to meet cost and quality expectations. Ironically, this requirement can serve the needs of student trainees who need interdisciplinary experience and be a catalyst for implementing IPE in new settings because it yields opportunities for clinical education that have not been explored.

The dynamics of health care reform (currently driven by the ACA) will continue to provide opportunities for physical therapy to shape its own future. Although changes in didactic education are important, those suggested for clinical education are critical for seeing practitioners assume new roles and accountabilities, and creating new opportunities in prevention and public health.

Making these changes will require careful examination of clinical education philosophy, mentoring mechanisms, and learner responsibility. Such examination can enhance current models in clinical education, as well as drive new models and open new routes for PTs to care for patients.

### **The Changing Face of Health and Models of Care**

Compared to a century ago, people in the US are living longer, surviving injury and disease, and making myriad lifestyle choices that are affecting their health, functional independence, and quality of life.<sup>2</sup> These changes (especially those affecting physical activity) highlight the importance of physical therapy to the health of society and demand response in professional education to ensure that the foundations of our knowledge match the realities of practice. Practically speaking, the current breadth of our potential contributions already is difficult to address in 3 years of professional education. As new knowledge emerges, new educational strategies will be required. One approach is to focus curricula on highly prevalent conditions to ensure that graduates become skilled in addressing the current profiles of health and disease seen in this country. Designing professional curricula around a deliberate selection of major conditions and organizing didactic and clinical experiences around achieving interprofessional competency in managing these conditions could avoid increasing the duration of professional education while responding to new evidence for practice. We selected 3 conditions as exemplars of health problems that are likely seen in most health care venues, invite interdisciplinary prevention and intervention, and open opportunities to influence the patterns, costs, and outcomes of care.

### **The Patient With Low Back Pain (LBP)**

LBP affects 31% of the adult population at any one time<sup>39</sup> and 80% of adults at some point in their lives.<sup>40</sup> It is the leading cause of activity limitation and lost work days in this country and represents a huge financial burden for individuals and the health care system at large.<sup>41</sup> Simply put, LBP is not a single or simple condition. It presents differently at different ages,<sup>42</sup> responds differently in acute versus chronic stages,<sup>43</sup> and has a high recurrence rate.<sup>40</sup> The incidence of LBP is increasing in absolute numbers as our population ages,<sup>39</sup> which could stress the health care system even further. Only 33% of older adults with LBP receive any exercise instruction from their primary care provider, perhaps explaining the reported tendency of these patients to overuse physical agents (eg, ice, heat, and

TENS) to manage their pain.<sup>42</sup> It is increasingly clear that general activity is most appropriate for acute episodes of LBP and motor control exercise important to prevent chronic conditions.<sup>43</sup> These interventions fit perfectly in the scope of physical therapist practice and invite partnerships among other care providers to observe patients for initial episodes, readiness for intervention, and recurrence. PTs are well prepared to help patients adhere to the changes in movement and lifestyle required to have any significant impact on the condition, and could be instrumental in designing new venues for intervention (eg, the hospital Emergency Department<sup>44</sup>) that could reduce recurring pain patterns characteristic of many with LBP.

The effect of LBP on individuals, families, workplaces, and society as a whole signals the importance of creating new models of care that not only highlight the expertise of physical therapy, but incorporate the contributions of other relevant disciplines to address comorbid conditions (eg, depression<sup>42</sup>) that accompany some patients' experiences with LBP. Such models must be constructed to address the entire continuum of care (including prevention) and adapted to address risks for LBP across the lifespan. The complexity of LBP warrants early introduction in professional education and sustained attention as training proceeds. Because LBP occurs widely in the population, gaining experience in its management during clinical education should be feasible in both general and specialty practice arenas.

### **The Patient Who Is Obese**

Obesity results from an imbalance of energy intake and output. Although genetic influences do contribute to the weight status of humans, environmental factors that influence eating and activity patterns are considered more influential.<sup>45</sup> The current prevalence of adult obesity (ie, Body Mass Index  $\geq 30\text{kg/m}^2$ ) in the United States is reported to be 35.7%,<sup>46</sup> with a significant increase for both adults and children expected in the next decade.<sup>47</sup> More troublesome than absolute BMI ranges are the health effects associated with obesity. These effects include bodily pain,<sup>48,49</sup> medical comorbidities,<sup>45,50</sup> and frank disability,<sup>51</sup> all of which can compromise health and life. The implications of obesity for the individual are severe; for the health care system, they are expensive. Wang<sup>47</sup> reports that medical expenditures attributed to obesity could exceed \$860 billion and account for \$1 out of every \$6 spent on health care by 2030. In addition to medical expenditures, stereotyping and stigmatization is reported to be associated with switching practitioners, or "doctor shopping,"

which, in turn, can lead to increased use of emergency rooms, primary care visits, hospitalization, and expenses for health care.<sup>52</sup>

Opportunities abound for PTs to take a central role in promoting the health of patients of all ages who are obese. The obesity epidemic signals the need for new models of care that draw from the expertise of multiple disciplines to address the long-term implications of the condition.<sup>47</sup> Beyond valuing primary prevention of obesity, physical therapists' influence on pain,<sup>48,49</sup> function,<sup>50</sup> risk for injury,<sup>53</sup> and the need for compassionate care<sup>52</sup> is enough to justify substantial attention to this disturbingly prevalent condition during professional education. Given its epidemic nature, required experience during clinical education with patients who are obese will be readily available in current adult and pediatric settings. Such experience may occur with various types of patients and could use specialized approaches such as aquatic physical therapy and group exercise programs to which students already should be oriented. A focus on obesity does not detract from our value for variety in generalist practice. Rather, it reaffirms the importance of all levels of prevention<sup>54</sup> and opens opportunities for new roles in interdisciplinary patient care.

### **The Patient Who Survives Cancer**

The incidence of cancer diagnoses has risen over the past 40 years, fueled by early detection<sup>55</sup> and enhanced by general longevity of the population at large.<sup>56</sup> Because of medical advances, overall survivorship from cancer is expected to rise 31% in the next decade,<sup>55</sup> with that in older adults expected to rise 42%.<sup>56</sup> Survivor rates are critically important to individuals, but also impact the health care system, which is projected to see a 29% increase in the current costs for cancer care by 2020.<sup>55</sup> As a result, several obligations and opportunities emerge for PTs. First, evidence points to the importance of exercise in the primary prevention of some forms of cancer,<sup>57</sup> as well as the prevention of modifiable sequelae resulting from other forms of cancer.<sup>58</sup> This obligates PTs to communicate the critical importance of physical activity when in contact with any patient, and when educating within their communities. Second, PTs can have a central role in managing complications resulting from the treatment of cancer. These include: obesity,<sup>45</sup> lymphedema,<sup>59</sup> pain,<sup>59</sup> and peripheral neuropathy with accompanying fall risk.<sup>60</sup> Of all complications, cancer-related fatigue is the most common side effect of treatment, affecting 80%-90% of those receiving chemotherapy or radiation.<sup>59</sup> PTs must be vigilant in identifying and seeking interdisciplinary partners to help patients

manage cancer-related fatigue and other effects that can affect function, quality of life, and health.<sup>61,62</sup> Third, physical activity and exercise has been judged to be safe for survivors and reduces the impact of cancer-related fatigue.<sup>60</sup> Evidence is growing to establish more precisely the type and intensity of exercise appropriate for particular types of cancer and their sequelae.<sup>58,60</sup> This information will increase the effectiveness of physical therapy for survivors and will make active involvement in the management of cancer survivorship an expectation of all PTs.<sup>62</sup>

Educating PTs, at both the professional and postprofessional levels, about the causes and effects of cancer will become increasingly important as survivorship rises and care for sequelae is needed. It will be essential to develop models of care that are appropriate from the time of diagnosis, that help patients manage long-term implications,<sup>59,61</sup> and that guide them through the end of life.<sup>63</sup> These models must be interdisciplinary and include care that occurs in the context of each patient's social and cultural milieu.<sup>61,62</sup> Clinical mentors must guide students' learning in each circumstance in which care is delivered—this will require embracing interprofessional education as an imperative and interdisciplinary practice as a core philosophy.

## DISCUSSION AND CONCLUSION

A PT's mission to improve health is steeped in strong expectations of professionalism<sup>64</sup> and provision of empathic and compassionate care.<sup>65</sup> Our profession has been enhanced by efforts to develop a unique and scientifically sound body of knowledge to support our work. Now, we must adjust to new realities and reexamine traditions in both physical therapist education and practice.

First, the profession must make IPE a priority through early and sustained experience in interdisciplinary care that spans the continuum of life and health. This approach must be strengthened by CAPTE standards, achieved using new strategies of mentorship at the clinical site, and supported by continual study of how patient outcomes may be enhanced through integrated health care.

Second, we must create clinical education opportunities that involve students in prevention of illness, injury, and disability, and promotion of health in the context of new rules and regulations of the ACA. This will require developing new community interfaces and adopting new standards for who can provide clinical instruction—both of which could expand the availability of clinical contact for students.

Finally, physical therapist education should focus on highly prevalent conditions,

management of which requires foundational knowledge applicable to other less prevalent conditions. This approach to curriculum design preserves generalist training at the entry level, avoids expanding curriculum duration, and prepares graduates to master knowledge and skills in areas most important for the health of this nation.

We are confident that physical therapy will remain important in the scheme of rehabilitation. However, without change, PTs will miss the opportunity to contribute to the primary care so that all people, for whom movement is a requirement for health and life, will benefit

## REFERENCES

- Ramsey PG, Miller ED. A single mission for academic medicine: improving health. *JAMA*. 2009;301(14):1475-1476.
- American Physical Therapy Association. *Today's Physical Therapist: A Comprehensive Review of a 21st-Century Health Care Profession*. Alexandria, VA: American Physical Therapy Association; 2011.
- Blue A, Brandt BF, Schmitt MH. American interprofessional health collaborative: historical roots and organizational beginnings. *J Allied Health*. 2010;39(suppl 1):204-209.
- Hollenberg D, Bourgeault IL. Linking integrative medicine with interprofessional education and care initiatives: challenges and opportunities for interprofessional collaboration. *J Interprof Care*. 2011;25:182-188.
- Reising DL, Carr DE, Shea RA, King JM. Comparison of communication outcomes in traditional versus simulation strategies in nursing and medical students. *Nurs Educ Perspect*. 2011;32(5):323-327.
- Garr DR, Evans CH, Cashman SB. Interprofessional prevention education: changing the future of health professions education. *Am J Prev Med*. 2008;34(2):161-163.
- Zorek J, Raehl C. Interprofessional education accreditation standards in the USA: a comparative analysis. *J Interprof Care*. 2013;27:123-130.
- Hallin K, Kiessling A, Waldner A, Henriksen P. Active interprofessional education in a patient based setting increases perceived collaborative and professional competence. *Med Teach*. 2009;31:151-157.
- O'Carroll V, Braid M, Ker J, Jackson C. How can student experience enhance the development of a model of interprofessional clinical skills education in the practice placement setting? *J Interprof Care*. 2012;26(6):508-510.
- Rodehorst TK, Wilhelm SL, Jensen L. Use of interdisciplinary simulation to understand perceptions of team members' roles. *J Prof Nurs*. 2005;21(3):159-166.
- Willison KD. Advancing integrative medicine through interprofessional education. *Health Sociol Rev*. 2008;17(4):342-352.

- Cox KR, Scott SD, Hall LW, Aud MA, Headrick LA, Madsen R. Uncovering differences among health professions trainees exposed to an interprofessional patient safety curriculum. *Qual Manag Health Care*. 2009;18(3):182-193.
- Fitzgerald JT, Williams BC, Halter JB, et al. Effects of geriatrics interdisciplinary experience on learners' knowledge and attitudes. *Gerontol Geriatr Educ*. 2006;26(3):17-28.
- Kilminster S, Hale C, Lascelles M, et al. Learning for real life: patient-focused interprofessional workshops offer added value. *Med Educ*. 2004;38:717-726.
- Dubouloz CJ, Savard J, Burnett D, et al. An interprofessional rehabilitation university clinic in primary health care: a collaborative learning model for physical therapist students in a clinical placement. *J Phys Ther Educ*. 2010;24(1):19-24.
- Bridges DR, Abel MS, Carlson J, Tomkowiak J. Service learning in interprofessional education: a case study. *J Phys Ther Educ*. 2010;24(1):44-49.
- Jacobsen F, Lindqvist S. A two-week stay in an interprofessional training unit changes students' attitudes to health professionals. *J Interprof Care*. 2009;23(3):242-250.
- Mann KV, McFetridge-Durdle J, Martin-Misener R, et al. Interprofessional education for students of the health professions: the "seamless care" model. *J Interprof Care*. 2009;23(3):224-233.
- Reeves S, Freeth D, McCrorie P, Perry D. "It teaches you what to expect in future...": interprofessional learning on a training ward for medical, nursing, occupational therapy and physiotherapy students. *Med Educ*. 2002;36:337-344.
- Weinstein RS, McNeely RA, Holcomb MJ, et al. Technologies for interprofessional education: the interprofessional education-distributed "e-classroom-of-the-future." *J Allied Health*. 2010;39(suppl 1):238-245.
- Solomon P, King S. Online interprofessional education: perceptions of faculty facilitators. *J Phys Ther Educ*. 2010;24(1):51-53.
- Grant M, Economou D, Ferrell B, Uman G. Educating health care professionals to provide institutional changes in cancer survivorship care. *J Cancer Educ*. 2012;27:226-232.
- Montgomery K, Griswold-Theodorson S, Morse K, Montgomery O, Farabaugh D. Transdisciplinary simulation: learning and practicing together. *Nurs Clin North Am*. 2012;47(4):493-502.
- Zwarenstein M, Reeves S. Knowledge translation and interprofessional collaboration: where the rubber of evidence-based care hits the road of teamwork. *J Contin Educ Health Prof*. 2006;26(1):46-54.
- Gilbert JH. Interprofessional learning and higher education structural barriers. *J Interprof Care*. 2005;19(suppl 1):87-106.

26. Bilodeau A, Dumont S, Hagan L, et al. Interprofessional education at Laval University: building an integrated curriculum for patient-centred practice. *J Interprof Care*. 2010;24(5):524-535.
27. American Physical Therapy Association. Physical therapy workforce project: physical therapy vacancy and turnover rates in outpatient private practices—2010. <http://www.apta.org/WorkforceData/>. Updated October 25, 2010. Accessed June 12, 2013.
28. American Physical Therapy Association. 2010 physical therapy workforce project: physical therapy vacancy and turnover rates in acute care hospitals. <http://www.apta.org/WorkforceData/>. Updated December 16, 2010. Accessed June 12, 2013.
29. American Physical Therapy Association. Physical therapy workforce project: physical therapy vacancy and turnover rates in skilled nursing facilities—2011. <http://www.apta.org/WorkforceData/>. Updated June 29, 2011. Accessed June 12, 2013.
30. American Physical Therapy Association. Physical therapist member demographic profile 2010. <http://www.apta.org/WorkforceData/>. Updated May 3, 2011. Accessed June 12, 2013.
31. Paez KA, Zhao L, Hwang W. Rising out-of-pocket spending for chronic conditions: a ten-year trend. *Health Aff (Millwood)*. 2009;28(1):15-25.
32. Lochner KA, Cox CS. Prevalence of multiple chronic conditions among Medicare beneficiaries, United States, 2010. *Prev Chronic Dis*. 2013;10:E61.
33. Machlin SR, Soni A. Health care expenditures for adults with multiple treated chronic conditions: estimates from the medical expenditure panel survey, 2009. *Prev Chronic Dis*. 2013;10:E63.
34. Medicare Payment Advisory Commission (MedPAC). A data book: health care spending and the Medicare program. <http://www.medpac.gov/documents/Jun11DataBookEntireReport.pdf>. Published June 2011. Accessed June 12, 2013.
35. Orszag PR, Emanuel EJ. Health care reform and cost control. *N Engl J Med*. 2010;363:601-603.
36. American Physical Therapy Association. *Physical Therapist Clinical Performance Instrument*: Version 2006. Alexandria, VA: American Physical Therapy Association. <http://www.apta.org/PTCPI/>. Accessed (AUTHOR, please see previous comment).
37. O'Connor JC, Gutelius BJ, Girard KE, Drum Hastings D, Longoria L, Kohn MA. Paying for prevention: a critical opportunity for public health. *J Law Med Ethics*. 2013;41(suppl 1):69-72.
38. Sood N, Huckfeldt PJ, Escarce JJ, Grabowski DC, Newhouse JP. Medicare's bundled payment pilot for acute and postacute care: analysis and recommendations on where to begin. *Health Aff (Millwood)*. 2011;30(9):1708-1717.
39. Hoy D, Bain C, Williams G, et al. A systematic review of the global prevalence of low back pain. *Arthritis Rheum*. 2012;64(6):2028-2037.
40. Freburger JK, Holmes GM, Agans RP, et al. The rising prevalence of chronic low back pain. *Arch Intern Med*. 2009;169(3):251-258.
41. Hoy D, Brooks P, Blyth F, Buchbinder R. The epidemiology of low back pain. *Best Pract Res Clin Rheumatol*. 2010;24:769-781.
42. Knauer SR, Freburger JK, Carey TS. Chronic low back pain among older adults: a population-based perspective. *J Aging Health*. 2010;22(8):1213-1234.
43. van Middelkoop M, Rubinstein SM, Verhagen AP, Ostelo RW, Koes BW, van Tulder MW. Exercise therapy for chronic nonspecific low-back pain. *Best Pract Res Clin Rheumatol*. 2010;24:193-204.
44. Fleming-McDonnell D, Czuppon S, Deusinger SS, Deusinger RH. Physical therapy in the emergency department: development of a novel practice venue. *Phys Ther*. 2010;90:420-426.
45. Racette SB, Deusinger SS, Deusinger RH. Obesity: overview of prevalence, etiology, and treatment. *Phys Ther*. 2003;83(3):276-288.
46. Flegal KM, Carroll MG, Kit BK, Ogden CL. Prevalence of obesity and trends in the distribution of body mass index among US adults, 1999-2000. *JAMA*. 2012;307(5):491-497.
47. Wang Y, Beydoun MA, Liang L, Caballero B, Kumanyika SK. Will all Americans become overweight or obese? Estimating the progression and cost of the US obesity epidemic. *Obesity (Silver Spring)*. 2008;16(10):2323-2330.
48. Gettys FK, Jackson JB, Frick SL. Obesity in pediatric orthopaedics. *Orthop Clin North Am*. 2011;42:95-105.
49. Heim N, Snijder MB, Deeg DJ, Seidell JC, Vissers M. Obesity in older adults is associated with an increased prevalence and incidence of pain. *Obesity*. 2008;16(11):2510-2517.
50. Iossi MF, Konstantakos EK, Teel DD Jr, et al. Musculoskeletal function following bariatric surgery. *Obesity (Silver Spring)*. 2013;21(6):1104-1110.
51. Armour BS, Courtney-Long EA, Campbell VA, Wethington HR. Disability prevalence among healthy weight, overweight, and obese adults. *Obesity (Silver Spring)*. 2013;21(4):852-855.
52. Gudzone KA, Bleich SN, Richards TM, Weiner JP, Hodges K, Clark JM. Doctor shopping by overweight and obese patients is associated with increased healthcare utilization. *Obesity (Silver Spring)*. 2013;21(7):1328-1334.
53. Jahnke SA, Poston WS, Haddock CK, Jitnarin N. Obesity and incident injury among career firefighters in the central United States. *Obesity (Silver Spring)*. 2013;21(8):1505-1508.
54. American Physical Therapy Association. *A Guide to Physical Therapist Practice*. Rev 2nd ed. Alexandria, VA: American Physical Therapy Association; 2003.
55. de Moor JS, Mariotto AB, Parry C, et al. Cancer survivors in the United States: prevalence across the survivorship trajectory and implications for care. *Cancer Epidemiol Biomarkers Prev*. 2013;22(4):561-570.
56. Parry C, Kent EE, Mariotto AB, Alfano CM, Rowland JH. Cancer survivors: a booming population. *Cancer Epidemiol Biomarkers Prev*. 2011;20(10):1996-2005.
57. Deusinger SS. Exercise intervention for management of obesity. *Pediatric Blood Cancer*. 2012;58(1):135-139.
58. Brown JC, Huedo-Medina TB, Pescatello LS, Pescatello SM, Ferrer RA, Johnson BT. Efficacy of exercise interventions in modulating cancer-related fatigue among adult cancer survivors: a meta-analysis. *Cancer Epidemiol Biomarkers Prev*. 2011;20(1):123-133.
59. Siegel R, DeSantis C, Virgo K, et al. Cancer treatment and survivorship statistics, 2012 [erratum in: *CA Cancer J Clin*. 2012;62(5):348]. *CA Cancer J Clin*. 2012;62(4):220-241.
60. Pignataro RM, Swisher AK. Chemotherapy induced peripheral neuropathy: risk factors, pathophysiology, assessment, and potential physical therapy interventions. *Rehab Oncol*. 2010;28(2):10-18.
61. Howell D, Hack TF, Oliver TK, et al. Models of care for post-treatment follow-up of adult cancer survivors: a systematic review and quality appraisal of the evidence. *J Cancer Surviv*. 2012;6:359-371.
62. Donofrio-Angelucci D. The role of PTs in cancer survivorship programs. *PT in Motion*. 2013;5:24-31.
63. Downey L, Engelberg RA. Quality-of-life trajectories at the end of life: assessments over time by patients with and without cancer. *J Am Geriatr Soc*. 2010;58(3):472-479.
64. Deusinger SS. The anatomy of professionalism in physical therapy: a shared value system. *The Advisor*. 2003;23(4):31-34.
65. Gabard DL, Lowe DL, Deusinger SS, Stelzner DM, Crandall SJ. Analysis of empathy in Doctor of Physical Therapy students: a multi-site study. *J Allied Health*. 2013;42(1):10-16.