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TITLE: A model for providing free patient care and integrating student learning and professional development in an interprofessional student-led clinic

AUTHORS:

Lydia George, PT, DPT, Sara Bemenderfer, PT, DPT, Maggie Cappel, PT, DPT
Kathryn Goncalves, PT, DPT, Micaela Hornstein, PT, DPT, Chelsea Savage, PT, DPT, OCS, Peter
Altenburger, PT, PhD, James Bellew, PT, EdD, M. Terry Loghmani, PT, PhD

Lydia George is a clinician at Indiana University Health and adjunct faculty member in the Department of Physical Therapy, Indiana University, Indianapolis, Indiana.

Sara Bemenderfer is a clinician at Carolinas Healthcare CMC-Mercy Hospital, Charlotte, North Carolina.

Maggie Cappel is a neurologic resident in physical therapy with Baylor Health and Texas Women's University, Dallas, Texas.

Kathryn Goncalves is a clinician at Hancock Regional Hospital, Greenfield, Indiana.

Micaela Hornstein is a clinician at Banner University Medical Center, Tucson, Arizona.

Chelsea Savage is a clinician at Body One Physical Therapy-North Meridian, Indianapolis, Indiana.

Peter Altenburger is an associate professor and chair in the Department of Physical Therapy, Indiana University, Indianapolis, Indiana.

James Bellew is a professor in the Department of Physical Therapy at the University of Indianapolis, Indianapolis, Indiana.

M. Terry Loghmani is an associate professor in the Department of Physical Therapy, Indiana University, Indianapolis, Indiana. Address all correspondence to Terry Loghmani at 1140 W. Michigan St., CF326A, Indianapolis, IN 46240, mloghman@iu.edu.

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ABSTRACT:

Background and Purpose: The need to reduce the barriers of access and affordability in healthcare is evident. The Indiana University Student Outreach Clinic (IU SOC) is a community-based, pro bono, interprofessional, student-led clinic dedicated to removing barriers to healthcare. The purpose of this report is to describe the implementation approach, sustainability efforts and initial outcomes of this community-based physical therapy clinic model with the aim of making it transparent for others to replicate.

Method/Model Description and Evaluation: An overview of the IU SOC, implementation and sustainability of the physical therapy clinic model and student learning opportunities are described. Keys to successful implementation are enumerated. Learning opportunities focused on include: clinical competency, professional values, civic engagement; interprofessional education and collaborative practice (IPECP); peer mentorship and leadership development.

Outcomes: Preliminary clinic and learning opportunity outcomes collected from patient databases and student surveys and reflections suggest the IU SOC is having a positive impact on the community it serves by providing care patients would not have otherwise received while simultaneously supporting learning. Patient volume and student participation are expanding. Initial outcomes suggest this model is valuable for the professional growth of future physical therapists.

Discussion and Conclusion: The impact of this clinic model on the community and students is just beginning to be realized and understood. Key elements of success are that it's a) community-based, b) interprofessional, and c) highly collaborative. Free student-led,

interprofessional healthcare clinics may offer an important means for improving healthcare access while simultaneously preparing entry-level professionals for practice.

BACKGROUND AND PURPOSE

Many individuals face significant barriers to accessing adequate, affordable healthcare. The report, *Health Wanted: The State of Unmet Need for Primary Health Care in America*, calls upon community-based health clinics to provide comprehensive care eliminating healthcare barriers, which will in-turn reduce costly trips to emergency departments and expensive hospital stays.¹ The Indiana University Student Outreach Clinic (IU SOC) is one such clinic serving the near eastside community of Indianapolis, Indiana. The mission of IU SOC is to provide medically underserved and uninsured populations within Indiana communities with access to free healthcare while providing students from multiple disciplines opportunity for professional development. Its primary goal is to decrease healthcare inequality.

The IU SOC is a student-led, interprofessional, pro bono healthcare clinic, formed as a partnership in 2009 between Indiana University (IU) medical students and the Neighborhood Fellowship Church (NFC). The clinic is located within the heart of a neighborhood with many unmet health needs that began with economic hardships in the 1940s that have continued through the turn of the century resulting in very few insured individuals. Historically, this community has had the highest emergency department visit rate within the county. While the main focus of the clinic is on decreasing the health disparities within the community, the clinic affords an equally important benefit to students by providing an avenue for experiential learning in the areas of patient care, interprofessional education and collaborative practice, and leadership.

In October 2012, Doctor of Physical Therapy students from IU and the University of Indianapolis (UIndy) established a novel collaboration to provide free evidence-based physical

therapist (PT) services. This addition added to the comprehensive nature of the clinic, which includes pharmacy (Butler University), legal (IU), social work (IU), dental (IU), physical therapist (PT) (IU, UIndy), occupational therapy (IU), public health (IU) and nursing (IU). This collection of services in 1 location provides the IU SOC with the opportunity to make a significant impact on health disparities in this community. The collaborative nature also makes it an ideal setting for applied interprofessional education and collaborative practice (IPECP). The World Health Organization (WHO) defines interprofessional education (IPE) as occurring “when two or more professions learn about, from and with each other.”² IPE is an essential step in preparing learners for collaborative practice which happens “when multiple health workers from different professional backgrounds work together with patients...to deliver the highest quality care.”² This is important since WHO recognizes IPECP as an “innovative strategy that will play an important role in mitigating the global health workforce crisis.”²

Student-led free clinics are becoming more prevalent as the need for affordable and accessible healthcare is ever growing. Moreover, educators are realizing the benefits of collaborating with community partners to improve patient care while enhancing student learning. A literature review was performed in PubMed, CINAHL, ProQuest, and Academic Premiere databases using the key words student-led, student-run, pro bono, multi-disciplinary and interprofessional clinics and interprofessional education and collaborative practice. Findings from this review indicate educators are recognizing and beginning to evaluate the impact these clinics have on improving collaborative care as well as student learning.^{3,4} Several universities have found students who participate in a pro bono health clinic reported increased

confidence, self-reflection, and civic mindedness.^{5,6,7} Other studies have reported that students indicate improved clinical skills after participation in a student-led clinic.^{8,9}

The literature review also revealed that there are many different clinic models with multiple disciplines and community partners; however, only a few include physical therapists students and even fewer with students from more than 1 university [Table 1].^{6,10,11,12} The IU SOC is unique in its student-led management approach that combines the expertise of multiple professions, collaborating across 3 universities and 2 PT education programs, to provide free, comprehensive healthcare housed within a community setting. The literature is sparse in the amount of published resources available to assist faculty with navigating through the pro bono clinic implementation process as well as to guide faculty in cultivating learning opportunities.

The primary purpose of this paper is to provide an overview of a model for a student-led, interprofessional, pro bono healthcare clinic from a physical therapy perspective. Specifically, the clinic model will be described, which will include our initial implementation and approach to achieving sustainability. In addition, we will discuss the initial impact participation in this authentic learning environment has had on student professional values. We will expand upon the potential of such a model to promote IPECP and provide preliminary data to support the clinic's impact on the community and the students. Our ultimate goal is to make this model transparent enough to allow other communities and educational institutions the opportunity to benefit from and possibly replicate what has been achieved at the IU SOC.

METHOD/MODEL DESCRIPTION AND EVALUATION

Although other student-led, pro bono healthcare clinic models exist, the IU SOC model is unique, particularly in the breadth of professional services (9 disciplines) that are offered from

3 universities and 2 PT education programs at a community-based site. Careful attention was paid to creating a sustainable clinic through a structured approach. Indiana University Institutional Review Board (IRB) was obtained as exempt research prior to any data collection or learning outcomes assessment.

Overall Clinic Description

Before the clinic was established, the founding medical student board and faculty advisor performed a community market analysis to identify healthcare needs and barriers, which proved to be a vital process in assuring the success of the clinic. Community members identified financial and knowledge barriers to receiving healthcare, distrust and fear of healthcare providers, and the need for low-cost healthcare services, including prescriptions. The identification of these barriers led to the creation of the IU SOC in a non-threatening environment in the NFC that has strong, established ties to the community.

Ongoing development of the clinic is controlled by the IU SOC Board who votes to add partners to the clinic periodically based upon interest and needs. Disciplines who want to become members must perform a needs assessment and develop a proposal that is presented to the existing student board. Each proposal must outline how the healthcare discipline will meet the mission of the clinic, the services they will provide, their operations plan, and space utilization. Services are not added without a clear vision for how the community will benefit. This was true for the integration of physical therapist services, which proposed a unique integration of 2 institutional programs.

Physical Therapy Clinic Model: Steps in Implementation

In order to implement the physical therapy clinic model, students and faculty from IU and UIndy laid the groundwork to organize and initiate physical therapist services through careful planning and consideration of multiple factors including community needs related to physical therapy, marketing, financial and staffing resources, organizational structure, and risk management. Attention was also given to developing volunteer roles with a focus on creating mentorship and leadership opportunities as well as shaping clinic and learning outcomes.

Perform a Needs Assessment: An Important First Step

The inaugural physical therapy board completed a thorough needs assessment and reviewed the market analysis completed by medical students in 2009 prior to establishing the IU SOC. Many of the barriers to receiving healthcare found in the original market analysis still exist and indicate the community's lack of finances, insurance, and access to transportation and primary care are key contributors to their unmet health needs. Since the clinic was already seeing patients, the needs assessment also included a review of patient diagnoses which revealed that greater than half the diagnoses treated at the IU SOC were applicable to the physical therapist scope of practice. Examples of patient complaints within the scope of practice included chronic and acute musculoskeletal pain that limited participation in life roles. A 'Strengths Weaknesses Opportunities Threats (SWOT)' analysis was completed to determine the feasibility of the addition of physical therapist services to the clinic given the available resources [Appendix 1]. The IU SOC PT clinic's strengths, weaknesses, opportunities, and threats were comparable to the BRIDGE Physical Therapy Clinic, which is likely a reflection of a similar population and mission.¹⁰ These similarities supported the assertion that the IU SOC PT model, with its added advantage of multiple disciplines and universities, was attainable.

1. Develop a Marketing Plan and Engage in Interprofessional Education

A marketing plan was developed to support recruitment of patients, student and faculty volunteers, and donors [Table 2]. When beginning collaboration with the other disciplines at the clinic, it became clear that there was a need for improved interprofessional education on the role and scope of physical therapist practice. Educating the patients, as well as the other student disciplines, on a continual basis was the primary focus to ensure adequate patient referrals. Although time consuming, this was done primarily in a face-to-face manner to foster communication, build trust, and strengthen relationships. Direct access to physical therapist services is legal in Indiana; however, referrals are sought within the clinic to better coordinate patient care and foster collaborative care. Eventually, an IPECP model for screening patients with the medical students for the need for PT or occupational therapy services was developed to help identify and assure appropriate patient cross referrals [Table 3]. The IU SOC is currently tracking this process for assessment of effectiveness. This approach is consistent with work by Kent et al who found that students who completed a screening interview of patients in interprofessional teams reported improved awareness of the importance of comprehensive patient-centered care and understanding of the roles of other disciplines.¹³ *Consider Financial*

Resources and Solicit Donor Participation

An assessment of the financial resources required to initiate physical therapist services was also completed. The 501(c)3 tax-exempt status of the IU SOC encouraged donations of monetary value, supplies, and equipment. The largest portion of monetary funding came from donors who were invested in the respective DPT programs, the community, or the NFC. These donations were solicited using the marketing plan outlined in Table 2. Additionally, the

inaugural student board members, faculty advisors, and school development officers solicited local vendors for donated equipment and supplies (Figure 1). Although the value of in-kind services, overhead, and administrative assistance are significant and difficult to determine, the donations and expenses from initiation of the physical therapy clinic through year 2 were recorded and are outlined in Table 4.

2. Establish a Risk Management Plan

In consultation with the schools' deans, legal departments and faculty advisory committee, a risk management plan was developed and informed by the work of the BRIDGE Physical Therapy Clinic's plan in their clinic manual.¹⁰ For example, records of HIPPA certification and background checks from faculty and students are required, patient files are stored in locked filing cabinets, and electronic patient records are password protected. Table 5 delineates the steps taken to ensure students could legally provide evidence-based examination and intervention at the clinic. Importantly, a memorandum of understanding was obtained individually between each PT education program and the NFC, and it was ascertained by the institutions' legal departments that students and faculty were indeed covered under their respective schools' medical malpractice policies because students are required to treat patients under the supervision of full-time or adjunct faculty licensed physical therapists.

3. Develop Student Leadership Roles: An Essential Element for Success

Every clinic partner has a student board and shared leadership with a faculty advisor. The IU SOC Board meets monthly to discuss and vote on clinic-wide decisions. Each partner has a board member who acts as a liaison on several clinic-wide subcommittees which consist of small groups of students that work together to complete common goals in the areas of

education, research, and finance/promotions to further the clinic's mission. The IU SOC PT has 1 board with 1 IU and 1 UIndy student collaborating as co-chairs in their respective roles. There are 6 positions on the IU SOC PT Executive Board: Chair, Vice Chair, Education Chair, Promotions & Finance Chair, Operations Chair, and Research Chair held by 2 co-chairs from each DPT program [Table 6]. The IU SOC medical student board structure served as an example when developing the PT student board roles to better align and accommodate clinic-wide sub-committee responsibilities. The 2 schools rotate leading IU SOC PT Executive Board meetings to enhance continuity and proficiency. Current IU SOC PT Executive Board members nominate and vote for incoming members to fill their positions. Each incoming board member shadows his or her predecessor for 2 months prior to taking over responsibilities.

Faculty advisors work closely with students on the IU SOC PT Executive Board to help facilitate decision-making and communication. This mentoring process provides students with an experiential learning environment for leadership skill development. Students enter the clinic with a foundation of leadership based upon American Physical Therapy Association's (APTA) core values and expand upon those through active participation in clinic management. This opportunity for cultivating leadership in student board members was found at 2 other student-led clinics.^{4,9} Furthermore, faculty at the Institute for Physical Therapy Education of Widener University found that intentionally designing leadership opportunities, such as presentations and formal in-services, for the inaugural student board members of a student-led physical therapy clinic improved development of leadership skills.⁹ IU SOC PT Executive Board members also have regular opportunities to present while fulfilling their leadership roles.

4. Construct Mentorship Opportunities among Students

Mandatory participation at the IU SOC PT clinic was added into both schools' DPT program curricula. As a component of first year students' integrative clinic education (ICE) programs, groups of 6 to 8 students were assigned a specific clinic date over the course of their initial year (either fall or spring semester). Once a first year student completed their mandatory participation, they were free to volunteer for any subsequent weekend. This design required 3 third year students to be present to provide the primary clinical competence and mentorship for the first year students. This mandatory participation led to the development of a clinical PT student team that included a third, second, and 2 first year students.

Student teams work together to conduct all components of an evaluation including differential diagnosis and identification of red flags while consulting with the licensed PT faculty supervisor between elements of the evaluation. These student teams group the 3 PT classes together; thus, cultivating upper classmen mentorship of lower classmen within each team. The first year student performs the subjective examination and systems review; then a second or third year student takes the lead during the tests and measures component of the exam. Together the student team determines the patient diagnosis and problem list to develop a plan of care. The upperclassmen may help guide the lowerclassmen through the selected evidence-based interventions, home exercise program and self-care instructions that were discussed with the faculty supervisor. The literature supports the benefit of this approach. For example, faculty at the Pritzker School of Medicine found students value peer mentorship when participating at a student-led clinic. First year medical students reported improved physical examination skills due to peer mentorship by fourth year medical students. It was hypothesized that the fourth year students helped ease anxiety by sharing knowledge without the fear of evaluation.¹⁶

The decision to require first year students to participate as part of their mandatory ICE program was assumed following significant faculty debate. The literature illustrates that potentially forced social participation may result in decreased satisfaction.^{14,15} Further discussions with the IU Center for Service Learning enlightened the faculty to view this participation not as “forced volunteerism,” but as an opportunity to expose students to “a novel learning opportunity” that they might otherwise never experience. Students are not formally evaluated for their participation in the clinic and it does not affect their grades beyond the required single day participation.

5. Offer Clinic Hours as Able: Start Small and Increase When Ready

The IU SOC PT started operating only 1 Saturday a month, with the 2 PT education programs rotating every other month. During this phase-in time, the students and faculty were able to collaborate and further develop standardized procedures, board member roles and responsibilities, volunteer training protocols, documentation processes, and a physical therapy referral system. After 10 months, in response to increased patient demand and the readiness of faculty and students to assume more hours, physical therapist services were increased. The addition of the mandatory ICE program for first year students helped accelerate this growth in frequency. Physical therapist services are currently offered 2 Saturdays a month, with each school staffing the clinic once a month, while the IU SOC operates every Saturday. Most Saturdays, the clinic operates with 3 student teams enabling the staff to handle 3 patients every 30 to 45 minutes. A minimum of 1 licensed faculty member is required to support the 3-team approach.

6. Outline the Clinic Manager and Volunteer Roles During Hours of Clinic Operation

An IU SOC PT Executive Board member serves as the physical therapy clinic manager. He or she is responsible for overseeing the operations to ensure efficiency, communication, and collaboration between all partners at the IU SOC. Physical therapist student volunteers hold 1 of 3 clinic positions on each clinic day: interprofessional representative, registration desk manager or student team member. The interprofessional representative acts as the PT liaison for IPE and participates in the triaging system with medical and occupational therapy students to screen all incoming patients for PT and occupational therapy needs. The registration desk manager organizes all documentation, assists patients with completing intake forms, and fills out a database with patient information. The majority of student volunteers make up the student teams that provide evidence-based examination and intervention under guidance of the supervising PT.

7. Develop Timely and Efficient Documentation

The clinic currently has paper documentation. For ease of use and student learning, evaluations were divided into body region with specific tests and measures listed. The physical therapy patient evaluation and patient care intervention document outlines the elements needed for defensible documentation. Each patient seen for physical therapist services has a clinic-wide health record that contains a copy of his or her physical therapist evaluation. The IU SOC PT also keeps a patient record that contains intake forms, patient care intervention notes, completed assessment tools, and a copy of the home exercise program. Student volunteers use free online websites, e.g. Move-Rx.com, to quickly develop home exercise programs. Documentation is reviewed and co-signed by the faculty supervisor then secured in a locked

file. Clinic-wide electronic health record keeping is slated for implementation in the near future, which will hopefully facilitate more timely and efficient documentation.

8. Determine Clinic and Learning Outcomes to be Evaluated from the Outset

Measuring outcomes is a professional responsibility specified in APTA Code of Ethics.¹⁷ The IU SOC PT Executive Board set patient care objectives including patient satisfaction. For example, data collection includes evaluations versus return visits, number of patients seen per day, and number of volunteers per clinic day to track growth and patient compliance. Students were asked following participation to provide open-ended reflections on their experience. From these responses, faculty realized that the clinic design offered an authentic learning experience for students' professional values. Specifically, students reflected upon how their participation enhanced their understanding of professional duty and social responsibility. As a consequence, faculty and students initiated an assessment plan to evaluate learning outcomes related to professional value development, which will be expanded upon in a subsequent section.

Physical Therapy Clinic Model Sustainability

There are 6 aspects that help ensure the IU SOC PT has long-term sustainability: *effective clinic partners, low operating cost, risk management policies, dedicated student leadership, efficient operations, and reduction of healthcare barriers*. Palombaro et al,¹⁸ from the Chester Community Physical Therapy clinic, described a similar model for sustainability to the one developed at the IU SOC PT clinic, further validating these key elements.

First, the partnerships created at the clinic are an important aspect of sustainability. The NFC, interprofessional partners, community, donors, vendors, and the IU and UIndy collaboration are all essential partnerships critical to the success of the clinic. Since the church

had already established a strong positive connection with the community, it helped to create a non-threatening medical environment. The IPECP between all of the partners at the clinic has fostered cross referrals between the professions and assisted patients' transition to ongoing care into traditional clinics, leading to appropriate patient care. The strong backing and support of leaders at the PT education programs, including deans, department directors, and faculty allowed students to engage in this learning opportunity. Vendors and donors contributed additional resources.

The second aspect of sustainability is assuring adequate clinic finances. The budget, fundraising efforts and a marketing plan enable financial stability. The IU SOC PT clinic has a low operating cost largely due to the free use of space and utilities within the church. The annual physical therapy fundraising goal is larger than the anticipated operating cost to provide a cushion for when equipment and supplies need to be replaced.

Risk avoidance is the third aspect of sustainability. Legal contracts as well as policies and procedures have been implemented to minimize risks. There are several methods to train the volunteers on these standardized procedures. Students and faculty volunteers participate in on-site training days and frequently view an online presentation reviewing clinic operation and participant's roles. Interprofessional practice also improves patient care through better identification of red flags and differential diagnosis; thus decreasing risk and increasing sustainability.

Passionate and committed student leadership is the fourth aspect of sustainability. Physical therapist student board members are responsible for cultivating role development within the student teams so that volunteers grow from mentees to mentors. This growth

encourages frequent volunteering; thus ensuring the clinic is adequately staffed. The current board members also inspire the next board members to take their place. Student dedication is vital for sustainability.

The fifth aspect of sustainability is successfully executing the procedures to effectively operate the clinic. The operations, volunteer roles, and communication tools used by both schools were written down and communicated to all student and faculty volunteers for consistency. This standardization was crucial for the IU SOC PT's unique model due to the 2 universities rotating staffing the clinic. The primary communication tools between each DPT programs' students are patient documentation, board meetings and email. Communication guidelines were developed to increase efficiency and smooth transitions between each clinic day. For example, to ensure continuity of patient care, a secure email is sent to a shared account at the end of each clinic day summarizing the day, providing details for any follow-up that needed to occur, and creating a list of needed supplies. Also, starting small with a lower frequency of services to avoid over-extending volunteers and resources was critical to initial sustainability, but could pose a longer-term challenge if physical therapy remains less present and available.

Lastly, the IU SOC is sustainable because the clinic is dedicated to eliminating the community's healthcare barriers. Lack of finances and insurance are no longer an obstacle. The barrier of transportation has been minimized by the central location of the church within the community as well as a bus stop located outside its door. The volunteers aim to ease patients' fear of medical professionals by making a concerted effort to provide positive and non-judgmental experiences for the patients.

Promoting Student Professional Development

Student participation at the IU SOC offers an experiential learning environment that reflects aspects of the program's professional goals [Table 7]. The development of professional values is an essential graduate outcome for PT education programs and is often difficult to measure. The pro bono clinic offers an authentic environment with the potential for fostering growth in several different programmatic learning outcomes dealing with professional value maturation. The curriculum's expected learning outcomes related to professional value attainment were adopted from APTA's Core Professional Values.¹⁹ Assessment of the "student experience" at the IU SOC as it relates to professional values was assessed through 2 different instruments: a Likert scale questionnaire and open-ended self-reflection.

OUTCOMES

Clinic Outcomes

The IU SOC PT is beginning to show its impact on the community through its growth during the first 2 years [Table 8]. Patient volume has nearly doubled and although detailed records of student volunteers were not initially tracked, the number of student volunteers has grown. Initially, about 20% of the students per class volunteered. After integration into the first year ICE program, about 42% of third year students and 82% of second year IU students volunteered in 2014. The impact of the IU SOC as a whole has not gone unnoticed by the greater Indianapolis community. All current disciplines at the clinic and the NFC were recognized in 2012 by the Indianapolis City Council for improving access to healthcare and received the 2013 Governor's Service award for its success in reducing the community's healthcare barriers.

Professional Development Outcomes

Students expressed an overwhelmingly positive response to the various learning opportunities afforded through participation at this outreach clinic. First year PT students, whose participation at the clinic was required at least once during their first year in PT school, were surveyed to gain greater insight into the impact that the IU SOC PT may have on students' professional values. The survey, given immediately upon participation, included a questionnaire with a set of open-ended questions asking them to reflect on the impact their experience had on their professional development [Table 7]. Three evaluators assessed each of the open-ended responses for all participants, independently analyzing the responses for common themes. Upon completion of theme analysis, evaluators triangulated their findings to produce a core set of consistent learning outcomes. In addition to the qualitative analysis, several questions in the survey were quantified to produce an analysis of student feedback.

Remarkably, 100% of these students indicated they would be back to volunteer at the clinic. For that first cohort of mandatory ICE participation, 88% volunteered at least 1 additional weekend. The exposure and subsequent participation resulted in a 68% increase in volunteer activity from the previous year. The results also indicate that students had positive experiences that focus on 4 distinct areas: professional competency, professional responsibility, civic identity, and philanthropy [Table 9]. Fifty-eight percent of students who were surveyed indicated that the experience increased their confidence in providing physical therapist services. One student suggested that through participation he is "better able to internalize the value of understanding patient impairments." Other comments focused on increased confidence with performing tests and measures and communicating effectively with patients.

Collectively, these findings indicated the experience improved the student's self-assessment of their clinical competency.

Students expressed growth in several different professional themes that are listed in Table 7. Connections between these themes and the program's expected outcomes related to professional development (APTA Core Values) are identified in Table 9. Student responses demonstrating professional responsibility (63%) included an appreciation for the importance of "treating the patient as a whole" as well as a desire to mentor future students. In addition, students commented on the value of the opportunity to apply what they had learned as well as "advocating for community wellness." These collective comments were representative of a student sentiment towards giving back to their profession as well as the community. In particular, students expressed surprise in learning they could have an impact in the community. The positive impact caused many to indicate a desire to be more civically engaged. Philanthropy (46%) was seen in comments made about the students expressing a desire to be "more invested in pro bono work." These findings were correlated to APTA's Professional Core Values of excellence, professional duty, social responsibility, and altruism, which is the foundation for the program's expected learning outcomes related to professionalism.¹⁹ Further measurement and assessment of professional value maturation in this authentic learning environment is warranted to better capture the potential learning experiences for students.

Preliminary data from a focus group discussion [Table 7] of the initiating IU SOC PT Executive Board members (n = 10) indicated that their participation in the clinic was pivotal in developing mentorship and leadership skills. All felt more prepared to assume mentorship roles as future clinicians, e.g. clinical instructors/faculty. Importantly, several leadership skills were

cited, but all indicated conflict resolution, flexibility and communication as areas of greatest growth. Of note, once eligible to serve as adjunct faculty, the first 2 inaugural physical therapy student board chairs have continued volunteering at the IU SOC PT as licensed physical therapists to supervise students; offering further evidence of professional development and leadership.

A third group of students, the entire IU SOC Board, was surveyed to help improve IPECP between all the partners (9 disciplines) with respect to PT and occupational therapy roles at the clinic. PT and occupational therapy student board members and faculty first gave a presentation that delineated the educational background and scope of practice of these respective disciplines to the rest of the board members at a semi-annual partner's retreat. Following the presentation, attendees (n = 28; 16 females, 12 males) indicated a greater understanding of PT and occupational therapy educational backgrounds (54%) and scope of practice (72%) (survey adapted from the University of Kentucky modified Heinemann Attitudes toward Health Care Teams, 5-point Likert scale).²⁰ From that, the entire IU SOC Board decided to implement similar consideration of each discipline's roles at IU SOC.

DISCUSSION AND CONCLUSIONS

An overview of a novel model for providing free healthcare in a student-led clinic through teamwork with multiple disciplines and preliminary findings for optimizing this environment as a means to enhance clinic and student learning outcomes has been described. Crucial elements for the success of this model are that a) the clinic is housed at a community-based site in which relationships built on trust already exist; b) its interprofessional nature is unified around a central aim to remove barriers to healthcare within that community; c) the

collaboration between dedicated PT students from 2 schools is structured to enable the implementation and sustainability of this model; and d) clinic and student learning objectives and assessment methods are established and monitored by the student board and faculty.

The inherent value of this clinic model is multi-faceted, but most notably, it is attempting to eliminate healthcare barriers through community engagement while providing sustainable educational experiences in clinical competency, IPECP, professional development and leadership for future clinicians. This model is important since it helps bridge gaps in both the healthcare and professional education systems. Patients are receiving care they would not have otherwise received, and students are participating under faculty supervision in an optimal environment for applied IPECP. At the outset, the clinic was seen mostly as a volunteer opportunity and not through an educational lens. Ideally, learning objectives would have been set up front, but it was not until PT students became actively involved that faculty realized how rich an environment it is for learning and scholarship. Assessing learning outcomes associated with this model provides evidence for changes in various aspects of students' professional development. Our initial findings are significant since they can be used internally to shape future clinic and curricular changes, outline specific learning experiences, and provide evidence for accreditation; and externally, by others to replicate or apply to their own clinics.

Opportunities

The IU SOC PT benefited from joining an existing pro bono, student-led clinic within a community setting with positive ties to the community members. Marketing was facilitated since the NFC assisted in promoting the available resources at the clinic. Also, the clinic had established resources that the inaugural physical therapy board used as a guide from which to

model, e.g. procedural examples, board member role descriptions and a memorandum of understanding.

Much has been learned from launching this physical therapy clinic model. Collaborating with another PT education program, if possible, may enhance sustainability, especially since it helps to disperse the large time commitment for student board members and volunteers. Co-chairs are able to share the workload and build on each other's strengths, thus improving efficiency and quality of the work. This model facilitates professional role and identity development, so much so, that faculty from both physical therapist education programs recognized the potential for learning embedded within this opportunity and expediently adapted their respective curricula to require mandatory participation at the clinic at least once for first year students as a component of an established course. Practicing in an interprofessional team environment with peer mentorship allows the opportunity for students to develop clinical competency and apply APTA core values. An unanticipated benefit was the degree to which this opportunity supports students in developing vital roles in leadership and clinic management.

Although the impact of this clinic on student learning is just beginning to be understood, this model should be considered an applied educational setting in light of the fact that IPECP is heralded as a way to meet the worldwide crisis in healthcare.^{21,22} Clearly, students must be educated on different scopes of practice and trained in concert with other healthcare providers before being expected to function as effective, collaborative, interprofessional team members.²¹

Challenges

There are challenges to starting such a clinic. Balancing the needs and goals of patients, students and faculty must be addressed. Buy-in from all constituents is critical to success, including school leadership and legal departments. Collaborating between 2 physical therapist education programs largely enhanced the clinic; however, coordinating the different classroom and clinical schedules was difficult. Student leaders adapted by meeting online if in-person meetings were not possible. Clinic days were scheduled ahead of time, at the start of semesters, to accommodate each school's clinical and exam schedules, thereby improving participation and avoiding volunteer burnout. Volunteer fatigue of faculty was also a concern. The deans and legal teams of each PT education program worked to remedy this challenge from the outset. For example, IU adjunct faculty supervisors were not initially covered under the school's malpractice policy; but now are, which increases the pool of faculty volunteers. Diligence and advocacy is essential from student leaders and faculty advisors to establish appropriate and necessary risk management procedures to address legal concerns. Offering PT services only once a month to start was beneficial and necessary to implement the model gradually and avoid becoming overwhelmed, but introduced another challenge; it decreased patient follow-up care and dampened volunteer enthusiasm. The collaboration between schools and its rapid curricular integration increased the availability of volunteers, allowing the IU SOC PT clinic hours to increase from once to twice a month. Nonetheless, the smaller pool of faculty and student volunteers compared to the medical school, for example, remains the primary barrier to increasing the frequency of physical therapist services at the IU SOC. If however, a patient needs care more often than the IU SOC PT clinic can provide, social work

students assist in transitioning the patient to a clinic where they can receive more frequent care.

There were also challenges to joining an established clinic. As the clinic partnerships grew, physical space within the church was subsumed and required negotiation for use. A primary challenge for PT referrals centered around educating the other student disciplines on the scope of physical therapist practice to gain appropriate referrals and improve collaborative care. A pervasive factor limiting IPECP within healthcare appears to be a lack of knowledge regarding scope of practice of each discipline. The IU SOC provides an opportunity for PT students to educate each partner on their distinct role within the healthcare team. The partners decided that an online educational video on PT and occupational education/practice be developed, a PT and occupational therapy screening system implemented and cross-discipline patient referrals tracked. Plans are to extend this method of cross-discipline education to all professions represented at IU SOC.

There are additional challenges to progressing physical therapy goals in patients with chronic conditions and complex psychological and social influences; which applies to many of the patients at the IU SOC. At the outset, it was unclear if patients receiving PT at the IU SOC PT would return for follow-up appointments when needed. This concern was well founded based on barriers previously described and changes needed in the community's culture to encourage compliance and an active role in one's rehabilitation and health. Although some patients are discharged at their initial PT evaluation, return visits are fostered through patient education and by making reminder phone calls and appointment cards if a continued plan of care is indicated. The irregular follow-up visits, as well as the complex patient population, resulted in

difficulty consistently assessing physical performance measures. Thus patient satisfaction and the number of return visits were used as the primary patient outcomes. However, there is growing evidence to support the idea that student-led free clinics can provide care at or above the standard of care; however, the literature discussing physical therapy specific outcomes is limited.^{23,24,25}

Adopting a student-led free clinic with an interprofessional approach into multiple schools' programs can be challenging. Logistically, schools may be separated by distance, variable student schedules, differing viewpoints and administrative hurdles, as well as the ability to procure financial resources. Implementing this model is a large commitment, made more difficult by limited means needed to support a sustainable clinic. The lack of shared learning objectives to evaluate student learning, IPECP, mentorship and leadership with unified assessment tools by the different schools and partners may pose yet another hurdle. Intentionality and communication is needed to set and measure selected learning objectives. This communication needs to be continued as outgoing student board members transition roles to incoming board members ensure outcomes are tracked correctly. The consistency of tracking patient outcome data was identified as a limitation in the first 2 years of operation at the IU SOC PT. The IU SOC PT learning objectives and assessment tools have evolved gradually over time since its startup; and coordinated, clinic-wide IPECP assessment methods are underway.

Future plans include increasing the frequency of physical therapist services, standardizing the assessment of clinic and learning outcomes, expanding clinic-wide IPECP objectives, and implementing shared electronic documentation. Also, cross discipline referral patterns will be tracked for appropriateness in a standardized manner. Data collection remains

in progress and although in depth discussion of initial learning outcomes are beyond the scope of this paper, subsequent reports are planned relevant to its multiple facets.

In conclusion, a free student-led healthcare clinic can improve access to physical therapist services in an underserved area that would otherwise go without care, while helping prepare future health professionals by immersing students in a setting which affords them an applied interprofessional learning opportunity to develop clinical skills and core professional values. The intent of this overview was to provide a broad perspective to assist others in moving forward with greater foresight in establishing an outreach clinic and tracking learning outcomes. To effectively establish such a clinic, its feasibility must be explored within the unique context of its community and available resources. The IU SOC PT clinic is distinct due to its partnerships between 2 physical therapist education programs, 3 universities and multiple disciplines in a location built on strong, ongoing community connections. Other communities may benefit substantially by adapting and implementing models similar to the IU SOC.

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Table 1. Example models of interprofessional free healthcare clinics with physical therapy student participation

Clinic	Indiana University Student Outreach Clinic	BRIDGE Clinic ²	MEDiC ³	SHAC: Student Health Action Coalition ⁴	Mercy Circle of Care ⁵
Student-run	Yes	Yes	Yes	Yes	No (Paid faculty member)
Free	Yes Unrestricted*	Yes Restricted**	Yes Restricted**	Yes	Yes Restricted**
Setting	Community	Community	Community	Community	Physical therapy clinic
Inter-professional	Yes 9 disciplines	Yes 5 disciplines	Yes 5 disciplines	Yes 6 disciplines	Yes 3 disciplines
Multiple Universities	Yes (3)	No	No	No	Yes (3)
Frequency of Physical Therapy	Twice a month	Weekly	Monthly	Weekly	3 nights per week
Physical Therapy Services	Evaluation & treatment of MS/NM/CP impairments	Screenings, evaluation, & treatment of MS impairments	Evaluation & treatment of MS/NM/CP impairments	Screenings, evaluation, & treatment of MS impairments	Evaluation & treatment of MS/NM/CP impairments; wound care

MS = musculoskeletal
 NM = neuromuscular
 CP = cardiopulmonary

*Unrestricted = no limitations on eligibility for services based on income, insurance, or zip code
 **Restricted = limited eligibility for services based on income, insurance, and/or zip code

Table 1 outlines examples of free healthcare clinic models that include physical therapy students providing care under the direction of licensed physical therapists. No clinic is exactly alike.

Table 2. IU SOC PT Clinic Marketing Plan

Patients

- Announce addition of physical therapy services at local community meetings
- Educate and screen patients already receiving treatment at the IU SOC

Referral Sources

- Provide interprofessional education on role and scope of physical therapy practice to the other partners at the IU SOC

Student and Faculty Volunteers

- Social media, IU SOC website, YouTube video showcasing the IU SOC
- Presentations and emails to DPT students & faculty at both universities

Donors

- Annual Open House at the IU SOC
- Presentation to potential donors at local APTA meetings
- Article in physical therapy department's annual newsletter and school's annual magazine
- Email solicitation

Table 2 summarizes the marketing plan to recruit patients, student and faculty volunteers, and donors for the IU SOC PT clinic.

Table 3. Questions from Physical and Occupational Therapy Screening Tool

1. Are you satisfied with your ability to perform your personal needs, chores at home and work?
2. Do you ever get short of breath while completing your daily activities or during exercise?
3. In the past month, have you had pain anywhere in your body, or does pain limit what you can do?
4. Do you have difficulty concentrating, thinking, or remembering?
5. How would you rate the quality of your sleep?
6. In the past month, have you fallen, or do you ever feel unsteady on your feet?
7. Are you a caregiver for someone else?
8. Are you satisfied with the way you cope with stress?

Table 3 depicts the questions used by physical and occupational therapy students to identify patients with physical and occupational therapy needs while triaging patients with the medical team. Patient- reported difficulty in any area would trigger a referral to either physical therapy (Q1, 2, 3, 6) and/or occupational therapy (Q 1, 4, 5, 7, 8) as discussed by the team.

Table 4. Financial standings after the initial start-up and 2 years of operation

	Donations	Expenses
Start-up	\$5,000 <i>(+Equipment valuing \$6,000)</i>	\$2,286
Year 1	\$4,170	\$440
Student Conference		\$1,560
Year 2	\$3,900	\$150
Total:	\$13,070	\$3,032

Table 4 displays the donations and expenses from the start-up of the IU SOC PT through the first 2 years of operation. Start-up expenses included equipment (e.g. mat tables, goniometers, resistance bands), operational supplies (e.g. lap top computer, printer, paper, hand sanitizer, disposable pillowcases), and marketing. The projected annual budget of \$2000 was calculated by averaging the total cost of 10 years of equipment and supplies to account for items that are replaced yearly and more expensive items that are replaced less frequently. An annual fundraising goal of \$3000 was set to cover rising cost of supplies, unexpected expenses, and anticipated increase in student participation in conferences. For the first 2 years of operations, the annual expenses were primarily to restock frequently used items (e.g. printer ink, copy paper, and Leukotape®). The significance and value of in-kind services, overhead costs, or administrative assistance are not reflected in this table.

Table 5. Steps taken by physical therapy faculty advisors, department chairs and school Deans to allow legal participation of physical therapy students at the IU SOC

1. Gained full support of leadership including the Dean and department chairs of each DPT program
2. Coordinated effort with legal department including site visits and many conversations amongst all the players
3. Obtained a memorandum of understanding individually between each physical therapy school (IU and UIndy) and the Neighborhood Fellowship Church
 - Identify the responsibilities of each party involved regarding space utilization, expenses, and staffing
 - Establish terms of liability
 - Delineate the rights of each party involved to terminate or modify the agreement
4. Created guidelines for faculty supervision
5. Developed an application process for licensed PTs to become unpaid adjunct faculty.
6. Set eligibility criteria, including: complete an application form; licensed PT in good standing; experience as a fulltime PT with at least one year of clinical experience; pass a criminal background check; commit to volunteering at least two times/year; shadowing twice before supervising without a fulltime faculty member.
7. Approved fulltime faculty coverage under the university malpractice umbrella, and the physical therapy department covered the malpractice insurance fee for qualified adjunct faculty.

Table 5 describes the steps to initiate legal participation in a free student-led clinic within a Doctorate of Physical Therapy program.

Table 6. IU SOC PT Executive Board Member Roles and Responsibilities

Chair	
	<ol style="list-style-type: none"> 1. Represent the IU SOC PT in all its affairs 2. Call and lead all IU SOC PT Executive Board meetings 3. Oversee elections and ensure fulfillment of responsibilities of the IU SOC PT Executive Board members 4. Communicate with faculty advisors regularly 5. Provide updates to IU SOC Partners on physical therapy business
Vice Chair	
	<ol style="list-style-type: none"> 1. Collaborate with the Chair to complete responsibilities 2. Complete Chair roles in the absence of the Chair
Operations Chair	
	<ol style="list-style-type: none"> 1. Represent the IU SOC PT with the other IU SOC partners' Operations Chairs 2. Coordinate the actions of clinic operations including clinic structure, staffing, and schedule 3. Develop and maintain policies and procedures for clinic operation including documentation 4. Oversee the storage and security of all supplies 5. Maintain records of all IU SOC PT committee meetings and function
Education Chair	
	<ol style="list-style-type: none"> 1. Complete responsibilities as a member of the IU SOC Education Committee 2. Develop and organize patient education materials 3. Act as a liaison for interprofessional education in collaboration with Research Chair
Research Chair	
	<ol style="list-style-type: none"> 1. Complete responsibilities as a member of the IU SOC Research Committee 2. Research IPE, other inter-disciplinary clinics and their outcome measures and tools 3. Oversee the development of presentation materials 4. Create quality measures, monitor quality of care, and develop plans for quality improvement
Promotions & Finance Chair	
Finance	<ol style="list-style-type: none"> 1. Represent the IU SOC PT when collaborating with IU SOC partners' Finance Chairs 2. Obtain all necessary supplies for the operation of IU SOC PT 3. Ensure proper management of funds and prepare financial statements semiannually 4. Oversee all fundraising efforts
Promotions	<ol style="list-style-type: none"> 1. Complete responsibilities as a member of the IU SOC Promotions Committee 2. Oversee communication with community groups including updating social media 3. Organize and maintain relationships with additional professional schools and outside facilities that wish to assist with the mission of IU SOC PT

Table 6 summarizes the roles and responsibilities of the IU SOC PT Executive Board members. Each position has 2 co-chairs held by 1 student from each physical therapy program.

Table 7. Initial Areas of Student Professional Development Assessment Tools and Sample Questions

Clinical Competency, Professional Identity, and Civic Engagement

Assessment Tool: Student Survey

Example Questions

1. How has your participation in the clinic influenced your understanding of what it means to place the needs of the patient/client ahead of your self-interests?
2. How might your intentions to be an active member of your profession changed as a result of your involvement in the clinic?
3. As a result of your clinic participation today, in what ways do you see yourself contributing in the future to address societal needs of health and wellness?

IPECP

Assessment Tool: Survey adapted from the University of Kentucky modified Heinemann Attitudes toward Health Care Teams (5-point Likert scale) and Student Survey¹¹

Example Questions

1. Likert scale: Educating other health care disciplines about physical therapy is important for my profession and for patient care.
2. How important is inter-professional/multi-disciplinary teamwork in patient care?

Peer Mentorship

Assessment Tool: Student Survey

Example Questions

1. Likert scale: This learning experience was valuable to my education through my role as a mentor; or, from the opportunity to learn from a mentor.
2. What do you hope to learn from your mentors?; or, What do you hope to teach your fellow peers?

Leadership

Assessment Tool: Focus Group Discussion with inaugural PT Board members

Example Questions

1. What professional skills have you developed the most by serving as a board member?
2. Has serving as a board member affected your conflict resolution skills? If so, how?

Table 7. The IU SOC provides rich opportunities for student learning from multiple aspects. Not only are students allowed a non-threatening environment to develop clinical competencies, role identity and APTA core values, they can enculturate the importance of civic engagement and interprofessional education and nurture mentorship and leadership skills.

Table 8. IU SOC PT patient utilization and satisfaction, Years 1 to 2

	Year 1	Year 2
Total Patients	76	134
Patient Return Rate	47%	35%
Number of Physical Therapy Clinic Days	13	23
Patient Satisfaction Survey [Appendix 2]	100% Agree or strongly agree	*

* Data collected, but not tracked effectively which is a challenge with a rotating student board.

Table 8 depicts the growth from year 1 (October 2012-2013) to year 2 (October 2013-2014) at the IU SOC PT.

Table 9. Assessing students' perceptions of professional and social responsibility after participating at the IU SOC PT

Response %	Students' Reflective Comments	Themes	APTA Core Values
58%	<ul style="list-style-type: none"> • <i>"It is necessary to get a clear picture of the patient."</i> • <i>"This was a valuable learning experience and helped to increase my confidence in what I can do and how I can help."</i> 	Professional Competency	Excellence
63%	<ul style="list-style-type: none"> • <i>"Importance of gathering a comprehensive history."</i> • <i>"It is important to be an active member of my profession"</i> 	Professional Responsibility	Professional Duty
63%	<ul style="list-style-type: none"> • <i>"Today has made me more likely to volunteer in society"</i> • <i>"It has made me realize that I need to be an advocate."</i> • <i>"...working here has helped me to understand how best to relate with our patients."</i> 	Civic Identity	Social Responsibility
46%	<ul style="list-style-type: none"> • <i>"I'm also more interested in doing pro bono work someday."</i> • <i>"It helped me to see how the patient should come first always, especially if a patient can only receive treatment once a month."</i> 	Philanthropy	Altruism

Table 9. Students (n = 24) at the IU SOC PT were asked to reflect on the impact their participation at the clinic had on their professional development. Evaluators of the students' answers found several themes: professional competency, professional responsibility, civic identity, and philanthropy. These themes correspond with 4 of the APTA core values.

Figure 1. Donated equipment and supplies in an IU SOC PT clinic private treatment room



Appendix 1. Results of initial Strengths Weakness Opportunities Threats (SWOT) analysis for IU SOC PT clinic

Strengths	Weakness
<ol style="list-style-type: none"> 1. Free to patients 2. Considerable need for physical therapy services 3. Strong positive connection with community already exists 4. Strong partnership with the church and local donors 5. Easy location for patient access (example: centered within community and bus stop directly across the street) 6. Interprofessional education 7. Interprofessional collaboration 8. Improve relations between students and faculty 9. Augment curriculum 10. Expand our schools existing donor pool 11. Larger volunteer pool because all three DPT classes have a role at the clinic 12. Opportunity for students to expand clinical knowledge and skills 13. Opportunity for students to have leadership and mentorship roles 14. Low operating costs (example: free building and electric bill) 15. Strong backing by IU and UIndy physical therapy departments 16. No competition in the local area 	<ol style="list-style-type: none"> 1. Patients unaware of physical therapy services 2. Lack of knowledge of physical therapy by other professionals 3. Treating only once a month 4. Shared space at church is limited 5. Students and faculty volunteers have other responsibilities that limit time commitment 6. Student board positions will rotate every year 7. Lack of funding to purchase malpractice insurance for adjunct faculty
Opportunities	Threats
<ol style="list-style-type: none"> 1. Fundraising options in community 2. Potential donor pool with multiple universities involved 3. Partnerships with local physical therapy clinics and vendors 4. Larger pool of licensed PTs with adjunct faculty from both physical therapy programs 	<ol style="list-style-type: none"> 1. Lack of funding 2. Lack of volunteers 3. Lack of return visits 4. Patient compliance 5. No-shows 6. Limited interprofessional student-run clinic models 7. Faculty volunteer burnout

Appendix 2. IU SOC PT Patient Satisfaction Survey from Shade Tree Physical Therapy Clinic

Questions about today's visit	Please circle the best answer			
The staff is friendly with me.	Strongly Disagree	Disagree	Agree	Strongly Agree
I did not have to wait too long before seeing the physical therapy team.	Strongly Disagree	Disagree	Agree	Strongly Agree
My physical therapy team did spend enough time with me.	Strongly Disagree	Disagree	Agree	Strongly Agree
I can talk about private things with my physical therapy team.	Strongly Disagree	Disagree	Agree	Strongly Agree
My physical therapy team cares about my life situation (housing, finances, etc).	Strongly Disagree	Disagree	Agree	Strongly Agree
I understand what my physical therapy team tells me.	Strongly Disagree	Disagree	Agree	Strongly Agree
After talking to my physical therapy team, I know something I can do to make myself healthier.	Strongly Disagree	Disagree	Agree	Strongly Agree
I am going to be able to do the things my physical therapy team wants me to do.	Strongly Disagree	Disagree	Agree	Strongly Agree
My physical therapy team answered any questions I had.	Strongly Disagree	Disagree	Agree	Strongly Agree
It was easy for me to get to and from the clinic today.	Strongly Disagree	Disagree	Agree	Strongly Agree
Overall, I was satisfied with the care that I got at this physical therapy clinic.	Strongly Disagree	Disagree	Agree	Strongly Agree
Based on my experiences, I would recommend this physical therapy clinic to my friends.	Strongly Disagree	Disagree	Agree	Strongly Agree