ACAPT Strategic Initiative Panel on Simulation Preliminary Report

October 1, 2020

Background

In October 2014 the American Council of Academic Physical Therapy (ACAPT) coordinated a Clinical Education Summit with the support of the American Physical Therapy Association (APTA), the Education Section of the APTA, the Federation of State Boards of Physical Therapy, and the Journal of Physical Therapy Education. The Clinical Education Summit brought together clinical and academic educators to discuss the concerns of the physical therapy clinical education system and develop options to address identified issues within the physical therapist (PT) clinical education system. The Summit goal was to reach agreement on best practice in PT clinical education. Representatives included academic and clinical faculty from 202 of the 212 ACAPT member institutions as well as other key stakeholders. The result of the Summit was a report containing 11 harmonizing recommendations and 3 innovative recommendations. Following the receipt of the report, the ACAPT Board of Directors prioritized the recommendations, integrated the work into the organization's strategic plan, and formed 3 strategic initiative panels to address the highest priority topics. The 3 topics chosen were common terminology for physical therapist education, integrated clinical education, and assessment of student readiness.

As the strategic panel considering integrated clinical education (ICE) worked through their charge in 2016 through 2017, discussion occurred on the use of simulation as a 'goal oriented diverse active learning experience' (per the original charge). The group has since determined that these experiences are not integrated clinical experiences but rather are more closely aligned with the academic portion of the PT education curriculum. This decision was based on the definitions of clinical education and clinical education experiences developed by the terminology panel. The definition for clinical education experience describes experiences that occur in physical therapy workplace

environments. The ICE Panel determined that simulation activities were not in the purview of their charge and suggested that a separate panel investigate simulation and its role in PT education programs to develop recommendations regarding simulation that align with current evidence.

In the summer of 2018 ACAPT put out a call for volunteers to serve on a new Strategic Initiative Panel on Simulation [SIPS] in PT education. The stated purpose of the SIPS was to investigate the role of simulation in PT education and provide options/best practices for the use of simulation in PT education. In August of 2018 the ACAPT Board selected 9 panel members and designated a chair. The first meeting of the SIPS was held in October of 2018. At that meeting the SIPS made the decision to secure data to address the charge from two main sources: a targeted review of the literature and survey data from CAPTE accredited institutions. This preliminary report is based upon the results of our survey work. A final report will be filed at a later date.

Panel Structure and Membership
Brad Stockert, PT, PhD – California State University, Sacramento [Chair]
Jacque Bradford, PT, DPT – University of Tennessee Health Sciences Center
Sharon Gorman, PT, DPTSc – Samuel Merritt University
Kristin Curry Greenwood, PT, DPT, EdD, GCS – Northeastern University
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Jason Rucker, PT, PhD – University of Kansas Medical Center
Nicki Silberman, PT, DPT, PhD – Hunter College, City University of New York
Shawne Soper, PT, DPT – Virginia Commonwealth University [Strategic Initiatives Panel Coordinator]

Charges: The ACAPT Strategic Initiative Panel on Simulation in PT education will examine the role of simulation in PT education programs and provide options/best practices for the effective use of simulation in physical therapy curricula. The specific charges to this working panel are:

- Investigate and describe the current use of simulation within physical therapist and other related health professions education programs;
- Describe models/best practices for the use of simulation within physical therapist education programs; and

- Explore the role of simulation to meet accreditation standards and required elements, particularly those curriculum elements related to clinical education and interprofessional education.

Summary of work to date:

In October 2018 the first meeting of the ACAPT Strategic Initiative Panel on Simulation (SIPS) occurred at the Education Leadership Conference (ELC) in Jacksonville, Florida. At that point a decision was made to address our charges by securing data from two primary sources: a targeted review of the literature and a descriptive survey of all the CAPTE accredited programs in the U.S. The SIPS members met face-to-face at ELC 2018 and 2019 as well as CSM 2019 and 2020. In addition, SIPS members conducted multiple conference calls and videoconferencing sessions from fall of 2018 through fall of 2020 in order to conduct the targeted review of the literature, develop two surveys to query PT education programs about their use of simulation and coordinate our efforts to address our charges. This preliminary report is in regards to the two surveys conducted of all CAPTE accredited programs. A final report with the data from the targeted literature review and all of the recommendations will be provided at a later date. We wanted to provide a preliminary report about our survey findings so that informed discussions from interested stakeholders could occur at ELC 2020.

The SIPS members created two surveys to gather information about current use of simulation-based learning in physical therapist (PT) education programs in the United States. The intent of the panel was not to describe simulation in other professions, but to use simulation practice in other professions to inform PT education, which led us to only survey PT education programs. In the fall of 2019 the first survey, developed by the SIPS members, was sent to all 236 PT program directors in the United States listed in the Directory of Programs on the Commission on Accreditation in Physical Therapy (CAPTE) website at the time of survey creation (Appendix 1). The purpose of the first survey was to gain a broad perspective of how many PT education programs use any form of simulation, and to

determine the best person(s) at each institution to answer more in-depth questions about their

simulation program. The second survey (Appendix 2) was also developed by the SIPS members and sent

in February, 2020 to those people identified in the first survey as using simulation in their PT program.

This more in-depth survey was cued to describe simulation use within the context of simulation best

practices, as described by International Nursing Association for Clinical Simulation and Learning

(INACSL)[1-8] and Association of Standardized Patient Educator (ASPE).[9] The preliminary report that follows

is based upon the results of our two surveys conducted with CAPTE accredited PT education programs.

Charge 1: Investigate and describe the current use of simulation within physical therapist and other related health professionals education programs as it relates to or may inform physical therapist education.

To address Charge 1, the ACAPT Strategic Initiative Panel on Simulation (ACAPT SIPS) created two surveys to gather information about current use of simulation-based learning in physical therapist (PT) education programs in the United States. The intent of the panel is not to describe simulation in other professions, but to learn from simulation practice in other professions to inform PT education, which led us to only survey PT education programs. The first survey was sent to all 236 accredited PT program directors in the United States listed in the Directory of Programs on the Commission on Accreditation in Physical Therapy (CAPTE) website at the time of survey creation (Appendix 1). The purpose of this brief survey was to gain a broad perspective of how many PT education programs educate through any form of simulation, and to determine the best person(s) at each institution to answer more in-depth questions about their simulation program. The second survey (Appendix 2) was sent to those people identified in the first survey as educating with simulation in their PT program. This more in-depth survey aimed to describe simulation within the context of simulation best practices, as described by International Nursing Association for Clinical Simulation and Learning (INACSL)[1-8] and Association of Standardized Patient Educator (ASPE).[9]

Survey 1 Results

Survey 1 was sent to all program directors (N=236 programs), and 143 unique responses were returned, yielding a 61% response rate (Figure 1). Fifty-two percent of respondents were from a private institution. Respondents represented a range of locations; including 57% urban, 26% suburban and 15% rural. The respondents represented all geographic regions and were representative of all PT programs across the US. (Table 1) Forty-one percent of responding institutions had a medical school, and 83% had a nursing school. Most programs reported having a simulation center at their institution (81%), and an

additional 5% were affiliated with a simulation center. Ninety-two percent of programs reported some form of simulation use in their PT program, with 67% reporting use of standardized patients.

Survey 2 Results

Program Data

Survey 2 was sent to 136 participants who provided complete contact information data from Survey 1, and 81 surveys were returned fully completed, with a 60% response rate for fully completed surveys. However, 105 people started the survey. As a result, the number of people responding to each item on the survey varied as some respondents answered only some questions. This difference was furthered by branching logic embedded in the survey. Therefore, we incorporated all data into the analysis to maximize reporting. Each question was analyzed based upon the number of responses for that individual item.

Similar to Survey 1, Table 1 demonstrates that Survey 2 included respondents from all geographic regions the country. Participating programs reported an average cohort size of 54 students (range 28 – 120). The respondents represented both public (39%) and private (42%) institutions. These data suggest that our sample for the second survey is fairly representative of accredited PT programs across the U.S.

Simulation Center Data

Ninety-one of 99 respondents (92%) reported access to a simulation center, and 92% of those respondents reported that the simulation center was located on their campus. Nursing (32%) was the department most commonly reported to administer the simulation center, but 48% reported administration was central or across multiple departments/schools. Only 28% of simulation centers were affiliated with a medical center. Additionally, only 36% were affiliated with a nursing school and

37% were affiliated with a nursing and medical school (Table 2). No direct monetary costs for using the simulation center were reported by 57% of respondents, while 34% reported a direct cost for use of the facility. Only 15% of respondents reported that their simulation center was accredited by the *Society for Simulation in Healthcare* while 56% reported not knowing the accreditation status of their simulation center.

Simulation centers provided support in the form of information technology (IT), simulation technician/specialist and scheduling for 60-75% of programs responding. The remaining PT programs provided those services on their own. In contrast, simulation case design (sim center 46%/PT program 54%), standardized patient training (sim center 58%/PT program 43%), faculty professional development (sim center 53%/PT program 47%) and debriefing support (sim center 50%/PT program 50%) were supplied about equally by the simulation center and the PT program.

Twelve programs reported using augmented reality (combination of reality and overlay of digital information[10]), 27 programs reported the use of computer-based simulation (real-life processes confined to a computer[10]), and 10 reported the use of virtual reality (use of computer to create interactive 3-dimensional world[10]). It is important to note these findings were at the completion of data collection in October 2019, and these modalities may have increased since due to the COVID-19 pandemic. Seventy-three programs reported using manikin-based simulation with this occurring most frequently in a simulation center. Sixty-four programs reported using part-task trainers (device designed to train a specific task or skill[10]).

Approximately 60 programs provided simulation-based learning experiences using individuals with a disorder/condition of interest (e.g. person with a history of stroke or a spinal cord injury) in their simulations. The majority of those simulations occurred within the PT program (n=51/60) versus the simulation center. A similar number of programs (n=60) reported the use of standardized patients in simulation experiences with the occurrence equally divided between the simulation center and the PT

program. Sixty programs reported the use of embedded participants during simulation, with the use

equally divided between the simulation center and the PT program. Embedded participants are trained

individuals who play a scripted part in a simulation, e.g. a family member, nurse or other member of the

healthcare team.

Simulation Coordinator/ Facilitator Results

Respondents reported a range of 6-31 (median 12) core faculty members at their respective

institutions, of which a range of 1-15 (median 4, mode=2) were involved in the delivery of simulation-

based education. This translated to most institutions having a few simulation champions, with most

faculty not using or participating in simulation-based learning activities (SBLE). Most respondents (73%)

received some form of workload credit for participation in SBLE. An average of 2 of each institution's

core faculty have some form of training in simulation (range 0-15, median 1, mode 0), but the mode

indicated many institutions do not have any faculty with formal training in simulation. (Table 3) The lack

of training is further substantiated by the data reported in Table 4, which revealed that 40-50% of the

primary instructors in simulation were not trained in many of the elements required for the use of

simulation following best practices, and 21% had no training in simulation at all. For example, 47% of

primary simulation faculty had no training in simulation facilitation, 46% had no training in simulation

design, and 44% did not have training in case design. For those that did have training, it came from a

variety of sources, as outlined in Table 5. The largest number of faculty primarily responsible for

simulation coordination received training from their institution (48%) or were self-taught (37%). We do

not know if these modes of training were standardized, and/or whether they were based on best

practices in simulation design and delivery as described by INACSL.

Simulation-based Learning Experiences (SBLEs)

Physical therapy education programs are incorporating SBLEs in a variety of ways in their curriculum. Forty-five percent of respondents reported more than 5 simulation experiences (median 10, range 6- 28 experiences), and an additional 41% had 3-5 experiences; i.e. 86% of the responding PT programs include at least 3 SBLEs during the course of their program. Additionally, 55 (69%) programs reported plans to expand the use of simulation in their PT program, whereas 25 (31%) reported they do not have plans to expand the use of simulation in their program.

In addition to the quantitative data, respondents were asked to answer the open-ended question: *What is the one greatest benefit of using simulation-based learning experiences in your PT curriculum?* Of the 63 individuals who provided responses, there were 4 notable consistencies:

1) 21 described the greatest perceived benefit of simulation to be preparation for clinical experiences, including improved student self-confidence/self-efficacy prior to clinical experiences.

2) 17 individuals related to the opportunity to provide experiential learning through an authentic learning environment.

3) 11 respondents noted the ability to challenge and enhance clinical decision making through simulated learning.

4) 8 individuals described how simulation allows for individualized learner assessment and feedback, including the affective domain of learning.

Relatively fewer respondents commented on the additional benefits of providing exposure to the ICU and other patient populations that students may not have an opportunity to work with during clinical education experiences, the ability for students to safely learn from their mistakes in a low stake environment, and enhanced reflective practice. Two individuals identified the greatest benefit of simulation as an opportunity for interprofessional education or psychomotor skills practice.

The following content areas were most often described as the focus of the SBLEs: cardiovascular and pulmonary (89%), communication skills (73%), neurologic (70%), musculoskeletal (64%), and ethics/professionalism (50%). The SBLEs were predominantly completed in a simulated acute care (94%), intensive care unit (61%), or outpatient (57%) settings. Ninety-six percent of DPT programs provided formative assessments following SBLEs, while 51% included summative assessment.

Sixty-nine percent of PT programs incorporated interprofessional (IP) SBLE into their programs. However, 65% of responding programs reported that IP SBLEs comprised less than 25% of their total simulations. Most IP SBLEs incorporated students from nursing and/or occupational therapy programs. See Table 6 for a full list of professions in which the programs engaged in IP SBLE.

The respondents indicated several barriers to implementing SBLEs in physical therapy curricula (see Table 7). The most commonly identified barriers included time related to faculty availability and schedule, as well as space/facility constraints and curricular constraints. Only 25% identified a lack of training as a limitation, which is notable, considering that 40-50% of the faculty coordinating SBLEs indicated that they did not have adequate training in all aspects of simulation design and delivery.

Summary:

- The sample was representative of all PT education programs across the US.
- 92% of programs reported some form of simulation used in their PT program
- 92% of programs reported access to a simulation center.
- 57% reported no direct costs for using the simulation center
- Simulation centers provide a substantial amount of support for SBLE in PT
- The largest number of faculty primarily responsible for simulation coordination received training from their institution (48%) or were self-taught (37%).
- 21% of faculty responsible for simulation reported having no training at all.
- Many institutions did not have any faculty with formal training in simulation.
- Only 25% of respondents identified a lack of training as a limitation, which is notable, considering that 40-50% of the faculty coordinating simulations identified that they did not have adequate training in all aspects of simulation
- 86% of the responding PT programs included at least three SBLEs during the course of their program.
- 69% of programs reported plans to expand the use of simulation in their PT program.
- Most commonly identified barriers to implementing SBLEs included time related to faculty availability and schedule, as well as space/facility constraints and curricular constraints.

- 73% of faculty reported receiving workload credit for delivering SBLE
- Augmented reality, virtual reality, and computer-based simulations are in limited use at this time.
- Standardized patients were used by a majority of respondents.

Charge #2: Describe models/best practices for the use of simulation within physical therapist education programs.

While there is some PT literature indicative of best practices for simulation delivery in PT education, there is no comprehensive guidance document specific to the use of simulation in physical therapy education. The Society for Simulation in Healthcare, an organization that serves a wide range of health care professions in efforts to improve performance and reduce errors in patient care through the use of simulation, accepts the standards for best practice in simulation presented by the International Nursing Association for Clinical Simulation and Learning (INACSL).[1-8]   The task force found that contemporary PT literature regarding the use of simulation in PT education provided evidence that the INACSL standards were being followed by PT simulation educators and researchers. We did not see any PT literature that diverged significantly from the INACSL standards. The collective agreement of the panel is that the INACSL and Association of Standardized Patient Educators (ASPE) guidelines should be followed in PT simulation-based education.

International Nursing Association for Clinical Simulation and Learning (INACSL) Guidelines

INACSL[1-8] provides a thorough foundation for how to develop a simulation program, including a description of "Best Practice" (BP) for the use of simulation in healthcare education using 8 criteria with required elements embedded within each criteria. The 8 criteria are *simulation design, outcomes and objectives, facilitation, debriefing, participant evaluation, professional integrity, simulation enhanced IPE and operations*. These criteria have been vetted, tested, and provide a basis for the use of simulation across professional healthcare education programs; e.g. physical therapy, occupational therapy and others. Research based upon the use of these guidelines has been used to justify substitution of direct patient clinical hours with hours spent in SBLE in Nursing. We found no evidence that SBLE could be substituted for direct patient clinical hours in the physical therapist education programs in the U.S., but there are 2 studies in Australia that support replacing some clinical time.[11,12]

Association of Standardized Patient Educators (ASPE)

The ASPE[9] provides a thorough description of BP for the use of standardized patients [SP]. While the INACSL standards speak to the broad use of simulation, this group speaks specifically to the BP for the use of SP during simulation. The standards identify five domains**:** *safe work environment; case development; SP training for role portrayal, feedback, and completion of assessment instruments; program management, and professional development.* The domains are divided into principles which are elucidated by key practices that offer practical guidelines for desired outcomes and safe simulation practices. These standards were developed to be used in conjunction with the INACSL standards.

Survey Data from U.S. Physical Therapist Education Programs

We found evidence in our survey of physical therapist education programs that several of the BP from INACSL and ASPE were addressed by many, but not all of the respondents. The survey data we received on use of SP in SBLE suggests that the majority of respondents reported following various elements of the ASPE guidelines for BP; e.g. working conditions, principles of confidentiality, training of SP prior to participation. We found those guidelines were utilized 68-100% of the time during simulation in the majority of physical therapist education programs, but 20-25% of programs reported never or rarely following the BP from ASPE.

According to the INACSL BP of Simulation Design, a needs assessment should be performed prior to creating each new SBLE. Our survey suggests that only about 45% respondents perform a needs assessment prior to creating a new SBLE. Materials for the SBLE were provided to the students prior to simulation about 90% of the time. The INACSL Simulation Design BP states that all SBLE should be pilot-tested prior to utilization, but only about 30% of respondents reported doing a pilot test. The Simulation Design BP states that learning objectives should be assessed following simulation. Our survey data suggests that assessment of learning objectives only occurs about 57% of the time and only 37%

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reported using any form of standardized outcome measure. Debriefing should follow the SBLE and it is considered to be a significant part of the learning experience when following the INACSL debriefing BP. The length of the debriefing is suggested to be at least as long as the SBLE and the debriefing should be student-centered. While 92% of respondents reported using debriefing and 96% of those reported student-centered debriefing, 43% spent less time in debriefing than in the SBLE. (See Table 8)

Summary:

- BP for the use of simulation and the use of standardized patients have been published by INACSL & ASPE
- As these BPs apply to simulation in PT education, there is no need for the development of BP standards for simulation specific to PT education.
- BP for the use of standardized patients were rarely or never followed by about 20-25% of respondents
- BP for the use of debriefing were not followed by 43% of respondents
- Assessment of learning objectives following simulation only occurred in 57% programs and only 37% reported the use of a standardized outcome measure.

Charge 3: Explore the role of simulation to meet accreditation standards and required elements, particularly those curriculum elements related to clinical education and interprofessional education.

The ACAPT SIPS Panel was charged with investigating the potential of simulation to meet accreditation standards and required elements. To start, the panel reviewed the current stance on simulation education to meet accreditation standards within PT education. Based on the Standards and Required Elements for Accreditation of Physical Therapist Education Programs supplied by CAPTE, "Integrated experiences cannot be satisfied with patient simulations or the use of real patients in class; these types of experiences are too limited and do not provide the full range of experiences a student would encounter in an actual clinical setting."[13] Simulation, however, can be a teaching modality to help meet a broad range of program goals or objectives within PT education programs similar to other health profession education programs that do not have a prescriptive approach to simulation.

Simulation is undoubtedly a learning methodology that can be designed to prepared students to achieve outcomes required for the initial practice of physical therapy. However, members of the SIPS consider simulation to be a teaching strategy that should be used in conjunction with and to augment other teaching strategies in order to maximize PT student learning outcomes. A consensus of SIPS members believed there were relatively few of the elements in CAPTE standard 7 that could not be addressed by appropriately designed simulation scenarios or activities. However, the SIPS members did not believe the singular use of simulation was a sufficient approach in silo for achieving any of the elements in CAPTE Standard 7. Simulation is a learning experience that can be designed to prepare students to achieve outcomes required for initial practice of physical therapy, but SIPS members believe the best approach would be to integrate simulation with other teaching strategies and approaches to optimize PT student outcomes for safe and effective practice. Simulation can be considered as a method of assessment as well, and can augment traditional assessments used in a didactic environment.

However, conducting simulation as an assessment should only be considered if the students have had opportunities to practice in this environment prior to the assessment.

To determine other opportunities for PT education to use simulation, the panel completed a review of the literature and reviewed the accreditation standards of other health professions education programs. Our goal was to determine if other professions were using simulation in a way that could be transferred to physical therapy education. We recognize that this information can be used as a guide, but also realize there are important distinctions between physical therapy clinical education and the clinical training structure of other professions, as well differences in autonomy and scope of practice. We found that most professions are silent regarding simulation experiences in the curriculum to meet their accreditation standards, despite using it frequently as a teaching modality. Nursing, occupational therapy, and pharmacy are exceptions, i.e. they include the use of simulation in their accreditation standards.

Occupational Therapy (Accreditation Council for Occupational Therapy Education- ACOTE)

Occupational therapy education requires student participation in Level I and Level II fieldwork experiences. According to the Accreditation Council for Occupational Therapy Education, the goal of a Level I fieldwork experience is to "introduce students to fieldwork, apply knowledge to practice, and develop understanding of the needs of clients."[14] In order to meet this goal,

> "Level I fieldwork may be met through one or more of the following instructional methods: Simulated environments, Standardized patients, Faculty practice, Faculty-led site visits, or Supervision by a fieldwork educator in a practice environment."[15] During these Level I fieldwork experience, the OT student may be supervised by currently licensed or otherwise regulated occupational therapists and occupational therapy assistants, psychologists, physician assistants, teachers, social workers, physicians, speech language pathologist, nurses, or physical therapists."

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This varies greatly from physical therapy student clinical education experiences. CAPTE standards require that "the clinical education component of the curriculum includes a minimum of 30 weeks of full-time clinical education experiences."[13] A clinical education experience is defined as

> that aspect of the professional curriculum during which student learning occurs directly as a function of being immersed within physical therapist practice. These experiences comprise all of the formal and practical "real-life" learning experiences provided for students to apply classroom knowledge, skills, and professional behaviors in the clinical environment.[13]

During full-time clinical education experiences, PT students must be supervised by clinical instructors who are licensed PTs "with a minimum of one year of full time (or equivalent) post-licensure clinical experience, and are effective role models and clinical teachers."[13]

Current challenges in both physical therapy clinical education and occupational therapy fieldwork include a significant shortage of clinical education sites, which has been heightened in the midst of the COVID-19 pandemic. In response to the challenge of providing sufficient sites for clinical education, the AOTA and ACOTE allows for simulation in lieu of a clinical placement for a student's Level 1 Fieldwork experience only.[14,16] This is an effective solution for OT education as the goals of the level I fieldwork experience relate to introduction to practice. The OT accreditation standards do not require this experience to occur in a clinical environment under direct supervision of a licensed professional. The experience is supplementary to their coursework and most Level I fieldwork experiences are largely observational in nature. This is a significant difference from full time clinical experiences required within PT education where the students have specific objectives related to skill development with a growing level of independent practice. CAPTE has not approved the use of simulation to replace full-time clinical experiences.

Nursing

Nursing has perhaps the strongest evidence for replacing clinical time with simulation,[17] however, it is difficult to translate these findings with PT education due to the many degrees available (bachelors, masters, and doctoral level), variability in accreditation standards, and differences in practice. That being said, Hayden et al.[17] found no difference in outcomes between students who spent the traditional amount of time in clinical experience compared with those that substituted 25% or 50% of clinical time with simulation experiences in Bachelor of Science in Nursing (BSN) students. Based on the results of this study, the National Council of State Boards of Nursing (NCSBN) recommended accepting activities completed in a simulated environment for up to 50% of required clinical time. Each state board makes a determination for the allowances in their state. To date, there is range of allowances per state, from 0% to up to 50% replacement of clinical time (Table 9). The NCSBN is loosely analogous to The Federation of State Boards of Physical Therapy (FSBPT) in physical therapy. While each state may have small differences in requirements to become licensed (e.g. jurisprudence exam), the clinical education requirements are standardized across states and prescribed by CAPTE for PT education.

Despite the evidence provided by the NCSBN, the Commission of Collegiate Nursing Education (CCNE) did not include simulation in its language in the updated standards for accreditation in 2018 for baccalaureate or graduate programs. Similar to CAPTE, CCNE includes simulation as a "teaching-learning practice",[18] in addition to other modalities like lecture, flipped classroom and case studies. CCNE also describes clinical practice more broadly than CAPTE:

> CCNE defines clinical practice experiences as planned learning activities in nursing practice that allow students to understand, perform, and refine professional competencies at the appropriate program level. Clinical practice experiences may be known as clinical learning opportunities, clinical practice, clinical strategies, clinical activities, experiential learning strategies, or

practice…Clinical practice experiences are not limited to clinical patient care settings. Clinical

practice experience also refers to any nursing intervention that influences health care

outcomes.[18]

CCNE, however, does specifically address simulation in its National Task Force (NTF) Criteria, which are

the Criteria for Evaluation of Nurse Practitioner Programs. The criteria states "there is an expectation

that a minimum of 500 direct patient care clinical hours is needed specifically to address NP

competencies in the preparation of the NP role and population-focused area."[19] The criteria further

elaborate that "direct patient care involves assessment, diagnosis, treatment, and evaluation of a real

client/patient - not simulations or lab exercises with trained patient actors."[19]

The American Association of Colleges of Nursing (AACN), the nursing counterpart to American

Council of Academic Physical Therapy (ACAPT), created the Essentials for Baccalaureate, Master's and

DNP education. The goal of the Essentials is to provide a standardized framework for schools to use to

build nursing curricula. The Baccalaureate Essentials state that "simulation experiences augment clinical

learning and are complementary to direct care opportunities"[20] and the Master's Essentials state

Learning experiences also can occur using simulation designed as a mechanism for verifying

early mastery of new levels of practice or designed to create access to data or healthcare

situations that are not readily accessible to the student. These experiences may include

simulated mass casualty events, simulated database problems, simulated interpersonal

communication scenarios, and other new emerging learning technologies. The simulation is an

adjunct to the learning that will occur with direct human interface or human learning

experience.[21]

This language is again similar to CAPTE in that simulation is a learning modality that may assist with clinical preparation. It is important to note that the Essentials were last updated in 2008 and 2011 respectively, which may account for the lack of inclusion of simulation in its language.

Overall, there is a large range of clinical training requirements for the varying levels of nursing education. Within this variety, some of nursing clinical training is related to task-specific skill mastery. Some of these task-specific skills are the focus of simulation-based learning objectives, e.g. intravenous insertion. While these psychomotor skills may be practiced in a simulated environment, nursing continues to require education in a direct patient care environment to capture the full complement of clinical skills required to deliver quality nursing care.

Pharmacy (American Association of Colleges of Pharmacy- AACP)

Pharmacy education requires 300 hours of interprofessional education (IPE). AACP allows for simulation activities to account for 60 of the 300 hours (20%) of the IPE requirement. However, the students still must have 150 hours of IPE experiences in community and institutional health-systems settings (Standard 12.7). In pharmacy education, similar to physical therapy education, simulation is recognized as a teaching modality, along with other experiential learning and didactic or classroom activities.

Panel Recommendations

While currently not accepted by CAPTE as a replacement for clinical education experiences, PT education has an opportunity to follow the lead of fellow health professions education programs in using simulation as a tool to better prepare students for clinical learning. Simulation can be a supplement to clinical education when clinical learning opportunities that provide significant depth and breadth are not available. In this vein, PT education could supplement clinical education with simulation

but the panel did not find sufficient evidence to recommend replacement of the 30-week minimum of

direct clinical experience or time. Simulation can be provided to all students for a uniform exposure to

specific clinical experiences, especially those that are high risk and low frequency experiences or IPE.

However, for success and sustainability the physical therapy education community needs to ensure that

faculty are properly trained in accordance with best practice guidelines to deliver simulation in the most

effective manner prior to broad adaptation.

Summary:

- CAPTE supports simulation as a teaching or assessment method modality to meet program goals and objectives
- ACOTE supports simulation for the replacement of Level I fieldwork, which is an observation experience intended to introduce students to OT
- NCSBN recommends replacement of up to 50% of clinical time with simulation. CCNE and AACN recommend the use of simulation as a teaching modality. NTF does not support replacing clinical time with simulation.
- AACP states that up to 20% of the IPE requirement can be met with simulation.
- PT education can benefit from simulation to prepare students for clinical experiences or to assess performance, and could supplement clinical education with simulation. However, the panel did not find sufficient evidence to recommend replacement of direct clinical experience or time.

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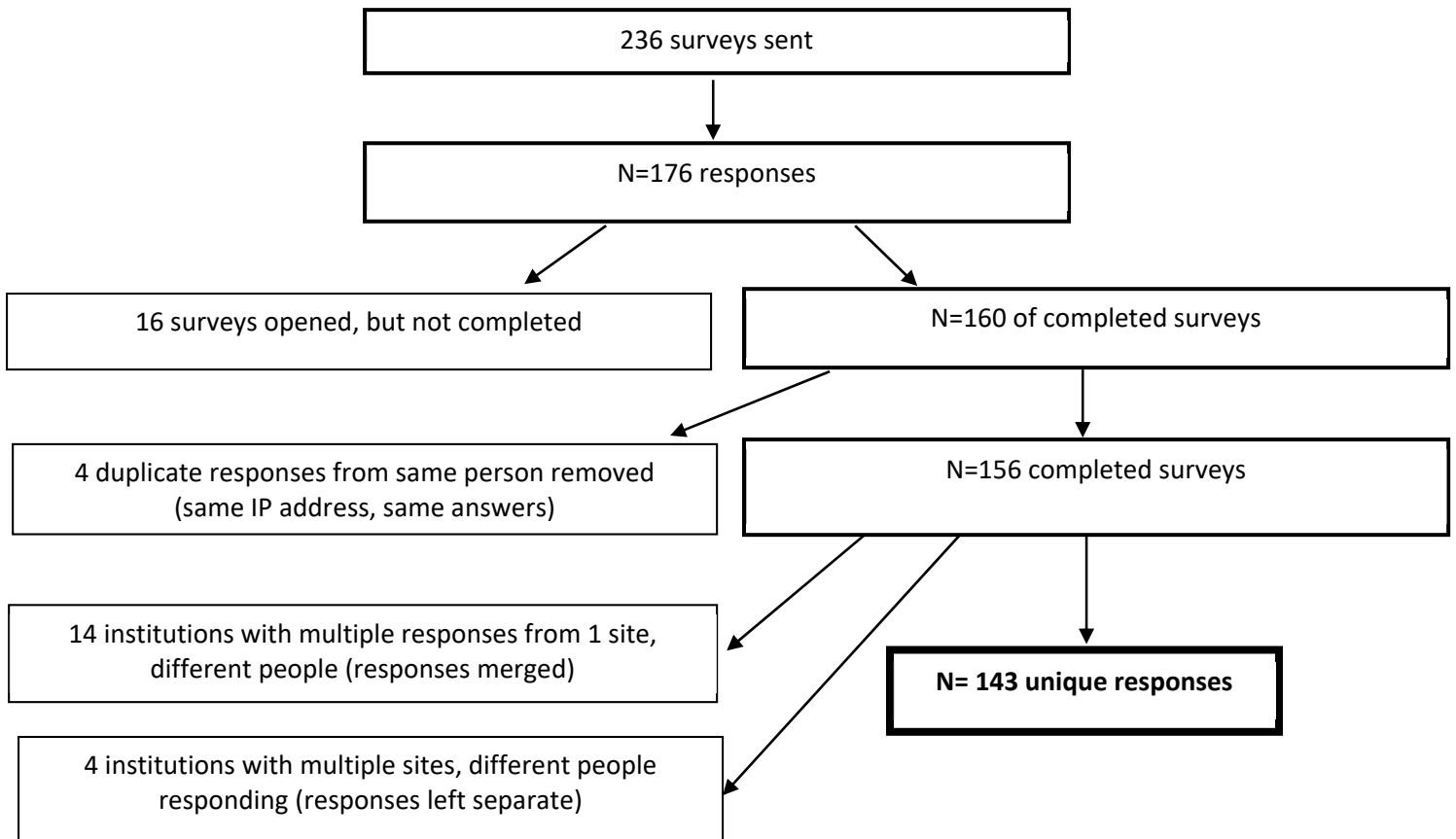
Figure 1: Survey 1 Responses

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                    ┌─────────────────────────────────────┐
                    │          236 surveys sent            │
                    └─────────────────────────────────────┘
                                     │
                                     ▼
                    ┌─────────────────────────────────────┐
                    │          N=176 responses             │
                    └─────────────────────────────────────┘
                       ↙                        ↘
┌──────────────────────────────────┐  ┌─────────────────────────────────┐
│ 16 surveys opened, but not       │  │  N=160 of completed surveys     │
│ completed                        │  │                                 │
└──────────────────────────────────┘  └─────────────────────────────────┘
                       ↙                        │
                                                ▼
┌──────────────────────────────────┐  ┌─────────────────────────────────┐
│ 4 duplicate responses from same  │  │  N=156 completed surveys        │
│ person removed (same IP address, │  │                                 │
│ same answers)                    │  └─────────────────────────────────┘
└──────────────────────────────────┘       ↙            │
                                                         ▼
┌──────────────────────────────────┐  ┌─────────────────────────────────┐
│ 14 institutions with multiple    │  │   N= 143 unique responses       │
│ responses from 1 site, different │  └─────────────────────────────────┘
│ people (responses merged)        │
└──────────────────────────────────┘

┌──────────────────────────────────┐
│ 4 institutions with multiple     │
│ sites, different people          │
│ responding (responses left       │
│ separate)                        │
└──────────────────────────────────┘
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Table 1: Geographical Regions represented by Survey Respondents

Region	Survey 1 %	Survey 2 %
Midwest (IA, IL, IN, KS, MI MN, MO, NE, ND, OH, SD, WI)	35 (24%)	15 (19%)
Northeast (CT, MA, ME, NH, NJ, NY, PA, RI, VT)	41 (28%)	23 (29%)
Southeast (AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, SC, TN, VA, WV)	35 (24%)	24 (30%)
Southwest (AZ, NM, OK, TX)	12 (8%)	7 (9%)
West (AK, CA, CO, HI, ID, MT, NV, OR, UT, WA, WY)	16 (11%)	10 (13%)
Geographic region data not reported	1 (5%)	0 (0%)

Table 2: Survey 2 Simulation Center Affiliations

Affiliation	Percent
Medical school	6%
Nursing school	36%
Both medical and nursing school	37%
No affiliation with medical or nursing schools	21%

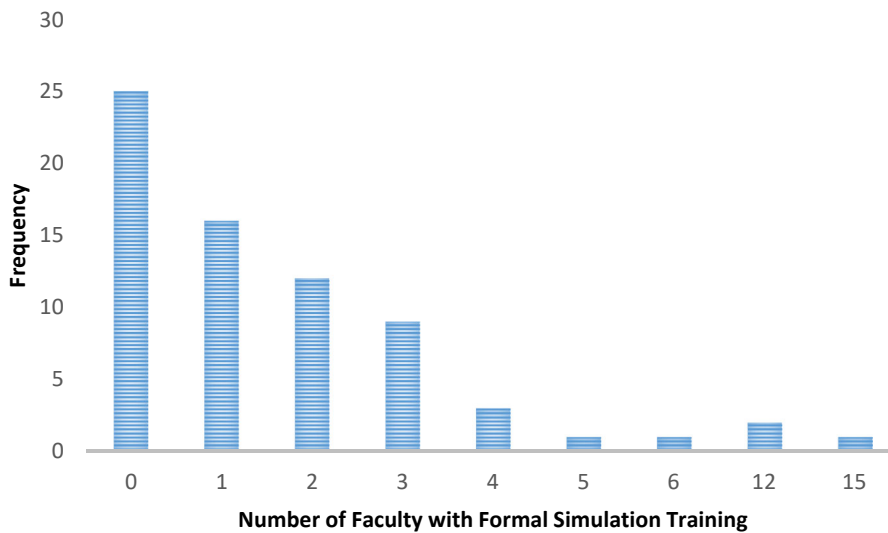Table 3: Frequency of Faculty Trained in Simulation

Table 4: Training for Primary Simulation Instructor

Type of Training for Primary Instructor	Number of Respondents (%)
Case design	45 (56%)
Debriefing	54 (67%)
Moulage	7 (9%)
Pre-briefing	39 (48%)
Simulation design	44 (54%)
Simulation facilitation	43 (53%)
Technology specific training	33 (41%)
No training at all	17 (21%)

Note: The types of training listed are specific items contained in the INACSL Standards of Best Practice in Simulation

Table 5: Simulation Coordinator, Facilitator and Debriefer Training

Simulation Training	Simulation Coordinator	Simulation Facilitator	Lead Debriefer
Center for Medical Simulation or equivalent course	12 (15%)	13 (16%)	11 (14%)
Vendor sponsored training (Laerdal, 3-D Med, Guamard, etc)	12 (15%)	11 (14%)	5 (6%)
University sponsored training	39 (48%)	34 (42%)	27 (33%)
Self-trained	30 (37%)		
Other	5 (6%)	6 (7%)	6 (7%)
No training	12 (15%)	19 (24%)	20 (25%)
Continuing Education Related to Simulation	**Simulation Coordinator**	**Simulation Facilitator**	**Lead Debriefer**
CSM- Pre Conference Course	9 (11%)	10 (12%)	8 (10%)
CSM- Regular programming	20 (25%)	13 (16%)	12 (15%)
INACSL Conference	1 (1%)	3 (4%)	2 (3%)
Society for Simulation in Healthcare Annual Conference	16 (20%)	17 (21%)	12 (15%)
TeamSTEPPS	18 (22%)	15 (19%)	11 (14%)

Table 6: Professions Involved in Interprofessional Education Simulation Based Learning

Profession	Number of Respondents (%)
Nursing	41 (72%)
Occupational Therapist/Occupational Therapy Assistant	32 (56%)
Medicine	25 (44%)
Physician Assistant	18 (32%)
Pharmacy	16 (28%)
Communication Sciences and Disorders, Speech-Language Pathologists	15 (28%)
Social Work	15 (26%)
Nurse Practitioner	12 (21%)
Counseling	9 (16%)
Respiratory Therapy	7 (12%)
Other (genetic counseling, dentistry, athletic training, nutrition, child and family services)	5 (7%)
Education	3 (5%)

Table 7: Barriers to Implementing Simulation Based Learning Experiences

Barrier	Number of Respondents (%)
Time- faculty availability	66 (82%)
Time- scheduling space (especially with IPE)	61 (75%)
Curricular constraints	44 (54%)
Space/facility constraints	43 (53%)
Time- student availability	37 (46%)
Cost	32 (40%)
Lack of education/training	20 (35%)
None	2 (3%)
Other	0

Table 8: Inclusion of Simulation Design BP[1] in Simulations

Simulation Design BP Criterion (INACSL)	Topic	Number (%) Who Complete Criterion
1	Conduct needs assessment	38 (48%)
2	Measurable objectives	78 (93%)
3	Structure format of SBLE based on purpose, theory, and type of experience	NI
4	Create scenario or case to provide context to SBLE	NI
5	Incorporate multiple types of fidelity to improve realism	NI
6	Student-centered evaluation	70 (96%)
7	Include pre-brief	NI
8	Debriefing	77 (93%)
9	Conduct an evaluation	33 (40%)
10	Provide preparation materials	76 (91%)
11	Pilot test SBLE	25 (30%)

NI= Item not included as a question on survey

Table 9: Replacement of Clinical Hours with Simulation in Nursing by State (BSN)

State(s)	Replacement Percentage
GA	0%
CA, IL, IN, VT, VA	Up to 25%
OK	Up to 30%
MS	25%-50%
AR, CO, DE, FL, IA, KY, LA, ME, MI, MN, NV, NH, NM, NC, SC, SD, TN, TX, WA, WI	Up to 50%
AL, AK AZ, CT, HI, ID, KS, MD, MA, MO, MT, NE, NJ, NY, ND, OH, OR, PA, RI, UT, WV, WY	No information/state board is silent

Appendix 1: Survey 1
Program Director Survey -- ACAPT Panel on Simulation

Q1 On behalf of the ACAPT Panel on Simulation in Physical Therapy, we request all Program Directors or their representatives to participate in our data gathering process. This is the first of two surveys gathering needed information on the integration of simulation-based education within your DPT curriculum. This first survey asks a few questions about your institution and program, does not include any protected information, and should only take 5 minutes or less to complete. As part of this first survey you will be asked to provide contact information regarding the best person to complete our upcoming, second survey which will ask in more detail about the use of simulation-based education in your curriculum. If you indicate in this brief survey you do not integrate simulation-based education in your curriculum, your program will not receive the second survey. However, it is important for you to still complete this first, brief survey in full to provide us with general information regarding simulation-based education use in physical therapy programs.

Thank you in advance for your time,
Panel on Simulation in Physical Therapy
Brad Stockert, PT, PhD, Chair
Jacque Bradford, PT, DPT, EdD
Sharon Gorman, PT, DPTSc
Kristin Curry Greenwood, PT, DPT, EdD
Kelly Macauley, PT, DPT, EdD
Amy Joyce Nordon-Craft, PT, DSc
Myles Quiben, PT, DPT, PhD
Jason Rucker, PT, PhD
Nicki Silberman, PT, DPT , PhD
Shawne E. Soper, PT, DPT, MBA, ACAPT Coordinator

If you have questions about this survey, please contact:
Dr. Kristin Greenwood (k.greenwood@northeastern.edu) or Dr. Sharon Gorman (sgorman@samuelmerritt.edu).
If you have questions regarding the Panel on Simulation in Physical Therapy, please contact Dr. Brad Stockert, Chair of Panel on Simulation in Physical Therapy (stockert@csus.edu).

Q2 Your entry-level, CAPTE accredited, DPT program is housed at what institution?

_____

Q3

Please let us know if you use the following in your curriculum.

Simulation is defined by Society for Simulation in Healthcare as:
A technique that creates a situation or environment to allow persons to experience a representation of a real event for the purpose of practice, learning, evaluation, testing, or to gain understanding of systems or human actions.

Simulation-based education is defined by the Society for Simulation in Healthcare as:
An array of structured activities that represent actual or potential situations in education and practice. These activities allow participants to develop or enhance their knowledge, skills, and attitudes, or to analyze and respond to realistic situations in a simulated environment. (Pilcher, Goodall, Jensen, Huwe, Jewell, Reynolds, and Karlson, 2012).

Standardized patients as defined by the Society for Simulation in Healthcare are:
Persons who have been carefully coached to simulate an actual patient so accurately that the simulation cannot be detected by a skilled clinician. In performing the simulation, the standardized patient presents the gestalt of the patient being simulated; not just the history, but the body language, the physical findings, and the emotional and personality characteristics as well (Barrows 1987).

Do you use the following types of simulation activities in your curriculum?

	Yes (1)	No (2)
Simulation (1)	○	○
Simulation-based education (2)	○	○
Standardized patients (3)	○	○
Other form(s) of simulation (4)	○	○

Skip To: End of Block If Do you use the following types of simulation activities in your curriculum? [No] (Count) = 4

Q5 In order for the Panel to gather the most accurate information, we are asking for one representative from your institution to complete a future survey regarding your curriculum's use of simulation.

Please provide the **name** of the BEST person in your program to complete this future survey.

_____

Q6 Please provide the **email** of the person listed above.

_____

Q7 Are you a public or private institution?

○ Public (1)

○ Private (2)

Q8 State your program is located in:

_____

Q9 Do you have any expansion program in another state?

○ Yes (1)

○ No (2)

Display This Question:
   If Do you have any expansion program in another state? = Yes

Q10 If yes, please provide the state(s) of your expansion program(s) here:

_____

Q11 Which best characterizes your primary campus location?

○ Urban (1)

○ Suburban (2)

○ Rural (3)

Q12 If you have expansion program(s), please describe their location(s) as urban, suburban, or rural here.

_____

Q13 Identify your institution using the following Carnegie Classification options (same categories as CAPTE AAR):

○ Doctoral/Research University (1)

○ Research Universities (very high research activity) (2)

○ Research Universities (high research activity) (3)

○ Master's Colleges and Universities (larger programs) (4)

○ Master's Colleges and Universities (medium programs) (5)

○ Master's Colleges and Universities (smaller programs) (6)

○ Baccalaureate Colleges - Arts & Sciences (7)

○ Baccalaureate Colleges - Diverse Fields (8)

○ Special Focus Institutions - Medical Schools and Medical Centers (9)

○ Special Focus Institutions - Other Health Professions Schools (10)

○ Not Classified (11)

Q14 Does your institution have a medical school?

○ Yes (1)

○ No (2)

Q15 Does your institution have a nursing school?

○ Yes (1)

○ No (2)

Q16 Does your institution have a simulation center?

○ Yes (1)

○ No (2)

○ No, but we have an affiliation with a simulation center (3)

Q17 Briefly describe the access and/or payment agreements you have with your affiliated simulation center (e.g., easily accessible, pay per hour of use).

_____

End of Block: Demographics

Sim Panel Survey 2

Hello:

You are invited to participate in our study exploring the use of simulation in physical therapist education. This study is being conducted by the ACAPT Strategic Initiative Panel on Simulation in Physical Therapy Education. This is the second survey created by the panel in an attempt to describe the use of simulation in physical therapy education. In this survey, all DPT programs using simulation are being asked to complete this survey to answer questions about simulation-based education. It will take you approximately 10-15 minutes to complete the survey.

Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can choose not to answer the question or withdraw from the study at any point prior to submission. We cannot remove your un-identified data once it is submitted. It is very important for us to learn your opinions.

Your survey responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. If you have questions at any time about the survey or the procedures, you may contact: Jacque Bradford at 901-448-9112 (jbrad15@uthsc.edu), Kelly Macauley at 207-941-7185 (macauleyk@husson.edu), or Brad Stockert, Chair of the Panel, at 916-278-3619 (stockert@csus.edu).

Thank you very much for your time and support. Please start with the survey now by clicking on the **Next** button below.

Background Information on Simulation Space

Do you have access to a simulation center?

◯ Yes

◯ No