Outcomes Assessment

In Physical Therapy Education

Table of Contents

Purpose of the *Outcomes Assessment In Physical Therapy Education Resource*

This document presents the various perspectives on and levels of outcomes assessment as they are present in physical therapist and physical therapist assistant education programs. It also describes how the various elements of assessment might fit together. The information located in this document provides physical therapy education programs, faculty, and researchers with a systematic structure for use in assessing program and graduate outcomes. Please note that use of this document—*Outcomes Assessment in Physical Therapy Education*—is voluntary. The Commission on Accreditation in Physical Therapy Education (CAPTE) does not and will not require use of this guide as part of the accreditation process. The systematic structure provided in the *Outcomes Assessment in Physical Therapy Education* is a cyclic method for gathering and reviewing data and student learning and development outcomes.

Chapter One: Introduction and Background

This chapter presents an overview of student learning and development outcomes assessment, as well as specific applications of outcomes assessment for physical therapist and physical therapist assistant education. It also provides physical therapy education stakeholders with a process to assess outcomes to promote student learning and for continuous program improvement.

Background

In 2005, to better prepare students for the 21st century workforce, the United States Secretary of Education formed the Secretary of Education's Commission on the Future of Higher Education (Commission). In November 2006, the Commission began to explore strategies for streamlining and improving the higher education accreditation process to support innovation, promote consistency in accreditation standards, and to increase accountability and transparency to the public.

Efforts by CAPTE in the area of outcomes assessment presaged efforts in higher education overall. Since the early 1990s, CAPTE and the American Physical Therapy Association (APTA) have been discussing the development and assessment of education program and graduate outcomes. In 2002 and 2006 respectively, CAPTE revised its documents, *Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapist Assistants and Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapists*, expanding the requirements that programs provide evidence on how they assess program and graduate outcomes. Assessment is an ongoing aspect of the educational environment. Within the 10-year accreditation cycle for CAPTE there is an opportunity for every physical therapy education program to develop, renew, and revisit its assessment plan.

CAPTE provides professional accreditation criteria, and APTA developed *A Normative Model of Physical Therapist Professional Education: Version 2004* by a consensus process (first published in 1997 and revised in 2000 and 2004) and *A Normative Model of Physical Therapist Assistant Education* (first published in 1999 and revised in 2007). These documents address key issues confronting physical therapist professional education and physical therapist assistant education, including the need for physical therapy education programs to perform outcomes assessment to meet the expectations of the CAPTE criteria. Outcomes assessment requirements and practices vary among institutions; therefore, it is assumed that the regional accreditation processes address the broader perspective of postsecondary education, and that any physical therapy education program functions within an accredited postsecondary institution.

In March 2005, APTA's Board of Directors charged APTA staff with producing an Education Strategic Plan to identify and address the Vision 2020 goals related to education. The outcomes initiative was targeted by APTA's education stakeholders to be included in Goal 11 of the Education Strategic Plan:

> *Develop leaders in physical therapy academic and clinical education and research with established roles and influences in prominent national and international agencies.*

Contained within this goal is the specific objective:

Develop an educational outcomes assessment model in response to accountability demands for higher education programs.

Numerous other goals in the Education Strategic Plan are associated with outcomes assessment (Goals 1-4, 7, 8, 15-17). Therefore, APTA created the Consulting Group on Uniform Outcomes Assessment (CGUOA). This group was responsible for defining outcomes assessment, articulating a purpose for outcomes assessment, identifying individuals who should be involved in the outcomes assessment process, and suggesting a framework for conducting outcomes assessment for use by physical therapy education programs.

The CGUOA initially met at the APTA offices in Alexandria, Virginia, on March 23 and 24, 2007. All six working group members attended: Bill Andrews, PT, MS, NCS (Elon University), Cathy Bieber Parrott, PT, MS (Youngstown State University), Lorna Hayward, PT, EdD, MPH (Northeastern University), Diane Jette, PT, DSc (University of Vermont), Leslie Portney, PT, DPT, PhD, FAPTA (MGH Institute of Health Professions), and Steve Tippett, PT, PhD, SCS, ATC (Bradley University). Several members of the APTA staff were present: Janet Bezner, PT, PhD, senior vice president for the Education Division; Jody Gandy, PT, DPT, PhD, director of physical therapy education; Mary Jane Harris, PT, MS, director of accreditation; Marc Goldstein, EdD, director of research services; and Ellen Price, PT, MEd, associate director in the Department of Accreditation. Janet Bezner and Karen Paulson, senior associate at the National Center for Higher Education Management Systems (NCHEMS), facilitated the meeting.

The CGUOA convened a second time on October 25 and 26, 2007. This meeting, also attended by Ken Harwood, PT, PhD, CIE, the new vice president of practice and education, resulted in a draft of this document that framed the purpose, components, and suggested processes for outcomes assessment in physical therapy education. The CGUOA acknowledges the work of the Commission on Accreditation for Dietetics Education and the American Dietetic Association (*Outcomes Assessment for Dietetics Educators*, 2002) and the American Association of Colleges of Pharmacy (*A Guide for Doctor of Pharmacy Program Assessment*, 2000), whose outcomes assessment documents influenced the development of *Outcomes Assessment in Physical Therapy Education*. (A complete list of references that informed the development process is included at the end of the document.)

Purpose of Outcomes Assessment

Outcomes assessment is defined as "the systematic collection, review, and use of information about educational programs that is undertaken for the purpose of improving student learning and development" (Palomba & Banta, 1999). A key goal of assessment efforts is determining whether a program is contributing to student growth and development. The emphasis of outcomes assessment is on the greater good of the program, rather than the performance of an individual student. The following statements serve as guidelines for outcomes assessment (modified from Palomba & Banta, 1999, p 21):

- The fundamental purpose of outcomes assessment is improvement of the education program.
- Assessment of student learning and development is a collaborative process.
- Assessment is aligned with the institutional mission.
- Assessment is not used for faculty evaluation.
- Assessment is an ongoing process.
- Assessment as a process is continually evaluated.
- Assessment is related to the curriculum, and the faculty "own" the curriculum.

Outcomes assessment encompasses three primary areas: student/graduate, faculty (as it relates to student learning and development), and program. A culture of outcomes assessment includes faculty and uses a team approach. Focus on outcomes assessment should be sustained over time. Meetings and work are public, driven by a common purpose and a shared vision related to the larger issues of teaching and learning. Perhaps most important, in a culture of outcomes assessment, there is shared ownership and agreement that assessment results will be used to implement necessary changes.

Goals are assessed by a process of establishing expected program outcomes and defining indicators, targets, and thresholds. The outcomes assessment process involves stakeholders consisting of faculty, administrators, professional staff, students, alumni, employers, and community members. It uses authentic and available artifacts to regularly analyze current progress and integrate that information back into the ongoing outcomes assessment process.

Suggested Outcomes Assessment Process for Physical Therapy Education

The model of outcomes assessment presented here for physical therapy education programs parallels Donabedian's (2003) quality assurance framework in health care (Appendix A). The model adopted by CGUOA employs a five-step cyclical process for outcomes assessment in physical therapy education programs. Although it makes the process of assessment explicit and manageable, is not prescriptive. The five steps include: (1) setting goals, (2) developing an assessment plan, (3) implementing the developed assessment plan, (4) analyzing results of assessment, and (5) closing the loop (Figure 1).

Figure 1. Model for outcomes assessment in physical therapy education programs.
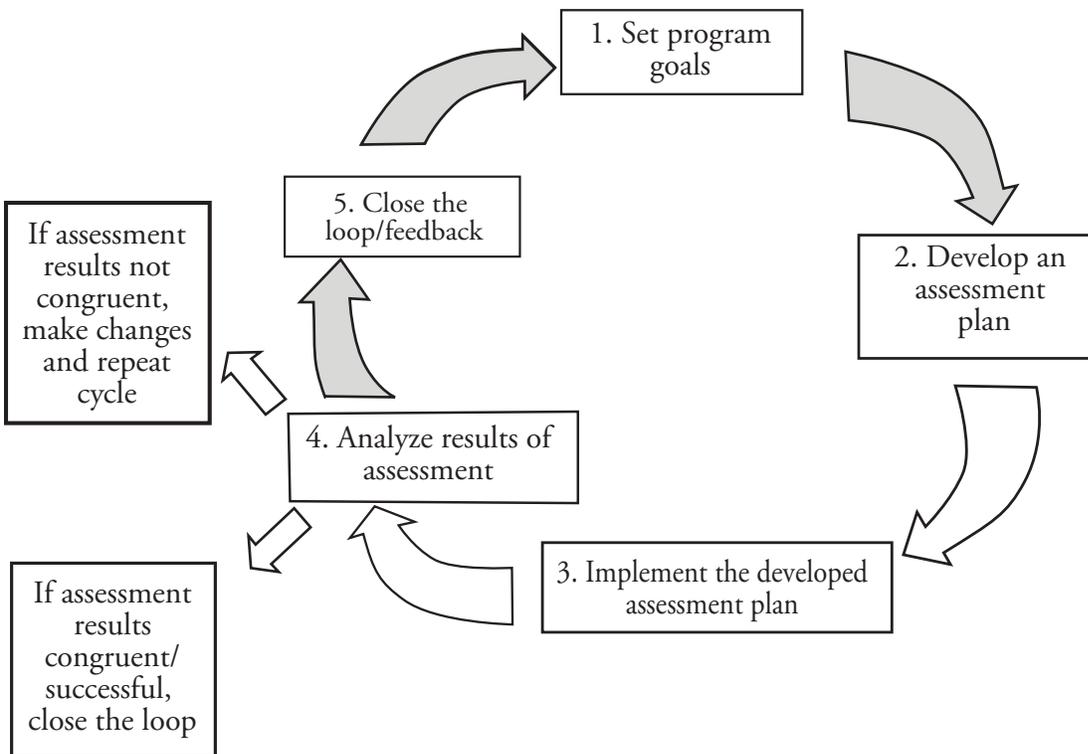
Summary

This chapter has provided a historical perspective of the APTA's efforts in the development of education program outcomes assessment. A suggested structured process for outcomes assessment in physical therapy education programs has been outlined. The remainder of *Outcomes Assessment in Physical Therapy Education* is organized into five chapters that detail each step in the model: goal setting, planning, implementation, analysis, and feedback.

Chapter Two:
The Assessment Team and Setting Program Goals

Following the framework provided in Chapter One, in this chapter, we define the terminology used in this document. Program Goals are identified and a process for development and selection of goals offered. The chapter will end with a section on linking Program Goals to Expected Program Outcomes.

The Assessment Team

Before beginning, an essential step is to decide who or what group will be involved in outcomes assessment for the physical therapy education program. Clearly, all faculty and administrators ultimately will be involved, but decisions must be made regarding who will lead assessment efforts and who has ultimate responsibility to ensure that outcomes assessment is performed. In addition, there should be authority for following through on decisions made. In many cases, programs designate an Assessment Team of faculty and staff members, who report and have authority through the dean of academic affairs. Several roles may exist on an Assessment Team: faculty (assistant, associate, and full professor), academic advisors, career counselors and others from student services, and administrators.

Overview of Terminology

To maximize understanding of the information that follows, a common language was adopted for use in *Outcomes Assessment in Physical Therapy Education*. Based on CGUOA discussions, the following language was agreed upon for the various components of outcomes assessment described in this document. The components are meant to be hierarchical, such that, starting at the lowest level, the target and threshold relate to a specific indicator, which relates to a specific Expected Outcome, which relates to a specific Program Goal.

> Overarching Program Goals (Chapter 2)
>> Expected Outcomes for Program, Faculty, and Graduates/Students (Chapter 2)
>>> Indicators (Chapter 3)
>>>> Targets and/or Thresholds (Chapter 3)

What Are Program Goals?

The first step in outcomes assessment is writing overarching Program Goals. This section will address what goals are, how to write Program Goals, how to select relevant Program Goals, and how Expected Outcomes are developed to assess goal achievement. Huba and Freed (2000) envision the relationship of learning outcomes for an institution, a particular academic program, courses that comprise that program, units within courses, and finally lessons with units (Figure 2). Although specific to learning outcomes, this illustration helps frame how the outcomes or Program Goals of an academic program—the physical therapy education program—are related to academic structures both broader than and included within the program.

Figure 2. Plan for designing and delivery learning outcomes (Huba and Freed, 2000).

Design Backward

←

| Intended Learning Outcomes of the Lesson | Intended Learning Outcomes of the Unit | Intended Learning Outcomes of the Course | Intended Learning Outcomes of the Academic Program | Intended Learning Outcomes of the Institution |

Deliver Forward

→
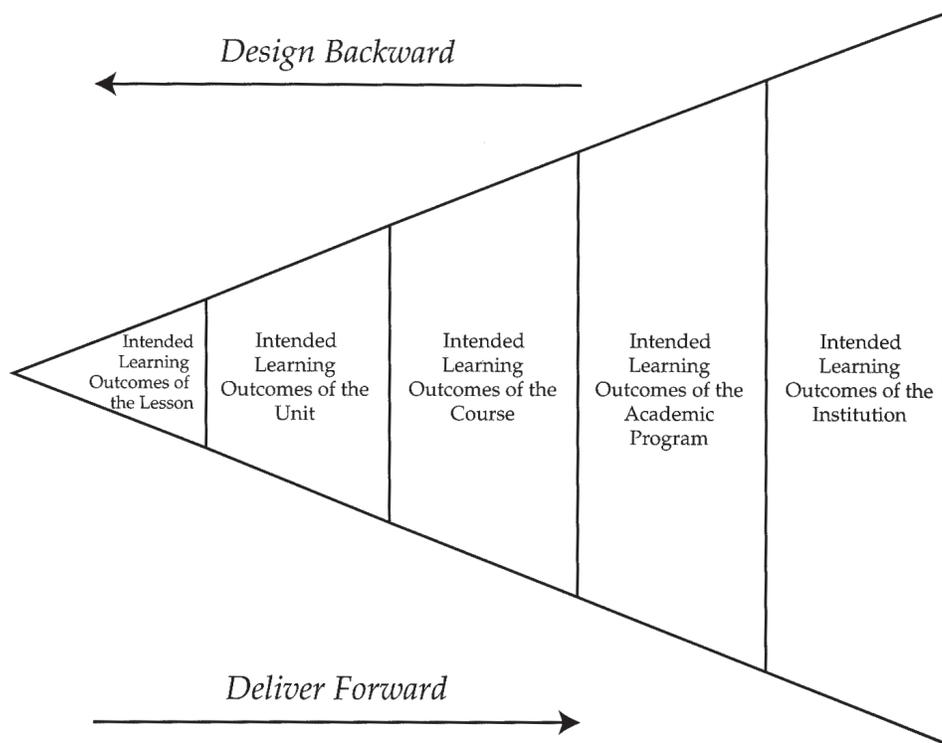
From May E. Huba & Jann E. Freed *Learner-centered Assessment On College Campuses: Shifting the Focus From Teaching to Learning,* 1/e. **Published by Allyn and Bacon/Merrill Education, Boston, MA Copyright© 2000 by Pearson Education. Reprinted by permission of the publisher.**

Overarching Program Goals are broad statements that reflect the desired results that physical therapy education program faculty and students strive to achieve. Goals are realistic and achievable statements expressing what the program must achieve to accomplish its mission (CAPTE). As such, Program Goals should be grounded in both the program's and institution's mission and values to ensure that assessment becomes the process of improving what key stakeholders (primarily faculty and administrators) have decided is important for the institution and program (AAHE, n.d.). This description of Program Goals is consistent with CAPTE's *2006 Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapists* ("P-2. The program has goals that are based on its stated mission") and with CAPTE's *2002 Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapist Assistants* ("1.2.2. The goals and objectives of the physical therapist assistant program support the program's mission and philosophy and are consistent with the mission and philosophy of the institution"). A program's mission is a statement of beliefs that guides planning and operation, describes why the entity exists, and includes the unique features of the entity (Haessig & Potin, 2002, p. 10).

Aligning a physical therapy education program's mission and goals with the institutional mission frames outcomes assessment within the context of what the institution values. This linkage fosters institutional support for outcomes assessment and any resulting quality improvement in physical therapy education programs. This association is illustrated in the next section and throughout *Outcomes Assessment in Physical Therapy Education.* (Haessig & Potin, 2002, p. 7). To facilitate this process, the broader overarching Program Goal statements should be expressed in quantifiable and assessable outcome measures.

Writing Program Goals

Basing Program Goals on the program and institutional mission statements ensures that goals are relevant and meaningful. It is considered good practice for goals to reflect outcomes that encompass all physical therapy education program activities, which can usually be divided into three categories: student/graduate, faculty, and program. The following section provides a guide to writing Program Goals.

- Gather and review the following:
    - Program and institutional mission statements and gioals,
    - Professional documents that describe expected skills and abilities of the graduate (Evaluative Criteria, Normative Model, National Physical Therapy Examination blueprint, minimal skills documents, Professionalism Core Values).
    - Previous assessment data, where applicable.
- Brainstorm about what the physical therapy education program wants to accomplish.
    - Brainstorming is typically done with all core faculty or a subgroup of the core faculty, as well as with any other individuals the program wishes to include.
    - The identification of what the program wants to accomplish should reflect not just the curricular goals, but also the goals of the program and faculty.
- Draft broad statements describing what the physical therapy education program wants to accomplish. (When the cycle restarts again, these broad statements may indicate a new focus or initiative for the program.)
- Refine the broad statements into realistic, achievable, and measurable Program Goals.
- Obtain approvals as appropriate for your institution.

Refer to Appendix B for examples of Program Goals.

Selecting Relevant Program Goals

At this point, the Assessment Team should have a list of potential overarching Program Goals, from which it will select those that most directly reflect, at that time, what is most important for the physical therapy education program to achieve and assess. Selecting a manageable number of Program Goals for the assessment process will enhance the physical therapy education program's ability to complete the assessment process in a timely and useful manner. To maximize manageability, select no more than three to five Program Goals for assessment and no more than three to five Expected Program Outcomes.

The following guidelines may be useful in identifying overarching Program Goals on which to focus in the Assessment Plan.

- Goals should link to the institution's strategic plan and reflect how the physical therapist education program fits within the context of the institution's mission, ie, core curriculum.
- Consider identifying Program Goals that focus on program improvement.
- Determine if any institutional or accrediting agency mandates must be included.
- Look for opportunities to group goals together as broader statements.
- Consider the needs of external stakeholders (eg, clinicians, health care system).

Linking Program Goals to Expected Program Outcomes

The next step in outcomes assessment is to write Expected Program Outcomes based on Program Goals. As defined by CAPTE, Expected Program Outcomes are predictable and demonstrable results of program, faculty, and student activities directed toward achievement of the stated Program Goals. Outcomes make goals quantifiable and assessable (Haessig & Potin, 2002, p. 7). Expected Program Outcomes can be categorized as student/graduate, faculty, or program outcomes. Expected Program Outcomes may also relate to more than one goal (see Appendix B for examples).

Some suggestions on how to write Expected Program Outcome statements include:

- For Expected Program Outcomes reflecting student/graduate outcomes, it may be helpful to begin with the phrase: "Upon completion of the program, students/graduates will be ...." Refrain from writing student/graduate program outcome statements that reflect what the instruction will be or what faculty will do. (Walvoord, 2004, p. 53)

- Faculty Expected Program Outcomes may begin with the following phrase: "Faculty of the physical therapy education program will...."

- Program-level Expected Program Outcomes may begin with the following phrase: "The physical therapy education program will...."

An example of a Program Goal that will be used throughout this document is: "Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy." An Expected Program Outcome that comes from this Program Goal is: "Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect."

Summary

This chapter has focused on developing strong Program Goals and Expected Program Outcomes that illustrate a strong link between the program and university mission and outcomes. It has also provided a foundation for and will facilitate the building and implementation of an equally strong Assessment Plan by physical therapy education programs.

Chapter Three:
Developing and Implementing an Assessment Plan

(Adapted from the work of the American Dietetic Association, Haessig & Potin, 2002)

In the previous chapter, the physical therapy education program articulated its Program Goals and determined the Expected Program Outcomes related to those goals. Program Goals are linked to the institutional vision, mission, and goals, as well as to the vision and mission of a physical therapy education program. Well-developed goal and outcome statements provide the basis that the physical therapy education program will use to assess the extent to which it is meeting the program's mission. Program assessment uses a variety of methods, employed by individuals representing diverse constituents or stakeholders, and has a sustained focus. The following example outlines the components of an Assessment Plan, as well as ways in which these components can be operationalized.

Table 1 presents a generic template illustrating the suggested outcomes assessment process described in this document. We will build on the template as we discuss each component of the Assessment Plan. The various components of the Assessment Plan summarized in this chapter are:

- List Program Goals and Expected Program Outcomes that will be assessed.
- Determine the indicators (actions or behaviors) that reflect the Program Goals and Expected Program Outcomes.
- Identify data needed to reflect the indicators and how these data will be obtained.
- Determine from whom (which individuals or groups of people) the identified data will be collected.
- Determine who will collect data.
- Determine who will analyze and interpret indicator data.
- Determine timeframe(s) for collecting, analyzing, and reporting data.
- Identify target and/or threshold criteria that will trigger the need for change.
- Highlight indicators in which there is a mismatch of measure with identified target and/or threshold criteria.

Table 1. Assessment Plan

Program Goal: [Insert one of the physical therapy education Program Goals.] **Expected Program Outcome:** [Insert one of the Expected Program Outcomes related to the Program Goal above.] **Relevant Institutional Goal:** [Write in any related institutional goal for documentation purposes.]									
Column A	**Column B1**	**Column B2**	**Column B3**	**Column C**	**Column D**	**Column E**	**Column F**	**Column G**	**Column H**
Indicator	Data Source	Data Type (Qualitative or Quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/ interpret data?	What is the timeframe for data collection?	What are the target and/or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
Continue as needed ↓									

List Program Goals and Expected Program Outcomes that will be assessed. (Table 1a)

Expected Program Outcomes that are aligned with Program Goals are used as the basis for program assessment because the process of analysis reveals how well Program Goals have been achieved. The first component of outcomes assessment is relatively simple: Simply list the Program Goals and Expected Program Outcomes that already have been developed (see Chapter Two).

Remember to document in writing how the Program Goals are related to institutional goals. Linking the Program Goals to the institutional goals will help demonstrate that the information gathered and analyzed for the physical therapy education program will also be important to the institution, generating institutional support for the assessment efforts. Additionally, assessment findings resulting from a structured process like the one suggested here may encourage institutional support for suggested programmatic changes that emerge from that process.

Table 1a. Assessment Plan With Program Goal, Expected Program Outcome, and Relevant Institutional Goal Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry level practice of physical therapy. **Expected Program Outcome:** Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect. **Relevant Institutional Goal:** Create an outstanding student experience that promotes personal and intellectual development.									
Column A	**Column B1**	**Column B2**	**Column B3**	**Column C**	**Column D**	**Column E**	**Column F**	**Column G**	**Column H**
Indicator	Data Source	Data Type (Qualitative or Quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/ interpret data?	What is the timeframe for data collection?	What are the target and/ or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
Continue as needed ↓									

Determine the indicators that reflect the Program Goals and Expected Program Outcomes. (Table 1b)

Indicators are measurable actions or behaviors that, when performed or demonstrated, signify that an Expected Program Outcome is being achieved. Indicators are developed guided by the wording of the respective Expected Program Outcomes. Although only one indicator is shown here, there can be multiple indicators for each program outcome. A useful approach to developing indicators is to ask the question: "What quantifiable criteria can be used to determine whether the Expected Program Outcome has been met?" (Haessig & Potin, 2002, p. 7). Remember that indicators may be both formative and summative. Formative indicates that the information gathered is about ongoing implementation, and summative indicates that the information is gathered upon completion of an activity.

Table 1b. Assessment Plan With Column A Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.

Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.

Relevant Institutional Goal: Create an outstanding student experience that promotes personal and intellectual development.

Column A	Column B1	Column B2	Column B3	Column C	Column D	Column E	Column F	Column G	Column H
Indicator	Data Source	Data Type (Qualitative or Quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/interpret data?	What is the timeframe for data collection?	What are the target and/or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
Students demonstrate the ability to present to a professional audience.									
Continue as needed ↓									

Identify data needed to reflect the indicators and how these data will be obtained. (Table 1c) (See Appendix C)

First, determine which data or evidence will help determine if the actions or behaviors as stated in the indicators are being performed or demonstrated and to what exent (Column B1). Second, indicate whether the data are qualitative or quantitative, summative or formative. Third, establish whether data already exist or whether new data collection efforts or other processes need to be developed by the physical therapy education program (Column B3). Use existing data when relevant and available to avoid duplicating efforts and to more efficiently use resources. For example, data about student retention may be available from the Registrar's office, or the institution may conduct overall student surveys that assess the adequacy of library resources or student satisfaction with faculty-student interactions.

To facilitate the identification of assessment methods and data sources, develop a list of potential assessment methods and sources of data that can be linked to each one of the relevant indicators. It may be helpful to indicate which data sources provide quantitative or qualitative information (Column B2). Commercially available products can be obtained to facilitate the collection and management of data (See Appendix D).

Table 1c. Assessment Plan With Columns B1, B2, and B3 Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.

Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.

Relevant Institutional Goal: Create an outstanding student experience that promotes personal and intellectual development.

Column A	Column B1	Column B2	Column B3	Column C	Column D	Column E	Column F	Column G	Column H
Indicator	Data Source	Data Type (Qualitative or Quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/ interpret data?	What is the timeframe for data collection?	What are the target and/or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
Students demonstrate the ability to present to a professional audience.	Presentation rubric	Quantitative	Yes						
Continue as needed ↓									

Determine from whom (which individuals or groups of people) identified data will be collected. (Table 1d)

When determining from whom data will be collected, consider all the programs' constituents and stakeholders: the institution or professional community (including employers of graduates, program graduates, program or associated faculty); graduates' coworkers; students' or graduates' patients; current students; students who left the program; librarians; etc. Because different stakeholder groups may provide information on different indicators, there should be discussion of which group may be the best source of data for each indicator, or whether data should be collected from multiple stakeholder groups. In addition, consideration of the practical realities of data collection should be considered when targeting stakeholder groups. For example, the ability to access specific stakeholder groups (eg, employers) might influence how and what data is sought from those groups.

Chapter Four will discuss how triangulation of data can enhance the analysis of the assessment results. One way to triangulate data is by collecting the "same" data from multiple stakeholders, which can serve to verify or discount the need for change. The Assessment Team triangulates data during the hypothesis-generating stage of analyzing results discussed in the next chapter.

Table 1d. Assessment Plan With Column C Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.									
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.									
Relevant Institutional Goal: Create an outstanding student experience that promotes personal and intellectual development.									
Column A	**Column B1**	**Column B2**	**Column B3**	**Column C**	**Column D**	**Column E**	**Column F**	**Column G**	**Column H**
Indicator	Data Source	Data Type (Qualitative or Quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/ interpret data?	What is the timeframe for data collection?	What are the target and/or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
Students demonstrate the ability to present to a professional audience.	Presentation rubric	Quantitative	Yes	Faculty					
Continue as needed ↓									

Determine who will collect data. (Table 1e)

The Assessment Team will determine who will be involved in the data collection process for outcomes assessment. In some cases members of the Assessment Team will be directly involved; in other instances, the Assessment Team will recruit appropriate individuals to contribute to the data collection effort. For example, program or institutional administrators, specific faculty, librarians, and others can be asked to provide or to develop data to assess aspects of the program that are related to their areas of responsibility or expertise. Because of the breadth of the outcomes assessment process, it is important to involve the appropriate personnel who can obtain the needed information efficiently and accurately.

To ensure reliability and validity of data, the Assessment Team should meet with all of those involved in data collection to make certain that everyone understands the nature of the data they will be gathering, as well as the standards that should be applied in the data collection process. When data are collected over long periods of time, systematic check-in is important to ensure the continuity of efforts. It is often helpful for members of the Assessment Team to take responsibility for monitoring different indicators to ensure that data collection is implemented, continuous, and adequate.

Table 1e. Assessment Plan With Column D Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy. **Expected Program Outcome:** Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect. **Relevant Institutional Goal:** Create an outstanding student experience that promotes personal and intellectual development.									
Column A	**Column B1**	**Column B2**	**Column B3**	**Column C**	**Column D**	**Column E**	**Column F**	**Column G**	**Column H**
Indicator	Data Source	Data Type (Qualitative or Quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/ interpret data?	What is the timeframe for data collection?	What are the target and/or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
Students demonstrate the ability to present to a professional audience.	Presentation rubric	Quantitative	Yes	Faculty	Assessment Team				
Continue as needed ↓									

Determine who will analyze and interpret indicator data. (Table 1f)

The Assessment Team will determine who will be accountable for analyzing and interpreting specific data that are collected for each indicator. It is likely that several individuals or groups will be involved in this process due to the diverse nature of data and the multiple sources for indicators that may contribute to a single Program Goal and its Expected Program Outcome. However, the Assessment Team should be responsible for ensuring data collection occurs and collating all data to generate an overall assessment for each Expected Program Outcome and Program Goal. (Additional information in Chapter 4, Analysis of Results)

Table 1f. Assessment Plan With Column E Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.									
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.									
Relevant Institutional Goal: Create an outstanding student experience that promotes personal and intellectual development.									
Column A	Column B1	Column B2	Column B3	Column C	Column D	Column E	Column F	Column G	Column H
Indicator	Data Source	Data Type (Qualitative or Quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/ interpret data?	What is the timeframe for data collection?	What are the target and/or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
Students demonstrate the ability to present to a professional audience.	Presentation rubric	Quantitative	Yes	Faculty	Assessment Team	Assessment Team			
Continue as needed ↓									

Determine timeframe(s) for collecting, analyzing, and reporting data. (Table 1g)

After decisions have been made about what data will be collected and who will collect the data and submit it to a particular group or individual for analysis, a timeframe for the collection of these data should be established. The timeframe should address when the data will be analyzed and when reports of the analysis will be provided to the Assessment Team. Formative data collection, analysis, and reporting may take place on a regular schedule, and actions may be taken to make changes as needed. For this purpose, analysis and interpretation of data will influence program activities on an ongoing basis. For summative data, analysis will generally occur at fixed intervals that correspond to endpoints, such as ends of semesters or graduation. The Assessment Team should specify when, in what format, and to whom reports will be submitted.

Table 1g. Assessment Plan With Column F Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.										
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.										
Relevant Institutional Goal: Create an outstanding student experience that promotes personal and intellectual development.										
Column A	Column B1	Column B2	Column B3	Column C	Column D	Column E	Column F	Column G	Column H
Indicator	Data Source	Data Type (Qualitative or Quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/ interpret data?	What is the timeframe for data collection?	What are the target and/or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
Students demonstrate the ability to present to a professional audience.	Presentation rubric	Quantitative	Yes	Faculty	Assessment Team	Assessment Team	Fall semester		
Continue as needed ↓									

Identify target and/or threshold criteria that will trigger the need for change. (Table 1h)

Goals often will reflect a minimum performance level for avoiding corrective action. A *target* is a level to try to achieve; a *threshold* is a minimum that must be achieved. For each indicator, a target and/or threshold should be identified that provides a measure for achievement. Targets and/or thresholds contextualize indicators and whether they are being achieved at acceptable levels. While indicators could be constant over time, targets and/or thresholds may change depending on program emphases and/or based on feedback from collected assessment data.

For example, a physical therapy education program might decide to use National Physical Therapy Examination (NPTE) scores as an indicator of graduate competence and this indicator would be included in the outcomes assessment every year. However, the target identified by the program may change from year to year; for example, it might be set at an 85% first-time pass rate one year, and then be increased by the Assessment Team and physical therapy education faculty to 90% the following year. To establish a threshold, the program could use a number of different methods, such as an industry standard, research findings, program history, or a gut feeling. If the program's graduates achieve a lower pass rate, the program should implement a corrective plan. Thresholds may be set for budget requirements, faculty workload, class size, research funding, and so on. Whenever possible, the outcomes assessment plan should specify a target and/or a threshold that will trigger additional analyses to determine if a change is indicated.

One idea that an Assessment Team (or some other entity external to a single program, for example, a group of employers) may want to use to inform target and threshold establishment is benchmarking, or comparing a physical therapy education program with other similar programs. A benchmark provides another, external, criterion for achievement, which may be based on an internally or externally determined standard. For example, a benchmark for admissions may be established by using an internal standard based on program budget requirements, or an external standard based on the national average.

Table 1h. Assessment Plan With Column G Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.									
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.									
Relevant Institutional Goal: Create an outstanding student experience that promotes personal and intellectual development.									
Column A	**Column B1**	**Column B2**	**Column B3**	**Column C**	**Column D**	**Column E**	**Column F**	**Column G**	**Column H**
Indicator	Data Source	Data Type (Qualitative or Quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/ interpret data?	What is the timeframe for data collection?	What are the target and/or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
Students demonstrate the ability to present to a professional audience.	Presentation rubric	Quantitative	Yes	Faculty	Assessment Team	Assessment Team	Fall semester	Target: average grades ≥ 90% Threshold: average grades = 80%	
Continue as needed ↓									

Highlight indicators in which there is a mismatch of measure with identified target and/or threshold criteria. (Table 1i)

The next step is to conduct an initial examination of whether there is a mismatch of outcome data with the identified target and/or threshold. In Column H, report the findings and indicate whether or not the target and/or threshold criteria were met. Consider whether further analysis is necessary, and so indicate. Further evaluation of the indicators will be discussed in subsequent chapters.

Table 1i. Assessment Plan With Column H Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.									
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.									
Relevant Institutional Goal: Create an outstanding student experience that promotes personal and intellectual development.									
Column A	Column B1	Column B2	Column B3	Column C	Column D	Column E	Column F	Column G	Column H
Indicator	Data Source	Data Type (Qualitative or Quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/ interpret data?	What is the timeframe for data collection?	What are the target and/or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
Students demonstrate the ability to present to a professional audience.	Presentation rubric	Quantitative	Yes	Faculty	Assessment Team	Assessment Team	Fall semester	Target: average grades ≥ 90% Threshold: average grades = 80%	Average grades = 79% in fall 2007, below threshold. Conduct further analysis.
Continue as needed ↓									

Summary

In this chapter, the components necessary to develop an outcome Assessment Plan for a physical therapy education program were presented. Creating the components of such an Assessment Plan in a linear and simple manner belies the number of iterations, drafts, and attention to specifics that must be given to achieve a workable and useable outcome Assessment Plan. Adequate time and effort must be given to the underlying work in order to execute a plan that will inform educational practice and policy in the physical therapy education program. Once created, a working outcome Assessment Plan with associated tasks, data, responsibilities, and timelines will produce reliable results as discussed in Chapter Four.

Chapter Four: Analysis of Results for the Outcomes Assessment Plan

This chapter will explain methods for analyzing data collected via the outcomes Assessment Plan described in Chapter Three. Specifically, this chapter will provide information about what to look for in data, how to develop possible reasons for the findings (hypotheses), how to determine whether a change should be made, and briefly discuss the implementation of change.

While the unit of study in the tables used in Chapter Three was *indicator*, for analysis purposes the unit of study includes not only indicators but also Expected Program Outcomes. One way to think about Expected Program Outcomes and their associated indicators is that the weight of the evidence from the individual indicators will yield information for the associated Expected Program Outcome. The approaches to analysis of results presented here are broad enough to be used for both indicators and Expected Program Outcomes. Each person or group listed in the Assessment Plan (Column E) for each indicator (Column A) should analyze findings using professional judgment and expertise, and then document how data analysis was accomplished. The Assessment Team should conduct—and be responsible for—similar analyses of results for the associated Expected Program Outcomes.

Making Sense of Collected Data (Table 2, Column I)

The analysis of data will vary depending on the nature and volume of data collected. The first step is to identify/sort which data are important to examine relative to the specific indicators and Expected Program Outcome under investigation. Analysis methods will vary depending on the type of data. Quantitative information can often be presented in graphic or tabular form, including frequencies or averages. Data such as examination pass rates, graduation or attrition rates, scores on the Clinical Performance Instrument (CPI), number of books in the library, grants received by physical therapy education faculty, equipment purchased, or square footage of space can all be expressed numerically. Qualitative data may need to be accumulated in narrative form for analysis. For example: Surveys of employers or focus groups may provide comments that reflect the competence of graduates; faculty involvement in scholarship may require description of research agendas and activities; programs may offer continuing education to improve clinical instructor performance; and observation may provide data to demonstrate its effectiveness. Such qualitative descriptors can be rich in substance for understanding the success or value of program activities.

Recall that the *analysis of assessment results* in the suggested outcomes assessment process described in this document is similar to *pattern analysis* and *interpretation* that Donabedian included in his quality assurance monitoring cycle for health care (See Appendix A). Once data and evidence have been identified for inclusion in the review for a specific indicator or Expected Program Outcome, analysis should include:

- Identification of "red flags," or areas that require action. There may be two kinds of red flags: pre-identified and emergent.
  - Pre-identified red flag—not meeting an identified target and/or threshold (already documented as Column H and described in Chapter Three)

- Emergent red flag—unexpected consequences or outcomes such as feedback from employers about inappropriate professional behaviors by students.
  - Identification of patterns in data (triangulate within and among data sources). When findings are consistent across sources, repetitive over time, or there are multiple indicators about a single subject area, the importance of those findings increases, as does the need to evaluate them more carefully. Consider the:
    - source of data (findings are consistent across more than one stakeholder group, eg, students, employers, patients, a faculty);
    - data collection method (findings are consistent across more than one collection method, eg, survey, test data, etc);
    - time trends (eg, whether this is the first time the finding has been identified or it has been seen previously); and
    - multiple red flags by category (student/graduates, faculty, and/or program).
  - Anticipation of potential problems based on findings. These may be issues that faculty are curious or concerned about based on personal observation, changes in the profession or health care system, etc. This information may inform future changes in the Assessment Plan.
  - Scanning of entries to identify areas of need (many instances of not meeting the threshold in Column H).

Table 2 diagrams a process for developing an action plan to address problems found from data analysis described in this chapter. The Assessment Team (or designated person or group) should enter information about whether action is needed on each Expected Program Outcome in Column I.

Table 2. Identified Hypotheses

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.			
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.			
Relevant Institutional Goal: Create an outstanding student experience that promotes personal and intellectual development.			
⬅ Link with Table 1, Assessment Plan	**Column I** Analysis of data collected for expected program outcome.	**Column J** Hypothesis? (possible causes or reasons for the findings)	Link with Table 3, Specific Action Plan ➡
	This is the first time the threshold was not achieved for this assessment tool; students have not had full time clinical education yet, so no CI or employer feedback for this group; Speech prerequisite dropped for this class in admissions process.	Students' lack of experience with platform-presentation format (15 min. presentation/5 min. Q&A).	

Formulation of Hypotheses (Table 2, Column J)

Potential reasons for problem findings must now be identified. The Assessment Team should develop a hypothesis that possibly explains the reasons for the findings for each Expected Program Outcome, or put another way, why these data might show the trends, deficits, or mismatches for the Expected Program Outcome. Because multiple indicators and multiple data sources may be used for each Expected Program Outcome, the Assessment Team should take all of the data into account as it develops hypotheses. The Assessment Team (or others identified by the team to provide needed insights) must identify all possible explanations/theories (hypotheses) about why thresholds and/or goals have not been met for each relevant indicator, and overall what effect these deficits may have on the Expected Program Outcome to which they are linked. There can be multiple hypotheses that may potentially explain an area of concern; these multiple hypotheses may point to behaviors that need to be changed and actions that need to be taken by different stakeholder groups (eg, faculty, students, administrators, employers).

The Assessment Team should consider the following suggestions when formulating hypotheses for the Expected Program Outcome.

- Gather other available data and information to better understand the problem associated with an Expected Program Outcome.
- Use faculty judgment about the area of concern.
- Consult with colleagues in other programs on the same campus or at other institutions and discuss what changes were implemented in response to common areas of concern.

To develop possible explanations/theories—hypotheses—the Assessment Team should consider:

- Outlier identification: Is the identified pattern time-limited? Is it person-specific? Is it a fluke? Is it because of a policy change in the program? Department? Institution? Identify the reason for the outlier and determine if action is required.
- The data collection method or instrument: Is there reason to believe that the data collection method or instrument is biased or inappropriate for investigation of the specific Expected Program Outcome? If the instrument is biased or inappropriate, findings should be used to modify the data collection method or instrument prior to the next assessment cycle.
- The weight of data and evidence collected: Hypotheses should be data driven and emerge from analysis of results; they should not be based on assumption or personal preference.

  If data driven, the Assessment Team now has to determine which of many factors might be contributing to the findings and consider together all factors that may be operating. For example, if an indicator is licensing examination scores and the data indicate that the threshold has not been met, there are likely multiple factors that have contributed. Consider the following general factors that may influence findings:

  - Structure (examples below are not exhaustive)
    - resources (faculty number/expertise, space, budget, learning resources, equipment, and materials)
    - admissions (prerequisite courses and other requirements)
    - organizational characteristics (public/private, policies/procedures, institutional hierarchy)
  - Process (examples below are not exhaustive)
    - curriculum content
    - curriculum sequence
    - pedagogy
    - clinical education
    - faculty development
    - scholarship

Once possible reasons have been identified, the task is to determine which contributed to the findings. There are likely multiple contributing factors and the task is to identify those hypotheses that are most critical for each Expected Program Outcome based on available data.

Table 2 can be used as a template to record the various hypotheses (Column J) for each Expected Program Outcome.

Change Based on Data-Driven Hypotheses

At this point, the Assessment Team, individual, or group assigned has identified hypotheses to explain the findings for each Expected Program Outcome, or, in other words, the most likely causes for the findings. The Assessment Team will likely be the group that determines what changes need to be made and what to do about them. Table 3 provides a template for a Specific Action Plan. A Specific Action Plan should be developed for each hypothesis and a unique table created for documentation purposes.

Table 3. Specific Action Plan (one for each hypothesis generated)

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy. **Expected Program Outcome:** Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect. **Hypothesis:** Students' lack of experience with platform-presentation format (15 min. presentation/5 min. Q&A).								
Column K	**Column L**	**Column M**	**Column N**	**Column O**	**Column P**	**Column Q**	**Column R**	**Column S**
Specific action that constitutes the change (can be multiple actions)	Who are the change agents?	Time frame for implementation of the specific action.	Who checks implementation of specific action(s)?	Timeframe for checking the results of the specific action.	Determine the effectiveness of specific action.	Institutionalize, revise, or discard specific action?	Communicate with appropriate stakeholders.	Document specific actions.
Lecture, discussion, and handout on elements of excellent platform presentations. Students required to have a graded presentation in Clinical Seminar course.								

Prior to determining an action plan, the Assessment Team should consider the following:

- Does the hypothesis for the cause of a finding or the finding itself suggest that the quality of the physical therapy education program has been affected? If not, then consider taking no action at this time, however, also consider whether the finding might show up in future assessments. Documentation of all decisions is necessary.
- Is the hypothesized cause of a finding such that it is the Assessment Team's professional judgment that action is not necessary or can be deferred? For instance, is the finding hypothesized to be an artifact of a college-wide or institutional policy change? If it is an artifact and no action is necessary, document the decision.

The remaining findings will require action. The Assessment Team determines the action to be taken based on the reasons for the findings, in consideration of:

- History of previous action about same issue/area of concern.
- Feasibility of possible changes in light of:
  - institutional/program mission,
  - available funding, and/or
  - faculty expertise.

Regardless of the source of the finding about which action has been deemed necessary (eg, the institution, program, faculty, students, etc), a Specific Action Plan should be developed outlining the corrective action that will be taken. The decisions made for action or inaction should be communicated to those individuals who will implement the decision as well as to stakeholders.

Determine specific action(s) needed based on the data-driven hypotheses. (Table 3a)

The next step is to determine specific actions to address the change. Actions may involve the efforts of different stakeholder groups. A collaborative discussion with those who will actually be implementing the actions—the change agents—will ensure better support. Changes may take several forms including formal and informal, and/or behavioral or policy changes. Furthermore, resources may need to be reallocated or newly allocated to achieve desired changes.

Table 3a. Specific Action Plan (one for each hypothesis generated) With Column K Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.

Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.

Hypothesis: Students' lack of experience with platform-presentation format (15 min. presentation/5 min. Q&A).

Column K	Column L	Column M	Column N	Column O	Column P	Column Q	Column R	Column S
Specific action that constitutes the change (can be multiple actions)	Who are the change agents?	Time frame for implementation of the specific action.	Who checks implementation of specific action(s)?	Timeframe for checking the results of the specific action.	Determine the effectiveness of specific action.	Institutionalize, revise, or discard specific action?	Communicate with appropriate stakeholders.	Document specific actions.
Lecture, discussion, and handout on elements of excellent platform presentations. Students required to have a graded presentation in Clinical Seminar course.								

Identify who/which group(s) will take specific action(s). (Table 3b)

The Assessment Team may choose to engage other stakeholders because they may provide useful input when determining a hypothesis or specific actions to take and because they may complement the knowledge and skills brought by Assessment Team members or simply because they will be implementing the change. The change agents are identified when the specific action(s) for change have been determined. Change agents in collaboration with the Assessment Team identify specific behavioral or policy actions that will be taken (see Table 3b). Change agents and the Assessment Team may need to advocate for either reallocation or new allocation of resources to assist in change implementation. These resources will vary depending on the expected action but may include additional time, money, space, personnel, and/or cooperation from other stakeholders. Change agents are responsible for implementing the specific action. If multiple actions are undertaken, different individuals or groups—different change agents—may be responsible for implementing the different actions. Recall that continuous improvement is about the program, not necessarily about specific faculty members' performance; the latter may be addressed via the faculty assessment and development process.

Because these specific actions result from the outcomes assessment process of the program, the physical therapy education program collectively implements and therefore supports these decisions.

Table 3b. Specific Action Plan (one for each hypothesis generated) With Column L Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.
Hypothesis: Students' lack of experience with platform-presentation format (15 min. presentation/5 min. Q&A).

Column K	Column L	Column M	Column N	Column O	Column P	Column Q	Column R	Column S
Specific action that constitutes the change (can be multiple actions)	Who are the change agents?	Timeframe for implementation of the specific action.	Who checks implementation of specific action(s)?	Timeframe for checking the results of the specific action.	Determine the effectiveness of specific action.	Institutionalize, revise, or discard specific action?	Communicate with appropriate stakeholders.	Document specific actions.
Lecture, discussion and handout on elements of excellent platform presentations. Students required to have a graded presentation in Clinical Seminar course.	Faculty member for Clinical Seminar course.							

Establish a timeframe for implementation of the specific action(s). (Table 3c)

Change agents and Assessment Team members responsible for specific actions for change should agree on a reasonable timeframe that allows enough time for change to have an impact on the identified area of concern. However, excessive delay between implementation and checking (Column N) can limit the utility of feedback.

Table 3c. Specific Action Plan (one for each hypothesis generated) With Column M Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.
Hypothesis: Students' lack of experience with platform-presentation format (15 min. presentation/5 min. Q&A).

Column K	Column L	Column M	Column N	Column O	Column P	Column Q	Column R	Column S
Specific action that constitutes the change (can be multiple actions).	Who are the change agents?	Time frame for implementation of the specific action.	Who checks implementation of specific action(s)?	Time frame for checking the results of the specific action.	Determine the effectiveness of specific action.	Institutionalize, revise, or discard specific action?	Communicate with appropriate stakeholders.	Document specific actions.
Lecture, discussion and handout on elements of excellent platform presentations. Students required to have a graded presentation in Clinical Seminar course.	Faculty member for Clinical Seminar course.	Next Fall semester						

Summary

Chapter Four documents the methods to identify and implement changes needed to improve the program. Implementation of specific actions can be the hardest part of an outcomes assessment process. Successful implementation requires:

- *Involvement and engagement by all individuals affected by actions taken to improve the outcomes of the physical therapy education program.* This engagement is needed continually throughout the outcomes assessment process. As a result, change will be more easily accepted and potential resistance to changes will be diminished. Open communication throughout the outcomes assessment process will help individuals understand their roles and how their actions matter in terms of the physical therapy education program's outcomes assessment process. It may be necessary and beneficial to explain and justify the need for change multiple times to avoid wasting scarce resources.

- *Availability of adequate resources to implement changes and specific actions.* Resources required to implement the change should be offered at a reasonable "cost" of time, talent, and finances to the physical therapy education program. Each program will have its own level of need for resources. Some physical therapy education programs may need templates of grading rubrics, for example, while others may need consultants.

- *Recognition by all stakeholders that there is likely to be a positive effect of the implemented changes on the program.* Each stakeholder associated with the program should recognize that the assessment plan and actions taken to improve outcomes are required so that continuous improvement of the program toward excellence can be made. This recognition will be facilitated by active participation by all stakeholders and by an Assessment Plan that is not tied to other policies such as tenure and promotion.

Assessment does not stop with implementation of actions designed to facilitate change. The outcomes assessment process—a quality assurance cycle—obliges the physical therapy education program to evaluate and provide a report about the consequences of specific actions. Chapter Five addresses some approaches to this feedback process.

Chapter Five: Closing the Loop

Now that outcomes assessment has resulted in the implementation of actions designed to improve program outcomes, the Assessment Team will need to make decisions about whether the changes will be institutionalized, revised, or discarded. This chapter describes in detail a process to "close the loop" using assessment for continuous program improvement.

Two visual representations of closing the loop—feedback—are included here. One is a flow chart (Figure 3) and the other is a series of tables (Tables 1, 2, and 3 in Chapters Three and Four) that can be completed and included in a physical therapy education program's assessment and program review documentation. In this chapter, the columns presented in Table 3 continue to build on the specific actions identified and lead through features to close the loop. The Assessment Team should review this chapter in its entirety before initiating this process. While the flow chart mirrors the earlier broader quality assurance process (Figure 1), there is a major difference—in this case the focus is on specific actions by specific individuals or groups, not on the broader scope of the process.

Figure 3. Implementation and evaluation of change process.
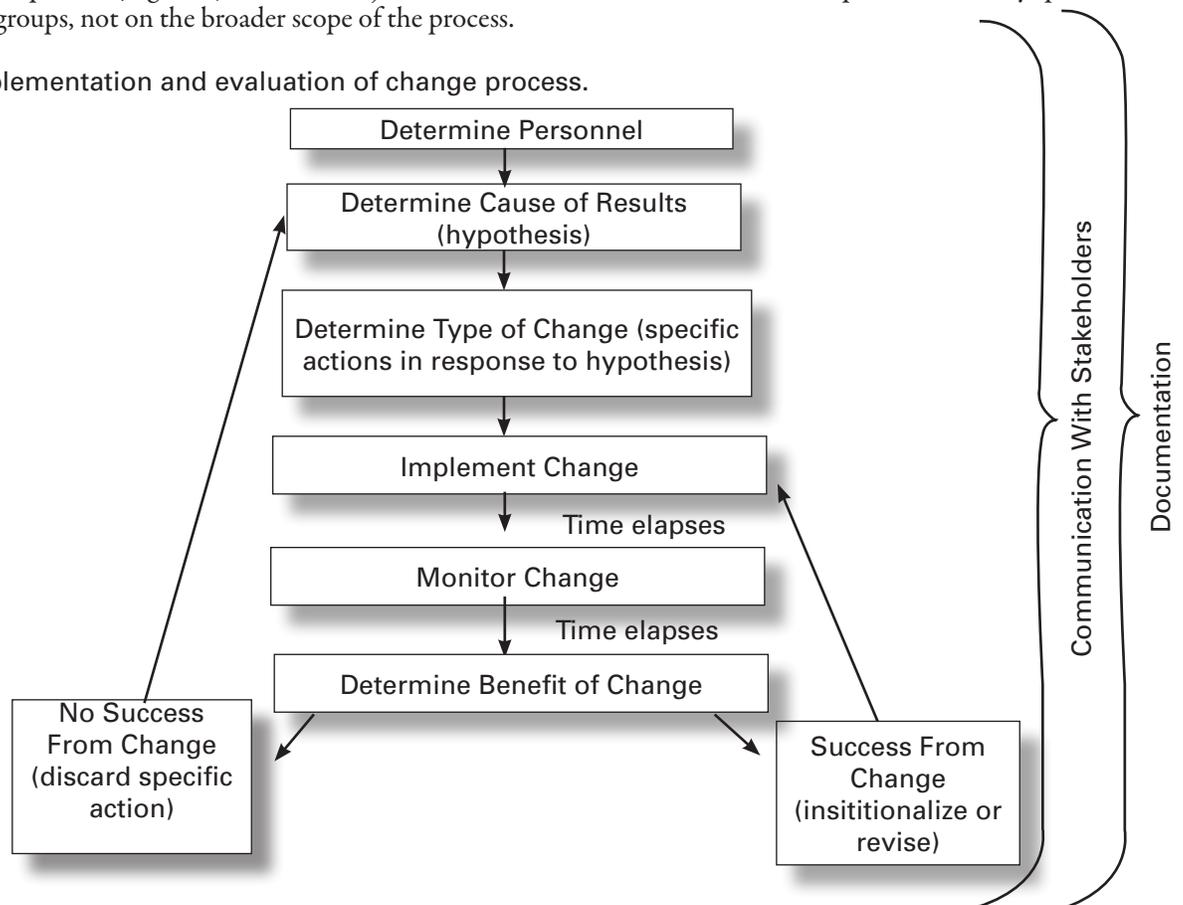
Who checks implementation of specific action(s)? (Table 3d)

A specific group should be identified to check that implementation of the specific actions occurs in the agreed-upon timeframes, using agreed-upon methods. Methods that can be used include observation, document review, and/or discussion with change agents. Many times the individual or group identified as the change agent (Column L) will also ensure implementation occurs (Column N), or the Assessment Team can periodically check on progress.

Table 3d. Specific Action Plan (one for each hypothesis generated) With Column N Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.								
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.								
Hypothesis: Students' lack of experience with platform presentation format (15 min. presentation/5 min. Q&A).								
Column K	**Column L**	**Column M**	**Column N**	**Column O**	**Column P**	**Column Q**	**Column R**	**Column S**
Specific action that constitutes the change (can be multiple actions).	Who are the change agents?	Timeframe for implementation of the specific action.	Who checks implementation of specific action(s)?	Timeframe for checking the specific action.	Determine the effectiveness of specific action.	Institutionalize, revise, or discard specific action?	Communicate with appropriate stakeholders.	Document specific actions.
Lecture, discussion and handout on elements of excellent platform presentations. Students required to have a graded presentation in Clinical Seminar course.	Faculty member for Clinical Seminar course.	Next Fall semester	Curriculum Committee					

Establish a timeframe for checking the specific action(s). (Table 3e)

Change agents and groups checking specific actions for change should agree on a reasonable timeframe that enables change to have an impact on the identified area of concern and also to adequately evaluate effectiveness of specific actions. The timeframe should be of sufficient length to allow the action to be implemented and the indicator to be reassessed. Delay between implementation and checking can limit utility of feedback and completion of closing the loop.

Table 3e. Specific Action Plan (one for each hypothesis generated) With Column O Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.

Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.

Hypothesis: Students' lack of experience with platform-presentation format (15 min. presentation/5 min. Q&A).

Column K	Column L	Column M	Column N	Column O	Column P	Column Q	Column R	Column S
Specific action that constitutes the change (can be multiple actions).	Who are the change agents?	Timeframe for implementation of the specific action.	Who checks implementation of specific action(s)?	Timeframe for checking the specific action.	Determine the effectiveness of specific action.	Institutionalize, revise, or discard specific action?	Communicate with appropriate stakeholders.	Document specific actions.
Lecture, discussion and handout on elements of excellent platform presentations. Students required to have a graded presentation in Clinical Seminar course.	Faculty member for Clinical Seminar course.	Next Fall semester	Curriculum Committee	2 years of this course				

Determine how to evaluate the effectiveness of specific action(s). (Table 3f)

This component is a microcosm of the larger outcomes assessment process. It is limited to the effectiveness of the specific action taken after identifying a problem and its probable cause. Both change agents and any groups monitoring subsequent change should determine the effectiveness of the specific action using document review, observation, and discussion.

Table 3f. Specific Action Plan (one for each hypothesis generated) With Column P Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.								
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.								
Hypothesis: Students' lack of experience with platform-presentation format (15 min. presentation/5 min. Q&A).								
Column K	**Column L**	**Column M**	**Column N**	**Column O**	**Column P**	**Column Q**	**Column R**	**Column S**
Specific action that constitutes the change (can be multiple actions).	Who are the change agents?	Timeframe for implementation of the specific action.	Who checks implementation of specific action(s)?	Timeframe for checking the specific action.	Determine the effectiveness of specific action.	Institutionalize, revise, or discard specific action?	Communicate with appropriate stakeholders.	Document specific actions.
Lecture, discussion and handout on elements of excellent platform presentations. Students required to have a graded presentation in Clinical Seminar course.	Faculty member for Clinical Seminar course.	Next Fall semester	Curriculum Committee	2 years of this course	Faculty observation and grading of student ability to present to professional audiences, including during clinical education experiences.			

Institutionalize, revise, or discard specific action (Table 3g)

This component is important because it is the determination of—a judgment about—the benefit of the specific action taken for change. The Assessment Team must now—based on the information given to it by the change agent and information about the effectiveness of the specific action—determine whether the specific action should be institutionalized, revised, or discarded based on whether or not it has improved the area of concern.

Table 3g. Specific Action Plan (one for each hypothesis generated) With Column Q Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.

Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.

Hypothesis: Students' lack of experience with platform presentation format (15 min. presentation/5 min. Q&A).

Column K	Column L	Column M	Column N	Column O	Column P	Column Q	Column R	Column S
Specific action that constitutes the change (can be multiple actions).	Who are the change agents?	Timeframe for implementation of the specific action.	Who checks implementation of specific action(s)?	Timeframe for checking the specific action.	Determine the effectiveness of specific action.	Institutionalize, revise, or discard specific action?	Communicate with appropriate stakeholders.	Document specific actions.
Lecture, discussion and handout on elements of excellent platform presentations. Students required to have a graded presentation in Clinical Seminar course.	Faculty member for Clinical Seminar course.	Next Fall semester	Curriculum Committee	2 years of this course	Faculty observation and grading of student ability to present to professional audiences, including during clinical education experiences.	Institutionalize		

Communicate with appropriate stakeholders. (Table 3h)

Now that a specific action has been taken, its effectiveness evaluated, and a decision made about whether that specific action will be institutionalized, revised accordingly, or discarded, those decisions about the specific action should be communicated to appropriate stakeholders. This feedback process is a microcosm of the larger closing the loop feedback process that is necessary for the outcomes assessment process. Keeping affected stakeholders apprised of why specific actions were taken and whether or not they are being institutionalized will help to build broader support for other changes made in the physical therapy education program.

Table 3h. Specific Action Plan (one for each hypothesis generated) With Column R Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.

Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.

Hypothesis: Students' lack of experience with platform presentation format (15 min. presentation/5 min. Q&A).

Column K	Column L	Column M	Column N	Column O	Column P	Column Q	Column R	Column S
Specific action that constitutes the change (can be multiple actions).	Who are the change agents?	Time frame for implementation of the specific action.	Who checks implementation of specific action(s)?	Timeframe for checking the specific action.	Determine the effectiveness of specific action.	Institutionalize, revise, or discard specific action?	Communicate with appropriate stakeholders.	Document specific actions.
Lecture, discussion and handout on elements of excellent platform-presentations. Students required to have a graded presentation in Clinical Seminar course.	Faculty member for Clinical Seminar course.	Next Fall semester	Curriculum Committee	2 years of this course	Faculty observation and grading of student ability to present to professional audiences, including during clinical education experiences.	Institutionalize	Core faculty, current and future students, clinical educators, alums, and employers.	

Document specific action(s). (Table 3i)

The Assessment Team should formally document all final decisions and actions taken. Rather than creating new documents, it is best to use documentation created as a part of standard institutional, departmental, and program operations, such as faculty meeting minutes, text of revised course offerings, etc.

Throughout the closing-the-loop process it is imperative to document all decisions made by various groups. The tables in this document have been developed to aid in documentation. Such records are useful for inclusion in programmatic accreditation documents, institutional self-studies, documenting continuous improvement of the physical therapy education program and to demonstrate that decision making is evidenced-based. Documentation can take either hard copy or electronic form.

Table 3i. Specific Action Plan (one for each hypothesis generated) With Column S Highlighted

Program Goal: Graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.
Expected Program Outcome: Students/graduates will communicate with various constituents in a manner that reflects their level of knowledge, considers health literacy, is sensitive to cultural issues, and demonstrates respect.
Hypothesis: Students' lack of experience with platform-presentation format (15 min. presentation/5 min. Q&A).

Column K	Column L	Column M	Column N	Column O	Column P	Column Q	Column R	Column S
Specific action that constitutes the change (can be multiple actions).	Who are the change agents?	Timeframe for implementation of the specific action.	Who checks implementation of specific action(s)?	Timeframe for checking the specific action	Determine the effectiveness of specific action.	Institutionalize, revise, or discard specific action?	Communicate with appropriate stakeholders.	Document specific actions.
Lecture, discussion and handout on elements of excellent platform presentations. Students required to have a graded presentation in Clinical Seminar course.	Faculty member for Clinical Seminar course.	Next Fall semester	Res Des II Faculty member; other core faculty.	2 years of this course	Faculty observation and grading of student ability to present to professional audiences, including during clinical education experiences.	Institutionalize	Core faculty, current and future students, clinical educators, alums, and employers.	Faculty meeting minutes, Dept chair letter to employers, e-mail to clinical instructors.

Feedback Into the Outcomes Assessment Process

To foster widespread support for the assessment process, it is important to communicate with appropriate stakeholders. In the feedback process this requires informing others that:

- Specific actions were taken for a reason (findings and hypotheses associated with Expected Program Outcomes).
- Specific actions were tested to see how well they addressed an identified area of concern for an Expected Program Outcome.
- Specific actions implemented require time to produce results.

Regular communication with the broader community of stakeholders (program, institutional, employer, etc) will serve the Assessment Team well in building support. The Assessment Team can determine when communication is appropriate, based on stakeholder needs, keeping in mind that communication fosters support.

The ultimate purpose of outcomes assessment is to provide a process that will positively influence a program toward excellence and assist the institution in meeting its mission. To progress in a satisfactory way, program goals, therefore, must include criteria for successful achievement—shown in *Outcomes Assessment in Physical Therapy Education* by identifying Expected Program Outcomes, indicators, and target and/or threshold criteria.

Summary

The closing-the-loop feedback process is often the most ill-defined part of any outcomes assessment process. In this chapter, components have been clearly explained and tables of those components provided in order to better define the process and explain the actions physical therapy education programs must take to close the loop of program improvement, from analyzing assessment results to setting goals.

Final Summary

Outcomes Assessment in Physical Therapy Education provides a structured framework for education programs to adopt or use as a reference in conducting an outcomes assessment. Following a process like the one described herein will assist programs to ground outcomes assessment in the institution's and program's respective missions, involve critical stakeholders in the process, comprehensively approach programmatic evaluation and improvement, and create a documentation trail that will demonstrate the efforts taken.

The outcomes assessment process may seem labor intensive and overwhelming—indeed it is a major effort that requires significant time and energy. Taken seriously and performed soundly, the results of a well-aligned and thought-out Assessment Plan far outweigh the invested effort by providing specific and meaningful information for the program and its stakeholders, resulting in the achievement of goals and the attainment of excellence.

Glossary

The definitions provided refer to the intended meanings of words used in *Outcomes Assessment in Physical Therapy Education*.

Accountability: Active acceptance of responsibility for the diverse roles, obligations, and actions of the physical therapist, including self-regulation and other behaviors that positively influence patient/client outcomes, the profession, and the health needs of society. (*Professionalism in Physical Therapy: Core Values,* August 2003.) (*Normative Model 2004*, Appendix E)

Assessment: See "Outcomes assessment."

Assessment Plan: A description and/or representation of the systematic and logical collection, review, and use of information in the conduct of outcomes assessment.

Assessment Team: The group of individuals, including faculty and other stakeholders, responsible for steering the outcomes assessment process.

Associated faculty: Those individuals who have classroom and/or laboratory teaching responsibilities in the curriculum and who are not core faculty or clinical education faculty. The associated faculty may include individuals with full-time appointments in the unit in which the professional program resides, but who have primary responsibilities in programs other than the professional program. (Commission on Accreditation in Physical Therapy Education)

Authentic: "Refers to assessment tasks that elicit demonstrations of knowledge and skills in ways that they are applied in the 'real world.' An 'authentic assessment' task is also engaging to students and reflects the best current thinking in instructional activities. Thus, teaching to the task is desirable." (Arter J, McTighe J. *Scoring Rubrics in the Classroom: Using Performance Criteria for Assessing and Improving Student Performance.* Thousand Oaks, CA: Corwin Press; 2001:179.)

Benchmarking: "A comparison of similar processes across public and/or private organizations to identify best practices in an effort to improve organizational performance." (Detrick G, Pica J. A. The power of benchmarking. In: *Proving and Improving: Strategies for Assessing the First College Year.* Randy Swing, ed. Columbia, SC: National Resource Center for the First-Year Experience, University of South Carolina;2001:55.)

Change agents: Individuals who manage change implementation details on behalf of another entity (in this case, members of the Assessment Team).

Clinical education: That portion of a physical therapy program that is conducted in the health care environment rather than in the academic environment. (Normative Model 2004, Appendix E)

Clinical education experiences: That aspect of the curriculum in which students' learning occurs directly as a function of being immersed within physical therapy 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. These experiences would be further described by those of short and long duration (eg, part-time and full-time experiences, internships that are most often a full-time, postgraduation experience for a period of 1 year), and those that vary how learning experiences are provided (eg, rotations on different units within the same practice setting, rotations among different practice settings within the same health care system) to include comprehensive care of patients/clients across the lifespan and related activities. (Syn: clinical learning experiences.) (Normative Model 2004, Appendix E)

Clinical educator: Any individual who participates in providing student clinical education experiences in the practice environment, including clinical instructors (CIs) and center coordinators of clinical education (CCCEs). (Syn: *clinical faculty*.) (*Normative Model 2004*, Appendix E)

Clinical instructor (CI): An individual at the clinical site who directly instructs and supervises students during their clinical learning experiences. The CI is responsible for facilitating clinical learning experiences and assessing students' performance in cognitive, psychomotor, and affective domains as related to entry-level clinical practice and academic and clinical performance expectations. (Syn: *clinical teacher, clinical tutor, and clinical supervisor*.) (*Normative Model 2004*, Appendix E)

Collaboration: Working together cooperatively, especially in the management of patient/client care. (*Normative Model 2004*, Appendix E)

Communication: A process by which information is exchanged between individuals through a common system of symbols, signs, or behaviors. (*Normative Model 2004*, Appendix E) All means of giving and receiving information. (Lopopolo, Schafer, & Nosse, 2004).

Competence: Possessing the requisite knowledge, abilities, and qualities to be a physical therapist. (Normative Model 2004, Appendix E)

Competency: A significant, skillfully performed, work-related activity (*Normative Model 2004*, Appendix E). Knowledge, skills, and abilities that contribute to achievement of student outcomes. A competency is the smallest unit; an outcome is the broadest unit.

Consultation (Curriculum): The rendering of professional or expert opinion or advice by a physical therapist. The consulting physical therapist applies highly specialized knowledge and skills to identify problems, recommend solutions, or produce a specified outcome or product within a given amount of time. (CAPTE Definition)

Coordination and collaboration: Integrating activities and input from units or individuals to achieve broader organizational goals (Lopopolo, Schafer, & Nosse, 2004).

Core faculty (Faculty): Those individuals appointed to and employed primarily in the program, including the program administrator, the academic coordinator of clinical education/director of clinical education (ACCE/DCE), and other faculty who report to the program administrator. The core faculty have the responsibility and authority to establish academic regulations and to design, implement, and evaluate the curriculum. Members of the core faculty typically have full-time appointments, although some part-time faculty members may be included among the core faculty. The core faculty may include physical therapists and others with expertise to meet specific curricular needs. They may hold tenured, tenure track, or nontenure track positions. (CAPTE Definition)

Criteria: "Guidelines, rules, or principles by which student responses, products, or performances are judged." (p. 180, Arter J, McTighe J. (2001). *Scoring rubrics in the classroom: Using performance criteria for assessing and improving student performance.*)

Curriculum: Classroom, laboratory, research, clinical, and other curricular activities that substantially contribute to the attainment of professional (entry-level) competence. (CAPTE Definition)

Dispositions: Refers to the affective dimensions of students in school (eg, motivation to learn, attitude toward school, academic self-concept, flexibility, persistence, and locus of control). Some scoring guides are designed to assess dispositions. These provide specific, observable indicators of the disposition being assessed (p. 180, Arter, J., & McTighe, J. (2001). *Scoring rubrics in the classroom: Using performance criteria for assessing and improving student performance.*).

Education: Knowledge and development resulting from a process of learning and change. (*Normative Model 2004*, Appendix E)

Entry-level: The initial point of entry into the practice of physical therapy, characterized by successful completion of an accredited professional education program and the acquisition of a license to practice physical therapy. Also, a level of practice characterized by little or no experience as a licensed, practicing physical therapist. (*Normative Model 2004*, Appendix E)

Evidence: Supporting materials used to confirm or disconfirm something, a conclusion.

Examination: A comprehensive and specific testing process performed by a physical therapist that leads to diagnostic classification or, as appropriate, to a referral to another practitioner. The examination has three components: the patient/client history, systems reviews, and tests and measures. (*Guide to Physical Therapist Practice*. Rev 2nd Ed. Alexandria, Va: American Physical Therapy Association; 2003.) (*Normative Model 2004*, Appendix E)

Excellence: Excellence is physical therapist practice that consistently uses current knowledge and theory while understanding personal limits, integrates judgment and the patient/client perspective, embraces advancement, challenges mediocrity, and works toward development of new knowledge. (*Professionalism in Physical Therapy: Core Values*, August 2003.) (*Normative Model 2004,* Appendix E)

Faculty: See **Associated faculty**

Finance: Planning and controlling the financial operation of a business. (Schafer, Lopopolo, & Luedtke-Hoffmann, 2007).

Formative assessment/evaluation: Activities conducted during the life of a program or performance with the purpose of providing feedback that can be used to modify, shape, and improve the program or performance. (Palomba & Banta, 1999)

Goals: The ends or desired results toward which program faculty and student efforts are directed. Goals are general statements of what the program must achieve in order to accomplish its mission. Goals are long range and generally provide some structure and stability to the planning process. In physical therapist education, goals are typically related to the educational setting, the educational process, the scholarly work of faculty and students, the service activities of faculty and students, etc. (CAPTE Definition)

Historical perspective: Historical data about the business and the context in which it operates that may have a bearing on future assumptions. (Lopopolo, Schafer, & Nosse, 2004).

Hypothesis: A proposition or set of propositions set forth as an explanation for the occurrence of some specified group of phenomena, either asserted merely as a provisional conjecture to guide investigation (working hypothesis) or accepted as highly probable in the light of established facts.

Indicators: Knowledge, action, behaviors, and attitudes that demonstrate the presence or absence of a particular concept, attribute, or variable. (*Normative Model 2004*, Appendix E)

Institutionalize: To incorporate into a structured and usually well-established system.

Intervention: The purposeful interaction of the physical therapist with the patient/client, and, when appropriate, with other individuals involved in patient/client care, using various physical therapy procedures and techniques to produce changes in the condition. (*Guide to Physical Therapist Practice*. Rev 2nd Ed. Alexandria, Va: American Physical Therapy Association; 2003.) (*Normative Model 2004*, Appendix E)

Learning experiences: See **Curriculum**

Mission: A statement that describes why the physical therapy education program exists, including a description of any unique features of the program. The mission is distinct from the program's goals, which indicate how the mission is to be achieved. (CAPTE Definition)

Normative model: A consensus-based model of physical therapy professional education that describes the profession's beliefs and values relative to professional education. Such a model includes the following components, among others: external and internal settings, essential academic and clinical curricula, prerequisites, and configuration of the preprofessional and professional aspects of the program. A consensus model can serve as a foundation or "norm" for existing and developing programs. (*Normative Model 2004*, Appendix E)

Objectives (Curriculum): Statements specifying desired knowledge, skills, behaviors, or attitudes to be developed as a result of educational experiences. To the extent possible, objectives are expected to be behavioral (eg, observable and measurable). (CAPTE Definition)

Operations: Managing day-to-day non-personnel matters within the organization (Schafer, Lopopolo, & Luedtke-Hoffmann, 2007).

Outcomes Assessment: The systematic collection, review, and use of information about education programs undertaken for the purpose of improving student learning and development (Palomba & Banta, 1999)

Expected Program Outcomes: Predictable and demonstrable results of program faculty and student activities directed toward achievement of the stated program goals. (CAPTE Definition)

Expected Student Outcomes: Competencies that the program expects students to have achieved at completion of the program, as well as stated expectations for graduate success in relationship to graduation rates, licensure rates, and employment rates. Expected student outcomes are a subset of the expected outcomes of the program. (CAPTE Definition)

Physical therapist (PT): A person who is a graduate of an accredited physical therapist education program and is licensed to practice physical therapy. (*Guide to Physical Therapist Practice*. Rev 2nd Ed. Alexandria, Va: American Physical Therapy Association; 2003.) (*Normative Model 2004*, Appendix E)

Physical therapist assistant (PTA): A technically educated health care provider who assists the physical therapist in the provision of selected physical therapy interventions. The physical therapist assistant is the only individual who provides selected physical therapy interventions under the direction and supervision of the physical therapist. The physical therapist assistant is a graduate of a physical therapist assistant associate degree program accredited by the Commission on Accreditation in Physical Therapy (CAPTE). (*Guide to Physical Therapist Practice*. Rev 2nd Ed. Alexandria, Va: American Physical Therapy Association; 2003.) (Normative Model 2004, Appendix E)

Physical therapy education program: A general term referring to a physical therapist education program or a physical therapist assistant education program.

Policy: A general principle by which a program is guided in its management. (CAPTE Definition)

Practices: Common actions or activities; customary ways of operation or behavior. (CAPTE Definition)

Procedures: A description of the methods, activities, or processes used to implement a policy. (CAPTE Definition)

Profession: An occupation that is viewed by society as a profession on the basis of its characteristics, development, or power. (Swisher and Page, 2005)

Professional education: A subset of higher education that prepares individuals to practice a profession such as law, medicine, ministry, or physical therapy. (Normative Model 2004, Appendix E)

Professionalism: The conduct, aims, or qualities that characterize or mark a profession or a professional person. (*Normative Model 2004*, Appendix E)

Program review: Formal self-studies of academic departments performed at regular intervals (every 5 to 7 years) using peer review (external and internal) to examine the way in which a unit is functioning. (Palomba & Banta, 1999)

Qualitative methods: Data collection that relies on descriptions rather than numbers.

Quantitative methods: Data collection that relies on numerical scores.

Quality improvement (QI): A management technique to assess and improve internal operations. Quality improvement focuses on organizational systems rather than individual performance and seeks to continuously improve quality rather than reacting when certain baseline statistical thresholds are crossed. The process involves setting goals, implementing systematic changes, measuring outcomes, and making subsequent appropriate improvements. (www.tmci.org/other_resources/glossaryquality.html#quality) (*Normative Model 2004*, Appendix E)

Rubric: A "set of general criteria used to evaluate a student's performance in a given outcome area. Rubrics consist of a fixed measurement scale (eg, 4-point) and a list of criteria that describe the characteristics of products of performances for each score point. Rubrics are frequently accompanied by examples (anchors) of products or performances to illustrate the various score points on the scale." (p. 181, Arter, J., & McTighe, J. (2001). *Scoring rubrics in the classroom: Using performance criteria for assessing and improving student performance.*)

Scholarship (Faculty Activity): Activities that systematically advance the teaching, research, and practice of physical therapy through rigorous inquiry that: (1) is significant to the profession, (2) is creative, (3) is peer-reviewed through various methods, (4) can be replicated or elaborated, and (5) is published, presented, or documented. (CAPTE Definition)

Service (Faculty Activity): Activities in which faculty may be expected to engage including, but not limited to, institution/program governance and committee work, clinical practice, consultation, involvement in professional organizations, and involvement in community organizations. (CAPTE Definition)

Specific action plan: That part of the Assessment Plan that describes the steps that will be taken to address hypotheses developed from the assessment of Expected Program Outcomes.

Stakeholder: An individual with an interest or share in any enterprise. (*Normative Model 2004*, Appendix E)

Strategic planning and management: Planning goals and actions to achieve the organization's long-term mission and goals. (Lopopolo, Schafer, & Nosse, 2004).

Summative assessment/evaluation: Activities conducted after a program or initiative has been in operation for a while, or at its conclusion, to make judgments about its quality or worth compared to previously defined standards for performance. (Palomba & Banta, 1999)

Systems review: An analysis of interrelated and interdependent environmental elements that may affect the business and its operation. (Lopopolo, Schafer, & Nosse, 2004).

Target: A goal or level to be achieved.

Threshold: The point that must be exceeded to elicit a response.

Triangulation: The application and combination of several research methodologies or data sources in the study of the same phenomenon.

Appendix A. Donabedian's Framework

Donabedian's framework, cited here as foundational work adapted for the model presented in this document, includes five steps that are illustrated in Figure 4 below:

1. Obtain data on performance
2. Analyze patterns
3. Interpret and generate hypotheses specific to pattern analysis
4. Take action(s) based on the hypotheses
5. Assess the consequences of action(s) taken

Figure 4. Quality monitoring cycle (adapted from Figure Intro 2, Donabedian, 2003, p. xxviii).
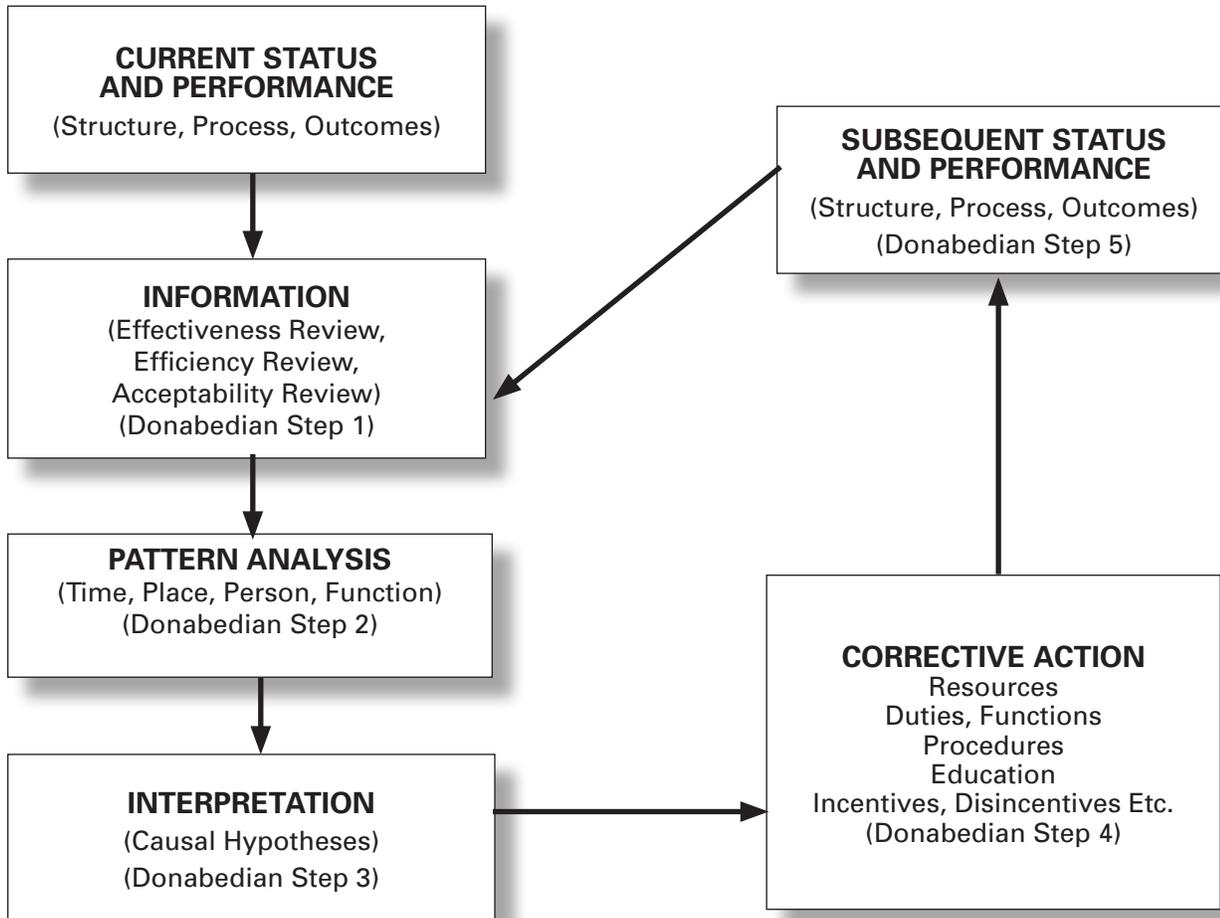
Donabedian's process of outcomes assessment involves five steps that make up an iterative cycle of goal setting, planning, implementation, analysis, and feedback. The process can be conceptualized through the analogy of patient/client care. Following a patient examination/evaluation by a physical therapist, a problem list is identified, mutual goals are created, a plan of care is established, and the patient/client responds accordingly. Then the patient's response to the intervention is assessed: If the patient/client responds favorably and the goals in the plan of care are met, goal attainment is communicated and documented. If the patient/client fails to respond, adjustment is required based on data collected, a change to the plan is made, and the process begins again.

The Model developed for use in *Outcomes Assessment in Physical Therapy Education* includes five steps (Figure 1) that parallel Donabedian's quality monitoring cycle:

Physical Therapy Education Program Outcomes Assessment Process (Figure 1)	In This Document	Donabedian's Quality Monitoring Cycle (Figure 4)
Step 1. Set program goals.	Chapter Two	Current Status and Performance
Step 2. Develop an assessment plan.	Chapter Three	Information
Step 3. Implement the assessment plan.	Chapter Three	Information
Step 4. Analyze assessment results.	Chapter Four	Pattern Analysis Interpretation
Step 5. Close the loop/Feedback.	Chapter Five	Corrective Action
Recursive looping back to….		
Step 1. Set program goals.		Subsequent Status and Performance

For a physical therapy education program to set program goals, knowledge must exist on "current status and performance" (Donabedian). The development and implementation of an assessment plan by a physical therapy education program parallels the information gathering step in Donabedian's quality monitoring cycle. Analysis of assessment results is encompassed by "pattern analysis" and "interpretation." Finally, Donabedian's "corrective action" is analogous to the feedback step of the Model.

Appendix B. Examples

1. Example of departmental, school, and institutional missions and overarching program goals that are aligned.

Mission Statement: Department of Physical Therapy

The mission of the Department of Physical Therapy is to prepare physical therapists who will provide quality physical therapy services. The professional services provided by a physical therapist demand a strong background in the liberal arts and clinical sciences as well as high moral and ethical standards. In addition to clinical practice expectations, teaching, service, and research responsibilities are an integral part of the educational experience.

Mission Statement: School of Medicine and Health Sciences

The mission of the University of North Dakota School of Medicine & Health Sciences is to educate and prepare physicians, medical scientists and other health professionals for service to North Dakota and the nation, and to advance medical and bio-medical knowledge through research.

Mission Statement: University of North Dakota

The University of North Dakota, as a member of the North Dakota University System, serves the state, the country, and the world community through teaching, research, creative activities, and service. State-assisted, the University's work depends also on federal, private, and corporate sources. With other research universities, the University shares a distinctive responsibility for the discovery, development, preservation, and dissemination of knowledge. Through its sponsorship and encouragement of basic and applied research, scholarship, and creative endeavor, the University contributes to the public well-being.

The University maintains its original mission in liberal arts, business, education, law, medicine, engineering and mines; and has also developed special missions in nursing, fine arts, aerospace, energy, human resources, and international studies. It provides a wide range of challenging academic programs for undergraduate, professional and graduate students through the doctoral level. The University encourages students to make informed choices, to communicate effectively, to be intellectually curious and creative, to commit themselves to lifelong learning and the service of others, and to share responsibility both for their own communities and for the world. The University promotes cultural diversity among its students, staff and faculty. In addition to its on-campus instructional and research programs, the University of North Dakota separately and cooperatively provides extensive continuing education and public service programs for all areas of the state and region.

Overarching Program Goals:

Students

Goal 1: The student will demonstrate the skills necessary for the entry-level practice of physical therapy.

Goal 2: The student is an advocate for service to the community and the profession.

Goal 3: The student will develop critical inquiry skills related to clinical and basic science research.

Goal 4: The student will develop the skills required for lif- long learning.

Goal 5: The student is to be an advocate for health and wellness at the individual and societal levels, demonstrate respect for self and others, and a commitment to the profession of physical therapy.

Faculty

Goal 1: Faculty members should role model a commitment to service activities to the community and the profession.

Goal 2: Faculty members are to be engaged in scholarly activity, the promotion of evidence-based practice in their teaching and the pursuit of professional advancement.

Program

Goal: The program, through its faculty and students, will show a commitment to the private and professional communities through activities of health promotion, continuing education, service, and advocacy for the physical therapy profession.

2. Example of Program Goal and Expected Program Outcomes Selected for Outcomes Assessment Process

Program Goal:

Students/graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.

Expected Program Outcomes Selected for Outcomes Assessment:

1. Students/graduates will demonstrate entry-level competence on all written and practical examinations.
2. Students/graduates will demonstrate entry-level competence in all clinical skills by the end of their clinical experiences.
3. Students/graduates will demonstrate effective written and oral communication skills.
4. Faculty should provide evidence for the methods, procedures, and theories taught within the curriculum.

3. Example of Expected Program Outcome That Relates to More Than One Goal

Program Goals:

Goal 1:   Students/graduates will demonstrate the skills necessary for the entry-level practice of physical therapy.

Goal 2:   Faculty members are to be engaged in scholarly activity, the promotion of evidence-based practice in their teaching, and the pursuit of professional advancement.

Expected Program Outcome That Relates to Both of the Above Goals:

Faculty should provide evidence for the methods, procedures, and theories taught within the curriculum.

4. Examples of Poorly Written Program Goals and Expected Program Outcomes

Example 1:

Program Mission:

The mission of the Department of Physical Therapy is to prepare physical therapists who will provide quality physical therapy services. The professional services provided by a physical therapist demand a strong background in the liberal arts and clinical sciences as well as high moral and ethical standards. In addition to clinical practice expectations, teaching, service, and research responsibilities are an integral part of the educational experience

Program Goal:

Faculty will provide innovative learning experiences.

Expected Program Outcomes Linked to Program Goals:

1. NPTE scores above 80%.
2. The student is expected to be self-aware, self-directed, and responsible for his or her learning.
3. 90% of classes taught include multimedia presentation (Powerpoint, video, audio, etc).

Explanation:

- Mission/Goal: The goal is not related to the mission.
- Goal: The goal is not written in goal language and is not a broad statement of something the program wants to accomplish.
- Expected Program Outcome 1: Outcome not directly linked to the Program Goal and the outcome statement is too specific and is more like a threshold or target.
- Expected Program Outcome 2: Outcome statement is well written, but Outcome is not linked to Program Goal.

- ■ Expected Program Outcome 3: Outcome is linked to Program Goal but written more like a threshold or target than an Outcome. A better outcome statement would be: Faculty will incorporate multimedia and experiential activities into learning experiences.

Example 2:

Program Mission:

The mission of the physical therapist assistant program is to prepare students to become caring and responsible practitioners who are competent in the provision of physical therapy services.

Program Goal:

To provide didactic and clinical education learning experiences for each PTA student as outlined by the Commission on Accreditation in Physical Therapy Education that enable the students upon graduation to be competent, skilled, and ethical in the provision of physical therapy services under the direction and supervision of a licensed physical therapist within the scope of practice of the PTA as set forth by the [state] Practice Act, the APTA Standards of Ethical Conduct for the PTA, and Guide for Conduct of the PTA.

Explanation:

Goal statement combines too many elements, making it difficult to identify the specific expected program outcomes that, if met, would demonstrate that the goal is met.

Expected Program Outcomes:

1. Communicate with the patient and others in an effective, appropriate, and capable manner.
2. Recognize individual and cultural differences and be able to respond appropriately in all aspects of PT services.
3. Exhibit conduct that reflects a commitment to meet the expectations of the public and the profession of physical therapy.
4. Exhibit conduct that reflects practice standards that are legal, ethical and safe.
5. Communicate an understanding of the plan of care developed by the PT to achieve short- and long-term goals and intended outcomes.
6. Demonstrate competence in implementing selected components of interventions identified in the plan of care established by the PT.
7. Demonstrate competence in performing components of data collections skills essential for carrying out the plan of care.
8. Adjust interventions within the plan of care established by the PT in response to patient clinical indications and to report this to the supervising PT.
9. Recognize when intervention should not be provided due to changes in the patient's status and to report this to the supervising PT.
10. Report any changes in the patient's status to the supervising PT.
11. Recognize when the direction to perform an intervention is beyond that which is appropriate for a PTA and to initiate clarification with the PT.
12. Participate in educating patients and caregivers as directed by the supervising PT.
13. Provide patient-related instruction to patients, family members, and caregivers to achieve patient outcomes based on the plan of care established by the PT.
14. Take appropriate action in an emergency situation.
15. Complete thorough, accurate, logical, concise, timely, and legible documentation that follows guidelines and specific documentation formats required by state practice acts, the practice setting, and other regulatory agencies.
16. Participate in discharge planning and follow-up as directed by the supervising PT.
17. Read and understand the health care literature.
18. Under the direction and supervision of the PT, instruct other members of the health care team using established techniques, programs, and instructional materials commensurate with the learning characteristics of the audience.
19. Educate others about the role of the PTA.

20. Interact with other members of the health care team in patient-care and non-patient care activities.

21. Provide accurate and timely information for billing and reimbursement purposes.

22. Describe aspects of organizational planning and operation of the PT service.

23. Participate in performance improvement activities.

24. Demonstrate a commitment to meeting the needs of the patients and consumers.

25. Demonstrate an awareness of social responsibility, citizenship, and advocacy, including participation in community and service organizations and activities.

26. Identify career development and life-long learning opportunities.

27. Recognize the role of the PTA in the clinical education of PTA students.

Explanation:
- Statements provided are taken directly from the practice expectations identified in the *Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapist Assistants* and *A Normative Model of Physical Therapist Assistant Education*, which does not identify the uniqueness of **this** program.
- In addition, having 27 expected student outcomes makes the process burdensome.

5. Example of PTA Program-Specific Aligned Mission/Goals/Expected Outcomes and Assessment Plan Based on Findings

Institution Mission:

Transpotomic Community College is a community-focused educational institution that provides open access to programs that promote the development of workforce skills and credentials necessary to support the human resource needs of the community. We value a community that supports diversity, mutual respect, critical and creative thinking, and lifelong learning. We strive to offer an educational foundation that will enhance the individual's potential to contribute to society in today's rapidly changing environment.

Program Mission:

The program will produce entry-level physical therapist assistants who are capable of performing safe and ethical interventions under the direction and supervision of a physical therapist. Due to the constant changes in the health care delivery system, graduates must possess the skills and values necessary for continuing their professional growth.

Goals:

1. Graduates will be competent physical therapist assistants who work under the supervision of physical therapists.
2. Graduates will engage in lifelong learning activities.
3. Gradutates and the program will meet the human resources needs of the community.

Expected Outcomes:

Goal 1: Graduates will be competent physical therapist assistants who work under the supervision of physical therapists.
  a. Graduates will pass the national physical therapist assistant licensure exam.
  b. Graduates will implement appropriate physical therapy treatments based on the plan of care established by a licensed physical therapist.
  c. Graduates will understand the role of the physical therapist assistant and work in a manner consistent with their state practice act and APTA's Code of Ethics and Guide for Conduct of the Physical Therapist Assistant.

Goal 2: Graduates will engage in lifelong learning activities.
  a. Graduates will be able to self assess their strengths and weaknesses.

b. Graduates will participate in continuing education programs to update their knowledge and skills.

c. The program will provide appropriate continuing education opportunities for graduates.

Goal 3: Graduates and the program will meet the human resources needs of the community.

a. Graduates will be employed in a variety of physical therapy settings.

b. The program will adjust class size based on changes in the market.

Table 3h. Assessment Plan

Program Goal: Prepare competent physical therapist assistants to work under the supervision of physical therapists. Expected Program Outcome: Graduates will pass the national PTA licensure exam. Relevant Institutional Goal: Graduates and the program will meet the human resources needs of the community.										
Column A	**Column B1**	**Column B2**	**Column B3**	**Column C**	**Column D**	**Column E**	**Column F**	**Column G**	**Column H**
Indicator	Data source	Data type (qualitative or quantitative)	Are data already available?	From whom will data be collected?	Who will collect data?	Who will analyze/ interpret data?	What is the timeframe for data collection?	What are the target and/ or threshold criteria?	Report your findings and indicate if there is a trigger for change or further analysis.
First-time pass rate will be 90%; ultimate pass rate will be 100%.	FSBPT licensure pass rates	Quantitative	Yes	FSBPT	Program director	PTA curriculum committee	December, May	Target: first-time pass rate grades ≥ 80%; ultimate pass rate = 100% Threshold: ultimate pass rate = 80%	F2008 first-time pass rate = 60%; ultimate pass rate = 72%; 3-year ultimate pass rate = 75%; **further analysis needed**
Continue as needed ↓									

Appendix C. Types of Data That Can Be Collected (table)

Quality Improvement Area	Areas to Evaluate	Types of Data		Collected From Whom/Where?	Who Collects?	Timing
		Generic	**Specific Instruments**			
Structure	Mission of the Institution	• Institution mission statement • Institutional goals • Accreditation self-study • Systems approach to education and program planning		• Institution • Institution Web sites • Director of program	• Program specific • Responsibility of faculty	• Whenever institution mission changes • At least every 5-10 years
	Program Goals (Identify what goals are, not if they are being met)	• Strategic plan • Institutional documents • Accreditation self-study • Systems approach to education and program planning		• Faculty, stakeholders	• Program specific • Responsibility of faculty	• 3-5 years • Annual review of objectives under strategic plan/goals
	Curricular Model/Plan	• Curricular & program outcomes • Plan of study (such as done for CAPTE) • Catalog • Web site		• Student • Alumni • Faculty • Clinical education faculty	• Curriculum committee • Core faculty responsibility	At least annually
	Academic faculty (coverages for all aspects of faculty responsibility associated)	• Sufficient faculty to do all work of faculty • Teaching (content expertise) • Service/ governance • Scholarship (program balance) • Core and associated FTEs • Tenure and non-tenure track • Academic and clinical track • Credentials • Areas of expertise • Specialty certification	CAPTE Forms: • Core faculty workload distribution form • Curriculum summary form • Faculty scholarship form	• Faculty • Program administrator (PA)	• PA	• As needed • At least annually
	Clinical education faculty (enough people with enough qualifications)	• Number • Qualifications (years in practice, years as CI, specialist certification)	• CSIF • APTA SSEF • Director of clinical education	• Clinical education instructors • CCCEs • Students (returning to the programs)	• Director of clinical education	• At least annually • Before, during, and after every clinical experience (3+ times)

Quality Improvement Area	Areas to Evaluate	Types of Data		Collected From Whom/Where?	Who Collects?	Timing
		Generic	Specific Instruments			
	Resources: Financial resources	• Budget (income and expenses) • Number, amount, and source of external and internal grants • Program goals • Fundraising	• Budget reports • Budget allocations	• Program administrator (PA) • Institutional accounting office	• Program specific	• At least annually
	Resources: Clinical education sites	• Numbers • Quality • Variety	• CPI • CSIF • APTA SSEF	• Clinical sites • Clinical instructors • CCCEs • Students	• DCE	• Regularly • At least annually
	• Resources: Physical offices (classroom, labs, equipment, storage, research space and equipment) • Clinical practice space	• Square footage • Blueprints/ physical space plan • Inventory • Office • Classroom • Lab • Research	None	• Lab manager • Space utilization and planning • Administration	• Program specific	• Regularly • Change in program • As needed • Driven by goals
Structure	Resources: Technology structure (learning resources, library, librarian, IT services, databases, computers, software, telecommunication, teleconference; distance learning platforms	• Inventory of technology and people resources • Accessibility (pp time, ADA, open hours)	None	• Appropriate individuals • Departments • Students • Space utilization/ technology office	• Program specific	• Regularly • As needed
	Resources: Student support services (admissions, financial, health, counseling, safety)	• Student government • Policies • Catalogs • Student handbook (university and department specific)	None	• Students • Faculty • Service departments	• Program specific	• Annually • As needed
	Resources: Staff	• Numbers • Type		• PA • Institutional Research	• PA	• Annually • As needed
	Resources: alumni (optional)			• Alumni • Alumni Office	• Program Specific	• As Needed
	Admissions	• Accreditation self-study • Admissions criteria apps/ admits/ enrolled • Data (by age, gender, R/E, GPA)	• GRE • Millers analogy • Allied health professions aptitude test • GPA	• Applications • Admissions office • Institutional research • PTCAS	• Program staff • PT admissions committee	• Annually • Every term/ semester

Quality Improvement Area	Areas to Evaluate	Types of Data		Collected From Whom/Where?	Who Collects?	Timing
		Generic	Specific Instruments			
Structure	Policies	• Accreditation self-study • Faculty policy manual • Student policy handbook (university and department specific) • Catalogs • APTA Code of Ethics • Institutional bylaws • Broader graduate school institutional and federal guidelines		• University and program documents and Web site • APTA documents and Web site	• Self-study committees • Faculty	• Annually • Accreditation cycle • As needed
	Environment of PT program (relationship with institution and community, governance)	• Institutional and program organization structure, including location of PT program, data on local city and community • Relationship with state legislature and state licensure • Federal policies affecting PT practice • Environmental scans (in strategic plan) • Marketing plan	• Educational needs index	• Legislation databases • Institutional documents and Web sites • Census and community information • Program advisory committee	• PT faculty • Institutional research	• Every 3 to 5 years • Ongoing

Quality Improvement Area	Areas to Evaluate	Types of Data		Collected From Whom/Where?	Who Collects?	Timing
		Generic	Specific Instruments			
Process	Content and delivery of curriculum	• Accreditation self-study • Normative Model of PT or PTA education • Data found in scholarship of teaching & learning • Use/mix and hours by various learning experiences • Course evaluations • Use of course learning management system (CMS) • Delivery methods/modalities	• Model practice act • State practice act • Curricular plan • Syllabi • Course objectives • Learning objectives • Student assessment scores (exams, practical exam) • Exit interview data • Focus group data • Peer review of course content • Student/site clinical evaluation form • PT CPI data • Patient satisfaction survey data • Alumni survey data • Survey data from professional colleagues • Use of various teaching techniques and assignments such as Hooked on Evidence	• Faculty (core and associate faculty) • Students • Alumni • Clinical educators • Professional colleagues • Tech/online CMS office	• Faculty • Clinical educators	• End of courses • End of semester • End of program • Between didactic and clinical education components • During clinical education
	Clinical Education	• Accreditation self-study • Clinical education policy and procedure manual • Number, variety, and quality of student experiences in clinical education sites • Documents on how student clinical placements are made	• Focus group data • PT CPI (CI and self-assessments) • Student/site evaluation form, SSEF • CSIF (learning requirement) • Patient documentation • Journal/diary • Portfolio • In-service or case study presentation • Clinical site curricular plan • CI Guidelines/ self-assessment • Student learning objectives • Clinical site visit data • Clinical faculty development programs • Exit interview	• Students • Clinical educators • Patients • DCEs	• DCEs • Faculty	• Prior to, during, and after clinical experiences

Quality Improvement Area	Areas to Evaluate	Types of Data		Collected From Whom/Where?	Who Collects?	Timing
		Generic	Specific Instruments			
Process	Faculty evaluation and develop-ment (including hiring)	• Faculty self-reflection	• Program Director (PD) reviews • Dean/administra-tion reviews • Peer faculty reviews • Documentation of process of faculty evaluation • Standardized student course evaluations • Faculty/program self-developed tools (self-assess-ments, midcourse evaluations) • Feedback from clinical educators • Faculty develop-ment plans includ-ing continuing education • Faculty portfolios • Curriculum vitae • P&T dossiers • Scholarship of community engaged partner-ships tools	• Students • Faculty • Dean/administra-tion • Program Admistrator (PA)s • Community partners • Clinical educa-tors	• Faculty • PAs • P&T committee	• Annually (faculty eval) • Every semes-ter
	Program Planning		• Strategic plan (program and institution) • Minutes from faculty retreat • Minutes from meetings (faculty, students, clinical educators) • Data (by section) from the licensure exam	• Faculty • PA • Clinical educa-tors • Students • Alumni • Advisory groups • FSBPT	• Curriculum • Program planning committee • Faculty • Program director	• At least annually

Quality Improvement Area	Areas to Evaluate	Types of Data		Collected From Whom/Where?	Who Collects?	Timing
		Generic	**Specific Instruments**			
Process	Communication		**Structure** • Affiliation agreements with clinical sites • CSIF • Weekly planning learning form (clinical ed) • Learning contracts (completed by students, CIs, faculty) • Communication with clinical sites (number and actual documents) • Organizational chart **Process** • Correspondence files (eg, e-mails, letters, faxes) • Student records • Site visit notes • Faculty meetings • Remediation learning contracts • Critical incident form • Student grievances and appeals • Newsletters • Web site • Open house and job fairs • Student advising • Marketing and PR • Interactions with supporting campus services (eg, library, IT, health services, financial aid/ scholarship)	**Structure** • DCE/legal counsel • Clinical instructors • Faculty **Process** • Faculty and staff • Clinical educators • Students • IT (Web site) • Alumni (job fairs) • Campus services	**Structure** • DCE • Faculty • Clinical educators **Process** • Faculty • Clinical Educators • Alumni (at job fairs) • Program director	**Structure** • Annual for affiliation agreements • Regularly and concurrent with clinical education experiences **Process** • Ongoing dependent upon communication process
Outcomes	Student Learning Outcomes	• Normative model (could be the basis of some data, source of outcomes) • CPI • Create a meta-instrument from existing • Exit survey • Graduate survey • "Official" or self-assessment • Professional colleague survey or checklist	• CPI • Institution-specific measures • Comprehensive exam (such as practical exam final) • Generic abilities assessment • Professionalism self-assessment form	• Students • Professional colleagues • Clinical instructors	• Faculty (give data to program)	• Self-assessment • Program specific (end of course, end of semester, end of year, end of program)

Quality Improvement Area	Areas to Evaluate	Types of Data		Collected From Whom/Where?	Who Collects?	Timing
		Generic	Specific Instruments			
Outcomes	Program Outcomes	• Accreditation self-study • Resource allocation over time • Job placement • Student retention statistics • Grants to the program for faculty development • Student credit hours generated • Monies generated • Grant proposals submitted by faculty • *US News & World Report* rankings • Student/alumni satisfaction surveys • Employment in field • Time to first job • Salaries • Student indebtedness	• CPI • Licensure exam scores and pass rates	• Institutional research • Department chair • Finance office • Students • Clinical education faculty • State • FSBPT • Faculty • *US News & World Report* • Financial aid offices (limited) • Self-report from graduates	• Program faculty and staff	• Annual • Ongoing but should be systematic • Cyclic as determined by program

Quality Improvement Area	Areas to Evaluate	Types of Data		Collected From Whom/Where?	Who Collects?	Timing
		Generic	**Specific Instruments**			
Outcomes	Faculty Outcomes	• Student credit hours generated • Monies generated • Grant proposals submitted by faculty • Student teaching evaluations • Patents and Inventions • Publications • Internal peer review of teaching • Annual reviews of faculty • Self-assessments • Portfolios • Presentations • Service to profession • Service to the institution • Practice plans • Faculty dossiers • IPEDS data • Professional consultation • Serving on federal agency and funding study sections • Editorial board positions • Fact sheet from CAPTE Web site (for comparison) • NSOPF		• Faculty • Department chair • Institutional research • Students • Peers who do reviews	• Program Administrator (PA) • Self-study committee • Institutional research	• At least each semester • Formally look at annual performance
	Alumni Outcomes	• Employment in field • Salaries • Specialization • Lifelong learning • CE participation • Commitment to profession and program	• Institutional specific • Alumni surveys • Employer surveys	• Alumni	• Program faculty and staff • Alumni office (clarify if they do it and how can PT get to it) • Institutional research	• Every 3-5 years

Resources

American Association for Higher Education (AAHE). AAHE Principles: Assessment forum. 9 principles of good practice for assessing student learning. Washington, DC: American Association for Higher Education (AAHE); 1996. http://ultibase.rmit.edu.au/Articles/june97/ameri1.htm#9. Accessed on March 31, 2009.

American Association of Colleges of Pharmacy, with the University of the Sciences in Philadelphia. Doctor of Pharmacy Program Assessment Resources Web page. *A Guide for Doctor of Pharmacy Program Assessment*, 2000. http://www.usp.edu/assessment/pharmacy.shtml. Accessed December 19, 2008.

American Physical Therapy Association. *A Normative Model of Physical Therapist Professional Education: Version 2004*. Alexandria, VA: American Physical Therapy Association; 2004.

American Physical Therapy Association. *A Normative Model of Physical Therapist Assistant Education: Version 2007*. Alexandria, VA: American Physical Therapy Association; 2007.

American Physical Therapy Association. Education Strategic Plan (2006-2020). http://www.apta.org/AM/Template.cfm?Section=Home&CONTENTID=52036&TEMPLATE=/CM/ContentDisplay.cfm. Published April 2006. Accessed December 19, 2008.

American Physical Therapy Association. *Physical Therapist Clinical Performance Instrument*. Alexandria, VA: American Physical Therapy Association; 1997.

American Physical Therapy Association. *Professionalism in Physical Therapy: Core Values*. Alexandria, VA: American Physical Therapy Association; 2003.

Arter J, McTighe J. *Scoring Rubrics in the Classroom: Using Performance Criteria for Assessing and Improving Student Performance*. Thousand Oaks, CA: Corwin Press; 2000.

Commission on Accreditation in Physical Therapy Education. *Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapists*. Alexandria, VA: American Physical Therapy Association; 2007.

Commission on Accreditation in Physical Therapy Education. *Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapists*. Alexandria, VA: American Physical Therapy Association; 2006.

Detrick G, Pica JA. The power of benchmarking. In: Randy Swing, ed. *Proving and Improving: Strategies for Assessing the First College Year*. Columbia, SC: National Resource Center for the First-Year Experience, University of South Carolina; 2001.

Donabedian A. *An Introduction to Quality Assurance in Health Care*. New York: Oxford University Press; 2003.

Guide to Physical Therapist Practice. Rev 2nd Ed. Alexandria, VA: American Physical Therapy Association; 2003.

Haessig C. Outcomes Assessment for Dietetics Educators [continuing education course]. Chicago, IL: Commission on Accreditation for Dietetics Education; 2002.

Haessig CJ, Potin AS. *Outcomes Assessment for Dietetics Educators*. Chicago, IL: American Dietetic Association, Commission on Accreditation for Dietetics Education; 2002.

Huba ME, Freed JE. *Learner-Centered Assessment on College Campuses: Shifting the Focus From Teaching to Learning*. Needham Heights, MA: Allyn Bacon; 2000.

Lopopolo RB, Schafer DS, Nosse LJ. Leadership, administration, management, and professionalism (LAMP) in physical therapy: A Delphi study. *Phys Ther*. 2004;84(2):137-150.

Managed Care Glossary. Tufts Health Care Institute. http://www.tmci.org/other_resources/glossaryquality.html#qi. Accessed March 31, 2009.

Palomba CA, Banta TW. *Assessment Essentials: Planning, Implementing, and Improving Assessment in Higher Education*. San Francisco, CA: Jossey-Bass Publishers; 1999.

Palomba, CA, Banta, TW (Eds). *Assessing Student Competence in Accredited Disciplines: Pioneering Approaches to Assessment in Higher Education.* Sterling, VA: Stylus Publishing; 2001.

Schafer DS, Lopopolo RB, Luedtke-Hoffmann KA. Administration and management skills needed by physical therapist graduates in 2010: A national survey. *Phys Ther.* 2007;87(3):261-281.

Swisher LL, Page CG. *Professionalism in Physical Therapy.* St Louis, MO: Elsevier Saunders; 2005.

Walvoord BE. *Assessment Clear and Simple: A Practical Guide for Institutions, Departments, and General Education.*