

Report of the BEA Task Force on the Integration of Science and Practice in

Health Service Psychology (HSP) Training

September 2016

Table of Contents

	Page
Executive Summary	3
Introduction	4
Terminology	8
Assumptions	12
Recommendations	13
Conclusions	26
References	29
Appendix A. Frequently Asked Questions	31
Appendix B. Task Force Roster	33
Appendix C. HSPEC Science Competencies	36

Executive Summary

The Board of Educational Affairs (BEA) Task Force on the Integration of Science and Practice in the Education and Training of Health Service Psychologists (HSPs) was convened in 2014 to address one of the recommendations made by the Health Service Psychology Education Collaborative (HSPEC). That recommendation stated that the education and training of HSP include an integrative approach to professional preparation that incorporates scientific-mindedness and goes well beyond merely “consuming” research findings. The goal of this report and its recommendations is to assist programs in promoting student/trainee competence in the integration of science and practice as articulated in the HSPEC blueprint. This report outlines the history, rationale, and nature of the work of the task force and the process used by the task force to fulfill its charge. The report provides specific guidance and recommendations for HSP education and training programs that are designed to help programs meet the expectations put forth by the HSPEC.

The task force came to agreement on definitions for key terms; these are presented in this report to facilitate common understanding of terms used. The task force articulated assumptions related to the centrality of science competencies for HSPs and how this is broader than training in evidence-based practice. The task force then developed for each of the HSP science competencies, student-focused behavioral anchors, examples of possible program activities to foster their development and assessment, and relevant resources that could be used to support education and training in each competency. The recommendations are suggestions and are not meant to limit academic freedom, but rather should be adapted by programs consistent with their local training philosophy.

Introduction

In 2014, the American Psychological Association's Board of Educational Affairs (BEA) approved a motion to convene a task force to address a recommendation made by the Health Service Psychology Education Collaborative (HSPEC) that education and training of health service psychologists (HSPs) include an integrative approach to professional preparation that incorporates scientific-mindedness and goes well beyond merely "consuming" research findings. Specifically:

The task force is charged with examining the integration of science and practice in health service psychology education and training as articulated in the blueprint recommendation of the Health Service Psychology Education Collaborative (HSPEC, 2013). The task force will evaluate the action steps suggested by HSPEC, consider other action steps, set priorities, take action on prioritized items, and develop a plan for implementation.

This report outlines the history, rationale, and nature of the work of the task force and the process used by the task force to fulfill its charge. The report provides specific guidance and recommendations for HSP education and training programs that are designed to help programs meet the expectations put forth by the HSPEC by:

- a) Reviewing the action steps proposed by HSPEC.
- b) Defining basic terminology relevant to HSP to ensure that the underlying language that explains our assumptions and recommendations is transparent, consistent, and well understood.

- c) Laying out key assumptions based on this terminology, so that subsequent recommendations are built on this strong foundation.
- d) Providing recommendations with an integrative approach to developing a range of trainee competencies that, together, contribute to engaging in research during the course of HSP education and a subsequent career of scientific thinking. Such training is highly relevant for careers in both the practice and scientific arenas.
- e) Offering guidance, while assuring independence and flexibility, for adopting these recommendations to reflect local programming philosophy, the discipline-specific knowledge, and profession-wide competencies required of accredited programs in HSP (APA CoA, 2015), along with the expectations put forth in the HSP Blueprint, including the integration of science and practice in HSP education and training.

HSPEC Blueprint

The BEA approved the creation of HSPEC, a multi-year, multi-organizational process that addressed key considerations to ensure quality education and training of HSPs. Members of HSPEC represented the APA, the Council of Chairs of Training Councils, and the Council of Graduate Departments of Psychology. After a broad survey of educators, students, trainees, and psychologists working outside education and training settings, seven key topics were identified. These seven topics were developed as recommendations with a rationale and proposed action steps. Taken together, they formed what become known as the “blueprint” (HSPEC, 2013). One of the recommendations was that competencies for HSPs be articulated. HSPEC took action on that recommendation, and the competencies articulated were approved as APA policy in 2014.

The HSP competencies are foundational to the work of this task force that focuses on the fifth recommendation in the blueprint:

“The integration of science and practice requires HSPs to implement evidence-based procedures, utilize a sophisticated degree of scientific mindedness, and do more than “consume” research findings.

Rationale as described by the HSPEC and utilized by BEA in forming the Task Force (HSPEC, 2013):

Psychology is a STEM discipline. As a result, the practice of psychology is scientifically based, and science is not merely one aspect of a continuum from science to practice. A crucial component of health service psychology, science must be part of all education and training. The growth of integrated primary care and patient-centered “medical homes” as settings where HSPs work and provide leadership supports the increased need to integrate science and practice. Psychologists who are health service providers need to learn the skills necessary to conduct research and evaluate the applicability of research to clinical practice. The development of “models of clinical training” has unintentionally dichotomized the field into those programs that train for research careers and those programs that train for practice, with the majority of programs falling somewhere in between. Given that career trajectories often include both research and practice, and that the relative emphasis on each of these may change over a person’s career, there needs to be a better articulation of how integration is fostered and how it is demonstrated in education and training.

Stokes (1997) suggested that the dichotomy of applied versus basic research be abandoned; rather he described a 2 X 2 method of conceptualizing science that was in part inspired by the work of Louis Pasteur. The figure below borrows heavily from Stokes’ conceptualizations.

Knowledge

		<i>Research is designed to search for new understanding</i>	<i>Research is designed to apply existing knowledge</i>
<i>Applicability</i>	<i>Research is aimed at a practical problem</i>	A	B
	<i>Research is pure science, with no clear application in mind</i>	C	D

Although science has always formed the basis of practice, differing career paths meant HSPs were trained in a wide range of research modalities. Many programs expect their graduates to be competent in the more “traditional” methods to generate new knowledge, regardless of whether those methods are designed primarily to increase our understanding of the world (C) or primarily to solve practical problems (A); education and training in these areas will likely not change. However, HSPEC believes that all HSPs, regardless of career path, need to be able to conduct research that applies existing knowledge to solve practical problems (B). Activities such as conducting program evaluations, evaluating the efficacy of interventions, and quality improvement interventions in one’s practice require HSPs to be more than mere consumers of research. Rather, the integration of science and practice must produce HSPs capable of both asking and answering questions in an evidence-based, scientific manner (p. 417-418),

Action Steps Proposed in the HSPEC Blueprint

In developing their work plan, the task force was asked by BEA to consider the following action steps as proposed by HSPEC:

1. *Promote promising practices in the integration of science and practice by collecting examples, and create an accessible database with regard to:*
 - *bodies of knowledge within psychology,*
 - *the interface of psychological science with other disciplines,*
 - *psychological science in the practice of psychology, and*
 - *practice informed science*
2. *Develop a measurable, articulated definition of the integration of science and practice that can be disseminated to training programs.*
3. *Assist the field in further articulation of competencies in research related to this area. This may involve work with the Evidence-Based Behavioral Practice Council. As a*

starting point, the kinds of knowledge and skills that health service psychologists should demonstrate include the ability to:

- *Identify strengths and weaknesses of different kinds of research evidence for answering different kinds of behavioral health questions,*
- *Understand methodologies used in synthesizing research evidence,*
- *Evaluate the quality and strength of evidence in systematic reviews or practice guidelines,*
- *Evaluate the quality and strength of primary research evidence using available critical appraisal tools that assess study design and/or study execution,*
- *Evaluate the applicability of the evidence for a particular individual or population, and*
- *Identify deficiencies in existing behavioral evidence that suggest needed research.” (HSPEC, 417-418, 2013)*

Work of the Task Force

A call for nominations was widely disseminated, and in early 2015, BEA appointed seven members, a liaison from BEA, and a chair, Dr. Sharon Berry. A complete roster of membership appears in Appendix B of this report. The task force conducted much of its work via conference call and electronic mail, supplemented by one face-to-face meeting.

Terminology and Definitions

The following terminology was taken from existing literature, from the HSPEC definitions, or developed by the Task Force, and defined below for consistent usage in the review of HSPEC and in development of recommendations.

General

- **Psychology** is the study of the mind and behavior. The discipline embraces all aspects of the human experience — from the neural functioning of the brain to the influence of culture on behavior, from prenatal development of the embryo and fetus to care for the aged. In every conceivable setting from scientific research centers to mental health services, "the

understanding of behavior" is the enterprise of psychologists. (APA,

<http://www.apa.org/support/about-apa.aspx>).

- All psychologists are **educated and trained to carry out research**. Some psychologists choose careers as scientists, some choose careers as practitioners, and some choose careers that combine scientific and practice activities on a daily basis. Naturally, these choices can and do vary and change over the course of one's career, but all psychologists should be competent to carry out reliable and valid empirical research and to evaluate behavioral health research reported in publications, technical reports, and the popular press.

Science

- **Research**, broadly defined, is any "systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge" (e.g., in the scientific and applied literature; Department of Health and Human Services, 2009) or to produce local knowledge (usable to enhance local services or answer a local, applied problem).
- **Psychological science** examines human behavior and its underlying bases through the scientific method and the accrual of basic scientific knowledge. Psychological science includes both basic and applied science (APA, 2010).
- **Psychological scientists** use a broad range of research methods and often work collaboratively with scientists in other disciplines (APA, n.d.)
- **Scientific method**, as described by APA, is "The set of procedures used for gathering and interpreting objective information in a way that minimizes error and yields dependable generalizations" (Gerrig & Zimbardo, 2002).

Practice

- Psychology is a core STEM discipline, and as a result, the **practice** of psychology is scientifically based. Science is not merely one aspect of the continuum from science to practice, but must be part of all education and training for health service psychology (HSPEC, 2013). See below **Health Service Psychologists**.

Education and Training

- For this report, **education** is defined as learning that occurs in the classroom, laboratory, or seminar setting.
- For this report, **Training** is defined as applied learning activities that occur in clinical settings or in the laboratory.
- For this report, a **student** is someone who is studying for a doctoral degree both in the classroom and in pre-internship practica, whereas a **trainee** is someone receiving applied, clinical education that is outside the classroom, usually in an internship or postdoctoral position.

Health Service Psychology

- To achieve the integration of practice and science, all HSP education and training programs work to develop the HSPEC competencies for all of their students and trainees.
 - Given the rapid evolution of healthcare in this country, it is vital for education and training programs **to integrate all HSP competencies** into their training.
 - These competencies are meant to inform any needed revisions in HSP education and training programs.
- These competencies include topics related to both science and practice. The HSP

competencies for “science,” as developed by the HSPEC, are detailed in Appendix B.

Health Service Psychologists

- **Health service psychologists (HSP)** produce, evaluate, and disseminate scientific knowledge for purposes of generalizable or local knowledge and its application.
- HSPs are prepared (via their education and training) to conduct research using scientific tools, techniques, and methods to solve both basic and applied problems.
- HSPs utilize a sophisticated degree of scientific mindedness (Bieschke, Fouad, Collins, & Halonen, 2004) and do more than consume research. The integration of research and practice in education and training activities produce HSPs who apply scientific thinking in both their research endeavors and clinical practice.
- ALL HSPs are capable of both asking and answering questions in a scientific manner.
- ALL HSPs are trained as competent researchers who understand clinical issues.
 - o As part of their doctoral education and training, **all HSPs will have conducted an empirical research project that includes collection and analysis of data.** The project examines a research question that is relevant to psychological science and/or clinical practice (e.g., treatment efficacy, program evaluation, or quality improvement studies).
 - o ALL HSPs are trained as competent clinicians who understand the underlying science of their area(s) of practice.
 - o HSP’s clinical training will have included scientifically based practice and the ability to review the scientific, evidence-based literature to make informed decisions for

carrying out both diagnostic and treatment interventions across practice settings and patient diagnostic groups.

Assumptions

The material presented by the task force as well as the recommendations contained in this report were predicated on the following assumptions:

- The HSP competencies in the domain of “science,” as detailed in Appendix B, are key goals of all graduate education and training programs, of all faculty and staff in those programs, and of all students and trainees throughout their entire education, training and their clinical and scientific careers. Science and health care practices are evolving rapidly - thus individuals must keep current and espouse an attitude of a lifelong learner.
 - Data on the decreasing half life of scientific data and its applicability to practice support this (Neimeyer, Taylor, & Rozensky, 2012);
- The concepts articulated in this document apply across the many specializations encompassed within the field of psychology;
- The literature related to evidence-based practice (Anderson, 2006) is critical to but not the sole focus of HSP education and training;
- The expectations related to competence in the science domain, including the carrying out of research as an expected component of graduate education, assumes trainees develop competence in all the HSP competencies and domains.

Recommendations

To assist education and training programs in expanding or adopting new practices and educational objectives associated with developing research competencies for health service psychologists, the task force created Table 1.

Table 1 presents the HSP science competencies, student-focused behavioral anchors for each competency, a range of program methods or activities that can be used to evaluate those competencies, and resources that could be used to promote development of the competency. Using the methodology from the original work on competency benchmarking (<http://www.apa.org/ed/graduate/revised-competency-benchmarks.doc>), Table 1 addresses competencies focused on the integration of science and practice at three levels of education and training: “readiness for practicum,” “readiness for internship,” and “readiness for entry into practice.”

The competencies designed to integrate science and practice are listed in the column titled HSP Competency and come directly from the HSP Blueprint as do the student-focused behavioral anchors (Health Service Psychology Education Collaborative, 2013) presented in bold in the column labeled “Behavioral Anchors for Trainees.” The behavioral anchors presented in the table reflect a synthesis of items generated by members of the task force and those that appear in extant competency models including the APA competency benchmarks, the counseling psychology core competencies, and the competencies for research for health psychologists; and the core competencies for clinical psychology developed by the University of Saskatchewan (APA, 2011; Council of Counseling Psychology Training Programs, 2013; Society for Health Psychology, 2016; University of Saskatchewan Department of Psychology, 2013. If there is no reference indicated, the example was generated by the task force. Similarly, in the column,

Program Activities, suggested methods for teaching and evaluating each competency were generated by the task force or referenced when appropriate. In some cases, the competencies overlap such that the same method or activity can be used to teach and evaluate several competencies.

The key to these recommendations is that they stand as guidance to the field; each academic department or training program continues to have the flexibility and academic freedom to adapt and adopt these recommendations to reflect local programming philosophy and the discipline-specific knowledge and profession-wide competencies required of accredited programs in health service psychology (APA CoA, 2015). The descriptors, definitions and recommendations in this report are not meant to be “bright lines” or standards, but rather provide guidance to help education and training programs adopt the expectations put forth in the HSP Blueprint, including the integration of science and practice in health service psychology education and training as articulated in the blueprint recommendations of the Health Service Psychology Education Collaborative (HSPEC, 2013).

To reiterate, the HSP competencies formed the foundation of the work carried out by this task force, with a focus on the fifth recommendation in the Blueprint as an objective of the education and training of all health service psychologists: **“The integration of science and practice requires HSPs to implement evidence-based procedures, utilize a sophisticated degree of scientific mindedness, and do more than “consume” research findings.”**

Table 1 is offered as guidance to help achieve the goal of the integration of science and practice:

<u>HEALTH SERVICE PSYCHOLOGY (HSP) COMPETENCIES INTEGRATING SCIENCE AND PRACTICE</u>						
<u>Scientific Knowledge and Methods</u>						
Competency: Be knowledgeable about the biological, cognitive, affective, social, and lifespan developmental bases of behavior; able to critically evaluate relevant literature; and apply that knowledge in practice						
<u>Readiness for Practicum</u>		<u>Readiness for Internship</u>		<u>Readiness for Entry into Practice</u>		
<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Individual</u>	<u>Program Activities</u>	<u>Resources</u>
<p>Demonstrates understanding of psychology as a science^a</p> <p>Demonstrates understanding of core scientific conceptualizations of human behavior^b</p> <p>Demonstrates basic knowledge of the breadth of scientific psychology^b</p> <p>Cites scientific literature to support an argument when appropriate^b</p> <p>Evaluates scholarly literature on a topic as needed^b</p>	<p>Course work in biological, cognitive, affective, social, and lifespan developmental bases of behavior</p> <p>Coursework on scientific method.</p> <p>Assign and evaluate a literature review of a specific clinical topic, in which an evaluation of the quality of the evidence is applied to the conclusions</p> <p>Assign and evaluate a case study in which an approach to diagnosis or treatment is defined in view of the literature</p>	<p>Demonstrates intermediate level knowledge of core science (i.e., scientific bases of behavior)^a</p> <p>Critically evaluates scientific literature^b</p> <p>Demonstrates understanding of intersections across core areas of psychological science^b</p> <p>Formulates scientific questions and research inquiries emerging from existing knowledge base^b</p> <p>Applies knowledge base to determine and refine the assessment or treatment of a client in the practicum setting</p>	<p>Provide readings and incorporate into qualifying or comprehensive examination measures of core knowledge of field and major area of study</p> <p>Require practica in which the student provides assessment and intervention that is evidence based</p> <p>Program requires students complete a written or oral examination in which the student describes a course of assessment or treatment in view of the literature</p>	<p>Demonstrates advanced level knowledge of core science (i.e., scientific bases of behavior)^a</p> <p>Accurately evaluates scientific literature regarding clinical issues^b</p> <p>Identifies multiple factors and interactions of those factors that underlie pathological behavior^b</p> <p>Selects appropriate assessment or intervention approaches based on relevant literature</p>	<p>Review written biopsychosocial conceptualizations of a client (e.g., treatment plans, assessment reports, case conceptualizations)</p> <p>Critique live or videotaped supervision of a practicum student providing evidence based treatment</p> <p>Require case presentation in group supervision or didactic setting in which trainee describes an assessment or course of treatment, and refinements, in view of evidence base</p>	<p>Critical Thinking Activities: 2016: Psych Learning Curve Article: Think like a scientist: Harnessing Current Events to Teach Psychological Science</p> <p>Psychosocial interventions for mental and substance use disorders: A framework for establishing evidence based standards.</p> <p>Finding what works in health care: Standards for systematic reviews.</p>

(Continued)

Competency: Be knowledgeable about the biological, cognitive, affective, social, and lifespan developmental bases of behavior; able to critically evaluate relevant literature; and apply that knowledge in practice

<u>Readiness for Practicum</u>		<u>Readiness for Internship</u>		<u>Readiness for Entry into Practice</u>		
<u>Behavioral</u> <u>Anchors for</u> <u>Trainee</u>	<u>Program</u> <u>Activities</u>	<u>Behavioral</u> <u>Anchors for</u> <u>Trainee</u>	<u>Program</u> <u>Activities</u>	<u>Behavioral</u> <u>Anchors for</u> <u>Individual</u>	<u>Program</u> <u>Activities</u>	<u>Resources</u>
<p>Demonstrates openness to multiple forms of scientific inquiry^b</p> <p>The historical relationship of health (service) psychology to the basic sciences, public health and clinical investigation^c</p> <p>Scientific foundations and methods of psychology and exposure to allied health^c</p> <p>Demonstrates understanding of psychology as a science^c</p>				Refines approach to assessment or treatment based on appropriately measured outcomes and relevant literature	Evaluate student providing scientifically based education and/or consultation to interprofessional team about a clinical topic	

Competency: Be knowledgeable about psychological research methods, techniques of data collection and analysis; apply that knowledge in practice						
<u>Readiness for Practicum</u>		<u>Readiness for Internship</u>		<u>Readiness for Entry into Practice</u>		
<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Individual</u>	<u>Program Activities</u>	<u>Resources</u>
<p>Displays critical scientific thinking^a</p> <p>Questions assumptions of knowledge^b</p> <p>Evaluates study methodology and scientific basis of findings^b</p> <p>Presents own work for the scrutiny of others^b</p>	<p>Journal Club discussions; opportunities to review scientific studies and contribute to discussion regarding appropriateness of methodology and statistics</p> <p>Program expects participation on research team and opportunities to serve as research assistant</p> <p>Program provides colloquium by faculty or invited experts regarding research and/or theoretical models</p> <p>Program requires completion of Master's Thesis research plan</p>	<p>Values and applies scientific methods to practice^a</p> <p>Uses literature to support ideas in case conferences and supervision^b</p> <p>Formulates appropriate questions regarding case conceptualization^b</p> <p>Generates hypotheses regarding own contribution to therapeutic process and outcome^b</p> <p>Be knowledgeable about the principles of the responsible conduct of research and understand informed consent</p>	<p>Faculty review research proposal and approve research based dissertation</p> <p>Program encourages and guides students to seek and receive peer reviewed funding for research activity such as National Research Services Award or NRSA</p> <p>Program encourages development of poster presentation for peer reviewed conference or convention</p>	<p>Independently applies scientific methods to practice^a</p> <p>Independently accesses and applies scientific knowledge and skills appropriately to the solution of problems^b</p> <p>Implements appropriate methodology to address research questions^b</p>	<p>Program requires completion of research based dissertation</p> <p>Program encourages submission of research based paper for peer review publication</p> <p>Program develops opportunities for students to conduct empirically based program evaluation</p> <p>Faculty mentor students to serve as a journal article reviewer</p> <p>Program expects students to be familiar with and utilize / provide training to others on Evidence based practice.</p> <p>Program requires APA Style for scientific publications.</p>	<p>CCHPTP Clinical Health Psychology Competencies Rating Form and CCHPTP Clinical Health Psychology Specialty Taxonomy (both located under "Other Resources")</p> <p>APA Style CENTRAL®, the only authoritative and complete institutional online environment for teaching, writing, and publishing in APA Style®. It has been designed to help users develop their writing and professional research skills, and features full integration of APA's best-selling <i>Publication Manual of the American Psychological Association</i>®. Visit http://www.apastyle.org/products/asc-landing-page.aspx for more information or contact APAStyleCentral@apa.org for related questions.</p> <p>APA Guidelines for Test User Qualifications</p>

*(Continued)***Competency: Be knowledgeable about psychological research methods, techniques of data collection and analysis; apply that knowledge in practice**

<u>Readiness for Practicum</u>		<u>Readiness for Internship</u>		<u>Readiness for Entry into Practice</u>		
<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Individual</u>	<u>Program Activities</u>	<u>Resources</u>
<p>Basic knowledge of research methods and of the applications of scientific research, including^d:</p> <p>~Applied statistics and measurement theory;</p> <p>-The logic of different models of scientific research (from laboratory experimentation to quasi-experimental and field research)</p> <p>-(Quantitative and) Qualitative research methods (including observation and interviewing), etc., particularly with respect to the nature of reliability and validity in the gathering and interpretation of qualitative data</p>						<p>Ponterotto, J.G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. <i>Journal of Counseling Psychology</i>, 52, 126-136.http://dx.doi.org/10.1037/0022-0167.52.2.126</p>

Competency: Be knowledgeable about psychological clinical research findings fundamental to the provision of health care services and apply that knowledge in practice						
<u>Readiness for Practicum</u>		<u>Readiness for Internship</u>		<u>Readiness for Entry into Practice</u>		
<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Individual</u>	<u>Program Activities</u>	<u>Resources</u>
<p>Awareness of strengths and limitations of electronic medical records technology</p> <p>Awareness of practices necessary to meet confidentiality and HIPAA requirements when using digital communication technologies</p> <p>Awareness of ethical obligations and standards of practice specific to offering telepsychology services</p> <p>Demonstrates ability to use software packages to statistically analyze data</p>	<p>Ethics coursework</p> <p>Statistics coursework (including digitally-based statistical software)</p> <p>Program encourages use of online literature relevant to specific clients.</p>	<p>Demonstrates knowledge of strengths and limitations of alternative technologies for different telepsychology purposes</p> <p>Demonstrates ability to independently analyze clinical or research data</p> <p>Use web-based informatics tools relevant to individuals and systems^c</p>	<p>Practicum experience providing in-person and telepsychology services</p> <p>Requirement to complete data-based dissertation</p>	<p>Demonstrates ability to independently use, and supervise others in the use of, electronic medical records and electronic communication technologies info</p> <p>Demonstrates ability to plan and carry out analysis of clinical outcome data</p>	<p>Program provides opportunities for Clinical service delivery</p> <p>Program provides mentored experiences with program evaluation</p> <p>Opportunities provided to assist in assessment of new and emerging health technologies^c</p>	<p>The use of Telemedicine in Pediatric Psychology: Research Review and Current Applications</p> <p>The Best Meditation Apps of 2016The Best Meditation Apps of 2016</p> <p>Telemedicine: Pediatric Applications</p> <p>APA Guidelines for the Practice of Telepsychology</p> <p>Practice guidelines for video-based online mental health services. American Telemedicine Association (2013).</p>

Competency: Be familiar with research on how biological, psychological, social, cultural, and economic factors affect health and behavior, disease, treatment outcomes, and wellness and apply that knowledge in practice

<u>Readiness for Practicum</u>		<u>Readiness for Internship</u>		<u>Readiness for Entry into Practice</u>		
<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Individual</u>	<u>Program Activities</u>	<u>Resources</u>
<p>Understands the scientific foundation of professional practice^a</p> <p>Can identify and give examples of the development of evidence based practice in psychology (EBP) as defined by APA^b</p> <p>Displays recognition of the scientific foundations of the competencies^b</p>	<p>Coursework on adult and child psychopathology as well as experience with case conceptualization</p> <p>Practice diagnostic interviewing and documentation</p>	<p>Demonstrates knowledge, understanding, and application of the concept of evidence-based practice^a</p> <p>Applies EBP concepts in case conceptualization, treatment planning, and interventions in consultation with supervisor^b</p> <p>Works with supervisor to compare and contrast EBP approaches with other theoretical perspectives^b</p> <p>Develop health psychology research protocols and evaluate their effectiveness and quality^c</p>	<p>Peer and faculty supervisor observation and review of treatment case and associated diagnostic conceptualization and treatment summary</p> <p>Supervision of supervision (didactic and experiential)</p>	<p>Independently applies knowledge and understanding of scientific foundations independently applied to practice^a</p> <p>Reviews scholarly literature related to clinical work and applies knowledge to case conceptualization^b</p> <p>Independently applies EBP concepts in practice^b</p> <p>Independently compares and contrasts EBP approaches with other theoretical perspectives and interventions in health^b</p> <p>Integrate within and lead in the formulation of interdisciplinary research teams^c</p>	<p>Supervision of graduate students in clinic or practicum setting related to evidence based practice, case conceptualization, and application of critical thinking skills.</p> <p>Program provides opportunities to lead Journal Club with relevant and timely scholarly article reflecting evidence based practice and consideration of all factors contributing to health and behavior, disease, treatment outcomes, and wellness</p>	<p>Evidence-based Practice. Division 12 Research Supported Psychological Treatments</p> <p>Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. <i>Exceptional children</i>, 71(2), 165-179. doi: 10.1177/001440290507100203</p> <p>Effective Child Therapy -- Evidence-based MH treatment for children & adolescents: Division 53, Society of Child and Adolescent Psychology</p> <p>Policy Statement on Evidence-Based Practice in Psychology</p>

Competency: Critically evaluate relevant health and behavioral research related to populations to be served						
<u>Readiness for Practicum</u>		<u>Readiness for Internship</u>		<u>Readiness for Entry into Practice</u>		
<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Individual</u>	<u>Program Activities</u>	<u>Resources</u>
Identifies how scientific databases can be used to gather information ^a	Assignment to conduct a literature review on a population to be served.	Demonstrates knowledge of application of scientific methods to evaluating practices, interventions, populations and programs ^a	Assignment to conduct critical literature review that notes limitations of conclusions drawn.	Applies scientific methods of evaluating practices, interventions, populations, and programs ^a	Program expects student to incorporate the development of a research plan to evaluate a practice, intervention, population or program into a clinical skills course.	Cochrane Library Kazdin, A. E. (2008). Evidence-based treatment and practice: New opportunities to bridge clinical research and practice, enhance the knowledge base, and improve patient care. <i>American Psychologist</i> , 63, 146-159. http://dx.doi.org/10.1037/0003-066X.63.3.146

Competency: Conduct research that contributes to the scientific and professional knowledge base or evaluates the effectiveness of various professional activities in health care and health promotion

<u>Readiness for Practicum</u>		<u>Readiness for Internship</u>		<u>Readiness for Entry into Practice</u>		
<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Individual</u>	<u>Program Activities</u>	<u>Resources</u>
<p>Applies scientific methods of evaluating practices, interventions, populations and programs^a</p> <p>Understands the bounds/limits of one's research competence^c</p>	<p>Program develops and evaluates competencies in designing, carrying out, and preparing journal article that describes project</p> <p>Program has course work and syllabi that teach and expect students to display competencies in design of clinical trial research to study interventions and their effectiveness</p> <p>Program teaches and expects student to prepare an publishable manuscript in APA Style</p> <p>Dissertations are evidence based, controlled studies using standards of quantitative or qualitative research</p>	<p>Applies scientific methods of evaluating practices, interventions, populations and programs^a</p> <p>Appropriate methods and procedures to develop a program of research^c</p> <p>Strengths and potential pitfalls of role relationships that characterize interdisciplinary collaborative research^c</p> <p>· Regulatory and ethics competence in relation to interdisciplinary research.</p> <p>· Appropriate methods and procedures to develop a program of research^c.</p>	<p>Expect student to incorporate these scientific methods in lab meeting discussions</p> <p>Assignment in research methods course to write a research proposal of a quality sufficient to be submitted to a granting agency or to prepare a manuscript suitable for submission to a peer reviewed journal^c</p> <p>Program encourages student to seek peer reviewed funding for research such as NRSA^c</p>	<p>Generates knowledge^a</p> <p>Apply diverse methodologies to address contextual, psychosocial, and biological processes as they relate to disease progression, health^c</p> <p>Develop health psychology research protocols and evaluate their effectiveness and quality^c</p> <p>· Evaluate biopsychosocial and cognitive assessment tools appropriate to understanding physical illness, injury, or disability^c</p> <p>· Design and evaluate empirically supported health promotion, prevention and other interventions appropriate to target populations in the context of an interdisciplinary team^c</p>	<p>Expectation to complete research based dissertation</p> <p>Require submission of research based paper for peer review publication</p>	<p>Youn, S. J., Castonguay, L. G., Xiao, H., Janis, R., McAleavey, A. A., Lockard, A. J., . . . Hayes, J. A. (2015). The Counseling Center Assessment of Psychological Symptoms (CCAPS): Merging clinical practice, training, and research. <i>Psychotherapy</i>, 52, 432-441. doi.org/10.1037/pst0000029</p> <p>Kratochwill et al., (2012). Practice-based evidence for children and adolescents: advancing the research agenda in schools. <i>School Psychology Review</i>, 41(2), 215-235.</p>

Competency: Use research skills for program development and evaluation as well as for quality improvement related to health care services

<u>Readiness for Practicum</u>		<u>Readiness for Internship</u>		<u>Readiness for Entry into Practice</u>		
<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Individual</u>	<u>Program Activities</u>	<u>Resources</u>
<p>Demonstrates understanding of program development and evaluation methods (including qualitative, quantitative, mixed methodology, community based participatory methods), as well as quality improvement methods to health care services and programs</p> <p>Engages in supervised research designed to apply existing knowledge to address a practical problem (i.e. program development and program evaluation efforts).</p>	<p>Course work & readings in program development and evaluation, and quality improvement in health care services and programs</p> <p>Additional didactics, webinars, readings on applications of program evaluation/quality improvement skills to health care services and programs</p>	<p>Demonstrates awareness of ability to translate research findings to applied settings</p> <p>Demonstrates ability to translate issues presented organizations/individuals into program evaluation/quality improvement questions</p>	<p>Research project that details a proposal for a program evaluation or quality improvement project</p> <p>Review of program evaluation materials from existing programs</p>	<p>Engages in program development and program evaluation with community organization, group, individuals</p> <p>Accurately and efficiently communicate program evaluation/quality improvement findings in a manner that is consistent with the highest standards within the profession in ways that can be understood by fellow psychologists, professionals from other disciplines, and lay audiences alike^c</p>	<p>Program requires student to engage in a program evaluation for a local, community non-profit/organization</p>	<p>A Framework for Program Evaluation: A Gateway to Tools</p> <p>Patton, M. (2008). <i>Utilization-focused evaluation</i> (4th ed.). Thousand Oaks, CA: Sage. doi/10.4135/9781412950558.n565</p> <p>Patton, M. (2011). <i>Developmental evaluation: Applying complexity concepts to enhance innovation and use</i>. New York: Guilford Press. doi/10.1002/casp.2116</p> <p>Carter McNamara's Basic Guide to Program Evaluation</p> <p>CDC: A Framework for Program Evaluation</p> <p>Plan-Do-Study-Act Worksheet</p> <p>APA Criteria for the Evaluation of Quality Improvement Programs and the Use of Quality Improvement Data</p> <p>The CIPP Evaluation Model: A Summary</p> <p>Empowerment Evaluation</p>

Competency: Be familiar with health research methods

<u>Readiness for Practicum</u>		<u>Readiness for Internship</u>		<u>Readiness for Entry into Practice</u>		
<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Trainee</u>	<u>Program Activities</u>	<u>Behavioral Anchors for Individual</u>	<u>Program Activities</u>	<u>Resources</u>
Can explain common health research methods and their applicability to common research and practice scenarios	Course work in core areas of health research methods that teach and assess core knowledge areas and readings in research methods	<p>Can apply research methods to identify evidence-based services and evaluate their impact on client functioning</p> <p>Demonstrates intermediate level knowledge of health research methods</p> <p>Differentiate traditional research methods from community-based research methods (e.g., (community-based participatory research (CBPR)</p> <p>Critically evaluates scientific literature related to health research methods</p> <p>Demonstrates understanding of intersections across areas of health research methods</p> <p>Can formulate scientific questions and research inquiries using health research methods</p>	<p>Practicum in evidence-based practice that provides training in applying research methods to patient care</p> <p>Provide readings and incorporate into a qualifying or comprehensive examination measures of core knowledge of health research methods</p>	<p>Carries out a health related research project</p> <p>Demonstrates advanced level knowledge of health research methods</p> <p>Is able to carry out a health related research project</p> <p>Accurately evaluates scientific literature regarding health research methods</p>	<p>Requirement to complete a research-based dissertation</p> <p>Expectation that student incorporates and differentiates knowledge from a variety of research conceptualizations into treatment plans, assessment reports, or case conceptualizations completed by trainee</p>	<p>Kazdin, A. E. (2003). <i>Research design in clinical psychology</i>. Boston, MA: Allyn and Bacon.</p> <p>Community-based participatory research</p> <p>World Health Organization. (2001). <i>Health research methodology: a guide for training in research methods (Vol. 5)</i>. World Health Organization. http://dx.doi.org/10.1007/springer reference_301104</p>

Commentary: *HSPs must have a firm grounding in psychological science and statistics, but this is not sufficient. They also need to have a basic familiarity with knowledge from other disciplines such as anatomy, physiology, genetics, pharmacology, anthropology, sociology, and economics. This is not to intended to train “mini physicians” or “mini pharmacists,” but to prepare psychologists to be able to appropriately assess and treat problems in their areas of expertise as well as ensure whole person care in collaboration with other health professions, including when to refer. This knowledge base is fundamental to the biopsychosocial model of care, although psychologists’ strengths will remain in the psychological/behavioral aspects and their interactions with other components.*

Commentary: *Cross-cutting themes of research relevant to HSPs are related to outcomes assessments, treatment efficacy/effectiveness, patient satisfaction, and quality improvement methods. HSPs must be more than consumers of research, but have skills in conducting practice-based research relevant to quality improvement efforts. They must also understand human subjects and consent issues related to health research*

aAPA, 2011

bCouncil of Counseling Psychology Training Programs, 2013

cSociety for Health Psychology, 2016

dUniversity of Saskatchewan Department of Psychology, 2013

Conclusions

The Board of Education Affairs convened a Task Force that was charged with examining the integration of science and practice in health service psychology education and training of health services psychologists (HSPs) as articulated in the blueprint recommendation from the Health Service Psychology Education Collaborative (HSPEC). The aim of this report is to provide recommendations to ensure that the learning experiences of all HSPs, at all levels, incorporate scientific-mindedness and include the expectation that those experiences go well beyond simply consumers of research.

The report begins by reviewing the HSPEC recommendations and actions steps from the blueprint that called for promoting promising practices in the integration of science and practice. As such, the Task Force collected and reviewed successful programs known for integrating science and practice, studied existing literature in evidence-based education and practice, successful curricula, and resources that documented competency-based education that integrated science and practice.

The Task Force compiled and edited a list of terminology and definitions that were then used for consistency in review of the HSPEC and existing literature regarding science, practice, and their integration, and in development of the report's recommendations. The Task Force then detailed several assumptions upon which the report was to be built. The key assumption was that expectations related to competence in the science domain, including carrying out research as an expected component of graduate education, assumes competence in all the HSP competencies and domains.

Recommendations were offered that stand as guidance to the field; each academic

department or training program continues to have the flexibility and academic freedom to adapt and adopt these recommendations to reflect local programming philosophy and the discipline-specific knowledge and profession-wide competencies required of accredited programs in health service psychology. The overarching goal of all recommendations was to ensure that HSP's utilize a sophisticated degree of scientific mindedness, and do more than "consume" research findings."

Table 1 lists competencies that, when met, support the student's or trainee's ability to integrate science and practice as a successful HSP. The Table was designed to offer recommendations for each of these competencies at three levels within the education and training sequence: readiness for practicum, readiness for internship, and readiness for entry into practice. Behavioral anchors for trainees are presented at each level along with program activities that support the development of the behavioral anchors for each competency throughout the education and training sequence. The Table also lists resources and references helpful to both students and programs as they review how to incorporate these competencies into their curriculum. These are not exhaustive but examples and other useful resources may be available that were not included. Programs are encouraged to specify the means by which they will evaluate the success of each trainee in developing the behavioral anchors for each competency at each level of training from practicum to internship to readiness for practice.

The Table concludes with restating the overarching goal of the project, "*Cross-cutting themes of research relevant to HSPs are related to outcomes assessments, treatment efficacy/effectiveness, patient satisfaction, and quality improvement methods. HSPs must be more than consumers of research, but have skills in conducting practice-based research relevant*

to quality improvement efforts. They must also understand human subjects and consent issues related to health research.”

Dissemination Plan

Finally, the Task Force recommends a dissemination protocol to bring this information to the education and training community in order to support the adoption of these recommendations across the field. The Task Force recommends that:

1. Disseminate this report to all training groups involved in the Council of Chairs of Training Councils (CCTC).
2. Presentations be made at each annual meeting of each training council to both present the recommendations and answer questions about its implementation.
3. Establish a website to promulgate the recommendations and serve as a vehicle for sharing successful implementation of the recommendations.
4. Develop metrics at the program level to evaluate their efforts to help students/trainees develop these competencies.

References

- American Psychological Association (2011). Revised competency benchmarks. Retrieved from <http://www.apa.org/ed/graduate/competency.aspx>.
- American Psychological Association (2010). Psychology as a Core Science, Technology, Engineering, and Mathematics (STEM) Discipline: Report of the American Psychological Association 2009 Presidential Task Force On the Future of Psychology as a STEM Discipline. Retrieved from: <http://www.apa.org/science/about/psa/2010/08/stem-report.pdf>
- American Psychological Association (n.d.). Psychological Science. Retrieved from: <http://www.apa.org/research/index.aspx>
- Anderson, N. B. (2006). Evidence-based practice in psychology. *American Psychologist*, 61, 271-285. doi.org/10.1037/0003-066X.61.4.271.
- Council of Counseling Psychology Training Programs (2013). Counseling psychology core competencies. Retrieved from: <http://www.ccctp.org/assets/docs/copsy%20competencies%20final2.pdf>
- Bieschke, K. J., Fouad, N. A., Collins, F. L., & Halonen, J. S. (2004). The scientifically-minded psychologist: Science as a core competency. *Journal of Clinical Psychology*, 60, 713-723. doi: 10.1002/jclp.20012
- Department of Health and Human Services (2009). Code of Federal Regulations, Title 45 Public Welfare. Retrieved from: <http://www.hhs.gov/ohrp/policy/ohrpreulations.pdf>
- Gerrig, R. J. & Zimbardo, P. G. (2002). *Psychology and life*, 16/e. Allyn and Bacon: Boston, MA. cited by <http://www.apa.org/research/action/glossary.aspx?tab=18>
- Health Service Psychology Education Collaborative. (2013). Professional psychology in health

care services: A blueprint for education and training. *American Psychologist*, 68, 411-426. doi:10.1037/a0033265.

Society for Health Psychology (2016). Competencies for research for health psychologists.

Retrieved from <http://www.health-psych.org/CompetenciesinResearch.cfm>

University of Saskatchewan Department of Psychology (2013). Core competencies of a clinical psychologist. Retrieved from:

http://artsandscience.usask.ca/psychology/programs/clinical/sub_pages/coare_competencies.php

Appendix A

BEA Task Force on the Integration of Science and Practice in Health Service Psychology (HSP) Training Frequently Asked Questions

Why was this task force convened? What was its charge?

The task force was asked to address a recommendation made by the Health Service Psychology Education Collaborative (HSPEC) that education and training of health service psychologists (HSPs) include an integrative approach to professional preparation that incorporates scientific-mindedness and goes well beyond merely “consuming” research findings.

Is my program going to be required to do what the task force proposes?

The key to these recommendations is that they stand as suggestions to the field; each academic department or training program continues to have the flexibility and academic freedom to adapt and adopt these recommendations to reflect local programming philosophy. The descriptors, definitions and recommendations in this report are not meant to be “bright lines” or standards, but rather provide recommendations to help education and training programs clearly adopt the expectations put forth in the HSP Blueprint. This includes the integration of science and practice in health service psychology education and training as articulated in the blueprint recommendations of the Health Service Psychology Education Collaborative (HSPEC, 2013). These suggestions are recommendations from the APA Board of Educational Affairs and are made independent of the APA Commission on Accreditation. The suggestions may assist programs in designing educational opportunities to develop the discipline-specific knowledge and profession-wide competencies required of accredited programs in health service psychology.

However, as independent recommendations, they have no bearing on decisions made by the Commission.

Is this about education and training in evidence-based practice?

The literature related to evidence-based practice is relevant but not the sole focus of this report. This BEA report recognizes the range of both scientific and clinical education across programs but acknowledges that the HSPEC recommendation #5 states that HSPs are competent in implementation of evidence-based procedures as a component of “scientific-mindedness” and research.

How should my program go about using the information in this report?

The key element in this report is Table 1. Table 1 lists the competencies needed to integrate science and practice from the HSP Blueprint. For each competency, behavioral anchors are provided that describe how the competency might look when demonstrated as well as options for activities programs might use to foster the development of each competency. Relevant education and training resources are also offered.

It is suggested that programs begin to adopt these recommendations by identifying competencies that may not be a current training focus. Next, review the behavioral anchors suggested, and program activities appropriate to the level of training offered, programs and tailor those to their local learning objectives. The program activities and resources columns in Table 1 can be used to help design education and training opportunities to promote competency development. Finally, it is recommended that programs decide how they wish to measure student attainment of each of the competencies.

Appendix B

Task Force Roster

**BEA Task Force on the Integration of Science and Practice
in Health Service Psychology Training**

MEMBERS

Prerna Arora, PhD, Med
Assistan Professor – Pace University
Visiting Assistant Professor, University of Maryland, School of Medicine
Department of Psychology – NYC
Pace University, 41 Park Row, Room 1322
New York, NY 10038
Phone: (212) 346-1434
Email: arorapm@Gmail.com

Sharon L. Berry, PhD, ABPP, **Task Force Chair**
Director of Training and Associate Clinical Director
Psychological Services, 17-217
Children's Hospital of Minnesota
Minneapolis, MN 55404-4518
Phone: (612) 813-6727
Email: sharon.berry@childrensmn.org

Andres De Los Reyes, PhD
Associate Professor of Psychology
Department of Psychology
University of Maryland at College Park
Biology/Psychology Building, room 3123H
College Park, MD 20742
Phone: (301) 405-7049
Email: adlr@umd.edu

Timothy P. Melchert, PhD
Professor
Department of Counselor Education and Counseling Psychology
168F Schroeder Complex
Marquette University
Milwaukee, WI 53201-1881
Phone: (414) 288-7379
Email: tim.melchert@marquette.edu

Jennifer Moye, PhD, ABPP
Associate Director for Education and Evaluation
New England Geriatric Research Education and Clinical Center
Associate Professor of Psychology

Department of Psychiatry, Harvard Medical School
VA Boston Healthcare System
150 South Huntington Avenue
Jamaica Plain, MA 02130
Phone: (857) 364-5849
Email: jennifer.moye@va.gov

Frederick L. Oswald, PhD
Professor
Department of Psychology
Rice University
6100 Main Street, MS25
Houston, TX 77005-1827
Phone: (713) 348-3908
Email: foswald@rice.edu

Roger L. Peterson, PhD, ABPP
Professor and Distinguished Senior Scholar
Department of Clinical Psychology
Antioch University, New England
40 Avon Street
Keene, NH 03431
Phone: (603) 283-2178
Email: rpeterson@antioch.edu

Ronald H. Rozensky, PhD, ABPP
Professor Emeritus
Department of Clinical and Health Psychology
University of Florida
Mailing Address:
16225 S.W. State Road 45
Archer, FL 32618
Phone: (352) 256-7800
Email: rozensky@phhp.ufl.edu

BEA LIAISON

Tammy L. Hughes, PhD, **BEA Chair**
Professor and Chair
School of Education, Counseling, and Special Education
102C Canevin Hall
Duquesne University
Pittsburgh, PA 15282
Phone: (412) 396-5191
Email: hughest@duq.edu

APA STAFF

Catherine Grus, PhD
Phone: (202) 336-5961
Email: cgrus@apa.org

Ashi Lavelle
Phone: (202) 336-5783
Email: akapur@apa.org

Appendix C

Health Service Psychology Science Competencies

SCIENCE

A. Scientific Knowledge & Methods:

Be knowledgeable about the biological, cognitive, affective, social, and lifespan developmental bases of behavior; be able to critically evaluate relevant literature, and apply that knowledge in practice.

Be knowledgeable about psychological research methods, techniques of data collection and analysis, and apply that knowledge in practice.

Be knowledgeable about psychological clinical research findings fundamental to the provision of health care services, and apply that knowledge in practice.

Be knowledgeable about current information technology and apply that knowledge in practice.

Be familiar with research on how biological, psychological, social, cultural, and economic factors affect health and behavior, disease, treatment outcomes, and wellness, and how to apply that knowledge in practice.

Commentary: *HSPs must have a firm grounding in psychological science and statistics, but this is not sufficient. They also need to have a basic familiarity with knowledge from other disciplines such as anatomy, physiology, genetics, pharmacology, anthropology, sociology, and economics. This is not to intended to train “mini physicians” or “mini pharmacists,” but to prepare psychologists to be able to appropriately assess and treat problems in their areas of expertise as well as ensure whole person care in collaboration with other health professions, including when to refer. This knowledge base is fundamental to the biopsychosocial model of care, although psychologists’ strengths will remain in the psychological/behavioral aspects and their interactions with other components.*

B. Research/Evaluation:

Critically evaluate relevant health and behavior research related to populations to be served.

Conduct research that contributes to the scientific and professional knowledge base or evaluates the effectiveness of various professional activities in health care and health promotion.

Use research skills for program development and evaluation as well as for quality improvement related to health care services.

Be familiar with health research methods.

Commentary: *Cross-cutting themes of research relevant to HSPs are related to outcomes assessments, treatment efficacy/effectiveness, patient satisfaction, and quality improvement methods. HSPs must be more than consumers of research, but have skills in conducting*

practice-based research relevant to quality improvement efforts. They must also understand human subjects and consent issues related to health research.