

**STUDY OF THE PRACTICE OF LICENSED PSYCHOLOGISTS
IN THE UNITED STATES AND CANADA**

prepared for

**THE ASSOCIATION OF STATE AND PROVINCIAL PSYCHOLOGY BOARDS
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Executive Summary

Study of the Practice of Licensed Psychologists in the United States and Canada

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Abstract

The Association of State and Provincial Psychology Boards sponsored a study of the practice of licensed psychologists in the United States and Canada to update the test specifications for the Examination for Professional Practice in Psychology (EPPP). Process- and content-based approaches were used to refine the delineation of roles and responsibilities performed by psychologists and the content areas and knowledge required in practice. In keeping with changes in contemporary practice, special focus was placed on the following nine areas of practice: clinical psychology with emphasis on the delivery of services in the present climate of delivery, neuropsychology, cross-cultural studies, forensics, geropsychology, neuroscience, psychopharmacology, quantitative methods, and health psychology

A survey was developed and sent to approximately 1000 licensed psychologists in the United States and Canada in order to validate and update all elements in the delineations. The return rate was 40%. Analysis of completed surveys produced information about (a) the demographic and professional background of licensed psychologists, (b) what licensed psychologists do in practice, (c) the critical knowledge licensed psychologists use, and (d) comments about changes occurring in the profession. The results were used to review and refine the test specifications to ensure that the knowledge assessed in the EPPP is required for the performance of critical roles and responsibilities and serves the public protection function of regulation.

Key Findings

- More than one half of the U.S. and Canadian respondents indicated clinical psychology as their major area of training. Among recently and less-recently licensed respondents, more respondents currently practice in areas such as clinical child psychology, clinical neuropsychology, community psychology, forensic psychology, and geropsychology than were trained in graduate programs specializing in these areas. Many respondents report that they have been involved in post-graduate specialization and/or respecialization programs.
- About one half of the respondents described their primary theoretical orientation as cognitive/behavioral or behavioral. Recently licensed psychologists were more likely to indicate their primary theoretical orientation as interpersonal or behavior than less-recently licensed psychologists.
- About one third of the U.S. respondents and 20% of the Canadian respondents indicated that they had participated in a formal postdoctoral specialization or respecialization program. Respondents were most likely to have indicated that their formal post-doctoral specialization or respecialization was in the area of neuropsychology.
- More than two thirds of the recently licensed respondents were female, compared to about 40% of the less recently licensed respondents.
- There were few differences in the role and content area ratings of U.S. respondents versus Canadian respondents and recently licensed versus less recently licensed respondents.
- Responsibility and knowledge statements that highlighted ethical behavior were rated higher on the *Importance*, *Frequency*, and *Criticality* rating scales than other responsibility and knowledge statements.
- Respondents identified the following types of knowledge and skills as needed in the future:

—Knowledge regarding the interplay between the mind and body; neurology/biology/genetic determinants; brain functions; affect; and interventions for traumatic care situations;
 —Professional skills associated with procedures to integrate medicine into psychology, including working with primary care physicians; procedures to combine aspects of spirituality into therapy; and
 —Generic skills, such as obtaining business training in order to run a practice.

- Revised test specifications were developed to reflect the contemporary practice of licensed psychologists in the U.S. and Canada. (See following for a copy of the revised test specifications at the content area level.)
- Procedures to disseminate the results of the practice analysis study to key stakeholders were developed.

Exhibit 1
Revised Test Specifications for the EPPP

Content Area	Percentage
CA1 Biological Bases of Behavior	11
CA2 Cognitive-Affective Bases of Behavior	13
CA3 Social and Multicultural Bases of Behavior	12
CA4 Growth and Lifespan Development	13
CA5 Assessment and Diagnosis	14
CA6 Treatment, Intervention, and Prevention	15
CA7 Research Methods and Statistics	7
CA8 Ethical/Legal/Professional Issues	15

Introduction

The Association of State and Provincial Psychology Boards (ASPPB) sponsored an update study of the practice of licensed psychologists in the United States and Canada to review and refine the test specifications for the Examination for Professional Practice in Psychology (EPPP). Process- and content-based approaches were used to refine the delineation of roles and responsibilities performed by psychologists and the content areas and knowledge required in practice. In keeping with changes in contemporary practice since the completion of the previous study of practice in 1995, special focus was placed on the following nine areas of practice: clinical psychology in the current climate of delivery, neuropsychology, cross-cultural studies, forensics, geropsychology, neuroscience, psychopharmacology, quantitative methods, and health psychology.

The specific purpose of the update study was to:

- Refine the roles and responsibilities performed by licensed psychologists and the knowledge required for professional practice, and
- Validate the test specifications underlying the construction of the Examination for Professional Practice in Psychology (EPPP).

The overall process of practice analysis is described in the 1999 revision of the *Standards for Educational and Psychological Testing* (American Educational Research Association, the National Council on Measurement in Education, and the American Psychological Association). This document emphasizes the concept of content validity and the need to conduct a practice analysis to assure that the professional knowledge/skills/abilities assessed in credentialing initiatives are in fact limited to those required for competent performance and serve a public protection function. Practice analysis, then, becomes the primary basis by which a professional association or credentialing agency establishes and defends the content validity of its credentialing initiatives.

Conduct of the Update Practice Analysis Study of Licensed Psychologists

This section contains a description of the procedures Professional Examination Service (PES) implemented to conduct an update practice analysis study of psychology on behalf of the ASPPB. PES conducted the update practice analysis study in 2002 and 2003 in conjunction with a four-member Practice Analysis Advisory Committee (PAAC) and an 7-member Practice Analysis Task Force (PATF). The members of the PAAC represented key decision-makers in ASPPB; in part they were responsible for guiding aspects of the licensure program, including examination development and validation efforts. The members of the PATF represented psychologists in different major areas of practice, including new and emerging specialties.

The responsibilities of the PAAC were to (a) select subject-matter experts to serve on the PATF; (b) review and approve the form and content of the survey, data collection procedures, data analyses, and results; and (c) review the final report for presentation to ASPPB's Board of Directors for final approval.

The Chair of the PAAC served as the liaison to the PATF and had the responsibility of maintaining communications between the PATF and the PAAC. The Chair of the PAAC also, had the responsibility of maintaining communications between the Executive Committee of the ASPPB and the PAAC. Finally, two members of the PAAC, including the Chair, had the responsibility of maintaining communications between the Exam Committee of the ASPPB and the PAAC. Appendix 1 lists the PAAC members and their professional work affiliations. The PAAC met one time and conducted additional business by telephone and e-mail.

The responsibilities of the PATF were to (a) develop the draft update and final delineations of practice; (b) select subject-matter experts to participate in complementary data collections procedures, and (c) review and discuss the form content of the data analyses and results. The PATF met three times and conducted additional business by telephone and e-mail between 2002 and 2003. Appendix 2 lists the PATF members and their professional work affiliations.

Select the Subject-Matter Experts to Participate in the PATF

On the basis of discussions held at meetings of the Committee on Examinations, Research, and Policy (CERP) in 2001 and 2002, a process was implemented to identify subject-matter experts (SMEs) in the following nine new and emerging areas of psychology: clinical psychology with emphasis on the delivery of services in a managed care context, neuropsychology, cross-cultural studies, forensics, geropsychology, neuroscience, psychopharmacology, quantitative methods, and health psychology

Nominations were solicited from all members of the PAAC. Subsequently, an information packet including a description of the update practice analysis study and a request for a current curriculum vitae was sent to each psychologist nominated to participate on the PATF. In early 2002, telephone conference calls were conducted in which members of the PAAC discussed the intended composition of the PATF, reviewed the qualifications of each nominee, and voted for a final slate of participants.

Develop the Draft and Final Update Delineation of Roles and Responsibilities, and Content Areas and Knowledge Statements

In 1995, process- and content-based approaches were implemented by PES to study the practice of licensed psychologists in the United States and Canada (Greenberg, Smith, and Muenzen, 1995). Process- and content-based approaches to practice analysis are appropriate for professions such as psychology wherein the primary professional behaviors are cognitive in nature (Schoon, 1985).

At that time, a process-based approach was used because it provided a structure for describing contemporary practice—that is, for identifying what psychologists do—and because it facilitated the development of examination items in a practice-related framework. The process-based approach comprises the delineation of roles and associated responsibilities performed by psychologists.

Roles represent major categories of activities. For example, the role of Psychological Services was identified as the provision of psychological services, or supervision or management their delivery, to individuals, couples, families, groups, and/or organizations/systems in a manner consistent with current professional and ethical standards/guidelines, and jurisdictional and national laws/regulations.

Responsibilities represent the specific activities psychologists perform within each role. For example, Plan, design, and implement prevention and/or intervention programs, and evaluation/feedback strategies (e.g., define goals and objectives, identify appropriate intervention targets and strategies, and outcome measures), is one responsibility performed in connection with the Psychological Services role. Unique sets of responsibilities are associated with each role.

A content-based approach was used because it provided a user-friendly template for describing contemporary practice, providing feedback to the candidates, and communicating with universities, professional schools, and training programs. The content-based approach comprises the delineation of content areas and the knowledge statements required to perform the responsibilities.

Content areas represent categories of knowledge used by psychologists in practice. For example, Biological bases of behavior is a content area encompassing knowledge of (a) neuroscience, (b) the physiological bases of behavior and illness, and (c) psychopharmacology.

Knowledge statements relate to the content areas; they describe an organized body of information needed to perform responsibilities. For example, Interaction of developmental, gender, ethnic, cultural, environmental, and experiential factors with the biological and neural bases of behavior.

In the 2002 to 2003 study, a similar approach was used to update the process- and content-based descriptions of practice. PES conducted two meetings of the PATF to update the delineations of roles and responsibilities, and content areas and knowledge statements. Before each meeting, the participants received a packet of information about the conduct of the meeting. After each

meeting, the participants completed a mail review of the delineations, responding to targeted questions developed by PES.

Following the first meeting of the Task Force, PES used complementary data collection methods to supplement the update draft delineations:

- To supplement the process-based delineation of roles and responsibilities and the content-based delineation of content areas and knowledge, a focus panel was conducted including licensed psychologists providing clinical services. The focus panel was designed to investigate the perspectives of private practitioners delivering services in a managed care environment. Accordingly, PES developed a structured protocol including open-ended discussions and a review of the draft delineation of roles and responsibilities.

Potential participants were identified by the chair of the Houston Psychological Association and were invited to participate in a 3-hour meeting conducted in January 2003. A total of 13 licensed psychologists participated in the meeting, including practitioners with diverse private practices specialties.

PES organized and summarized the results of the data collection method for review by the members of the PAAC and Task Force. Appendix 3 contains a copy of a summary document titled, *Summary of Procedures for Conduct of Complementary Data Collection Initiatives*. The document includes a copy of the structured protocol for the conduct of the focus panel, and a professional and demographic profile of the respondents. Appendix 4, *Summary of the Results of the Conduct of a Focus Panel*, contains documents that summarize the results of the focus panel, including the results of their review of the roles and responsibilities, and a summary of their views regarding the changes occurring in the delivery of services.

- To check on the completeness and accuracy of the content-based delineation of knowledge and skills required for practice, a sample of licensed psychologists were asked to participate in a critical incidents interview conducted by PES. The critical incidents methodology is designed to elicit a description of the critical knowledge and skill base underlying professional practice; accordingly, the participants are asked to reflect upon incidents in which they felt particularly effective and particularly ineffective in their practice.

Potential participants were nominated by the members of the PATF, and were identified from the pool of individuals nominated for, but not appointed to, the Task Force. The PATF members were asked to identify individuals with a “practitioner” rather than an “academic” emphasis, who had knowledge and/or expertise in a particular specialty and/or subspecialty areas in psychology. Finally, PATF members were also asked to select potential nominees in light of such factors as geographical representation, level of experience, and multicultural diversity.

A total of 17 psychologists was selected from the pool of nominees and interviewed by PES. The psychologists interviewed were representative of the pool of nominees. PES

organized and summarized the results of the data collection method for review by the members of the PAAC and Task Force. Appendix 3 contains a copy of the protocol and a professional and demographic profile of the participants. Appendix 5 contains a document titled, *Summary of Critical Incidents Telephone Interviews with Licensed Psychologists*. The document includes the list knowledge and skills associated with the professional responsibilities the interviewees perform, and a summary of their views regarding the long-range changes occurring in the practice of psychology.

- To check on the completeness, accuracy, and clarity of the process- and content-based delineations, a sample of psychologists was asked to complete an independent review of the delineation. Reviewers were asked to critique the roles and responsibilities (e.g., Is each responsibility clear? Is the language idiosyncratic? Are the examples useful?) and the content areas and knowledge statements (e.g., Is each knowledge statement clear? Is each knowledge statement unique? Do the statements describe the body of knowledge you require in your own practice?).

Potential participants in the independent review process were nominated by the members of the PATF. The members were asked to identify individuals who had subject-matter expertise in one or more of the content areas outlined in the content-based delineation. Additionally, and on the basis of a review of the professional and demographic characteristics of the subject-matter experts participating in the previously completed complementary data collections method (i.e., the focus panel and the critical incidents interviews), the following *categories* of individuals were judged to have been underrepresented or not represented at all, and were, therefore, targeted as a potential basis for identifying independent reviewers: specialists in mental retardation/developmental disabilities, substance abuse and prevention, pain management, civil and forensic psychology, international psychology, serious mental illness, sports psychology, consumerism, systems of care, industrial/organization psychology, policy development, and multicultural diversity.

Of 15 individuals invited to participate in the independent review process, 7 completed the review. The psychologists completing the independent review were representative of the pool of nominees. PES organized and summarized the results for review by the members of the PAAC and the Task Force. Appendix 6 contains a copy of the document titled, *Summary of Independent Reviews of the Process and Content Delineations of the Practice of Psychology*. The document includes the comments of each independent reviewer. Appendix 3 includes a professional and demographic profile of the independent reviewers.

At the second meeting of the PATF, the members reviewed and integrated the results of the complementary data collection methods into the process- and content-based delineations. Subsequently, over the course of numerous additional mail reviews and telephone conference calls, the members of the PAAC reviewed and approved the final draft delineations of roles and responsibilities, and content areas and knowledge statements to be included in the pilot-test version of the practice analysis survey document.

Table 1 documents the layout of the structure of the delineations, including the number of roles and associated responsibilities, and the number of content areas and associated knowledge statements in the final update delineation.

In accordance with the mandate of the PAAC, the overall structure of the delineation, including four roles and eight content areas, remained the same as in 1995, while the actual responsibilities and knowledge statements were reviewed and refined. Moreover, the definitions of the roles and content areas were updated, consistent with the changes in the associated responsibilities and knowledge statements, respectively.

Table 1
Process- and Content-Bases Delineations of the Practice of Psychology

Roles	Number of Responsibilities
Psychological Services	10
Consultation, Outreach, and Policy Making	8
Academic Preparation and Professional Development	7
Research, Evaluation, and Scholarship	10
Total Number of Responsibilities	35
Content Areas	Number of Knowledge Statements
Biological Bases of Behavior	7
Cognitive-Affective Bases of Behavior	7
Social and Multicultural Bases of Behavior	12
Growth and Lifespan Development	11
Assessment and Diagnosis	13
Treatment, Intervention, and Prevention	17
Research Methods and Statistics	7
Ethical/Legal/Professional Issues	5

Review and Approval of the Form and Content of the Survey of the Practice of Psychology

A draft document, *Survey of the Practice of Psychology – Pilot Version*, (referred to as the *Pilot Survey*) was developed to study the practice of licensed psychologists in the United States and Canada, and verify the roles and responsibilities performed by psychologists, and the content areas and knowledge required for practice. In Winter 2002 – 2003, PES presented the draft to the members of the PAAC. On the basis of comments and reviews by the PAAC, PES revised the document in preparation for the conduct of a pilot test of the *Pilot Survey* including a mail-based review.

PES implemented the pilot test of the *Pilot Survey* to identify question defects such as ambiguous items and to identify respondents’ cognitive difficulties as they formed answers to *Pilot Survey* questions. Members of the PATF were invited to nominate licensed psychologists to participate in the mail-based pilot test. The members were asked to identify individuals in a variety of practice areas and employment settings, and to personally invite the nominees to participate in the pilot test. PATF members were also asked to nominate individuals in lights of

such factors as geographical representation, level of experience, and multicultural diversity. As had been the case with each of the previously described complementary data collection methods, the final pool of participants also included some psychologists nominated for, but not appointed to, the PATF. Finally, all members of ASPPB's Exam Development Committee, and the PAAC and the PATF were invited to participate in the pilot test.

Participants in the mail-based pilot test were requested to complete the *Pilot Survey* and to critique each section to identify any unclear elements. As a check on the length of time needed to complete the *Pilot Survey*, participants were asked to record how long it took them to complete the process.

Appendix 7 contains a copy of the instructions provided to the participants in the mail-based pilot test of the *Pilot Survey*. The participants completing the mail-based pilot test were representative of the target sample of nominees.

Results of the mail-based pilot test of the *Pilot Survey* were used to refine the form and content of the document. Specifically, the procedures provided a final review of the content of the delineations, the clarity of the instructions, and the usefulness of the rating scales. Following the pilot test, a few items in the delineations were added and/or modified, and both the instructions and the rating scales (including the scale points) were refined.

In Winter 2003, at the time of the conduct of the pilot test of the *Pilot Survey* and the presentation of the results by PES, the PAAC reviewed and approved the form and content of the final version of the survey materials via telephone conference calls. See Appendix 8 for a copy of the final document—*Survey of the Practice of Psychology* (referred to as the *Survey*)—used in the large-scale validation of the practice analysis of licensed psychologists in the United States and Canada.

The final survey document included six sections. Section 1 elicited information about the responsibilities, activities psychologists perform in practice, related to the practice of psychology associated with roles performed by psychologists. All respondents were asked to rate the responsibilities in response to three questions:

- How important was performance of the responsibility to *your practice* as a psychologist during the past year? (4-point scale, 0 = not important; 1 = minimally important; 2 = moderately important; 3 = very important)
- How frequently have *you* performed this responsibility during the past year? (4-point scale, 0 = never or very rarely; 1 = infrequently; 2 = frequently; 3 = very frequently)
- How critical is performing the responsibility to *protecting the patient/client/public* from harm? (4-point scale, 0 = not critical; 1 = minimally critical; 2 = moderately critical; 3 = highly critical)

Section 2 utilized a similar set of rating scales to elicit information about the roles, or categories of activities that psychologists perform. Respondents were asked to rate the roles in response to three questions:

- How important was the role to *your practice* as a psychologist during the past year? (4-point scale, 0 = not important; 1 = minimally important; 2 = moderately important; 3 = very important)
- What percentage of *your work time* was devoted to each role during the past year?
- How critical is performing the role to *protecting the patient/client/public* from harm? (4-point scale, 0 = not critical; 1 = minimally critical; 2 = moderately critical; 3 = highly critical)

(Note that the *Importance* and *% of Time* rating scales focused on the professional work of the respondent, while the *Criticality* rating scale focused on the respondent's judgement regarding the profession in general.)

Section 3 obtained information about the knowledge statements, or body of information needed to perform responsibilities, that is organized within eight content areas. Respondents rated the knowledge statements in response to three questions:

- What level best represents *your use* of this knowledge in your practice? (3-point scale, 0 = do not have the knowledge; 1 = *recognize/recall* the knowledge; 2 = *apply/interpret/integrate* the knowledge)
- At what point should the knowledge be *acquired* by psychologists? (3-point scale, 0 = not necessary at any point, 1 = primarily *before* initial licensure, 2 = primarily *after* initial licensure)
- How critical is possessing the knowledge to *protecting the patient/client/public* from harm? (4-point scale, 0 = not critical; 1 = minimally critical; 2 = moderately critical; 3 = highly critical)

(In this instance, the *Usage* rating scale referred to the respondent's own practice, while the *Acquisition* and *Criticality* rating scales referred to the respondent's own judgement regarding the profession in general.)

Section 4 of the survey elicited information regarding the content areas—or categories of knowledge—that psychologists use in practice. Respondents were asked to rate the content areas on three rating scales:

- How important was the content area *to your practice* as a psychologist during the past year? (4-point scale, 0 = not important; 1 = minimally important; 2 = moderately important; 3 = very important)

- How frequently have *you* called upon knowledge from the content area in your practice during the past year? (4-point scale, 0 = never or very rarely; 1 = infrequently; 2 = frequently; 3 = very frequently)
- How critical is the content area to *protecting the patient/client/public* from harm? (4-point scale, 0 = not critical; 1 = minimally critical; 2 = moderately critical; 3 = highly critical)

Section 5 was designed to obtain information about the demographic and professional background of respondents with respect to their work in psychology, such as primary employment setting, practice area, theoretical orientation, specialization or respecialization, specialty certification; and with respect to demographic variables, such as education, sex, disability, and race or ethnicity.

Finally, Section 6 solicited qualitative comments wherein respondents were asked to describe any professional responsibilities they perform or knowledge they call upon that were not included in the Survey. Most importantly, respondents were asked to comment upon what they believe to be the long-range changes occurring in the practice of psychology.

Develop the Sampling Plan for the Conduct of the Survey

PES prepared a sampling plan for the conduct of the large-scale validation survey of the practice of licensed psychologists in the United States and Canada. During the Winter of 2002 – 2003, the PAAC reviewed and approved the general strategy, and PES implemented the plan to develop the potential sample.

The sampling plan for dissemination of the survey was designed to (a) generate a sample of licensed psychologists from those jurisdictions in the United States and Canada that employ the EPPP as an element in the credentialing process, and (b) ensure the representation of licensed psychologists at or near the entry-level of the profession. Accordingly, a minimum of 10 licensed psychologists were sampled from each jurisdiction using the EPPP, regardless of the size of the jurisdictions. PES implemented the plan based on the following specific information elements:

- The target sample size was approximately 1,000 licensed, practicing psychologists.
- There was no comprehensive database of all licensed psychologists in either the United States or Canada.
- ASPPB-member jurisdictions in the United States and Canada varied considerably in their ability to select a sample of licensed practicing psychologists from among the population of all licensed psychologists in the jurisdiction. Some jurisdictions were unable to sample psychologists by either year of licensure or practice status (active/inactive), and some were unable to produce the file in any format other than a hard list copy.

PES implemented the sampling plan in conjunction with the following general guidelines:

- The sample should represent U.S. and Canadian licensed psychologists in proportion to their representation in the population of each country. To ensure representation of respondents in every jurisdiction, a minimum of 10 licensed psychologists should be sampled from each ASPPB-member jurisdiction, and the remaining psychologists should be sampled in proportion to the population across all jurisdictions within each country.

In the U.S., 30 psychologists were sampled from each of 17 most populated jurisdictions, 20 psychologists were sampled from each of 17 mid-sized jurisdictions, and 10 psychologists were sampled from each of the 18 least populated jurisdictions (including the District of Columbia). In Canada, 30 registered psychologists were sampled from the largest jurisdictions, and 15 licensed psychologists were sampled from the smallest jurisdictions.

- The sample should ensure equal representation of recently licensed psychologists (i.e., licensed in 1999 or after) and less-recently licensed psychologists (i.e., licensed prior to 1999 and after 1960). Where possible, the ASPPB-member boards were asked to sample equal numbers of recently and less-recently licensed psychologists.

The final sampling plan included two different data sources: ASPPB-member boards and the ASPPB CPQ Database. PES relied on the CPQ Database only in those cases where it was not possible to obtain a sample of names directly from a jurisdiction.

Conduct of the Practice Analysis Survey

PES prepared a plan for the conduct of the large-scale survey of the practice of licensed psychologists in the United States and Canada. During the Winter of 2000 – 2003, the PAAC reviewed and approved the elements of the plan. Following the completion of the pilot test, the development and production of the Survey and all related materials, and the implementation of all procedures required in connection with the sampling plan, PES implemented the plan. Appendix 9 contains copies of all the materials used in the mailings.

1. In March 2003, potential recipients of the survey received a letter from the President of the ASPPB describing the nature and scope of the project and inviting their participation in the data collection efforts. Recipients who declined to participate or who were no longer active in the profession were requested to call PES so as to be eliminated from the sample.
2. Approximately two weeks later, all remaining potential members of the sample received a survey packet from PES. The survey packet contained: (a) a cover letter from the President of the ASPPB reviewing the purpose and importance of the data collection, and assuring the recipients about the confidentiality of the responses; (b) a Survey; (c) a postage-paid return envelope; and (d) a tracking postcard to be returned to PES, indicating return or non-return of the completed Survey.
3. Finally, approximately two weeks later, each member of the sample received a reminder/thank you postcard. The postcard included a telephone number so that recipients could call PES and request a second copy of the Survey, if necessary.

Perform the Data Analyses and Develop Test Specifications

In Spring 2003, PES prepared preliminary descriptive statistical analyses on the basis of the demographic and professional data supplied by the respondents. The results of the analyses were presented at a combined meeting of the PAAC and PATF held in June 2003. The presentation of these results are summarized in the next section of this report, including recommendations for revised test specifications.

Develop Final Report

In Fall 2003, PES submitted a draft final report to the members of the PAAC. Based on feedback from the PAAC, PES revised the report for review and approval by the ASPPB Board of Directors.

Summary of Results

This section presents information on the: (a) return rate for U.S. and Canadian respondents; (b) demographic and professional description of the sample; (c) comparison of the sample to the sample described in the previous job analysis study; (d) conduct of preliminary statistical analyses related to the ratings of respondents as a function of year of licensure and country; (e) ratings of roles, responsibilities, content areas, and knowledge statements; (f) qualitative comments made by the respondents; (g) process- and content-based profiles of practice; and (h) hypothetical test specifications for roles and responsibilities, and content areas and knowledge statements.

Return Rate

Table 2 presents information regarding the return rate of completed surveys for U.S. and Canadian licensed psychologists, and for the total sample. The rates were based on the number of potential respondents eligible to be included in the sample rather than the number of invitation letters mailed to potential respondents. The number eligible was defined as the total number of potential survey respondents, minus addressees who were deceased or confirmed as no longer practicing, or whose materials were returned as undeliverable. Inspection of Table 2 indicates that the overall return rate for the Survey was about 40%. A higher percentage of Canadian licensed psychologists (45%) completed and returned the Survey than did licensed U.S. psychologists (37%).

Table 2
U.S. and Canadian Return Rate

	# Invitations Mailed	Undeliverable	Not Eligible*	# Returned	Return Rate
U.S.	960	104	105	275	36.6
Canada	150	2	11	62	45.3
Not specified	–	–	–	12	–
Total	1110	106	116	349	39.3

*Not licensed or not practicing.

Table 3 presents information regarding the sample in terms of the participation by U.S. and Canadian ASPPB-member jurisdictions, including (a) the number of eligible respondents, (b) the number of Surveys completed and returned, and (c) the percent of eligible respondents completing and returning the Survey from each jurisdiction.

As can be seen in Table 3, all but four U.S. and two Canadian ASPPB-member jurisdictions were represented in the final sample of returns. The percentage of returns by jurisdiction varied from 0% to 100%.

Table 3
Return Rate by Jurisdiction

Jurisdiction	# Eligible	# of Surveys Returned	% of Eligible Returned
U.S.			
Alabama	19	8	42.1
Alaska	10	4	40.0
Arizona	13	5	38.5
Arkansas	20	6	30.0
California	29	9	31.0
Colorado	15	5	33.3
Connecticut	15	7	46.7
Delaware*	0	0	0.0
District of Columbia	9	7	77.8
Florida	19	6	31.6
Georgia	20	7	35.0
Hawaii	7	5	71.4
Idaho	8	7	87.5
Illinois	24	7	29.2
Indiana	18	14	77.8
Iowa	18	4	22.2
Kansas	18	8	44.4
Kentucky	14	5	35.7
Louisiana	9	5	55.6
Maine	10	2	20.0
Maryland	14	6	42.9
Massachusetts	18	3	16.7
Michigan	21	8	38.0
Minnesota	14	7	50.0
Mississippi*	0	0	0.0
Missouri	29	11	37.9
Montana*	0	1	–
Nebraska	8	1	12.5
Nevada	9	3	33.3
New Hampshire	10	2	20.0
New Jersey	19	4	21.0

Table 3
Return Rate by Jurisdiction (continued)

Jurisdiction	# Eligible	# of Surveys Returned	% of Eligible Returned
New Mexico	9	2	22.2
New York	21	12	57.1
North Carolina	28	10	35.7
North Dakota	8	3	37.5
Ohio	25	5	20.0
Oklahoma*	0	0	0.0
Oregon	17	6	35.3
Pennsylvania	21	12	57.1
Rhode Island	10	0	0.0
South Carolina	16	4	28.6
South Dakota	9	3	33.3
Tennessee	20	4	20.0
Texas	26	8	30.8
Utah	17	5	29.4
Vermont	10	4	40.0
Virginia	18	5	27.8
Washington	27	7	25.9
West Virginia	9	6	66.7
Wisconsin	17	8	47.0
Wyoming	6	2	33.3
Canada			
Alberta	29	10	34.5
British Columbia*	0	0	0.0
Manitoba	30	11	36.7
New Brunswick	4	2	50.0
Newfoundland*	0	0	0.0
Nova Scotia	9	7	77.8
Ontario	26	8	30.8
Prince Edward Island	1	1	100.0
Quebec	25	13	52.0
Saskatchewan	14	10	71.4
Not specified	–	12	–

Note. Column percents may not add to 100 due to rounding error.

* Jurisdiction unwilling/unable to participate

Respondent Demographic and Professional Characteristics

This section presents information on the demographic and professional characteristics of recently and less-recently licensed U.S. and Canadian respondents, as derived from the responses to Section 5 of the Survey, Demographic and Professional Information. Selected comparisons to the demographic and professional information reported in the ASPPB’s 1995 practice analysis study are presented, as available.

Table 4 shows the median year of licensure in psychology for recently and less-recently licensed U.S. and Canadian respondents. Consistent with the design of the sampling plan, the median year of initial licensure for the recently licensed respondents in both the U.S. and Canada was 2000. The median year of initial licensure was 1982 for the less-recently licensed U.S. respondents, and 1984 for the less-recently licensed Canadian respondents. Although an attempt was made to sample an equal number of recently and less-recently licensed psychologists, recently licensed psychologists represented about 70% of the U.S. respondents and 79% of the Canadian respondents.

**Table 4
Median Year and Range of Years of Licensure in Psychology for U.S. and Canadian
Recently and Less-Recently Licensed Respondents**

	U.S.		Canadian	
	Recently licensed (n = 83)	Less-recently licensed (n = 189)	Recently licensed (n = 13)	Less-recently licensed (n = 49)
Median	2000	1982	2000	1984
Range	1999 – 2003	1965 – 1998	1999 – 2002	1972 – 1998

Information about the highest level of education in psychology beyond a Bachelor’s degree is presented in Tables 5 and 6. Inspection of Table 5 indicates that in the U.S., about 64% of the recently licensed respondents had earned either a doctorate in philosophy (Ph.D.) or a doctorate in psychology (Psy.D.). About 84% of the less-recently licensed respondents had earned a Ph.D., while only 7% of the less-recently licensed respondents had earned a Psy.D., and only 5% had earned a doctorate in education (Ed.D.).

In Canada, over three-fourths of recently licensed respondents had earned a Ph.D. (77%), while the remaining 23% earned Master's degrees. For the less-recently licensed Canadian cohort, 88% indicated that they had earned a Ph.D., while 4% each indicated that they had earned either a Master's degree, an Ed.D., and a Psy.D.

Table 5
Highest Degree in Psychology for U.S. and Canadian Recently and Less-Recently Licensed Respondents

Degree	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	N	%	n	%	n	%	n	%
Master's degree	2	2.4	3	1.6	3	23.1	2	4.1
Graduate work beyond a Master's degree (at least 12 semester hours or equivalent)	0	0	1	0.5	0	0	0	0
Coursework for Doctorate completed	1	1.2	0	0	0	0	0	0
Ed.D.	1	1.2	10	5.3	0	0	2	4.1
Ph.D.	53	63.9	158	83.6	10	76.9	43	87.8
Psy.D.	25	30.1	13	6.9	0	0	2	4.1
Specialist degree	1	1.2	3	1.6	0	0	0	0
Other degree	0	0	1	0.5	0	0	0	0
None	0	0	0	0	0	0	0	0
Not specified	0	0	0	0	0	0	0	0

As documented in Table 6, both recently and less-recently licensed U.S. and Canadian respondents were most likely to be awarded their highest degree in psychology from a university (including an affiliated school of professional psychology.) Among U.S. respondents, the recently licensed group was more than three times as likely as less-recently licensed respondents to be awarded their highest degree in psychology from a free-standing school of professional psychology (about 23% and 7%, respectively). Among the Canadian respondents, whereas few from either group had earned their highest degree from a free-standing school of professional psychology (about 15% and 2%, respectively), recently licensed psychologists were more likely to have done so.

Table 6
Type of Institution Awarding Highest Psychology Degree for U.S. and Canadian Recently and Less-Recently Licensed Respondents

Type of Institution	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Free-standing school of professional psychology	19	22.9	13	6.9	2	15.4	1	2.0
University (including an affiliated school of professional psychology)	64	77.1	176	93.1	11	84.6	48	98.0
Not specified	0	0	0	0	0	0	0	0

Tables 7 and 8 document the major area of training in the graduate program from which respondents received their highest degree in psychology, and compares this to the current major area of practice among the U.S. and Canadian respondents, respectively.

As can be seen in Table 7, in the U.S., at least one-half of the recently and less-recently licensed respondents indicated clinical psychology as both their major area of training and current practice area. Among recently licensed respondents, between 4% and 7% each indicated clinical child psychology, clinical neuropsychology, and school psychology as their major area of training, whereas among less-recently licensed psychologists, between 3% and 5% each indicated child clinical psychology, developmental psychology, and educational psychology as their major area of training. Finally, at least two respondents indicated psychoanalysis and pediatric psychology as an *Other* area of training or current practice.

Table 7 shows that in terms of current major area of practice about 50% and 57% of the recently and less-recently licensed respondents, respectively, indicated clinical psychology as their major area of practice—as might be expected on the basis of the data regarding major area of training. On the other hand, only about 4% and 7% of the respondents indicated counseling psychology as their current area of practice—fewer than might be expected on the basis of reported major area of training. Among recently and less-recently licensed respondents, more respondents currently practice in areas such as clinical child psychology, clinical neuropsychology, community psychology, forensic psychology, and geropsychology than were trained in graduate programs specializing in these areas. Finally, fewer respondents currently practice in counseling psychology, educational psychology, and school psychology than were trained in these areas.

Table 7
Major Practice Area (During Graduate Training and Current) for Recently and Less-recently Licensed U.S. Respondents

Major Area	Recently licensed (n = 83)				Less-recently licensed (n = 189)			
	Graduate Training		Current		Graduate Training		Current	
	n	%	n	%	n	%	n	%
Clinical Psychology	54	65.1	41	49.4	99	52.4	108	57.1
Clinical Child Psychology	6	7.2	11	13.3	6	3.2	10	5.3
Clinical Neuropsychology	3	3.6	5	6.0	3	1.6	12	6.3
Cognitive Psychology	0	0	0	0	0	0	0	0
Community Psychology	0	0	1	1.2	0	0	2	1.1
Comparative Psychology	0	0	0	0	1	0.5	1	0.5
Counseling Psychology	11	13.3	3	3.6	33	17.5	13	6.9
Developmental Psychology	1	1.2	0	0	7	3.7	3	1.6
Educational Psychology	1	1.2	0	0	9	4.8	0	0
Environmental Psychology	0	0	0	0	0	0	0	0
Experimental Psychology/Sensation and Perception/Learning	0	0	0	0	0	0	0	0
Forensic Psychology	0	0	3	3.6	2	1.1	8	4.2
General Psychology/Methods & Systems	0	0	0	0	4	2.1	1	0.5
Geropsychology	0	0	2	2.4	0	0	1	0.5
Health Psychology	1	1.2	2	2.4	2	1.1	2	1.1
Industrial/Organizational Psychology	0	0	1	1.2	2	1.1	3	1.6
Neurosciences	0	0	0	0	0	0	0	0
Personality Psychology	0	0	0	0	1	0.5	0	0
Physiological Psychology/Psychobiology	0	0	0	0	2	1.1	2	1.1
Psychopharmacology	0	0	0	0	1	0.5	0	0
Quantitative/Mathematical/ Psychometrics/Statistics	0	0	0	0	0	0	0	0
Rehabilitation Psychology	0	0	1	1.2	0	0	1	0.5
School Psychology	3	3.6	2	2.4	5	2.6	3	1.6
Social Psychology	0	0	0	0	3	1.6	1	0.5
Combined (e.g., counseling/school)	2	2.4	1	1.2	2	1.1	3	1.6
Other	0	0	1	1.2	6	3.2	7	3.7
Not specified	1	1.2	9	10.8	1	0.5	8	4.2

Note. Column percents may not add to 100 due to rounding error.

As can be seen in Table 8, in Canada, at least one-half of recently and less-recently licensed psychologists indicated clinical psychology, and 15% and 6% of recently and less-recently licensed respondents, respectively, indicated counseling psychology as their major area of training. Among recently licensed respondents, about 8% each indicated clinical child psychology and educational psychology as their major area of training, whereas between 4% and 8% of less-recently licensed psychologists indicated counseling psychology, developmental psychology, experimental psychology/sensation and perception/learning, and physiological psychology/psychobiology.

Regarding current major area of practice, Table 8 shows that less than one-half of both groups of respondents indicated clinical psychology as their current major area of practice—somewhat fewer than might be expected on the basis of major area of training. Similarly, fewer recently licensed respondents indicated counseling psychology as their current major area of practice than had indicated it as their major area of graduate training. Among recently and less-recently licensed Canadian respondents, more respondents currently practice in areas such as health psychology, forensic psychology, and rehabilitation psychology. Finally, fewer respondents currently practice in educational psychology and experimental psychology/sensation and perception/learning than were trained in these areas.

Table 8
Major Practice Area (During Graduate Training and Current) for Recently and Less-Recently Licensed Canadian Respondents

Major Area	Recently licensed (n = 13)				Less-recently licensed (n = 49)			
	Graduate Training		Current		Graduate Training		Current	
	n	%	n	%	n	%	n	%
Clinical Psychology	9	69.2	6	46.2	28	57.1	24	49.0
Clinical Child Psychology	1	7.7	2	15.4	0	0	4	8.2
Clinical Neuropsychology	0	0	0	0	1	2.0	4	8.2
Cognitive Psychology	0	0	0	0	1	2.0	2	4.1
Community Psychology	0	0	0	0	0	0	0	0
Comparative Psychology	0	0	0	0	0	0	0	0
Counseling Psychology	2	15.4	1	7.7	3	6.1	3	6.1
Developmental Psychology	0	0	0	0	3	6.1	1	2.0
Educational Psychology	1	7.7	0	0	4	8.2	0	0
Environmental Psychology	0	0	0	0	0	0	0	0
Experimental Psychology/Sensation and Perception/Learning	0	0	0	0	2	4.1	0	0
Forensic Psychology	0	0	0	0	0	0	1	2.0
General Psychology/Methods & Systems	0	0	0	0	0	0	0	0
Geropsychology	0	0	0	0	0	0	0	0
Health Psychology	0	0	0	0	0	0	5	10.2
Industrial/Organizational Psychology	0	0	0	0	0	0	0	0
Neurosciences	0	0	0	0	1	2.0	0	0
Personality Psychology	0	0	0	0	1	2.0	0	0
Physiological Psychology/Psychobiology	0	0	0	0	2	4.1	0	0
Psychopharmacology	0	0	0	0	0	0	0	0
Quantitative/Mathematical/ Psychometrics/Statistics	0	0	0	0	0	0	0	0
Rehabilitation Psychology	0	0	1	7.7	0	0	0	0
School Psychology	0	0	0	0	1	2.0	1	2.0
Social Psychology	0	0	0	0	1	2.0	0	0
Combined (e.g., counseling/school)	0	0	0	0	0	0	1	2.0
Other	0	0	0	0	0	0	0	0
Not specified	0	0	3	23	0	0	0	0

Note. Column percents may not add to 100 due to rounding error.

Table 9 shows that U.S. and Canadian respondents work in a variety of primary employment settings within three overall categories—educational institutions/school systems (27 settings), human services settings (20 settings), and other employment settings (12 settings).

As can be seen in Table 9, approximately 70% of both recently and less-recently licensed U.S. respondents indicated that their primary employment setting fell within the general category of human services settings (including individual practice and group psychological practice), whereas 21% and 13% of recently and less-recently licensed U.S. respondents indicated an educational institution and school system as their primary employment setting, respectively. Fewer than 14% of indicated some other employment setting.

The pattern of primary employment settings for recently licensed Canadian respondents differed from that of U.S. respondents. Approximately 85% of recently licensed respondents indicated that their primary employment setting was within the category of human services settings, and the remaining 15% of respondents indicated that they worked in some other employment setting. No recently licensed respondents gave educational institutions and school systems as their primary employment setting. Less-recently licensed Canadian respondents were somewhat less likely to indicate primary employment in the category of human services settings (61%), and more likely to indicate primary employment in the category of educational institutions and school systems (33%). Only 6% of less-recently licensed respondents indicated that they work in some other employment setting.

Table 9
Primary Employment Setting for U.S. and Canadian Recently and Less-Recently Licensed Respondents

Primary Employment Setting	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Educational Institutions and School Systems	17	20.5	24	12.7	0	0	16	32.7
Human Services Settings	57	68.7	134	70.9	11	84.6	30	61.2
Other Employment Setting	6	7.2	25	13.2	2	15.4	3	6.1
Not specified	3	3.6	6	3.2	0	0	0	0

Regardless of year of initial licensure or country, at least 85% percent of respondents identified themselves as health service providers (see Table 10). This result is consistent with the fact that in many jurisdictions, licensure laws specifically designate licensees as health service providers.

Table 10
Health Service Provider Status of U.S. and Canadian Recently and Less-Recently Licensed Respondents

Health Service Provider Status	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Yes	78	94.0	170	89.9	11	84.6	44	89.8
No	5	6.0	17	9.0	2	15.4	4	8.2
Not specified	0	0	2	1.1	0	0	1	2.0

Respondents identified a primary and a secondary theoretical orientation that best described their approach to professional practice. Tables 11 and 12 document the primary and secondary theoretical orientations of the recently and less-recently licensed U.S. and Canadian respondents, respectively. In the U.S., more than one-half of the recently licensed respondents indicated cognitive/behavioral psychology (57%), and 11% and 14% indicated interpersonal psychology and psychodynamic psychology as their primary orientations, respectively. No more than 7% of the recently licensed respondents indicated any of the other four theoretical orientations as primary. In terms of secondary theoretical orientation, over one-fourth of the recently-licensed cohort indicated cognitive/behavioral (30%), and about 10% each indicated existential/humanistic, interpersonal, psychodynamic, social learning, and systems.

The pattern of responses for less-recently licensed respondents is similar to that of recently licensed respondents, although slightly fewer of the less-recently licensed respondents indicated that either cognitive/behavioral psychology or interpersonal psychology was their primary theoretical orientation. They were slightly more likely than the recently licensed group to indicate psychodynamic psychology as their primary orientation. The less-recently licensed respondents gave similar responses to the recently licensed respondents regarding secondary orientation, except they were slightly more likely to indicate behavioral psychology and slightly less likely to indicate systems psychology as their secondary theoretical orientations.

Table 11
Primary and Secondary Theoretical Orientation of Recently and Less-Recently Licensed U.S. Respondents

Theoretical Orientation	Recently licensed (n = 83)				Less-recently licensed (n = 189)			
	Primary		Secondary		Primary		Secondary	
	n	%	n	%	n	%	n	%
Behavioral	6	7.2	5	6.0	11	5.8	29	15.3
Cognitive/Behavioral	47	56.6	25	30.1	97	51.3	31	16.4
Existential/Humanistic	4	4.8	8	9.6	9	4.8	20	10.6
Interpersonal	9	10.8	8	9.6	10	5.3	32	16.9
Psychodynamic	11	13.3	9	10.8	37	19.6	24	12.7
Social learning	1	1.2	8	9.6	2	1.1	23	12.2
Systems	1	1.2	8	9.6	11	5.8	10	5.3
Other	3	3.6	5	6.0	10	5.3	9	4.8
Not applicable, no secondary orientation	–	–	1	1.2	–	–	3	1.6
Not specified	1	1.2	6	7.2	2	1.1	8	4.2

Note. Column percents may not add to 100 due to rounding error.

Table 12 shows that, among recently and less-recently Canadian respondents, the most frequently reported primary theoretical orientation was cognitive/behavioral (62% and 59%, respectively), with psychodynamic psychology as the next most frequently reported primary theoretical orientation (23% and 16%, respectively). Fewer than 8% of respondents from the recently and less-recently licensed cohorts indicated any of the other five theoretical orientations as primary.

In terms of secondary theoretical orientation, nearly one-fourth each of the recently licensed respondents indicated cognitive/behavioral and systems, and about 15% each indicated existential/humanistic and social learning. The pattern of responses for less-recently licensed Canadian respondents is similar, although they were less likely to indicate systems psychology and more likely to indicate psychodynamic psychology as their second theoretical orientation

In eliciting information about theoretical orientation, respondents were asked to select from seven designated categories and to refrain from selecting *Other* if at all possible. At least two respondents each indicated the following *Other* orientations: solution-focused, holistic, and eclectic.

Table 12
Primary and Secondary Theoretical Orientation of Recently and Less-Recently Licensed Canadian Respondents

Theoretical Orientation	Recently licensed (n = 13)				Less-recently licensed (n = 49)			
	Primary		Secondary		Primary		Secondary	
	n	%	n	%	n	%	n	%
Behavioral	1	7.7	0	0	3	6.1	2	4.1
Cognitive/Behavioral	8	61.5	3	23.1	29	59.2	13	26.5
Existential/Humanistic	0	0	2	15.4	4	8.2	4	8.2
Interpersonal	0	0	0	0	1	2.0	6	12.2
Psychodynamic	3	23.1	1	7.7	8	16.3	9	18.4
Social learning	0	0	2	15.4	1	2.0	8	16.3
Systems	0	0	3	23.1	3	6.1	4	8.2
Other	1	7.7	1	7.7	0	0	1	2.0
Not applicable, no secondary orientation	–	–	0	0	–	–	0	0
Not specified	0	0	0	0	0	0	0	0

Note. Column percents may not add to 100 due to rounding error.

Table 13 documents the number and percent of recently and less-recently licensed U.S. and Canadian respondents who participated in any formal post-doctoral specialization or respecialization program. About 36% of the recently licensed U.S. respondents and about 31% of the less-recently licensed U.S. respondents had participated in such a program. In contrast, only about 8% of the recently licensed and 20% of the less-recently licensed Canadian respondents had participated in any formal post-doctoral specialization or respecialization program. Thirty respondents indicated that their formal post-doctoral specialization or respecialization was in the area of neuropsychology. Respondents indicated other areas of post-doctoral specialization or respecialization: forensic psychology/evaluation (9), psychoanalysis (11), psychopharmacology (5), clinical (5), family therapy (3), pediatric psychology (3), child psychology (3), group training (3), pain management (3), and hypnosis (2).

Table 13
Post-doctoral Specialization/Respecialization for U.S. and Canadian Recently and Less-Recently Licensed Respondents

Post-doctoral Specialization	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Yes	30	36.1	58	30.7	1	7.7	10	20.4
No	52	62.7	130	68.8	12	92.3	38	77.6
Not specified	1	1.2	1	0.5	0	0	1	2.0

Note. Column percents may not add to 100 due to rounding error.

As documented in Table 14, few U.S. and Canadian respondents reported attaining certification from the American Board of Professional Psychology (ABPP). Among the U.S. respondents reporting ABPP certification, recent licensees were most likely to have been certified in clinical psychology or clinical neuropsychology (see Table 15). Of the two Canadian respondents who were ABPP certified, both were certified in school psychology. One of those respondents indicated multiple areas of certification: behavioral psychology, clinical neuropsychology, group psychology, health psychology, psychoanalysis, and rehabilitation psychology.

Table 14
ABPP Certification Status of U.S. and Canadian Recently and Less-Recently Licensed Respondents

ABPP Certified	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Yes	2	2.4	19	10.1	0	0	2	4.1
No	81	97.6	169	89.4	13	100	47	95.9
Not specified	0	0	1	0.5	0	0	0	0

Note. Column percents may not add to 100 due to rounding error.

Table 15
ABPP Certification Area(s) of U.S. and Canadian Recently and Less-Recently Licensed Respondents

ABPP Certification Areas	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Behavioral	0	0	0	0	0	0	1	2.0
Clinical	0	0	7	3.7	0	0	0	0
Clinical Neuropsychology	1	1.2	5	2.6	0	0	1	2.0
Counseling	1	1.2	2	1.1	0	0	0	0
Family	0	0	0	0	0	0	0	0
Forensic	0	0	4	2.1	0	0	0	0
Group	0	0	1	0.5	0	0	1	2.0
Health	0	0	0	0	0	0	1	2.0
Psychoanalysis	0	0	2	1.1	0	0	1	2.0
Rehabilitation	0	0	1	0.5	0	0	1	2.0
School	0	0	0	0	0	0	2	4.1
Not certified by ABPP	81	97.6	169	89.4	13	100	47	95.9

Note. Column percents reflect percentage of respondents indicating each ABPP certification area; multiple responses permitted.

Table 16 presents the self-described areas of expertise of U.S. and Canadian respondents. As can be seen, U.S. recently and less-recently licensed respondents were most likely to describe themselves as being experts in clinical psychology (58% and 64%, respectively) and in assessment/diagnosis/evaluation (53% and 48%, respectively). Among the recently licensed U.S. respondents, about one-fourth indicated that they were experts in the area of clinical child psychology, and between 10% and 12% described themselves as experts in child psychology, clinical neuropsychology (adult), and counseling psychology. As for the less-recently licensed U.S. respondents, almost one-fourth indicated that they are experts in the area of marriage and family psychology. The less-recently licensed cohort was slightly more diverse in their self-described areas of expertise. Between 10% and 18% of less-recently licensed respondents indicated that they are experts in each of the following areas: behavioral psychology, child psychology, clinical child psychology, counseling psychology, forensic psychology, and health psychology.

Canadian recently licensed respondents were most likely to have self-described expertise in the following three areas: assessment/diagnosis/evaluation (62%), clinical psychology (54%), and counseling psychology (39%). Less-recently licensed respondents were also most likely to have

expertise in clinical psychology (63%) and assessment/diagnosis/evaluation (51%). Between 22% and 25% of the less-recently licensed group had expertise in marriage and family psychology and health psychology.

Table 16
Self-Described Areas of Expertise of U.S. and Canadian Recently and Less-Recently Licensed Respondents

Major Area	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Assessment/Diagnosis/Evaluation	44	53.0	90	47.6	8	61.5	25	51.0
Behavioral Psychology	5	6.0	19	10.1	2	15.4	5	10.2
Career/Vocational Psychology	3	3.6	14	7.4	0	0	2	4.1
Child Psychology	10	12.0	25	13.2	3	23.1	5	10.2
Clinical Psychology	48	57.8	120	63.5	7	53.8	31	63.3
Clinical Child Psychology	20	24.1	33	17.5	3	23.1	7	14.3
Clinical Neuropsychology – Adult	9	10.8	17	9.0	0	0	6	12.2
Clinical Neuropsychology – Child	6	7.2	8	4.2	0	0	3	6.1
Cognitive Psychology	5	6.0	18	9.5	0	0	2	4.1
Community Psychology	0	0	7	3.7	0	0	0	0
Comparative Psychology	0	0	0	0	0	0	1	2.0
Consulting Psychology	1	1.2	9	4.8	0	0	3	6.1
Consumer Psychology	0	0	0	0	0	0	0	0
Counseling Psychology	9	10.8	28	14.8	5	38.5	6	12.2
Cross Cultural Studies/Issues	3	3.6	3	1.6	0	0	0	0
Developmental Psychology	6	7.2	12	6.3	0	0	3	6.1
Educational Psychology	2	2.4	10	5.3	0	0	5	10.2
Environmental Psychology	0	0	0	0	0	0	1	2.0
Ethical/Legal/Professional Issues	1	1.2	9	4.8	0	0	6	12.2
Experimental Psychology	0	0	2	1.1	0	0	3	6.1
Forensic Psychology	6	7.2	29	15.3	1	7.7	6	12.2
Gay/Lesbian Issues	3	3.6	9	4.8	1	7.7	1	2.0
General Psychology/Methods & Systems	1	1.2	4	2.1	0	0	1	2.0
Geropsychology/Aging	5	6.0	10	5.3	0	0	4	8.2

Self-Described Areas of Expertise of U.S. and Canadian Recently and Less-Recently Licensed Respondents (continued)

Major Area	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Marriage and Family Psychology	4	4.8	43	22.8	1	7.7	11	22.4
Health Psychology	7	8.4	21	11.1	1	7.7	12	24.5
Industrial/Organizational Psychology	1	1.2	9	4.8	0	0	1	2.0
Mental Retardation/Developmental Disabilities	5	6.0	13	6.9	2	15.4	4	8.2
Multicultural Psychology/Ethnic minority issues	3	3.6	5	2.6	0	0	0	0
Neuroassessment	1	1.2	6	3.2	0	0	4	8.2
Neurosciences	3	3.6	3	1.6	0	0	1	2.0
Pain/Pain management	2	2.4	10	5.3	0	0	9	18.4
Pediatric Psychology	4	4.8	3	1.6	0	0	5	10.2
Personality Psychology	2	2.4	15	7.9	0	0	2	4.1
Physiological Psychology/Psychobiology	0	0	2	1.1	0	0	2	4.1
Psychoanalysis	2	2.4	11	5.8	0	0	2	4.1
Psychology of Women	3	3.6	12	6.3	2	15.4	3	6.1
Psychopharmacology	0	0	11	5.8	0	0	2	4.1
Rehabilitation Psychology	1	1.2	7	3.7	1	7.7	6	12.2
Research and Evaluation	3	3.6	4	2.1	0	0	4	8.2
Quantitative/Mathematical/ Psychometrics/Statistics	1	1.2	3	1.6	0	0	2	4.1
School Psychology	7	8.4	16	8.5	1	7.7	4	8.2
Social Psychology	0	0	1	0.5	0	0	1	2.0
Sports Psychology	1	1.2	2	1.1	0	0	2	4.1
Substance Abuse	7	8.4	13	6.9	0	0	2	4.1
Treatment Intervention	3	3.6	17	9.0	0	0	8	16.3

Note. Column percents reflect percentage of respondents indicating areas of expertise; multiple responses permitted.

Table 17 presents the wide array of experiences as a psychologist that recently and less-recently licensed U.S. and Canadian respondents had in the most recent three year period. Regardless of year of licensure or country, the most frequently reported experiences were providing health/mental health services to a client pro bono and providing other services (e.g., expert witness, research, teaching, organization consultation) on a pro bono basis. At least one-fourth of the recently and less recently licensed U.S. respondents indicated that they had experiences in three areas, and at least one-fourth of the recently and less-recently licensed Canadian respondents indicated that they had such experiences in at least two activity areas.

Table 17
Experience as a Psychologist During the Past Three Years for U.S. and Canadian Recently and Less-Recently Licensed Respondents

Experiences as a psychologist	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Research principal/co-investigator	11	13.3	20	10.6	1	7.7	20	40.8
Provided mental health services pro bono	55	66.3	148	78.3	9	69.2	32	65.3
Provided other services pro bono	40	48.2	106	56.1	6	46.2	30	61.2
Paid consultant to another institution	23	27.7	88	46.6	3	23.1	19	38.8
Paid consultant on a grant/contract	9	10.8	19	10.1	2	15.4	6	12.2
Expert witness in court proceeding	29	34.9	90	47.6	3	23.1	18	36.7
Appeared on TV/radio as a psychologist	16	19.3	41	21.7	6	46.2	14	28.6
Reviewed R&D grant proposals	3	3.6	7	3.7	0	0	15	30.6
Involved in legislative/lobbying activities	7	8.4	44	23.3	3	23.1	11	22.4
Presented at an international convention	10	12.0	26	13.8	2	15.4	19	38.8
Attended an international convention	21	25.3	46	24.3	5	38.5	30	61.2
Prof psych association, committee, group	16	19.3	52	27.5	1	7.7	23	46.9
Served on a licensure or regulatory board	0	0	6	3.2	2	15.4	9	18.4

Note. Column percents reflect percentage of respondents indicating various experiences as a psychologist during the past three years; multiple responses permitted.

As documented in Table 18, in both the U.S. and Canada, the majority of recent licensees are female (78% and 62%, respectively), while the majority of less-recently licensees are male (both 61%)

Table 18
Gender of U.S. and Canadian Recently and Less-Recently Licensed Respondents

Gender	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Female	65	78.3	73	38.6	8	61.5	19	38.8
Male	16	19.3	116	61.4	5	38.5	30	61.2
Not specified	2	2.4	0	0	0	0	0	0

Note. Column percents may not add to 100 due to rounding error.

As can be seen in Table 19, about 93% of the U.S. respondents and 92% of the Canadian respondents described themselves as Caucasian, not of Hispanic Origin. In both the U.S. and Canada, no more than 2% identified themselves as best described by any of the other racial/ethnic categories. Two respondents indicated that they were of Indian descent.

Table 19
Racial/Ethnic Background of U.S. and Canadian Recently and Less-Recently Licensed Respondents

Racial/Ethnic Background	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
African-American	1	1.2	1	0.5	0	0	0	0
Asian/Pacific Islander	2	2.4	0	0	0	0	2	4.1
Caucasian, not of Hispanic Origin	74	89.2	180	95.2	12	92.3	45	91.8
Native American	0	0	0	0	0	0	1	2.0
Spanish/Hispanic Origin	2	2.4	2	1.1	0	0	0	0
Other	0	0	3	1.6	1	7.7	1	2.0
Not specified	4	4.8	3	1.6	0	0	0	0

Note. Column percents may not add to 100 due to rounding error.

As can be seen in Table 20, very few recently and less-recently licensed U.S. respondents indicated that they had a disability as defined by the Americans with Disabilities Act. Less-recently licensed U.S. respondents were most likely to report having a physical/orthopedic disability. One U.S. respondent each described themselves as having the following disabilities: deaf/hard of hearing, learning/cognitive disability, and *Other* (diabetic and mood disorder). No Canadian respondents reported having a disability.

Table 20
Self-Reported Disabilities of U.S. and Canadian Recently and Less-Recently Licensed Respondents

Disability	U.S.				Canadian			
	Recently licensed (n = 83)		Less-recently licensed (n = 189)		Recently licensed (n = 13)		Less-recently licensed (n = 49)	
	n	%	n	%	n	%	n	%
Blind/Visually Impaired	0	0	0	0	0	0	0	0
Deaf/Hard of Hearing	0	0	1	0.5	0	0	0	0
Physical/Orthopedic Disability	1	1.2	6	3.2	0	0	0	0
Learning/Cognitive Disability	1	1.2	1	0.5	0	0	0	0
Mental Illness	0	0	0	0	0	0	0	0
Other	1	1.2	1	0.5	0	0	0	0
None specified	80	96.4	181	95.7	13	100	49	100

Note. Column percents reflect percent of sample indicating each disability; multiple responses permitted.

Results Related to the Delineations

Process-Based Delineation

Roles in the practice of psychology. This section presents the results of the ratings related to the roles previously identified in the practice of psychology. Results related to Importance, % of Time, and Criticality ratings for each role are presented for the total sample and for the U.S. and Canadian respondents. (See pages 10 to 12 of this report for a complete description of the rating scales, and Appendix 8 for a copy of the Survey, including the name and definition of each role.)

Table 21 presents the mean, standard deviation, and number of respondents completing the *Importance* and *Criticality* ratings on the roles, and the frequency distributions for the associated scale points, as well as the mean, standard deviation, and number of respondents completing the *% of Time* estimates, and the range of time estimates for each role.

Table 21
Descriptive Statistics for Total Sample on Roles: Mean, Standard Deviation, Number of Respondents, and Percentage of Responses at Each Scale Point for Importance and Criticality; Mean, Standard Deviation, Number of Responses, and Range for Percent of Time

Role	Importance					% of Time		Criticality				
	Rating Scale Point					M SD n	Range	Rating Scale Point				
	M SD n	0 %	1 %	2 %	3 %			M SD n	0 %	1 %	2 %	3 %
Psychological Services	2.9 0.5 338	2	2	3	94	69.3 24.4 349	0 – 100	2.9 0.4 344	<1	2	8	90
Consultation, Outreach, and Policy Making	1.5 1.0 319	19	29	32	20	9.3 9.8 349	0 – 50	2.1 0.9 334	6	14	44	37
Academic Preparation and Professional Development	1.6 1.1 317	22	20	29	28	10.3 12.7 349	0 – 85	2.2 0.9 333	8	11	41	41
Research, Evaluation, and Scholarship	1.1 1.1 305	38	26	21	15	7.2 13.4 349	0 – 90	1.8 0.9 323	10	24	39	27
Other Roles	1.4 1.4 71	44	10	10	37	3.8 13.9 349	0 – 100	1.4 1.3 74	37	18	15	31

As can be seen in Table 21, for the total sample of respondents, the mean *Importance* ratings for the four specifically delineated roles range from 1.1 for the Research, Evaluation, and Scholarship role, to 2.9 for the Psychological Services role, indicating that the roles range from minimally important to the practice of licensed psychologists to moderately-to-very important to practice. Psychological Services was the only role rated as moderately-to-very important to the practice; in fact, 94% of the ratings were at scale point 3, and the associated standard deviation was the smallest of any role and in connection with any rating scale.

For the total sample of respondents, the mean *% of Time* ratings for these same four roles range from 7.2% for Research, Evaluation, and Scholarship to 69.3% for Psychological Services, indicating that respondents devote differing amounts of work time to the roles. By far, respondents devote the most work time to the Psychological Services role—the role rated as most important to their own practice. On average, respondents spent no more than about 10% of their time in each of the three remaining three roles—Consultation, Outreach, and Policy Making; Academic Preparation and Professional Development; and Research, Evaluation, and Scholarship. The magnitude of the standard deviations associated with mean *% of Time* ratings indicate that there is a great deal of variability in the practice patterns of the respondents. Also, the range of time estimates indicate that some respondents may devote *no time* to any given role while other respondents may devote *nearly all* or *all* of their professional work time to that same role.

The mean *Criticality* ratings among the total respondents for the four specifically delineated roles range from 1.8 for Research, Evaluation, and Scholarship, to 2.9 for Psychological Services, indicating that all of the roles are moderately-to-highly critical to protecting the patient/client/public from harm. Psychological Services, the role rated as most important and to which respondents devote the majority of their time, was also rated as most critical of any role. The mean *Criticality* ratings for the remaining three roles are quite high and uniform, in contrast to the mean *Importance* and *% of Time* ratings for these same three roles. It should be noted that this pattern of differentiated ratings is consistent with the construction of the rating scales; that is *Importance* and *% of Time* rating scales focused on the professional work of the respondent, while the *Criticality* scale focused on the respondent's judgment in general.

Finally, in the area of *Other* roles, of the respondents who devoted *any* work time to the *Other* role, at least three respondents each specified that they worked in such diverse areas as consultation, supervision and training, administration/paperwork/clerical/billing, and management. In terms of the *Importance* and *Criticality* scales, the respondents rated these activities as minimally-to-moderately important to their practice and as minimally-to-moderately critical to protecting the patient/client/public from harm, respectively. A review of the definitions of the four roles included in the Survey and the activities associated with the four roles suggested that all of the activities specified by the respondents in the category of *Other* roles were included in the delineation.

Tables 22 and 23 present for the U.S. and the Canadian respondents, respectively, the mean, standard deviation, and number of respondents completing the *Importance* and *Criticality* ratings on the roles, and the frequency distribution for the associated scale points, as well as the mean,

standard deviation, and number of respondents completing the *% of Time* estimates, and the range of estimates for each role.

As can be seen, with a few exceptions, the ratings of the U.S. respondents, comprising about 81% of the total sample, and the ratings of the Canadian respondents, comprising about 19% of the sample, are very similar and closely parallel the ratings of the total sample. U.S. respondents devoted slightly less time to the role of Research, Evaluation, and Scholarship than did the Canadian respondents, and they also spent slightly more time in the role of Psychological Services than did their Canadian counterparts. It is worth noting that both U.S. and Canadian respondents rated Research, Evaluation, and Scholarship similarly on the *Criticality* scale. Also, U.S. respondents devoted slightly more time to the category *Other*, and rated it slightly higher on both *Importance* and *Criticality*.

Table 22

Descriptive Statistics for U.S. Respondents on Roles: Mean, Standard Deviation, Number of Respondents, and Percentage of Responses at Each Scale Point for Importance and Criticality; Mean, Standard Deviation, Number of Responses, and Range for Percent of Time

Role	Importance					% of Time		Criticality				
	Rating Scale Point					M SD n	Range	Rating Scale Point				
	M SD n	0 %	1 %	2 %	3 %			M SD n	0 %	1 %	2 %	3 %
Psychological Services	2.9 0.5 268	2	1	3	94	71.4 23.7 275	0 – 100	2.9 0.4 271	<1	1	10	89
Consultation, Outreach, and Policy Making	1.5 1.0 249	21	26	35	19	9.1 9.9 275	0 – 50	2.1 0.9 261	6	14	42	38
Academic Preparation and Professional Development	1.6 1.1 249	24	20	30	26	9.0 11.5 275	0 – 85	2.1 0.9 262	9	10	41	41
Research, Evaluation, and Scholarship	1.1 1.1 240	39	26	20	14	6.6 13.3 275	0 – 90	1.8 1.0 254	10	24	38	27
Other Roles	1.5 1.4 57	42	9	9	40	3.9 14.3 275	0 – 100	1.5 1.3 60	35	15	17	33

Note. Rating scale percentages may not add to 100 due to rounding error.

Table 23

Descriptive Statistics for Canadian Respondents on Roles: Mean, Standard Deviation, Number of Respondents, and Percentage of Responses at Each Scale Point for Importance and Criticality; Mean, Standard Deviation, Number of Responses, and Range for Percent of Time

Role	Importance					% of Time		Criticality				
	M SD n	Rating Scale Point				M SD n	Range	Rating Scale Point				
		0	1	2	3			M	0	1	2	3
		%	%	%	%			%	%	%	%	%
Psychological Services	2.9 0.5 59	0	5	2	93	62.5 25.4 62	5 – 100	2.9 0.3 61	0	2	3	95
Consultation, Outreach, and Policy Making	1.6 1.0 59	14	39	25	22	10.3 9.6 62	0 – 40	2.1 0.8 61	7	10	56	28
Academic Preparation and Professional Development	1.8 1.1 57	14	25	28	33	15.6 16.2 62	0 – 70	2.2 0.8 59	2	15	44	39
Research, Evaluation, and Scholarship	1.2 1.1 54	32	32	20	17	10.0 14.4 62	0 – 65	1.9 0.9 57	7	25	44	25
Other Roles	0.6 0.8 11	64	18	18	0	1.5 5.4 62	0 – 33	0.6 0.7 11	55	36	9	0

Note. Rating scale percentages may not add to 100 due to rounding error.

Responsibilities in the practice of psychology. This section presents the results of the ratings related to the 35 responsibilities identified in connection with the four roles in the practice of psychology. Results related to Importance, Frequency, and Criticality ratings are presented for the total sample and for U.S. and Canadian respondents. In addition, results are presented regarding the degree of relationship between ratings assigned to each role and to the responsibilities associated with each role. (See pages 10 to 12 of this report for a complete description of the rating scales, and Appendix 8 for a copy of the Survey, including the responsibilities identified in connection with each role.)

Table 24 presents the mean of means and standard error of the means for the *Importance*, *Frequency*, and *Criticality* Rating Scales for the responsibilities associated with each role. Data are presented for the total sample of respondents and for U.S. and Canadian respondents. The mean of means for *Importance* ranges from 0.9 for the 10 responsibilities associated with the Research, Evaluation, and Scholarship role, to 2.2 for the 10 responsibilities associated with the Psychological Services role. The responsibilities associated with the Psychological Services role are moderately-to-very important to the respondents' practice, while the responsibilities associated with the remaining three roles are minimally-to-moderately important to the practice of respondents.

The pattern of *Frequency* ratings for the responsibilities in each role generally parallels that of the *Importance* ratings. The mean of means for *Frequency* ranges from 0.7 for responsibilities associated with the Consultation, Outreach, and Policy Making role and the Research, Evaluation, and Scholarship role, to 1.9 for responsibilities associated with the Psychological Services role. In contrast, the mean of means for *Criticality* ranges from 1.7 for Consultation, Outreach, and Policy Making role and Research, Evaluation, and Scholarship, to 2.3 for Psychological Services, indicating that respondents generally view the responsibilities associated with the former as moderately critical in terms of protecting the patient/client/public from harm, while the responsibilities associated with the remaining roles are moderately-to-very critical.

The *Criticality* scale ratings generated a narrower range in the mean of means relative to the *Importance* and *Frequency* data. The pattern in the ratings suggests that respondents perceived the criticality of the responsibilities, regardless of the contribution of the responsibilities to their own practice.

Table 24
Mean of Means and Standard Deviation, for Importance, Frequency, and Criticality Ratings for Responsibilities within Roles

Role	# of Responsibilities	Importance			Frequency			Criticality		
		U.S.	Canada	Total	U.S.	Canada	Total	U.S.	Canada	Total
Psychological Services	10	2.2 0.5	2.3 0.5	2.2 0.5	1.9 0.5	2.0 0.5	1.9 0.5	2.3 0.3	2.4 0.3	2.3 0.3
Consultation, Outreach and Policy Making	8	1.0 0.1	1.1 0.1	1.0 0.1	0.6 0.2	0.8 0.2	0.7 0.1	1.7 0.1	1.9 0.1	1.7 0.1
Academic Preparation and Professional Development	7	1.3 0.5	1.4 0.5	1.3 0.5	0.9 0.5	1.2 0.4	1.0 0.5	2.1 0.2	2.1 0.3	2.1 0.3
Research, Evaluation, and Scholarship	10	0.9 0.3	1.1 0.3	0.9 0.3	0.6 0.3	1.0 0.3	0.7 0.3	1.7 0.2	1.7 0.2	1.7 0.2

The pattern of data on mean of means for U.S. and Canadian respondents is similar. On the *Importance* and *Frequency* scales, the Canadian respondents rated the responsibilities associated with all four roles somewhat higher than did the U.S. Respondents.

The overall pattern of ratings for the responsibilities documented in Table 24 is consistent with the pattern of ratings documented in Table 20, wherein respondents rated each role on *Importance*, *% of Time*, and *Criticality*. That is to say, there is a general consistency in the respondents' ratings of roles and responsibilities.

Appendix 10 presents the mean, standard deviation, and number of respondents completing the *Importance*, *Frequency*, and *Criticality* ratings on the 35 responsibilities, and the distributions for the associated scale points. Data are presented for the total sample and for U.S. and Canadian respondents.

As can be seen for the total sample, there is a wide range of ratings within each role. Within the Psychological Services role, one responsibility—RE4, Develop procedures and/or instruments (e.g., behavioral analyses; structured interviews; surveys and questionnaires; work samples; and tests of knowledge, skills, and abilities) for the assessment of relevant characteristics of individuals, groups, jobs, organizations, educational and social institutions, and/or environments—is rated lowest on two of the three rating scales (*Importance* and *Criticality*). Likewise, a single responsibility—RE1, Provide psychological services and/or make referrals with knowledge of the range of the levels and types of evaluation and interventions available—is rated highest on all three scales. Additionally, the mean ratings of the responsibilities within the Psychological Services role indicate that 7 of the 10 responsibilities are at least moderately important to the respondents; 5 of the 10 responsibilities are performed at least frequently; and 8

of the 10 responsibilities are evaluated to be at least moderately critical to protecting the patient/client/public from harm.

In contrast, for the Consultation, Outreach, and Policy Making role, the mean ratings of the responsibilities indicate that 0 of 8 responsibilities are at least moderately important to the respondents and performed frequently. One of 8 responsibilities in this role was judged to be moderately critical to protecting the patient/client/public from harm, although three other responsibilities approached the moderately critical mark. The responsibility—RE13, Prepare, present, coordinate, and evaluate classes, seminars, or workshops to various groups (e.g., personnel in school systems, legal systems, health care and organizational settings; medical and mental health consumer groups; and the general public)—is rated highest on the *Importance* and *Frequency* scales, while the statement—RE12, Prepare, present, coordinate, and evaluate prevention and/or early intervention programs for at-risk populations (e.g., substance abuse prevention, HIV-AIDS education, injury prevention programs for frail older adults, school violence prevention)—is rated highest on the *Criticality* scale.

A similar pattern is apparent in the data related to the Academic Preparation and Professional Development role; that is, the mean ratings of the responsibilities indicate that only 1 of 7 responsibilities is at least moderately important to the respondents and performed at least frequently. In contrast, 5 of 7 responsibilities are judged to be at least moderately critical to protecting the patient/client/public from harm. One responsibility—RE25, Participate in professional self-development and continuing education designed to enhance personal and professional effectiveness, and knowledge and skills (e.g., self-care, burnout prevention, life-long learning, Continuing Education courses)—is rated highest on all three scales.

Finally, for the Research, Evaluation, and Scholarship role, the same pattern is apparent. The mean ratings of the responsibilities indicate that no responsibility is at least moderately important to the respondents, performed at least frequently, and moderately critical to protecting the patient/client/public from harm. In fact, 6 of 10 responsibilities are rated not important-to-minimally important and 8 of 10 are performed never or very rarely-to-infrequently. One responsibility—RE 26, Critically review and appraise existing literature with regard to issues such as conceptualization, methodology, interpretation, and generalizability of results and conclusions—is rated highest on all three scales.

Content-Based Delineation

This section presents the results of the ratings related to the content areas identified in the practice of psychology. Results related to mean *Importance*, *Frequency*, and *Criticality* ratings for each content area are presented for the total sample and for U.S. and Canadian respondents. (See pages 10 to 12 of this report for a complete description of the rating scales, and Appendix 8 for a copy of the Survey, including the name and definition of each content area.)

Content areas. Table 25 presents for the total sample of respondents the mean, standard deviation, and number of respondents completing the Importance, Frequency, and Criticality ratings on the eight content areas, and the frequency distributions for the associated scale points.

As can be seen in Table 25, the *Importance* ratings for the eight content areas range from 1.4 for the Research Methods and Statistics content area, to 2.8 for the Ethical/Legal/Professional Issues content area, indicating that the content areas range from being minimally-to-moderately important to the practice of licensed psychologists, to moderately-to-very important to the practice of licensed psychologists. In fact, seven of the eight content areas were rated as moderately-to-very important to practice, and only one content area, Research Methods and Statistics, was rated as less important to practice.

For the total sample of respondents, the mean *Frequency* ratings for the content areas range from 1.3 for the Research Methods and Statistics content area, to 2.6 for the Treatment, Intervention, and Prevention content area, indicating that respondents call upon knowledge from the content areas from infrequently-to-frequently, to frequently-to-very frequently. In fact, consistent with the *Importance* ratings previously described, respondents call upon the knowledge from seven of the eight content areas moderately-to-very frequently, and the knowledge from one content area, Research Methods and Statistics, infrequently-to-frequently.

For the total sample of respondents, the mean *Criticality* ratings for the eight content areas range from 1.7 for the Research Methods and Statistics content area, to 2.8 for the Ethical/Legal/Professional Issues content area, indicating that all of the content areas are rated as minimally-to-moderately and moderately-to-highly critical to protecting the patient/client/public from harm. In general, the *Criticality* ratings were very similar to the *Importance* ratings, indicating that respondents both called upon the knowledge in their own practice and recognized the knowledge as critical to protecting the patient/client/public from harm.

Tables 26 and 27 present the responses of the U.S. and Canadian respondents, respectively, the mean, the standard deviation, and the number of respondents completing the *Importance*, *Frequency*, and *Criticality* ratings on the content areas, and the frequency distributions for the associated scale points.

As can be seen, with few exceptions, the ratings of the U.S. and Canadian respondents were similar and closely parallel the ratings of the total sample. Canadian respondents rated five of the eight content areas somewhat lower than did the U.S. respondents on the *Importance* scale, and they rated six of the eight content areas slightly lower on *Frequency* than did their U.S. counterparts. The Canadian cohort rated four of the eight content areas the same as did the U.S. respondents on the *Criticality* scale, consistent with the overall pattern of similarities and differences documented previously.

Table 25

Descriptive Statistics for Total Sample on Content Areas: Mean, Standard Deviation, Number of Respondents, and Percentage of Responses at Each Scale Point for Importance, Frequency, and Criticality

Content Area	Importance					Frequency					Criticality				
	M	Rating Scale Point				M	Rating Scale Point				M	Rating Scale Point			
		SD	0	1	2		3	SD	0	1		2	3	SD	0
n	%	%	%	%	n	%	%	%	%	n	%	%	%	%	
Biological Bases of Behavior	2.2	4	15	38	43	2.1	5	19	42	35	2.3	3	12	41	45
	0.8					0.9					0.8				
	345					345					345				
Cognitive-Affective Bases of Behavior	2.5	3	8	30	59	2.4	3	10	34	53	2.4	2	8	40	50
	0.8					0.8					0.7				
	345					345					345				
Social and Multicultural Bases of Behavior	2.3	1	14	38	46	2.2	1	19	41	38	2.3	1	13	41	46
	0.8					0.8					0.7				
	345					345					344				
Growth and Lifespan Development	2.5	1	9	30	59	2.4	1	14	33	52	2.4	1	9	37	54
	0.7					0.8					0.7				
	345					344					344				
Assessment and Diagnosis	2.6	1	10	18	71	2.5	1	12	23	65	2.6	1	4	32	63
	0.7					0.7					0.6				
	345					345					345				
Treatment, Intervention, and Prevention	2.7	1	6	17	77	2.6	1	9	19	72	2.7	<1	2	21	76
	0.6					0.7					0.5				
	345					344					345				
Research Methods and Statistics	1.4	16	42	27	15	1.3	17	49	20	14	1.7	10	30	38	22
	0.9					0.9					0.9				
	345					344					344				
Ethical/Legal/Professional Issues	2.8	1	1	17	81	2.5	1	7	30	62	2.8	0	2	14	84
	0.5					0.7					0.4				
	345					345					345				

Note. Rating scale percentages may not add to 100 due to rounding error.

Table 26
Descriptive Statistics for U.S. Respondents on Content Areas: Mean, Standard Deviation, Number of Respondents, and Percentage of Responses at Each Scale Point for Importance, Frequency, and Criticality

Content Area	Importance					Frequency					Criticality				
	M SD n	Rating Scale Point				M SD n	Rating Scale Point				M SD n	Rating Scale Point			
		0	1	2	3		0	1	2	3		0	1	2	3
		%	%	%	%		%	%	%	%		%	%	%	%
Biological Bases of Behavior	2.3 0.8 272	3	13	39	45	2.1 0.8 272	4	18	41	38	2.3 0.8 272	2	11	40	46
Cognitive-Affective Bases of Behavior	2.5 0.7 272	2	7	29	62	2.4 0.8 272	2	10	32	56	2.4 0.7 272	2	8	38	52
Social and Multicultural Bases of Behavior	2.3 0.7 272	2	13	40	46	2.2 0.8 272	1	18	42	39	2.3 0.7 272	1	12	41	46
Growth and Lifespan Development	2.5 0.7 272	1	7	31	61	2.4 0.7 271	<1	13	34	53	2.4 0.7 271	1	9	37	54
Assessment and Diagnosis	2.6 0.7 272	<1	11	19	70	2.5 0.7 272	<1	13	24	64	2.6 0.6 272	1	5	33	62
Treatment, Intervention, and Prevention	2.7 0.7 272	2	6	17	76	2.6 0.7 271	1	10	19	71	2.7 0.5 272	<1	3	21	76
Research Methods and Statistics	1.4 0.9 272	16	44	27	13	1.3 0.9 271	17	52	19	12	1.7 0.9 271	10	31	37	22
Ethical/Legal/Professional Issues	2.8 0.5 272	1	1	16	82	2.6 0.7 272	2	6	28	65	2.8 0.4 272	0	1	14	85

Note. Rating scale percentages may not add to 100 due to rounding error.

Table 27
Descriptive Statistics for Canadian Respondents on Content Areas: Mean, Standard Deviation, Number of Respondents, and Percentage of Responses at Each Scale Point for Importance, Frequency, and Criticality

Content Area	Importance					Frequency					Criticality				
	M	Rating Scale Point				M	Rating Scale Point				M	Rating Scale Point			
		SD	0	1	2		3	SD	0	1		2	3	SD	0
n	%	%	%	%	n	%	%	%	%	n	%	%	%	%	
Biological Bases of Behavior	1.9 0.9 62	7	26	36	32	1.8 0.9 62	8	24	44	24	2.1 0.8 62	3	18	42	37
Cognitive-Affective Bases of Behavior	2.4 0.8 62	3	10	36	52	2.2 0.8 62	3	13	45	39	2.3 0.7 62	0	11	47	42
Social and Multicultural Bases of Behavior	2.2 0.8 62	2	21	32	45	2.0 0.8 62	2	27	37	34	2.3 0.7 62	0	15	44	42
Growth and Lifespan Development	2.2 0.9 62	3	19	27	50	2.2 0.9 62	5	21	29	45	2.4 0.7 62	2	10	37	52
Assessment and Diagnosis	2.7 0.7 62	2	8	13	77	2.6 0.7 62	2	10	19	69	2.7 0.6 62	0	3	29	68
Treatment, Intervention, and Prevention	2.8 0.5 62	0	5	13	82	2.7 0.6 62	0	5	19	76	2.8 0.4 62	0	0	24	76
Research Methods and Statistics	1.6 1.0 62	15	39	23	24	1.4 1.0 62	18	42	21	19	1.7 0.9 62	10	29	42	19
Ethical/Legal/Professional Issues	2.7 0.6 62	2	2	21	76	2.4 0.7 62	2	7	40	52	2.8 0.4 62	0	2	13	86

Note. Rating scale percentages may not add to 100 due to rounding error.

Knowledge in the practice of psychology. This section presents the results of the ratings related to the 79 knowledge statements delineated in connection with the content areas in the practice of psychology. Results related to Usage, Acquisition, and Criticality ratings for each knowledge statement are presented for the total sample and for the U.S. and Canadian respondents. (See pages 10 to 12 of this report for a complete description of the rating scales, and Appendix 8 for a copy of the Survey, including the knowledge identified in connection with each content area.)

Appendix 11 documents the frequency distributions for the scale points associated with the *Usage*, *Acquisition*, and *Criticality* rating scales, and the mean, standard deviation, and number of respondents completing the *Criticality* rating for each knowledge statement for the total sample of respondents, and for U.S. and Canadian respondents.

As documented in Appendix 12 at least 85% of the respondents used 60 of the 79 knowledge statements at either the recognize/recall or the apply/interpret/integrate level. On the other hand, as many as 44% of the respondents identified each of the remaining 19 knowledge statements as knowledge they did not have. Fourteen of these 19 statements were associated with two content areas—the Assessment and Diagnosis area and the Treatment, Intervention, and Prevention area.

Additionally, on the *Acquisition* scale, at least 85% of the respondents rated 75 of the 79 knowledge statements as necessary at some point in time—either *primarily before* or *primarily after* initial licensure. In the case of the remaining four knowledge statements, up to 23% of the respondents rated each statement as not necessary at any point in time. Three of the four statements were associated with the same two content areas previously identified in connection with the *Usage* ratings—Assessment and Diagnosis and Treatment, Intervention, and Prevention. Each of the four statements had also been identified by at least 27% of the respondents as a knowledge base they did not have. Exhibit 2 presents the four knowledge statements.

Exhibit 2
Knowledge Statements Not Meeting Present Criterion for the Usage Rating Scale and for the Acquisition Rating Scale

- KN19 Knowledge of evolutionary perspectives on social behavior
 - KN44 Knowledge of methods for evaluating environmental/ecological influences on individuals, groups, or organizations (e.g., organizational frameworks, functional analysis of behavior)
 - KN57 Knowledge of human resource management interventions (e.g., risk management, management training, conflict resolution, compensation and benefits design)
 - KN64 Consumerism (e.g., impact of internet access to healthcare information, consumer involvement in treatment planning); patient empowerment
-

Table 28 presents the mean of means and the standard error of the means for the *Criticality* rating scale for the knowledge statements associated with each content area for the total sample of respondents and for U.S. and Canadian respondents. The general pattern for ratings reported in Table 28 is somewhat consistent with the pattern of ratings in Table 25, wherein respondents rated each content area on *Criticality*, although the ratings are consistently lower on the specific knowledge statements than on the associated content areas.

For the total sample, the mean of means range from 1.7 for the seven knowledge statements delineated in connection with the Research Methods and Statistics content area, to 2.7 for the five knowledge statements delineated in association with Ethical/Legal/Professional Issues content area. Overall, the knowledge statements associated with three content areas (Social and Multicultural Bases of Behavior; Treatment, Intervention, and Prevention; and Research Methods and Statistics) were minimally-to-moderately critical to protecting the patient/client/public from harm, while the knowledge statements associated with five content areas (Biological Bases of Behavior, Cognitive-Affective Bases of Behavior, Growth and Lifespan Development, Assessment and Diagnosis, Ethics/Legal/Professional Issues) were moderately-to-highly critical.

Table 28
Mean of Means and Standard Deviation for Criticality Ratings for Knowledge Statements within Content Areas

Content Area	# of Knowledge Statements	Criticality		
		U.S.	CAN	Total
Biological Bases of Behavior	7	2.1 0.3	2.0 0.2	2.1 0.3
Cognitive-Affective Bases of Behavior	7	2.1 0.3	2.1 0.3	2.1 0.3
Social and Multicultural Bases of Behavior	12	1.9 0.3	1.9 0.3	1.9 0.3
Growth and Lifespan Development	11	2.2 0.2	2.2 0.2	2.2 0.2
Assessment and Diagnosis	13	1.9 0.3	2.0 0.4	2.0 0.3
Treatment, Intervention, and Prevention	17	1.9 0.4	2.0 0.5	1.9 0.4
Research Methods and Statistics	7	1.6 0.1	1.8 0.1	1.7 0.1
Ethical/Legal/Professional Issues	5	2.7 0.2	2.7 0.2	2.7 0.2

The mean of means for the U.S. and Canadian respondents are very similar. The Canadians rated the knowledge base associated with Biological Bases of Behavior slightly lower than did the U.S. respondents, and the knowledge bases associated with Assessment and Diagnosis; Treatment, Intervention, and Prevention; and Research Methods and Statistics slightly higher than did the U.S. respondents.

Finally, for the *Criticality* scale, 30 of the 79 knowledge statements were rated as minimally-to-moderately critical, and 49 statements were rated as moderately-to-highly critical. All of the statements associated with the content area Ethical/Legal/Professional Issues were rated as moderately-to-highly critical.

In general, the patterns of ratings for the U.S. and Canadian respondents were similar (see Appendix 11). Fewer knowledge statements were rated by at least 85% of the Canadian respondents as used at either the recognize/recall or the apply/interpret/integrate level. However, at least 85% of the Canadian respondents rated 73 of the knowledge statements as necessary at some point in time. In the case of the remaining six statements, up to one-fourth of the respondents rated the knowledge as not necessary at any point. These latter statements were associated with three content areas—Biological Bases of Behavior (KN6); Social and Multicultural Bases of Behavior (KN18 and KN19); Assessment and Diagnosis (KN44); and Treatment, Intervention, and Prevention (KN57 and KN61). Three of these knowledge statements were also among the knowledge statements documented in Exhibit 2.

Qualitative Results

Respondents to the Survey were asked to identify long-range changes occurring in the practice of the profession—especially those that may affect the knowledge required of psychologists in the future. Approximately one third of the U.S. and Canadian respondents provided qualitative responses. The following summary characterizes the areas of change identified by the U.S. and Canadian respondents.

- More than 10% of Survey respondents commented on the impact of prescription privileges for psychologists.
- More than 5% of the Survey respondents commented on the negative impact of managed care.
- About 5% of the Survey respondents commented on the increased competition from masters' and bachelor's prepared practitioners.

Both U.S. and Canadian respondents identified the following types of knowledge and skills as needed in the future:

- Knowledge regarding the interplay between the mind and body, neurology/biology/genetic determinants, brain functions, affect, and interventions for traumatic care situations.
- Professional skills associated with procedures to integrate medicine into psychology, including working with primary care physicians, procedures to combine aspects of spirituality into therapy, and procedures to implement evidence-based practice.
- Generic skills, such as obtaining business training in order to run a practice.

Process- and Content-Based Profiles of Practice

The purpose of developing profiles of practice from the data collected and described previously is to provide empirical descriptions of the critical activities performed by licensed psychologists in practice. Following review by subject-matter experts, the profiles become the basis for final test specifications for the EPPP.

Two separate profiles of practice were developed. Profile 1 used the data associated with the process-based delineation—the ratings on the roles and responsibilities. Profile 2 used the data associated with the content-based delineation—the ratings on the content areas and knowledge statements. In each case, decisions were made regarding the most relevant sets of ratings from which to generate the profiles.

For purposes of developing the process-based profile, evaluation of the statistical analyses supported the conclusion that the *Time/Frequency* and *Criticality* ratings of the roles and responsibilities might be used to develop the profile, with little loss of information. Both sets of ratings contributed the most independent information regarding the profile of practice. Similarly, for purposes of developing the content-based profile, evaluation of the statistical analyses supported the conclusion that *Frequency* and *Criticality* ratings of content areas might be used to develop the profile, with little loss of information.

To develop the process-based profile, the following steps were implemented:

- In Step 1, the *% of Time* estimates of all U.S. and Canadian respondents on the four specifically delineated roles and *Other* roles were recalculated so as to exclude time spent on *Other* roles from the proportional estimates of time spent in professional practice.
- In Step 2, the *% of Time* and *Criticality* ratings on each role were multiplied together and added across respondents to form a sum for each role. The sums for the roles were added to obtain a grand sum. The *% of Time X Criticality* sum for each role was then divided by the grand sum to produce a percentage or weight for each role.
- In Step 3, a similar procedure was used to create a weighted description of responsibilities within the roles. The *Frequency* and *Criticality* ratings for each role of the responsibilities making up a role were multiplied together and added to form a total for the responsibility. The *Frequency X Criticality* ratings for all of the responsibilities in the role were then added to form a total for the role. The *Frequency X Criticality* ratings for each responsibility was then divided by the total for the role to produce a percentage for each responsibility. The resulting percentage for each responsibility. The resulting percentage for each responsibility was then multiplied by the overall percentage for the role obtained in Step 2.

The overall process produced a profile of practice in which (a) percentages for responsibilities within roles sum to the appropriate percentage for the role, and (b) the percentages for the roles total 100%.

Table 29 presents the results of the procedures designed to produce the profile of practice for the process-based delineation. By far, the largest element in the profile related to the Psychological Services role (about 75%); the remaining 3 roles contributed 25% to the overall profile of the critical activities performed by licensed psychologists.

Table 29
Profile of Practice for Roles and Responsibilities as a Function of Time/Frequency and Criticality Ratings

Role	Approximate Percentage
R1 Psychological Services	74.6
R2 Consultation, Outreach, and Policy Making	9.0
R3 Academic Preparation and Professional Development	9.7
R4 Research, Evaluation, and Scholarship	6.7

Table 29
Profile of Practice for Roles and Responsibilities As a Function of Time/Frequency and Criticality Ratings

Responsibility	Approximate Percentage
Psychological Services	
RE1 Provide psychological services and/or make referrals with knowledge of the range of levels and types of evaluation and interventions available	9.8
RE2 Coordinate and/or participate in service delivery with psychologists and others (e.g., health professionals, managed care systems, organizational personnel, attorneys, managers and executives, collective bargaining representatives, schools, community groups, public sector systems, and other agencies)	8.5
RE3 Use multiple methods to gather information from individuals, couples, families, groups, organizations, and other relevant sources (including information about context) in a systematic manner to identify the problems/needs for assessment and prevention and/or intervention planning	8.6
RE4 Develop procedures and/or instruments (e.g., behavioral analyses; structured interviews; surveys and questionnaires; work samples; and tests of knowledge, skills, and abilities) for the assessment of relevant characteristics of individuals, groups, jobs, organizations, educational and social institutions, and/or environments	4.9
RE5 Select, administer, and code/quantify/score instruments for the assessment of relevant characteristics of individuals, groups, jobs, organizations, educational and social institutions, and/or environments	7.4
RE6 Evaluate and integrate results of information-gathering and assessment processes with scientific/professional knowledge to formulate/reformulate working hypotheses, descriptions, diagnoses, and intervention recommendations	9.1
RE7 Plan, design, and implement prevention and/or intervention programs, and evaluation/feedback strategies (e.g., define goals and objectives, identify appropriate intervention targets and strategies, and outcome measures)	7.2
RE8 Prepare, present, and coordinate classes, seminars, or workshops for individuals, groups, or organizations (e.g., executive managers, employees, and others) on a variety of issues (e.g., procedural justice, training and development programs, organizational entry/exit programs, change management, parenting interventions)	4.9
RE9 Document and communicate assessment results, intervention recommendations, progress, and outcomes	9.1
RE10 Design, implement, and monitor quality efficacy and effectiveness of prevention and intervention programs, systems, and procedures and modify, as appropriate (e.g., individual and organizational interventions, utilization review, care management, case management)	5.1
Consultation, Outreach, and Policy Making	
RE11 Prepare, present, coordinate, and evaluate health promotion programs or workshops	1.2

Responsibility	Approximate Percentage
for public or organizational audiences (e.g., smoking cessation, parenting, anger control and management, informational programs on community psychological services/resources)	
RE12 Prepare, present, coordinate, and evaluate prevention and/or early intervention programs for at-risk populations (e.g., substance abuse prevention, HIV-AIDS education, injury prevention programs for frail older adults, school violence prevention)	1.1
RE13 Prepare, present, coordinate, and evaluate classes, seminars, or workshops to various groups (e.g., personnel in school systems, legal systems, health care and organizational settings; medical and mental health consumer groups; and the general public)	1.3
RE14 Provide expertise to and/or serve on boards or committees of local/state/provincial/federal agencies (e.g., community outreach program, jurisdictional licensing board, federal mental health commission, releasing/parole board) and other policy making organizations (e.g., business and healthcare coalitions, business roundtables, chambers of commerce, legal system)	1.2
RE15 Provide expertise to and/or serve on local, state/provincial, national or international psychological and/or interdisciplinary organizations, consumer groups, charitable and religious organizations	1.1
RE16 Provide expertise to and/or serve on boards or committees of specific organizations (e.g., accreditation preparation committee, Quality Improvement Committee, program advisory committee)	0.9
RE17 Disseminate knowledge of psychology and its value to the general public via various media (e.g., interviews and articles for the popular press; radio and television appearances)	1.1
RE18 Formulate and advocate for policies and standards applicable to individual and/or organizational providers and consumers of psychological services and work to build consensus for their adoption by the appropriate constituents	1.1
Academic Preparation and Professional Development	
RE19 Prepare, present, coordinate, and evaluate courses, seminars, workshops, or conferences for undergraduate, graduate, and post-doctoral students, and professional practitioners	1.3
RE20 Supervise, administer, coordinate, and evaluate undergraduate and graduate training and practicum, internship, and post-doctoral fellowship programs for knowledge and skill acquisition	1.4
RE21 Develop and evaluate curricula for undergraduate, graduate, post-doctoral, and continuing education programs	0.9
RE22 Supervise professional practitioners to enhance their professional development and service delivery	1.4

Responsibility	Approximate Percentage
RE23 Supervise and advise undergraduate, graduate, and post-doctoral students regarding research and evaluation studies (e.g., honors thesis, dissertation)	0.9
RE24 Provide mentoring for undergraduate, graduate, and post-doctoral students, and professional psychologists	1.5
RE25 Participate in professional self-development and continuing education designed to enhance personal and professional effectiveness, and knowledge and skills (e.g., self-care, burnout prevention, life-long learning, Continuing Education courses)	2.3
Research, Evaluation, and Scholarship	
RE26 Critically review and appraise existing literature with regard to issues such as conceptualization, methodology, interpretation, and generalizability of results and conclusions	1.0
RE27 Use the existing knowledge base to formulate clear research/program evaluation questions and design appropriate methods to test them	0.7
RE28 Administer and manage research/program evaluation projects (e.g., select and train personnel, supervise subject recruitment and data collection, carry out fiduciary responsibilities, ensure design integrity)	0.6
RE29 Collect and analyze data using appropriate methods of analysis	0.7
RE30 Disseminate research and/or program evaluation findings, implications, and limitations	0.7
RE31 Engage in other scholarly activities so as to contribute to the core body of knowledge and enhance understanding (e.g., prepare scholarly reviews; develop instrumentation, models, and theories; write textbooks)	0.6
RE32 Interpret and recommend applications of research and/or program evaluation findings, with awareness of their strengths and limitations	0.7
RE33 Organize and participate in scientific and professional meetings and workshops	0.9
RE34 Prepare proposals for funding agencies	0.4
RE35 Provide scientific expertise (e.g., serve in an editorial capacity on professional journals or other refereed publications, review proposals for funding agencies, serve on an Institutional Review Board and advisory committees)	0.5

To develop the content-based profile of practice, the following steps were implemented:

- In Step 1, the *Frequency* and *Criticality* ratings for all U.S. and Canadian respondents on each content area were multiplied together and added across respondents to form a sum for each content area. The sums for the eight content areas were added together to form a grand sum. The *Frequency X Criticality* sum for each content area was then divided by the grand sum to produce a percentage or weight for each content area.
- In Step 2, the *Acquisition* and *Criticality* ratings of the knowledge statements were used to generate a mean value and rank-order for the 79 statements. Exhibit 3 presents the weights assigned to each respondent’s ratings of each knowledge statement. The procedure was designed to highlight the knowledge base identified as necessary primarily before licensure, and to incorporate the relative criticality of each statement.

Exhibit 3
Weighting of Knowledge Statements

Weight	Acquisition	Criticality
1	Not necessary at any point	Not critical
2	Not necessary at any point	Minimally critical
3	Not necessary at any point	Moderately critical
4	Not necessary at any point	Highly critical
5	Primarily <i>after</i> licensure	Not critical
6	Primarily <i>after</i> licensure	Minimally critical
7	Primarily <i>after</i> licensure	Moderately critical
8	Primarily <i>after</i> licensure	Highly critical
9	Primarily <i>before</i> licensure	Not critical
10	Primarily <i>before</i> licensure	Minimally critical
11	Primarily <i>before</i> licensure	Moderately critical
12	Primarily <i>before</i> licensure	Highly critical

The overall process produced a profile of practice in which the percentages for the content areas total 100%, and the mean value and rank-order of each knowledge statement highlight the critical knowledge to be acquired—either before or after licensure.

Table 30 presents the results of the procedures designed to produce the profiles of practice for the content-based delineation. As can be seen, at the content area level, seven of eight content areas each contribute between 11% and 15% to the profile, while one content area, Research Methods and Statistics, made a smaller contribution to the profile (7%).

Table 30
Profiles of Practice and Hypothetical Test Specifications for Content Areas as a Function of Frequency and Criticality Ratings

Content Area	Approximate Percentage
CA1 Biological Bases of Behavior — knowledge of (a) biological and neural bases of behavior, (b) psychopharmacology, and (c) methodologies supporting this body of knowledge	11.4
CA2 Cognitive-Affective Bases of Behavior — knowledge of (a) cognition and its neural bases, (b) theories and empirical bases of learning, memory, motivation, affect, emotion, and executive function, and (c) factors that influence cognitive performance and/or emotional experience and their interaction	12.8
CA3 Social and Multicultural Bases of Behavior — knowledge of (a) intrapersonal, interpersonal, intragroup, and intergroup processes and dynamics, (b) theories of personality, and (c) issues in diversity	11.9
CA4 Growth and Lifespan Development — knowledge of (a) age-appropriate development across the life span, (b) atypical patterns of development, and (c) the protective and risk factors that influence developmental outcomes for individuals	12.9
CA5 Assessment and Diagnosis — knowledge of (a) psychometrics, (b) assessment models and instruments, (c) assessment methods for initial status of and change by individuals, couples, families, groups, and organizations/systems, and (d) diagnostic classification systems and their limitations	14.0
CA6 Treatment, Intervention, and Prevention — knowledge of (a) individual, couple, family, group, organizational, or community interventions for specific concerns/disorders in diverse populations, (b) intervention and prevention theories, (c) best practices, and (d) consultation models and processes	15.0
CA7 Research Methods and Statistics — knowledge of (a) individual, couple, family, group, organizational, or community interventions for specific concerns/disorders in diverse populations, (b) intervention and prevention theories, (c) best practices, and (d) consultation models and processes	7.2
CA8 Ethical/Legal/Professional Issues — knowledge of (a) codes of ethics, (b) professional standards for practice, (c) legal mandates and restrictions, (d) guidelines for ethical decision-making, and (e) professional training and supervision	14.8

Table 31 presents the results of the procedures designed to rank-order the knowledge statements in terms of *Acquisition* and *Criticality* ratings.

Table 31
Profiles of Practice for Knowledge Statements Mean and Rank for Knowledge Statements as a
Function of Acquisition and Criticality Ratings

Knowledge		Mean	Rank
Biological Bases of Behavior			
KN1	Correlates and determinants of the biological and neural bases of behavior (e.g., [neuro] anatomy, [neuro] physiology, [neuro] endocrinology) pertaining to perception, action, attention, memory, temperament, and mood in normal, acute and chronic disordered states (e.g., drug or carbon monoxide intoxication, stroke and focal lesions); and/or acute and chronic disease (e.g., insulin shock, diabetes, mood disorders, dementia, schizophrenia, and Alzheimer's)	10.55	23
KN2	Drug classification (e.g., anti-anxiety, anti-depressant, anti-psychotic, anti-convulsant, cognitive enhancing, hallucinogenic, depressant, stimulant); pharmacokinetics (administration, distribution, metabolism, elimination) and pharmacodynamics (receptor actions, second and third messenger system actions, neural plasticity) as they relate to the desired and non-desired, acute and chronic effects of therapeutic drugs, abused drugs, and drug interactions	10.01	42
KN3	Guidelines for pharmacological treatment of mental disorders (e.g., disorders for which they are available, recognized pharmacological treatments, efficacy and outcome information, and combination with non-pharmacological treatments)	9.99	46
KN4	Behavioral genetics, transmission and expression of genetic information and its modification (e.g., gene-environment interactions), and the role of this information in understanding disorders (e.g., alcoholism, Autism) and diseases (e.g., Huntington's, Down Syndrome, Alzheimer's); population differences in genetic information (e.g., enzymatic polymorphisms)	9.18	61
KN5	Interaction of developmental, gender, ethnic, cultural, environmental, and experiential factors with the biological and neural bases of behavior	10.49	25
KN6	Applications and limitations of: brain imaging methods that describe structure and function (e.g., MRI, CT, fMRI, PET, SPECT, evoked potentials); electrophysiological methods (e.g., biofeedback); therapeutic drug monitoring techniques; genetic screening methodologies, and neuropsychological assessment	8.05	71
KN7	Biological and neural bases of stress (e.g., endocrine glucocorticoid response and its neural effects); relationship of stress to biological and psychological functioning, with particular reference to lifestyle and lifestyle modification (e.g., cardiac rehabilitation, smoking cessation) and behavioral health; effects of stress on the immune system	9.88	50

Table 31
Profiles of Practice for Knowledge Statements
Mean and Rank for Knowledge Statements as a Function of Acquisition and Criticality Ratings

Knowledge		Mean	Rank
Cognitive-Affective Bases of Behavior			
KN8	Elements of cognition (e.g., sensation and perception, attention, learning, memory, language, spatial skills, intelligence, information processing, problem-solving, strategies for organizing information, executive function)	11.04	6
KN9	Neural bases of cognition, affect, and emotion	9.86	53
KN10	Major theories, models, and principles of learning (e.g., social learning, classical and operant conditioning, Rescorla-Wagner model) and their application (e.g., contingency reinforcement, interventions, cognitive behavioral therapy, training strategies, sports performance strategies)	10.93	13
KN11	Major theories and models of memory (e.g., multiple memory systems, expectancy theory, constructivist theory, levels of processing) and their application (e.g., use of mnemonics)	9.96	47
KN12	Major theories and models of motivation and emotion (e.g., need/value approaches, cognitive choice approaches, James-Lang theory of emotion) and their application (e.g., self-regulation, work motivation, anger management, social skills training, sports performance)	10.47	26
KN13	Interrelationships among cognitions/beliefs, behavior, affect, temperament, and mood (e.g., healthy functioning, performance anxiety, performance enhancement, job satisfaction, stress, and depression)	10.94	12
KN14	Influence of psychosocial factors (e.g., gender, social class, family styles and characteristics, academic/occupational success, ethnicity and culture) on beliefs/cognitions and behaviors	10.84	16

Table 31
Profiles of Practice for Knowledge Statements
Mean and Rank for Knowledge Statements as a Function of Acquisition and Criticality Ratings

Knowledge		Mean	Rank
Social and Multicultural Bases of Behavior			
KN15	Social cognition and perception (e.g., attribution theory and biases, information integration, confirmation bias, person perception, development of stereotypes, prejudice)	10.36	31
KN16	Social interaction (e.g., interpersonal relationships, attraction, aggression, altruism, procedural and distributive justice)	10.41	29
KN17	Group/team dynamics and organizational structures (e.g., school and family systems, family work interface and management, job satisfaction, team functioning, group thinking, conformity, persuasion, jury selection) and social influences on individual functioning	10.14	39
KN18	Environmental/ecological psychology (e.g., person-environment fit, rural-urban differences, crowding, pollution, noise)	8.75	66
KN19	Evolutionary perspectives on social behavior	7.70	75
KN20	Major theories of personality (e.g., psychodynamic, humanistic/existential, cognitive, behavioral, trait)	11.15	4
KN21	Cultural issues (e.g., cross-cultural and social class comparisons, universal and culture-specific formulations, political differences, international and global awareness)	10.34	32
KN22	Causes, manifestations, effects, and the prevention and reduction of oppression (e.g., racism and antiracism, sexism, homophobia, ethnic conflicts, colonization, political persecution)	9.86	52
KN23	Racial and ethnic minority issues (e.g., theories of racial/ethnic identity, effects of culture on school motivation, differences in communication styles, differences in the psychosocial, political, and economic development of individuals, families, groups, and communities)	10.42	28
KN24	Sexual orientation (e.g., sexual identity development, gay/lesbian/bisexual/transgender perspectives)	10.17	36
KN25	Psychology of gender (e.g., psychology of women, psychology of men, gender identity development)	10.01	43
KN26	Disability and rehabilitation issues (e.g., inclusion, accessibility, psychological impact of disability, conceptual models and assumption of disability, compliance with anti-discrimination laws and regulations, management of disabled persons in the workplace)	9.11	65

Table 31
Profiles of Practice for Knowledge Statements
Mean and Rank for Knowledge Statements as a Function of Acquisition and Criticality Ratings

Knowledge		Mean	Rank
Growth and Lifespan Development			
KN27	Normal growth and development (biological, physical, cognitive, perceptual, social, personality, moral, and emotional) across the lifespan	11.24	2
KN28	Role of genes, behavioral genetics, and impact of shared versus non-shared environmental factors in the study of development	9.87	51
KN29	Impact of parents, peers, siblings, schools, community, and media on socialization of aggression, prosocial behavior, antisocial conduct, and self-esteem	10.87	15
KN30	How development is influenced by the organism-environment interaction over time (e.g., understanding the relationship between the individual and the social, academic, or work environment)	10.12	40
KN31	Major theories of development (e.g., psychodynamic, constructivist, behavioral, social cognitive, evolutionary, ecological)	10.90	14
KN32	Influence of culture and cultural differences on development (e.g., determination of what is normal and abnormal, adaptive and non-adaptive, normative and age-expected behaviors)	10.58	22
KN33	Family development and functioning and its impact on the individual (e.g., family life cycle, family conflict, parent-child communication, sibling relationships, grandparenting)	10.99	9
KN34	Nontraditional families (e.g., single parent, reconstituted, gay/lesbian) and their effects on child and adolescent development	9.93	48
KN35	Life event changes that can alter the normal course of development (e.g., injury, trauma, illness, onset of chronic disease or disorder in self or parent, death, divorce)	10.73	18
KN36	Factors that promote problems or resilience in high-risk environments (e.g., abuse, poverty, war, trauma)	9.84	54
KN37	Risk factors that predict a problematic developmental course (e.g., nutritional deficiencies, poor prenatal care, poor health care, lack of social support, poverty, exposure to violence and abuse, parental alcohol/drug abuse, problem parenting)	10.60	21

Table 31
Profiles of Practice for Knowledge Statements
Mean and Rank for Knowledge Statements as a Function of Acquisition and Criticality Ratings

Knowledge		Mean	Rank
Assessment and Diagnosis			
KN38	Psychometric theory (e.g., classical test theory, item response theory), generalizability theory, and related concepts (e.g., test construction and standardization procedures, reliability and validity measures, examination of test fairness and bias, test and item characteristic, curve analysis, and application of test standards)	10.81	17
KN39	Assessment theories and models (e.g., psychometric behavioral, ecological, diagnostic, and other classification systems; assessment centers)	10.53	24
KN40	Assessment methods (e.g., self-report, report by others, psychophysiological, work sample, direct observation, structured and semi-structured interviews)	10.96	11
KN41	Tests for the measurement of characteristics and behaviors of individuals (e.g., social, emotional, and behavioral functioning; cognitive and neuropsychological functioning; ability, aptitude, and achievement; personality; vocational interest; health behavior and various medical conditions; assessment of competence, criminal responsibility, risk of future violence, suicide evaluation), and the adaptation of these tests for use with various populations	10.99	8
KN42	Issues of differential diagnosis and integration of non-psychological information (e.g., medical evaluations, results of imaging procedures, laboratory test results) into psychological assessment	10.00	45
KN43	Instruments and methods for the measurement of characteristics and performance of jobs, organizations and systems of care, and educational and other social institutions (e.g., performance appraisal, work history, job analysis, job evaluation, need assessment, organizational frameworks, functional analysis of behavior)	8.23	68
KN44	Methods for evaluating environmental/ecological influences on individuals, groups or organizations (e.g., organizational frameworks, functional analysis of behavior)	7.80	74
KN45	Criteria for selection and adaptation of assessment methods (e.g., cultural appropriateness, trans-cultural adaptation, language accommodation, cost effectiveness, incremental validity, relevance to referral concern)	9.41	57
KN46	Utilization of various classification systems (e.g., DSM, WHO, AAMR, SEC, ICD) and their underlying rationales and limitations for evaluating client functioning	10.31	33

Table 31
Profiles of Practice for Knowledge Statements
Mean and Rank for Knowledge Statements as a Function of Acquisition and Criticality Ratings

Knowledge		Mean	Rank
KN47	Factors influencing judgment and diagnostic decision-making (e.g., base rates, group differences, cultural biases and differences, availability heuristics)	10.00	44
KN48	Epidemiology of behavioral disorders, base rates of disorders in clinical or demographic populations; comorbidity of mental illness with substance abuse; comorbidity of behavioral disorders with medical disorders; comorbidity rates, age ranges affected; associated features; natural course of disorders	10.20	35
KN49	Methods for the measurement of individual, couples, family, group, and organizational change due to intervention or prevention efforts (e.g., continuous monitoring, pre-, post-, and follow-up assessment, detection of relapse, patient compliance, organizational benchmarking)	9.58	56
KN50	Use of computers, the internet, and related technology in implementing tests, surveys, and other forms of assessment and diagnostic evaluation; validity, cost effectiveness, consumer acceptability	8.09	70

Table 31
Profiles of Practice for Knowledge Statements
Mean and Rank for Knowledge Statements as a Function of Acquisition and Criticality Ratings

Knowledge		Mean	Rank
Treatment, Intervention, and Prevention			
KN51	Treatment decision making processes and issues based on best available evidence (e.g., matching treatment to assessment/diagnosis, matching client/patient and therapist characteristics, cost benefit, level of intervention)	10.64	20
KN52	Contemporary theories/models of treatment/intervention (e.g., behavioral, cognitive, cognitive-behavioral, psychodynamic, family-systems/ecological, humanistic, psycho-educational, time-limited/brief therapy, rehabilitation and recovery, biopsychosocial, and career development)	11.22	3
KN53	Treatment techniques/interventions and the evidence for their comparative effectiveness for specific disorders or functional concerns (e.g., exposure techniques for panic disorder, cognitive therapy for depression, parent training for oppositional defiant disorder, family psycho-education for serious mental illness, approaches to integrating psychotherapy and psychopharmacology for bipolar disorder, structured organizational changes, adherence to medical regimes)	11.07	5
KN54	Interventions to enhance growth and performance for individuals, couples, families, groups, and organizations (e.g., personal coaching, executive coaching, enhancement of athletic performance, teaching cooperation and conflict resolution skills, teaching optimism)	8.23	69
KN55	Systems and organizational interventions (e.g., systemic family interventions, school or community systems interventions, organizational development and change, performance enhancement/management, organizational leadership)	9.17	62
KN56	Consultation models and processes for individuals, couples, families, groups, organizations, and communities (e.g., mental health, physical health, residential facilities, behavioral, instructional, organizational)	8.61	67
KN57	Human resource management interventions (e.g., risk management, management training, conflict resolution, compensation and benefits design)	7.02	78
KN58	Academic and career counseling (e.g., career assessment, career counseling, career development, vocational counseling, improving study habits, time management)	8.00	72
KN59	Interprofessional cooperation and appropriate referrals (e.g., education, health, mental health, social services, forensics, business and industry) including the roles of other professionals at all levels of care	9.41	58
KN60	Adjunctive and alternative interventions (e.g., inpatient or partial hospitalization, psychopharmacology, support groups, individual self-help, and spiritual and indigenous support systems)	9.38	59

Table 31
Profiles of Practice for Knowledge Statements
Mean and Rank for Knowledge Statements as a Function of Acquisition and Criticality Ratings

Knowledge		Mean	Rank
KN61	Use of computers, the internet, and related electronic technologies in planning and delivery of treatment/intervention, human factors design, clinical/research documentation, and authorized exchange of client/patient information (e.g., validity, cost-effectiveness, consumer acceptability)	7.66	76
KN62	Healthcare system structures (e.g., common models, provider networks), processes and procedures (e.g., quality improvement, documentation of assessment, treatment plans, and patient progress), and methods (e.g., specification of benefit coverage limitations, medical necessity criteria, and need for prior authorization)	7.84	73
KN63	Healthcare economics and policies impacting psychological services (e.g., funding sources and trends, cost/benefit considerations, medical cost-offset; health care resource allocation)	7.00	79
KN64	Consumerism (e.g., impact of internet access to healthcare information, consumer involvement in treatment planning); patient empowerment	7.14	77
KN65	Health promotion, risk reduction, and goals (e.g., reduce substance abuse; reduce medical risk factors/promote health; reduce injury, violence, school dropout, job burnout; facilitate treatment adherence; manage the psychological and behavior impact of invasive treatments and chronic illnesses; increase resilience) and methods (e.g., stress management, medical monitoring techniques, family support following mastectomy, exercise schedules for chronic pain)	9.17	63
KN66	Interventions to reduce risk factors and to increase resilience and competence of individuals living in at-risk environments	9.29	60
KN67	Interventions for acute traumatic stress situations (e.g., counseling at disaster site; suicidal intervention, emergency room consultation)	10.04	41

Table 31
Profiles of Practice for Knowledge Statements
Mean and Rank for Knowledge Statements as a Function of Acquisition and Criticality Ratings

Knowledge		Mean	Rank
Research Methods and Statistics			
KN68	Research methods (e.g., sampling, instrument, instructions for research subjects, data collection procedures)	10.22	34
KN69	Research design (e.g., hypothesis generation; experimental, quasi-experimental, naturalistic inquiry; group and single-case research designs; randomized controlled trials; longitudinal and cross sectional designs)	10.14	38
KN70	Considerations for instrument selection and validation (e.g., reliability, sensitivity, and validity)	10.43	27
KN71	Statistics and analytic methods (e.g., qualitative, quantitative, descriptive; probability theory, univariate, bivariate, and multivariate methods; meta analysis; parametric and non-parametric statistics; regression analysis; causal modeling; time-series designs; survival analysis) and related issues (e.g., power, effect size, selection of appropriate statistical methodologies, interpretation of findings, causal vs. association, sensitivity and specificity, degree and nature of generalizability, clinical versus statistical significance)	10.14	37
KN72	Considerations for critical appraisal and utilization of research findings (e.g., technical adequacy, limitations to generalizations, threats to internal and external validity, design flaws)	10.37	30
KN73	Evaluation strategies and techniques (e.g., needs assessment, process/implementation evaluation, formative and summative assessment program evaluation, outcome evaluation, cost-benefit analysis, public health benefit)	9.15	64
KN74	Presentation and dissemination of research findings (e.g., analyzing the data and interpreting results for publication in a journal or presentation to professional colleagues, dissemination of results via various appropriate avenues)	9.72	55

Table 31
Profiles of Practice for Knowledge Statements
Mean and Rank for Knowledge Statements as a Function of Acquisition and Criticality Ratings

Knowledge		Mean	Rank
Ethical/Legal/Professional Issues			
KN75	APA Ethical Principles of Psychologists and Code of Conduct and/or Canadian Code of Ethics for Psychologists (e.g., confidentiality, research, dual relationships, limits of competence, advertising practices, informed consent, record-keeping)	11.49	1
KN76	Professional standards and guidelines for the practice of psychology (e.g., APA/CPA Standards for Providers of Psychological Services, AERA/APA/NCME Standards for Educational and Psychological Testing, ASPPB Code of Conduct, AP-LS Guidelines for Forensic Practice, APA Guidelines for Child Custody Assessment, model licensure acts, credentialing requirements for advanced specialties and proficiencies, published guidelines for special populations such as women and minorities)	11.03	7
KN77	Pertinent federal, state and/or provincial laws/statutes and/or judicial decisions that affect psychological practice (e.g., laws and regulations relating to family and child protection, education, disabilities, discrimination, regulations for electronic exchange of patient information, duty to warn and privileged communication, commitment and least restrictive care, continuing education requirements, practice regulations, licensure regulations)	10.73	19
KN78	Ethical decision-making process (e.g., resolution of conflicts involving ethical issues, problems and ethics of practice on the internet and in the media, integration of ethical principles and legal/regulatory standards)	10.96	10
KN79	Models and approaches for professional development (e.g., methods for developing, updating, and enhancing knowledge in proficiencies and specialties, continuing education, professional self-management, clinical supervision, peer consultation and supervision; recognition of self-limits; appropriateness of credentials)	9.91	49

As can be seen in Table 31, at the content area level, Ethical/Legal/Professional Issues content area included three of the top-10 ranked knowledge statements; the Growth and Lifespan Development and Treatment, Intervention, and Prevention content areas both included two of the top-10 highest ranked statements, and Cognitive-Affective Bases of Behavior, Social and Multicultural Bases of Behavior, and Assessment and Diagnosis each included one of the top-10 ranked statements.

Development of Test Specifications

Following a systematic review of the results related to the process- and content-based profiles of practice, recommendations regarding revised test specifications for the EPPP were prepared. The goal of the revision was to develop test specifications that focus on (a) those responsibilities performed by licensed psychologists that make the greatest contribution to the protection of the

patient/client/public from harm, and (b) the knowledge needed by licensed psychologists that serves the public protection function of regulation.

To develop the recommendations, PES presented all relevant data to the PAAC. The members of the PAAC were decision-makers in ASPPB responsible for guiding examination development and validation efforts. The panel reviewed the process- and content-based profiles of practice.

On the basis of discussions and review of the data, the PAAC supported the following decisions regarding the EPPP test specifications:

1. The continued use of the content areas and knowledge statements as the primary organizing structure for the test specifications and feedback to the candidates;
2. The adoption of percentage weights for the eight content areas reflecting minor modifications of the percentage weights adopted in 1995;
3. The continued use of a hierarchical weighting for each knowledge statement, indicating the degree to which related questions might be included in each version of the EPPP. In order of priority, the system incorporated the *Criticality* ratings and the *Acquisition* ratings for the knowledge statements;
4. The revision of eight knowledge statements, including additions, deletions, and modifications of the examples included as part of the knowledge statements; and the elimination of one knowledge statement via the incorporation of the related examples into other knowledge statements;
5. The use of roles and responsibilities as an organizing structure for item-writing initiatives and examination assembly;
6. The adoption of percentage weights for the four roles and associated responsibilities to be used as general guidance in regard to examination construction;
7. The use of a rubric system by which: (a) test items would be classified by role, responsibility, content area, and knowledge statement; and (b) forms of the EPPP would be constructed so as to reflect the content-based weights in the test specifications.

Table 32 documents the recommended final test specifications, including the recommended percentage weights at the content area level and the list of validated knowledge statements, and general guidance regarding the roles and responsibilities.

The development of the EPPP in accordance with the foregoing information and decisions is most likely to provide the continuing basis for a generic or core licensing examination for psychologists in the U.S. and Canada. Such an examination will assess the critical knowledge base required at the point of licensure in a practice-relevant framework.

Table 32
Recommended Content Outline for the EPPP including Content Areas and Validated Knowledge Statements, and General Guidance Regarding Roles and Responsibilities

Rubric	Content Area	Percentage of the Exam*
01	Biological Bases of Behavior — knowledge of (a) biological and neural bases of behavior, (b) psychopharmacology, and (c) methodologies supporting this body of knowledge	11%
02	Cognitive-Affective Bases of Behavior — knowledge of (a) cognition and its neural bases, (b) theories and empirical bases of learning, memory, motivation, affect, emotion, and executive function, and (c) factors that influence cognitive performance and/or emotional experience and their interaction	13%
03	Social and Multicultural Bases of Behavior — knowledge of (a) intrapersonal, interpersonal, intragroup, and intergroup processes and dynamics, (b) theories of personality, and (c) issues in diversity	12%
04	Growth and Lifespan Development — knowledge of (a) age-appropriate development across the life span, (b) atypical patterns of development, and (c) the protective and risk factors that influence developmental outcomes for individuals	13%
05	Assessment and Diagnosis — knowledge of (a) psychometrics, (b) assessment models and instruments, (c) assessment methods for initial status of and change by individuals, couples, families, groups, and organizations/systems, and (d) diagnostic classification systems and their limitations	14%
06	Treatment, Intervention, and Prevention — knowledge of (a) individual, couple, family, group, organizational, or community interventions for specific concerns/disorders in diverse populations, (b) intervention and prevention theories, (c) best practices, and (d) consultation models and processes	15%
07	Research Methods and Statistics — knowledge of (a) research design, methodology, and program evaluation, (b) instrument selection and validation, and (c) statistical models, assumptions, and procedures	7%
08	Ethical/Legal/Professional Issues — knowledge of (a) codes of ethics, (b) professional standards for practice, (c) legal mandates and restrictions, (d) guidelines for ethical decision-making, and (e) professional training and supervision	15%

*As approved by the ASPPB Board of Directors on June 21, 2003

Content Area/Knowledge Statement Codes

Knowledge	
01	Biological Bases of Behavior
0101	Correlates and determinants of the biological and neural bases of behavior (e.g., [neuro] anatomy, [neuro] physiology, [neuro] endocrinology) pertaining to perception, action, attention, memory, temperament, and mood in normal, acute and chronic disordered states (e.g., pain, drug or carbon monoxide intoxication, stroke and focal lesions); and/or acute and chronic disease (e.g., insulin shock, diabetes, mood disorders, dementia, schizophrenia, and Alzheimer's)
0102	Drug classification (e.g., anti-anxiety, anti-depressant, anti-psychotic, anti-convulsant, cognitive enhancing, hallucinogenic, depressant, stimulant); pharmacokinetics (administration, distribution, metabolism, elimination) and pharmacodynamics (receptor actions, second and third messenger system actions, neural plasticity) as they relate to the desired and non-desired, acute and chronic effects of therapeutic drugs, abused drugs, and drug interactions
0103	Guidelines for pharmacological treatment of mental disorders (e.g., disorders for which they are available, recognized pharmacological treatments, efficacy and outcome information, and combination with non-pharmacological treatments)
0104	Behavioral genetics, transmission and expression of genetic information and its modification (e.g., gene-environment interactions), and the role of this information in understanding disorders (e.g., alcoholism, Autism) and diseases (e.g., Huntington's, Down Syndrome, Alzheimer's); population differences in genetic information (e.g., enzymatic polymorphisms)
0105	Interaction of developmental, gender, ethnic, cultural, environmental, and experiential factors with the biological and neural bases of behavior
0106	Applications and limitations of: brain imaging methods that describe structure and function (e.g., MRI, CT, fMRI, PET, SPECT, evoked potentials); electrophysiological methods (e.g., biofeedback); therapeutic drug monitoring techniques; genetic screening methodologies, and neuropsychological assessment
0107	Biological and neural bases of stress (e.g., endocrine glucocorticoid response and its neural effects); relationship of stress to biological and psychological functioning, with particular reference to lifestyle and lifestyle modification (e.g., cardiac rehabilitation, smoking cessation) and behavioral health; effects of stress on the immune system
02	Cognitive-Affective Bases of Behavior
0208	Elements of cognition (e.g., sensation and perception, attention, learning, memory, language, spatial skills, intelligence, information processing, problem-solving, strategies for organizing information, executive function)
0209	Neural bases of cognition, affect, and emotion
0210	Major theories, models, and principles of learning (e.g., social learning, classical and operant conditioning, Rescorla-Wagner model) and their application (e.g., contingency reinforcement, interventions, cognitive behavioral therapy, training strategies, sports performance strategies)
0211	Major theories and models of memory (e.g., multiple memory systems, expectancy theory, constructivist theory, levels of processing) and their application (e.g., use of mnemonics)

Knowledge	
0212	Major theories and models of motivation and emotion (e.g., need/value approaches, cognitive choice approaches, James-Lang theory of emotion) and their application (e.g., self-regulation, work motivation, anger management, social skills training, sports performance)
0213	Interrelationships among cognitions/beliefs, behavior, affect, temperament, and mood (e.g., healthy functioning, performance anxiety, performance enhancement, job satisfaction, stress, and depression)
0214	Influence of psychosocial factors (e.g., gender, social class, family styles and characteristics, academic/occupational success, ethnicity and culture) on beliefs/cognitions and behaviors
03 Social and Multicultural Bases of Behavior	
0315	Social cognition and perception (e.g., attribution theory and biases, information integration, confirmation bias, person perception, development of stereotypes, prejudice)
0316	Social interaction (e.g., interpersonal relationships, attraction, aggression, altruism, procedural and distributive justice)
0317	Group/team dynamics and organizational structures (e.g., school and family systems, family work interface and management, job satisfaction, team functioning, group thinking, conformity, persuasion, jury selection) and social influences on individual functioning
0318	Environmental/ecological psychology (e.g., person-environment fit, rural-urban differences, crowding, pollution, noise)
0319	Evolutionary perspectives on social behavior
0320	Major theories of personality (e.g., psychodynamic, humanistic/existential, cognitive, behavioral, trait)
0321	Cultural issues (e.g., cross-cultural and social class comparisons, universal and culture-specific formulations, political differences, international and global awareness)
0322	Causes, manifestations, effects, and the prevention and reduction of oppression (e.g., racism and antiracism, sexism, homophobia, ethnic conflicts, colonization, political persecution)
0323	Racial and ethnic minority issues (e.g., theories of racial/ethnic identity, effects of culture on school motivation, differences in communication styles, differences in the psychosocial, political, and economic development of individuals, families, groups, and communities)
0324	Sexual orientation (e.g., sexual identity development, gay/lesbian/bisexual/transgender perspectives)
0325	Psychology of gender (e.g., psychology of women, psychology of men, gender identity development)
0326	Disability and rehabilitation issues (e.g., inclusion, accessibility, psychological impact of disability, conceptual models and assumption of disability, compliance with anti-discrimination laws and regulations, management of disabled persons in the workplace)

Knowledge	
04	Growth and Lifespan Development
0427	Normal growth and development (biological, physical, cognitive, perceptual, social, personality, moral, and emotional) across the lifespan
0428	Role of genes, behavioral genetics, and impact of shared versus non-shared environmental factors in the study of development
0429	Impact of parents, peers, siblings, schools, community, and media on socialization of aggression, prosocial behavior, antisocial conduct, and self-esteem
0430	How development is influenced by the organism-environment interaction over time (e.g., understanding the relationship between the individual and the social, academic, or work environment)
0431	Major theories of development (e.g., psychodynamic, constructivist, behavioral, social cognitive, evolutionary, ecological)
0432	Influence of culture and cultural differences on development (e.g., determination of what is normal and abnormal, adaptive and non-adaptive, normative and age-expected behaviors)
0433	Family development and functioning and its impact on the individual (e.g., family life cycle, family conflict, parent-child communication, sibling relationships, grandparenting)
0434	Nontraditional families (e.g., single parent, reconstituted, gay/lesbian) and their effects on child and adolescent development
0435	Life event changes that can alter the normal course of development (e.g., injury, trauma, illness, onset of chronic disease or disorder in self or parent, death, divorce)
0436	Factors that promote problems or resilience in high-risk environments (e.g., abuse, poverty, war, trauma)
0437	Risk factors that predict a problematic developmental course (e.g., nutritional deficiencies, poor prenatal care, poor health care, lack of social support, poverty, exposure to violence and abuse, parental alcohol/drug abuse, problem parenting)
05	Assessment and Diagnosis
0538	Psychometric theory (e.g., classical test theory, item response theory), generalizability theory, and related concepts (e.g., test construction and standardization procedures, reliability and validity, sensitivity and selection, examination of test fairness and bias, test and item characteristic, curve analysis, and application of test standards)
0539	Assessment theories and models (e.g., psychometric behavioral, ecological, diagnostic, and other classification systems; assessment centers)

Knowledge	
0540	Assessment methods (e.g., self-report, report by others, psychophysiological, work sample, direct observation, structured and semi-structured interviews)
0541	Tests for the measurement of characteristics and behaviors of individuals (e.g., social, emotional, and behavioral functioning; cognitive and neuropsychological functioning; ability, aptitude, and achievement; personality; vocational interest; health behavior and various medical conditions; assessment of competence, criminal responsibility, risk of future violence, suicide evaluation), and the adaptation of these tests for use with various populations
0542	Issues of differential diagnosis and integration of non-psychological information (e.g., medical evaluations, results of imaging procedures, laboratory test results) into psychological assessment
0543	Instruments and methods for the measurement of characteristics and performance of jobs, organizations and systems of care, and educational and other social institutions (e.g., performance appraisal, work history, job analysis, job evaluation, need assessment, organizational frameworks, functional analysis of behavior)
0544	Methods for evaluating environmental/ecological influences on individuals, groups or organizations (e.g., organizational frameworks, functional analysis of behavior)
0545	Criteria for selection and adaptation of assessment methods (e.g., cultural appropriateness, trans-cultural adaptation, language accommodation, cost effectiveness, incremental validity, relevance to referral concern)
0546	Utilization of various classification systems (e.g., DSM, WHO, AAMR, SEC, ICD) and their underlying rationales and limitations for evaluating client functioning
0547	Factors influencing judgment and diagnostic decision-making (e.g., base rates, group differences, cultural biases and differences, availability heuristics)
0548	Epidemiology of behavioral disorders, base rates of disorders in clinical or demographic populations; comorbidity of mental illness with substance abuse; comorbidity of behavioral disorders with medical disorders; comorbidity rates, age ranges affected; associated features; natural course of disorders
0549	Methods for the measurement of individual, couples, family, group, and organizational change due to intervention or prevention efforts (e.g., continuous monitoring, pre-, post-, and follow-up assessment, detection of relapse, patient compliance, organizational benchmarking)
0550	Use of computers, the internet, and related technology in implementing tests, surveys, and other forms of assessment and diagnostic evaluation; validity, cost effectiveness, consumer acceptability
06	Treatment, Intervention, and Prevention
0651	Treatment decision making processes and issues based on best available evidence (e.g., matching treatment to assessment/diagnosis, matching client/patient and therapist characteristics, cost benefit, level of intervention)
0652	Contemporary theories/models of treatment/intervention (e.g., behavioral, cognitive, cognitive-behavioral, psychodynamic, family-systems/ecological, humanistic, psycho-educational, time-limited/brief therapy, rehabilitation and recovery, biopsychosocial, and career development)

Knowledge

0653	Treatment techniques/interventions and the evidence for their comparative effectiveness for specific disorders or functional concerns (e.g., exposure techniques for panic disorder, cognitive therapy for depression, parent training for oppositional defiant disorder, family psycho-education for serious mental illness, approaches to integrating psychotherapy and psychopharmacology for bipolar disorder, structured organizational changes, adherence to medical regimes)
0654	Interventions to enhance growth and performance for individuals, couples, families, groups, and organizations (e.g., personal coaching, executive coaching, enhancement of athletic performance, teaching cooperation and conflict resolution skills, teaching optimism)
0655	Systems and organizational interventions (e.g., systemic family interventions, school or community systems interventions, organizational development and change, performance enhancement/management, organizational leadership)
0656	Consultation models and processes for individuals, couples, families, groups, organizations, and communities (e.g., mental health, physical health, residential facilities, behavioral, instructional, organizational)
0657	Human resource management interventions (e.g., employee assistance programs, risk management, management training, conflict resolution, compensation and benefits design)
0658	Academic and career counseling (e.g., career assessment, career counseling, career development, vocational counseling, improving study habits, time management)
0659	Interprofessional cooperation and appropriate referrals (e.g., education, physical health, mental health, social services, forensics, business and industry) including the roles of other professionals at all levels of care
0660	Adjunctive and alternative interventions (e.g., inpatient or partial hospitalization, psychopharmacology, support groups, individual self-help, and spiritual and indigenous support systems)
0661	Use of computers, the internet, and related electronic technologies in planning and delivery of treatment/intervention, human factors design, clinical/research documentation, and authorized exchange of client/patient information (e.g., validity, cost-effectiveness, consumer acceptability)
0662	Healthcare system structures (e.g., common models, provider networks), processes and procedures (e.g., quality improvement, documentation of assessment, treatment plans, and patient progress), and methods (e.g., specification of benefit coverage limitations, medical necessity criteria, and need for prior authorization)
0663	Healthcare economics and policies impacting psychological services (e.g., funding sources and trends, cost/benefit considerations, medical cost-offset; health care resource allocation)
0664	Consumerism (e.g., impact of internet access to healthcare information, consumer involvement in treatment planning); patient empowerment

Knowledge	
0665	Health promotion, risk reduction, and goals (e.g., reduce substance abuse; reduce medical risk factors/promote health; reduce injury, violence, school dropout, job burnout; facilitate treatment adherence; manage the psychological and behavior impact of invasive treatments and chronic illnesses; increase resilience) and methods (e.g., stress management, medical monitoring techniques, family support following mastectomy, exercise schedules for chronic pain)
0666	Interventions to reduce risk factors and to increase resilience and competence of individuals living in at-risk environments
0667	Interventions for acute traumatic stress situations (e.g., counseling at disaster site; suicidal intervention, emergency room consultation)
07 Research Methods and Statistics	
0768	Research methods (e.g., sampling, instrument selection, instrument calibration, survey design, instructions for research subjects, data collection procedures)
0769	Research design (e.g., hypothesis generation; experimental, quasi-experimental, naturalistic inquiry; group and single-case research designs; randomized controlled trials; longitudinal and cross sectional designs)
0770	Statistics and analytic methods (e.g., qualitative, quantitative, descriptive; probability theory, univariate, bivariate, and multivariate methods; meta analysis; parametric and non-parametric statistics; regression analysis; causal modeling; time-series designs; survival analysis) and related issues (e.g., power, effect size, selection of appropriate statistical methodologies, interpretation of findings, causal vs. association, sensitivity and specificity, degree and nature of generalizability, clinical versus statistical significance)
0771	Considerations underlying critical appraisal and utilization of research findings (e.g., technical adequacy, limitations to generalizations, threats to internal and external validity, design flaws)
0772	Evaluation strategies and techniques (e.g., needs assessment, process/implementation evaluation, formative and summative assessment program evaluation, outcome evaluation, cost-benefit analysis, public health benefit)
0773	Presentation and dissemination of research findings (e.g., analyzing the data and interpreting results for publication in a journal or presentation to professional colleagues, dissemination of results via various appropriate avenues)
08 Ethical/Legal/Professional Issues	
0874	APA Ethical Principles of Psychologists and Code of Conduct and/or Canadian Code of Ethics for Psychologists (e.g., confidentiality, research, dual relationships, limits of competence, advertising practices, informed consent, record-keeping)
0875	Professional standards and guidelines for the practice of psychology (e.g., APA/CPA Standards for Providers of Psychological Services, AERA/APA/NCME Standards for Educational and Psychological Testing, ASPPB Code of Conduct, AP-LS Guidelines for Forensic Practice, APA Guidelines for Child Custody Assessment, model licensure acts, credentialing requirements for advanced specialties and proficiencies, published guidelines for special populations such as women and minorities)

Knowledge

- 0877 Pertinent federal, state and/or provincial laws/statutes and/or judicial decisions that affect psychological practice (e.g., laws and regulations relating to family and child protection, education, disabilities, discrimination, regulations for protection and exchange of patient information, duty to warn and privileged communication, commitment and least restrictive care, continuing education requirements, practice regulations, licensure regulations)
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- 0876 Ethical decision-making process (e.g., practice management, supervision of others, resolution of conflicts involving ethical issues, problems and ethics of practice on the internet and in the media, integration of ethical principles and legal/regulatory standards)
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- 0878 Models and approaches for professional development (e.g., methods for developing, updating, and enhancing knowledge in proficiencies and specialties, continuing education, professional self-management, clinical supervision, peer consultation and supervision; recognition of self-limits; appropriateness of credentials)
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Recommended Guidance for the EPPP in Regard to Process Outline

Role	Approximate Percentage
<p>01 Psychological Services — design or provide psychological services, or supervise or manage their delivery, to individuals, couples, families, groups, and/or organizations/systems in a manner consistent with current professional and ethical standards/guidelines, and jurisdictional and national laws/regulations</p>	74%
<p>02 Consultation, Outreach, and Policy Making — prepare, present, coordinate, and evaluate educational and training programs for public or organizational audiences; disseminate information or provide expertise to a variety of constituents; and/or participate in the process of policy making, advocacy, and standard setting in a manner consistent with current professional and ethical standards/guidelines, and jurisdictional and national laws/regulations</p>	9%
<p>03 Academic Preparation and Professional Development — develop, implement, administer, and evaluate educational programs for psychologists including teaching, supervision, and curriculum development in a manner consistent with current professional and ethical standards/guidelines, and jurisdictional and national laws/regulations; engage in continuing education and self-development</p>	10%
<p>04 Research, Evaluation, and Scholarship — develop and/or participate in any activity to expand or refine knowledge or to improve programs and services in a manner consistent with current professional and ethical standards/guidelines, and jurisdictional and national laws/regulations</p>	7%

Role/Responsibility Codes

Responsibility	
01	Psychological Services
0101	Provide psychological services and/or make referrals with knowledge of the range of levels and types of evaluation and interventions available
0102	Coordinate and/or participate in service delivery with psychologists and others (e.g., health professionals, managed care systems, organizational personnel, attorneys, managers and executives, collective bargaining representatives, schools, community groups, public sector systems, and other agencies)
0103	Use multiple methods to gather information from individuals, couples, families, groups, organizations, and other relevant sources (including information about context) in a systematic manner to identify the problems/needs for assessment and prevention and/or intervention planning
0104	Develop procedures and/or instruments (e.g., behavioral analyses; structured interviews; surveys and questionnaires; work samples; and tests of knowledge, skills, and abilities) for the assessment of relevant characteristics of individuals, groups, jobs, organizations, educational and social institutions, and/or environments
0105	Select, administer, and code/quantify/score instruments for the assessment of relevant characteristics of individuals, groups, jobs, organizations, educational and social institutions, and/or environments
0106	Evaluate and integrate results of information-gathering and assessment processes with scientific/professional knowledge to formulate/reformulate working hypotheses, descriptions, diagnoses, and intervention recommendations
0107	Plan, design, and implement prevention and/or intervention programs, and evaluation/feedback strategies (e.g., define goals and objectives, identify appropriate intervention targets and strategies, and outcome measures)
0108	Prepare, present, and coordinate classes, seminars, or workshops for individuals, groups, or organizations (e.g., executive managers, employees, and others) on a variety of issues (e.g., procedural justice, training and development programs, organizational entry/exit programs, change management, parenting interventions)
0109	Document and communicate assessment results, intervention recommendations, progress, and outcomes
0110	Design, implement, and monitor quality efficacy and effectiveness of prevention and intervention programs, systems, and procedures and modify, as appropriate (e.g., individual and organizational interventions, utilization review, care management, case management)
02	Consultation, Outreach, and Policy Making
0211	Prepare, present, coordinate, and evaluate health promotion programs or workshops for public or organizational audiences (e.g., smoking cessation, parenting, anger control and management, informational programs on community psychological services/resources)

Responsibility

0212 Prepare, present, coordinate, and evaluate prevention and/or early intervention programs for at-risk populations (e.g., substance abuse prevention, HIV-AIDS education, injury prevention programs for frail older adults, school violence prevention)

0213 Prepare, present, coordinate, and evaluate classes, seminars, or workshops to various groups (e.g., personnel in school systems, legal systems, health care and organizational settings; medical and mental health consumer groups; and the general public)

0214 Provide expertise to and/or serve on boards or committees of local/state/provincial/federal agencies (e.g., community outreach program, jurisdictional licensing board, federal mental health commission, releasing/parole board) and other policy making organizations (e.g., business and healthcare coalitions, business roundtables, chambers of commerce, legal system)

0215 Provide expertise to and/or serve on local, state/provincial, national or international psychological and/or interdisciplinary organizations, consumer groups, charitable and religious organizations

0216 Provide expertise to and/or serve on boards or committees of specific organizations (e.g., accreditation preparation committee, Quality Improvement Committee, program advisory committee)

0217 Disseminate knowledge of psychology and its value to the general public via various media (e.g., interviews and articles for the popular press; radio and television appearances)

0218 Formulate and advocate for policies and standards applicable to individual and/or organizational providers and consumers of psychological services and work to build consensus for their adoption by the appropriate constituents

03 Academic Preparation and Professional Development

0319 Prepare, present, coordinate, and evaluate courses, seminars, workshops, or conferences for undergraduate, graduate, and post-doctoral students, and professional practitioners

0320 Supervise, administer, coordinate, and evaluate undergraduate and graduate training and practicum, internship, and post-doctoral fellowship programs for knowledge and skill acquisition

0321 Develop and evaluate curricula for undergraduate, graduate, post-doctoral, and continuing education programs

0322 Supervise professional practitioners to enhance their professional development and service delivery

0323 Supervise and advise undergraduate, graduate, and post-doctoral students regarding research and evaluation studies (e.g., honors thesis, dissertation)

0324 Provide mentoring for undergraduate, graduate, and post-doctoral students, and professional psychologists

0325 Participate in professional self-development and continuing education designed to enhance personal and professional effectiveness, and knowledge and skills (e.g., self-care, burnout prevention, life-long learning, Continuing Education courses)

Responsibility

04 Research, Evaluation, and Scholarship

0426 Critically review and appraise existing literature with regard to issues such as conceptualization, methodology, interpretation, and generalizability of results and conclusions

0427 Use the existing knowledge base to formulate clear research/program evaluation questions and design appropriate methods to test them

0428 Administer and manage research/program evaluation projects (e.g., select and train personnel, supervise subject recruitment and data collection, carry out fiduciary responsibilities, ensure design integrity)

0429 Collect and analyze data using appropriate methods of analysis

0430 Disseminate research and/or program evaluation findings, implications, and limitations

0431 Engage in other scholarly activities so as to contribute to the core body of knowledge and enhance understanding (e.g., prepare scholarly reviews; develop instrumentation, models, and theories; write textbooks)

0432 Interpret and recommend applications of research and/or program evaluation findings, with awareness of their strengths and limitations

0433 Organize and participate in scientific and professional meetings and workshops

0434 Prepare proposals for funding agencies

0435 Provide scientific expertise (e.g., serve in an editorial capacity on professional journals or other refereed publications, review proposals for funding agencies, serve on an Institutional Review Board and advisory committees)

Conclusions

The study of the practice of licensed psychologists in the United States and Canada yielded the following results:

- Current roles and responsibilities performed by licensed psychologists, and the knowledge required for professional practice, were identified and validated via a large-scale survey of practice. Professional background and demographic descriptions of recently and less-recently licensed psychologists were documented.
- Recommendations regarding revised test specifications for the EPPP were developed on the basis of the survey data. Validated content- and process-based test specifications were developed which focus primarily on the knowledge needed by licensed psychologists that serves the public protection function of regulation, and secondarily on the responsibilities performed by licensed psychologists that make the greatest contribution to the protection of the patient/client/public from harm.
- Profiles of practice were developed as empirical descriptions of the activities licensed psychologists perform in practice and the critical knowledge base needed in practice.
- Current and emerging trends in the practice of the profession and the knowledge base that will be increasingly useful to licensed psychologists in the future were identified as a base for reviewing college and university curricula, professional schools, training programs, continuing education efforts, and specialty recognition initiatives that may be undertaken in professional psychology.

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