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AACP REPORTS

Building a Process for Program Quality Enhancement in Pharmacy Education: Report of the 2003-04 Academic Affairs Committee

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According to the Bylaws of the AACP, the Academic Affairs Committee shall consider

the intellectual, social, and personal aspects of pharmaceutical education. It is expected to identify practices, procedures, and guidelines that will aid faculties in developing students to their maximum potential. It will also be concerned with curriculum analysis, development, and evaluation beginning with the pre-professional level and extending through professional and graduate education. The Committee shall seek to identify issues and problems affecting the administrative and financial aspects of member institutions. The Academic Affairs Committee shall extend its attention beyond intra-institutional matters of colleges of pharmacy to include interdisciplinary concerns with the communities of higher education and especially with those elements concerned with health education.

Consistent with a theme of exploring how AACP might foster organizational improvement and success among its institutional members, President Robert A. Kerr asked the 2003–04 AACP Academic Affairs Committee to suggest appropriate program assessment measures, indicators, and processes to guide institutions in responding to the question “How do you know if you have a quality program?” It was anticipated that the program assessment process model developed would incorporate the results of institutional research to identify 1) evidence of effectiveness, and 2) indicators of needed change in a continuous quality improvement environment. In addressing its charge, the committee focused on identifying and producing resources and tools to facilitate systematic program assessment and use of assessment results to improve the curriculum and enhance student learning and student services.

FACILITATING EDUCATIONAL QUALITY

PROPOSED POLICY STATEMENT 1: AACP supports and encourages the implementation of ongoing program assessment processes at member institutions for the purpose of enhancing the quality of educational programs and student services.

The national higher education environment.

Assessment, which began as a national movement in the mid-1980s, is now considered an essential element for enhancing quality in higher education.¹ Accreditation standards promulgated by regional accreditation agencies and by specialty accreditation organizations include the need for documentation of the design, implementation, and outcomes associated with a prospective, systematic, and comprehensive assessment plan. Contemporary challenges are to use efficient, valid, and sound methods for the collection, analysis, and application of assessment data. Both national survey processes and local assessments are useful in program evaluation. Efficiency, validity, and benchmarking can be enhanced through the use of national surveys. However, assessment and the analysis and use of assessment data for quality improvement must also be specific for a given institution and program.

The aggregation and use of individual student assessment data in a meaningful, efficient manner has proven useful in institution-wide and program-specific assessment. The question “How do you know if you have a quality program?” is inextricably linked to how much students learn; to what extent they achieve stated desired outcomes for a unit, course, or program; how well they perform desired tasks; and to what extent they are able to demonstrate desired skills and abilities. Student assessment data are foundational to the evaluation of program quality. A systematic, comprehensive assessment plan

should include the use of both national and local assessment instruments.

Assessment in health professions education. The accreditation standards for each of the health professions have fully embraced assessment as an essential program component. Although there is some variability in assessment practices and accreditation standards among the disciplines, these standards are consistent in indicating the need to base assessment on programmatic outcomes or objectives, use a variety of measures, and include assessments of student, faculty, and alumni achievement and performance. Student learning can be enhanced by comprehensive assessments that are valid and reliable and data derived from such assessments may be useful in program improvement. Because it is costly and difficult to develop valid and reliable school- or program-specific instruments for comprehensive assessment, nationally developed and validated instruments may be preferable.

Each health discipline has national and/or regional licensing or certification standards and evaluations conducted after graduation. However, the United States Medical Licensing Examination® (USMLE) is a three-step process of evaluating the developing knowledge and skills of medical students and, ultimately, determining their eligibility for licensure. Each of the three steps includes a multiple-choice, computer-based examination. Beginning in the second or third quarter of 2004, Step 2 will also include a Clinical Skills examination using standardized patients.² This process has several advantages including the development and assessment of nationally accepted outcomes, a comprehensive approach to assessing knowledge and skills, multiple opportunities to provide nationally valid feedback to improve student learning; documented validity and reliability of the testing instruments and processes, and availability of benchmarking data across institutions. There are also several difficulties or potential disadvantages of such a system, particularly the elimination of diversity across programs and evolution toward a more standardized curriculum, but there may be two common steps in pharmacy education where standardization may be possible and desirable – at the conclusion of the didactic components of the curriculum and at the end of the curriculum.

RECOMMENDATION 1: AACP should lead a profession-wide exploration of the desirability, advisability, and feasibility of evolving a national, multi-stage assessment process to assess progressive student learning and, ultimately, to determine entry-level practice competency for pharmacists.

AACP and quality enhancement efforts in pharmacy education. AACP has a long history of providing resources to assist pharmacy educators in the enhance-

ment of pharmacy educational programs. The more recent efforts have focused on transition to the Pharm.D. degree as the sole professional degree in pharmacy, the integration of liberal education and general-ability outcomes within the context of professional practice, and quality assurance and assessment.

- Early 1990's: The AACP Commission to Implement Change in Pharmaceutical Education issued a series of papers that addressed the mission of pharmacy practice and pharmaceutical education,³ curricular content and process,^{4,5} and post-graduate education and training.⁶
- 1991 to 1994: The AACP Focus Group on the Liberalization of the Professional Curriculum authored two reports that influenced the curricular change process.^{7,8}
- 1994: The AACP Center for the Advancement of Pharmaceutical Education (CAPE) *Educational Outcomes* were released.⁹ The *Educational Outcomes* were revised in 1998 and are under revision in 2004.
- 1995: AACP published the *Handbook on Outcomes Assessment* as a guide for faculty at colleges and schools of pharmacy as they incorporated assessment into the educational process.¹⁰
- 1996–1998: AACP conducted a FIPSE-funded project to establish *Mentoring Partnerships to Foster the Dissemination and Adaptation of Models to Facilitate Expansion of Ability-Based Education in Schools of Pharmacy*.
- 1998–1999: The AACP Academic Affairs Committee report included 1) a glossary of terms key to a common understanding of the principles of program assessment, 2) a model that illustrates the components of an effective learning system (including assessment and evaluation), and 3) a multi-step tool to facilitate local consideration of an institution's mission and objectives, learning environment, and assessment and evaluation processes.¹¹
- 1996–2003: The AACP Institute on Pedagogical and Curricular Change programs were designed to enable participating schools develop skills necessary for curriculum development and change, and development and implementation of instructional and assessment strategies.
- 1999–2000: Eric Boyce, then of the Philadelphia College of Pharmacy, participated as a scholar in residence with AACP and produced "A Guide for Doctor of Pharmacy Program Assessment." The report, along with its appendices, includes "guide-

lines, templates, and other resources...fundamental in the development, implementation, and integration of a prospective, ongoing assessment plan for Doctor of Pharmacy academic programs, related student services and student life.”^{12,13}

- 2001: As a follow-up to the 2001 AACP Institute, AACP commissioned a manuscript by Nancy Winslade that made “evidence-based recommendations regarding a system to assess outcome achievement of students enrolled in Doctor of Pharmacy (PharmD) programs...”¹⁴
- 2001–2003: AACP collaborated with ACPE through the AACP/ACPE Joint Task Force on Assessment and Accreditation to develop survey instruments useful to colleges and schools of pharmacy in gathering perception data related to curriculum quality from pharmacy faculty, graduating students, and alumni.
- 2002–2003: The AACP Board of Directors solicited a series of analytical papers on issues deemed critically important to the Association’s goal of supporting excellence in pharmaceutical education. The issues selected represented challenges confronting existing and emerging colleges and schools of pharmacy, especially in the context of meeting or exceeding accreditation standards. The paper by Abate, Stamatakis, and Haggett provided an analysis of contemporary issues in higher education and health professions education related to curriculum development, instructional design and delivery, student assessment, and program assessment, and factors necessary to assure quality instructional programs in pharmaceutical education.¹⁵
- Ongoing: AACP conducts institutional research and provides institution-specific data and comparisons for assessment and benchmarking purposes.

RECOMMENDATION 2: AACP, through its Institute for promoting leadership and continuous improvement of curricular and pedagogical activities and other programs, products, and services, should continue to provide member education and resource materials to support the implementation of program assessment processes by member institutions.

BUILDING A PROGRAM ASSESSMENT PLAN

Principles of assessment. The goals of assessment are to enhance student learning and to improve the processes that impact student learning, learning experiences, and learning environment. The fundamental prin-

ciples that are paramount to providing a comprehensive, meaningful assessment plan are included below:

- Assessment is essential to quality improvement in educational programs.
- Assessment must be a part of the institutional culture in order for it to be highly effective.
- It is the role of administrators, faculty, students, and others (alumni, staff, employers, etc.) to support and participate in assessment activities.
- Assessment must be meaningful, manageable, and focus on predetermined program outcomes or objectives.
- Assessment should be performed in an ongoing, prospective, planned, and organized manner.
- Assessment instruments should, if possible:
 - ▶ Provide usable, meaningful information;
 - ▶ Be pre-tested;
 - ▶ Be evaluated for reliability and validity; and
 - ▶ Be reviewed periodically to determine continued usefulness and the potential need for change or revision.
- Assessment data on a specific outcome or objective should, if possible:
 - ▶ Be collected from a variety of sources using a variety of measures;
 - ▶ Contain formative and summative data;
 - ▶ Contain quantitative and qualitative data;
 - ▶ Contain demographic, perceptual and performance data; and
 - ▶ Include data on inputs, through-puts, and outputs.
- The assessment plan should include plans for routine assessments (performed on a regular, frequent basis), comprehensive episodic assessments (performed at 3- to 6- year intervals), and sporadic assessments (performed to address unforeseen issues).
- Assessment data should be used. If no explicit use for data are envisioned, those measures should not be made.
- The assessment plan and process should be assessed – just as any other programmatic component should be assessed - and additions, deletions, and refinements made as necessary.

Fundamental components of an assessment plan.

The accreditation standards for health professions educational programs (eg, medicine, nursing, dentistry, physical therapy, occupational therapy, and pharmacy) each describe several common, fundamental components of an assessment plan.¹⁶⁻²² Those fundamental components include:

- Applicant characteristics and prior academic performance;
- Student progression;
- Student performance and competency;
- Course evaluations;
- Clinical education evaluations;
- Graduate licensing or certification examination results;
- Graduate job placement;
- Graduate success (leadership in professional organizations, awards, etc.)
- Faculty credentials and performance; and
- Satisfaction of students, faculty, alumni, and employers.

Various templates for and approaches to assessment plan development are provided in Appendix 1. An example of how specific data elements may be organized and used in one particular framework is provided in Appendix 2.

ASSESSMENT RESOURCES

After a review of the literature in 2000, Abate and colleagues found that most colleges and schools of pharmacy were "...in only the early stages of establishing an institutional culture of assessment and comprehensive outcomes assessment plans..."¹⁵ The Assessment Culture Matrix from the Higher Learning Commission provides a framework and markers used to determine the extent to which a program, college/school, or university has evolved a culture of assessment. In each of four clusters (institutional culture, shared responsibility, institutional support, and efficacy of assessment), descriptions of characteristics are provided at three levels of implementation (beginning implementation of assessment programs, making progress in implementing assessment programs, and maturing stages of continuous improvement) to assist programs in understanding and gauging the strength of their assessment programs.²³

Several resources and specific assessment tools are available to assist programs and institutions in the conduct of assessment.

- Customized, school-specific profiles (admission requirements, admissions, enrollments, degrees conferred, faculty demographics and credentials, and college/school financial data) can be generated by the AACP office of institutional research, upon request, for institutional self-study and peer comparison.
- Curriculum quality perception surveys for graduating students, alumni, and faculty, developed by the AACP/ACPE Joint Task Force on

Assessment and Accreditation, will be available from AACP in mid-2004 for local administration.

- National surveys "to assess the extent to which [college students] are engaged in educational practices associated with high levels of learning and personal development" are available, including the National Survey of Student Engagement (NSSE)²⁴ and Law School Survey of Student Engagement (LSSSE).²⁵
 - ▶ The National Survey of Student Engagement (NSSE) is an annual national study of first year and graduating undergraduate students developed by the Center for Postsecondary Research at the University of Indiana–Bloomington, piloted in 1999, and used in over 730 colleges and universities. The survey instrument is focused on five areas correlated with desirable learning and personal development outcomes of college: level of academic challenge, enriching educational experiences, student-faculty interaction, active and collaborative learning, and supportive campus environment.
 - ▶ Derived from the National Survey of Student Engagement, the Law School Survey of Student Engagement (LSSSE) was developed and pilot tested in spring 2003. Designed specifically for law students, this initiative extended the NSSE framework and examination of specific educational process that contribute to the development of desired outcomes to professional education.
- For each of 13 different assessment methods, strategies, and instruments, the Toolbox of Assessment Methods© provides a description of the method and its intended use, a summary of its psychometric qualities, a statement as to the feasibility/practicality of using the method in medical residency programs, and a reference for more detailed information about the method or instrument type.²⁶ The Toolbox© was developed by the Accreditation Council for Graduate Medical Education and the American Board of Medical Specialties to improve the evaluation of medical resident's achievement of competencies in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. Several these tools may prove useful in the assessment of pharmacy students.

- Two assessment administration methods [objective structured clinical examination (OSCE), progress testing] and various assessment formats (written assessments of knowledge and understanding, written assessments of knowledge of skills, written simulations, simulated patients, observation-based ratings, portfolios) have been reviewed by Winslade.¹⁴
- A 25-item instrument to assess behavioral professionalism, developed by Hammer and colleagues, has been tested and described in the literature.²⁷

RECOMMENDATION 3: The AACP Institutional Research Advisory Committee or another ad hoc task force or committee should be charged to compile a list of assessment tools, including those listed above, and relate the tools to specific assessment plan components in order to guide the appropriate application of the instruments and processes for specific purposes and to answer specific assessment questions.

SUGGESTION 1: The Academic Affairs Committee encourages AACP member institutions to review the list of example assessment resources and to select instruments and processes appropriate to the implementation and assessment of their assessment plans and to the conduct of on-going quality improvement analyses and activities. Member institutions should also be encouraged to develop program-specific assessment tools and then share the most useful tools with other institutions through AACP.

SUGGESTION 2: The Academic Affairs Committee encourages AACP member institutions to adapt one or more of the assessment plan templates included in Appendix 1 as the basis for an institution-specific plan for the gathering, analysis, and use of specific data elements to provide evidence of programmatic effectiveness and indicators of needed quality enhancements.

SUGGESTION 3: The Academic Affairs Committee encourages AACP member institutions to share their assessment plans with peer institutions for the purpose of facilitating an understanding of assessment plan development and implementation within the academy.

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Appendix 1: Assessment Plan Templates

Model: Assessment and Evaluation Across the Curriculum

Source: Hollenbeck RG. Chair report for the Academic Affairs Committee. *Am J Pharm Educ.* 1999;63:7S-13S.

Description: Provides a model for an effective learning system and worksheet to guide faculty consideration of the components of that system. For each component, faculty are encouraged to consider a list of guiding questions, to identify evidence and/or criteria for determining whether or not the system component is working optimally at the college or school, and a template for planning quality improvement steps based on the analysis.

Template:

Mission/Objectives

- Do you have a mission statement that faculty “buy into”?
- Is there a common, agreed upon understanding of pharmaceutical care among faculty?
- Are environmental changes causing a need to revisit the mission/redefine niche?

Outcomes

- Has your faculty developed, approved, and embraced a set of desired outcomes for the professional degree program?
- Are these outcomes linked to the mission/objectives?
- Have faculty members constructed discipline- and/or course-specific outcome statements related to these outcomes?

Learning Environment

- Does the learning environment allow achievement of the mission/objectives and outcomes?
- Are appropriate learning strategies used to facilitate student learning?
- How are faculty empowered and rewarded for efforts to improve the learning environment and instructional strategies?

Assessment

- Is there an assessment plan for the program, curriculum, and individual courses?
- Are multiple assessment strategies used?
- How does assessment drive student learning?

Evaluation

- What goals and objectives are evaluated?
- Is the evaluation process discrete or continuous?
- Is input from multiple stakeholders considered in evaluation?
- Are criteria established and made public?

Model: Assessment Plan to Learn about Student Learning

Source: Maki, PL. “Developing an Assessment Plan to Learn about Student Learning.” Available at www.aahe.org/assessment/assessmentplan.htm. Accessed March 30, 2004.

Description: Provides a three-part framework to assist in the integration of assessment of student learning for the purposes of quality evaluation and improvement into the ongoing operations of the college or school.

Template:

Part I: Determining Your Institution's Expectations

A) State expected outcomes

American Journal of Pharmaceutical Education 2004; 68 (3) Article S7.

- B) Identify where expected outcomes are addressed
- C) Determine methods and criteria to assess outcomes
- D) State institution's or program's level of expected performance
- E) Identify and collect baseline information

Part II: Determining Timing, Identifying Cohort(s), and Assigning Responsibility

- A) Determine whom you will assess
- B) Establish a schedule for assessment
- C) Determine who will interpret results

Part III: Interpreting and Sharing Results to Enhance Institutional Effectiveness

- A) Interpret how results will inform teaching/learning and decision making
- B) Determine how and with whom you will share interpretations
- C) Decide how your institution will follow up on implemented changes

Model: Assessment Culture Matrix

Source: Assessment of Student Academic Achievement: Assessment Culture Matrix, The Higher Learning Commission. Available at <http://www.higherlearningcommission.org/resources/assessment/AssessMatrix03.pdf>. Accessed March 12, 2004.

Description: A tool that provides characteristics and situational descriptions around which colleges and schools may document their progress in developing and implementing assessment programs. The matrix is designed around four component areas with statements in each subcategory that describe three levels of program maturity (beginning implementation of assessment programs, making progress in implementing assessment programs, maturing states of continuous improvement) against which a college or school may self-assess.

I. Institutional Culture

- a) Collective/shared values
- b) Mission

II. Shared Responsibility

- a) Faculty
- b) Administration and board
- c) Students

III. Institutional Support

- a) Resources
- b) Structures

IV. Efficacy of Assessment

Model: Developing an Assessment Plan

Source: Handbook on Outcomes Assessment, Alexandria, Virginia: American Association of Colleges of Pharmacy; 1995.

Description: Provides a series of questions to guide the development of an outcomes assessment plan.

Template:

- Who is developing the outcomes assessment activities? A wide range of participants in the development and implementation of a program assessment process provides breadth of scope and helps to ensure broad acceptance.
- What assessment activities are already occurring?
- Where does the curriculum committee fit in? All faculty and administrators should understand the relationship among and distinctions between classroom assessment, course assessment, and program assessment.
- What are the desired outcomes?
- Who and what is going to be assessed?
- How will outcomes be measured? What sources of data will be used?
- Who will be involved in data collection?
- Who will be involved in data interpretation?
- What purpose(s) will data interpretation serve?

Model: Elements of an Assessment Plan

Source: Palomba, CA, Banta, TW. Assessment Essentials: Planning, implementing, and improving assessment in higher education. San Francisco, Calif: Jossey-Bass Inc.; 1999: 39-45.

Description: Authors describe essential elements of an assessment plan.

Template:

- Purposes for assessment (for example, program improvement, documenting student achievement, evaluating effectiveness of program delivery strategies, etc.)
- Assessment methods to be used (for example, national surveys/instruments, focus groups, alumni surveys, licensure examinations, classroom tests, etc.)
- Timeline for administration (taking into account time needed to collect data, issue reports, make decisions, and review progress; accreditation review cycles; campus governance processes; etc.)
- Framework for using assessment information (including likely analysis of data; necessary reports; intended audiences; internal processes for discussion, review, and decision making)
- Provisions for administering the plan (for example, assignment of roles, responsibilities, and authority to conduct specific components of the assessment plan).

Model: Input-Environment-Outcome

Source: Astin, AW. *Assessment for Excellence: The philosophy and practice of assessment and evaluation in higher education.* New York, NY: Macmillan Publishing Company; 1991 (reprint ed., Westport, Conn: The Oryx Press; 2002):16.

Description: Presents a conceptual guide for assessment activities.

Template:

- Inputs are defined as the personal qualities and characteristics, including talent developed to date, students bring to the educational program.
- Environment is defined as the collective, actual experiences during the educational program.
- Outcomes are the talents or abilities intended to be developed through the educational program.

Appendix 2: Draft Application of Input-Environment-Outcome Model to Pharmacy Education

The 2003-04 Academic Affairs Committee drafted the following adaptation of Astin's Input-Environment-Outcome model for assessment of a pharmacy degree program, listing example measures that colleges and schools might consider within each of the model components. Although organized within the Input-Environment-Output module, these indicators and measures are model independent and could be applied within any of the models noted in Appendix 1. If and how specific measures are used by an individual institution will vary and depend on the specific purpose of the assessment question under consideration.

INPUTS

A. Student and Applicant Demographic and Other Data

1. Number of applicants and number (and percent) eligible, accepted (full and provisional), matriculated, from targeted region/population.
 - a. Number interviewed (if applicable)
 - b. Reasons for not attending, actual career path chosen for those accepted, but who did not matriculate
2. Quality of students and applicants
 - a. Pre-pharmacy prerequisites
 - b. Pre-pharmacy grade point average - overall, select courses (prerequisites, core science/math, communications, problem solving, collaborative/team, etc.)
 - c. Pre-pharmacy degrees earned
 - d. PCAT scores and sub-scores
 - e. Pre-pharmacy educational site(s) - institution, type(s) of institution
 - f. Other institution-specific factors used to determine admission status
 - g. Prior pharmacy work experience/knowledge
3. Age, gender, ethnicity, and other institution-specific demographic factors

B. Curriculum

1. Curriculum design
2. Curricular mapping - prospective
3. Academic standards
4. Curricular management and administrative structure
5. Teaching, learning, and evaluation process and policies

C. Faculty

1. Student:faculty ratio
2. Faculty workload measures

3. Faculty development provided in teaching and learning, curricular design, assessment
4. Faculty recruitment
 - a. Number of applicants per position
 - b. Reasons for not taking a position

D. Student Programs and Services

1. Student recruitment and admissions
2. Advising and mentoring
3. Financial aid
4. Tutoring services
5. Health and counseling services
6. Career planning services and programs

E. College/School of Pharmacy and Departments

1. Mission of the college or school
2. Strategic plan of the college or school
3. Leadership
4. Organizational and committee structure
5. Institutional relationships
6. Responsibilities of the dean

F. Learning Resources

G. Experiential Site Resources

1. Number of sites for each rotation type
2. Preceptor development
3. Budget
4. Number of personnel overseeing experiential education
5. Number of sites not willing to take students
6. Reasons sites do not want to take students

H. Physical Resources

1. Number of large, medium and small classrooms to support educational mission
2. Instructional resources within each classroom
3. Access to learning resources (library) by faculty and students
4. Access to technology for students within learning areas (or building if wireless)

I. Fiscal Resources

1. Revenue model for college or school
2. Development plan for college or school
3. Institutional budget for college or school
4. Departmental budget within college or school

ENVIRONMENT (THROUGHPUT/PROCESS)

A. Student Progression, Performance, Perception, and Engagement

1. Progression
 - a. Academic probation, dean's list, dropped or withdrawn from the program, progression, retention
 - b. Graduation rate, time to graduation, academic honors at graduation
2. Performance
 - a. Grade point average overall and by semester/quarter/academic year, grades in specific courses
 - b. Performance in critical period evaluations or comprehensive evaluations
 - c. Student abilities (skills, knowledge and attitudes/behaviors) in program outcomes and accreditation standards
 - d. Student awards
3. Perception
 - a. Student perceptions/opinions about their curricular experience as a whole and about specific aspects of courses and the curriculum
 - b. Alumni perceptions/opinions about their curricular experience as a whole and about specific aspects of courses and the curriculum
 - c. Faculty perceptions about student performance
4. Engagement
 - a. Student involvement and leadership in college/school committees and activities
 - b. Student involvement and leadership in professional organizations and activities

- c. Student involvement and leadership in community activities
- d. Student engagement with the educational process
- e. Work

B. Use and Perception of Student Programs and Services

- 1. Advising and mentoring
- 2. Financial aid
- 3. Tutoring services
- 4. Health and counseling services
- 5. Career planning services and programs
- 6. Technological services and learning resources

C. Faculty

- 1. Student evaluation of teaching
- 2. Peer assessment of teaching
- 3. Faculty development
 - a. instruction, curricular design, assessment
 - b. advising, mentoring
- 4. Scholarship of teaching, learning, and assessment
- 5. Systematic faculty performance evaluation
- 6. Involvement and leadership in professional and community

D. Curriculum/Program

- 1. Curricular mapping - retrospective

OUTPUTS

A. Graduate Performance and Perception

- 1. Performance
 - a. NAPLEX and MPJE - percent pass, scoring statistics, comparison state-wide and nationally
 - b. Supplementary licensing examination results
 - c. Employer and other stakeholder perceptions of graduate abilities
- 2. Position and career path
 - a. Number and percent pursuing post-graduate training and education - general and specific type (residency, fellowship, graduate or professional degree(s))
 - b. Administrative and leadership roles
 - c. Career switches to outside healthcare
 - d. Job satisfaction
- 3. Volunteer, leadership, and involvement in professional organizations and community activities
- 4. Alumni support (e.g., financial, college or school committees and activities, teaching, mentoring)