

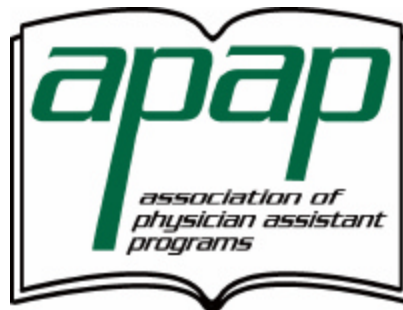
Physician Assistant Programs:

A GUIDE FOR



INTERNATIONAL PROGRAM DEVELOPMENT

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PHYSICIAN ASSISTANT PROGRAMS: A GUIDE FOR INTERNATIONAL PROGRAM DEVELOPMENT

Developed by the Association of Physician Assistant Programs

INTRODUCTION

The physician assistant (PA) profession was formally established in the United States in the late 1960s as a strategy for improving access to health care and enhancing the existing health care delivery system.^{1,2} Since that time the profession has also been recognized for its contribution to the quality of health care provided to U.S. citizens.³ Improving access to health care services, helping to stabilize health care costs, and improving the delivery of quality health care to patients continue to be the primary goals of the PA profession and fundamental considerations in the delivery of PA education.

In the United States, the PA profession relies on a combination of strong educational programs, a well-defined process for national PA program accreditation, and a rigorous national certification process to ensure that new graduates possess the necessary competencies that prepare them to practice medicine as a PA. This system, in combination with the licensing requirements for each state that require PAs to work with physician supervision, fosters the valuable contribution PAs make in the medical and surgical specialties of the U.S. health care system. Integral to the PA profession is a strong appreciation for the value and contributions of other members of the health care team, and the ability to recognize one's limitations and to consult with the physician supervisor or other team members. As the profession has evolved, a well-established network of professional organizations (represented in Appendix #1) have been developed that continue to facilitate the growth and maturation of the profession.

In response to the growing interest in the PA profession internationally, the Association of Physician Assistant Programs (APAP) has prepared this guide to help provide medical colleagues, policy-makers, and educational planners with a greater understanding as they consider, develop, and implement PA programs. The intent of the Association, which is the sole national organization for PA educators in the United States, is to provide basic, current information about PA education as it exists in the United States. The Association recognizes that it has a uniquely American perspective and will be most effectively applied when adapted to the specific health care needs of individual countries and institutions.

DESCRIPTION OF THE PROFESSION

Physician assistants are health professionals licensed to practice medicine with physician supervision. They are qualified to practice through graduation from a physician assistant education program accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) and certification by the National Commission on Certification of Physician Assistants (NCCPA).⁴

Within the physician/PA relationship, PAs exercise autonomy in medical decision-making and provide a broad range of medical and patient care services. It is the obligation of each physician/PA team to ensure that the PA's scope of practice is identified; that delegation of medical tasks is appropriate to the PA's level of competence; that the relationship of the PA to the supervising physician is clearly defined and access to the physician is sufficient; and that a process of performance evaluation is established. Adequate and responsible supervision of the PA, and personal recognizance on the part of each PA, contributes to both high quality patient care and continued professional growth.

PAs are educated to formulate and document a detailed differential diagnosis, establish a diagnosis, develop a comprehensive patient management plan, and provide essential diagnostic and therapeutic procedures. They also prescribe medications, order and interpret diagnostic studies such as laboratory tests and electrocardiograms, and perform many diagnostic and therapeutic procedures, including minor surgery, suturing, and casting. PAs also provide other important aspects of medical care such as patient education, counseling, and health risk appraisal.

PAs practice primary and specialty patient care in medical and surgical settings all over the country and, increasingly, the world. In the United States, many PAs practice in primary care specialties. However, PAs also work in a wide variety of medical and surgical specialties and sub-specialties including emergency medicine, orthopedics, general surgery, hematology/oncology, infectious disease, nephrology, and cardiology, among others.⁵ Although PA practice is focused and educationally centered on patient care, it often includes education, research, or administrative responsibilities. Among the settings in which PAs practice are rural and urban community health clinics, private and group practices, hospitals, managed care settings, geriatric and long-term care facilities, industrial and occupational health clinics, prison systems, and clinics serving members of the uniformed services.

The demand for PAs remains strong because they are capable of providing quality, cost-effective patient care services. The fact that PAs are trained in the medical education model facilitates the close working relationship they enjoy with their physician supervisors. In addition, this model of training is a primary reason for the compatibility of PA utilization and practice with existing health care delivery systems. Historically, programs in the United States have encouraged graduates to practice in underserved areas or with underserved patient populations. Involvement in local, state, and national professional organizations and a broad range of leadership activities is a hallmark of many PA education programs.

Commitment to maintaining high ethical, moral, and professional standards in all interactions with patients and other health care providers is integral to the profession and stressed during PA education.⁶ PA participation in the delivery of patient care services on a worldwide basis is a natural outcome of the success of the profession.

GENERAL INFORMATION

Accreditation

Physician assistant programs are strongly influenced by the accreditation mechanism. The Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) is the sole agency responsible for accrediting PA programs in the United States. Several physician and PA organizations cooperate with the ARC-PA in developing the Standards that are utilized in guiding program development and maintenance.

ARC-PA describes itself as

[T]he accrediting agency that protects the interests of the public and PA profession by defining the standards for PA education and evaluating PA educational programs within the territorial United States to ensure their compliance with those standards.

The ARC-PA encourages excellence in PA education through its accreditation process, by establishing and maintaining minimum standards of quality for educational programs. It awards accreditation to programs through a peer review process that includes documentation and periodic site visit evaluation to substantiate compliance with the Accreditation Standards for Physician Assistant Education. The accreditation process is designed to encourage sound educational experimentation and innovation and to stimulate continuous self-study and improvement.

In addition to establishing educational standards and fostering excellence in PA programs, the ARC-PA provides information and guidance to individuals and organizations regarding PA program accreditation and makes public its accreditation actions.⁷

The Standards utilized by the ARC-PA are developed in consultation with the collaborating organizations and thus represent a profession-wide perspective on appropriate minimum standards for PA programs. The ARC-PA accredits only U.S.-based programs and consequently has a decidedly American perspective. This perspective is widely evident within this document.

Sponsorship

PA programs are sponsored by several types of institutions of higher education in the United States. These include: (1) schools of allopathic or osteopathic medicine and schools of health sciences in academic health centers, (2) colleges and universities affiliated with clinical teaching facilities, (3) hospitals with links to degree-granting institutions, and (4) medical education facilities of the federal government.

It is the sponsoring institution, not the program itself, that assumes the ultimate responsibility for all aspects of the education of PA students, including the quality of that education. Therefore, sponsorship of a PA program should be congruent with the long-term mission of the institution. The sponsoring institution must be fully accredited by the appropriate accrediting agency and capable of providing training as well as granting academic credentials to PA program graduates.

Most institutions in the United States award a master's degree upon completion of the program, although some programs award the bachelor of science (BS) degree or a certificate of completion or both. There is some variation in the specific type of master's degree awarded by PA programs. Degrees awarded include the master's of physician assistant studies (MPAS), master's of medical science (MMS), master's of science (MS), master's of health science (MHS), and master's of public health (MPH). Although the education provided in PA programs in the United States meets the educational standard generally applied for the extension of a graduate degree, individual programs are permitted discretion concerning the level and type of degree awarded, based on factors such as their applicant pool and the unique needs of their community.

The sponsoring institution is ultimately responsible for ensuring the availability of appropriate faculty, support staff, educational facilities, and necessary financial resources to sustain the quality of the educational program through periods of fluctuation in personnel and resources.

Resources

The sponsoring institution should fully appreciate that the PA profession is a separate health care profession that requires specific resources in medical education content and process. Therefore, the sponsoring institution must be able to provide access to a wide spectrum of medical education resources, including adequate exposure to basic science, behavioral science, and clinical faculty; patients; and other health care personnel.

The sponsoring institution needs to have access to sufficient numbers of clinical affiliations to provide the breadth and depth of the curriculum necessary to ensure entry-level practice competency. Supervising physicians and PAs who function as preceptors should be sufficiently freed of other teaching and patient care responsibilities so that they may provide a thorough clinical experience for PA students.

NEW PROGRAM DEVELOPMENT

Needs Assessment

The development of a new health profession is often initiated in response to the identification of an unmet health workforce need. The response to addressing this shortage is often urgent and results in a concerted effort to identify a type of alternative provider who can provide the medical services needed and who can be trained more quickly and efficiently. The time and cost efficiencies of PA education in the United States are highly valued. As a result, PA program models similar to those in the United States are increasingly being explored as viable solutions to meeting medical workforce needs in other countries. To date, this has resulted in the development of several PA programs outside of the United States and an expressed interest in doing so by many other countries with medical workforce shortages.

Conducting a thoughtful and systematic needs assessment is essential to the process of deciding whether to initiate a PA program and introduce a cadre of PA graduates in any given country. There may be significant benefits to conducting the needs assessment with the input of the Ministry of Health or other government officials as well as health educators and health policy makers. National, regional, or local need for PAs should be considered in undertaking

such an assessment. Past experience in PA program development reveals that strong verification and documentation of the need for additional health care professionals can be of great value in garnering the support and resources needed to establish a viable PA program and practice environment. In addition, conducting a needs assessment often helps to: (1) educate and garner the support of key players in proposed PA program development, such as members of the medical community, policy makers, potential participants, and patients; (2) generate helpful suggestions pertaining to development plans; and (3) identify other important questions that may need to be addressed in the developmental process.

It is strongly recommended that the needs assessment be broad-based, bringing in data from such constituencies as local health care providers and organizations, hospitals and clinics, community leaders, medical organizations, educational organizations, employers, patients, and potential students. Including other health care workforce studies and local workforce projections is often useful, as is investigation into the impact of factors that may be unique to the environment of the founding country. Finally, the current and potential demand for PA services, the type of practice opportunities that will exist for PAs on a national, regional, and local basis, and the identification of those institutions and individuals who are willing to participate in development and operation of the training program are other important factors traditionally studied in a needs assessment.

Initial Program Planning

Once a careful needs assessment has been conducted, an analysis of how best to meet the identified needs must be completed. The initial planning phase for a PA program should begin only after it has been determined that a PA program is a viable solution to meeting the identified need. Appointing an advisory committee with broad representation from groups interested in the program is a valuable way of facilitating the thorough planning necessary to develop and establish an effective, high-quality PA program.

The initial planning process for a PA program often determines its future direction and, ultimately, its success. Therefore, the importance of meticulous planning cannot be overstated. This phase should include thoughtful consideration of the identified needs, a comprehensive study of the institution's internal and external environment, careful definition of the program's mission, and a long-term strategic plan. Issues concerning regulatory agencies that will exercise control and influence over the educational program should be identified and addressed. Likewise, planners should try to anticipate the regulation of graduate practice while developing the educational program. Detailed planning will facilitate the process of making informed decisions concerning issues such as budget, student and faculty recruitment, curriculum, instructional methods, student and program evaluation, and clinical training sites.

Mission

The program should be guided by a carefully developed educational philosophy and purpose. This is often referred to as the program's mission, which is articulated in the form of a mission statement. The mission statement provides continuous direction and establishes priorities for the program. A carefully developed program mission statement is often the single most important defining precept of the program. It will communicate to others why the program exists and what it is attempting to accomplish. In defining an appropriate mission

statement, careful, thoughtful attention must be paid to such factors as program resources; the applicant pool; and local, regional, and national patient care needs.

The program mission statement should clearly articulate the major goals of the program. It should identify the type of training the students in the program will receive, e.g., generalist, surgical. It may also state the desired practice setting for the placement of program graduates, e.g., rural or urban. All subsequent decisions regarding program development should be consistent with the established mission and major goals articulated in the mission statement. Ultimately, specific objectives that support the mission and goals of the program will form the basis of the program's educational offering and serve to guide other important program activities, as well as student learning.

ADMISSION AND RECRUITMENT

The program's admissions process, policies, and recruitment strategy should reflect the overall mission of the program and be congruent with those of the sponsoring institution. Some programs may be required by their sponsoring institutions to recruit and admit local residents, minorities, or individuals from medically underserved areas, while others will have no specific requirements. Admissions policies should also take into account the culture of the surrounding community.

Admission requirements such as the minimum grade point average, prior degree or experience, and specific academic and technical standards should be clearly defined, published, and readily available to potential students and to the public. Recruitment strategies should be clearly articulated, as should the program's educational and social focus, the general timeframe for application, and the types of recruitment activities that prospective applicants can access. Careful attention must be paid to ensuring that published materials clearly and accurately reflect program policies and procedures.

Policies regarding advanced placement, transfer of credit, credit for on-the-job experience, and requirements for both education and work experience need to be stated clearly. Details of these policies should be easy for potential students to access.

A selection committee (often called an "admissions committee") should convene before, during, and after the acceptance of applications. Attention should be paid to selecting students who understand the role and responsibilities of PAs. The committee should ensure that all candidates are evaluated fairly and objectively based on published criteria. All members of the committee should be familiar with the PA education, practice, and current issues of importance to the profession.

Virtually all U.S. PA programs find the personal interview to be a necessary and important element in the selection process because of the additional insights an interview provides into applicants' levels of maturity, empathy and compassion, motivation, critical thinking skills, ability to communicate and work in teams, cultural sensitivity, and potential to achieve career satisfaction within the PA role. Therefore, prior to the interview, it is useful to develop some carefully crafted questions and interview techniques to help interviewers evaluate the desired applicant characteristics. It is useful to ask a set of standardized questions to all applicants for purposes of comparison during the selection process, while also allowing enough time for interviewers to exercise discretion in asking other questions that may be necessary to ensure

that the most qualified applicants are selected. Interviewing procedures and questions should be carefully reviewed to ensure that they do not introduce a selection bias.

CURRICULUM

General Information and Content

Physician assistant programs in the United States exist in a variety of institutions, including teaching hospitals, community colleges, four-year universities, and medical schools. This diversity in sponsoring institutions has resulted in a variety of curriculum models that meet specific community and institutional needs and priorities. The curriculum of a specific educational institution is influenced by the prerequisite courses required of the entering students and the students' previous health care experience. Thus, a program that requires intensive college-level science preparation may have a lower number of science courses in the PA curriculum. Similarly, programs that choose students primarily based on past clinical experience may start their clinical courses at a more advanced level than those programs that do not have a "prior experience" requirement. It is important to note that all PA curricula share core content in the basic medical sciences, patient assessment, clinically related classroom courses, and clinical rotations. The curriculum currently provided to PA students in the United States is generally reflective of a graduate- (post-baccalaureate degree) level of academic intensity and requires graduates to master graduate-level knowledge and skills.

Physician assistant education in both the preclinical (didactic) and clinical years of the program is guided by specific course and learning objectives. These objectives are developed by program faculty for all courses, and are reviewed annually. Learning objectives specify the knowledge, skills, and behavior that all PA students are expected to demonstrate and serve as the basis for student evaluation throughout all phases of PA education.

Basic Medical Sciences

When considering the design of basic science courses essential to competent clinical practice, program developers should take into account the clinical relevance of the material presented. For example, the cardiac physiology content should teach students not only the principles and formulae necessary to understand the concepts of cardiac output and systemic and peripheral vascular resistance, but also help the student progress to the clinical application of these principles. Basic science courses should be specifically designed to support the mission of the PA program and be taught by individuals possessing the expertise to discuss the clinical relevance of the course content and materials.

In the most recent analysis of PA curriculum, in the *Nineteenth Annual Report on Physician Assistant Educational Programs in the United States, 2002-2003*, it was reported that the average PA program provided 400.5 hours of lecture in basic medical science. The principal method of instruction in the basic sciences was lecture and discussion with most of the laboratory hours associated with anatomy, microbiology, and clinical laboratory sciences. After anatomy (121.3 hrs), the most time-intensive basic science courses were pharmacology (75.4 hrs), pathophysiology (67.4 hrs), and physiology (65.8 hrs).⁸ It must be noted that there was considerable variation in the hours of basic science instruction, dependent upon both the program prerequisites and philosophy of instruction.

While there is a wide array of presentation styles and teaching techniques, ranging from electronic self-instructional materials to individual mentoring, it is important to ensure that all teaching methods reinforce the material presented within the context of the clinical role of the PA. When electronic media — videotape, for example — replace traditional lab experiences, the educational outcomes must be comparable.

Patient Assessment

Central to the PA role is the ability to communicate clearly, precisely, and sensitively with patients and their families, colleagues, and other health professionals. Therefore, when designing the essential laboratory or practicum components of the physical diagnosis portion of the curriculum, it is imperative that students have ready access to clinical skills labs and objective structured clinical examinations utilizing actual and simulated patients. The patient populations available for student experiences in history-taking, counseling, and physical diagnosis should offer a balance between males and females and span the full age range.

Inherent in the ability to obtain a detailed history and to provide appropriate counseling for all patients is an awareness of and sensitivity to cross-cultural communication. Therefore, course offerings in history-taking and counseling should provide specific information about the relationships between culture, health, and illness. Teaching should respond to issues of human diversity and the heterogeneity of the patient population to be served. This information should be incorporated into *clinical* exercises or simulations that reinforce the principles taught in the classroom portion of the course.

According to the *Nineteenth Annual Report*, the average PA program provides considerable instruction in patient assessment, with an average of 97.2 hours in physical assessment and another 49.6 hours in history taking and interviewing. Again, there was a wide range among programs as a result of the factors previously noted.

Clinically Related Classroom Courses

In the United States, PA program didactic education is largely focused on general medicine and primary care, with additional instruction in general surgery and other specialties, i.e. internal and family medicine, obstetrics/gynecology, pediatrics, and mental health, although many programs have added instruction on common problems related to specialties, e.g. surgery. In all cases, instruction should include a thorough discussion of the most cost-effective ways to approach the use of diagnostic tools, e.g., lab and radiology, in the evaluation of common primary and specialty care problems covered in the curriculum. Classroom and practical experiences in invasive diagnostic or therapeutic procedures associated with common medical/surgical problems also need to be addressed.

Programs need to provide students with competency-based training in the recognition and emergency management of life-threatening illnesses, e.g., acute airway obstruction, respiratory arrest, and acute anaphylaxis. Before placing the student in clinical settings, the program must also provide the student with classroom and practical instruction that teaches the principles and techniques of hand-washing antiseptics, infection control, and precautions against the transmission of blood-borne pathogens.

Clinically related classroom instruction in the behavioral and social sciences is an essential component of PA education. Instruction on psychosocial health issues, patient education, health promotion and disease prevention, medical ethics, and public health concepts are typically included in this component of the PA program curriculum. Students need specific preparation in the principles of public health so that they may understand the concepts of population-based medicine and the practice of public health, and incorporate these precepts into their individual medical practice. To the extent possible, PA students should be introduced to the range of electronic information storage and delivery systems found in the modern practice of medicine.

According to the *Nineteenth Annual Report* the average number of hours of clinically related classroom instruction is slightly higher than the hours of basic science material, averaging 358.9. Another 71.4 hours, on average, are provided in clinical skills training, e.g., suturing, EKG, casting, venipuncture, and injections.

Clinical Rotations

Clinical rotations must be designed to ensure that all students will have a set of experiences in the core disciplines appropriate to the program’s mission. The patient mix should be reflective of the local or regional community and be adequately distributed by age, gender, and cultural background. Clinical experiences must offer the student graduated responsibility in the diagnosis and management of common medical and surgical conditions.

The typical PA curriculum requires 45 weeks (approximately 11 months) of supervised clinical instruction in required and elective rotations, ordinarily provided in the second year of the PA program. On average, PA students will spend about 28 weeks of this time in primary care medical specialties and the remaining 18 weeks in non-primary care areas. The length of the specific clinical rotations varies between two and ten weeks.

Table 1 - Typical PA Program Curriculum	
Topic	Average Time
Basic science	400.5 hours
Clinical medicine	358.9 hours
Patient sssessment	147.3 hours
Supervised clinical instruction	45.0 weeks

Source: *Nineteenth Annual Report on Physician Assistant Educational Programs in the United States, 2002-2003*.

PERSONNEL

Program Director

The director of a PA program is responsible for the organization, administration, continuous review, planning, development and general effectiveness of the program. The program director must supervise the activities of the medical director, faculty, and staff that are in direct support of a PA program. In a few instances, the program director is a physician who may also serve as medical director. The program director must be familiar with PA practice and the specific issues of PA education. The program director should be prepared to be an

advocate for the program both within the institution and in the broader health care environment. Therefore, strong communication and interpersonal skills and a strong understanding of the role and responsibilities associated with the practice of medicine as a PA are important attributes of a program director.

The program director has authority over students, the implementation and evaluation of the program's curriculum, staffing decisions, and the program's complete budget. It is often useful for a program director to have experience in budget preparation, obtaining funding from sources outside the sponsoring institution, grant writing, and preparing accreditation documents. The sponsoring institution should support the program director in acquiring appropriate skills for program administration and leadership.

Although in the United States, it is not required that the program director be a physician assistant, this is the most desirable choice. If not a PA, the program director should have a medical background, familiarity with the classroom and clinical characteristics of PA training, an appreciation of the philosophy of PA education, and the ability to interact with both internal and external constituencies dealing with the PA profession.

Medical Director

In the United States, the medical director must be a licensed physician experienced in the delivery of the type of health care services for which the students are being trained. He or she should interact with the students in the program and act as a role model for appropriate physician-PA relationships.

The medical director supports the program director in providing continuous, competent medical guidance for the clinically related program components, so that both the classroom and the supervised clinical practicum instruction meet current acceptable standards of practice. The medical director works to increase the understanding and support of practicing physicians for the program and the profession. The medical director should have links with physician organizations and represent the program to those organizations as appropriate and needed.

The medical director should participate in long-range planning for the program that includes all self-study activities and the review and planning of both the classroom and clinical phases of the program. He or she should review course content annually and should be available to assess difficult or struggling students at the request of the program director or faculty. PA program medical directors often provide some classroom or clinical teaching for students enrolled in the PA program.

Although the medical director's position is generally part-time, it entails significant responsibility. Given that the medical director works for the program director to assist with oversight of classroom and clinical instruction and the supervision of faculty, staff, and students, a significant commitment in terms of time and effort is generally required, as is a high level of compatibility with the program director.

Faculty and Instructional Staff

The instructional faculty and staff are responsible for establishing an atmosphere that is conducive to learning and for presenting the educational program and all related educational experiences in an organized and thoughtful manner. The faculty must be qualified through academic preparation and experience to teach assigned subjects. Faculty for the supervised clinical practice portion of the PA program must include PAs and physicians and may include other health professionals who are experienced in their disciplines and in the provision of patient care services. The program cannot rely solely on practicing physicians or resident physicians to provide PA instruction.

Program faculty and instructional staff may represent a broad range of backgrounds both academically and clinically, but they should all have an understanding of the PA role and the concepts of competency-based education.

In addition to core faculty members, most programs utilize affiliate or part-time faculty members. These individuals may be practicing clinicians from the community, basic scientists, or health professions educators from other departments or institutions. They may be responsible for specific courses, presentation of single lectures, small-group instruction, evaluation of students in the classroom setting, or the assessment of students at clinical sites.

Faculty are responsible for evaluating student performance promptly, identifying and counseling students who are not achieving the defined course and learning objectives, providing remedial instruction, and informing the program administration about student performance (both academic and professional) that is less than satisfactory.

In each location where a student is assigned for classroom or supervised clinical practice, there must be a qualified individual with sufficient time allocated to provide supervision, direct instruction, and frequent assessment of the student's progress in achieving identified program objectives. There should be a mechanism for approving clinical sites and preceptors, and for orienting clinical preceptors and administrative staff to the needs and requirements of the PA program and its students.

For clinical practicum or preceptorship experiences, criteria for the selection of clinical supervisors or preceptors should include evidence of interest in teaching, ability to teach, and an understanding of and commitment to the use of PAs. The availability of physical space for the student to interview and examine patients at the clinical site is also an important consideration, as is the selection of preceptors who maintain high professional and ethical standards in all aspects of clinical practice.

There should be sufficient faculty to provide students with adequate attention, instruction, and supervised practice to acquire the knowledge and competence needed for entry into the profession. To that end, the program should maintain a faculty-to-student ratio sufficient to ensure that all students are able to obtain the instruction required. This ratio may depend on the program model being utilized. For courses that require labor-intensive instruction, e.g., physical diagnosis and clinical skills, many PA educators consider ideal faculty:student ratio to be 1:6. Lecture courses often have a higher ratio. In a well-established program, a typical faculty:student ratio is approximately one full-time PA faculty member for every 6-10 enrollees.

Faculty roles in PA programs are different from other types of educational settings because PA program faculty members generally have responsibilities in both the classroom and

clinical phases of the program. PA faculty (including PA program and medical directors) often practice on a part-time basis in order to keep their clinical knowledge and skills current. These roles often necessitate a higher number of faculty members than would be found in traditional non-health professional educational programs.

Clerical and Support Staff

Adequate numbers of competent clerical and support staff are needed to support faculty and program activities. Typically, PA programs have clerical and support staff for the administrative, classroom, and clinical components of the program. Particular attention should be paid to ensuring that sufficient administrative staff and resources are available to support the program's recruitment and admissions processes. Staff should be oriented to, and understand, the PA role and the unique elements of PA education. The program should ensure that staff is prepared to deal with students, other health professionals, and the public in an appropriate and sensitive manner.

RESOURCE DEVELOPMENT

Program Funding

A critical step in developing a PA educational program is careful identification of the actual financial costs of starting and operating a PA program. Only after all start-up and continuation costs have been identified can a plan to secure adequate resources be developed. It is important not to underestimate the starting costs of operating a PA program. There may be substantial capital investment involved. The costs of recruiting faculty and staff, conducting an effective student recruitment and admissions process, and providing for ongoing faculty development are just some of the expenses that may be overlooked or underestimated in determining the initial program budget.

In the United States, various financial sources contribute to the cost of managing PA programs. In most instances, the sponsoring institution is the primary source of funding. Many programs rely heavily upon tuition and fees generated by their students' enrollment. Some programs also receive grants from federal or state governments, foundations, industry, or other sources.

According to the *Nineteenth Annual Report*, the mean total budget for PA programs was \$866,612. The mean total number of students per program was 77.1.

However, variation in institutional structure and other factors make it difficult to determine the exact costs associated with operating a program. The university may provide services that are not charged to the program; teaching faculty other than the program's core faculty may be paid by their respective departments; and preceptors responsible for the clinical training of PA students may not receive any remuneration. The unique administrative requirements of PA programs, the labor-intensive nature of both classroom and clinical education, and the cost of developing and monitoring clinical sites are some of the factors responsible for program costs.

Facilities

Adequate classrooms, laboratories, administrative offices, and other facilities, including sufficient full-time clinical practice sites to accommodate the class size and to provide quality education, must be identified and secured. Clinical resources should afford students both a variety of experiences and consistent learning opportunities. The program should carefully assess the availability of clinical sites when determining class size.

Teaching facilities for PA programs should include classroom space as well as private areas for teaching and evaluating physical exams and other clinical procedures. Other laboratory facilities should be available in accordance with curricular requirements. The program should have a design for the clinical phase that is consistent with the program goals and the classroom instruction. The program should monitor clinical sites regularly.

Equipment and Supplies

Appropriate and sufficient equipment, supplies, and storage space should be provided for student use and for teaching the classroom and supervised clinical practice components of the curriculum. Instructional aides, clinical specimens, clinical education models, reference materials, and equipment need to be available as required by the types of learning experiences delineated for the classroom and supervised clinical educational activities.

Medical Library and Related Resources

Students and faculty need convenient and timely access to an adequate supply of current books, journals, periodicals, and other reference materials. In many instances, students access these resources via electronic formats. When housed in library facilities, resources must be accessible enough hours each day so that students can access them at times when they are likely to be studying.

PROGRAM EVALUATION MECHANISMS

Ongoing program evaluation is the primary tool for achieving and maintaining excellence in PA education. Effective program evaluation allows faculty to diagnose problems, develop plans for improvement, monitor ongoing activities, and formulate the basis for strategic planning. The program should have a formal self-evaluation process for continually and systematically reviewing the effectiveness of the education it provides.

In the United States, the ARC-PA requires that all accredited programs develop and implement a process of continuous self-assessment through which faculty and staff regularly and systematically review the quality and effectiveness of their administrative and educational practices, policies, and procedures. Through continuous self-assessment, programs identify their strengths and weaknesses, develop plans for corrective intervention, and evaluate the effects of the interventions. In addition, prior to each ARC-PA on-site visit, programs engage in a period of intensive, comprehensive program evaluation known as periodic self-assessment. Using the ARC-PA *Standards* as the point of reference, a program critically examines its current practices and policies, identifies its strengths and weaknesses, and delineates a plan for any modifications and improvements that may be necessary to maintain compliance with the *Standards*. A written self-study report documents the program's continuous and periodic self-assessment processes, current operational status, and improvement plan.

CONCLUSION

The Association of Physician Assistant Programs trusts that this document will be useful to those who have chosen to explore the development of a PA program and the PA profession in their own countries. In addition, APAP is prepared to provide more detailed and specific information about PA education upon request. Requests for consultative services on PA program development and education will be considered on a case by case basis.

The initiation of any new profession includes the establishment of a program accreditation process; the development of appropriate legislation and regulations to facilitate practice, , privileges, and regulations; establishing representative organizations for the profession; and a process for initial and continuing certification of graduates. To this end, consultation with the officers and staff of the Accreditation Review Commission on Education for the Physician Assistant, the American Academy of Physician Assistants (AAPA), and the National Commission on Certification of Physician Assistants (NCCPA), as well as APAP, can be of great value. Contact information for each of these organizations is included in Appendix 2.

Finally, should you elect to pursue the development of a PA program we hope that you will experience the same enjoyment, pride, and sense of accomplishment that we have had in developing the physician assistant profession in the United States. We feel privileged to assist you in disseminating the PA concept. In doing so, we hope to continue a tradition of high quality physician assistant education and, most importantly, facilitate your efforts to contribute to the health and well-being of your fellow citizens.

GLOSSARY

Accreditation Review Commission on Education for the Physician Assistant (ARC-PA): ARC-PA is the accrediting agency that protects the interests of the public and PA profession by defining the standards for PA education and evaluating PA educational programs within the territorial United States to ensure their compliance with those standards.

American Academy of Physician Assistants (AAPA): AAPA is the only national organization that represents physician assistants in all specialties and all employment settings. Its membership also includes physician assistant students and supporters of the profession.

Association of Physician Assistant Programs (APAP): APAP is the national organization representing physician assistant educational programs in the United States. APAP's mission is to assist PA educational programs in the instruction of highly educated physician assistants. The association offers an array of services for PA programs, faculty, students, and the general public aimed at fulfilling this mission.

Clinical Affiliations: Formal associations with a clinic, hospital, or other health care organization for the purposes of providing clinical education.

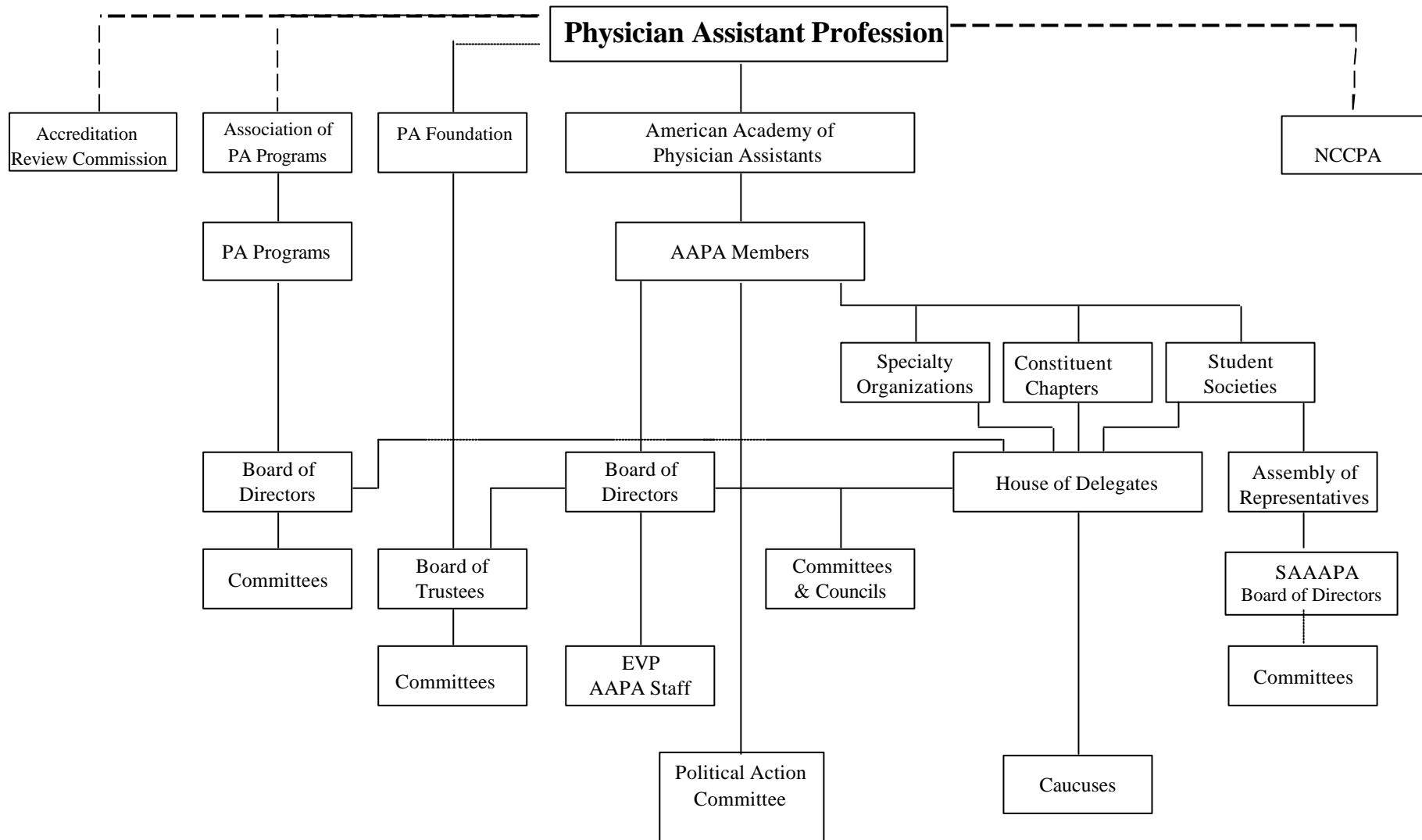
Graduate-Level: Refers to educational programs or degrees that are taken after completing a high school education and a four-year college degree (bachelor's degree).

National Commission on Certification of Physician Assistants (NCCPA): NCCPA is the only certifying organization for physician assistants in the United States. Established as a not-for-profit organization in 1975, NCCPA is dedicated to assuring the public that certified physician assistants meet established standards of knowledge and clinical skills upon entry into practice and throughout their careers. Every U.S. state, the District of Columbia, and the U.S. territories rely on NCCPA certification criteria for licensure or regulation of physician assistants. Approximately 50,000 physician assistants have been certified by NCCPA.

Supervising Physician: A medical doctor who as part of the PA/physician team oversees the medical care that is delivered to the patients by the physician assistant. This does not mean that the supervising physician will see each patient the PA provides care to, nor does it mean that the physician is directly located at the same site where the PA is providing care.

Appendix 1. Network of PA Organizations Representing PAs in the United States

(Source: Modified from Physician Assistant Profession Organizational Chart, American Academy of Physician Assistants)



Appendix 2. Professional Organization Contact Information

American Academy of Physician Assistants (AAPA)
950 North Washington Street
Alexandria, VA 22314
(703) 836-2272
aapa@aapa.org
www.aapa.org

Accreditation Review Commission on Education for the Physician Assistant (ARC-PA)
1000 North Oak Avenue
Marshfield, WI 54449-5788
(715) 389-3785
mccarty.john@marshfieldclinic.orgwww.arc-pa.org

Association of Physician Assistant Programs (APAP)
950 N Washington St
Alexandria, VA22314
(703) 548-5538
apap@aapa.org
www.apap.org

National Commission on Certification of Physician Assistants (NCCPA)
12000 Findley Road, Suite 200
Duluth, GA 30097-1409
(770) 734-4500
nccpa@nccpa.net
www.nccpa.net

REFERENCES

1. Hooker RS, Cawley JF. *Physician Assistants in American Medicine*. 2nd ed. New York, NY: Churchill Livingstone; 2003.
2. Ballweg R, Stolberg S, Sullivan EM. *Physician Assistant: A Guide to Clinical Practice*. 3rd ed. Philadelphia, Pa: Saunders; 2003.
3. Hooker RS. The economics of physician assistant employment. *Physician Assistant*. 2000;24:67-85.
4. American Academy of Physician Assistants. AAPA Policy Manual, H-P-100.1.0 Definition/Role. Available at <http://www.aapa.org/manual>. Accessed May 25, 2004.
5. American Academy of Physician Assistants. 2003 AAPA Physician Assistant Census Report. Available at <http://www.aapa.org/research/03census-intro.html>. Accessed May 25, 2004.
6. American Academy of Physician Assistants. Guidelines for Ethical Conduct. Available at: <http://www.aapa.org/policy/ethical-conduct.html>. Accessed May 25, 2004.
7. The Accreditation Review Commission on Education for the Physician Assistant. General Information. Available at <http://www.arc-pa.org>. Accessed May 25, 2004.
8. Association of Physician Assistant Programs. *Nineteenth Annual Report on PA Educational Programs in the United States, 2002-2003*. Alexandria, VA: APAP; 2003.