EXECUTIVE SUMMARY

The University of Missouri - Kansas City (UMKC) proposes establishing a Master of Medical Science program graduating skilled physician assistants (PAs) to meet local and national healthcare needs. The graduates will be highly trained competent professionals licensed to work under the supervision of a licensed physician to provide various healthcare services in hospitals, clinics, surgery centers, and other healthcare environments.

The implementation of a new program is important in addressing significant local and national shortages of physicians and other healthcare providers, especially in light of newly implemented Healthcare Reform Act. PAs are an important contributor in solving this crisis. To meet the increasing need for healthcare providers, a practical solution is to establish new educational programs. Currently there are only two graduate-level degree-granting PA educational programs in the state of Missouri (Saint Louis University and Missouri State University). The UMKC program will be the third such program and is logistically situated to address the workforce shortages for healthcare in the state of Missouri.

National and local market analyses (focused primarily on individuals considering an advanced degree) place the physician assistant profession as one of the top professions needed to assist in meeting the healthcare needs within the near future. For example, U.S. News and World Reports lists PA as one of the 50 best careers of 2010 with faster than average expected job growth due to the growing demand for healthcare services, the impending retirement of baby boomers, and broader efforts to limit healthcare costs. The volume of PA jobs is expected to grow by 39%, among the fastest occupational growth rates according to the 2010-2011 Bureau of Labor Statistics (Appendix B).

Program admission requires 1) baccalaureate degree from a United States or Canadian college or university accredited by the United States Department of Education or Canadian Department of Education, respectively, 2) successful completion of prerequisite course requirements and 3) exemplary personal characteristics desirable for a demanding career in healthcare. All students will complete a twenty-seven month curriculum consisting of basic science courses and clinical training for a total of 58 credit hours of didactic course work and 48 credit hours of clinical training. The School of Medicine (SOM) has fully accredited M.D., graduate residency, and Master of Science in Anesthesia programs validating the requisite structure to support a solid foundation for the proposed PA program. The Master of Medical Science program will meet rigorous national accreditation standards governed by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) a member organization of the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

The planned PA program is fully aligned with the mission of UMKC and the SOM to “lead in the life and health sciences, to develop a professional workforce, and to collaborate in urban issues and education.” Employing efforts to solicit a diverse applicant pool, the PA work-ready graduates will closely reflect the cultural composition of patients seeking and receiving care in the urban and rural environments they enter. As confirmed through support letters from leading healthcare providers within the greater Kansas City area, a Master of Medical Science Physician Assistant program is timely and focused directly on UMKC’s mission. Based on the experience of other PA graduate-level programs, the UMKC program is expected to attract a large pool of

highly qualified applicants. Once the program is fully established, a yearly Fall enrollment of 20 students is anticipated, resulting in a student body of 60 (Fall Semester) and 40 (Spring and Summer).

The program reflects effective and efficient financial stewardship of taxpayers' dollars and will begin yielding a positive return-on-investment beginning with the second year. The program generates a positive cumulative revenue for the third and subsequent years.

Form NP

NEW PROGRAM PROPOSAL FORM

Sponsoring Campus:	University of Missouri-Kansas City
Program Title:	Physician Assistant
Degree/Certificate:	Master of Medical Science
CIP Classification:	51.0912
Implementation Date:	Fall Semester, August 2013
Expected Date of First Graduation:	December 2015
Cooperative Partners	N/A

AUTHORIZATION:

Steve Graham, Senior Associate Vice President for Academic Affairs
Name/Title of Institutional Officer Signature Date

Person to Contact for More Information:
Steve Graham, Senior Associate Vice President for Academic Affairs 573-882-6396

1. INTRODUCTION

In 1965, Dr. Eugene Stead recognized that residents of North Carolina had limited access to quality medical care. In an attempt to increase medical care accessibility, Dr. Stead, chair of the Department of Medicine at Duke University Medical Center, implemented a program to educate ex-military corpsmen with extensive medical training to practice medicine under the supervision of a physician. This educational model, based in part on Dr. Stead's experience with the fast-track training of doctors during World War II, was the birth of the physician assistant (PA) profession.

PAs are highly trained and skilled individuals who have completed a baccalaureate degree and a specialized master's degree that includes basic medical sciences, pharmacology, behavioral and social sciences, health policy and professional practice issues, and extensive direct patient care clinical rotations. Today, PAs are licensed healthcare professionals practicing medicine (with direction and supervision of a doctor of medicine or osteopathy) in all general and specialty areas of medicine in all 50 states. PAs are members of healthcare teams working in concert with physicians to ensure the provision of quality patient care. They conduct physical exams, diagnose and treat illnesses, order and interpret tests, counsel on preventive healthcare, assist in surgery, and write prescriptions all under the supervision of a physician. A PA's scope of practice may also include education, research, and administrative services.

To practice as a PA, a graduate from an accredited program must pass the national PA certification exam administered by the National Commission on Certification of Physician Assistants (NCCPA) in conjunction with the National Board of Medical Examiners. In addition, to maintain certification, 100 hours of continuing medical education (CME) must be earned every two years and the NCCPA recertification examination passed every six years. Currently, there are 149 accredited PA educational programs in the United States located at medical colleges and universities, teaching hospitals, and in the Armed Forces. They have all met the standards for accreditation as set forth by the ARC-PA. All programs have similar curricula and are designed to be completed in 24 to 27months.

Implementation of a UMKC PA program will require employment of a Program Director and two PA Instructors. Resources in support of these positions are factored into the program budget. The PA program will require resource support from the School of Medicine for the first 1 to 2 years; thereafter, the program will be self-sustaining.

The PA's rigorous education, versatility, and commitment to individualized treatment allow physicians to function more efficiently and improve patient flow by releasing physicians to manage more complex or demanding cases. To this end, the American Medical Association (AMA) has established guidelines for physician-PA team practice (Appendix A). According to the Bureau of Labor Statistics, "…PAs may be the principal care provider in rural or inner-city clinics where a physician is present for only 1 or 2 days each week" (Appendix B). An AMA survey found that PAs enhance practice efficiency, and solo practice physicians who employ PAs experience expanded practice, greater efficiency and greater access to care for their patients.[1] With 632 PAs practicing in the state of Missouri in 2008, the total number of patient visits totaled 2,141,648.

[1] www.aapa.org American Academy of PAs, Hiring a PA, May 2009

Hiring a PA enhances patient satisfaction in several respects. Studies by the Kaiser Permanente Center for Health Research report high patient satisfaction levels for services provided by PAs, ranging between 89 and 96 percent.[1] Aspects of patient satisfaction examined included interpersonal care, confidence in provider, and understanding of patient problems.

The following results were noted from a 2005 NCCPA survey of PA healthcare physician employers:

1. 94% agreement PAs increase the number of patients seen,
2. 92% agreement PAs deliver shortened patient appointment wait times, and
3. 91% agreement PAs affords physicians additional individual patient visit time.

Employer satisfaction is also realized not only by having satisfied patients seen by PAs but also because PAs are able to receive third-party payer reimbursement for most public and private patient encounters. Additionally, Medicare, state Medicaid and TRICARE reimburse employers for PA-rendered services in virtually all practice settings.

2. Fit with University Mission and Other Academic Programs

2.A. Alignment with Mission and Goals

The planned PA program is fully aligned with the mission of UMKC and the School of Medicine (SOM) to *"lead in the life and health sciences, to develop a professional workforce, and to collaborate in urban issues and education."* Addressing the mission becomes especially relevant when considering the projected rise in healthcare needs resulting from recent national healthcare reform, an aging "baby boomer" population, and overall physician shortages realized most dramatically in the rural communities of Missouri.

Additionally, with national enrollment caps placed on admission of medical students and residency programs, the development and implementation of graduate-level allied health programs affords the university and the SOM an opportunity to focus on the mission while assisting with efforts aligned to improve financial solvency during a depressed economy.

This proposed Master in Medical Science PA program provides tangible support that the SOM is committed and actively engaged in meeting our mission. Preparing competent ready-to-work and much-in-demand patient care providers, the proposed PA program is postured to meet the growing demands for healthcare in a financially responsible manner.

2.B. Duplication and Collaboration within Campus and Across System

The University of Missouri-Kansas City Master of Medical Science PA program is expected to be competitive and unique. First, no other school in the Kansas City metro area or the University of Missouri System offers a PA program. The two PA programs residing in Missouri are located in Saint Louis and Springfield with a third program residing in the adjacent state of Kansas at Wichita.

The following depicts accredited PA training programs offered in Missouri and adjacent states:

		Accreditation Date
MO	Saint Louis University*	6/1/1973
MO	Missouri State University (formerly SWMS)*	10/1/1999
NE	Union College	10/1/1997
NE	University of Nebraska	11/1/1974
OK	University Of Oklahoma, Tulsa (provisional)	9/7/2007
OK	University Of Oklahoma, Oklahoma City	9/1/1972
KS	Wichita State University	11/1/1973
IL	John H. Stroger Hospital Of Cook County/Malcolm X (Chicago City-Wide/Cook County from 1988-1992)	10/1/1992
IL	Midwestern University	5/1/1993
IL	Rosalind Franklin Univ Of Medicine (formerly Finch)	5/1/1993
IL	Southern Illinois University	4/1/1997

Relative to collaborative efforts, the administrators of the UMKC PA program will not displace UMKC Nurse Practitioners from existing clinical training sites established prior to the implementation of the PA program. The two schools will communicate with one another to plan for student clinical assignments and where UMKC Nurse Practitioners and PA students occupy overlapping training sites, the two programs will work cooperatively to accommodate the training needs of both programs.

Second, the Master of Medical Science PA program is a SOM effort drawing upon the capacity of multiple disciplines. Collaboration for training and potential employment of graduates among the SOM and its Hospital Affiliations including but not limited to, St. Luke's Hospital, Children's Mercy Hospital and Clinics, Center for Behavioral Medicine**,** Research Medical Center**,** and the Kansas City Veterans Affairs Medical Center, demonstrate the commitment to provide direct patient-centered training sites and quality clinical instruction. Community involvement also is demonstrated by interest from greater Kansas City colleges and universities in Missouri and Kansas. As noted in multiple support letters (Appendix C), area affiliated healthcare facilities and universities are excited about the opportunity for a graduate-level PA program providing an educational pathway for their students.

3. Business-Related Criteria and Justification

3.A. Market Analyses: Program Need and Demand

Analyses of the market demand and community support for individuals prepared as physician assistants suggest that program graduates will be highly sought after healthcare providers. Based on national, local, and student interest data, we anticipate that the PA program will be cost effective and its graduates will be in demand to help meet increasing healthcare needs within the state of Missouri and the across the nation. Likely employers include hospitals, solo and group physician offices, nursing homes, urgent care clinics, educational settings, correctional institutions, school and universities and many others. Representing the perspectives of local and national need, Lieutenant Commander Tracy Branch, Department of Health and Human Services writes:

The Kansas City Metropolitan area long recognized for its ability to produce nationally recognized physicians now has the opportunity to extend this same level of excellence to the PA profession. A physician assistant program will now be able to capture those individuals with an interest in medicine…from urban and rural communities…timing for the creation of this program will not only be well received but will be imperative for the health care system to meet the needs of an aging and increasingly ill society.

3.A.1. Need for Program:
The June 7, 2010 issue of American Medical News published by the American Medical Association (AMA) posed the question "Will there be enough doctors to see everyone?"

National Perspective: Currently there are local and national physician and non-physician healthcare provider shortages. A report by the Association of American Medical Colleges projects future supply and demand for physicians and concludes that a national shortage is likely driven by such factors as U.S. population growth, aging population of physician providers, and increased physician visits.[2] Analyses of the data support a conclusion that the demand for physicians will outstrip supply through at least 2025. The study reports that actions beyond increasing the supply of physicians will be needed. Complex changes such as improving efficiency, reconfiguring healthcare delivery, and making better use of both physicians and other healthcare professionals will be necessary. The report concludes that future demand for physicians will be significantly reduced if physician assistants play a larger role in patient care.

In addition to current national physician shortages, recently adopted changes regarding residency training of physicians has the potential of affecting access to healthcare. As cited in an article published June 24, 2010 in the Wall Street Journal, modification of guidelines proposed by the Accreditation Council for Graduate Medical Education (ACGME) will decrease the number of hours resident physicians may work per shift and per week. Due to these duty hour limitations applied to residents, the article cites the need to supplement patient care with the use of PAs.[3] (Effective July 1, 2010 the ACGME adopted the proposed duty hour modifications).

U.S. News and World Reports lists PA as *one of the 50 best careers of 2010* with faster than average expected job growth thanks to the growing demand for healthcare services, the impending retirement of baby boomers, and broader efforts to limit healthcare costs.[4] *The volume of PA jobs is expected to grow by 39%, among the fastest occupational growth rates.* Money magazine in its November 2009 issue ranked *PAs No. 2 in the top 50 careers* with great pay and growth prospect with a *growth rate of 27% over the next 10 years* according to the Bureau of Labor Statistics 2006-2016 data. In the same issue PAs were *ranked No.7 in the best careers to have a benefit to society*.[5] In the occupational employment projections to 2018 by the *Bureau of Labor Statistics (Appendix B), PAs are expected to have a 39% increases between 2008 and 2018 with 42,800 total job openings due to growth and replacement needs.*[6]

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[2] The Complexities of Physician Supply and Demand: Projections Through 2025, Association of American Medical Colleges, November 2008
[3] New Rx for Young Doctors: Shorter Work Day, Wang, Shirley, The Wall Street Journal, WSJ.com, June 24, 2010
[4] www.usnews.com/money/careers
[5] Money.cnn.com/magazines/moneymag/bestjobs/2009
[6] Occupational employment projections to 2018, Monthly Labor Review, November 2009

Missouri (Regional) Perspective:

An important part of the mission of the University of Missouri is to provide educational programs that promote health to Missourians and the nation. Through its health science mission, the UMKC offers numerous educational programs in the fields of dentistry, medicine, nursing, pharmacy and related areas. These programs provide many of the trained professionals that are the foundation of a high quality healthcare system in the state. This proposed Master in Medical Science Physician Assistant Program will add one more locally trained profession thus enhancing the availability of community healthcare providers during a time when demand is accelerating faster than available physician supply.

A 2009 study by the Health Management Associates, Inc., funded by the Missouri Foundation for Health and the Healthcare Foundation of Greater Kansas City, concluded that Missouri has a healthcare shortage based on the ratio of the population to the availability of healthcare services.[7] *Missouri is experiencing the most acute shortage of physicians in rural areas, demonstrated by the fact that 40% of the population resides in rural areas*, but only 25% of the state's physicians practice there. With the generalist primary care training of a PA, the demand could be potentially offset with the utilization of UMKC PA program graduates.

With the 2010 Healthcare Reform it is estimated that more than 30^{+} million uninsured people nationwide will be expected to gain healthcare coverage. State health data published by the Kaiser Family Foundation reveals that 726,600 or 14.4% of Missouri's non-elderly population were uninsured in 2008. A white paper to the President of the United States and Congress, prepared on behalf of The Physicians Foundation, advocates the training and use of PAs to meet these increased needs as healthcare providers providing front-line primary care services, with generalist consultative oversight.

Given the rural healthcare physician shortage along with a projected increase of insured Missourians, PAs are predicted to be *one of Missouri's top 20 fastest growing occupations from 2009-2011* with a projection of 730 PAs in the state of Missouri in 2011, representing a two-year increase of 3.97%. It was one of the 16 new occupations to make the list. *The PA occupation itself was given a grade of A- outlook in terms of having above average openings, growth and wages.* [8]

The Missouri Department of Economic Development (Appendix D) provides information on occupational outlooks for numerous job categories on its Missouri Economic Research and Information Center (MERIC) website. This resource provides optimistic projections for job growth in a wide range of healthcare fields, specifically listing *PAs as one of Missouri's Hot Jobs today and of the future through 2008-2018 projecting 288 PA job openings over the next 10 years in the state of Missouri.*[9]

Using the Missouri Career Exploration Tool and information provided by the Office of Social and Economic Data Analysis obtained on the MERIC web site (www.missourieconomy.org), for

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[7] Recruitment and Retention of Healthcare Providers Very Difficult, Health Management Associates, Inc. 2009

[8] www.missourieconomy.org, data sources: MERIC Short-term Occupational Projections, MERIC Occupational Employment and Wage Survey, and US Bureau of Labor Statistics

[9] Missouri Economic Research and Information Center, www.missourieconomy.org/occupations

the next 10 years Missouri is expected to have 29 annual openings for PAs in health services occupations with an average salary in 2010 of $63,710 and $81,130 for experienced PAs. Sources vary slightly in terms of reported numerical percentages; however, all concur there is an ever growing need for PAs.

Local Perspective: Data obtained from the Missouri Career Exploration Tool for the Kansas City region showed a projected annual need of 5 new PA positions with a mean wage of $73,710 and experienced wage of $93,097.[10] Initially, the projected need of 5 PAs may appear low; however if the trend holds true for UMKC SOM PA graduates, as experienced in the Saint Louis and Springfield areas (both having accredited PA programs), the Kansas City PA employment opportunities will increase beyond the projected market demands. To illustrate this assumption, according to the Missouri Economic Research and Information Center (MERIC at www.misourieconomy.org/occupations/occ_proj.stm), Saint Louis regional estimates project 310 PAs employed by 2012 with recruitment efforts to fill 98 new and replacement positions between 2008 and 2018. Similarly, for the Ozark region surrounding Springfield, employment projections are for 90 PAs employed by 2012 with recruitment efforts to fill 29 new and replacement positions by 2018. Compound these figures with Health Care and Social Assistance as the top occupation in Kansas City as of 2009 (MERIC) an appreciation is gained that the demand for PAs will increase to numbers greater than 5 for the Kansas City area (Appendix D)

Many of the cited references related to the demand for additional healthcare have been superseded by the recent legislation related to the provision of national healthcare. The letters of support for the implementation of a PA program within the Kansas City area are driven mostly by anticipated need for additional providers secondarily validated by above reported results. An anticipated *thirty million additional individuals eligible for healthcare,* that a few months ago were uninsured, is more than the current physician supply can accommodate. Consequently, the healthcare profession is embracing the assistance of non-physician providers as essential to meeting the increased demands.

Letters of support for the implementation of a PA program in the Kansas City area (Appendix C) originated from academic and healthcare facilities. The general tenor of the letters may be summarized by a quote from the CEO of Research Medical Center when he wrote:

> *"Very quickly, as healthcare reform takes shape, there will be overwhelming demands for healthcare providers that cannot be fully met by the current physician population. Because of this, there will be an increased need for advanced practice healthcare professionals, including physician assistants. UMKC School of Medicine is to be commended for having the foresight and initiative to address these impending challenges."* Kevin J. Hicks.

3.A.2. Student Demand for Program

Dr. Larry Sullivan, Dean, School of Science and Health, Avila University (a private Kansas City metro university and potential undergraduate academic feeder to a UMKC School of Medicine PA program), indorses UMKC's efforts by stating:

[10] www.missourieconomy.org, Missouri Career Exploration Tool

Even though being a physician assistant is one of the fast growing health care careers, there is currently no program that is available in the Kansas City area. Each year I have students who are interested in becoming a physician assistant but they have no choice but to move to Wichita. Once they have moved, they are less likely to return to work in Kansas City…our community need for physician assistants is going to grow.

Dr. Sullivan's comments are consistent with the 2009-2010 Annual Report data from the PA Education Association e.g., the number of applicants per seat was 2.91 up from 2.75 in 2008. The mean number of new first-year students increased to 6,793, continuing the upward trend since 2001. The existing programs attract exceptionally well-qualified applicants with high overall grade point averages and an average science GPA of 3.39. Using this information, the following table is the UMKC SOM PA enrollment projections by year.

Form SE
STUDENT ERNOLLMENT PROJECTIONS

Table 1. Total Student Enrollment Projections Based on Market and Student Demand

Year	**1**	**2**	**3**	**4**	**5**
Full time	15	30	50	55	60
Part time	0	0	0	0	0
Total	15	30	50	55	60

The 27-month PA program is designed to accommodate 60 students (new to the UMKC campus), with 15 students admitted each of the first two years and 20 students admitted in each year thereafter. Ultimately with the exception of each Fall Semester, 40 will be enrolled. With a 27-month program, Fall Semester will have additional 15-to-20 students who graduate the end of Fall Semester. Initial admission will be in August with graduation seven semesters later during the Fall semester. Due to the nature of the profession and the curricula standards set by the accreditation body, all students will enroll for the entire 27-month program. An existing UMKC feeder program has yet to be established affording current students the ability to transfer into the program. Consequently, all students will be new to the PA program. Attrition rates in PA programs are low, but to maintain an average graduating class of 20 students per year, one or two additional students may be accepted each year to compensate for attrition. This size of the student body provides a sufficient number of students to assure an academically and financially strong program, while maintaining a high faculty-to-student ratio. The program is expected to be self-supporting within the 2nd year following admission of the first class. For students requiring financial counseling and potential monetary assistance, the UMKC Hospital Hill Financial Aid and Scholarship Office has services that may be beneficial.

National and statewide data and reports, scientific publications, web searches, and letters from professionals in the field were used to assess the market demand and societal need. These sources include the Bureau of Labor Statistics (Appendix B), the Missouri Department of Economic Development (Appendix D), the American Academy of PAs, the PA Education Association, the Association of American Medical Colleges and professional publications. In

developing this program directors and faculty from PA programs at Duke, Butler, the University of Iowa, and Emory offered advice about the curriculum, finances, and other aspects of the program. These directors also expressed the expectation that the new program would generate a high student demand and that graduates would be highly recruited by employers. Collectively, the sources of information support the conclusion that this program will be in high demand by students and that the graduates will be sought after as valuable members of healthcare teams that serve the needs of the state and the nation.

Enrollment Capped

A total PA student body capped at 60 students within the first 5 years will enable matching students with available resources, to include an appropriate number of faculty and clinical rotation sites, thereby assuring high quality educational courses yielding work-ready competent graduates. Future program growth will be contingent upon community and student demand, to include the implantation of feeder programs and availability of faculty and clinical rotation sites. Based on a premise that quality and cost factors contribute to community buy-in of non-physician providers, identifying clinical rotation sites and sustaining program growth seems favorable. For example, studies conducted by the Rand Corporation found that PAs save as much as 20% of the costs of medical care, can perform at least 80% of the functions in an ambulatory care practice, and are widely accepted by patients. The congressional Office of Technology Assessment studied healthcare services provided by PAs and determined that *"within their scope of practice, PAs, provide healthcare that is indistinguishable in quality from care provided by physicians"*.[11] Statements such as this are routinely presented in the media resulting in increased student demands for education and cost saving awareness by healthcare employers. The five-year enrollment cap of 60 students is well within expectations and similar to other university PA program enrollment figures (Appendix E).

[11] www.aapa.org, American Academy of PAs, PA facts, May 2009

Form FP
FINANCIAL PROJECTIONS

3. B. Financial Projections

Table 2. Financial Projections for Physician Assistant Program for Years 1 through 5.

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
1. Expenses per year					
A. One-time					
Equipment	31,500				
Library	3,000	3,000	3,500	3,500	4,000
Initial Recruitment for Faculty and Staff	5,000				
Total one-time	39,500	3,000	3,500	3,500	4,000

B. Recurring

Benefit Eligible					
Faculty	380,000	387600	395,352	403,220	411,285
Staff	92,000	93,840	95,715	98,012	100,789
Benefits for Benefit Eligible	136,300	139,000	141,800	144,700	147,800
Non-Benefit Eligible					
Medical Director	23,400	23,868	24,345	24,832	25,329
Off-site Supervisors	0	90,000	120,000	150,000	160,000
Benefits for Non-eligible Staff	1,800	8,700	11,000	13,400	14,200
Total Staff Benefits	138,100	147,700	152,800	158,100	162,000

Other Costs

Accreditation Fees	8,000	4,500	12,500	4,500	4,500
Marketing	3,000	3,060	3,121	3,184	3,247
Training	8,000	9,000	9,000	10,000	10,000
Database Modification	15,000	5,000	5,000	5,0000	5,000
Skills Replacements	4,500	5,000	5,500	6,000	6,500

Departmental Operating Expenses	21,000	21,000	21,000	21,000	21,000
Total Recurring	691,200	781,866	833,333	870,447	895,450
Total Expenses (A+B)	**730,700**	**784,868**	**836,833**	**873,947**	**899,450**
2. Revenue per year					
In-State Tuition/Fees	348,151	696,295	914,259	1,001,295	1,034,027
Out-of-State Tuition/Fees	128,808	257,615	418,682	520,683	552,942
Total Tuition + Fees	476,959	953,910	1,332,941	1,521,978	1,586,969
94.34% Tuition + Fees (PA Faculty Instruction)	**449,962**	**899,919**	**1,257,495**	**1,435,834**	**1,497,146**
3. Net Revenue per year	**(280,738)**	**115,051**	**420,662**	**561,887**	**597,696**
4. Cumulative revenue	**(280,738)**	**(165,687)**	**254,975**	**816,862**	**1,414,558**

3.B.1. Expenses *
One-Time Expenditures

1. Equipment: A copy machine will be needed because the existing copy machines in will be unable to manage the increased load. The Year 1 budget includes $10,000 for a new copy machine.
2. Office equipment to include phone jacks, data ports, chairs, computers, monitors, etc. will be purchased the first year not-to-exceed $21,000 for the 7.0 FTE.
3. Funding for recruitment is allocated in the budget in the event national searches are needed to attract the highly competent FTE's needed to begin a new program.
4. Library expenditures to support the program are estimated at approximately $3,000 during the first year and increasing to $4000 by year 5. $3,000 will be combined with the Master of Science in Anesthesia contribution of $3.000 per year. Both programs use library resources currently existing for medical students, residents, and faculty. The $3,000 is solely a contribution for maintaining current subscriptions.

Recurring Expenditures

1. Faculty (prior to students being admitted and to meet accreditation requirements):
    a. A 1.0 FTE benefit eligible program director will be hired. This position will teach courses and perform administrative duties.

b. A .2 FTE non-benefit eligible program medical director will be hired. This position will provide medical oversight of all aspects of the program and participate on key selection, promotion, and other committees as appropriate.
c. Two 1.0 FTE benefit eligible physician assistant instructors will be hired. These positions will focus primarily on didactic instruction.
d. Two 1.0 FTE benefit eligible basic science faculty will be hired. These positions will focus on didactic instruction.
e. A 1.0 FTE education coordinator will be hired to ensure compliance with accreditation standards, assign clinical rotations, ensure student and supervisory evaluations are addressed, supervise the administrative assistant, and more.
f. A 1.0 FTE administrative assistant will be hired to provide secretarial/administrative support to the above listed positions.
g. Physician and Physician Assistants located at sites where students participate in clinical (hands-on) practicum will be provided faculty status and receive approximately $6,000 per year for their supervisory/instruction contribution to the program. These supervisors are employed by hospitals, private clinics, etc. and consequently, consume no UM System resources with the exception of being provided an email account.

2. Key to the success of an innovative healthcare program is the element of skills training and simulation exercises incorporated into the curriculum. The SOM is fortunate in this aspect as there is a fully functional skills lab equipped with the latest of skill and simulation trainers. As with the annual library contribution, the PA program will make annual contributions to the lab for the replacement of artificial skin and other disposable materials that have high utilization by PA students. Initially a $4,500 contribution grows to approximately $6,000 by year 5.
3. Funding for marketing and database modifications are included to "customize" currently employed processes to fit the needs of the PA program.
4. An additional recurring cost is that of faculty and staff training. As an urban university literally sitting amongst the taxpayers of Missouri who support UMKC, maintaining instructional and clinical competencies are considered essential. Anything less would be providing the community with a return-on-their investment that would not yield healthcare providers they require and have financially supported. Initially $8,000 is allocated for training during year 1 and increases to $10,000 through year 5.

* Data calculations obtained using UM Expenditure Template (Appendix I)

3.B.2. Revenue

All revenue from this program will be generated by tuition and fees associated with admission of students to the program.

The following page illustrates revenue generation based on a fixed yearly collections projected for in- and out-of-state students over the course of 7 semester from matriculation to graduation. With 100 credit hours of PA faculty instruction vs. 6 credit hours provided by SOM faculty, total revenue per year reflects an adjustment to 94.43% of actual collections. It is anticipated that most, if not all, students will be new to the campus. This assumption is based on the fact there

are no UMKC undergraduate-level health science degrees providing a direct pathway to the Master of Medical Science Physician Assistant degree. Additionally, admission to the program is not expected to occur by transfer from other PA programs. All students are expected to enter at year one and complete the entire program at UMKC. Affiliations establishing Missouri academic feeder schools are being pursued. For projections purposes, 20% of students are anticipated to be out-of-state students paying out-of-state tuition rates leaving the remainder of students (80%) paying in-state tuition. None of the students will receive discounted tuition.

UMKC School of Medicine Master of Medical Science Physician Assistant
Revenue Projections per Semester per Enrolled Student

	Year 1 Fall *	Year 1 Spring	Year 1 Summer	Year 2 Fall	Year 2 Spring	Year 2 Summer	Year 3 Fall	Year 3 Spring	Year 3 Summer	Year 4 Fall	Year 4 Spring	Year 4 Summer	Year 5 Fall	Year 5 Spring	Year 5 Summer
In-State Tuition Rate (flat rate)	$10,457	$10,457	$6,971	$10,457	$10,457	$6,971	$10,457	$10,457	$6,971	$10,457	$10,457	$6,971	$10,457	$10,457	$6,971
In-State Fees	$454	$454	$220	$454	$454	$220	$454	$454	$220	$454	$454	$220	$454	$454	$220
Out-of-State Tuition Rate (flat rate)	$10,457	$10,457	$6,971	$10,457	$10,457	$6,971	$10,457	$10,457	$6,971	$10,457	$10,457	$6,971	$10,457	$10,457	$6,971
Out-of State Fees	$5,673	$5,673	$3,706	$5,673	$5,673	$3,706	$5,673	$5,673	$3,706	$5,673	$5,673	$3,706	$5,673	$5,673	$3,706
In-state Fall Addmittance 1 Time Annually	12			12			15			15			15		
Out-of-State Fall Addmittance 1 Time Annually	3			3			5			5			5		
In-State Enrollment	12	12	12	24	24	24	39	27	27	42	30	30	45	30	30
Out-of State Enrolled	3	3	3	6	6	6	11	9	9	14	11	11	16	11	11
In-state Tuition Revenu	$125,478	$125,478	$83,652	$250,956	$250,956	$167,304	$407,804	$282,326	$188,217	$439,173	$313,695	$209,130	$470,543	$313,695	$209,130
Out-of-State Tuition Revenue	$31,370	$31,370	$20,913	$62,739	$62,739	$41,826	$115,022	$94,109	$62,739	$146,391	$115,022	$76,681	$167,304	$115,022	$76,681
Total Semester Tuition	**$156,848**	**$156,848**	**$104,565**	**$313,695**	**$313,695**	**$209,130**	**$522,825**	**$376,434**	**$250,956**	**$585,564**	**$428,717**	**$285,811**	**$637,847**	**$428,717**	**$285,811**
Total In-State Fees	$5,451	$5,448	$2,644	$10,896	$10,896	$5,287	$17,706	$12,258	$5,948	$19,068	$13,620	$6,609	$20,430	$13,620	$6,609
Total Out-of-State Fees	$17,019	$17,019	$11,117	$34,038	$34,038	$22,235	$62,403	$51,057	$33,352	$79,422	$62,403	$40,764	$90,768	$62,403	$40,764
Total Semester Fees	**$22,470**	**$22,467**	**$13,761**	**$44,934**	**$44,934**	**$27,522**	**$80,109**	**$63,315**	**$39,301**	**$98,490**	**$76,023**	**$47,373**	**$111,198**	**$76,023**	**$47,373**
							(first class of 15 graduate end of Fall Semester)			(second class of 15 graduate end of Fall Semester)			(third class of 20 graduate end of Fall Semester)		

Total In-Stae plus Out-of-State Tuition and fees for Years 1 - 5 (data from UMKC Cashier Web site, School of Medicine, Graduate 2011)

Year 1 Fall	Year 1 Spring	Year 1 Summer	Year 2 Fall	Year 2 Spring	Year 2 Summer	Year 3 Fall	Year 3 Spring	Year 3 Summer	Year 4 Fall	Year 4 Spring	Year 4 Summer	Year 5 Fall	Year 5 Spring	Year 5 Summer
$179,317	$179,315	$118,326	$358,629	$358,629	$236,652	$602,934	$439,749	$290,257	$684,054	$504,740	$333,184	$749,045	$504,740	$333,184

Teaching Responsibilities	
Total Program Credit Hours = 106	**% of total hrs.**
PA Faculty Instruction = 100 hours	**94.34%**
Other Faculty Instruction = 6 hours	5.66%

Yearly Totals of Tuition plus Fees Not Adjusted for Inflation

Year 1	Year 2	Year 3	Year 4	Year 5
$476,958	$953,910	$1,332,940	$1,521,978	$1,586,968

Yearly Tuition Plus Fees Attributed to 94.34% PA Faculty Instru

Year 1	Year 2	Year 3	Year 4	Year 5
$449,962	$899,919	$1,257,495	$1,435,834	$1,497,146

*Matriculation & Graduation Occur Fall Semester Secondary to a 7 Semester Program.

3.B.3. Net Revenue

The return-on-investment when cumulative revenue exceeds cumulative expenses occurs in year 3 as identified in Table 2. Tuition collections plus fees (revenue) are based on 2011 UMKC Cashier and Collections (http://www.umkc.edu/adminfinance/finance/cashiers/school-of-medicine-tuition-fee-rates.asp) for School of Medicine, Medical Graduate Anesthesia tuition rates (with subsequent years not adjusted for inflation or possible state approved increases). One-hundred credit hours of the total 106 program credit hours are taught by PA faculty resulting in a net revenue equal to 94.34% of collected revenue (e.g., combination of tuition and fees). Employing this percentage, the annual net revenue and the cumulative revenue become positive and remain positive with a sustained and minimal enrollment of 30 students per year. That is, approximately 50% of the student enrollments projected as an ideal enrollment by year 5 will yield cumulative revenue sufficient for the program to remain financially viable.

Table 3. Enrollment at the End of Year 5 for the Program to Be Financially and Academically Viable.

Enrollment Status	Full-Time	Part-Time	Total
Number of Students	30	0	30

3.C. Business and Marketing Plan: Recruiting and Retaining Students

Recruitment audiences for the Master in Medical Science program can range from the high school senior, to the college undergraduate to the non-traditional returning student, to the working professional. The recruitment goal is to obtain a highly qualified student body that is diverse across traditional/non-traditional student categories, age, gender, race and ethnicity. There is a strong demand for the Master in Medical Science PA program among both traditional and non-traditional students. The demand for the program is expected to increase after the recruitment plan is implemented secondary to increased student awareness.

The recruitment plan will be comprehensive and use multiple proven methods to reach both traditional and non-traditional students. The recruitment methods for traditional undergraduate students will include presentations/attendance at career and college fairs throughout Missouri, direct mail including invitations and brochures for the program, and visiting with high school counselors throughout the establishing career awareness during early academic planning.

With students and society in general being increasingly web-based savvy, a website will be developed specifically for the Master in Medical Science PA program to include web-based services. Paragraphs about, and links to, the PA program will be present on collaborating academic units websites. You Tube videos, Facebook and Twitter will also be utilized to reach potential UMKC PA program students.

An identified recruitment audience for the Master in Medical Science program will be current undergraduate students. For example, UMKC, Rockhurst University, Avila University, Central Methodist University and Baker University have specific Pre-PA tracks. With UMKC offering a graduate level PA program, students typically want to stay in the area to attend PA school and usually apply to Missouri State, St. Louis University, Wichita State and the Oklahoma PA

programs per discussion with advisors from each of the respective universities. As expressed in the letters of support, facilities from these schools believe that a PA program at UMKC would be highly attended by their students. Park University, William Jewell College and Benedictine College would also be a source of potential students. By aligning the SOM PA graduate level program with existing pre-PA programs, a direct linkage resulting in an educational pathway will be an option to attain an advanced healthcare degree within the local community. This will result in a win-win scenario for the student while meeting the demands of local healthcare providers and is illustrated nicely with the following statement:

> *Our students have gone to Wichita State University…The University of Oklahoma…Barry University (FL), Union University (TN), The University of Tulsa, and Samuel Merritt University (CA)…All … would choose, if they could, to stay in the KC area for their master's degree, but currently this is not an option for them. (Dr. Darcy Russell, Baker University).*

Other Marketing Initiatives

Information sessions will be held for prospective students attending UMKC and colleges and universities in surrounding communities. Many of the universities indicated having student organizations (i.e. Biological Science Student Government and Pre-Med Societies), each providing an informative educational opportunity for presentations by SOM PA faculty.

In addition to student-facilitated meetings, marketing the program to pre-health advisors and Career Placement offices are an opportunity to provide literature, posters, handouts and admission requirements for dissemination to interested students. The UMKC College of Arts and Science offers a freshman seminar course that may spike pre-health student interest for future academic pursuit. Other options for consideration include approaching the School of Biological Sciences to provide similar information to biology/chemistry students. Many of the pre-health students will take the Medical College Admissions Test (MCAT). Efforts will be made to contact students who have taken the MCAT with the intent of identifying potential candidates for admission to the PA program (MCAT purchase will be shared with the Master of Science in Anesthesia program).

To facilitate recruitment of non-traditional students, public service announcements as well as direct mailings will be used. Once established an open houses will be advertised and offered to the community thereby showcasing the PA profession and career opportunity.

Physicians, and several non-physician healthcare providers, including PAs, Emergency Medical Technicians and Paramedics are required to obtain continuing medical education (CME) hours. As an accredited CME provider, marketing both programs simultaneously may be beneficial. Networking with community healthcare providers through CME activities may also identify potential future preceptors and lecturers for a growing enrollment in the PA program.

Professional organizations to include the Missouri Academy of PAs, Missouri Emergency Medical Services Association, Missouri Physical Therapy Association and the Missouri State Medical Association hold meetings on a routine basis providing additional exposure. Marketing efforts in professional journals will be ongoing.

Historically, the first PA students were military corpsman who gained extensive medical training while honorably serving our country. Those same skills are being acquired today by men and women serving our military forces. For these veterans, the SOM is participating in the Yellow Ribbon Program, a provision of the post-9/11 Veterans Educational Assistance Act of 2008 for tuition assistance. The combination of available tuition assistance by the Department of Veterans Affairs and a Master of Science PA program provides an unparalleled opportunity to give back to those eligible veterans who have defended our country and the basic rights afforded to us all.

Student Retention and Assessment

The proposed Master of Medical Science PA degree is designed as a rigorous and demanding program. Nonetheless, if UMKC's PA program mirrors the national application trend (*i.e.,* 2.9 applicants per seat) it is anticipated that more applicants than available student positions will be realized.

A selection committee charged with reviewing applicants and interviewing those who have excelled in meeting the prerequisites will determine program acceptance. Influencing factors to include attributes of maturity, adaptability, and expression of personal values are considered meaningful behavioral indicators of program success; each contributing to the overall selection process.

For students accepted into the PA program, the following factors have been realized through personal observations to increase retention:

1. Student-to-faculty ratio: Didactic class sizes of 20 or fewer students with daily instruction provided by interdepartmental instructors, PA faculty and the Medical Director.
2. Clinical rotations with daily evaluations completed by the student and the supervisor. Supervisory evaluations of students' mastery of objectives and competencies are collected and evaluated. Intervention by the Program Director will be immediate when a student's learning appears compromised. Minimally, on a semester basis, every student will meet with one of the three PA faculty to review student progression.
3. Recorded simulation/skills training providing immediate supervisory debriefing of each student's performance. Each student will have the availability of a recorded copy of their training thereby enhancing the opportunity to self-learn.

Philosophy

Not all students learn in a similar manner; students bring diverse and different values to the Program. Diversity of values and learning styles (among other variables) have influenced the "what, how, and when" related to student assessments. Assessments of learning are now linked to mastering competency-based objectives as measured using various modalities (e.g., through observation, written tests, oral presentations). Regardless of the modality of assessment, evaluations are focused on knowledge, skills, and attitude as demonstrated through systems-based practice, professionalism, interpersonal communication skills, practice-based learning and improvement, medical knowledge, and patient care (Appendix F).

In addition, small class sizes, a philosophy and structure to intervene in a rapid and timely manner, interdisciplinary professional involvement and SOM organizational structure (e.g., the Allied Health Advisory Committee, the Council on Graduate Studies, the Council on Progressions, and community clinical rotation sites), PA program faculty who devote 100% to the success of the students, and daily competency-based assessments with immediate student feedback have proven effectively employed within the SOM. The continuation of an already proven effective model seems prudent.

Estimated Marketing Cost

Historically, marketing strategies consolidated with other SOM program marketing initiatives have proven cost effective. Consequently, by employing consolidated marketing initiatives within the SOM, the PA's Program initial contribution of $3,000 will realize greater returns than if marketing the PA program in isolation.

Plans Ensuring Program Enrollment Outcomes are Achieved

Enrollment will be highly dependent upon identification of sufficient clinical rotation sites to accommodate students in the final four semesters (*i.e.*, approximately 40 students). With utilization of the physician assistants already woven into the fabric of local, regional, and national healthcare, and the recent healthcare reform legislation, acquiring the necessary clinical rotation sites to accommodate the PA program training needs is not anticipated to be problematic. The diverse origin of the support letters (Appendix C) reinforces the contention that clinical rotation sites will not become a barrier to achieving projected enrollment figures.

All healthcare facilities that affiliate with UMKC are expected to provide to the PA students clinical training resources that meet the standards set forth by the program administration. Those standards include but are not limited to the following:

1. One-on-one supervision by a physician or certified PA.
2. Education in medical and surgical clinical practice experience appropriate to the clinical rotation consistent with the prevailing standard of care while always keeping patient safety at the forefront.
3. Daily evaluation of student performance with timely oral and written feedback to students and to program administration.

Training facilities providing clinical rotations have a desire to educate PAs and to use the student rotations as "on-the-job interviews". As experienced with other programs requiring clinical rotations, the rotations ultimately materialize as future employment opportunities for the graduate.

Retention

The program is characterized by the following attributes that are projected to enhance student retention:

1. Diverse backgrounds for the student body promoting shared learning among peers.

2. Progressively larger enrollments with class size culminating at 20 students in the first 5 years affording individual attention to student development and professional and academic progress throughout the program.
3. An exceptional learning environment with shared faculty from combined SOM and UMKC disciplines, exposing the student to the vast range of disciplines and skills involved in modern healthcare.
4. Clinical rotation sites affording practicum experiences with diverse populations of patients representing
   prenatal to geriatric patients, gender differences, and socioeconomic differences.
5. Resources to include extensive utilization of the Youngblood Medical Skills Laboratory and other skills/simulation opportunities currently available on UMKC Hospital Hill campus.
6. In addition to receiving instructor feedback regarding student progression, the PA Advisory Committee, the Committee on Progression, and the SOM Council on Graduate Studies receive semester reports on each student and intervene when a student is experiencing academic difficulties.

The student may self-initiate assistance when experiencing academic or personal challenges. At their disposal are SOM academic advisors, UMKC campus assistance related to sexual/relationship violence, harassment/discrimination, computer/technical, and health and wellness programs.

4. Institutional Capacity

While considering the ramifications of establishing another program within the SOM (which included the aspect of institutional capacity) reviews of the proposal by the SOM Chief Fiscal Officer, SOM Council on Graduate Studies, and the Dean have all indicated support for the proposal.

With the implementation of an Allied Health Office within the SOM, the framework, integration, and business model for the PA program will mirror the existing Master of Science in Anesthesia program. In doing so, much of the academic foundation has been laid. An overlay of another graduate level program will only strengthen the allied health component of the SOM, financially benefit the UM system, and contribute to the mission of increasing UMKC's community involvement and awareness as a leader in healthcare education. Consequently, the Master of Medical Science PA program will not reduce the quality of existing programs. By building upon existing resources and fostering collaborations, the new master level PA program will strengthen existing programs and provide new opportunities for students and faculty members.

The value of the proposed PA program to the UMKC community is indicated by the strong support received from faculty members and administrators throughout the university, along with community support from St. Luke's Hospital, Children's Mercy Hospital and Clinics, Kansas City Veterans Affairs Medical Center, and Center for Behavioral Medicine. The depth and breadth of support by academic units and community partners reflects the excitement and commitment for the program and the need for additional skilled practicing PAs in our community.

Form PG
PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

5. Program Characteristics
5.A. Program Outcomes
PA program will add to and not detract from the quality of existing programs. By building upon existing resources and fostering collaborations, the UMKC SOM PA program will strengthen existing programs and provide new opportunities for students and faculty members.

The learning outcomes are identified by the ARC-PA accreditation body (Appendix G). While enrolled in the Program, course competencies as defined by the ARC-PA will be mastered by receiving appropriate grades for demonstrating competency- based knowledge and skills and receiving positive supervisory evaluation reports (see 5.E. for more detail). Ultimately, the successful outcome of a student's participation in the PA program will be measured by passing the national board examination, gaining state licensure, and receiving clinical privileges by their employer.

A PA program could lead to the development and/or expansion of existing programs and educational opportunities at UMKC. To reference a few, formal post-graduate educational programs made available to NCCPA certified PAs wanting to further their education in preparation of practicing in a specific discipline or specialty (similar to a residency program for physicians) could be a consideration. Another possible educational opportunity is to offer a scholars program similar to the six-year medical school program that currently exists at UMKC. Finally, but not all inclusive in terms of expansion, is to offer an online/distant learning PA Master option benchmarked to the University of Nebraska, and other similar on-line academic programs, that offers this opportunity for those PAs who graduated from a bachelor's level PA program.

Form PS
PROGRAM STRUCTURE

5.B. Program Structure

The UMKC Master of Medical Science PA program will be housed in the School of Medicine (SOM), with the majority of clinical training anticipated to occur within the Kansas City metropolitan area. Ultimately, the program will be financed entirely by income from tuition consistent with SOM rates. These rates are nationally competitive with other PA programs (Appendix E) and will generate, on average when accounting for instate and out-of-state tuition, approximately $70,000 per student for the entire program based on 2011 SOM tuition rates.

1. Total credits required for graduation: 106
2. Residency requirements, if any: N/A
3. General education: Total credits for general education courses: 0
4. Major requirements: Total credits specific to degree: 106

Courses (specific course or distribution area and credit hours):

Course	Hrs	Course	Hrs	Course	Hrs
Anatomy w/ lab	4	Physiology	3	Foundations in Medical Science I	4
History and Physical Diagnosis	3	Health Research Methods	2	Clinical Medicine I	4
Pharmacotherapeutics	3	Foundations in Medical Science II	4	Patient Assessment	3
Clinical Laboratory and Diagnostic Methods	2	Clinical Medicine II	4	Behavioral Health	3
Emergency Medical Problems and Management	3	Professional Role Issues	2	Family Medicine Clinical Rotation	8
Emergency Medicine Clinical Rotation	4	General Surgery Clinical Rotation	4	Internal Medicine Clinical Rotation	8
Pediatrics Clinical Rotation	4	Behavioral Medicine Clinical Rotation	4	Obstetrics/Gynecology Clinical Rotation	4
Rural/Community Health Clinical Rotation	2	Long Term Care/Geriatrics Clinical Rotation	2	Senior Seminar	3
Professional Practice	2	Legal and Ethical Aspects of Medicine	2	Health Promotion/Disease Prevention	3
Capstone Project	4	Clinical Rotation	4	Clinical Rotation	4

5. Free elective credits: Total free elective credits: 0 (*The sum of hours required for general education, major requirements and free electives should equal the total credits required for graduation).*

6. Requirement for thesis, internship or other capstone experience: Formal ground round presentations to the UMKC medical community to include a referenced review article or a written case summary are required.

7. Any unique features such as interdepartmental cooperation: An anticipated expectation is that students enrolling in the Master of Medical Science PA program will come from diverse backgrounds ranging from traditional graduate students with a science degree to those seeking to expand upon their professional healthcare career. All students are expected to enroll full time for the duration of the 27-month course of study.

The first year is dedicated to didactic study augmented by skills, simulation, and standardized patient training. The student must complete 44 credit hours of classroom instruction meeting the educational requirements as set forth by the Accreditation Review Commission for PAs. Faculty from the SOM, certified PAs, and PA physician faculty will provide the instructional body.

The remaining semesters of the program are spent in clinical rotations in a variety of medical settings completing 48 credit hours of direct patient-centered training and instruction under direct PA faculty supervision. This clinical education is enabled by PA faculty appointments of community physicians and PAs, yearly "supervision remuneration", and collaboration agreements between the University and clinical training sites. The legal agreements between the University and the clinical training sites assign liability to the appropriate entities and describe the relationships between the student, the University, the healthcare facility and the private physician practice.

To learn their clinical trade, PA students must be given the opportunity to actively participate in patient care. Quality clinical practice sites will be identified to provide opportunities for clinical instruction. The individual facilities "see" the student rotations as "on-the-job interviews" to facilitate future employment of graduates.

During the last semester, students focus on professional aspects of PA practice. The program culminates with a senior capstone project consisting of a formal presentation to the UMKC medical community.

The Youngblood Medical Skills Laboratory provides the following resources to PA students: standardized patient exams, Objective Structured Clinical Examination (OSCE), video conferencing, mannequins and simulators to practice clinical skills and recording systems for debriefing purposes. These outstanding facilities will make the UMKC PA program attractive to potential students.

5.C. Program Design and Content

Standards established by the *ARC-PA*, the *NCCPA (Appendix H)* and *Competencies for the PA Profession* (Appendix F) *provide* the foundation for design and content of the proposed PA program. In addition, site visits with accredited graduate-level PA academic program officials validated our conceptualizations of a master level PA program.

Table 5 provides an overview of course offerings by year and semester followed by a comprehensive description of each course. Courses will receive a catalog number exclusively assigned to the PA program and consequently considered a "new" course. Learning outcomes for each course consists of successfully achieving competencies as referenced in the preceding paragraph and assessed as defined in Section 3.C, Student Retention and Assessment, in accordance with national accreditation guidelines.

Table 4. PA Program Curriculum Design by Year and Semester

Didactic Year (3 Semesters)

Fall Semester	**Spring Semester**	**Summer Semester**
Anatomy w/Lab (4)	Clinical Medicine I (4)	Clinical Medicine II (4)
Physiology (3)	Pharmacotherapeutics (3)	Behavioral Health (3)
Foundations in Medical Science I (4)	Foundations in Medical Science II (4)	Emergency Medical Problems and Management (3)
History & Physical Diagnosis (3)	Patient Assessment (3)	Professional Role Issues (2)
	Clinical Laboratory and	
Health Research Methods (2)	Diagnostic Methods (2)	
Total Credit Hours 16	**Total Credit Hours 16**	**Total Credit Hours 12**

Clinical Year (3 Semesters)

	Internal Medicine 8 weeks/8 credits	Obstetrics/Gynecology 4 weeks/4 credits
Family Medicine 8 weeks/8credits		
Emergency Medicine 4 weeks/4 credits	Pediatrics 4 weeks/4 credits	Rural/Community Health 2 weeks/2 credits
	Behavioral Medicine 4	Long Term Care/Geriatrics 2
General Surgery 4 weeks/4 credits	weeks/4 credits	weeks/2 credits
	Elective Rotation I 4 weeks/4	Elective Rotation II 4 weeks/4
Total Credit Hours 16	credits	credits
	Total Credit Hours 20	**Total Credit Hours 12**

Senior Year (One Semester)

Senior Seminar (3)
Professional Practice (2)
Legal and Ethical Aspects of Medicine (2)
Health Promotion/Disease Prevention (3)
Capstone Project (4)
Total Credit Hours 14

Total Program Credit Hours = 106

- PA Faculty Instruction = 100 hours
- Other School of Medicine Faculty Instruction = 6 hours

Didactic Curriculum: ("New Hire" represents references to a total of 4.0 FTE and is listed as New Hire A, B, C, and D. Course responsibilities for the 2.0 PA instructors B and C may vary dependent upon qualifications and an attempt to provide an even teaching distribution per semester for each**).**

Anatomy (with lab) *New Hire A: SOM Basic Science Faculty*
An organ systems approach to the introduction of gross anatomy using both lecture and lab format while including the use of illustrations, models, radiology films and cadaver dissection. The focus will be on the relationship between anatomical concepts and practical application to clinical practice

Physiology *New Hire D: SOM Basic Science Faculty*
A systems approach to normal function of the human body including relevant anatomical information. Lectures and assigned readings progress from cell physiology through the physiology of various organ systems. Focus is on how each contributes to the normal functioning of the body as a whole. Clinical examples that illustrate the consequences of malfunction are used to emphasize, by comparison, normal physiology; however, the focus is not on diagnosis and treatment. The course develops a strong foundation for the study of pathophysiology and disease states.

Foundations in Medical Science I *Instruction by existing SOM Faculty*
An introduction of the basic principles of biochemistry, clinical nutrition and pharmacology taught in a modular format. The biochemistry module provides an overview on the fundamental building blocks of life, metabolic pathways essential for living organisms and genetic reproduction as they relate to health and disease. It will include the structure and function of proteins, enzyme kinetics, and metabolism of carbohydrates, lipids and amino acids. The nutrition module covers the basic science of human nutrition and relates the biochemical and physiological aspects of nutrition in health and disease. The pharmacology module covers basic principles of drug action, drug disposition, and drug toxicity, providing the foundation for the pharmacotherapeutics course taught Spring semester.

History and Physical Diagnosis *New Hire B: PA Instructor*
This course focuses on developing skills to perform a complete history and physical examination on patients over the spectrum of ages and clinical situations that a physician assistant may encounter in clinical practice. The learning experiences emphasize the principles, skill, routines, and special tests appropriate for the assessment of disease involving the cardiovascular and respiratory systems. A secondary aim of this course is the development of skill in formulating an appropriate diagnosis and treatment plan derived from information taken in the history and identified from the physical exam. The course will stress the accurate presentation of information in both written and oral forms.

Health Research Methods *New Hire C: PA Instructor*
This course introduces the student to research methods used in clinical and community-based research. The course is organized around a series of lectures, exercises, and literature reviews designed to show how research proposals are developed and how to interpret research performed by others. Topics include problem definition, hypothesis formulation, study design, sample

selection, scientific measurement, statistical options, interpretation of results, and ethical considerations. Interpretation of the medical literature is emphasized.

Foundations in Medical Science II *Instruction by existing SOM Faculty*
Concepts in Medical Genetics, Immunology and Clinical Microbiology are presented in separate modules. The Medical Genetics module provides a foundation for understanding the role of genes and chromosomes in basic patterns of inheritance, genetic factors in disease, screening and testing for genetic abnormalities and ethical and legal considerations. The Clinical Microbiology module covers pathogenic bacteria, fungi, viruses and animal parasites in relation to human disease with an emphasis on pathogenesis, mechanisms of virulence, epidemiology, therapy and prevention. The Immunology module introduces basic principles of human immunity, response of the body to injury and common immunologic disorders. It will present the components of the immune system, functional roles of B cells, T cells, antibodies and cytokines, antigen recognition and antibody response, primary and secondary immunodeficiency disease and explores tolerance and the immune response to bacteria and viruses.

Pharmacotherapeutics *Instruction by existing SOM Faculty*
Drug categories and specific drugs used in the treatment of common diseases are presented using an organ systems approach to therapeutic management. Indication, contraindications, drug-drug interactions, appropriate drug dosing and monitoring are covered. Additionally, pharmacologic management of pregnant/lactating females, pediatric and elderly patients is included.

Fundamentals of Clinical Medicine I *New Hires: Medical Director & PA Instructors B & C*
An organ-system approach to disease, emphasizing the pathophysiology, clinical presentation, and diagnostic and therapeutic management of common disorders involving an in-depth study of the cardiovascular, pulmonary, renal, gastrointestinal, skin, musculoskeletal and rheumatologic systems using lectures, case discussions and critical thinking sessions to help students focus their learning.

Patient Assessment *New Hire C: PA Instructor*
This course continues to develop skills in performing a complete and problem-specific history and physical examination on patients over the spectrum of ages and clinical situations. The learning experiences focus upon the principles, skills, routines and special tests appropriate for the assessment of diseases involving the eyes, ears, nose, throat, gastrointestinal, dermatological, musculoskeletal, and nervous systems. Didactic lectures on exam techniques and interpretation of physical exam findings are given. Physical exam skills labs, patient simulations, and patient work-ups as well as small group discussions provide opportunities to develop clinical skills essential to patient evaluation and management. In weekly small-group tutorials, students concentrate on the critical thinking skills relevant to developing and defending differential diagnoses and treatment plans on hospitalized patients providing verbal and written feedback to faculty.

Clinical Laboratory and Diagnostic Methods *New Hire B: PA Instructor*
Three part course covering radiology, clinical laboratory tests and electrocardiography (ECG). Includes basic principles of radiology (indications for, contraindications of, materials used, information obtained and complications), pathology, and the correlation between disease process

and interpretation of clinical laboratory diagnostic tests. Includes demonstration and practice of various laboratory methods including ECG theory and interpretation.

Fundamentals of Clinical Medicine II
New Hires: Medical Director & PA Instructors B & C augmented by existing SOM Physician Faculty

Continuation of Clinical Medicine I, with the in-depth study of the pathophysiology, clinical manifestations and prognosis associated with the disease states affecting the neurological, endocrine and hematopoietic systems along with the study of general pediatrics and women's health.

Behavioral Health *Instruction by existing SOM Faculty*
An overview of human behavior and psychopathology, including clinical evaluation and neurological assessment of patient, human sexuality, organic mental disorders, substance abuse, and dependency, partner violence, mood disorders, personality disorders, anxiety disorders, adjustment disorders, and concepts for patient education and behavioral modification techniques to deal with the various types of patients encountered.

Emergency Medical Problems and Management with Clinical Skills Lab
New Hire: Medical Director & PA Instructors B & C
Introduction to diagnosis and management of acute trauma, including thoracic injuries, fractures, facial injury, hemorrhagic shock and head and neck injuries. Incorporation of basic and advanced cardiac life support (BCLS & ACLS) including sudden death, chest pain, acute myocardial infarction, dysrhythmia, cardiopulmonary, pharmacology, and airway management. Emergency presentation and evaluation of acute respiratory failure, the acute abdomen, burns, poisoning, altered mental status, near drowning and anaphylaxis, hypertensive crisis, and acute ear, nose and throat problems are some of the topics covered. Techniques in clinical procedures are introduced and include injections, gowning and gloving in the operating room, sterile technique, venipuncture, casting, suturing, and lumbar punctures.

Professional Role Issues *New Hire: PA Instructor B*
This course provides students a historical perspective of the evolving professional, clinical, and intra-professional roles carried out by physician assistants through a study of the organizational, political, legal and socioeconomic forces that have and continue to shape the profession.

<u>Clinical Clerkships/Rotations</u>
A full spectrum of potential clinical rotations should occur with preceptors practicing in the following disciplines:

Family Medicine
This eight-week rotation is designed to provide a practical clinical patient care experience in the outpatient primary care setting for different age groups. Students are provided the opportunity to deliver acute care and continuing care and address health maintenance issues in keeping with the primary-care philosophy and under the supervision of an internist or family practitioner.

Internal Medicine
During this eight-week rotation, the student learns to apply basic medical knowledge to the problems and situations encountered on an internal medicine service. By collecting a database, formulating a complete problem list, and participating in daily rounds and in the management of patient problems, the student develops an awareness of the complexity of disease processes and differential diagnosis.

Pediatrics
In this four-week rotation, the student is assigned to either an institutional setting or a community-based pediatric site. Special emphasis is placed on communication skills and relating sensitively to both children and parents. The student gains familiarity with normal growth and development, pediatric preventive medicine and evaluation and management of common childhood illnesses.

Obstetrics/Gynecology
During this four-week rotation, the student learns about common gynecological problems, pregnancy, and delivery. Assisting during surgery may be a part of the rotation. The rotation emphasized routine gynecological and prenatal care, clinical experience with cancer detection techniques, abnormal menstruation and bleeding infections, and contraception counseling.

Surgery
This four-week rotation explores practical experience with general surgical problems. The student participates in the management of hospitalized patients, including assisting during surgery, preoperative and postoperative care, and daily ward rounds.

Emergency Medicine
This four-week rotation emphasized the roles and functions of the emergency department. The student has the opportunity to gain experience in the evaluation and management of trauma situations and emergency intervention from both the medical and surgical aspects. Students gain experience in the initial evaluation of emergency room patients, perform problem-specific exams and practice minor surgery skills.

Rural/Community Health
This two-week primary care rotation is held in rural health clinics throughout the state of Missouri or in community-oriented clinics throughout the Kansas City area. Emphasis is placed on the economic, social and cultural influences that affect the health of communities and special populations.

Psychiatry
This four-week mental health rotation is designed to promote an understanding of the behavioral components of health, disease and disability. Contact with patients who exhibit a variety of emotional illnesses and disabilities are used to refine history taking and mental status examination skills, to recognize and categorize psychiatric disturbances and to identify techniques of early intervention and psychiatric referral.

Long-term/Geriatrics
This two-week Geriatric rotation is designed to emphasize the special needs and challenges of treating the aging patient. Different settings are utilized including skilled nursing facilities, primary care settings, and inpatient settings.

Each student "elects" 2 clinical rotations, each four weeks in length, in areas of vocational interest to include:

1. Community and Family Medicine
2. Occupational Medicine
3. Geriatrics
4. Primary Care
5. Behavioral Medicine
6. Inpatient Medicine
7. General Surgery
8. Emergency Medicine
9. Pediatrics
10. Obstetrics/Gynecology
11. Cardiology
12. Dermatology
13. Endocrinology
14. Hematology/Oncology
15. Infectious Diseases
16. Gastroenterology
17. Nephrology
18. Neurology
19. Pulmonary Medicine
20. Rheumatology
21. Radiology
22. Cardiothoracic Surgery
23. Otolaryngology
24. Neurosurgery
25. Orthopaedics
26. Plastic Surgery
27. Sports Medicine
28. Trauma

(Not an all-inclusive list)
Senior Year
Senior Seminar
In small group and lecture settings, students review clinical cases and common medical topics and procedures. A final written summative evaluation is part of this course, which also serves as preparation for the PA National Certifying Examination (PANCE)

Professional Practice

Students are offered an opportunity to acquire knowledge and skills specific to enhancing clinical practice knowledge, including elements of accountability, proper diagnostic coding and reimbursement issues, scope of practice, state law for licensure and certification, and maintenance of clinical skills.

Legal and Ethical Aspects of Medicine
The goals of this course are to introduce students to the basic concepts and language of medical ethics, to acquaint students with clinically relevant topics in medical ethics, and to provide an opportunity for students to develop skills in the application of medical ethics to clinical cases.

Health Promotion/Disease Prevention
This course emphasizes patient education topics using the health promotion/disease prevention model of the Healthy People 2010 document culminating in a presentation by the student on a specific patient education intervention.

Capstone Project
Required is a formal presentation to the UMKC medical community with submission of an original referenced review article and a written case summary. The formal presentation is based on an in-depth patient case study encountered during his/her clinical rotation. Presentation will demonstrate the evidence-based process that led to the final diagnosis, treatment plan, prognosis and patient counseling; preventive medicine aspects of the disease will also be addressed. The referenced review article and case summary will be provided to interested faculty in advance of the formal presentation affording the faculty an opportunity to generate questions proactively regarding the case.

5.D. Program Goals and Assessment
A number of parameters will be utilized to determine if the program goals are being addressed, achieved, and aligned with national accreditation standards and SOM goals as presented in the current strategic plan. The processes of assessing learning outcomes will include using multiple competency-based evaluation tools, assessment of student, supervisor and employer satisfaction ratings, first-time national boards pass rate, and percentage of employment vs. eligible for employment. The following represent a sampling of goals and assessments specific to addressing the 5.D. section:

1. employing standardized assessment tools, direct instructor/student observation, daily supervisory evaluations related to clinical rotation knowledge, skill, ability, and professionalism,
2. standardized patient and skills/simulation training followed by faculty initiated debriefing exercises,
3. audience (physician, PA, and other healthcare professionals) assessments of scheduled grand round presentations,
4. periodic and routine individual faculty-student counseling sessions,
5. administration of the Physician Assistant Clinical Knowledge Rating and Assessment tool (PACKRAT) at completion of year one and two both showing positive correlations ($P<0.001$) to the Physician Assistant National Certification Examination (Derek E. Wilson, PACKRAT: A predictor of success on the PANCE, May 2006). Practicing as a PA provider requires successfully passing the PANCE,

6. realization of a sufficient number of clinical rotation sites within the greater Kansas City area to accommodate student demands,
7. increased community demand for PA services,
8. placement of graduates in the state of Missouri, and
9. financial solvency of the program within 3-to-5 years.

Projections of program success on national and/or local assessments will be feasible once a class has begun to process through the PA program. With national board examination success rates of 92% for 2009, the expectation for future years is that SOM PA graduating student scores will match or exceed the national average score for the year in which they graduate.

The goal of the UMKC PA program is to admit limited number of students each year, provide one-on-one student/faculty interactions, and graduate 100% who, by demonstration meet and/or exceed the competencies as set forth by the AMA, NCCPA, ARC-PA, and the ACGME.

With an ever-increasing need for healthcare, reasons for not accepting employment of a PA will be related to self-interest and not because of a lackluster demand for mid-level non-physician healthcare providers. All indices surveyed point to an employment market rich with opportunities for licensed physician assistants. Consequently, 100% of all UMKC SOM PA program graduates should receive employment offers prior to graduating.

5.E. Student Preparation

Admission: The admission policies reflect the goal of meeting the Accreditation Standards for PA Educational Programs (Appendix G). Applicants are considered on a variety of parameters, including but not limited to, academic potential to successfully complete the program, understanding and commitment to the role of the PA, personal maturity, communication skills, clinical aptitude, and personality traits.

Required for Admission Consideration (received prior to application deadline):

1. Baccalaureate degree from an accredited US or Canadian college or university by the United States Department of Education or Canadian Department of Education, respectively.
2. Successful completion of the following prerequisite courses or equivalents:
   - *Life Sciences (12 Semester Hours Minimum)*
   - *Anatomy and Physiology at the pre-med or science majors level to include lab (2 courses; 8 semester hours total)*
   - *Microbiology with lab (3 semester hours minimum)*
   - *Chemistry (12 semester hours minimum)*
   - *General Chemistry sequence to include lab (2 semesters at the pre-med or science major level).*
   - *One Organic or Biochemistry course with lab*
   - *Statistics (1-3 semester hours)*
   - *Social Sciences (3 semester hours minimum – one general or introductory psychology course)*
   - *Medical Terminology (2 hours; may be taken online)*
3. a grade of C or higher earned in each of the prerequisite courses*,

4. minimum overall Grade Point Average (GPA) of at least a 3.0 on a 4.0 scale,
5. completed Graduate Record Examination (GRE) General Test within the past 5 years or the Medical College Admissions Test (MCAT) within the past 3 years. (There is currently no required minimum GRE or MCAT score for admission to the program. Instead, the GRE or MCAT score is only one of several student selection criteria. The GRE or MCAT must be taken prior to application deadline).
6. all requirements met for admission to graduate study at the University of Missouri-Kansas City,
7. proof of United States citizenship or permanent resident status,
8. proficiency in basic computer skills (word processing, spreadsheets, databases, internet searches, email) as the curriculum incorporates the use of computer technology, and
9. references from three persons with first-hand knowledge of applicant's actual abilities, talents, personality and academic performance. References from college instructors who comment on academic potential, physicians, PAs and other health professionals having worked with or know applicant well are preferred.

* Additional life science, chemistry and social science courses (Cell biology, cell physiology, embryology, endocrinology, genetics, histology, virology, immunology, molecular biology, neurobiology, bacteriology, and epidemiology) beyond the minimum will strengthen the application.
*CLEP examination or advanced placement credit may not be used to meet any of the above requirements, unless a comparable number of credits in advanced courses in the discipline have been completed.
*Due to the evolution of the basic sciences, preference will be given to applicants who have completed their pre-professional prerequisite courses during the seven years prior to applying to the program, particularly those with strong recent science work.

Recommended for Admission Consideration:

1. Direct patient care experience (professional or volunteer):. Admission preference will be given to applicants with the equivalent of at least 1000 hours of direct patient care experience before entering the program. This may include clinical experience as a health professional (*i.e.,* nurse, health educator, paramedic, EMT, respiratory therapist, medical/nursing assistant, clinic aide, orderly, patient care attendant, etc.). Applicants should seek out interactions and shadowing experiences with PAs.
2. Previous healthcare experience is regarded as one measure of the applicant's interest in healthcare. In addition, such experience offers a means by which the applicant may better understand the role of the PA.

Admission Process:

1. Complete applications, received prior to application deadline, will be reviewed. As listed on the UMKC graduate application for admission, a non-refundable application fee and a Supplemental Application to the Master of Medical Science PA program also must be submitted. Due to the structure of the program, students currently or previously enrolled in a PA program through another university may not transfer academic hours toward completion of a UMKC PA degree. Once the current model is proven effective, an

application model affording transfer students opportunities for admission status will be reviewed.
2. After the PA program Admissions and Interview Committee has reviewed the requisite application materials, selected applicants will be offered an interview at the UMKC SOM. The selected applicants will be notified by telephone, e-mail, or letter, and required to be present at the scheduled date and time for the interview.

Selection Factors:

Admission to the PA program is highly competitive. A maximum of 20 students within the first 5 years of the program will be selected to enroll each August. While applicants must complete all prerequisite requirements for class consideration, completion of admission requirements does not assure program acceptance. In making class selections, the admission committee will consider the following characteristics of competitive applicants in addition to criteria listed under Section 5.C.

Admission Requirements:

1. Academic potential to successfully complete the program based on submission of official transcripts.
2. Strong motivation to become a PA based on a thorough understanding of the PA profession as demonstrated through shadowing, a personal statement and the interview process.
3. Personal qualities relating to maturity and professionalism as demonstrated in the interview and letters of recommendation.
4. Ability to communicate effectively as demonstrated by the personal written statement and during the interview.
5. Prior work or volunteer patient care experiences.
6. Capacity for performance of the technical functions and tasks required of the PA profession as demonstrated by past academic performance, recommendation letters, and interview responses.
7. Extracurricular, professional, or service organization involvement and activity.

Upon completion of all interviews, the PA program Selection Committee will offer admission to candidates who best meet acceptance criteria as presented heretofore in section 5C. All applicants will receive in writing the Committee's decision.

Applicant Admission:

1. Applicants for whom English is not the native language must provide proof of English Language Proficiency obtaining a minimum TOEFL scores of 550 (paper based test), 213 (computer based test), or 79 (internet test). An exemption may be granted for 2 years (60 credits) academic coursework or a high school diploma from an English speaking country.
2. A background check is required (at applicant's expense) and administered by a UMKC provided vendor. If an applicant has an unsatisfactory finding, the PA program officials will determine if the offense warrants non-admission.

3. Accepted applicants must submit proof of health insurance, health immunizations, and a physical examination to the PA program assistant within one month of the start of the program.
4. University financial requirements for tuition, fees and specified equipment must be completed within the appropriate timeline of the University and this Program.
5. Matriculated students must enroll on a full-time basis and progress through the program as a cohort group.

Applicant Pool:

Nationally reported trending of PA program applicant pools present categories of students who typically apply to PA program and likewise are expected to be attracted to UMKC. The primary applicant pools include:

1. *Pre-Med Baccalaureate Degree Holders*. Often there is desire to have a career in medicine, but academic, financial or family circumstances have made medical school unattainable.
2. *MCAT Test Takers.* This population of students has taken the Medical College Admission Test (MCAT) and for numerous reasons fail acceptance into medical school. These individuals are often interested in admission to PA programs. In 2009, 42,269 people took the MCAT with 23,879 or 56% not matriculating. In the central states of Missouri, Iowa, Illinois, Kansas and Nebraska 3,623 people took the MCAT and 1924 or 53% did not matriculate. In Missouri alone, 612 people took the MCAT and 307 or 50% did not matriculate.
3. *GRE Test Takers*. A strong background in the sciences and an interest in medicine may lead to submitting an application for PA program admission over pursuing other graduate school avenues.

4. *Other Allied Health Professionals.* A logical career pathway extension exists from other allied health fields into the PA profession. Respiratory therapists, perfusionists, surgical assistants, physical therapists, athletic trainers, registered nurses, and emergency medical technicians are examples of a few of the professions whose educational backgrounds and job descriptions are consistent with the prerequisite knowledge and skills required for a career as a PA. The increased responsibilities and subsequent increased wages typically encountered in the PA profession are attractive to an allied health professional who is interested in pursuing more education and a positive career change.
5. *Non-Traditional Student.* The 2010 National Center for Educational Statistics (http://nces.ed.gov) reported that with the down-turned economy, many students are returning to school to become more marketable. These students differ from the characteristics of students analyzed in the 2003 report. That is, today 73% of the students are considered non-traditional students (as compared to traditional students who enter college immediately after completion of high school). The non-traditional students include, but are not limited to, an "older" segment of the population retooling their skills, students supporting a family, and returning veterans from overseas engagements,…constituting a student population that seeks alternative curricular design that meets their "nontraditional" needs.

5.F. Faculty and Administration

Responsible for Success

The success of the PA program will reside primarily with the following personnel (recruitment efforts for Program specific positions begin with approval of the proposal)

Medical Director: 20% commitment
Program Director: 100% commitment
Two PA Instructors: 100% each
Richard W. Trullinger, Ph.D., Assistant Dean School of Medicine, Allied Health. Dedication to the PA program as needed.

Instructional Needs

To meet accreditation standards as set forth by the Accreditation Review Commission for PAs, two NCCPA-certified PAs must fill two full-time faculty positions (100% devoted to the PA program with primary responsibilities of teaching and advising). A licensed allopathic or osteopathic physician serving as the medical director must be an active participant in the PA program.

Clinical faculty will consist primarily of practicing physicians (M.D. or D.O.) and licensed PAs. It is expected that the program will provide supervised clinical practice experiences with preceptors who are prepared by advanced medical education or by experience. Good clinical instructors are competent and confident clinicians, good listeners, positive when criticizing, and observant and respectful of others' perspectives.

Faculty involved in this program will be expected to instruct courses related to PA profession and training. Many of the faculty members are teaching related courses already under the aegis of their teaching duties within the academic unit where they have a primary appointment.

PA faculty is required to hold current NCCPA certification and licensure in the state of Missouri, maintain 100 hours of Continuing Medical Education every two years, maintain a SOM faculty appointment and pass the PA National Recertification Exam every 6 years. It is also expected and encouraged for PA faculty to continue in clinical practice or research activities for a minimum 8 hours a week to maintain their skills and credibility as an educator.

5.G. Alumni and Employer Survey

Alumni

To meet ARC-PA accreditation standards, the PA program must implement an ongoing program self-assessment process that is designed to document program effectiveness and foster program improvement. The program must apply the results of ongoing program self-assessment to the curriculum and other dimensions of the program. To assist with this assessment, program alumni will be surveyed on a rigorous schedule:

1. One month post-graduation, to assess their satisfaction with the Program and employment status.
2. One year post-graduation to assess how the Program helped prepare for their current job.
3. Three, six and nine years post graduation, short surveys will be sent assessing their long-term satisfaction with the Program, their employment status, and course content having the greatest application to their current employment.

Employer

Data from two groups of employers will be collected and analyzed *i.e.*,

1. Local Healthcare Employers, defined as those located within 200 miles of the KC metropolitan area, and
2. Healthcare Employers defined as those who have employed graduates in the past three years.

Healthcare employers will be polled annually to determine if their employment needs have changed and to gain a satisfaction measure with the quality of applications received from UMKC PA program graduates. Assuming they have also employed graduates, they will receive the employment survey to assess their satisfaction with specific employees' skills. Healthcare employers will be surveyed once every three years to determine the level of satisfaction regarding the quality of students they supervise from the program, and in particular those that have been employed in their workplace.

Surveys will also be mailed to current clinical rotation preceptors on a yearly basis to assess if students are meeting their expectations. Result of the feedback will assist in improving future clinical rotations.

5.H. Program Accreditation

PA education is accredited by the Accreditation Review Commission on Education for the PA (ARC-PA) to protect the interest of the public and PA profession by defining education and evaluation standards for PA academic programs within the territorial United States. By doing so, the ARC-PA ensures compliance with medically sound competency standards.

Following Institutional and State Board of Higher Education approval, the UMKC PA program will contact the executive director of the ARC-PA to discuss the timeline for the accreditation process. Initial Provisional Accreditation visits are conducted during the calendar year prior to enrollment of the charter class of students. Provisional visits evaluate a program's readiness to matriculate students into the first 12 months of the program and a program's readiness for the curriculum beyond the first 12 months. Based on the accreditation application, the descriptive report, and a report based on observations made by the site visit team, the ARC-PA determines accreditation status.

Follow-up provisional visits are conducted with programs that have successfully achieved provisional accreditation. Follow-up visits must occur no sooner than four months after students have entered the clinical phase of the program and no later than six months after graduation of the first class. A report of the visit is written for consideration and action by the ARC-PA. Accreditation is granted when a program holding provisional accreditation meets timeline requirements and demonstrates compliance with the standards for full accreditation.

The ARC-PA meets in March and September of each year. As a rule, the site visit component of the review process in advance of the March commission meeting must occur between August 1 and December 31 of the preceding year. For the September commission meeting the visit must occur between February1and June 30 of that year.

APPENDIX *A*

American Medical Association Suggested Guidelines for Physician-Physician Assistant Practice

Adopted by the AMA House of Delegates, June 1995; reaffirmed 2003.

Reflecting the comments from the American Academy of Physician Assistants, separate model guidelines for Physician/Physician Assistants practice have been developed. These are based on the unique relationship of physician assistants who recognize themselves as agents of physicians with respect to delegated medical acts, and legal responsibilities. They are consistent with the existing AMA policies concerning physician assistants cited in this report. The suggested guidelines reflect those as follows:

1. The physician is responsible for managing the health care of patients in all settings.
2. Health care services delivered by physicians and physician assistants must be within the scope of each practitioner's authorized practice, as defined by state law.
3. The physician is ultimately responsible for coordinating and managing the care of patients and, with the appropriate input of the physician assistant, ensuring the quality of health care provided to patients.
4. The physician is responsible for the supervision of the physician assistant in all settings.
5. The role of the physician assistant in the delivery of care should be defined through mutually agreed upon guidelines that are developed by the physician and the physician assistant and based on the physician's delegatory style.
6. The physician must be available for consultation with the physician assistant at all times, either in person or through telecommunication systems or other means.
7. The extent of the involvement by the physician assistant in the assessment and implementation of treatment will depend on the complexity and acuity of the patient's condition and the training, experience, and preparation of the physician assistant, as adjudged by the physician.
8. Patients should be made clearly aware at all times whether they are being cared for by a physician or a physician assistant.
9. The physician and physician assistant together should review all delegated patient services on a regular basis, as well as the mutually agreed upon guidelines for practice.
10. The physician is responsible for clarifying and familiarizing the physician assistant with his/her supervising methods and style of delegating patient care.

"Health Policies of AMA House of Delegates (HOD)," AMA Advocacy Resource Center, Oct. 2006 update, pp.8-9, downloaded from AMA website Feb. 9, 2009.

APPENDIX B

BUREAU OF LABOR STATISTICS

Occupational Outlook Handbook, 2010-11 Edition

(PDF)
Physician Assistants
Significant Points

- Requirements for admission to training programs vary; most applicants have a college degree and some health-related work experience.
- Physician assistants must complete an accredited education program and pass a national exam in order to obtain a license.
- Employment is projected to grow much faster than the average.
- Job opportunities should be good, particularly in rural and inner-city healthcare facilities.

Nature of the Work About this section

Physician assistants (*PAs*) practice medicine under the supervision of physicians and surgeons. They should not be confused with medical assistants, who perform routine clinical and clerical tasks. (Medical assistants are discussed elsewhere in the *Handbook*.) PAs are formally trained to provide diagnostic, therapeutic, and preventive healthcare services, as delegated by a physician. Working as members of a healthcare team, they take medical histories, examine and treat patients, order and interpret laboratory tests and x rays, and make diagnoses. They also treat minor injuries by suturing, splinting, and casting. PAs record progress notes, instruct and counsel patients, and order or carry out therapy. Physician assistants also may prescribe certain medications. In some establishments, a PA is responsible for managerial duties, such as ordering medical supplies or equipment and supervising medical technicians and assistants.

Physician assistants work under the supervision of a physician. However, PAs may be the principal care providers in rural or inner-city clinics where a physician is present for only 1 or 2 days each week. In such cases, the PA confers with the supervising physician and other medical professionals as needed and as required by law. PAs also may make house calls or go to hospitals and nursing care facilities to check on patients, after which they report back to the physician.

The duties of physician assistants are determined by the supervising physician and by State law. Aspiring PAs should investigate the laws and regulations in the States in which they wish to practice.

Many PAs work in primary care specialties, such as general internal medicine, pediatrics, and family medicine. Other specialty areas include general and thoracic surgery, emergency medicine, orthopedics, and geriatrics. PAs specializing in surgery provide preoperative and postoperative care and may work as first or second assistants during major surgery.

Work environment. Although PAs usually work in a comfortable, well-lighted environment, those in surgery often stand for long periods. At times, the job requires a considerable amount of walking.

PA's work schedules may vary according to the practice setting and often depend on the hours of the supervising physician. The workweek of hospital-based PAs may include weekends, nights, or early morning hospital rounds to visit patients. These workers also may be on call. PAs in clinics usually work about a 40-hour week.

Physician assistants are formally trained to provide diagnostic, therapeutic, and preventive healthcare services, under the supervision of a physician.

Training, Other Qualifications, and Advancement About this section

Requirements for admission to training programs vary; most applicants have a college degree and some health-related work experience. All States require physician assistants to complete an accredited, formal education program and pass a national exam to obtain a license.

Education and training. Physician assistant educational programs usually take at least 2 years to complete for full-time students. Most programs are at schools of allied health, academic health centers, medical schools, or 4-year colleges; a few are at community colleges, are part of the military, or are at hospitals. Many accredited PA programs have clinical teaching affiliations with medical schools.

In 2008, 142 education programs for physician assistants were accredited or provisionally accredited by the Accreditation Review Commission on Education for the Physician Assistant. Eighty percent, or 113, of these programs offered the option of a master's degree, 21 of them offered a bachelor's degree, 3 awarded associate degrees, and 5 awarded a certificate.

Most applicants to PA educational programs already have a college degree and some health-related work experience; however, admissions requirements vary from program to program. Many PAs have prior experience as registered nurses, emergency medical technicians, and paramedics.

PA education includes classroom and laboratory instruction in subjects like biochemistry, pathology, human anatomy, physiology, clinical pharmacology, clinical medicine, physical diagnosis, and medical ethics. PA programs also include supervised clinical training in several areas, including family medicine, internal medicine, surgery, prenatal care and gynecology, geriatrics, emergency medicine, and pediatrics. Sometimes, PA students serve in one or more of these areas under the supervision of a physician who is seeking to hire a PA. The rotation may lead to permanent employment in one of the areas where the student works.

Licensure. All States and the District of Columbia have legislation governing the practice of physician assistants. All jurisdictions require physician assistants to pass the Physician Assistant National Certifying Examination, administered by the National Commission on Certification of Physician Assistants (NCCPA) and open only to graduates of accredited PA education programs. Only those who have successfully completed the examination may use the credential “Physician Assistant-Certified.” To remain certified, PAs must complete 100 hours of continuing medical education every 2 years. Every 6 years, they must pass a recertification examination or complete an alternative program combining learning experiences and a take-home examination.

Other qualifications. Physician assistants must have a desire to serve patients and be self-motivated. PAs also must have a good bedside manner, emotional stability, and the ability to make decisions in emergencies. Physician assistants should have an enthusiasm for lifelong learning, because their eligibility to practice depends on continuing education.

Advancement. Some PAs pursue additional education in a specialty. PA postgraduate educational programs are available in areas such as internal medicine, rural primary care, emergency medicine, surgery, pediatrics, neonatology, and occupational medicine. Candidates must be graduates of an accredited program and be certified by the NCCPA. As they attain greater clinical knowledge and experience, PAs can earn new responsibilities and higher wages. However, by the very nature of the profession, clinically practicing PAs always are supervised by physicians.

Employment About this section

Physician assistants held about 74,800 jobs in 2008. The number of jobs is greater than the number of practicing PAs because some hold two or more jobs. For example, some PAs work with a supervising physician but also work in another healthcare facility. According to the American Academy of Physician Assistants, about 15 percent of actively practicing PAs worked in more than one clinical job concurrently in 2008. More than 53 percent of jobs for PAs were in the offices of physicians. About 24 percent were in general medical and surgical hospitals, public or private. The rest were mostly in outpatient care centers, including health maintenance organizations; the Federal Government; and public or private colleges, universities, and professional schools. Very few were self-employed.

Job Outlook About this section

Employment is expected to grow much faster than the average for all occupations. Job opportunities for PAs should be good, particularly in rural and inner-city healthcare facilities.

Employment change. Employment of physician assistants is expected to grow by 39 percent from 2008 to 2018, much faster than the average for all occupations. Projected rapid job growth reflects the expansion of healthcare industries and an emphasis on cost containment, which results in increasing use of PAs by healthcare establishments. Physicians and institutions are expected to employ more PAs to provide primary care and to assist with medical and surgical procedures because PAs are cost-effective and productive members of the healthcare team. Physician assistants can relieve physicians of routine duties and procedures. Healthcare providers will use more physician assistants as States continue to expand PAs' scope of practice by allowing them to perform more procedures.

Besides working in traditional office-based settings, PAs should find a growing number of jobs in institutional settings such as hospitals, academic medical centers, public clinics, and prisons.

Job prospects. Job opportunities for PAs should be good, particularly in rural and inner-city clinics because those settings have difficulty attracting physicians. Job openings will result both from employment growth and from the need to replace physician assistants who retire or leave the occupation permanently. Opportunities will be best in States that allow PAs a wider scope of practice.

Projections Data About this section

Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2008	Projected Employment, 2018	Change, 2008-18		Detailed Statistics	
				Number	Percent		
Physician assistants	29-1071	74,800	103,900	29,200	39	[PDF]	[XLS]

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

Earnings About this section

The median annual wage of physician assistants was $81,230 in May 2008. The middle 50 percent of physician assistants earned between $68,210 and $97,070. The lowest 10 percent earned less than $51,360, and the highest 10 percent earned more than $110,240. Median annual wages in the industries employing the largest numbers of physician assistants in May 2008 were:

General medical and surgical hospitals	$84,550
Outpatient care centers	84,390
Offices of physicians	80,440
Federal Executive Branch	78,200
Colleges, universities, and professional schools	74,200

According to the American Academy of Physician Assistants' 2008 Census Report, median income for physician assistants in full-time clinical practice was $85,710 in 2008; median income for first-year graduates was $74,470. Income varies by specialty, practice setting, geographical location, and years of experience. Employers often pay for their employees' professional liability insurance, registration fees with the Drug Enforcement Administration, State licensing fees, and credentialing fees.

For the latest wage information:

The above wage data are from the Occupational Employment Statistics (OES) survey program, unless otherwise noted. For the latest National, State, and local earnings data, visit the following pages:

☐ physician assistants

APPENDIX C

LETTERS OF SUPPORT

Avila University
Baker University
Center for Behavioral Medicine
Children's Mercy Hospital and Clinics
Department of Health and Human Services
Dickson-Diveley Midwest Orthopedic Clinic, P.A.
Kansas City Veteran Affairs Medical Center
Metropolitan Community College, Penn Valley
Northland Bone & Joint, Inc.
North Kansas City Hospital
Research Medical Center
Saint Luke's Hospital of Kansas City
William Jewell College

AVILA UNIVERSITY

JUN 30 REC'D

June 28, 2010

Betty Drees, M.D.
Dean, UMKC School of Medicine
2411 Holmes
Kansas City, Missouri 64108

Dear Dr. Drees,

I am writing to support the start of a Master of Science Physician Assistant Program at the University of Missouri – Kansas City. It is my understanding from Kathy Ervie that you are considering the development of this program.

Even though being a physician assistant is one of the fast growing health care careers, there is currently no program that is available in the Kansas City area. Each year I have students who are interested in becoming a physician assistant but they have no choice but to move to Wichita, St. Louis or other community where they can get the education that they need. Once they have moved, they are less likely to return to work in Kansas City. With health care reform being implemented, our community need for physician assistants is going to continue to grow.

Please let me know of any ways that I can be of help. I am fully supportive of your efforts.

Yours truly,

C. Larry Garrison Sullivan

C. Larry Garrison Sullivan, Ph.D.
Dean, School of Science and Health
Prehealth Professions Advisor
Past President of NAAHP

Dr. Betty Drees, M.D.
Dean of the UMKC School of Medicine
2411 Holmes
Kansas City, Missouri 64108

JUN 23 REC'D

BAKER UNIVERSITY
Own Confidence

June 18, 2010

Dear Dr. Drees,

In a recent conversation with Ms. Kathy Ervie, I learned that individuals at the University of Missouri Kansas City School of Medicine are discussing the possibility of establishing a new program for training students to become Physician Assistants. As the Health Professions Advisor at Baker University, I wanted to let you know that I am happy about this possibility.

The College of Arts and Sciences at Baker University is a small, private liberal arts college located in Baldwin City, Kansas. The enrollment at Baker CAS is about 900 students. Of these students about twelve percent major in one of the sciences. These students often have a career in the health professions in mind. Since 2000, we have had thirteen students apply for admission to PA programs and ten of these students were admitted. Our students have gone to Wichita State University (four students), The University of Oklahoma (two students), Barry University (FL), Union University (TN), The University of Tulsa, and Samuel Merritt University (CA).

Currently, I am working with four more students (three rising seniors and one May 2010 graduate) who are in the process of applying for admission. The average GPA of these four students is 3.43. All four of them are from the greater Kansas City area. All four would choose, if they could, to stay in the KC area for their master's degree, but currently this is not an option for them.

As I share these data, I realize that a small program like ours will never contribute more than two to five students per year to your applicant pool; however I believe we would consistently send you two to five excellent students with a strong interest in staying in the Kansas-Missouri region to practice following graduation.

I thank-you for your time as you read this letter.

Kind regards,

Darcy Russell

Darcy L. Russell, Ph.D.
Professor of Biology and Health Professions Advisor
Baker University
Baldwin City, Kansas 66006
darcy.russell@bakeru.edu
785-594-8418

P.O. Box 65
Baldwin City, KS 66006
785.594.6451 | 785.594.2522 fax
www.bakerU.edu

STATE OF MISSOURI
DEPARTMENT OF MENTAL HEALTH

DIVISION OF COMPREHENSIVE PSYCHIATRIC SERVICES
CENTER FOR BEHAVIORAL MEDICINE
1000 EAST 24th STREET
KANSAS CITY, MISSOURI 64108-2776
(816) 512-7000
TDD 800-955-8339

May 27, 2010

Betty Drees, M.D.
Dean, UMKC School of Medicine
2411 Holmes
Kansas City, MO 64108

Dear Betty:

As the only affiliate to the School of Medicine that exclusively provides education in psychiatry and the behavioral sciences, the Center for Behavioral Medicine (CBM) undoubtedly should be considered as a training and future employment site for graduates of the Physician Assistant program currently being developed. We currently serve as the primary training site for medical students and residents in psychiatry, psychology and psychopharmacy for the UMKC School of Medicine. CBM is also a popular training site for students in nursing, social work and music therapy. This allows CBM to provide an ideal environment for training and employing students in the Physician Assistant training program.

Should you have questions regarding our support of a future Physician Assistant degree granting program residing within the School of Medicine, please call me.

Sincerely,

Stuart Munro, MD
Medical Director
Center for Behavioral Medicine
and
Chair, Department of Psychiatry
UMKC School of Medicine

Children's Mercy
HOSPITALS & CLINICS
www.childrens-mercy.org

2401 Gillham Road
Kansas City, Missouri 64108
(816) 234-3000

JUN 15 REC'D

June 9, 2010

Betty Drees, M.D.
Dean, UMKC School of Medicine
2411 Holmes
Kansas City, MO 64108

RE: Physician Assistant Degree Granting Program

Dear Betty:

I am pleased to support your application for a Physician Assistant degree granting program within the UMKC School of Medicine. As the only affiliate to the School of Medicine that exclusively provides pediatric medical services from birth to 18 years, the Children's Mercy Hospital and Clinics needs to be actively involved in training the students enrolled in the Physician Assistant program at the UMKC School of Medicine..

The Children's Mercy Hospital and Clinics offers an ideal environment for training much needed non-physician patient care providers. Physician Assistant students will receive training in a high quality, large academic medical center focused exclusively on pediatric care, offering the expertise of pediatric-trained and board-certified physicians in more than 40 specialty areas. In fact, our pediatric faculty is one of the largest in the country. During Fiscal Year 2009 our patient activities included over 300,000 outpatient visits and 14,621 inpatient admissions, resulting in 77,736 total patient days.

I look forward to collaborating with you in developing and supporting the Physician Assistant degree granting program residing within the UMKC School of Medicine.

Should you have questions regarding our support, please give me a call.

Sincerely,

Charles C. Roberts, M.D.
Associate Executive Medical Director/Vice President
The Children's Mercy Hospital and Clinics

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Office of Public Health and Science
Region VII

601 East 12th Street, Room S1801
Kansas City, MO 64106
(816) 426-3291
Fax: (816) 426-2178

5 April 2010-04-05

Dr. Rick Trullinger, Assistant Dean
University of Missouri – Kansas City
School of Medicine
MG – 200
2411 Holmes Street
Kansas City, MO 64108

Dr. Trullinger,

It is with great pleasure that I write this letter in support of the University of Missouri - Kansas City's development of a Physician Assistant Program. As the U.S. Department of Health and Human Services' Office of Minority Health Representative for the region I have come to work closely with UMKC both in a professional and personal capacity. Through my relationships with the various schools of health I have come to appreciate the high standards and commitment to excellence that the school holds.

As a practicing physician assistant (PA) for the past ten years I can speak to the level of professionalism, competence and collaboration that PAs can offer the health care system and communities alike. The PA profession is the second fastest growing health profession in the nation. One that enables students to be trained and in clinical practice within 36 months to become professionals with a level of competence and expertise shown to produce cost effective and consistent positive health outcomes.

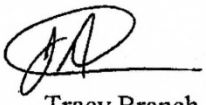
Physician Assistants because of their generalist training and ability to work in any setting where you find physicians has begun to peak the interest of other countries as they come to recognize the role that this profession can play in improving capacity and accessibility to competent healthcare providers. The countries of Brazil, Estonia, United Kingdom, Ghana, Thailand, Honduras, Ecuador, China, Papua New Guinea and Costa Rica all currently have formal agreements to accept U.S. PA students for clinical rotations. While the Netherlands, United Kingdom, Germany and South Africa are all in the process of developing physician assistant like training programs.

The Kansas City Metropolitan area long recognized for its ability to produce nationally recognized physicians now has an opportunity to extend this same level of excellence to the PA profession. A physician assistant program will now be able to capture those individuals with an interest in medicine who were incapable of applying to medical school due to the long training and financial commitment. It will also draw from urban and rural communities, students who are looking for a career change and retraining.

It is my strong belief that with the passage of the Health Care Reform Bill into law that your timing for the creation of this program will not only be well received but will be imperative for the health care system to meet the needs of a aging and increasingly ill society.

Please count me as one of your supporters as you move forward in making a University of Missouri - Kansas City Physician Assistant Program a reality.

Very Respectfully,



Tracy Branch
Lieutenant Commander, USPHS

From: Barnett, Donald (KCVA) [Donald.Barnett@va.gov]
Sent: Wednesday, April 07, 2010 6:27 PM
To: Trullinger, Richard W.
Subject: support of UMKC PA program

The Kansas City VA Medical Center supports the efforts of the University of Missouri-Kansas City in establishing a Physician Assistant Masters Degree program. The Kansas City VA Medical Center has had a long-standing academic affiliation with the University of Missouri-Kansas City School of Medicine. The Kansas City VA Medical Center has long supported the employment and education of physician assistants and would welcome this potential partnership.

Donald Barnett, MD, MSPH

Deputy Chief of Staff

Kansas City VA Medical Center

816-922-2482

E. Bernard Franklin
President, MCC-Penn Valley

Metropolitan Community College
Penn Valley

June 25, 2010

Richard Trullinger, Ph.D.
Assistant Dean of Allied Health Programs
UMKC School of Medicine, MG 200
2411 Holmes Street
Kansas City, MO 64108

Dear Dr. Trullinger:

I am pleased to learn of plans by the University of Missouri- Kansas City School of Medicine to initiate a program to train Physician Assistants. I believe your proposed Master's program will make a positive contribution to the education and health care landscapes of our community.

MCC-Penn Valley is committed to the education and training of this region's health care workforce. We are equally committed to ensuring opportunities for students and graduates to advance in this important arena. I am convinced that UMKC's Physician Assistant program represents a significant advancement of these objectives, and I a happy to lend my support.

I have appreciated our the relationship enjoyed by our institutions, and am especially delighted at the growing collaboration that has emerged following the recent opening of th MCC-Penn Valley Health Science Institute. I believe the UMKC Physician Assistant program enhanced our excellent working relationship.

Please let me know how we can held assistance as this project unfolds.

Sincerely,

Bernard Franklin, Ph.D.
President
Metropolitan Community College-Penn Valley

DICKSON-DIVELEY MIDWEST ORTHOPAEDIC CLINIC, P.A..

Steven T. Joyce, M.D.
Thomas P. Phillips, M.D.
Charles E. Rhoades, M.D.
Dan M. Gurba, M.D.
Mark Bernhardt, M.D
Robert C. Gardiner, M.D.
Timothy M. Badwey, M.D.
Lowry Jones, Jr., M.D.
Stanley Bowling M.D.
Brian J. Divelbiss M.D.
Thomas L. Shriwise, M.D
Lan Fotopoulos, M.D.
R. Lance Snyder, M.D.
Joshua Niemann, M.D.
Alicia Hillman, M.D.

Compassionate Orthopaedic Care for Kansas City Since 1923

Friday, April 09, 2010

Reason: Physician Assistants Program at University of Missouri Kansas City

Dear Sirs,

It is a pleasure to write a letter of support and recommendation the anticipated physician assistants program at the UMKC. We started our physician assistant practice program in 2000. The incredibly positive experience we had has led us to develop a physician assistant team which now consists of 6 physician assistants. We have found that the level of satisfaction from the patients is extremely high with all of our physician assistants. They are able to provide more timely access to the clinic, highly personalized care to the patients, and extend the reach of our services to many people who would not otherwise be able to recieve orthopedic care. They have become an integral part of our care delivery system. The level of acceptance and appreciation by our patient's has been extremely high.

We have found the need to be significant in the Kansas City area. The establishment of a physician assistant program in the Kansas City area can greatly improve care in Kansas City and the surrounding counties. The physician assistants will be more inclined to choose practice areas in Western Missouri or Kansas City if they have their training program in Kansas City. Their participation in the current health care delivery system should help decrease the difficulty of access to both primary care and specialty care physicians which exist at this time.

An additional benefit, which often is not recognized, is that physician extenders will frequently provide innovative solutions to patient's needs which may not have been tried before in the traditional physician-patient visit.

I am quite confident a physician assistant program can be supported financially, educationally and administratively at the University of Missouri Kansas City. I am sure many physicians in the community would be very willing to participate in the educational process with rotations, preceptorships, and didactic instruction.

Sincerely,

Charles E. Rhoades

Sincerely,

Charles E. Rhoades M.D.
President, Dickson-Diveley Midwest Orthopaedic Clinic, PA
CEO, Kansas City Orthopaedic Clinic,LLC

Medical Plaza Bldg I
Suite 610 4320 Wornall
Kansas City, Mo. 64111
www.dd-clinic.com

Phone 816-531-5757

Kansas City Orthopaedic Institute
3651 College Boulevard
Leawood, Kansas 66211
www.kcoi.com

Fax 816-531-5313

Northland Bone & Joint

Northland Bone
& Joint, Inc.

Leslie Thomas, MD
James Reardon, MD
Steven Smith, MD
Christopher Bagby, MD
Erich Lingenfelter, MD

Board Certified Physicians
By
American Board of
Orthopedic Surgery

Janese Hunter, ANP-C
Kathy Ervie, PA-C
Kate Romohr, PA-C

2790 Clay Edwards Dr.
Suite 1230
North Kansas City, MO
64116

5844 NW Barry Road
Suite 320
Kansas City, MO 64154

9151 NE 81st Terrace,
Suite 240
Kansas City, MO 64158

Ph. 816.214.9300
Fax: 816.214.9330

www.nlbkc.com

April 16, 2010

Dr. Richard Trullinger
Assistant Dean, Allied Health Associate Professor
School of Medicine
MG-200
2411 Holmes Street
Kansas City, Missouri 64108-2792

Dr. Trullinger,

This letter is written in support of establishing a Physician Assistant Training Program within your School of Medicine. I feel the need for a PA training program in the Kansas City metro area is great, and has the potential to escalate to a critical need in the near future.

I am a private practice orthopedic surgeon in the Kansas City Northland. We currently have 5 board-certified orthopedic surgeons, 2 Certified Physician Assistants and 1 Certified Adult Nurse Practitioner. We intend to add an additional mid-level provider in the short-term and project at least one additional hire in the next few years. The use of mid-level providers is crucial to our ability to deliver access to care in our community.

Recruiting and signing new physicians is incredibly difficult at this time and is projected to become even more difficult as the population of baby-boomers ages. The impending national health-care legislation may introduce an additional load of patients to the health-care delivery system that will be unable to be served without additional providers.

Physician Assistants allow our practice to extend its capability to get patients seen and treated in a timely fashion. In addition, they allow for improved quality of life for overworked physicians who are at high risk for burnout. I believe there are many very talented individuals who are unwilling to accept the burdens of medical school and the physician lifestyle, who can contribute a great deal to the health of our population as Physician Assistants.

I can't state more clearly or strongly how important I feel mid-level providers will be to our health-care delivery system going forward. The need in our immediate area alone is great and will become greater.

I would urge you to consider establishing a Physician Assistant training program as soon as reasonably possible in an effort to meet the needs of our patients and overburdened health-care delivery system.

Please feel free to contact me if you have any questions.

Steven B. Smith, MD
Northland Bone and Joint, Inc.
2790 Clay Edwards Dr., Su. 1230
North Kansas City, MO, 64116
Phone: 816-421-6114
Fax: 816-214-9330
email: kcorthodoc@yahoo.com

North Kansas City Hospital

2800 Clay Edwards Drive
North Kansas City, MO
64116-3281

(816) 691-2000
www.nkch.org

JUL 12 REC'D

July 6, 2010

Betty Drees, M.D.
Dean, UMKC School of Medicine
2411 Holmes
Kansas City, MO 64108

Dear Dr. Drees:

It was brought to my attention that UMKC is considering the establishment of a Physician Assistant program and, as President & CEO of North Kansas City Hospital, I would like to convey North Kansas City Hospital's support of efforts to establish a Physician Assistant program.

The State of Missouri has already experienced challenges due to the shortage of physicians, as well as a difficulty to recruit new physicians to the area. North Kansas City Hospital recognizes the important role Physician Assistants play in alleviating the gap caused by current physician shortages as well as anticipated future physician shortages in the Kansas City Metropolitan area.

Sincerely,

David Carpenter
President & CEO

Research MEDICAL CENTER
HCA Midwest HEALTH SYSTEM

JUL 16 REC'D

July 13, 2010

Betty Drees, M.D.
Dean, UMKC School of Medicine
2411 Holmes
Kansas City, MO 64108

RE: Physician Assistant Program

Dear Dr. Drees:

Research Medical Center is pleased to offer this letter of support to the University of Missouri – Kansas City as it develops a program to help address the unmet healthcare needs in the state of Missouri, by educating and training future Physician Assistants. Very quickly, as healthcare reform takes shape, there will be overwhelming demands for healthcare providers that cannot be fully met by the current physician population. Because of this, there will be an increased need for advanced practice healthcare professionals, including Physician Assistants. UMKC School of Medicine is to be commended for having the foresight and initiative to address these impending challenges.

As a major employer of healthcare professionals in the greater Kansas City area, Research Medical Center looks forward to benefitting from the pool of Physician Assistants that will be increased through UMKC's PA program.

Please let me know how Research Medical Center can assist in bringing this much-needed program to fruition.

Sincerely,

Kevin J. Hicks
Chief Executive Officer

Saint Luke's Hospital of Kansas City
SAINT LUKE'S HEALTH SYSTEM
saintlukeshealthsystem.org

Malcolm Baldrige National Quality Award
Saint Luke's Hospital 2003 Award Recipient

John D. Yeast, M.D., M.S.P.H.
Vice President of Medical Affairs, Saint Luke's Hospital of Kansas City; and
Professor and Vice-Chair, Department of OBGYN, UMKC School of Medicine

JUN 03 REC'D

May 10, 2010

Betty Drees, M.D.
Dean, UMKC School of Medicine
2411 Holmes
Kansas City, MO 64108

RE: Physician Assistant Program

Dear Betty:

Saint Luke's Hospital, along with other healthcare facilities within Missouri and surrounding states, is experiencing unmet physician shortages. To this end, participating with the University of Missouri-Kansas City as a training site and future employer for Physician Assistants would be beneficial to the mission we both share . We have the requisite faculty, patient variety and volume, and certainly the motivation and institutional commitment to do so.

We look forward to being on the forefront of addressing the health care needs of Kansas City. Should you have questions regarding Saint Luke's Hospital's commitment to participate with UMKC in the Physician Assistant Training Program, please let me know.

Sincerely,

John D. Yeast, M.D., M.S.P.H.
Vice President of Medical Affairs, Saint Luke's Hospital of Kansas City; and
Professor and Vice-Chair, Department of OBGYN, UMKC School of Medicine

WILLIAM JEWELL COLLEGE
500 College Hill • Liberty, Missouri 64068-1896

June 28, 2010

Betty Drees, M.D.,
UMKC School of Medicine
2411 Holmes, KC, MO 64108

Dear Dr. Drees:

Please accept this letter of support for your efforts to establish a 27 month Master of Medical Science Physician Assistant program at the University of Missouri-Kansas City.

William Jewell College has a large number of undergraduate students interested in carees in the health professions. We can foresee a local Master's level PA program being of interest to our students. Additionally, our faculty and staff will do all we can to help identify and recruit undergraduate students to this program. There are several opportunities to get information to the students about the program, and we can help you take advantage of them and encourage interested students to apply.

We wish you the best in your development of this program. Please keep us apprised of your progress and let us know if we can be of any further assistance.

Sincerely,

Tara J. Allen, Ph.D.
Dr. Burnell Landers Chair and Professor
Department of Biology

APPENDIX D

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

Health Services

Career Cluster:
- Health Sciences

Occupation	Openings* Over 10 Years	ANNUAL WAGES** IN MISSOURI		
		Entry	Average	Experienced
On-The-Job Training				
Dental Assistants	1,352	$22,140	$30,170	$34,190
Home Health Aids	4,230	$14,780	$18,190	$19,900
Medical Assistants	2,462	$20,000	$25,590	$28,390
Pharmacy Technicians	5,032	$17,650	$23,640	$26,630
Postsecondary Vocational Award				
Licensed Practical and Licensed Vocational Nurses	5,558	$25,880	$33,330	$37,060
Massage Therapists	375	$16,390	$33,880	$42,630
Nursing Aides, Orderlies, and Attendants	6,492	$15,750	$20,370	$22,680
Surgical Technologists	938	$24,830	$34,840	$39,850
Associate Degree				
Cardiovascular Technologists and Technicians	241	$23,450	$39,840	$48,040
Dental Hygienists	662	$47,660	$63,500	$71,420
Diagnostic Medical Sonographers	276	$45,370	$59,190	$66,090
Medical and Clinical Laboratory Technicians	834	$21,010	$30,750	$35,620
Medical Records and Health Information Technicians	1,889	$19,790	$28,350	$32,630
Nuclear Medicine Technologists	77	$49,230	$60,170	$65,640
Occupational Therapist Assistants	187	$25,350	$38,700	$45,370
Physical Therapist Assistants	481	$27,370	$37,480	$42,540
Radiation Therapists	143	$42,040	$62,810	$73,190
Radiologic Technologists and Technicians	1,131	$33,980	$52,260	$61,400
Recreational Therapists	835	$35,010	$44,050	$48,570
Registered Nurses	18,702	$39,960	$54,300	$61,470
Veterinary Technologists and Technicians	566	$17,000	$26,330	$30,990
Bachelor's Degree				
Health Diagnosing and Treating Practitioners, All Other	730	$41,880	$89,140	$112,770
Healthcare Practitioners and Technical Workers, All Other	375	$24,110	$44,850	$55,220
Medical and Clinical Laboratory Technologists	803	$38,130	$49,340	$54,950
Orthotists and Prosthetists	27	$40,180	$63,940	$75,820
Master's Degree				
Occupational Therapists	589	$44,030	$57,770	$64,640
Physical Therapists	971	$46,550	$63,450	$71,900
Physician Assistants	215	$28,870	$63,710	$81,130
First Professional Degree				
Anesthesiologists	379	ND	$183,480	ND
Family and General Practitioners	661	$100,920	$160,730	$190,640
Obstetricians and Gynecologists	217	ND	$181,200	ND
Pharmacists	1,887	$77,650	$95,390	$104,260
Physicians and Surgeons, All Other	1,197	$54,670	$144,830	$189,910
Psychiatrists	143	$106,560	$158,980	$185,200
Veterinarians	658	$40,860	$74,440	$91,220

ND = Non Disclosed

**Occupational projections are based on 2006 data and cover the years 2006-2016.* Occupations are graded on a combination of average wage, percent growth, and total openings over the next 10 year period of employment projections. The occupations shown have a better than average outlook for the 10 year period.

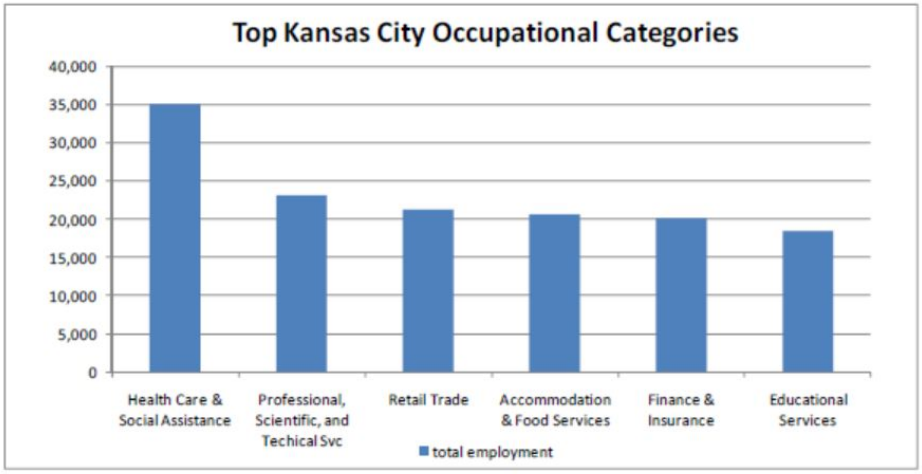
***Wage data are from 2006.*

Fastest Growing Occupations (excludes occupations with less than 50 total openings)				
		2008-2018		
Occupational		Mean	Percent	Growth
Code	Title	Wage	Chang	Openings
17-2031	Biomedical Engineers	$67,180	62.25%	94
31-1011	Home Health Aides	$19,540	49.62%	6,432
19-1021	Biochemists and Biophysicists	$63,280	45.00%	126
39-9021	Personal and Home Care Aides	$18,710	39.04%	7,080
13-2061	Financial Examiners	$80,700	33.53%	226
29-9091	Athletic Trainers	$46,140	33.52%	119
19-1042	Medical Scientists, Except Epidemiologists	$67,090	31.34%	633
15-1081	Network Systems and Data Communications Analysts	$74,790	30.17%	1,573
53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	ND	28.96%	53
25-3021	Self-Enrichment Education Teachers	$35,420	28.87%	1,283
29-2056	Veterinary Technologists and Technicians	$27,350	27.29%	295
29-2052	Pharmacy Technicians	$24,560	26.75%	2,819
23-2091	Court Reporters	$49,310	26.15%	68
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	$61,940	25.94%	103
29-1131	Veterinarians	$71,110	25.94%	330
13-2052	Personal Financial Advisors	$91,280	25.14%	869
13-1041	Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation	$50,250	24.30%	1,094
25-2011	Preschool Teachers, Except Special Education	$25,320	24.12%	1,982
29-1071	Physician Assistants	$65,590	23.80%	163
49-9062	Medical Equipment Repairers	$42,870	23.09%	212
21-1014	Mental Health Counselors	$36,820	22.69%	317
25-4012	Curators	$51,740	22.01%	57
29-2021	Dental Hygienists	$63,000	21.93%	514
31-9091	Dental Assistants	$33,100	21.77%	1,084
37-3013	Tree Trimmers and Pruners	$29,370	20.79%	316
39-5094	Skin Care Specialists	$32,300	20.65%	102
31-9092	Medical Assistants	$26,890	20.49%	1,666
13-1061	Emergency Management Specialists	$48,180	20.26%	63
31-2022	Physical Therapist Aides	$21,920	19.77%	122
31-2011	Occupational Therapist Assistants	$45,350	19.75%	126
29-1123	Physical Therapists	$62,220	19.36%	821
29-2055	Surgical Technologists	$37,050	19.26%	337
39-4021	Funeral Attendants	$20,740	19.21%	132
31-2021	Physical Therapist Assistants	$43,620	19.07%	280
33-2011	Fire Fighters	$43,780	18.85%	1,021
25-2041	Special Education Teachers, Preschool, Kindergarten, and Elementary School	$45,160	18.64%	1,115
11-9031	Education Administrators, Preschool and Child Care Center/Program	$41,870	18.51%	171
21-1022	Medical and Public Health Social Workers	$40,880	18.24%	626
25-9031	Instructional Coordinators	$56,190	18.14%	203
43-5031	Police, Fire, and Ambulance Dispatchers	$29,510	18.09%	465
29-2031	Cardiovascular Technologists and Technicians	$42,860	18.09%	136
51-9083	Ophthalmic Laboratory Technicians	$32,280	17.97%	165
43-3011	Bill and Account Collectors	$28,780	17.51%	2,178

Kansas City Area Job Trends 2006 – 2016

Growing & Shrinking Industries

Kansas City's workforce declined 3.7% from 2002 to 2009. Healthcare & Social Assistance is Kansas City's top employing sector with over 35,000 workers followed by Professional, Scientific & Technical Services and Retail Trade. The *Goods Producing* sector lost 16% of its jobs during this time. Outside of Jackson County, most surrounding counties had an increase in residents who work in the Kansas City *Goods Producing* sector. The *Trade, Transport, & Utilities* sector lost 6% of its jobs during this span. Residents of most counties working in this sector declined except for Cass County, which increased nearly 12%



MERIC - Missouri Department of Economic Development

APPENDIX E

COMPARISON OF TUITION RATES OF PA PROGRAMS IN MEDICAL SCHOOL CENTERS

COMPARISON OF REGIONAL PA PROGRAMS AND TUITION RATES

Comparison of Tuition Rates of PA Programs in Medical School Centers

Programs	State	Tuition for Program Resident/NonResident	Length of Program	Degree Awarded	Class Size
Keck School of Medicine of USC	California	111342	33	Masters	50
University of Colorado Anshutz Medical Campus	Colorado	36600/70496	36	Masters	40
Yale University School of Medicine	Connecticut	68000	27	Masters	54
Emory University School of Medicine	Georgia	53000/59000	28	Masters	50
Medical College of Georgia	Georgia	38000/63000	27	Masters	50
Northwestern University Feinberg School of Medicine	Illinois	68000	24	Masters	
Rosalind Franklin University of Medicine and Science	Illinois	50000	24	Masters	60
Massachusetts College of Pharmacy and Health Sciences	Massachusetts	88350	30	Masters	40
Seton Hall University	New Jersey	84000	36	Masters	30
University of Medicine and Dentistry of New Jersey	New Jersey	51400/77000	36	Masters	50
Albany Medical College	New York	43680	28	Masters	30
New York Institute of Technology	New York	81850	30	Masters	52
Duke University	North Carolina	60295	24	Masters	76
Wake Forest University School of Medicine	North Carolina	51580	24	Masters	56
Philadelphia College of Osteopathic Medicine	Pennsylvania	57000/59000	26	Masters	55
Medical University of South Carolina	South Carolina	47000/93000	27	Masters	65
Eastern Virginia Medical School	Virginia	53000/59000	27	Masters	50

Comparison of Regional PA Programs and Tuition Rates

Program	State	Tuition for Program Resident/NonResident	Length of Program	Degree Awarded	Class Size
St. Louis University	Missouri	64395	27 months	Masters	34
Missouri State University	Missouri	16517/32704	24 months	Masters	24
Union College	Nebraska	72400	33 months	Masters	25
University of Nebraska	Nebraska	30381/81887	28 months	Masters	45
University of Iowa	Iowa	35000/77000	25 months	Masters	25
Des Moines University	Iowa	49920	25 months	Masters	50
Butler University	Indiana	88260	30 months	Masters	50
University of Saint Francis	Indiana	75200	27 months	Masters	25
Wichita State University	Kansas	20115/53700	26 months	Masters	42
University of Oklahoma	Oklahoma	15000/45000	30 months	Masters	50
University of Oklahoma-Tulsa	Oklahoma	30000/60000	30 months	Masters	24

APPENDIX F

COMPETENCIES FOR THE PHYSICIAN ASSISTANT PROFESSION

Competencies for the Physician Assistant Profession

Preamble

In 2003, the National Commission on Certification of Physician Assistants (NCCPA) initiated an effort to define PA competencies in response to similar efforts being conducted within other health care professions and growing demand for accountability and assessment in clinical practice. The following year, representatives from three other national PA organizations, each bringing a unique perspective and valuable insights, joined NCCPA in that effort. Those organizations were the Accreditation Review Commission for Education of the Physician Assistant (ARC-PA), the body that accredits PA educational programs; the Association of Physician Assistant Programs (APAP), the membership association for PA educators and program directors; and the American Academy of Physician Assistants (AAPA), the only national membership association representing all PAs.

The resultant document, *Competencies for the Physician Assistant Profession*, is a foundation from which each of those four organizations, other physician assistant organizations and individual physician assistants themselves can chart a course for advancing the competencies of the PA profession.

Introduction

The purpose of this document is to communicate to the PA profession and the public a set of competencies that all physician assistants regardless of specialty or setting are expected to acquire and maintain throughout their careers. This document serves as a map for the individual PA, the physician-PA team and organizations that are committed to promoting the development and maintenance of these professional competencies among physician assistants.

The clinical role of PAs includes primary and specialty care in medical and surgical practice settings. Professional competencies for physician assistants include the effective and appropriate application of medical knowledge, interpersonal and communication skills, professionalism, practice-based learning and improvement, systems-based practice, as well as an unwavering commitment to continual learning, professional growth and the physician-PA team, for the benefit of patients and the larger community being served. These competencies demonstrated within the scope of practice, whether medical or surgical, for each individual physician assistant as that scope is defined by the supervising physician and appropriate to the practice setting.

In 1999, the Accreditation Council for Graduation Medical Education (ACGME) endorsed a list of general competencies for medical residents. NCCPA's Eligibility Committee, with substantial input from representatives of AAPA, APAP and ARC-PA, has modified the ACGME's list for physician assistant practice, drawing from several

other resources, including the work of Drs. Epstein and Hundert; research conducted by AAPA's EVP/CEO, Dr. Steve Crane; and NCCPA's own examination content blueprint.

PHYSICIAN ASSISTANT COMPETENCIES
Vers. 3.5 (3/22/05)
The PA profession defines the specific knowledge, skills, and attitudes required and needed for physician assistants to acquire and demonstrate these competencies.

MEDICAL KNOWLEDGE: Medical knowledge includes an understanding of pathophysiology, patient presentation, differential diagnosis, patient management, surgical principles, health promotion and disease prevention. Physician assistants must demonstrate core knowledge about established and evolving biomedical and clinical sciences and the application of this knowledge to patient care in their area of practice. In addition, physician assistants are expected to demonstrate an investigatory and analytic thinking approach to clinical situations. Physician assistants are expected to:

understand etiologies, risk factors, underlying pathologic process, and epidemiology for medical conditions symptoms of medical conditions select and interpret appropriate diagnostic or lab studies manage general medical and surgical conditions to include understanding the indications, contraindications, side effects, interactions and adverse reactions of pharmacologic agents and other relevant treatment modalities identify the appropriate site of care for presenting conditions, including identifying emergent cases and those requiring referral or admission, identify appropriate interventions for prevention of conditions, identify the appropriate methods to detect conditions in an asymptomatic individual, differentiate between the normal and the abnormal in anatomic, physiological, laboratory findings and other diagnostic data, appropriately use history and physical findings and diagnostic studies to formulate a differential diagnosis, and provide appropriate care to patients with chronic conditions .

INTERPERSONAL & COMMUNICATION SKILLS: Interpersonal and communication skills encompass verbal, nonverbal and written exchange of information. Physician assistants must demonstrate interpersonal and communication skills that result in effective information exchange with patients, their patients' families, physicians, professional associates, and the health care system. Physician assistants are expected to:

1. create and sustain a therapeutic and ethically sound relationship with patients,
2. use effective listening, nonverbal, explanatory, questioning, and writing skills to elicit information,
3. appropriately adapt communication style and messages to the context of the individual patient interaction,
4. work effectively with physicians and other health care professionals as a member or leader of a health care team or other professional group,
5. apply an understanding of human behavior, and

6. demonstrate emotional resilience and stability, adaptability, flexibility and tolerance of ambiguity and anxiety, and accurately and adequately document and record information regarding the care process for medical, legal, quality and financial purposes.

PATIENT CARE: Patient care includes age-appropriate assessment, evaluation and management. Physician assistants must demonstrate care that is effective, patient-centered, timely, efficient and equitable for the treatment of health problems and the promotion of wellness. Physician assistants are expected to:

1. work effectively with physicians and other health care professionals to provide patient-centered care,
2. demonstrate caring and respectful behaviors when interacting with patients and their families,
3. gather essential and accurate information about their patients,
4. make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment,
5. develop and carry out patient management plans,
6. counsel and educate patients and their families,
7. competently perform medical and surgical procedures considered essential in the area of practice, and
8. provide health care services and education aimed at preventing health problems or maintaining health.

PROFESSIONALISM: Professionalism is the expression of positive values and ideals as care is delivered. Foremost, it involves prioritizing the interests of those being served above one's own. Physician assistants must know their professional and personal limitations. Professionalism also requires that PAs practice without impairment from substance abuse, cognitive deficiency or mental illness. Physician assistants must demonstrate a high level of responsibility, ethical practice, sensitivity to a diverse patient population and adherence to legal and regulatory requirements. Physician assistants are expected to demonstrate:

1. understanding of legal and regulatory requirements, as well as the appropriate role of the physician assistant,
2. professional relationships with physician supervisors and other health care providers,
3. respect, compassion, and integrity,
4. responsiveness to the needs of patients and society,
5. accountability to patients, society, and the profession,
6. commitment to excellence and on-going professional development commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices, and
7. sensitivity and responsiveness to patients' culture, age, gender, and disabilities.

RACTICE-BASED LEARNING AND IMPROVEMENT: Practice-based learning and improvement includes the processes through which clinicians engage in critical analysis of their own practice experience, medical literature and other information resources for the purpose of self-improvement. Physician assistants must be able to assess, evaluate and improve their patient care practices. Physician assistants are expected to:

1. analyze practice experience and perform practice-based improvement activities using a systematic methodology in concert with other members of the health care delivery team,
2. locate, appraise, and integrate evidence from scientific studies related to their patients' health problems,
3. obtain and apply information about their own population of patients and the larger population from which their patients are drawn,
4. apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness,
5. apply information technology to manage information, access on-line medical information, and support their own education,
6. facilitate the learning of students and/or other health care professionals, and
7. recognize and appropriately address gender, cultural, cognitive, emotional and other biases; gaps in medical knowledge; and physical limitations in themselves and others.

SYSTEMS-BASED PRACTICE: Systems-based practice encompasses the societal, organizational and economic environments in which health care is delivered. Physician assistants must demonstrate an awareness of and responsiveness to the larger system of health care to provide patient care that is of optimal value. PAs should work to improve the larger health care system of which their practices are a part. Physician assistants are expected to:

1. use information technology to support patient care decisions and patient education,
2. effectively interact with different types of medical practice and delivery systems,
3. understand the funding sources and payment systems that provide coverage for patient care,
4. practice cost-effective health care and resource allocation that does not compromise quality of care,
5. advocate for quality patient care and assist patients in dealing with system complexities,
6. partner with supervising physicians, health care managers and other health care providers to assess, coordinate, and improve the delivery of health care and patient outcomes,
7. accept responsibility for promoting a safe environment for patient care and recognizing and correcting systems-based factors that negatively impact patient care,
8. apply medical information and clinical data systems to provide more effective, efficient patient care, and
9. use the systems responsible for the appropriate payment of services.

APPENDIX G

ACCREDITATION REVIEW COMMISSION ON EDUCATION FOR THE PHYSICIAN ASSISTANT, INC.

Accreditation Standards for Physician Assistant Education ©

Curriculum and Instruction (Section B) extracted from the Fourth Edition

Accreditation Standards for Physician Assistant Education
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SECTION B: CURRICULUM AND INSTRUCTION

INTRODUCTION

The program curriculum prepares students to provide patient centered care and collegially work in physician-PA teams in an inter-professional team environment. The curriculum establishes a strong foundation in health information technology and evidence-based medicine and emphasizes the importance of remaining current with the changing nature of clinical practice.

Section B addresses all aspects of the curriculum. The professional curriculum for PA education includes applied medical, behavioral and social sciences; patient assessment and clinical medicine; supervised clinical practice; and health policy and professional practice issues. Issues relating to individual professional responsibility and working in the health care delivery system are included in the clinical preparatory section of this *Standards* section and apply to supervised clinical practice settings in the clinical curriculum.

Programs need not have discrete courses for each of the instructional areas discussed within this section. *Learning outcomes* related to all instructional areas are important elements of the curriculum and course syllabi. The standards in section B1 apply to the entire curriculum of the program and have application to all curricular components.

B. 1 CURRICULUM

B. 1.01 The curriculum *must* be consistent with the mission and *goals* of the program.

B. 1.02 The curriculum *must* include core knowledge about established and evolving biomedical and clinical sciences and the application of this knowledge to patient care.

B. 1.03 The curriculum *must* be of *sufficient* breadth and depth to prepare the student for the clinical practice of medicine.

B. 1.04 The curriculum design *must* reflect sequencing that enables students to develop the *competencies* necessary for current and evolving clinical practice.

> *ANNOTATION: The concept of sequencing refers to the coordination and integration of content both horizontally and vertically across the curriculum. It does not mandate that content be delivered in separate courses with traditional discipline names. Appropriate sequencing involves considering overall program design and integration of content. Content and course sequencing should build upon previously achieved student learning.*

B. 1.05 The curriculum *must* include instruction about intellectual honesty and appropriate academic and professional conduct.

B. 1.06 The curriculum *must* include instruction to prepare students to provide medical care to patients from diverse populations.

> *ANNOTATION: Quality health care education involves an ongoing consideration of the constantly changing health care system and the impact of racial, ethnic and socioeconomic health disparities on health care delivery. Instruction related to medical care and diversity prepares students to evaluate their own values and avoid stereotyping. It assists them in becoming aware of differing health beliefs, values and expectations of patients and other health care professionals that can affect communication, decision-making, compliance and health outcomes.*

B. 1.07 The curriculum *must* include instruction related to the development of problem solving and medical decision-making skills.

B. 1.08 The curriculum *must* include instruction to prepare students to work collaboratively in inter-professional patient centered teams.

ANNOTATION: Such instruction includes content on the roles and responsibilities of various health care professionals, emphasizing the team approach to patient centered care beyond the traditional physician-PA team approach. It assists students in learning the principles of inter-professional practice and includes opportunities for students to apply these principles in inter-professional teams within the curriculum.

B. 1.09 For each didactic and clinical course, the program *must* define and publish *instructional objectives* that guide student acquisition of required *competencies*.

ANNOTATION: Instructional objectives stated in measurable terms allow assessment of student progress in developing the competencies required for entry into practice. They address learning expectations of students and the level of student performance required for success.

B. 1.10 The program *should* orient *instructional faculty* to the specific *learning outcomes* it requires of students.

ANNOTATION: Program and principal faculty need to work collaboratively with instructional faculty in designing courses with appropriate learning outcomes and student assessment tools that reflect the learning outcomes expected of students.

B. 1.11 The program *must* ensure educational equivalency of course content, student experience and access to didactic and laboratory materials when instruction is: a) conducted at geographically separate locations and/or b) provided by different pedagogical and instructional methods or techniques for some students.

B. 2. CLINICAL PREPARATORY INSTRUCTION

B. 2.01 While programs may require specific course(s) as prerequisites to enrollment; those prerequisites *must* not substitute for more advanced applied content within the professional component of the program.

B. 2.02 The program curriculum *must* include instruction in the following areas of applied medical sciences and their application in clinical practice: a) anatomy, b) physiology, c) pathophysiology, d) pharmacology and pharmacotherapeutics, e) the genetic and molecular mechanisms of health and disease.

B. 2.03 The program curriculum *must* include instruction in clinical medicine covering all organ systems.

B. 2.04 The program curriculum *must* include instruction in interpersonal and communication skills that result in the effective exchange of information and

collaboration with patients, their families and other health professionals.

B. 2.05 The program curriculum *must* include instruction in patient evaluation, diagnosis and management.

ANNOTATION: Instruction in patient assessment and management includes caring for patients of all ages from initial presentation through ongoing follow-up. It includes instruction in interviewing and eliciting a medical history; performing complete and focused physical examinations; generating differential diagnoses; and ordering and interpreting diagnostic studies. Patient management instruction addresses acute and longitudinal management. Instruction related to treatment plans is patient centered and inclusive, addressing medical issues, patient education and referral.

B. 2.06 The program curriculum *must* include instruction in the provision of clinical medical care across the life span.

ANNOTATION: Preclinical instruction prepares PAs to provide preventive, emergent, acute, chronic, rehabilitative, palliative and end-of-life care. It includes content relevant to prenatal, infant, children, adolescent, adult and elderly populations.

B. 2.07 The program curriculum *must* include instruction in technical skills and procedures based on current professional practice.

B. 2.08 The program curriculum *must* include instruction in the social and behavioral sciences as well as normal and abnormal development across the life span.

ANNOTATION: Social and behavioral sciences prepare students for primary care practice. Instruction includes detection and treatment of substance abuse; human sexuality; issues of death, dying and loss; response to illness, injury and stress; principles of violence identification and prevention; and psychiatric/behavioral conditions.

B. 2.09 The program curriculum *must* include instruction in basic counseling and patient education skills.

ANNOTATION: Instruction in counseling and patient education skills is patient centered, culturally sensitive and focused on helping patients cope with illness, injury and stress, adhere to prescribed treatment plans and modify their behaviors to more healthful patterns.

B. 2.10 The program curriculum *must* include instruction to prepare students to search, interpret and evaluate the medical literature, including its application to individualized patient care.

ANNOTATION: This instruction assists students in maintaining a critical, current and operational knowledge of new medical findings required for the prevention and treatment of disease. Instruction often includes topics such as framing of research questions, sampling methods, interpretation of basic biostatistical methods, and the limits of medical research. The use of common medical databases to access medical literature is also included.

B. 2.11 The program curriculum *must* include instruction in health care delivery systems and health policy.

B. 2.12 The program curriculum *must* include instruction in concepts of public health as they relate to the role of the practicing PA.

ANNOTATION: Instruction in concepts of public health includes an appreciation of the public health system and the role of health care providers in the prevention of disease and maintenance of population health. It includes participating in disease surveillance, reporting and intervention.

B. 2.13 The program curriculum *must* include instruction in patient safety, quality improvement, prevention of medical errors and risk management.

B. 2.14 The program curriculum *must* include instruction about PA licensure, credentialing and laws and regulations regarding professional practice.

B. 2.15 The program curriculum *must* include instruction regarding reimbursement, documentation of care, coding and billing.

B. 2.16 The program curriculum *must* include instruction in the principles and practice of medical ethics.

B. 2.17 The program curriculum *must* include instruction in the PA profession, its historical development and current trends.

ANNOTATION: Instruction related to PA professional issues addresses the physician-PA team relationship, political issues that affect PA practice, the PA professional organizations.

B.3. SUPERVISED CLINICAL PRACTICE

B. 3.01 PA students *must* be clearly identified in the clinical setting to distinguish them from physicians, medical students and other health profession students and graduates.

B. 3.02 *Supervised clinical practice experiences must* enable students to meet program expectations and acquire the *competencies* needed for clinical PA practice.

ANNOTATION: It is expected that the program expectations of students will address the types of patient encounters essential to preparing them for entry into practice. It is expected that at a minimum these will include preventive, emergent, acute, and chronic patient encounters.

B. 3.03 *Supervised clinical practice* experiences *must* provide sufficient patient exposure to allow each student to meet program-defined requirements with patients seeking:

a) medical care across the life span to include, infants, children, adolescents, adults, and the elderly,
b) women's health (to include prenatal and gynecologic care),
c) care for conditions requiring surgical management, including pre- operative, intraoperative, post-operative care and
d) care for behavioral and mental health conditions.

B. 3.04 *Supervised clinical practice experiences must* occur in the following settings: a) outpatient, b) emergency department, c) inpatient and d) operating room.

ANNOTATION: While patients often use emergency departments for primary care complaints, students are expected to interact with patients needing emergent care in this setting. Urgent care centers may be used for supervised clinical practice experiences, but do not replace the requirement to have students in emergency departments.

B. 3.05 *Instructional faculty* for the supervised clinical practice portion of the educational program *must* consist primarily of practicing physicians and PAs.

B. 3.06 *Supervised clinical practice experiences should* occur with: a) physicians who are specialty board certified in their area of instruction, b) PAs teamed with physicians who are specialty board certified in their area of instruction or c) other licensed health care providers experienced in their area of instruction.

ANNOTATION: It is expected that the program will provide supervised clinical practice experiences with preceptors who are prepared by advanced medical education or by experience. The ARC-PA will only consider supervised clinical practice experiences occurring with physician preceptors who are not board certified or with other licensed health care providers serving as preceptors when they are evaluated and determined by the program faculty to be appropriate for the specified area of instruction, under circumstances unique to the program.

B. 3.07 *Supervised clinical practice experiences should* occur with *preceptors* practicing in the following disciplines:

a) family medicine,
b) internal medicine,
c) general surgery,

d) pediatrics,
e) ob/gyn and
f) behavioral and mental health care.

ANNOTATION: PA education requires a breadth of supervised clinical practice experiences to help students appreciate the differences in approach to patients taken by those with varying specialty education and experience. Supervised clinical practice experiences used for required rotations are expected to address the fundamental principles of the above disciplines as they relate to the clinical care of patients. Subspecialists serving as preceptors might, by advanced training or current practice, be too specialty focused to provide the fundamental principles for required rotations in the above disciplines. Reliance on subspecialists as preceptors in the above disciplines is contrary to the intent of this standard.

APPENDIX H

NATIONAL COMMISSION ON CERTIFICATION OF PHYSICIAN ASSISTANTS (NCCPA)

NCCPA
Examination Content Blueprint
Overview
The material on NCCPA's certification and recertification exams can be organized in two dimensions:

1. organ systems and the diseases, disorders and medical assessments physician assistants encounter within those systems, and

2. the knowledge and skills physician assistants should exhibit when confronted with those diseases, disorders and assessments.

Please note that while the subject matter covered on the certification and recertification exams is the same, there is some difference in the *nature* of the questions on those exams. Generally, the questions on the initial certification exam are more specific, while questions on the recertification exam tend to address broader clinical issues. This difference is most apparent in the questions related to applying basic science concepts and reflects the different functions of the two exams.

The tables below illustrate the approximate percentage of exam questions you'll encounter in several categories, grouped as described above. Other content dimensions cross-sect those categories delineated in the tables. For example, up to 20 percent of the questions on any exam may be related to surgery, and up to two percent may cover legal or ethical issues.

% of Content	Diseases, Disorders & Medical Assessments Of the:
16%	Cardiovascular System
12%	Pulmonary System
10%	Gastrointestinal System/Nutrition
10%	Musculoskeletal System
9%	Eyes, Ears, Nose & Throat
8%	Reproductive System
6%	Endocrine System
6%	Neurologic System
6%	Psychiatry/Behavioral Science
6%	Genitourinary System
5%	Dermatologic System
3%	Hematologic System
3%	Infectious Diseases

% of Content	Knowledge & Skills Areas:
16%	History Taking and Physical Examination
14%	Using Laboratory & Diagnostic Studies
18%	Formulating Most Likely Diagnosis
14%	Clinical Intervention
18%	Pharmaceutical Therapeutics
10%	Health Maintenance
10%	Appling Basic Science Concepts

Each question you encounter will address a disease, disorder or medical assessment from a category in the table at left and a knowledge or cognitive skill area from the table above.

The following pages provide lists of specific diseases, disorders, medical assessments, and knowledge areas you may encounter on your exam. Though these lists are not exhaustive, they can provide a foundation for your exam preparation. They serve as your blueprint to the exam content.

Diseases, Disorders and Medical Assessments by Organ System

The Cardiovascular System

Cardiomyopathy □ Dilated □ Hypertrophic □ Restrictive **Conduction Disorders** □ Atrial fibrillation/flutter □ Atrioventricular block □ Bundle branch block □ Paroxysmal supraventricular tachycardia □ Premature beats □ Ventricular tachycardia □ Ventricular fibrillation/flutter **Congenital Heart Disease** □ Atrial septal defect □ Coarctation of aorta □ Patent ductus arteriosus □ Tetralogy of Fallot □ Ventricular septal defect **Congestive Heart Failure**	**Hypertension** □ Essential □ Secondary □ Malignant **Hypotension** □ Cardiogenic shock □ Orthostasis/postural **Ischemic Heart Disease** □ Acute myocardial infarction □ Angina pectoris o Stable o Unstable o Prinzmetal's/variant **Vascular Disease** □ Acute rheumatic fever □ Aortic aneurysm/dissection □ Arterial embolism/thrombosis □ Chronic/acute arterial occlusion □ Giant cell arteritis	□ Peripheral vascular disease □ Phlebitis/thrombophlebitis □ Venous thrombosis □ Varicose veins **Valvular Disease** □ Aortic stenosis/insufficiency □ Mitral stenosis/insufficiency □ Mitral valve prolapse □ Tricuspid stenosis/insufficiency □ Pulmonary stenosis/insufficiency **Other Forms of Heart Disease** □ Acute and subacute bacterial endocarditis □ Acute pericarditis □ Cardiac tamponade □ Pericardial effusion

The Pulmonary System

Infectious Disorders □ Acute bronchitis □ Acute bronchiolitis □ Acute epiglottitis □ Croup □ Influenza □ Pertussis □ Pneumonias o Bacterial o Viral o Fungal o HIV-related □ Respiratory syncytial virus infection □ Tuberculosis **Neoplastic Disease** □Bronchogenic carcinoma	□ Carcinoid tumors □ Metastatic tumors □ Pulmonary nodules **Obstructive Pulmonary Disease** □ Asthma □ Bronchiectasis □ Chronic bronchitis □ Cystic fibrosis □ Emphysema **Pleural Diseases** □ Pleural effusion □ Pneumothorax o Primary o Secondary o Traumatic	o Tension **Pulmonary Circulation** □ Pulmonary embolism □ Pulmonary hypertension □ Cor pulmonale **Restrictive Pulmonary Disease** □ Idiopathic pulmonary fibrosis □ Pneumoconiosis □ Sarcoidosis **Other Pulmonary Disease** □ Acute respiratory distress syndrome □ Hyaline membrane disease □ Foreign body aspiration

The Gastrointestinal System/Nutrition

Esophagus □ Esophagitis □ Motor disorders □ Mallory-Weiss tear □ Neoplasms □ Strictures □ Varices **Stomach** □ Gastroesophageal reflux disease □ Gastritis □ Neoplasms □ Peptic ulcer disease □ Pyloric stenosis **Gallbladder** □ Acute/chronic cholecystitis □ Cholelithiasis **Liver** □ Acute/chronic hepatitis □ Cirrhosis □ Neoplasms	**Pancreas** □ Acute/chronic pancreatitis □ Neoplasms **Small Intestine/Colon** □ Appendicitis □ Constipation □ Diverticular disease □ Inflammatory bowel disease □ Intussusception □ Irritable bowel disease □ Ischemic bowel disease □ Neoplasms □ Obstruction □ Toxic megacolon **Rectum** □ Anal fissure □ Anorectal abscess/fistula □ Fecal impaction □ Hemorrhoids □ Neoplasms □ Pilonidal disease □ Polyps	**Hernia** □ Hiatal □ Incisional □ Inguinal □ Umbilical □ Ventral **Infectious Diarrhea** **Nutritional Deficiencies** □ Niacin □ Thiamine □ Vitamin A □ Riboflavin □ Vitamin C □ Vitamin D □ Vitamin K **Metabolic Disorders** □ Lactose intolerance □ Phenylketonuria

The Musculoskeletal System

Disorders of the Shoulder □ Fractures/dislocations □ Rotator cuff disorders □ Separations □ Sprain/strain **Disorders of the Forearm/Wrist/Hand** □ Fractures/dislocations Boxer's Colles' Gamekeeper's thumb Humeral Nursemaid's elbow	□ Cauda equina □ Herniated nucleus pulposus □ Kyphosis/scoliosis □ Low back pain □ Spinal stenosis **Disorders of the Hip** □ Aseptic necrosis □ Fractures/dislocations □ Slipped capital femoral epiphysis **Disorders of the Knee** □ Bursitis	**Neoplastic Disease** □ Bone cysts/tumors □ Ganglion cysts □ Osteosarcoma **Osteoarthritis** **Osteoporosis** **Rheumatologic Conditions** □ Fibromyalgia □ Gout/pseudogout □ Juvenile rheumatoid arthritis □ Polyarteritis nodosa □ Polymyositis

Scaphoid □ Sprains/strains □ Tenosynovitis Carpal tunnel syndrome de Quervain's tenosynovitis Elbow tendinitis Epicondylitis **Disorders of the Back/Spine** □ Ankylosing spondylitis □ Back strain/sprain	□ Fractures/dislocations □ Meniscal injuries □ Osgood-Schlatter disease □ Sprains/strains **Disorders of the Ankle/Foot** □ Fractures/dislocations □ Sprains/strains **Infectious Diseases** □ Acute/chronic osteomyelitis □ Septic arthritis	□ Polymyalgia rheumatica □ Reiter's syndrome □ Rheumatoid arthritis □ Systemic lupus erythematosus □ Scleroderma □ Sjogren's syndrome

Eyes, Ears, Nose & Throat

Eye Disorders □ Blepharitis □ Blowout fracture □ Cataract □ Chalazion □ Conjunctivitis □ Corneal abrasion □ Dacryoadenitis □ Ectropion □ Entropion □ Foreign body □ Glaucoma □ Hordeolum □ Hyphema □ Macular degeneration □ Orbital cellulites □ Pterygium □ Retinal detachment	□ Retinal vascular occlusion o Retinopathy o Diabetic □ Hypertensive □ Strabismus **Ear Disorders** □ Acute/chronic otitis media □ Barotrauma □ Cerumen impaction □ Hearing impairment □ Mastoiditis □ Meniere's disease □ Labyrinthitis □ Otitis externa □ Tympanic membrane perforation □ Vertigo	**Nose/Sinus Disorders** □ Acute/chronic sinusitis □ Allergic rhinitis □ Epistaxis □ Nasal polyps **Mouth/Throat Disorders** □ Acute pharyngitis □ Acute tonsillitis □ Aphthous ulcers □ Dental abscess □ Epiglottitis □ Laryngitis □ Oral candidiasis □ Oral herpes simplex □ Oral leukoplakia □ Peritonsillar abscess □ Parotitis □ Sialadenitis

The Reproductive System

Uterus □ Dysfunctional uterine bleeding □ Endometrial cancer □ Endometriosis/adenomyosis □ Leiomyoma □ Metritis □ Prolapse	□ Rectocele □ Vaginitis **Menstrual Disorders** □ Amenorrhea □ Dysmenorrhea □ Premenstrual syndrome **Menopause** **Breast**	**Uncomplicated Pregnancy** □ Prenatal diagnosis/care □ Normal labor/delivery **Complicated Pregnancy** □ Abortion □ Abruptio placentae □ Dystocia □ Ectopic pregnancy

Ovary □ Cysts □ Neoplasms **Cervix** □ Carcinoma □ Cervicitis □ Dysplasia □ Incompetent **Vagina/Vulva** □ Cystocele □ Neoplasm □ Prolapse	□ Abscess □ Carcinoma □ Fibroadenoma □ Fibrocystic disease □ Mastitis **Pelvic Inflammatory Disease** **Contraceptive Methods** **Infertility**	□ Fetal distress □ Gestational diabetes □ Gestational trophoblastic disease □ Molar pregnancy □ Multiple gestation □ Placenta previa □ Postpartum hemorrhage □ Pregnancy-induced hypertension □ Premature rupture of membranes □ Rh incompatibility

The Endocrine System

Diseases of the Thyroid Gland □ Hyperparathyroidism □ Hypoparathyroidism □ Hyperthyroidism □ Hypothyroidism □ Thyroiditis □ Neoplastic disease	**Diseases of the Adrenal Glands** □ Cushing's syndrome □ Corticoadrenal insufficiency **Diseases of the Pituitary Gland** □ Acromegaly/gigantism □ Dwarfism □ Diabetes insipidus	**Diabetes Mellitus** □ Type 1 □ Type 2 □ Hypoglycemia **Lipid Disorders** □ Hypercholesterolemia □ Hypertriglyceridemia

The Neurologic System

Alzheimer's Disease **Cerebral Palsy** **Diseases of Peripheral Nerves** □ Bell's palsy □ Diabetic peripheral neuropathy □ Guillain-Barre syndrome □ Myasthenia gravis **Headaches** □ Cluster headache	□ Migraine □ Tension headache **Infectious Disorders** □ Encephalitis □ Meningitis **Movement Disorders** □ Essential tremor □ Huntington's disease □ Parkinson's disease **Multiple Sclerosis**	**Seizure Disorders** □ Generalized convulsive disorder □ Generalized nonconvulsive disorder □ Status epilepticus **Vascular Diseases** □ Cerebral aneurysm □ Stroke □ Transient ischemic attack

Psychiatry/Behavioral Science

Anxiety Disorders □ Panic disorder □ Generalized anxiety disorder □ Posttraumatic stress disorder □ Phobias **Attention-Deficit Disorder** **Autistic Disorder** **Eating Disorders** □ Anorexia nervosa □ Bulimia nervosa □ Obesity **Mood Disorders** □ Adjustment	□ Depressive □ Dysthymic □ Bipolar **Personality Disorders** □ Antisocial □ Avoidant □ Borderline □ Histrionic □ Narcissistic □ Obsessive-compulsive □ Paranoid □ Schizoid □ Schizotypal **Psychoses** □ Delusional disorder	□ Schizophrenia □ Schizoaffective disorder **Somatoform Disorders** **Substance Use Disorders** □ Alcohol abuse/dependence □ Drug abuse/dependence □ Tobacco use/dependence **Other Behavioral and Emotional Disorders** □ Acute reaction to stress □ Child/elder abuse □ Domestic violence □ Uncomplicated bereavement

The Genitourinary System

Benign Conditions of the GU Tract □ Benign prostatic hyperplasia □ Cryptorchidism □ Erectile dysfunction □ Hydrocele/varicocele □ Incontinence □ Nephro/urolithiasis □ Paraphimosis/phimosis □ Testicular torsion **Infectious/Inflammatory Conditions** □ Cystitis □ Epididymitis	□ Orchitis □ Prostatitis □ Pyelonephritis □ Urethritis **Neoplastic Diseases** □ Bladder carcinoma □ Prostate carcinoma □ Renal cell carcinoma □ Testicular carcinoma □ Wilms' tumor **Renal Diseases** □ Acute/chronic renal failure □ Glomerulonephritis	□ Nephrotic syndrome □ Polycystic kidney disease **Electrolyte and Acid/Base Disorders** □ Hypo/hypernatremia □ Hypo/hyperkalemia □ Hypo/hypercalcemia □ Hypomagnesemia □ Metabolic alkalosis/acidosis □ Respiratory alkalosis/acidosis □ Volume depletion □ Volume excess

The Dermatologic System

Eczematous Eruptions □ Dermatitis o Atopic o Contact o Diaper	**Vesicular Bullae** □ Bullous pemphigoid **Acneiform Lesions** □ Acne vulgaris □ Rosacea	□ Paronychia **Viral Diseases** □ Condyloma acuminatum □ Exanthems □ Herpes simplex

oNummular eczematous o Perioral o Seborrheic o Stasis □ Dyshidrosis □ Lichen simplex chronicus **Papulosquamous Diseases** □ Dermatophyte infections o Tinea versicolor oTinea corporis/pedis □ Drug eruptions □ Lichen planus □ Pityriasis rosea □ Psoriasis **Desquamation** □ Stevens-Johnson syndrome □ Toxic epidermal necrolysis □ Erythema multiforme	□ Folliculitis **Verrucous Lesions** □ Seborrheic keratosis □ Actinic keratosis **Insects/Parasites** □ Lice □ Scabies □ Spider bites **Neoplasms** □ Basal cell carcinoma □ Melanoma □ Squamous cell carcinoma **Hair and Nails** □ Alopecia areata □ Androgenetic alopecia □ Onycomycosis	□ Molluscum contagiosum □ Verrucae □ Varicella-zoster virus infections **Bacterial Infections** □ Cellulitis/vasculitis □ Erysipelas □ Impetigo **Other** □ Acanthosis nigricans □ Burns □ Decubitus ulcers/leg ulcers □ Hidradenitis suppurativa □Lipomas/epithelial inclusion cysts □ Melasma □ Urticaria □ Vitiligo

The Hematologic System

Anemias □ Aplastic anemia □ Vitamin B12 deficiency □ Folate deficiency □ Iron deficiency □ G6PD deficiency □ Hemolytic anemia □ Sickle cell anemia □ Thalassemia	**Coagulation Disorders** □ Factor VIII disorders □ Factor IX disorders □ Factor XI disorders □ Thrombocytopenia o Idiopathic thrombocytopenic purpura	o Thrombotic thrombocytopenic purpura o von Willebrand's disease **Malignancies** □ Acute/chronic lymphocytic leukemia □ Acute/chronic myelogenous leukemia □ Lymphoma □ Multiple myeloma

Infectious Diseases

Fungal Disease □ Candidiasis □ Cryptococcosis □ Histoplasmosis □ Pneumocystis **Bacterial Disease** □ Botulism	**Parasitic Disease** □ Amebiasis □ Hookworms □ Malaria □ Pinworms □ Toxoplasmosis **Spirochetal Disease**	**Viral Diseases** □ Cytomegalovirus infections □ Epstein-Barr virus infections □ Erythema infectiosum □ Herpes simplex □ HIV infection □ Human papillomavirus

□ Chlamydia □ Cholera □ Diphtheria □ Gonococcal infections □ Salmonellosis □ Shigellosis □ Tetanus **Mycobacterial Disease** □ Tuberculosis □ Atypical mycobacterial disease	□ Lyme borreliosis o Lyme disease □ Rocky Mountain spotted fever □ Syphilis	infections □ Influenza □ Mumps □ Rabies □ Roseola □ Rubella □ Measles □ Varicella-zoster virus infections

The lists of knowledge areas and skills that follow were identified as important to physician assistant practice through an intensive practice analysis.

History Taking and Physical Examination

Knowledge of:

1. Pertinent historical information associated with selected medical conditions.
2. Risk factors for development of selected medical conditions.
3. Signs and symptoms of selected medical conditions.
4. Physical examination techniques.
5. Physical examination findings associated with selected medical conditions.
6. Appropriate physical examination directed to selected medical conditions.
7. Differential diagnosis associated with presenting symptoms or physical findings.

Cognitive skills in:

1. Conducting comprehensive and focused interviews.
2. Identifying pertinent historical information.
3. Performing comprehensive and focused physical examinations.
4. Associating current complaint with presented history.
5. Identifying pertinent physical examination information.

Using Laboratory and Diagnostic Studies

Knowledge of:

1. Indications for initial and subsequent diagnostic or laboratory studies.
2. Cost effectiveness of diagnostic studies or procedures
3. Relevance of common screening tests for selected medical conditions.
4. Normal and abnormal diagnostic ranges.
5. Risks associated with diagnostic studies or procedures.
6. Appropriate patient education related to laboratory or diagnostic studies.

Cognitive skills in:

1. Using diagnostic equipment safely and appropriately.
2. Selecting appropriate diagnostic or laboratory studies.
3. Collecting diagnostic or laboratory specimens.
4. Interpreting diagnostic or laboratory studies results.

Formulating Most Likely Diagnosis

Knowledge of:

1. Significance of history as it relates to differential diagnosis.
2. Significance of physical findings as they relate to diagnosis.
3. Significance of diagnostic and laboratory studies as they relate to diagnosis.

Cognitive skills in:

1. Correlating normal and abnormal diagnostic data.
2. Formulating differential diagnosis.
3. Selecting the most likely diagnosis in light of presented data.

Clinical Intervention

Knowledge of:

1. Management and treatment of selected medical conditions, indications, contraindications, complications, risks, benefits and techniques for selected procedures.
2. Standard precautions and special isolation conditions.
3. Sterile technique.
4. Follow-up and monitoring of therapeutic regimens.
5. Conditions that constitute medical emergencies Indications for admission to or discharge from hospitals or other facilities.
6. Discharge planning.
7. Available community resources.
8. Appropriate community resources.
9. Appropriate patient education.
10. Roles of other health professionals.
11. End-of-life issues
12. Risks and benefits of alternative medicine.

Cognitive skills in:

1. Formulating and implementing treatment plans.
2. Recognizing and initiating treatment for life-threatening emergencies.
3. Demonstrating technical expertise related to performing specific procedures.
4. Communicating effectively.
5. Using counseling techniques.
6. Facilitating patient adherence and active participation in treatment.
7. Interacting effectively in multidisciplinary teams.

Pharmaceutical Therapeutics

Knowledge of:

1. Mechanism of action.
2. Indications for use.
3. Contraindications.
4. Side effects.
5. Adverse reactions.
6. Follow-up and monitoring of pharmacologic regimens.
7. Risks for drug interactions
8. Clinical presentation of drug interactions.
9. Treatment of drug interactions.
10. Drug toxicity.
11. Methods to reduce medication errors.
12. Cross reactivity of similar medications.
13. Recognition and treatment of allergic reactions.

Cognitive skills in:

1. Selecting appropriate pharmacologic therapy for selected medical conditions.
2. Monitoring pharmacologic regimens and adjusting as appropriate.
3. Evaluating and reporting adverse drug reactions.

Health Maintenance

Knowledge of:

1. Epidemiology of selected medical conditions.
2. Early detection and prevention of selected medical conditions.
3. Relative value of common screening tests.
4. Appropriate patient education regarding preventable conditions or lifestyle modifications.
5. Healthy lifestyles.
6. Prevention of communicable diseases.
7. Immunization schedules and recommendations for infants, children, adults and foreign travelers.
8. Risks and benefits of immunization.
9. Human growth and development.
10. Human sexuality.
11. Occupational and environmental exposure.
12. Impact of stress on health.
13. Psychological manifestations of illness and injury.
14. Effects of aging and changing family roles on health maintenance and disease prevention.
15. Signs of abuse and neglect.
16. Barriers to care.

Cognitive skills in:

1. Using counseling and patient education techniques.
2. Communicating effectively with patients to enhance health maintenance.
3. Adapting health maintenance to the patient's context.
4. Using informational databases.

Applying Basic Science Concepts

Knowledge of:

1. Human anatomy and physiology.
2. Underlying pathophysiology.
3. Microbiology and biochemistry.

Cognitive skills in:

1. Recognizing normal and abnormal anatomy and physiology.
2. Relating pathophysiologic principles to specific disease processes.
3. Correlating abnormal physical examination findings to a given disease process.
4. Correlating abnormal results of diagnostic tests to a given disease process.

Examination, Development & Scoring

NCCPA's examination questions are developed by committees comprising PAs and physicians selected based on both their item writing skills, experience and references as well as demographic characteristics (*i.e.,* practice specialty, geographic region, practice setting, etc.). The test committee members each independently write a number of test questions or items, referencing each to a recently published textbook (excluding journal articles). Each question is review by content experts and medial editors from which only some items emerge for pre-testing. Every NCCPA exam includes both scored and pre-test items, and examinees have no way of distinguishing between the two. This allows NCCPA to collect important statistics about how the pre-test items perform on the exam, which informs the final decision about whether a particular question meets the standards for inclusion as a scored item on future PANCE or PANRE exams.

Pathway II exams are developed in much the same way as PANCE and PANRE exams. Pathway II questions, however, are not pre-tested due to the nature of that exam. Rather, after a preliminary analysis of each Pathway II administration's results, statistical analyses are used to identify items that appear to have been problematic or even flawed. Through this validation process, content experts review those items to determine whether the answers had been keyed incorrectly in the scoring system or whether the item itself was flawed in some way.

Also, occasionally Pathway II examinees will contact NCCPA with questions or concerns about particular examination items, which are also reviewed during the validation process. When the content experts identify a flawed item, it is removed from the group of scored items and is not included in the scoring process.

When NCCPA exams are scored, candidates are initially awarded 1 point for every correct answer and 0 points for incorrect answers to produce a raw score. After examinees' raw scores have been computed by two independent computer systems to ensure accuracy, the scored response records for PANCE and PANRE examinees are entered into a maximum likelihood estimation procedure, a sophisticated, mathematically-based procedure that uses the difficulties of all the scored items in the form taken by an individual examinee as well as the number of correct responses to calculate that examinee's proficiency measure. This calculation is based on the *Rasch model* and equates the scores, compensating for minor differences in difficulty across different versions of the exam. Thus, in the end, all proficiency measures are calculated as if everyone took the same exam. (That step is not necessary for Pathway II since all examinees in a given administration take the same exam).

Finally, the proficiency measure is converted to a scaled score providing aggregated data over time and among different groups of examinees. The scale is based on the performance of a reference group (some particular group of examinees who took the exam in the past) whose scores were scaled so that the average proficiency measure was assigned a scaled score of 500 and the standard deviation was established at 100. The vast majority of scores fall between 200 and 800. More details on the reference group for each exam and the calculation of scores will be provided in the form of *Performance Interpretation Guidelines* published with your exam results.

Example Question

The questions on NCCPA exams are presented in multiple-choice format and most offer four or five answer choices. An increasing percentage of exam questions are based on information presented in a clinical vignette, which requires higher level thinking than some other common question formats.
A 58-year-old man who has a history of alcohol abuse complains of severe epigastric pain. He feels some relief from the pain when he leans forward. In the past 24 hours he has experienced nausea and vomiting. He appears acutely ill and restless. On physical examination, the patient is hypotensive and has a rapid pulse rate. Bowel sounds are hypoactive, and there is abdominal tenderness with muscular rigidity and distention. The diagnosis would be supported best by which of the following laboratory tests?

1. Determination of the serum amylase level
2. Electrocardiography
3. Examination of the stool for ova and parasites
4. Routine urinalysis
5. Upper gastrointestinal series