

Dual PharmD/MBA Programs 2001-2002: A Descriptive Report

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This study provides a descriptive snapshot of active dual PharmD/MBA programs across the United States. All dual PharmD/MBA programs listed by the American Association of Colleges of Pharmacy (AACP) for the academic year 2001-2002 were included in the study. Representatives were sent a letter that stated the purpose of the study and requested printed informational materials on their respective programs. Telephone interviews were conducted as well. Fourteen of fifteen active dual programs were represented in the study. The programs have been in existence from 1-12 years with an average of 5.7 (SD= 4.1) years. All programs admit candidates independently to the pharmacy and business institutions. Graduates assume positions in the pharmaceutical industry upon completion of a dual program. These descriptive results may provide valuable information to students considering pursuing both the PharmD and MBA degrees. Additionally the findings may also provide a framework to improve dual degree programs already in existence and aid in the development of additional programs.

INTRODUCTION

Many changes in the pharmacy curriculum have taken place across the country. This is evident in the transition to the entry-level PharmD degree. The PharmD is a professional doctorate that focuses on pharmaceutical care, "the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life"(1).

Careers are available for individuals with the PharmD degree in a wide range of settings including the retail setting, hospital, long term health care, pharmaceutical industry, and managed care organizations among others. Examples of the managerial positions available within these organizations include directors of pharmacy, associate directors of pharmacy, assistant directors of pharmacy, administrative pharmacy directors, district or field supervisors, and pharmacy managers. Responsibilities of those in these positions often involve personnel management including hiring employees, conducting performance appraisals, and taking disciplinary action when warranted. Meanwhile, they may also be challenged with the responsibility of providing optimal pharmaceutical care with limited financial resources. Some are even held accountable for producing profits like other business corporations.

Since these positions are more than clinical in nature, some pharmacy institutions have come to realize the value of an administrative background in addition to the PharmD degree. Several options for obtaining managerial and administrative expertise are available. These include on-the-job experience, master's programs, residencies, and combination MS/residency programs. MS/residency programs teach residents to develop an understanding of pharmacy practice within healthcare organizations and allow one to gain a broad perspective on pharmacy issues. During the two-year program, residents are required to make critical decisions when given significant challenges and responsibilities[^].

Professionals may discern information about MS residencies by searching the American Society of Health-System Pharmacists (ASHP) Residency Directory under the general

residency category. Among those listed in the 2001 directory include the University of Kansas Medical Center and Ohio State University Medical Center. Both institutions offer a 24-month residency with an MS degree in hospital pharmacy upon completion of the program. The residency at Kansas Medical Center provides specialized training in administration that includes managing pharmacy services and personnel. Similarly, the residency at Ohio State affords residents the opportunity to participate in a staff development program for clinical pharmacy services(3).

Pharmacy Practice Management is another type of residency with a management focus. This residency type is listed in the ASHP Residency Directory under the category Specialized Pharmacy Practice Residency Programs. An example of this type of residency is offered at the University of California, San Francisco. The program teaches management concepts in aspects of pharmacy ranging from health care information systems management to personnel management. The program encompasses training in areas such as continuous quality management and cost-effectiveness of service(4).

Yet another option for studying managerial topics is to earn an MBA degree. The "MBA is an applied, practical degree that emphasizes a broad understanding of the overall operation of business"(5). Having such a degree enables an individual to develop managerial skills and responsibilities within an organization. The MBA degree is believed to offer the highest technical level of management education and has previously been ranked above the MS degree in terms of management training(6,7).

According to a study performed by Oakley in 1985, the preferred degrees for administrative positions in hospital pharmacy departments were the MBA or MS degrees. The PharmD degree, on the other hand, was preferred only for the position of Assistant Director for Clinical Services at the 1,531 hospi-

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Table I. Program characteristics for institutions offering the dual PharmD/MBA program (Academic Year 2001-2002)

	Years dual program has been in existence	Private institution	Public institution	MBA program accredited by AACSB ^a	PharmD program accredited by ACPEB	PharmD/ MBA awarded simultaneously	MBA awarded post-PharmD	GMAT required for MBA admission	PCAT required for pharmacy admission
Univ. of the Pacific	1	•		•	•	•		•	
Univ. of So. Calif.	12	•		•	•	•		•	
Univ. of Florida	10		•	•	•	•		•	
Mercer Univ.	14	•		•	•	•		•	•
Idaho State Univ.	8		• ^c	•	•		•	•	
Drake Univ.	4	•		•	•	•		•	•
Univ. of Kentucky	4			•	•	•		•	•
Creighton Univ.	4	•		•	•	•		•	•
Univ. at Buffalo	2	•		•	•	•		•	•
Duquesne Univ.	6	•		•	•		•		
Wilkes Univ.	1	•				•			
Univ. of Rhode Island	1		•	•	•		•	•	
Shenandoah Univ.	6	•			•	•			•
Univ. of Maryland	7		•	•	•		•		•

^a American Assembly of Collegiate Schools of Business.

^b American Council on Pharmaceutical Education.

^c In candidacy.

tals surveyed. The results of this survey imply that "pharmacy directors should possess a broader administrative knowledge base than a PharmD degree provides"(8). Another study published by Oakley *et al.* in 1985 showed that directors possessing MBA or MS degrees rated themselves higher than their PharmD or BS pharmacy director counterparts in academic preparedness to perform administrative roles(6). These limited studies, however, were both conducted in the mid 1980's and may not be as relevant today.

Currently, a number of pharmacy institutions offer the dual PharmD/MBA program and others are considering initiating such programs to allow students to graduate with dual degrees. According to the American Association of Colleges of Pharmacy (AACP) website there were 18 anticipated dual PharmD/MBA programs in the United States for the 2001-2002 school year(9). Despite the many programs in existence, few reports are available in the literature that describe PharmD/MBA programs. Among the few reports are descriptions of the programs at Campbell University, Shenandoah University, and the University of Kentucky. At Campbell University, PharmD students may decide to participate in the combined PharmD/MBA program at anytime during their pharmacy education. Once enrolled in the combined program students are given the opportunity to take an array of business courses including management, finance, business policy and law, as well as, accounting and economics (10).

The dual degree program at the University of Kentucky was developed for several reasons. One of which is to prepare individuals to balance clinical decision making with financial realities. Shaping leaders to assume managerial responsibility in various healthcare settings is another objective of the program. The University of Kentucky College of Pharmacy believes that the special skills obtained through its program will enable individual leaders to advance the profession of pharmacy(11). Likewise, Shenandoah University trusts that a joint PharmD/MBA program will enhance the managerial abilities of individuals to obtain high level positions in fields such as industry and health care institutions which will enable them to impact pharmacy organizations(12).

However, there was still a lot to learn about these three programs and the other fifteen institutions listed as offering the PharmD/MBA program. Therefore, the purpose of this study was to provide a descriptive analysis of the dual PharmD/MBA programs available in the United States and to determine the track record of these programs to date.

METHODS

The design was survey research. All dual PharmD/MBA programs listed on the AACP website were included in the study. A census was performed of one representative from each listed program. During the interview process efforts were made to contact any additional dual PharmD/MBA programs that were found to exist (a process known as snowball sampling). All representatives were contacted by mail with an advance letter stating the purpose of the study and requesting printed informational materials on their respective dual PharmD/MBA programs. A script of the telephone interview was attached to the advance letter so that each representative could be prepared for the interview. Each telephone interview lasted approximately 20-40 minutes. Characteristics of the dual PharmD/MBA programs served as the variables. Public information regarding the programs was also compiled. Descriptive statistics were used to portray the data. The study was deemed exempt by the Human Subjects Protection Program.

RESULTS

Study Participants

One representative from each of the 18 institutions listed on the AACP website was initially contacted. Five of the eighteen institutions were excluded because they did not offer the dual PharmD/MBA program for the 2001-2002 academic year. All five institutions are planning on initiating such a program within several years. During the interview process it was learned that three other institutions are considering implementing a dual PharmD/MBA program in the near future and that two additional institutions not listed on the AACP website already offer the dual degree program. These two institutions were included in the study resulting in a total of 15 institutions

Table II. Distribution of PharmD/MBA graduates' current positions^a (N=37)

Area of practice	Number	Percent
Pharmaceutical Industry	17	46.0
Pharmacy Association Management	1	2.7
Community Pharmacy Owner	4	10.8
Academia/Pursuit of PhD	4	10.8
Community Pharmacy	3	8.1
Insurance Company	5	13.5
Hospital Pharmacy	2	5.4
Consultant Pharmacy	1	2.7

^a Numbers are not comprehensive. They only include those known to the representatives at nine institutions.

offering the dual degree program for 2001-2002. All 15 institutions agreed to participate in the interview; however, one representative was later unable to participate due to personal health reasons. The 14 institutions that were represented are listed in Table I.

Program History

The 14 active PharmD/MBA programs have been in existence from 1-12 years with an average of 5.7 (SD= 4.1 years). Three of the institutions have been in existence for only one year and 50 percent of the institutions have been in existence for six or more years. Table II displays the whereabouts of program alumni known by the representatives at nine institutions. Two institutions had no knowledge of their graduates and the three new institutions implemented approximately one year ago have yet to graduate any students from the dual program. Based on the nine institutions, just less than half (46 percent) of the graduates secured positions in the pharmaceutical industry. Another 13.5 and 10.8 percent of the graduates work for insurance companies and became owners of community pharmacies, respectively.

Program Structure

Twelve of fourteen (86 percent) programs were structured around two main education centers, the pharmacy institution and the business institution. The other two remaining programs are structured entirely at one education center, specifically at the pharmacy institution. Nine of fourteen (64 percent) programs offered their pharmacy and business courses concurrently. Meanwhile three of fourteen (21 percent) programs offer their courses sequentially. The remaining two programs offer the pharmacy and business courses in an interspersed or "broken" format (*i.e.*, students would take pharmacy courses for one year, take business courses for another year and then return to take additional pharmacy courses for the remaining two years).

Program Objectives

The dual degree programs share two primary objectives. First, to instill in clinical students the business background and skills necessary to enter management and administrative positions within pharmacy. Second, to allow students to earn the MBA degree in less time and at a lower expense.

Admissions

All 14 dual degree programs admit candidates independently to the pharmacy institution and the business institution. All but one of the institutions requires that their students be admitted to the pharmacy institution prior to applying to the

MBA portion of the dual degree program. The remaining institution allows their students to apply to both the pharmacy and MBA program concurrently.

Fifty percent of the pharmacy institutions required the PCAT as part of their pharmacy admissions and 79 percent of the business institutions required the GMAT for the MBA program. Thirty-six percent of the institutions offering the dual PharmD/MBA program required both the PCAT and the GMAT. The GRE is not required by any of the 14 dual programs. A competitive GPA is a stipulated requirement at 13 of the 14 institutions for both the PharmD and MBA program. One dual degree program waives the minimum GPA requirement for pharmacy students applying to the MBA program; however, a competitive GPA is required for the initial admission to the PharmD program.

Nine of fourteen (64 percent) business institutions did not require the pharmacy students to have any business pre-requirement courses prior to starting their MBA program. Two years of full time work experience was necessary in order to be considered for admission to one of the business institutions. Two of the business institutions also required that the students have a prior degree in any field of study or have senior standing based on the number of college credits completed in order to apply to their MBA program.

Enrollment

The University of the Pacific is the only pharmacy institution of the 14 that have year-round enrollment. Students are able to complete their PharmD in a total of three years. All other pharmacy institutions have a two-semester (Fall and Spring) enrollment. Students at these institutions may earn their pharmacy degree in four years. The average number of years it takes to complete the dual degree program for all institutions is one more year of schooling in addition to the usual number of years it takes to complete the pharmacy program alone.

The average number of students who enrolled in the dual degree programs each year between 1998 and 2002 was not obtainable since many of the institutions do not track this information. However, 71 percent of the representatives reported that nearly all the students who applied to the dual programs were admitted, enrolled, and completed the program. The other 29 percent of the representatives were unable to provide any data or estimation of the number of students who were admitted, enrolled, or completed the program each year.

Courses

The average number of credit hours required for completion of the PharmD degree is 138.30 (SD= 12.39) [ranging from 122-158]. The average number of additional business credit hours required for completion of the PharmD/MBA degree is 34.43 (SD= 17.17) [ranging from 24-57]. Three of the MBA institutions have a business project requirement for graduation in addition to the core business courses.

The core business courses offered by the MBA programs are listed in Table III. All 12 of the MBA programs that provided information on their MBA curriculum offer courses in accounting, economics, finance, and marketing. Greater than 50 percent of the programs offer courses in business policy, global and domestic business environment, production and operation management, management information systems, and organizational behavior.

Approximately 30 percent of the business courses for all

Table III. Core MBA courses offered by Dual PharmD/MBA institutions^a

Core MBA courses	Number of dual PharmD/ MBA institutions offering the courses	Percent
Accounting	12	100.0
Analysis for Decisions	4	33.3
Business Policy	7	58.3
Economics	12	100.0
Ethics	2	16.7
Finance	12	100.0
Global and Domestic Business	9	75.0
Environment Management	2	16.7
Law/Legal Environment	6	50.0
Leadership Management	4	33.3
Information Systems	10	83.3
Marketing	12	100.0
Operations Management		
Science	3	25.0
Organizational Behavior	10	83.3
Production and Operation Management	7	58.3
Statistics	6	50.0

^aTwo of the fourteen institutions were unable to provide information on their MBA courses. Percent calculated based on a total of twelve available MBA curriculums.

programs were elective classes. The list of elective business courses was extensive and variable depending on the individual MBA program. Most of the MBA elective courses can be fulfilled through pharmacy courses. In such cases, the student receives dual credit from the pharmacy and business institutions.

Accreditation

The American Council on Pharmaceutical Education (ACPE) accredited all 14 pharmacy institutions(13). The American Assembly of Collegiate Schools of Business (AACSB) accredited 79 percent of the MBA programs (14). Three of the fourteen were not accredited by AACSB. However, one of these three institutions has "candidacy" status, which signifies that the MBA institution is demonstrating reasonable progress toward the attainment of the AACSB accreditation. No further information was available at the AACSB website regarding the two non-accredited institutions.

Tuition

The current average cost of in-state pharmacy tuition per year at a public institution was \$5,968 (SD= \$2,350) [ranging from \$2,952 - \$8,500]. The average out-of-state pharmacy tuition at a public institution was \$14,936 (SD=\$5,454) [ranging from \$8,119 - \$21,000]. The average additional MBA tuition cost per year for in-state and out-of-state students attending a public institution was \$5,680 (SD= \$3,281) [ranging from \$0 - \$8,000] and \$15,320 (SD= \$8,033 [ranging from \$0 - \$21,000], respectively. Two of the public institutions with the concurrent PharmD/MBA program have a flat tuition cost such that students do not pay any additional MBA tuition as long as they were taking at least the minimum number of credit hours considered "full time" at their institution.

The most recent average pharmacy tuition cost at private

institutions for in-state and out-of-state students was \$18,642 (SD= \$6,202) [ranging from \$8,726 - \$28,333]. Additional in-state and out-of-state MBA tuition cost at private institutions was approximately \$16,224 (SD= \$10,693) [ranging from \$5,750 - \$28,000].

DISCUSSION

Pharmacy institutions continue to recognize the value of an MBA degree in addition to the PharmD degree. The three new programs initiated last year and the eight institutions currently working towards implementing the dual PharmD/MBA program illustrate this growth.

Important information was gathered from the representatives at each institution regarding the dual degree programs. Surprisingly, only 13 of 18 dual degree programs anticipated for 2001-2002 listed by AACP actually offer the dual PharmD/MBA program. Furthermore, it was found that two institutions not listed on the AACP website already have active dual degree programs in existence. According to one institution that recently implemented the dual PharmD/MBA program, several considerations must be made prior to the initiation process in order to have a successful program. One key consideration is to establish whether the pharmacy student population is interested in such a dual degree. For example, the institution surveyed the current pharmacy students to determine how many would be willing to put in the extra time and effort to pursue an additional degree. Only after establishing such an interest did the institution proceed in the endeavor of implementing the PharmD/MBA program.

Another important step is to study the dual programs already in existence to gain insight as to what works and what does not in order to avoid making similar mistakes. Other steps involved in initiating a dual program include careful review of both the pharmacy and business curriculum, proposing such a dual degree program to each institution, obtaining approval from both institutions and also that of the graduate college.

During the implementation process, challenges should also be anticipated. Challenges to the initiation of a dual program include the need to dispel any misconceptions that may exist. For instance, some may think that pharmacy students cannot take graduate courses without first obtaining a bachelors degree. This simply may not be the case, especially if the student has accumulated graduate status based on the number of units or credit hours obtained from pre-pharmacy and pharmacy courses completed. It is possible to formally propose a dual PharmD/MBA program within one year if the appropriate steps and preparations are taken.

A total of 15 dual programs were active for the year 2001 - 2002. Information such as program structure and characteristics of the dual PharmD/MBA programs offered throughout the United States were also obtained. All dual institutions represented in the study admit students to the pharmacy program and the MBA program independently of each other. Pharmacy students applying to the MBA programs must compete with all other candidates from various disciplines applying to the business institution.

The dual PharmD/MBA programs that were already in existence share some similar program structure characteristics. Nearly all the dual programs offer their courses at two locations; the pharmacy courses at the pharmacy institution and the MBA courses at the business institution. Also, a majority of the dual programs are set up in such a manner that students take both pharmacy and business courses concurrently instead of

sequentially or interspersed. In addition, a large number of the dual programs award both the PharmD and MBA degree simultaneously at the completion of the joint professional program. Furthermore, most of the business institutions require the GMAT for admissions to the MBA program and none required the GRE.

Another similarity among the institutions was that the average number of credit hours entailed in the pharmacy curriculum was fairly consistent from one institution to the next as were the number of credit hours entailed in the business curriculum. This can be due in part to the fact that all 14 pharmacy institutions were accredited by ACPE, a national agency for the accreditation of professional degree programs in pharmacy. Likewise, most of the business programs were accredited by AACSB.

Finally, the graduates whose whereabouts were known by the representatives primarily secured positions in the pharmaceutical industry. The pharmaceutical industry encompasses a wide variety of career options. Examples of the specific areas within the industry include academic detailing, product sales and marketing, clinical research, and drug development. Only a small number of graduates ventured into the business world by starting their own independent pharmacies. These selected individuals, however, have reportedly been successful and continue to own and operate their pharmacies.

Characteristics of the dual PharmD/MBA programs that varied greatly among institutions were the pharmacy tuition cost and the additional MBA tuition cost. As expected the private institutions had the highest tuition cost for both the pharmacy tuition and the additional MBA tuition as compared to the public institutions. The private institutions have the same tuition cost for all students irrespective of whether they are in-state or out-of-state students. The public institutions, on the other hand, offer lower tuition cost for in-state students for both the pharmacy and MBA programs.

Interestingly, the range of additional tuition cost for the MBA program offered at public institutions varied significantly from \$0 to \$8,000 more for in-state students and \$0 to \$21,000 more for out-of-state students. Two institutions have a flat tuition cost which enables students to take as many courses as possible without additional tuition fees once the "full-time" number of credits have been achieved. For instance, if a student is already taking 15 credit hours of pharmacy courses at an institution that considers anything over 12 credit hours as "full-time" student status, any business credit hours taken in addition to the pharmacy credit hours do not accrue further fees. Despite this incentive, most students enrolled in the dual degree program at these two institutions do end up paying more to take the additional MBA courses because many will find it necessary to take the business courses in the summer when their pharmacy workload is not so challenging. Students exploring the simultaneous pursuit of two degrees should take into consideration the demands of an enhanced academic workload.

Overall, there appears to be two main practical advantages to completing the dual degree program as opposed to obtaining each degree separately. One reason is that the average number of years required to complete the professional dual degree program is five years. This is one year less than it would take for a student to complete the four year professional pharmacy degree and then go on to obtain the MBA degree which on average takes two years to complete. The other reason why such a program is more appealing is that the additional MBA

tuition cost can be considerably less than what it would cost if the MBA degree were pursued separately.

While there may be some advantages to obtaining the dual PharmD/MBA degree versus that of earning each degree separately, one should also keep in mind the other options available such as on-the-job experience, residencies and combination MS/residency programs. The dual PharmD/MBA programs, residencies, and combination MS/residency programs tend to offer a much more formal and structured environment in which to learn as compared to that gained from on-the-job experience. These programs are also accredited by professional organizations, which ensure that certain objectives are met, whereas the knowledge gained from on-the-job experience may vary significantly from one place of employment to the next.

Furthermore, the dual PharmD/MBA programs, residencies, and combination MS/residency programs afford their students either a degree or some sort of certification upon completion of the program where on-the-job experience does not. PharmD/MBA programs offer a learning environment in which knowledge is gained through practice in hypothetical situations or study case scenarios that are used in future application in the "real" world after completion of the program. Combination MS/residency programs, on the other hand, allows students to not only obtain academic knowledge but also offers them the chance to immediately apply that knowledge in actual practice. Residencies and combination MS/residency programs also tend to be more clinical in nature than that of the dual PharmD/MBA programs.

Finally, the length of each program may be a key factor to consider. Dual PharmD/MBA programs typically take one year longer than the PharmD degree alone, as do the residencies. Combination MS/residencies, however, require an additional two years after the PharmD degree. Differences certainly exist among the several choices available for those interested in gaining managerial and administrative expertise. Careful thought should be given in order to determine the best path that is most suitable to the interests and needs of each individual.

There are some limitations to this study. First, it is assumed that the representatives provided accurate, unbiased information regarding their respective institutions. Further the compiled data for the core MBA courses and employment positions of alumni are not all inclusive. Lastly, due to the dynamic nature of such dual programs some of the information gathered in this study may change.

CONCLUSION

These descriptive results may provide valuable information to students considering pursuing both the PharmD and MBA degrees. Also, the results may provide a framework to improve dual degree programs already in existence and be useful in aiding the development of such programs at pharmacy institutions planning on initiating a similar joint program. Most dual PharmD/MBA programs at present do not consistently track the number of students that apply, enroll, or complete such programs. It would be interesting to see such figures tracked and determine where graduates pursue careers and if employers increasingly require the MBA as a hiring criterion.

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