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SPECIAL ARTICLES

Growth of a Pharmacy School Through Planning, Cooperation, and Establishment of a Satellite Campus

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University of Maryland School of Pharmacy was in a quandary: its comprehensive mission required meeting state workforce needs while increasing educational quality, expanding research, and responding to service needs, but state resources were declining, faculty members were stressed, construction of a long-needed new building was stalled, and pressure to increase doctor of pharmacy (PharmD) enrollment was growing. A sharp challenge from the Board of Regents mobilized the school to quickly launch a growth initiative to accelerate PharmD program expansion through a satellite campus. Within 4 months, a plan was approved that not only led to enrollment growth, but also to a significant expansion of the faculty and staff, increased operating and capital budgets, and ground breaking for an $83 million new building. This case study illustrates how seemingly competitive needs such as teaching, research, and service can be woven together synergistically to accomplish multiple goals.

Keywords: satellite campus, planning, finance, distance education, enrollment, expansion

INTRODUCTION

In the spring of 2006, representatives of the University of Maryland School of Pharmacy attended a University System of Maryland Board of Regents hearing to defend construction funds for a new pharmacy building. Not an unusual event in the United States as pharmacy schools struggle to garner the resources to increase PharmD enrollment in the face of a continuing workforce shortage in pharmacy. The building was to support the educational facilities necessary to implement a 10-year enrollment plan that would increase the number of PharmD graduates from the state's only pharmacy school.

The regents were unimpressed, however, both by the number of additional students to be accommodated by the new building, and by the 7-year lag time before any new graduates would appear. The proposed enrollment plan was deemed insufficient to support a facility that would cost taxpayers over $83 million and would not help short-term pharmacy workforce needs. The regents challenged the School to complement its long-term enrollment plan with short-term tactics to address immediate workforce needs. Furthermore, they wanted the plan presented to them in 1 month. A case study of how the school met that challenge and undertook a growth initiative that not only met the regents' desire to meet pharmacy workforce needs, but also supported a strategic plan that would improve educational quality, better define the role of the pharmacist, advance research, and alleviate chronic under funding of service programs.

The Context

In May 2005, the school of pharmacy faculty adopted an ambitious strategic plan. Implementation of the plan began in academic year 2005-2006. Resource issues emerged early as a major challenge to achieving the strategic goals. While the school had been successful in recent years in achieving additional and improved space for faculty members and students involved in research and graduate education, and had renovated and expanded space for pharmacy practice faculty members and residents, space for the PharmD educational program was poor. Lecture facilities and teaching laboratories were overcrowded and needed renovation, smaller classrooms were limited and scattered across the campus, and public space for students was almost nonexistent. A new building to address these needs had been languishing in the state capital budget queue since the early 1990s. Initial planning money was obtained in early 2006, but construction funding continued to be elusive and a completed facility was several years away.

PharmD program enrollment was increased by 20% in 2000 (to 120 per class); however, anticipated additional state resources did not materialize due to a downturn in the state's economy. Only 2 additional faculty members

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were appointed to meet the needs of the expanded program. By fiscal year 2007, net state appropriations had dropped by almost 40% from 5 years earlier and tuition and fees had risen by 81%. While the school's operating budget had remained level, the PharmD program had become much more dependent on tuition and fees. State funding was relatively stable between fiscal years 2005-2006 and 2007-2008, but another forecast downturn in the economy did not bode well for the program expansion that would be necessary if PharmD enrollment were to be increased yet again.

Other factors affecting the school in 2006 included a pharmacist shortage in Maryland that contributed to strong competition for the limited number of seats in the PharmD program. While the academic quality of students increased, applicant and alumni frustration grew over the low acceptance rate. Conversely, there was little doubt that the applicant pool could support expansion in class size without sacrificing student quality. Also, faculty members were not enthusiastic about further enrollment increases. The increased workload from the recent 20% enrollment increase, coupled with successful expansion of research funding, continued to affect the morale of faculty and staff members. Planning groups found it difficult to deal with the strategic goal that called for the school to "Optimize student enrollment with a sustainable infrastructure of technology, facilities, preceptors, and faculty and staff resources." Finally, there was rapid growth in public service activities operated by the school. In particular, the Maryland Poison Center provided critical service throughout the state, but had little dedicated funding and was subsidized disproportionately by the school's academic budget.

The Initial Response

Given the short turnaround time to prepare a formal response to the regents, a small team of faculty members and administrators began gathering information, establishing priorities, and structuring a preliminary plan. It was essential that the response not only address PharmD enrollment, but also the strategic goals of the school in education, research, and scholarship, as well as in clinical and public service. The plan also had to be fiscally sound. Other assumptions for the plan were agreed upon:

- PharmD enrollment increases could not be accommodated on the University of Maryland Baltimore (UMB) campus. A suitable off-campus site must be identified.
- The school could not be replicated at a distant site. The UMB campus was the only public academic health center in the state and the school's research and clinical programs were inextricably woven into its fabric. Therefore, any faculty members stationed at a satellite location would have full rights and responsibilities in the school.
- The school required an off-campus site as a satellite that could house additional students and facilitate delivery of the existing PharmD curriculum taught by the same core faculty.
- Instructional technology would be used to deliver content from the main campus with dedicated local faculty support at the satellite site.
- Additional full-time faculty and staff members would be essential to maintain or improve program quality. Faculty/student ratios must be maintained at current levels.
- The satellite campus must be in an area that could provide necessary introductory and advanced pharmacy practice experiences.
- Accreditation standards must be maintained.
- The new pharmacy building at the main campus must be built rapidly, since it would house most of the new faculty members required by the expansion.
- Appropriate assurances of long-term state budget support for the satellite would be necessary, since once students were enrolled there could be no turning back.

Several potential locations for a satellite campus in Maryland were explored. Sites in Western Maryland and on the Eastern Shore were considered because of acute pharmacist workforce shortages and local support, but lacked the advantages of the Universities at Shady Grove (USG), located only 40 miles away, which was chosen. As part of the USM, USG was created in 2000 as a second physical home for academic programs operated by any of the other USM institutions. USG had a campus that included classrooms and science laboratories, conference facilities, a cafeteria, a fitness center, and ample parking. Upon completion of a greatly expanded library at USG in fall 2007, pharmacy students there would have the same access to library services and collections as those in Baltimore.

The School of Pharmacy was offered the space occupied by the soon-to-be-relocated library to accommodate a new pharmacy practice laboratory. Faculty offices and classroom space would be made available adjacent to that of the school of nursing, which had offered its baccalaureate program at USG for many years. Nursing welcomed pharmacy's proposal to enlarge and share laboratories for patient assessment and objective structured clinical examination (OSCE) use.

Infrastructure support would be provided for student affairs and instructional technology and would mesh well with and supplement the analogous services provided by the School of Pharmacy. Pharmacy would be the first professional doctoral program on the campus. Both USG and USM were eager to have the satellite campus for the School of Pharmacy located at Shady Grove and favorable financial arrangements appeared feasible.

An added advantage of USG was its location in the heart of the I-270 research corridor, which included many biotech firms such as MedImmune and Human Genome Sciences. Several federal agencies such as the National Institutes of Health, Food and Drug Administration, National Institute of Standards and Technology, and Agency for Healthcare Research and Quality were nearby, and the University of Maryland Center for Advanced Research in Biology was adjacent. Shady Grove Adventist Hospital was close, as were several other large community hospitals.

In summary, the initial response to the regents in June 2006 proposed to expand the PharmD program in fall 2007 by adding 40 students at USG. This number provided a substantial short-term enrollment increase (33%) to address the workforce issue. It was large enough to justify the substantial commitments necessary to support a satellite campus yet small enough to be feasible given the short time period for planning. The curriculum would be delivered in hybrid fashion, using asynchronous delivery of most lectures from the School in Baltimore using distance education technology coupled with synchronous discussions and meetings and supplemented by faculty members located at Shady Grove. New graduates would be added to the pharmacy workforce by spring 2011. A revised 10-year enrollment plan would increase graduates at the Baltimore campus after completion of the new building. Caveats to the proposal included additional operating funds to maintain faculty/student ratios; capital funding for instructional technology and facilities development at both the Baltimore and USG sites; acceleration of construction of the new building at Baltimore; and the availability of experiential learning practice sites. The regents accepted the proposal and asked UMB and USM to further develop the plan and its implementation.

THE GROWTH INITIATIVE

In mid-2006 the school committed to a *growth initiative* – a rare opportunity to invest significant new operating and capital resources into a strategic plan that would increase capacity in its PharmD program while simultaneously developing its other priorities. With only 14 months to prepare for the opening of a new satellite campus, the school had to mobilize quickly. If students were to be enrolled at USG in fall 2007, rather than a year later, a decision had to be made by October 2006—only 4 months away.

The Business Plan

Key to the success of the growth initiative would be a realistic and feasible business plan that would take into account the distinctive characteristics of UMB, USG, and USM. Under the direction of the associate dean for administration and the chief operating officer, the business plan was updated at least 20 times during the next few months to keep pace with rapidly changing aspects of academic planning, student affairs, faculty and staff recruitment, curriculum delivery, instructional technology, space and facilities, and operating budgets. Since almost everyone in the school was involved in some phase of the growth initiative, the business plan provided the critical mechanism and overarching structure for unifying the many disparate functions that had to be integrated to assure success. It was developed and refined in parallel with the academic planning directed by the associate dean for academic affairs. The business plan addressed several key elements:

Maintaining full-time faculty/student ratios. Full-time faculty members are the principal drivers of academic excellence. Therefore, it was important to maintain and even improve faculty/student ratios. The plan called for adding 25 new faculty positions over 4 years (a 37% increase). In addition, startup costs were included as a recurring part of the operating budget. Space and facility needs were built into concomitant proposals to support office space at USG and office and research space in the new building at UMB.

The size of the cohort of students at the satellite. After studying various models it was determined that a minimum cohort of 40 students would be needed to generate the tuition and fee revenue necessary to support the financial aspects of the plan.

Information technology needs. Delivering content over the Internet to a new site and to students anywhere would require significant improvements in the school's information technology (IT), both at UMB and USG. Improved IT would also permit leveraging of faculty time, enhancing the pursuit of research and scholarship, innovative practice models, and public service.

Educational delivery systems. To better leverage funding to hire faculty members, and for cost and quality reasons, the school chose to develop an in-house educational delivery system (rather than outsourcing). The school had already been investigating distance education technology for some time and had already gathered substantial information about alternatives. This approach permitted flexible development over time and could be managed internally for direct control. Estimated cost savings would support appointing 6 additional faculty members.

Experiential learning. The business plan included dedicated funding to support the administrative and educational resources needed to expand the number of sites, preceptors, and faculty coordinators for all aspects of experiential learning.

Student support. Additional PharmD scholarship funds were built into the school's base state budget.

Assessment infrastructure. Appropriate programmatic and student assessments would be necessary to assure the equivalency of PharmD program delivery between UMB and USG. Additional staff support was provided for this purpose.

Capital support for facilities. The capital requirements of the growth initiative included $1.7 million in UMB funds to install instructional technology at UMB and to renovate space at Shady Grove for the pharmacy practice laboratory and other facilities. Since plans for a new practice laboratory were already being developed for the planned new building in Baltimore, it was feasible to project construction of a similar facility before it was needed for extensive use by the second year PharmD class. During the first year, Shady Grove students would be bussed to Baltimore for the few occasions that a practice laboratory would be required.

Upfront loans and cash flow issues. The business plan called for additional state funds over the first 3 years of the program, supplemented by the dedication of tuition revenue from additional PharmD students. Although it would take 4 years for the tuition revenues to reach their maximum, the startup costs would be the greatest in the early years of the program. Loans from the campus were negotiated to support these costs that would be paid back from future tuition revenues.

Achieving independent funding for the Maryland Poison Center. A separate initiative was proposed to achieve new funding from the state for this public health service and free up resources for the growth initiative.

Multiple iterations of the business plan were necessary as more information was obtained during the development of the growth initiative. Once a plan was devised that reasonably met the School's needs, extensive negotiations were undertaken with USM and UMB to obtain the necessary support.

Due Diligence

As business planning proceeded for the growth initiative, the faculty members undertook a process of due diligence under the leadership of the associate dean for academic affairs. Five groups of faculty and staff members were organized in the summer of 2006 to focus on the School's ability to open a PharmD program at Shady Grove in fall 2007, or whether opening would need to be delayed a year. The groups concentrated on the short-term issues of rapid implementation.

An important early decision was not to attempt to radically revise the curriculum in the face of implementing the distance education program. The challenges of the new delivery system would be enough to tackle during at least the first year of the program. A hybrid system was developed. The identical first-year curriculum would be delivered at both campuses using an asynchronous delivery system for classroom lectures. Faculty at UMB would lecture to Baltimore PharmD students as always. Content would be captured and placed immediately on a secure Web site. The recorded lectures would be supplemented by live support from a small core of faculty members located at Shady Grove, as well as by synchronous video and face-to-face experiences with Baltimore-based faculty members. As a revised PharmD curriculum was to be developed as part of the school's strategic plan, discussion of delivery of future components of the program to Shady Grove was deferred.

The due diligence groups examined a wide range of issues and concerns.

Personnel needs. Course masters, department chairs, and vice chairs of education were consulted regarding the number and types of faculty and staff members necessary to deliver the year 1 curriculum to a distant site. Permission was sought to begin recruitment immediately to fill new faculty positions that would be funded by the growth initiative for year 1 (FY 2008). Since most of the teaching responsibilities in year 1 of the PharmD curriculum lay with the pharmaceutical sciences department, the largest number of new faculty positions were allocated there. Two practice positions were allocated for Shady Grove so that practice sites could be developed in advance of student needs in year 2. Subsequent allocations were deferred to maintain flexibility, but would be made in accord with educational needs and strategic priorities.

Information and educational technology. Facility and equipment needs as well as faculty development and training requirements were identified.

PharmD student recruitment, admissions, and other needs. Since the PharmD program applicant pool was large and of high quality, enrolling 40 additional students would not be an issue. Because most recruitment for the entering class of fall 2007 would have been completed by the time a final decision to go ahead was made, the plan called for informing all students qualifying for admission (120 plus the new 40) that they would have their choice of which campus to attend. Once one campus was filled, students would be required to accept the alternative campus or decline admission and release a place for someone on the waiting list. Complete information about the alternatives would be provided to the admitted applicants. A variety of student issues were addressed and resolved such as access to faculty advising, academic support, medical and mental health services, and ancillary services. Current PharmD students at UMB were consulted about establishing student organizations at USG and were enthusiastic about working to set up integrated or separate groups as appropriate.

Experiential learning sites and preceptors. This group explored the availability of the required number and quality of community and institutional experiential sites and established the need for a full time preceptor recruiter/trainer to support the USG program.

Finances and facilities. The group identified the physical plant modifications necessary at UMB and USG. The group also reviewed the financial feasibility of the growth initiative to maintain and improve the quality of instruction, research, and service activities of the school.

In early October 2006, each of the due diligence groups reported that it was feasible to begin the new program at Shady Grove in fall 2007. The school's executive council endorsed the conclusions, and subsequently, the faculty assembly approved the growth initiative plan, along with the previously stated caveats referring to resource availability.

During the due diligence process, the school sought out and received extraordinary assistance from other UMB schools, as well as from other pharmacy schools throughout the country with experience in distance education. For example, an alumnus provided the use of a private airplane to enable a team of 8 faculty members to visit both the main campus and 1 of the satellite campuses of the University of Florida College of Pharmacy within an intense 2-day period. The team was able to assess firsthand Florida's experience with distance education, its successes, and perhaps most important, things to avoid.

Throughout the process, constructive input and support were received from the leadership and staff members of the UMB campus, USG, and USM. The governor's office and the Maryland General Assembly also were involved with funding decisions concerning the Maryland Poison Center, the growth initiative, and acceleration of construction of the school's new building. Recognizing the need for quick action, all parties responded positively and rapidly.

OUTCOMES OF THE GROWTH INITIATIVE

In early November 2006, the president of UMB endorsed the business plan of the 4-year growth initiative and guaranteed the necessary operating and capital funds to begin the satellite PharmD program in fall 2007. Recurring state funds were included in the operating budget of the school beginning in July 2007 (Year 1, FY 2008) and UMB provided loans and capital funds for equipment and renovations to enable establishment of the satellite.

The first PharmD class matriculated at the USG satellite in August 2007. For the most part, curriculum delivery went as planned. Three faculty members and 1 staff member were located full time at USG, while Baltimore-based faculty members associated with first-year courses made frequent trips to Shady Grove for student review sessions, discussions, examinations, and individual counseling. The academic performance of the students during the first year of the PharmD program offered initial evidence of success. No significant differences in academic performance were found between students at the satellite campus and students at the home campus at UMB.

Focused site visits from the Accreditation Council for Pharmacy Education were conducted in March 2007 and November 2007 to review the substantive change in the doctor of pharmacy program. The ACPE subsequently affirmed the accreditation status of the program after each visit.

The Maryland General Assembly provided a separate operating budget for the Maryland Poison Center beginning in July 2007 (FY 2008). This permitted reallocating significant operating funds in the school's operating budget for use in the growth initiative.

The funds generated through additional general state revenues and the capture of tuition revenues from what will eventually be 160 additional students will permit hiring about 25 new full-time faculty members, as well as a significant support staff. Faculty recruitment is now underway to implement further the projected 37% increase in positions. A steering committee made up of the dean, associate deans, department chairs, and staff members reviews and recommends budget allocations, deals with logistical issues, and assesses progress at both campuses.

The Maryland General Assembly approved capital funds for the new pharmacy building effective July 2008 and construction began on the 112,565-square-foot, $83-million facility. The appropriation included $19.6 million for furniture, technology, and scientific equipment that would support both faculty research and PharmD and graduate student education.

Subsequently, the school received year 2 (FY2009) and year 3 (FY2010) growth initiative funding as requested. Of course, as the state budget faces shortfalls with the declining economy, these funds are vulnerable in the same way as other elements of the university's budget.

CONCLUSIONS

A solid business plan along with careful planning and support from both internal and external constituencies enabled the successful completion of the first stages of the University of Maryland School of Pharmacy's Growth Initiative. This case study illustrates how a variety of seemingly disparate objectives such as meeting workforce needs, growing research and scholarship, expanding clinical service programs (including the Maryland Poison Center) and developing experiential sites, can be blended into a successful and unified plan. The catalyst of a challenge from an activist board of regents, combined with the willingness of the School of Pharmacy community to take risks and act extraordinarily rapidly for an academic institution, and the support of the campus and university system, plus a great deal of good fortune, contributed to outcomes that will have a positive impact on pharmacy, pharmaceutical research, and health care in the State of Maryland for many years to come.

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