

COMMITTEE MEMORANDUM

TO: Education and Student Affairs Committee, Board of Regents, State of Iowa

FROM: Diana Gonzalez

DATE: June 1, 2005 *ASN*

SUBJ: Proposal to Create a Department of Cardiothoracic Surgery at the University of Iowa

Recommended Action:

Consider the University of Iowa's proposal to create a Department of Cardiothoracic Surgery, and determine whether to approve the proposal, as recommended by the Council of Provosts.

Executive Summary:

The University of Iowa is requesting approval for a new Department of Cardiothoracic Surgery in the Carver College of Medicine.

Existing Structure	Currently, there is a Division of Cardiothoracic Surgery which functions as a relatively autonomous unit in the Department of Surgery. The proposed change is to establish a Department of Cardiothoracic Surgery from the Division of Cardiothoracic Surgery.
Trends	Recent national trends have been for academic centers to establish an independent department of cardiothoracic surgery to attract clinical and research faculty by allowing greater autonomy from the department of surgery.
Duplication	There are no other cardiothoracic training programs within the state of Iowa.
Need	Departmental status will provide a strengthened basis for recruitment and retention of faculty, enhanced education and training, and growth in research productivity. A separate department will promote visibility and allow the department to attract postdoctoral candidates.

Quality	<p>According to the University of Iowa, the Division of Cardiothoracic Surgery has achieved national recognition as a result of the technical skills of the faculty, the quality of the graduate medical education (residency) program, participation in clinical research programs particularly related to oncologic surgery, artificial organs, pediatric cardiac surgery, and transplantation, and the national leadership roles of senior faculty in specialty organizations.</p>
Cost	<p>The Division is currently striving to achieve fiscal balance. Several changes in budgetary consideration will be met if the division becomes a department, including (1) ability to control operating facilities to a greater extent; (2) determination of appropriate levels of personnel in all areas for growth; and (3) ability to achieve financial success.</p> <p>During the initial separation from the Department of Surgery, the department of cardiothoracic surgery will cost-share several positions, including a billing person and administrator of the department.</p>
Residency Program	<p>Because cardiothoracic surgery has an independent residency program, complete autonomy in the educational mission of cardiothoracic surgery is possible without reliance on other programs for supplying residents. In addition to continuing cardiothoracic resident education and training, clinical and educational opportunities will be enhanced by the increased volume of clinical material and research opportunities resulting from new faculty recruitment.</p>
Accreditation	<p>The program is fully accredited by the Accreditation Council for Graduate Medical Education. However, five citations were made during the last site visit, including duty hours; case volume; pacemakers; parking; and faculty involvement in education and development. Some of the citations, including duty hours, case volume, and improvement in faculty education and development, have already been corrected. Parking remains an issue and, according to the division, beyond their control. The program is currently functioning under a short accreditation cycle which they indicate is customary with a change in program directors. The next site visit will occur in July 2006. At that time, "if substantial compliance with the Requirements is not documented, an adverse action will be conferred." The division anticipates that the next site visit will result in a 3-5 year accreditation.</p>

Link to Strategic Plan:

This effort is part of the institutional activities which help the Board of Regents achieve its objective to improve access to offer high-quality programs through ongoing program improvement for undergraduate, graduate, professional, and non-degree students and special school students (Objective 1.1).

Background:

According to the Thoracic Surgery Directors Association (TSDA) and the Residency Review Committee (RRC) on accredited programs, there are 87 thoracic surgery programs in the U.S. that are actively training residents. Of these programs, 56 are divisions and 28 are departments; more than 90% of the latter have become departments in the last 7-10 years.

Review of
Proposal

The Council of Provosts (COP) and the Board Office reviewed this request and the Council recommended approval.

Regent Program
Review Questions

The University's responses to the Regent Academic Review and Program Approval Questions and to the Principles and Standards for Program Duplication are attached (pages 4-11).

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**Proposal to Create a Department of Cardiothoracic Surgery
College of Medicine at the University of Iowa**

6. 05 Academic Review and Program Approval

1. How will this proposed program further the educational and curricular needs of students in this discipline and in other units in the College and the University?

Need

The Division of Cardiothoracic Surgery at the University of Iowa has achieved national recognition due to the excellent technical skills of the faculty, the quality of the graduate medical education (residency) program, participation in clinical research programs particularly related to oncologic surgery, artificial organs, pediatric cardiac surgery, and transplantation, and the national leadership roles of our senior faculty in specialty organizations.

The achievements of the Division now meet the full academic complement expected of a Department in the College of Medicine. The granting of departmental status will provide a strengthened basis for recruitment and retention of faculty, enhanced education and training, and growth in research productivity. A separate department would promote visibility and allow the department to attract postdoctoral candidates. With programmatic expansion and development, the Department would have the opportunity to recruit and train residents and fellows beyond the current capacity.

2. Duplication and Collaboration

Further Historical Background:

Information provided by the Thoracic Surgery Directors Association (TSDA) and the Residency Review Committee (RRC) on accredited programs shows that there are 87 Thoracic Surgery programs in the United States that are actively training residents. Of these programs, 56 are divisions and 28 are departments, and over 90% of these latter departments have become departments in the last 7-10 years.

The discipline of cardiothoracic surgery has its own board certification that is distinct from that of the American Board of Surgery (ABS). However, all trainees must graduate from an Accreditation Council on Graduate Medical Education (ACGME) certified general surgery program to be eligible for American Board of Thoracic Surgery (ABTS) certification.

Regarding other programs in this field of study at other educational institutions in Iowa:

There are no other cardiothoracic training programs within the State of Iowa. Furthermore, only major cities within the State have clinicians practicing within this discipline who have had additional training in this specific area. There are 12 active cardiac programs in the state in 8 different cities. In 10 of those programs there is at least one University of Iowa trained surgeon. There also are general surgeons in Iowa communities who perform procedures within the realm of the cardiothoracic surgeon. However, this is becoming less common since recent reports

have shown that specialists in this field have significantly better results with lower mortality. This fact has prompted the Committee on Medicare and Medicaid Services (CMS) to require that cardiothoracic surgery be done by a board-certified Cardiothoracic surgeon to obtain reimbursement. This requirement could mean a shortage of these professional services in the State of Iowa and decreased service to the people of the State. It is incumbent upon the University to help supply the necessary workforce to meet the needs of the state.

3. Estimate the number of students affected by the program in the next five years.

Two residents are chosen each year to enter the Cardiothoracic Surgery Residency at The University of Iowa. As noted earlier, these residents must have completed a ACGME-certified and accredited General Surgery Residency before entering our program. While at the present time residents are not required to take the American Board of Surgery certification exam, it is still strongly encouraged by the Thoracic Surgery Directors Association. All but one program in the country take between one and three residents each year.

The bulk of the 48% taking one resident per year are three-year programs, whereas most of the 36% taking two residents per year and the 10% taking three residents per year are two-year programs. Prior to 2003, the University of Iowa had a three-year program, which consisted of an initial year of research followed by two clinical years. However, starting in July of 2004 residents will no longer be required to perform an initial year of research because of the onerous training already in place to become a Thoracic Surgeon and because of financial constraints related to the costs of research training.

The Division has made a conscious decision to provide excellent clinical and academic opportunities within the confines of a two-year program, unless the department is able to attract funded researchers who can support the research development of selected trainees. Under those circumstances, a third year may be added to enhance research opportunities. Currently the division receives between 30 and 40 applications for these two positions and interviews approximately 16 people. It is part of the National Residency Match Program for Thoracic Surgery and will continue to be involved in this.

With capacity for growth as a Department, the unit plans to offer a one-year General Thoracic Fellowship once a critical volume of 700 cases is reached. At this volume, there would be no impact on current residents and there would be ample clinical material to provide for all training levels. We anticipate this happening within the next fiscal year, as the caseload projection is an increase of 30% from the current level of over 550 cases/year. In addition, the new Department would plan to offer a Pediatric Cardiothoracic Fellowship along the same guidelines, with the critical number being at least 225 cases/year.

At the present time it is difficult to predict this timeframe because Dr. Burkhart, currently on track to do 150-175 cases/year, is still building his practice. A transplant fellowship with the addition of mechanical devices also would be added once there was a level of over 25 transplants /year including both hearts and lungs combined. At present the unit only does heart transplants, and lung transplantation would need to be added before a meaningful fellowship could be achieved. The new department would continue to educate Post Graduate Year (PGY)1's, 2's and 4's from the Department of General Surgery with two-month rotations.

4. Data information on employment opportunities available for graduates of this program in Iowa and nationally:

Since its inception in 1948, all residents in The University of Iowa Cardiothoracic Program have completed board accreditation through the American Board of Thoracic Surgery successfully and all residents who have not completed part II of the boards are still board eligible and will be taking this in the near future. All trainees have enjoyed excellent success with immediate employment at the completion of the residency, either within the state of Iowa, or with excellent job opportunities outside of the state of Iowa.

Some of our trainees hold academic positions in major institutions, although about 70% go into non-academic practices. We hope to increase the percentage of our future graduates choosing academic positions by training our residents in state-of-the-art techniques such as robotics and transplantation, as well as surgery for heart failure. We would also hope to return to the three-year training program, allowing time for trainees to develop research expertise, thus increasing the number of individuals interested in academic pursuits. This will position our residents for competitive academic opportunities.

The Division of Cardiothoracic Surgery has a rich history of clinical research and productivity in both translational research as well as cooperative studies. Much of its current grant support is industry related, which is consistent with the majority of Cardiothoracic divisions throughout the country. Last year in the Division, there were 26 publications and 17 submitted manuscripts, of which 11 were authored by residents. There also were 15 presentations, of which our residents presented nine. Past residents have received funding from AHA and NIH training grants as well as endowments.

Despite the falling reimbursement and limited job opportunities, trainees from this program have been able to successfully secure positions in both the private sector and in academics. The trend has been that trainees from well-established academic and clinical programs educated with the latest techniques and newer methods of treatment have secured these better employed opportunities. The Division, at present, has a robust program in robotics for both cardiac and general thoracic surgery. The opportunities for training in the area of robotics will only increase as the robotics programs gain momentum.

The division has the ability to train residents in the surgical treatment of heart failure and transplantation. These experiences open doors to academic positions, as many programs do not offer these opportunities. In order to continue to attract individuals with the skills needed to move programs such as transplantation, robotics and heart failure surgery forward, the Division needs the autonomy to initiate new programs, develop directorships in these areas, and provide compensation differently from that currently being offered as part of the Department of Surgery. Within a new departmental structure, the unit could reward current and future faculty and attract educators and researchers in the field by offering directorships in new programs.

5. Accreditation standards:

The residency for Cardiothoracic Surgery at The University of Iowa is fully approved by the ACGME, and recently had a site visit with them. It also remains approved with the ABTS and RRC. In addition, it is a member of the Thoracic Surgery Directors Association and National Residency Match Program. The Division has never been on probationary status since the inception of its residency program in 1972 and has a preliminary report of a “deferred” from the recent site visit. This deferral was related to a lack of documentation regarding the change in leadership of the division as well as a change in the length of the program. This paperwork has been filed with the ACGME. The committee from that organization will return in January. No other concerns were raised. A member of the committee felt that once the documentation was provided, the program would be reaccredited. There have been no serious violations or citations issued as a result of any previous site visits, and previous minor citations were correctable within a six-month period following the site visit.

6. Meeting of national standards:

As stated above, the training program is identified as an ACGME-certified program in compliance with the RRC, accepted by the ABTS, and is awaiting its next 5-year accreditation.

7. The coordinated council for post high school education has not been consulted, as this priority is not viewed as relevant to this clinical academic specialty.

8. Additional resource needs:

The Division of Cardiothoracic Surgery currently functions as a relatively autonomous division in The Department of Surgery. The Division at the present time is striving to achieve fiscal balance. Several significant changes in budgetary consideration will be met if it becomes a separate department. These considerations include but are not limited to: ability to control operating facilities to a greater extent; determination of appropriate levels of personnel in all areas (faculty, staff and ancillary services) for growth; and ability to achieve financial success. Departmental status would allow cardiothoracic surgery to perform and contract for its own professional fees, billing and collections, which would improve the profitability of the department without having a major impact on the Department of Surgery.

Competitive salaries could be based on productivity in both clinical and academic arenas, enhanced education and training, and growth in research productivity. Increased productivity enhances the patient flow through the clinical areas and the operating rooms. This improves the overall fiscal solvency for the College and University. It also increases activity in other departments, such as radiology and anesthesia. It would be anticipated that the Department of Surgery revenues would also be enhanced through downstream activities.

There are currently eight faculty within the division, three of whom are clinical, three who are tenured, one who is Professor Emeritus, and one who is on the tenure track. All eligible faculty in the division are members of The Society of Thoracic Surgeons and those who are eligible are

members of The American Association of Thoracic Surgeons. All are board certified in General Surgery and they all have obtained American Board of Thoracic Surgery certification and re-certification or are board eligible awaiting to complete the second part of their boards.

To consider the move to departmental status, it is important to identify the emerging patient care and research opportunities in the area of Cardiothoracic surgery:

Surgery for Pulmonary Insufficiency

This developing market has two unique opportunities: that of lung volume reduction (LVRS) as both a definitive treatment or as a bridge to the other emerging market, which is transplantation. At present, the state of Iowa does not have a lung transplant program even though there are approximately 15-20 organs that are sent out of the state each year, based on recent United Network for Organ Sharing (UNOS) numbers. With some attention, a UI program could be in the middle tier as a lung transplant center by simply utilizing in-state donors.

The Division currently has local expertise in lung volume reduction surgery and surgical treatments for emphysema; however, the current rules for payment by CMS do not allow for lung volume reduction surgery to be done at an institution that does not have the ability to perform lung transplantation. Further, private payers are following the lead of CMS and will only approve LVRS at transplant centers. The University of Iowa has a strong history of research in pulmonary fibrosis and end stage lung disease, but does not currently have the ability to perform surgical intervention for these diseases when appropriate.

Becoming a department would allow for the recruitment of a surgeon interested particularly in surgery for end-stage pulmonary disease and research in this field, with subsequent establishment of a division in the area. A national search would allow identification of the best individual for this position.

Surgery for End-Stage Cardiac Disease

This is the area of most intense interest in cardiac surgery. However, to attract a leader in this field he/she would need to be promised at least a division directorship, or directorship of the heart care center under the newly formed department. The most intense areas of research would be myocyte regeneration and ventricular assist devices. The current Division has been unable to capitalize on these fields, but a change in directorship within the department could attract a qualified person. This would then allow establishment as a center for the surgical treatment of heart failure and research in this field.

At present, the University of Iowa is the only cardiac transplant center in Iowa and we will need to capitalize on this market to affect the ventricular assist device market. Without the ability to offer a leadership role in a heart-failure program or center for heart failure, this market share will be lost to surrounding hospitals. Under that scenario, local hospitals may implant devices and then transfer patients to our institution only to have them wait here for an available heart.

Development of a Research Program

The new department will be poised to further develop and expand its basic science research efforts. At present, Dr. Harold Burkhart has been given money from within the Division utilizing Foundation accounts to support his research efforts with Pediatric Surgery and Neonatology. These research efforts are geared towards investigating the role of granulocyte colony stimulating factor in myocyte development. Dr. Burkhart has been given a two-year commitment of protected laboratory time with the goal of establishing a meaningful research endeavor to allow him promotion in the tenure track. With respect to general thoracic research, three areas of investigation based on changes in current faculty are being considered.

The Division is currently undergoing evaluation with corporate venturing for experimental research with the College of Engineering, Department of Biomedical Engineering, on robotics through corporate-sponsored grants. Preliminary discussions have occurred and follow up is expected in November, 2004. It is hoped that this will provide an additional avenue for research in the future. Faculty in the Division currently hold two industry-sponsored grants for general thoracic research and are in the process of conducting these experiments. Basic-science research with respect to esophageal cancer, lung cancer, and lung transplantation will require collaborative efforts, and discussions already are underway to pursue these avenues.

Building a Program with Adult Cardiology

Currently discussions also are underway with Adult Cardiology to pursue other avenues of clinical initiatives such as venturing with local hospitals to improve the flow of patients, as well as the number of patients, so that as many cardiac surgery and cardiology patients as possible remain in Iowa City. This new venture is being discussed at the executive leadership levels of the college and hospital and we hope will come to fruition in the near future. With respect to cardiology at the University of Iowa, interactions between Adult Cardiology and Cardiac Surgery have improved with the development of a conference on Tuesday mornings for 1-½ hours during which the Adult Cardiologists interact with the Cardiac Surgeons on a regular basis. This has improved relationships and will go a long way to building bridges where significant differences of opinion have been a barrier to collaboration in the past. We hope these interactions will foster a more collegial atmosphere and further both the understanding of the disease process as well as the education of our residents. New leadership has been established within Cardiac Transplantation and Left Ventricular Assist Devices, which we believe will improve the relationship between these two clinical programs so that a true multidisciplinary and cooperative group will be established.

Financial Structure

Prior to fiscal year 2005, compensation was not based on productivity, and expectations for the educational or clinical missions had not been set. A compensation plan with incentives for education, research and patient care were established and has been instituted for fiscal year 2005. Current capital expenditures, such as overtime, are being eliminated and workforce allocations are being reevaluated to allow for budgeting adjustments. Other costs have been identified and aggressively controlled. To demonstrate the advantage of fiscal autonomy, the new chair inherited a \$700,000 deficit from previous fiscal years. The estimated budget shortfall

for this year was approximately half of that amount. However, after the first six months, there has been an 18% reduction in expenses compared to the budget. In addition, the first 6 months deficit is only 12% of that originally projected. This has been primarily the result of having independent financial control given to the division. As programs grow and new faculty are attracted, the Department of Surgery would not be responsible for the costs of these individuals, many of whom require larger salaries than currently available under the Department of Surgery Practice Plan.

During the period of the initial growth and separation from the Department of Surgery, it would be fiscally more prudent to determine the needs of the new department first. Initially the department would cost-share several individuals rather than hiring into these positions. This will allow the new department to determine the level of support needed prior to committing to new hires and possibly to determine whether outsourcing these functions would be better for the Department in the long run.

Initially, the division would share a billing person with General Surgery and by mutual agreement this position with other responsibilities would result in one FTE, which would result in no change for the Division at present. The administrator of the proposed department is currently dividing time between financial analyst services for the Department of General Surgery and performing administrative duties, financial modeling and budgeting for the Division of Cardiothoracic Surgery. Continued sharing of this administrative support would allow the new department to utilize economies of scale in personnel by freeing up financial resources to support other needs, and to limit expenditures by preventing duplication of efforts between the two departments.

Many corporations that are performing divestitures in the form of a spin-off use this model of shared personnel costs to prevent duplication of services. This sharing model allows the new venture the luxury of autonomy and determination of needs, while allowing the parent "corporation" (Department of Surgery) the ability to gain some income from the loss of the newly formed Department. At present the relationship between General Surgery and Cardiothoracic surgery is well established and for the most part enjoys excellent rapport. The combined education of the residents and working relationships of the faculty and staff of both departments will be continued in the future for the success of the shared mission of the departments.

6.09 Principles and Standards for Program Duplication

- A. The Board of Regents, State of Iowa, recognizes that program overlap or duplication cannot be evaluated in absolute terms. Some duplication is desirable, appropriate, and essential. Other duplication is inappropriate.

This program is not a duplication of any other program either at a Regent's institution or in the state.

- B. Policy decisions concerning the appropriateness of new programs or the expansion of existing programs that appear to duplicate activities in other institutions shall be based on such considerations as the following:
1. Does the institution have personnel, facilities, and equipment adequate to establish and maintain a high quality program or should the program be located in another institution where adequate resources are available? **Yes, the institution has the ability to maintain a high quality program in Cardiothoracic surgery. The proposed creation of a separate department would enhance our capability to sustain the high quality of the program.**
 2. Does student demand for the proposed program justify its development or expansion? **This is not a new program or an expansion of an existing one; rather it is an administrative reorganization, the separation of a division from its current home department and elevation to departmental status. The number of students or residents served by this program will not change immediately, but may offer additional training opportunities in the future.**
 3. Do adequate employment opportunities for graduates exist, and is it likely that they will continue to exist? **There are positions for the graduates of this program, both inside and outside of the state (see 6.05 #4)**
 4. In fields in which one university already offers a substantial program, but in which another university is proposing a new or expanded program, could the first institution reasonably accommodate the necessary expansion or would its resources and facilities be so taxed that such an expansion would reduce educational quality? **N/A**
 5. Would a comparable program development or expansion at the first university (see Point 4) require new capital construction producing a higher cost alternative to that proposal? **N/A**
 6. Would the proposed program enhance other programs already in place at the university? **This is not a new program and the current program does serve as a substantial enhancement for many other programs currently at the institution, as well as serving as a state resource.**
 7. Is the proposed program consistent with the institutional mission statement? **Yes, no change.**
 8. Do other colleges in Iowa offer programs similar to the one proposed and at comparable quality and cost? **There are no other programs offered anywhere in the state.**