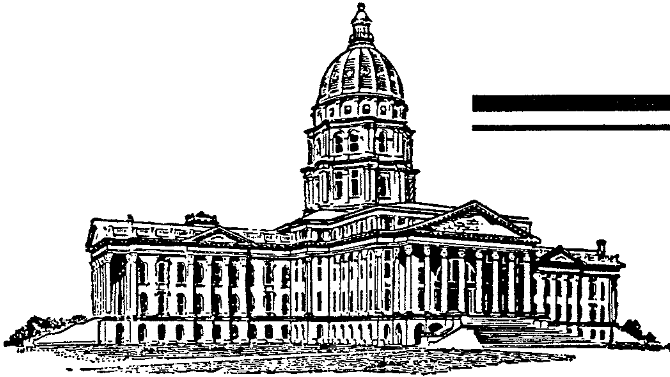

PERFORMANCE AUDIT REPORT

Examining Problems with the University of Kansas Medical Center's Heart Transplant Program

A Report to the Legislative Post Audit Committee
By the Legislative Division of Post Audit
State of Kansas
September 1995

95-56

Legislative Post Audit Committee

Legislative Division of Post Audit

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PERFORMANCE AUDIT REPORT

EXAMINING PROBLEMS WITH THE UNIVERSITY OF KANSAS MEDICAL CENTER'S HEART TRANSPLANT PROGRAM

OBTAINING AUDIT INFORMATION

This audit was conducted by Ellyn Sipp, Sharon Patnode, Allan Foster, Laurel Murdie, and Tim Patton. If you need any additional information about the audit's findings, please contact Ms. Sipp at the Division's office.

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EXAMINING PROBLEMS WITH THE UNIVERSITY OF KANSAS MEDICAL CENTER'S HEART TRANSPLANT PROGRAM

Summary of Legislative Post Audit's Findings

An article in the *Kansas City Star* May 7, 1995, reported that the University of Kansas Medical Center performed no heart transplants from early May 1994 to late March 1995. On April 7, 1995, the Medical Center inactivated its heart transplant program. The article reported that, during this time, the Medical Center allegedly refused donor hearts 50 times, including 38 times for non-medical reasons, while still accepting transplant patients. This audit examined those reported problems as well as related legislative concerns about the Medical Center's heart transplant program.

What factors contributed to the problems in the Medical Center's heart transplant program? Four hearts were turned down because of inadequate nurse staffing in May and June 1994. The number of nurses available to care for cardiothoracic surgery patients had declined after the cardiothoracic surgery and general surgery intensive care units were merged. In addition, the cardiothoracic surgeon had a fundamental disagreement with the nurse manager about the types of nurses who should care for his patients. The hospital made an effort to hire new nurses and cross-train general surgery nurses to care for cardiothoracic surgery patients, but the number of specially trained nurses never reached the targeted level recommended in a staffing study that examined the problem, nor did that number reach the level available before the merger.

Between July 1994 and March 1995, 17 hearts were turned down because of a lack of surgeons. By November 1994, the surgeon who directed the program announced he would no longer be doing heart transplants, and the program's other surgeon and its only resident had resigned. The surgeon who had been hired in September to head up cardiothoracic surgery took over the transplant program in late November 1994, even though he did not meet the United Network for Organ Sharing guidelines as the primary transplant surgeon.

During the time when no heart transplants were being performed, patients who were on, or added to, the waiting list were not informed that hearts were being rejected for non-medical reasons, and that their chances of getting a transplant were significantly reduced. The transplant cardiologist and surgeon did not effectively communicate with each other or coordinate their efforts, and failed to carry out their responsibilities for keeping their patients informed. Top officials of the Medical Center were aware of problems with the heart transplant program, and several knew that donor hearts were being rejected for non-medical reasons. However, these officials failed to recognize how serious the problems were and failed to take appropriate action to deal with them. They didn't exercise any oversight over the heart transplant program, and they didn't use the official bodies set up to handle problems.

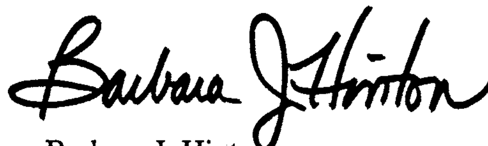
What happened to patients who were awaiting heart transplants while the Medical Center was not accepting donor hearts? A total of 14 people were on the waiting list at one time or another during the period in which the Medical Center was not doing transplants. Of these 14 patients, four improved enough to be removed from the list, three received transplants at other hospitals, three died, and four are now on waiting lists at other hospitals. It seems unlikely that any deaths were the direct result of the program's problems. During this period, the patients on the waiting list were billed about $500,000 for heart-related services. The Medical Center wrote off charges for only one of the patients. There is some question about the appropriateness of charging individuals for services performed after hearts offered for them were turned down.

Does the Medical Center have policies and procedures in place that would help minimize the likelihood that similar problems could occur in this or other departments? By and large, the problems that occurred resulted from individuals not taking reasonable and appropriate actions when they should have, rather than a wholesale lack of policies and procedures. However, the Medical Center doesn't have systematic ways to ensure that problems can be resolved, in part because the lines of authority and responsibility have not been clearly communicated to Medical Center staff. The heart transplant program also didn't have one person or entity that was responsible for overseeing the operations of the entire program, a problem that could occur in other departments as well.

In addition, although its formal mechanisms for discussing and resolving problems once they are identified appeared to be adequate, those mechanisms won't work if no one uses them, or if the ways in which those official oversight committees can help resolve problems aren't communicated to staff.

What options are available for heart transplants in the Kansas City area if the Medical Center does not do them? If the Medical Center permanently closed its heart transplant program, transplants still would be available at St. Luke's Hospital in Kansas City, Missouri. Closing the program wouldn't necessarily save the Medical Center any money, but would cost the Hospital about $1.6 million dollars annually in lost revenue (based on 1993 figures). In addition, closing the program may put the Hospital at a disadvantage in competing for contracts with insurance companies and health maintenance organizations. Officials told us that heart transplants did not play an important educational role, so closing the heart transplant program would probably not affect the Hospital's cardiothoracic surgery residency program.

This report contains numerous recommendations to ensure that the problems with the heart transplant program are resolved, and to ensure that similar problems don't occur elsewhere at the Medical Center. We would be happy to discuss these recommendations or any other items in the report with any legislative committees, individual legislators, or State officials.



Barbara J. Hinton
Legislative Post Auditor

Examining Problems with the University of Kansas Medical Center's Heart Transplant Program

An article in the *Kansas City Star* May 7, 1995, reported that the University of Kansas Medical Center performed no heart transplants from early May 1994 to late March 1995. The article reported that, during this time, the Medical Center allegedly refused donor hearts 50 times, including 38 times for non-medical reasons, while still accepting transplant patients. Doctors in charge of the program said they repeatedly complained to Medical Center administrators about inadequate staffing. The only surgeon on staff who met the suggested guidelines established by the United Network for Organ Sharing resigned in March 1995.

The article also quoted the head of the cardiothoracic surgery department, who was hired in September 1994, as saying there was no question there had been a problem with cardiothoracic surgery, and that he had inherited a "mess." The article also said that in late March 1995, a heart transplant was performed by a doctor who did not meet the suggested guidelines for performing heart transplant surgery. According to the article, the patient died shortly after the surgery. In April, the Medical Center voluntarily inactivated its transplant program.

Several days after this article appeared, a response to the article, written by the Executive Dean and the Vice-Chancellor for Hospital Administration at the Medical Center, was published. This response indicated that the previous head of cardiothoracic surgery had made the major decisions regarding the heart transplant program, including who was put on a waiting list and which hearts would be accepted for transplant. Their article indicated that administrators were not notified until November 1994 that this doctor had continued to assign patients to the waiting list while refusing almost all hearts that were offered for transplantation. The article also indicated that when staffing concerns were brought forth, they were addressed to the complete satisfaction of hospital administration.

Given the different perspectives that have been expressed, legislative questions have been raised about what problems existed in the heart transplant program, and what factors may have contributed to them. Legislators also are interested in knowing what happened to the patients who were awaiting transplants, what can be done to prevent similar problems from going undetected in this and other programs at the Medical Center, and what options are available for patients and students if the Medical Center does not have a heart transplant program. This performance audit answers the following questions:

1. **What factors contributed to the problems in the Medical Center's heart transplant program?**

2. **What happened to patients who were awaiting heart transplants while the Medical Center was not accepting donor hearts?**

3. **Does the Medical Center have policies and procedures in place that would help minimize the likelihood that similar problems could occur in this or other departments?**

4. **What options are available for heart transplants in the Kansas City area if the Medical Center does not do them?**

To answer these questions, we interviewed Medical Center administrators and medical staff, reviewed correspondence and pertinent policies and procedures, and analyzed staffing data. We interviewed officials and reviewed data from the United Network of Organ Sharing and the Midwest Organ Bank. We also interviewed heart transplant patients and families, and analyzed financial data relating to these patients and to heart transplants generally. Finally, we talked with officials of heart transplant programs in six other teaching and non-teaching hospitals. In conducting this audit, we followed all applicable government auditing standards set forth by the U. S. General Accounting Office.

In general, we found that four hearts were turned down because of inadequate nursing staff in May and June 1994. The number of nurses available to care for cardiothoracic surgery patients had declined after the cardiothoracic surgery and general surgery intensive care units were merged. In addition, the cardiothoracic surgeon had a fundamental disagreement with the nurse manager responsible for assigning nurses about the types of nurses who should care for his patients. The hospital made an effort to hire new nurses and cross-train general surgery nurses to care for cardiothoracic surgery patients, but the numbers never reached the targeted level recommended in a staffing study that examined the problem. Between July 1994 and March 1995, 17 hearts were turned down because there were not enough surgeons available to perform heart transplants. All the surgeons involved in the program when the problems began have since left the Medical Center.

During the months when no heart transplants were being performed, patients who were on or added to the waiting list weren't informed that donor hearts were being rejected because of staffing shortages. We found that the transplant cardiologist and surgeon did not effectively communicate with each other or coordinate their efforts, and failed to carry out their responsibilities for keeping their patients informed. We also found that top officials of the Medical Center were aware of problems with the heart transplant program, and that several knew that donor hearts were being rejected for non-medical reasons. However, these officials failed to recognize how serious the problems were, and failed to take appropriate action to deal with them. They didn't exercise any oversight of the heart transplant program, and they didn't use the official bodies set up to handle problems.

A total of 14 people were on the waiting list during the period when no heart transplants were being performed. Of those, four were removed from the list, three received transplants at other hospitals, three died, and four are on waiting lists at other hospitals.

We found that the problems identified in this report could occur in other departments at the Medical Center because they primarily resulted from a failure of the individuals who knew about problems to take appropriate steps to ensure the problems were effectively resolved. In addition, we found that the Medical Center doesn't have systematic ways of ensuring that problems can be resolved, in part because the lines of authority and responsibility apparently have not been clearly communicated.

Finally, we found that heart transplants still would be available at St. Luke's Hospital in Kansas City, Missouri, if the Medical Center permanently closed its heart transplant program, although there would be some financial and other impacts on the Medical Center. Medical school officials told us that closing the heart transplant program would not affect the Hospital's cardiothoracic surgery residency program.

Background on the University of Kansas Medical Center's Heart Transplant Program

The University of Kansas Medical Center located in Kansas City, Kansas, includes the School of Medicine and KU Hospital, also known as Bell Memorial Hospital. Among the many clinical functions of the Hospital are Cardiovascular Diseases and Cardiothoracic Surgery. Cardiovascular Diseases is a division within the Department of Medicine. Cardiothoracic Surgery is a division of the Department of Surgery. Heart transplantation was one of the services provided by the Cardiothoracic Surgery Division until the program was inactivated in April 1995.

The Medical Center Performed Its First Heart Transplant in 1984

Dr. Bixler performed the first heart transplant at the Medical Center in 1984. This program was the first of its kind at a public university in the Midwest. Dr. Bixler was the hospital's only cardiothoracic surgeon at the time; he got assistance from other physicians in the community in performing transplants.

In 1985, Dr. Moran was hired to be Chief of the Department of Cardiothoracic Surgery. When he arrived at the Medical Center, he had the program stop doing heart transplants until he could make sure that suitable staff, facilities, and other resources were in place. In October 1985, heart transplantation was resumed.

At that time, Dr. Moran was the only member of the Department. However, the program generally has had two fellows. (Fellows are physicians who have completed a general surgery residency and want to specialize in cardiothoracic surgery. They also may be referred to as residents.)

In 1991, one of the fellows—Dr. Beggerly—was hired by Dr. Moran as a staff surgeon in cardiothoracic surgery. Dr. Beggerly also became an assistant professor in the Cardiothoracic Surgery Department.

From the heart transplant program's beginning in 1984 until its inactivation in April 1995, 80 transplants were performed at the Medical Center. The chart on the following page shows the number conducted each year before the program was closed.

As the table shows, the number of heart transplants performed grew from a low of 3 in 1984 to a high of 11 in 1991 and 1992. On average, the Medical Center performed about 6.7 transplants a year.

Number of Heart Transplants Performed
At the Medical Center, by Year

Year	Number of Heart Transplants Performed
1984	3
1985	9
1986	5
1987	7
1988	8
1989	5
1990	10
1991	11
1992	11
1993	6
1994	4
1995	1
Total	**80**

At the Medical Center, the Cardiologists Identified Patients Who Needed Heart Transplants

Patients who may be candidates for heart transplants usually have a long history of heart problems. In fact, all patients needing transplants have heart failure. Their doctors usually refer them to a cardiologist for further evaluation. If a patient is referred to the University of Kansas Medical Center, he or she would be seen by one of the Medical Center's cardiologists.

The cardiologist would evaluate the patient and continue to treat his or her heart problems. However, the cardiothoracic surgeon would do the actual heart transplant. Heart transplants were a small part of the cardiothoracic surgeon's work. In calendar year 1993, for example, 125 bypass surgeries were performed, compared with only six heart transplants.

Patients Who Needed Heart Transplants Were Placed on a Waiting List

At the Medical Center, the cardiologist evaluated the patient to determine whether he or she was a good candidate for a heart transplant. This evaluation included a series of tests and interviews over a several-day period to determine the patient's physical and emotional suitability for a transplant.

If, after this evaluation, the cardiologist (Dr. Gollub) thought the patient was a good heart transplant candidate, he would make that recommendation to a transplant committee consisting of the cardiologist, a cardiothoracic surgeon, transplant coordinators working for the cardiologist and for the cardiothoracic surgeon, a social work-

er, and the Medical Center's transplant financial coordinator for consideration. (The transplant coordinators were both registered nurses, and were responsible for dealing with patients and coordinating their care before and after the transplant.) The decision to put a patient on the waiting list was made by the doctors. Dr. Gollub told us Dr. Moran always made the final decision; Dr. Moran said he would almost always accept Dr. Gollub's recommendation. According to Dr. Gollub, Dr. Moran took his recommendation 95% of the time. After the decision was made, the cardiothoracic surgeon's transplant coordinator would call the Midwest Organ Bank to formally place the patient on the heart waiting list.

The names of patients needing heart transplants were placed on a central computerized listing maintained by the United Network for Organ Sharing (UNOS), a federally regulated organization. The country is divided into 62 Organ Procurement Organization areas.

The Midwest Organ Bank in Westwood, Kansas, is the procurement organization for the entire state of Kansas and the western half of Missouri. The Midwest Organ Bank provides organ procurement services to over 200 hospitals in its area. It is through the Midwest Organ Bank that patients in this area are listed on a waiting list, and that hospitals are notified of the availability of a donor organ.

Patients on the heart transplant waiting list are classified as "Status I" or "Status II" patients based on the severity of their conditions. Status I patients are critically ill and hospitalized in an intensive care unit. Status II patients are at home or in the hospital without life support. When a heart becomes available in a particular region, the computer database identifies which patients have compatible blood types and size. After that determination is made, patients are ranked by level of medical urgency (Status I patients from all hospitals in the region are ranked first; Status II patients, second) and how long the patient has been on the waiting list.

If a donor heart becomes available within the Midwest Organ Bank's region, the computer database attempts to match the organ with a local waiting list patient. If the donor organ doesn't match any waiting list patient, the organ is offered to patients in the next nearest region. Conversely, when there are no local matches in other regions, the Midwest Organ Bank might be called and told an import donor heart is available from another part of the country. An import heart already has been rejected by the hospitals in the other region, so it is more likely to have problems. In addition, the Medical Center did not often accept import hearts. However, of all the import hearts offered to the Medical Center from January 1994 to March 1995, 38% eventually were transplanted at other hospitals.

The wait for a heart could be a long one or a short one, depending on the availability of a suitable heart. Patients may be in and out of the hospital while on the waiting list; however, the sickest patients—Status I patients—typically would be in the hospital's intensive care unit and be unable to leave until a transplant was performed. With medication, Status II patients could live outside the hospital. While on

the waiting list, patients visited the Medical Center's cardiologist once a month, and had frequent contact with both the cardiologist's transplant coordinator and the cardiothoracic surgeon's transplant coordinator, who needed to know where the patient could be contacted at all times in case a donor heart became available.

When a donor heart became available to a patient on the Medical Center's waiting list, the Midwest Organ Bank would call the cardiothoracic surgeon's transplant coordinator. The transplant coordinator would be given basic information about the heart, and would have one hour to decide whether to accept the heart. In some cases, the coordinator would know right away the heart wouldn't work. For example, if the potential recipient were sick or on antibiotics, he or she wouldn't be eligible for a transplant, and the transplant coordinator would reject the heart immediately. In some cases, the donor heart would be rejected because of the donor's social history; for example, if the donor was an intravenous drug user and as a result had a high risk for AIDS.

Sometimes the cardiothoracic surgeon's transplant coordinator would be able to make the decision without consulting the doctor. In other cases, the coordinator had to consult with one of the cardiothoracic surgeons to determine whether to accept the heart. If the heart appeared to be medically acceptable, the coordinator would contact the surgeons and possibly request additional tests. If the results of all the tests were medically acceptable, the transplant coordinator would contact a list of people based on the Medical Center's cardiothoracic surgeon's "blue book," which listed the procedures to follow when a heart transplant was going to be done.

If the heart was not acceptable, the transplant coordinator would give the Midwest Organ Bank the reason for rejecting the heart. Typically, even before the problems with the heart transplant program at the Medical Center surfaced, the majority of hearts offered to patients at the Medical Center were rejected for various medical reasons. For example, from January through April 1994, records we reviewed showed that of the 22 donor hearts offered, 18 were rejected for a medical reason, and only one was rejected for a non-medical reason (bad weather did not permit the heart to be accepted). The other three hearts were transplanted into patients at the Medical Center.

If the heart was accepted, one of the cardiothoracic surgeons and a cardiothoracic operating room nurse would go to retrieve the heart. The other surgeon and one of the cardiothoracic fellows would begin preparing the heart recipient for the surgery.

According to the cardiothoracic surgeon's transplant coordinator, timing at this stage was critical. For instance, there should be no more than four hours from the time the donor's heart was taken to the time the heart started beating in the recipient. The surgeon's transplant coordinator notified the cardiothoracic intensive care unit charge nurse and all other personnel involved in the transplant operation. From the time the intensive care charge nurse was notified a transplant patient was coming into

the unit, he or she would have about eight hours to find adequate nursing staff to care for the patient after the transplant.

After the transplant, the patient would be sent to the cardiothoracic intensive care unit and would receive one-on-one nursing care for at least the first 24 to 72 hours. While in the intensive care unit, the patient would be under the care of the cardiothoracic surgeon. Depending on how well the patient did, the patient would be transferred after several days to another room in the hospital for further recovery, still under the care of the surgeon. If all went well, the patient would be released from the hospital and would return only for regular, periodic tests and follow-up care by the cardiologist.

Until Spring 1994, Heart Transplant Patients Were Cared for in an Intensive Care Unit Dedicated to Cardiothoracic Surgery

Patients on this unit were cared for by a group of highly trained and experienced cardiothoracic nurses. Unlike nurses in other hospital units, these cardiothoracic nurses did not "float" to other units to care for patients, but took care of cardiothoracic patients exclusively.

In January 1994, the Cardiothoracic Surgery Intensive Care Unit moved into newly renovated space that was adjacent to the General Surgery/Trauma Intensive Care Unit.

According to hospital and nursing administrators and some medical staff, the Cardiothoracic Surgery Intensive Care Unit was moved to that location so it could share resources, including supplies and nursing staff, with the General Surgery/Trauma Intensive Care Unit. The Cardiothoracic Surgery Intensive Care Unit had always had a relatively low census of three to six patients at any one time, and the hospital administrators we talked with told us they didn't think it was efficient to have such a small unit operate autonomously.

At that time, each unit had its own nurse manager to handle nurse staffing, and hospital administrators began to work with the nurse managers on ways to share resources. These managers' efforts to coordinate their responsibilities and share resources did not work out. In late March 1994, the nurse manager for the cardiothoracic surgery intensive care side resigned. The nurse manager who had been responsible for the General Surgery/Trauma Intensive Care Unit was put in charge of both units. Later, the units were formally combined into the Surgical Intensive Care Unit. This unit then not only cared for cardiothoracic surgery and heart transplant patients post-operatively, but also cared for general surgery and trauma patients as well as liver transplant patients.

The remainder of this report answers the four questions addressed by this audit.

What Factors Contributed to the Problems in the Medical Center's Heart Transplant Program?

Four donor hearts were turned down for non-medical reasons between late May and late June 1994 because heart transplants surgeons thought the nursing staff available to provide post-operative care for cardiothoracic surgery patients was inadequate. Their reasons were twofold. First, the actual number of cardiothoracic nurses had declined following the merger of the two intensive care units. Second, the senior cardiothoracic surgeon fundamentally disagreed with the nurse manager (who made the nursing staff assignments) that general surgery nurses could properly care for his cardiothoracic surgery patients while they were in intensive care.

A total of 17 donor hearts were turned down from July 1994 through March 1995 because there weren't enough surgeons on-hand to perform the transplants. Even though the program always had operated with the bare minimum number of surgeons needed, the program's sole resident resigned in September, leaving only two transplant surgeons. During much of the fall of 1994, however, both surgeons often were on vacation. Both ultimately left the Medical Center for other jobs. Dr. Beggerly resigned in November, and Dr. Moran indicated at that time he would no longer do heart transplants. He left in March 1995. The surgeon who had been hired in September to head up cardiothoracic surgery—Dr. Hannah—took over the transplant program in late November 1994, even though he did not meet the United Network for Organ Sharing (UNOS) guidelines as the primary transplant surgeon.

Patients were added to or kept on the waiting list without being told that donor hearts were being turned away because the transplant cardiologist and surgeon didn't effectively communicate with each other or coordinate their efforts, and failed to carry out their responsibilities for keeping their patients informed. Finally, hospital administrators generally were aware that heart transplants weren't being performed, but failed to take actions to ensure that donor hearts did not continue to be rejected for non-medical reasons. These and other findings are described in more detail in the sections that follow.

A Number of Serious Problems Have Been Reported About the Medical Center's Heart Transplant Program

On May 7, 1995, the *Kansas City Star* reported the following problems with the Medical Center's heart transplant program:

- from May 1994 to March 1995, the Medical Center turned down many of the donor hearts offered to it because of inadequate staffing

- while donor hearts were being refused, the Medical Center continued to add patients to the waiting list for heart transplants without telling those patients that hearts were being turned down

- hospital officials said they weren't aware that heart transplants weren't being performed until November 1994, six months after the first heart was turned down for non-medical reasons

This question focuses on the information we were able to obtain to support or refute these reported problems, and on the factors that appeared to us to contribute to them. Each major problem area is addressed separately.

The story we were able to piece together was complex and involved serious disagreements among the Medical Center's physicians, nurses, and administrators over staffing and other patient-care issues. To more fully explain what happened over the 11-month period when no heart transplants were being performed, we have included a chronology of the key events in Appendix A.

Factors that Contributed to Hearts Being Turned Away Because of Inadequate Staffing

We Found That, in All, the Medical Center Turned Down 21 Donor Hearts Between May 1994 and March 1995 Because of Inadequate Staffing

Between May 1994 and March 1995, our review of Medical Center records showed that a total of 45 donor hearts were turned down. (If a single heart was offered to more than one patient, we counted it as one donor heart.) Of these, 23 were turned down for medical reasons, such as an abnormal echocardiogram or poor cardiac function, and one was turned down because bad weather prevented them from going to get the heart. The table below shows the reasons for turning down the remaining 21 hearts.

Donor Hearts Refused for Non-Medical Reasons
May 1994 - March 1995

Date	Reason
May 25, 1994	Inadequate nursing staff in the intensive care unit
June 6, 1994	Inadequate nursing staff in the intensive care unit
June 15, 1994	Inadequate nursing staff in the intensive care unit
June 28, 1994	Inadequate nursing staff in the intensive care unit
July 8, 1994	One transplant surgeon was on vacation
August 29, 1994	One transplant surgeon was busy with another surgery
September 2, 1994	One transplant surgeon was busy with another surgery
September 10, 1994	Program was restricted to in-house donors, donor not in-house
September 24, 1994	Program was restricted to in-house donors, donor not in-house
September 26, 1994	Program was restricted to in-house donors, donor not in-house
October 2, 1994	Program was restricted to in-house donors, donor not in-house(*)
October 4, 1994	Program was restricted to in-house donors, donor not in-house(*)

October 9, 1994	Program was restricted to in-house donors, donor not in-house(*)
October 9, 1994	Program was restricted to in-house donors, donor not in-house(*)
October 11, 1994	Program was restricted to in-house donors, donor not in-house(*)
October 14, 1994	Program was restricted to in-house donors, donor not in-house(*)
October 26, 1994	Program was restricted to in-house donors, donor not in-house(*)
November 1, 1994	Program was restricted to in-house donors, donor not in-house(*)
November 5, 1994	Only one transplant surgeon available(**)
December 29, 1994	Lack of surgeons(***)
January 5, 1995	Lack of surgeons(***)

(*) Even if an in-house donor had been available, one transplant surgeon was out of town at the time, so the transplant could not have been performed.

(**) Dr. Hannah was at the Medical Center, but was not yet doing heart transplants.

(***) We were unable to determine the real reason these hearts were turned down. Available documentation does not show what happened, the transplant coordinator told us she doesn't specifically remember what happened but said she would have called Dr. Hannah, and Dr. Hannah said no one called him about these hearts.

In all, 13 of these 21 hearts were "local" hearts; the others were imported from other regions. Although import hearts already have been rejected by the hospitals in their regions, Dr. Moran's transplant coordinator told us the program usually did a preliminary medical review first and rejected hearts for medical reasons if such a reason presented itself. Apparently, the import hearts listed above passed that preliminary review.

As the table shows, the last heart that was rejected for non-medical reasons was rejected on January 5, 1995. Between then and March 1995, the Medical Center only rejected hearts for medical reasons or, in one case, because of bad weather.

To get a sense of whether this situation was unusual, we talked to officials in several other hospitals with heart transplant programs that are located in this area. Those hospitals included St. Luke's Hospital in Kansas City, St. Francis Hospital in Wichita, and teaching hospitals at the Universities of Colorado, Iowa, Missouri, and Oklahoma. Appendix B contains comparative information about heart transplant programs at these hospitals.

Officials from those hospitals told us that refusing donor hearts that are potentially medically acceptable for non-medical reasons should almost never happen. In fact, some used the word "inconceivable" to describe this situation. Nevertheless, this situation occurred at the Medical Center 21 times in less than eight months.

Between Late May and Late June, Four Donor Hearts Were Rejected Because the Heart Transplant Surgeons Thought The Nursing Staff Available to Provide Post-Operative Care For Cardiothoracic Surgery Patients Was Inadequate

The cardiothoracic surgeons and their staff made the decision to accept or reject a donor heart. Between May 25 and June 28, 1994, these individuals rejected four donor hearts because of inadequate intensive care unit nursing staff. To identify

An Acuity System Determines the Number of Nurses Needed During a Particular Shift

The Medical Center uses an acuity system in conjunction with an automated nurse staffing system to determine its staffing needs. In general, that system measures the hours of nursing care required by each patient based on his or her specific needs. Staffing decisions are based on the estimated hours of nursing care required.

The acuity system is not designed to determine whether there are adequate nurses available to provide care for patients who have not yet been admitted to a unit; for instance, for heart transplant patients. It also does not define what kinds of nurses (cardiothoracic surgery, general surgery, or the like) should be caring for the patients. The system is a useful tool for staffing purposes, but it does not answer the basic question of whether there are an adequate number of intensive care unit nurses available to provide post-operative care for cardiothoracic surgery patients.

the specific concerns behind these rejections, we contacted the two cardiothoracic surgeons on staff at the time—Drs. Moran and Beggerly—and their transplant coordinator. (Dr. Beggerly declined to discuss any matters related to the heart transplant program.) In addition, we reviewed related correspondence and other documents.

We found that the cardiothoracic surgeons were concerned about post-operative nursing staff for two reasons—the availability of nurses specifically trained to care for their patients had decreased to the point where the surgeons saw it as a problem, and the surgeons fundamentally disagreed with the nurse manager about the types of nurses who could be assigned to adequately care for their patients.

The availability of nurses specifically trained to care for cardiothoracic surgery patients had declined between April and June 1994, or after the two intensive care units had been merged. At the beginning of 1994, the Cardiothoracic Surgery Department had its own intensive care unit and nursing staff. All these nurses had specific training in the care of cardiothoracic patients. Early in 1994, the cardiothoracic surgery unit was combined with the general surgery unit. In connection with that combination, or at least at the same time, two changes occurred that decreased the availability of nurses specifically trained to care for cardiothoracic surgery patients—some of the trained nurses quit, and some of those remaining refused to work overtime as much as they had before the combination.

- *The number of nurses specifically trained to care for cardiothoracic surgery patients declined by about four full-time-equivalent positions.* Between April and July 1994, several nurses who had cared for cardiothoracic surgery patients before the merger of the cardiothoracic surgery and general surgery intensive care units quit. According to personnel records and records from the nurse manager, the full-time equivalent number of such nurses dropped from 15.6 to 11.4 during that period.

  Most of these resignations had been planned for some time (for instance, one nurse entered a residency program, one went to nurse anesthetist school, and one followed her husband to another job). However, one resignation apparently was the direct result of the merger.

- *Some of the nurses who remained with the merged unit refused to work overtime to care for cardiothoracic surgery patients, which effectively reduced the availability of trained nurses even more.* The cardiothoracic nurses we talked with all told us they were very upset with the way the merger was handled. They said they had heard rumors for several years that the two units would be merged, but had been assured by hospital administrators that a merger would not happen. Then, when the merger actually happened, they had no say in the matter. The Dean of the School of Medicine also told us the decision to merge the units was a unilateral hospital administration decision, with no input from the medical staff.

  The cardiothoracic surgery nurses told us that before the merger, they saw themselves as members of a highly trained team, supported by a strong nurse manager. After the merger, they no longer had that same sense of being part of a team, and "their" nurse manager had resigned. They told us that before the merger they had a self-staffing policy that allowed them regularly to schedule overtime and to receive compensatory time for that overtime. They said they no longer had that same self-staffing policy after the merger.

  Finally, they told us that before the merger, they would work whatever overtime was needed to provide adequate care for their patients. (According to Dr. Moran's transplant coordinator, no hearts were turned down before the merger because of inadequate nursing staff.) Because of their anger over the merger of the two intensive care units, many of the nurses we talked with said they were less inclined—and even refused—to work overtime. As a result, they weren't as available to care for cardiothoracic surgery patients as they had been before the merger.

  The Vice Chancellor for Hospital Administration and the former associate hospital administrator who had been in charge of the intensive care units told us they had made it clear to the cardiothoracic surgery staff that the two units would be merged or would share resources, although initially they had said both nurse managers would be retained. The former associate hospital administrator also told us it was a trend nationwide to merge small hospital units into larger units to increase efficiency. In addition, he pointed out that other intensive care units at the Medical Center, including cardiology, pulmonary, and other medical specialties, had been combined into a single medical intensive care unit.

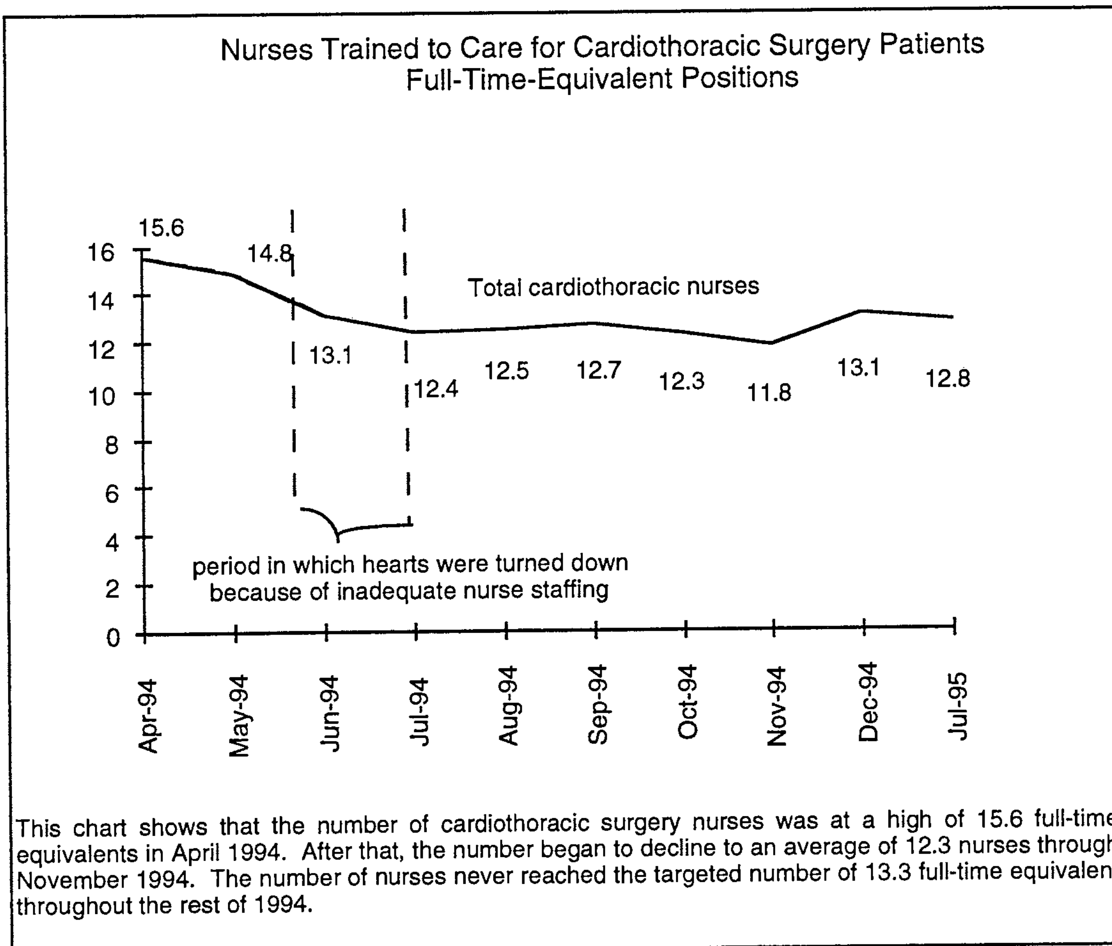
  We were unable to determine whether the cardiothoracic staff had, in fact, been informed in advance of the merger. However, it's clear that this staff was very angry that the merger occurred, and that it seriously affected the cardiothoracic surgery staff's morale.

Although the Medical Center hired new nurses and cross-trained the general surgery nurses to care for cardiothoracic surgery patients, the number of

nurses available did not reach the same levels as before the merger. In response to Dr. Moran's numerous complaints and concerns about the adequacy of the nursing staff, the hospital agreed in a June 1994 memo to cross-train six general surgery nurses to care for cardiothoracic surgery patients.

In addition, the Dean of the School of Medicine appointed a staffing study committee to review cardiothoracic nurse staffing. This study was conducted by several physicians, including the Chair of the Department of Surgery (Dr. Cheung), the cardiologist (Dr. Gollub), and other members of the Department of Medicine. The hospital's chief operating officer also took part in some of the study discussions.

The study acknowledged there was a nursing shortage, and recommended that four additional cardiothoracic surgery nurses be hired to increase the staffing to 13.3 full-time-equivalent staff. (The 13.3 figure would allow one-to-one care for an average daily census of three cardiothoracic surgery patients.) The study also recommended that a physician's assistant or nurse clinician be hired, and that a "triage" system be implemented so that patients wouldn't be given a higher level of nursing care than they needed. The triage system was expected to reduce the need for cardiothoracic surgery-experienced nurses.



This chart shows that the number of cardiothoracic surgery nurses was at a high of 15.6 full-time equivalents in April 1994. After that, the number began to decline to an average of 12.3 nurses through November 1994. The number of nurses never reached the targeted number of 13.3 full-time equivalent throughout the rest of 1994.

Our review of staffing over this time period showed that, although new nurses were hired and four general surgery nurses were cross-trained, an average of only 12.3 full-time-equivalent cardiothoracic surgery nurses was available from July through November 1994. That figure was three fewer than the number of cardiothoracic nurses on-board before the merger, and one fewer than the study's recommended target of 13.3 full-time-equivalent nurses. The accompanying chart shows the number of cardiothoracic surgery nurses from April 1994 on.

It is also notable that, by the time the nurse staffing study came out in July 1994, hearts were no longer being turned down because of a lack of nursing staff; rather, they were being turned down because of a lack of surgeons. That issue is dealt with later in this question.

In addition to thinking there were not enough cardiothoracic surgery nurses, Dr. Moran fundamentally disagreed that general surgery nurses who had not received cardiothoracic surgery training could provide adequate post-operative care to his cardiothoracic surgery patients. Dr. Moran was known to be very demanding and outspoken about the level and type of care his patients should receive. He expected all his patients, whether heart transplant patients or other cardiothoracic surgery patients, to be cared for by nurses trained in cardiothoracic surgery while they were in the intensive care unit. Before the merger, that had always been the case. In fact, the Medical Center's heart transplant patient survival rate after three years was 93%, far higher than the expected survival rate of 78%, according to data from the United Network for Organ Sharing. One of the Medical Center's pediatricians also told us Dr. Moran's aftercare was excellent, and attributed Dr. Moran's high pediatric surgery success rate to the level of post-operative care given to his patients.

After the merger, all nursing assignments for the merged unit were approved by the nurse manager (or her assistant) who previously had been responsible for the General Surgery/Trauma Intensive Care Unit. The nurse manager told us her philosophy was that all nurses on the unit, including general surgery nurses who had not been trained in cardiothoracic surgery, were competent in critical care. She said these nurses could care for patients with a variety of problems, including some cardiothoracic patients who, in her judgment, no longer required specialized cardiothoracic nursing care. Such patients would not include heart transplant patients immediately after surgery. For such a transplant patient, the nurse manager would always assign a cardiothoracic surgery nurse, even if that required reassigning nurses so that a general surgery nurse might care for a less critical cardiothoracic surgery patient.

Dr. Moran told us that, after the merger, he no longer had any assurance that all of his patients would be cared for during the post-operative period by nurses who were trained in cardiothoracic surgery—rather than by general surgery nurses would had not received this training. Although unit governance standards made it the nurse manager's job to find qualified nurses to care for patients, Dr. Moran told us he was concerned the nurse manager did not have the experience or training to put appropriately trained nurses with his patients, and he did not trust her to do her job. His concerns appeared to be based, at least in part, on the following situations:

- Dr. Moran's heart transplant coordinator told us about one instance when Dr. Moran had gone to the intensive care unit before surgery. When he arrived, he thought there weren't enough cardiothoracic surgery nurses to care for his patients; one patient apparently had pulled out his intravenous lines, and no one had noticed. Because of the problems he saw, Dr. Moran canceled the surgery, even though his patient—a young child—had already been placed under anesthesia. (This incident resulted in the Dean of the School of Medicine relieving Dr. Moran of his post as Chair of the Department of Cardiothoracic Surgery, and placing him under the supervision of Dr. Cheung, Chair of the Department of Surgery.)

- Dr. Moran told us that, when he tried to use the triage system implemented by the hospital on a patient, the nurse manager violated his request by placing a general surgery nurse with the patient. The nurse manager told us Dr. Moran didn't use the triage system on a regular basis. She said he was uncomfortable with the triage system and did not use it on every patient.

The procedures Dr. Moran adopted to assess whether a sufficient number of cardiothoracic nurses would be available on any given day were not effective, and may have placed unreasonable constraints on the nurse manager. Because Dr. Moran didn't trust the nurse manager to provide his patients with appropriate nursing care, he instituted a daily practice in which he or Dr. Beggerly would contact the charge nurse (the nurse responsible for a particular day's staffing) to see if a sufficient number of cardiothoracic surgery nurses was available to care for his patients that day. If there appeared to be a problem with staffing, one of the surgeons would contact the nurse manager to find out what she would do if a donor heart became available for a patient on the waiting list. The cardiothoracic surgeons wanted to know the name of the specific nurse who would be taking care of the patient, so they would know whether the nurse was adequately trained in cardiothoracic surgery procedures.

If a donor heart were accepted, the nurse manager had up to eight hours to get a nurse to care for that patient post-operatively, and to ensure that the other cardiothoracic surgery patients in the intensive care unit would have adequate nursing care when the heart transplant recipient came in. However, the nurse manager told us she could not say specifically in response to the surgeons' questioning which nurses she could get to provide post-operative care for the transplant recipient or for the other cardiothoracic surgery patients in the intensive care unit.

What apparently happened was that, if it appeared to the surgeons there were not enough cardiothoracic surgery nurses on a particular day, the surgeons would make a unilateral decision not to accept a donor heart that day. If a donor heart came in, they apparently wouldn't give the nurse manager a chance to find appropriate staffing.

Officials we contacted at three other hospitals agreed that the nurse manager has the responsibility and authority to determine which nurses to place with which pa-

tients. They said it was not typical for the surgeon to make staffing decisions on his own. The director of the heart transplant program at St. Luke's Hospital generally agreed, but said if staffing levels fell below a safe level, it was the surgeon's responsibility to become involved in staffing decisions because the surgeon was directly responsible for the patient's care.

> **Top Medical Center Officials Wanted To Keep the Heart Transplant Program in Operation**
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> One of the steps that Medical Center officials could have taken when they learned donor hearts were being turned down for non-medical reasons would have been to suspend the heart transplant program. Dr. Moran suggested this action, and in least two letters, said he was going to quit doing heart transplants after June 30, 1994. Dr. Moran also told us he called UNOS in May 1994 to try to get the transplant program inactivated, but was told he couldn't make that decision—it was a hospital program.
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> Medical Center officials, including the Executive Vice Chancellor, the Vice Chancellor for Hospital Administration, the Dean of the School of Medicine, the chief of staff, and the directors of the other transplant programs did not want to shut the heart transplant program down. Dr. Gollub also preferred the program to remain active and thought there were ways to resolve Dr. Moran's concerns.
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> According to the former Chancellor, the University showcased the program and was extremely proud of it. These officials also told us it was important to the other transplant programs (liver and kidney) to have an operating heart transplant program. They said it helped increase awareness of the need for donor organs. Also, it provided a necessary service to heart patients. Finally, it was a good tool to attract managed care contracts.

Based on the available documentation, we weren't able to determine whether there was adequate intensive care unit nurse staffing on the four days donor hearts were rejected for that reason. After the heart transplant program's problems were made public in the newspapers, the hospital administration asked the nurse manager and the clinical director to do a study to see if there would have been adequate staffing on those days hearts were turned down. The chief nurse executive said their reviews showed that steps could have been taken to make sure there was sufficient nursing staff to care for heart transplants patients on those days. Those steps included putting some general surgery nurses with cardiothoracic surgery patients in the intensive care unit who didn't require as much nursing care. As pointed out earlier, however, the cardiothoracic surgeons would have found this "solution" to be totally unacceptable.

In addition, the Cardiothoracic Surgery Foundation kept its own records of staff availability after the first donor heart was rejected for inadequate nurse staffing. The transplant coordinator from the Foundation said those records showed there were no available cardiothoracic surgery nurses who reasonably could have been expected to come in to work on those four days. The records showed that in most instances, the nurses who could have been called in worked on an as-needed basis, and may or may not have been available.

To try to verify the transplant coordinator's assertions, we called one charge nurse who had reviewed the schedule with Dr. Moran and Dr. Beggerly on one of the days a heart was turned down. She told us to the best of recollection she could remember calling every available cardiothoracic surgery nurse that day, but none would come in. However, she also acknowledged she didn't give the nurse manager the op-

portunity to try to move patients around so that cardiothoracic surgery patients who no longer needed a cardiothoracic surgery nurse could be cared for by a general surgery nurse. She assumed Dr. Beggerly talked with the nurse manager. The nurse manager, however, told us the donor heart was rejected before she had been given the chance to find staffing.

We reviewed the information from both sources for the four days hearts were turned down because of inadequate intensive care unit nursing staff. In general, we weren't able to draw any firm conclusions because the records didn't show what efforts had been made to find additional nurses on those days. Even though we can't say with any certainty that there was insufficient nursing staff on those four days, we can conclude that Dr. Moran thought there was a problem with inadequate nurse staffing on those days, and turned down hearts for that reason.

Between July 1994 and Mid-January 1995, 17 Donor Hearts Were Refused Because There Weren't Enough Heart Transplant Surgeons Available To Perform the Surgeries

Although most of the attention regarding the adequacy of staff to perform heart transplants at the Medical Center has been directed toward the nursing staff, that's not why most of the donor hearts turned down for non-medical reasons were rejected. That was the case only during the first two months of the 11-month period we reviewed. As the table on pages 10 and 11 showed, after June 1994, the non-medical reasons for refusing 17 of 21 donor hearts related exclusively to surgeons not being available to perform the surgeries.

Even at full strength, the Medical Center may not have had enough surgeons to have a viable heart transplant program. Based on information provided by the six hospitals, it takes at least two transplant surgeons and one resident to do a "normal" heart transplant. One transplant surgeon retrieves the donor heart, and one transplant surgeon and another surgeon—who can be a cardiothoracic surgery resident—prepare the recipient. If either of these two transplant surgeons is busy with another surgery, on vacation, or out of town, heart transplants generally can't be performed. (The exception would be if a donor heart came from within the facility itself; in that case, one surgeon and the resident could perform the transplant. Such "in-house" donor hearts are not a common occurrence, however.)

During most of the period we reviewed, the Medical Center's Cardiothoracic Surgery Division had only two cardiothoracic surgeons available to perform heart transplants—Drs. Moran and Beggerly. Thus, it had the absolute minimum number of surgeons needed to perform a heart transplant. By contrast, all of the six hospitals we contacted had at least three transplant surgeons.

The Medical Center's heart transplant program also had two residents until December 1993, when one left because he didn't think he was being adequately

trained as a cardiothoracic surgeon because of the low volume of cardiothoracic surgery cases. He couldn't be replaced easily at the time of his resignation because residencies generally are on an academic-year basis. In addition, the Medical Center didn't fill this second residency position at the start of the new academic year in 1994.

Until July 1994, Drs. Moran and Beggerly apparently managed with such a small staff by curtailing their vacations and professional travel, and by requiring themselves and the remaining resident to be on call 24 hours a day, so that the entire existing physician staff would always be available for a heart transplant.

To address this situation longer-term, however, Dr. Moran asked the Medical Center to hire another heart transplant surgeon. He had written to the Acting Dean of the School of Medicine about his need for a third surgeon in November 1993. In early June 1994, he wrote a letter to the new Dean, Dr. Hollander, stating that he required a third staff surgeon to be part of the cardiac transplant team prior to resuming cardiac transplantation. His request eventually was acted upon; Dr. Hannah and his four partners were hired as part-time faculty and started work in September 1994. However, as described in later sections of this report, Dr. Hannah did not begin performing surgical procedures at the Medical Center until November 1994.

Between July and early September 1994, three donor hearts were refused because at least one transplant surgeon was performing other surgeries or was on vacation. During this period, there were enough surgeons on-board to do heart transplants. However, as the table on page 10 showed, one donor heart was turned down July 8 because a transplant surgeon was on vacation. Hearts also were turned down August 29 and September 2 because a transplant surgeon was busy with another surgery.

These rejections did not seem unreasonable to us. The fact that they occurred underscores the small size of the Cardiothoracic Surgery Department at the Medical Center.

Between September and early November 1994, 11 donor hearts (none from in-house donors) were refused because the Medical Center's heart transplant program was limited to accepting in-house donors. In September 1994, the remaining resident resigned. He told us he was concerned about the lack of Medical Center support for the cardiothoracic surgery program. To deal with concerns about the heart transplant program and to keep heart transplant options as open as possible, the chief of staff, Dr. Estes, suggested Drs. Moran and Beggerly decrease or backlog the number of other elective heart surgeries they performed. When that happened, the resident was concerned his residency experience might not provide him with adequate training in cardiothoracic surgery. (The resident's concerns apparently were well-founded. A June 1994 site visit report by the Residency Review Committee had indicated that, among other problems, residents were not doing enough procedures to meet residency requirements. In January 1995, the cardiothoracic residency program lost its accreditation. One of the program's deficiencies was an inadequate number of procedures for training residents.)

By early September 1994, Dr. Hannah was on staff but was not yet performing any surgical procedures at the Medical Center. That situation left the heart transplant program with only two surgeons, and meant the program was limited to accepting hearts from in-house donors.

According to Dr. Hannah, he offered to help Dr. Moran with transplants, but Dr. Moran never asked for his help because Dr. Moran had told him he didn't like working with other surgeons. On the other hand, Dr. Moran told us Dr. Hannah never offered to help him with transplants. But even if Dr. Hannah had offered to help, Dr. Moran told us, he would have refused that offer.

One important note during this time period: in 8 of the 11 cases where donor hearts were refused because the donor was not in-house, at least one surgeon also was on vacation or out of town. That means even in-house donor hearts would have to have been refused. During this time, Drs. Moran and Beggerly apparently had dropped their policy of curtailing vacations and out-of-town travel in order to be available to perform heart transplants. Dr. Moran told us that Dr. Beggerly was looking for another job during part of this time period and that was one reason he was frequently out of town.

Three additional donor hearts were refused after Dr. Beggerly resigned and Dr. Moran quit doing heart transplants in November 1994. In early November 1994, Dr. Beggerly resigned. At the same time, Dr. Moran decided to quit doing transplants, and informed the Midwest Organ Bank of that decision. Dean Hollander also was informed of this decision.

By November, Dr. Hannah was performing cardiothoracic surgery at the Medical Center and was in charge of the Cardiothoracic Surgery Division of the Department of Surgery. After Dr. Moran told him he was no longer going to do heart transplants, Dr. Hannah wrote to Dr. Moran that he and his four associates would take over the heart transplant program. Three hearts were turned down for a lack of surgeons after November 4, 1994. As noted in the table on page 11, we were unable to determine the real reason two of these hearts were turned down. Available documentation does not show what happened, the transplant coordinator told us she doesn't specifically remember what happened but said she would have called Dr. Hannah, and Dr. Hannah said no one told him about these hearts.

Between mid-January and late March 1995, although no donor hearts were refused for non-medical reasons, the Medical Center's heart transplant program continued to have problems. Beginning in late November 1994, Dr. Hannah took charge of the Medical Center's heart transplant program. Although he had done eight heart transplants several years earlier at another transplant center, Dr. Hannah did not meet the United Network for Organ Sharing (UNOS) experience guidelines for being the program's primary heart transplant program surgeon, Those guidelines included performing at least 20 heart transplants within a two-year or three-year period. The Medical Center had given Dr. Hannah hospital privileges to perform heart transplants. The chief of staff said these privileges were appropriate

After November 4, 1994, the Medical Center No Longer Had Any On-Site UNOS-Qualified Heart Transplant Surgeons Involved in the Program

This profile summarizes the correspondence between UNOS and the Medical Center regarding Dr. Hannah.

•Dr. Moran contacted UNOS and the Midwest Organ Bank in early November 1994, and told them he would no longer perform heart transplants at the Medical Center.

•November 11, 1994, UNOS wrote the Medical Center and acknowledged that Drs. Moran and Beggerly would no longer be performing heart transplants the Medical Center. UNOS requested that a Change of Personnel Form be submitted, and pointed out that the Medical Center could voluntarily inactivate its heart transplant program if it did not provide documentation for a new primary heart transplant surgeon.

•November 1994, Dr. Pierce, Professor of Surgery and UNOS Representative for the Medical Center, met with the Dean of the School of Medicine, the Executive Vice Chancellor, Drs. Hannah and Gollub (and the other members of the cardiology staff), and Associate Hospital Administrator Jon Jackson, to decide what the Medical Center's reply (to the November 11, 1994, UNOS letter) should be.

•November 1994, according to Dr. Pierce and Mr. Jackson, UNOS allowed the Medical Center an unofficial grace period in which to get things in order. This grace period, from November 1994 to January 31, 1995, was allowed by UNOS because the Medical Center planned to have a UNOS-qualified heart transplant surgeon by the end of January. UNOS officials told us the "grace period" is inconsistent with what UNOS wrote in correspondence.

•November 28, 1994, the Midwest Organ Bank notified the Medical Center and UNOS that the Organ Bank was aware of personnel changes at the Medical Center. The Midwest Organ Bank told the Medical Center: "[w]e must... assume the program is inactive on the basis of UNOS regulations, and that patients on the waiting list will be managed accordingly; this means patients will either be declared inactive, removed from the waiting list or transferred to another center's list."

•December 1994, UNOS told the Midwest Organ Bank to continue to provide organ procurement services to the Medical Center.

•December 1, 1994, Dr. Pierce wrote UNOS and told them of Dr. Hannah's credentials, and that the Medical Center did not want to inactivate its heart transplant program. In the interim, the letter said, Dr. Hannah would perform transplants on any of the patients for whom a suitable donor organ becomes available.

•January 24, 1995, UNOS acknowledged receiving the Medical Center's Key Personnel Change Form, but indicated that the application was incomplete, and that Dr. Hannah failed to meet the minimum transplant training or experience requirements. UNOS planned to review the Medical Center personnel change at its January meeting of the Membership and Professional Standards Committee.

•February 21, 1995, UNOS' Membership and Professional Standards Committee determined that Dr. Hannah's experience did not meet the criteria for acquired clinical experience for the primary heart transplant surgeon—a minimum of 20 heart transplants—and gave the Medical Center the option of requesting an interview before the Committee.

•March 3, 1995, the Medical Center requested an interview before the Committee.

•March 24, 1995, Dr. Hannah performed a transplant at the Medical Center before the interview with the UNOS Membership and Professional Standards Committee was conducted.

•April 7, 1995, the Medical Center requested that its heart transplant program be considered inactive until additional personnel are on site.

•June 5, 1995, UNOS explains to the Medical Center that it has until April 6, 1996, to return its program to active status by having its program reviewed. After that time, the Medical Center would need to reapply for UNOS membership.

UNOS Policies Are Voluntary Guidelines for UNOS Members

The National Organ Transplant Act, enacted in 1984, gives the United Network for Organ Sharing (UNOS) the authority to operate the National Organ Procurement and Transplantation Network. The Network's purpose is to decide how to allocate the relatively few human organs available for transplantation to the many patients awaiting transplants.

Under the Act, the Network established membership requirements, such as guidelines for transplant surgeons and physicians. For instance, the UNOS bylaws require that a heart transplant program have a qualified transplant surgeon on-site. The surgeon must have met these qualifications in a cardiothoracic residency or fellowship, or by experience. Members include hospitals with transplant programs, organ procurement organizations (OPOs), and independent histocompatibility laboratories. As long as there is a UNOS-qualified transplant surgeon on site, other heart transplant surgeons at the transplant center do not have to meet these same guidelines.

The Network also has established medical criteria for allocating organs. For example, if a donor heart is not accepted locally, it will be allocated, according to length of time waiting, to other organ procurement organizations in the zones surrounding the originating organ procurement organization.

All Network policies are subject to review and approval by the federal government. Until that time, compliance with UNOS policies is voluntary. Proposed rules for operating the National Organ Procurement and Transplantation Network were published in the Federal Register in September 1994. To date, the federal government has not approved any UNOS policies.

UNOS officials told us they can't force members to comply with their policies. However, they said the voluntary compliance rate for UNOS policies is very good, and that peer pressure from other members or UNOS' corrective-action policies eliminate most noncompliance. UNOS monitors for any instances of noncompliance, and encourages any noncomplying members to voluntarily inactivate their programs.

because Dr. Hannah had performed eight heart transplants, and because a UNOS-qualified surgeon, Dr. Moran, was also on staff.

As the accompanying profile shows, after Dr. Moran quit doing heart transplants, UNOS requested the Medical Center to send it information about who would be the primary transplant surgeon. The Medical Center provided UNOS with information about Dr. Hannah. In response, UNOS sent a letter to the Medical Center on February 21, 1995, saying Dr. Hannah did not meet UNOS guidelines. In that letter, UNOS also noted that its guidelines were voluntary, and that the Medical Center could request an interview to discuss Dr. Hannah's qualifications further. The Medical Center requested this interview on March 3, 1995.

On March 4, 1995, Dr. Moran resigned from the Medical Center and took a job at another teaching hospital.

In late March 1995, an in-house donor heart became available for a patient on the Medical Center's waiting list. The Medical Center had not yet had the interview with UNOS about Dr. Hannah. Dr. Hannah told us that when the in-house donor heart came up, he wasn't thinking about whether he met the UNOS criteria, but was thinking about a seriously ill patient who finally had a donor heart. Dr. Hannah said he talked with Dr. Gollub, the cardiologist, who agreed he should accept the heart. Dr. Hannah accepted the heart and performed the transplant. The patient died shortly after the transplant.

On April 7, 1995, the Medical Center voluntarily inactivated its heart

transplant program and withdrew its request for an interview. According to Dr. Hannah, the decision was made for several reasons:

- Dr. Moran had left the Medical Center and no one on staff had done enough transplants to satisfy the UNOS criteria that required there to be at least one UNOS-qualified heart transplant surgeon on-site
- a surgeon who had been offered a position with the Medical Center starting in July declined, and the other surgeon who accepted a position would not start until September. (That individual is expected to meet the UNOS guidelines as the Medical Center's on-site qualified heart transplant surgeon.)

Factors that Contributed to Patients Being Kept on or Added to the Heart Transplant Waiting List Without Being Told That Donor Hearts Were Being Turned Away

We Found That, Between May 1994 and March 1995, A Total of 14 Patients Were on the Waiting List At One Time or Another

At the Medical Center, the heart patient's cardiologist recommended that he or she be put on the transplant waiting list when that person's heart disease or other heart-related problems had deteriorated into a life-threatening situation. After the transplant surgeon concurred with this recommendation, the transplant surgeon's transplant coordinator physically activated the patient on the waiting list. At that time, the patient became eligible to receive a donor heart based on his or her ranking on the waiting list.

Our review showed that 14 patients were on the waiting list at one time or another between May 1994—when the first donor heart was turned down for inadequate staffing—and March 1995—when the last heart transplant was performed at the Medical Center. Between May 1994 and January 1995, 21 hearts were rejected because of staffing inadequacies. As a result, these patients' chances of getting a transplant at the Medical Center were significantly decreased—or even eliminated—during this time period.

Keeping patients on the waiting list or adding them to the list when hearts were being turned away for non-medical reasons would not necessarily be a problem, so long as patients were informed. The Medical Center's statement of patient rights outlines patients' rights to participate in and make decisions about their care. Giving patients this right requires that they be fully informed about their health care needs and options. In the case of these potential heart transplant patients, they would have been able to make informed decisions about whether they wanted to remain on the waiting list at the Medical Center, or transfer to another hospital had they been given this information.

To get a sense about a doctor's responsibility for informing patients about situations that affect them, we also contacted the chair of the Hospital/Medical Staff Ethics Committee. He told us there was no specific standard of care that would require doctors to inform patients every time a heart was turned down for them for medical or non-medical reasons. Rather, the standard of care in Kansas is what a "reasonable" physician would tell his or her patient. However, he also said that if the Medical Center were not doing heart transplants, ethical standards would require that patients be informed.

Patients on the heart transplant waiting list generally were not informed about the problems the program was having or that hearts were being rejected for non-medical reasons. We contacted 12 of the 14 patients who had been on the Medical Center's waiting lists at that time (or their families) to determine whether anyone associated with the heart transplant program had informed them that donor hearts were being rejected because of inadequate staffing, or that heart transplants were not being performed. Two of the patients we talked with remembered being told by a nurse or a doctor that the program was experiencing problems.

One patient said a nurse had told him in April or May 1994 that no heart transplants were being performed because of a lack of adequate nursing staff.

Another patient said Dr. Gollub told him in April or May 1994 that the program was having staffing problems but they were working them out. This same patient was in the intensive care unit in June 1994 and reported that Dr. Gollub came to him and told him the Medical Center was shutting down its heart transplant program and was transferring him to another hospital. (Dr. Gollub told us he didn't tell this patient that the heart transplant program was shutting down.) This patient was transferred to St. Luke's Hospital in June 1994, where he received a heart transplant within a few weeks.

Some patients told us they heard rumors that the program was having problems. One patient who had been in the intensive care unit for several months in late 1994 said he heard a rumor from another patient on the waiting list that the Medical Center was not doing transplants. This patient transferred himself to St. Luke's Hospital in February 1995. He received a heart transplant within a few weeks. Another patient remembered being told in April or May 1994 that the hospital was not doing transplants, but could not remember who told him. (The next question provides detailed information about what happened to all the patients who had been on the Medical Center's waiting list.)

The other patients all said they were told nothing. In fact, several patients said they repeatedly had asked Dr. Gollub why they weren't getting a heart. They said he always told them they would get a heart soon.

Beginning in November 1994, patients apparently were told that Dr. Hannah was going to take over the heart transplant program from Dr. Moran, but they were not told about any of the problems the program had been experiencing. When the

program was inactivated in April 1995, five patients remained on the waiting list. They reported being told sometime in April or May that they would be given the opportunity to transfer to other hospitals, which they all did. However, they were not told about the problems that the program had been experiencing. Dr. Gollub told us he called all the patients in April, when the program was inactivated.

The transplant cardiologist and surgeon did not effectively communicate with each other or coordinate their efforts, and failed to carry out their responsibilities for keeping their patients informed. Our conclusions in this area are based on the following:

- *Dr. Moran decided to accept or reject donor hearts that were offered for transplant patients without consulting Dr. Gollub, the transplant cardiologist.* In addition, Dr. Moran did not keep Dr. Gollub informed regularly about donor hearts that were being offered for his patients, and Dr. Gollub apparently did not ask. In the other transplant programs at the Medical Center, and in heart transplant programs at other hospitals we contacted, decisions about donor organs are made jointly by the surgeon and the referring medical specialist (who in this case would be Dr. Gollub).

- *Dr. Gollub told us he was aware that Dr. Moran had concerns about the adequacy of the Cardiothoracic Surgery Intensive Care Unit nursing staff, but said Dr. Moran was never able to document that patients were harmed as a result.* Dr. Gollub said he got assurances from the Executive Vice-Chancellor that Dr. Moran would be given adequate support. In addition, Dr. Gollub said he had participated in the staffing study that resulted in more cardiothoracic surgery nurses for the intensive care unit. But, he also told us he didn't necessarily think there was a shortage of nurses sufficient enough to discontinue the heart transplant program. He told us Dr. Moran had never shown him that patients were being harmed because of inadequate staffing, and had never shown him specific documentation from donor log books that hearts had been turned down for non-medical reasons. We would point out, however, that in June 1994 Dr. Moran had written to Dr. Gollub informing him that four donor hearts had been rejected for non-medical reasons.

- *Dr. Gollub told us that when he recommended adding patients to the waiting list in August, Dr. Moran seemed excited and enthusiastic about the heart transplant program, leading Dr. Gollub to think the problems had been solved.* He said that Dr. Moran was planning to reschedule elective cardiac surgery cases to free up nursing staff to do heart transplants, and that a heart transplant had been attempted in July. He also noted that, by August, the staffing study had just been completed, and the Hospital was committed to increasing the number of cardiothoracic surgery nurses to make Dr. Moran happy. By that time, however, all the donor hearts Dr. Moran and his staff were rejecting for non-medical reasons were because of a lack of surgeons, not because of a lack of adequate nursing staff.

• *Dr. Moran agreed with Dr. Gollub's recommendations to add patients to the waiting list even though he knew first-hand of the problems with the heart transplant program.* Dr. Gollub's recommendations to add patients to that list were referred to a transplant review committee that included Dr. Moran, Dr. Gollub, the transplant coordinators, and a social worker. Dr. Moran approved adding these patients to the waiting list, although he said he repeatedly told Dr. Gollub that these patients were unlikely to get transplants. (Dr. Gollub said that was not true.) He told us Dr. Gollub insisted they be added to the list. Dr. Gollub told us that by August, he had no reason to suspect there were any problems with the heart transplant program. He said that, by then, he thought the staffing problems had been resolved.

Patients Who Were On the Waiting List Are Upset at Not Being Told About the Program's Problems

We called 12 of the 14 patients (or families of patients) who were on the waiting list sometime between May 1994 and April 1995. Most of the patients we talked to liked the doctors and nurses they had dealt with at the Medical Center. However, they were very upset that the Medical Center kept them on a waiting list when there was no hope of getting a heart transplant.

One patient told us she was grateful to the staff at the Medical Center because they saved her life, but at the same time she was very upset that they lied to her about trying to get her a heart. She said she was in pain the whole time she was on the list and had to live with the stress of knowing she could die at any time. She wonders if all that pain might have been unnecessary if she had gone to another hospital.

Two patients we talked to told us they'd asked Dr. Gollub several times why they weren't getting a heart. They said they were always told that there were no problems. One also was told it was a slow period for donor hearts. The other was told she would get a heart soon. Dr. Gollub said he would never tell patients they would get a heart "soon" because he had no control over the availability of hearts. He said he probably would have told patients he hoped they'd get a heart soon. One patient called the Medical Center after the *Kansas City Star* reporter began contacting patients, to ask about the things the reporter had told him. He said Dr. Gollub told him there were no problems with the program.

Two of the three patients who had improved enough to be taken off the active waiting list told us that if their condition worsens again, they would transfer to another hospital even if the Medical Center starts up their program again. Both patients told us they have lost trust with the Medical Center because of all that has happened.

• *Dr. Moran never acknowledged that the heart transplant program was effectively shut down during this period.* Dr. Moran told us he was willing to do a transplant if the appropriate staffing were in place. In fact, in July 1994, a donor heart was going to be transplanted into a patient, but further tests done on the donor heart showed it was medically incompatible with the patient. In essence, heart transplants theoretically might have been performed, but the conditions under which they could be performed were so rare that none ever were. Given that it was unlikely a heart transplant could be performed, it seemed to us that Dr. Moran should have insisted that patients not be placed on the Hospital's waiting list until his concerns had been addressed and resolved, or that if they were, they should have been fully informed.

• *Dr. Moran thought that patients on the waiting list should be informed that hearts were being rejected, but he told us he didn't see that as his responsibility because they were Dr. Gollub's patients.* Dr. Moran brought up the ethics of not informing patients about problems with the heart transplant program in correspondence to Dr. Gollub on May 27,

1994. Dr. Moran wrote, "I do think that it is important that the patients on the waiting list be transferred as soon as possible since even now we are in a position of only being able to accept donor hearts on an occasional and unpredictable basis." In his November 4, 1994, letter to Dr. Hannah in which he told him he was no longer going to do heart transplants, Dr. Moran wrote, "I have urged Dr. Gollub to consider transferring the patients awaiting cardiac transplantation to another facility so that they can compete for a donor heart at another facility..."

Given his feelings about this matter, Dr. Moran had at least two options: he could have informed patients himself, or raised the issue with the Hospital/Medical Staff Ethics Committee. He apparently decided not to inform those patients himself because they weren't his patients, even though Medical Center procedures require patients on the heart transplant waiting list to be followed by both the transplant cardiologist and the transplant surgeon. Also, he didn't raise the issue with the Ethics Committee. (That issue didn't come before the Committee until March 1995, when nurses from the medical intensive care unit expressed concern that patients in their unit who were on the waiting list were not being informed that the Medical Center was not doing transplants. These nurses were concerned that keeping this information from patients was not giving them enough information to make decisions about their medical care. The critical care director told us she talked with those nurses on two occasions, and told them Dr. Hannah was going to do heart transplants and that the program was still viable.)

- *Dr. Gollub told us he didn't inform any of his patients on the waiting list about problems with the heart transplant program because he had no reason to think there were any problems, even though he'd been informed in June 1994 that four hearts had been rejected, and had transferred one of his patients to another hospital.* Dr. Gollub knew first-hand about at least one occasion when a donor heart had been rejected because of nurse staffing inadequacies. In that instance, he transferred the patient to another hospital for a heart transplant. In addition, in a letter dated June 13, 1994, Dr. Moran informed Dr. Gollub that four hearts had been rejected because of inadequate cardiothoracic surgery intensive care unit nurse staffing.

Dr. Gollub had told us he had never heard of a situation where surgeons had turned down legitimate donor hearts. Given that, we would have expected the events described above to signal that there were serious problems within the program. They apparently didn't have that effect.

Drs. Gollub and Moran weren't the only people at the Medical Center who should have been aware of these problems, and who should have thought about the need to inform patients that hearts being offered for them were being turned down because of inadequate staffing. In June 1994, Dr. Moran also had informed the Dean of the School of Medicine that he had turned down four donor hearts because of inadequate cardiothoracic surgery intensive care unit nurse staffing. The Chair of the Sur-

gery Department and the hospital's chief of staff also had received letters from Dr. Moran complaining about the lack of nurse staffing. When the cardiothoracic surgery resident resigned in early September and Dr. Beggerly resigned in November, Dr. Hannah, Dr. Cheung (the Chief of the Surgery Department), and the Dean of the School of Medicine all had to be aware of the potential for surgeon staff shortages within the program.

It's hard to know whether these individuals would have felt they had any authority to talk with Dr. Moran's and Dr. Gollub's patients about problems in the heart transplant program. However, at a minimum they all had the option of raising this issue with the Hospital/Medical Staff Ethics Committee. None of them did.

Factors that Contributed to Hospital Administrators Being Unaware That Heart Transplants Weren't Being Performed, or Failing to Take Action to Resolve Problems within the Program

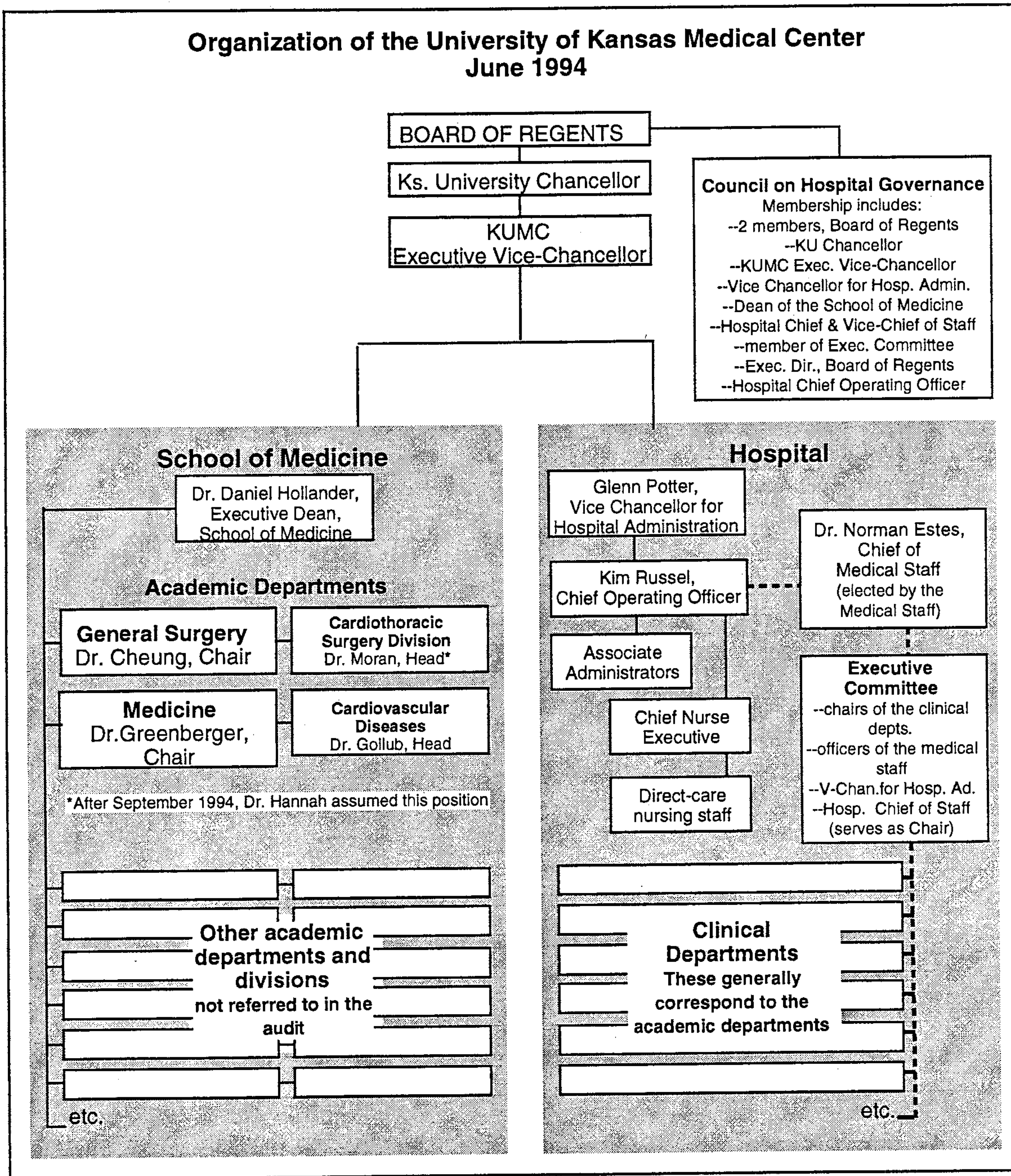
We Found That Many Top Officials at the Medical Center Were, In Fact, Aware of Problems With the Medical Center's Heart Transplant Program

As shown in the accompanying organizational chart, the Medical Center's heart transplant program is located within the Cardiothoracic Surgery Division of the Department of Surgery, within the School of Medicine. Cardiothoracic surgeons are under the general supervision of the Chair of the Department of Surgery, who reported to Dr. Hollander, the Dean of the School of Medicine. An associate hospital administrator served as the hospital's liaison with the Midwest Organ Bank and the cardiologist's transplant coordinators. However, this individual had no formal management or monitoring role over the heart transplant program.

The organizational chart also shows that the Medical Center has established several formal bodies to handle doctor or patient-related issues that arise. The first of these groups shown on the chart is the Executive Committee of the Medical Staff, which is the governing body for the hospital's physicians. The Chair of the Executive Committee is the chief of staff. The Committee also has a number of subcommittees that deal with specific issues.

The second group shown on the chart is the Council on Hospital Governance, which serves as the hospital's board of directors. The Medical Center's top administrators are members of this Council, as are the Chancellor of the University of Kansas, the Executive Director of the State Board of Regents, and two members of the Board of Regents.

To determine whether and when Hospital officials had been informed of problems within the heart transplant program—more specifically, that hearts were being



turned down because of inadequate nursing staff or because surgeons were not available—we reviewed the correspondence files of the Dean of the School of Medicine, the hospital's chief operating officer, and the Vice Chancellor for Hospital Administration. We also interviewed all these officials, as well as physicians and nurses associated with the program.

Correspondence we reviewed showed that many administrative officials at the Medical Center had been informed in May and June 1994 that nurse staff-

ing was inadequate and that hearts were being turned down for staffing reasons. The following listing summarizes the May and June correspondence we reviewed:

- **May 18, 1994**: Dr. Beggerly wrote to Dr. Cheung, the Chair of the Department of Surgery, outlining in detail the lack of cardiothoracic surgery nurses. Dr. Beggerly also noted he had discussed this problem with the assistant hospital administrator overseeing the intensive care units.

- **May 23, 1994**: Dr. Cheung sent a copy of this letter to the Dean of the School of Medicine. Dr. Cheung noted in the letter that the hospital's chief of staff was aware of the nursing problems for the Cardiothoracic Surgery Intensive Care Unit, and was working with hospital administration and Dr. Moran.

- **May 26, 1994**: The Dean of the School of Medicine sent a letter to the Vice Chancellor for Hospital Administration that said hospital support for cardiothoracic surgery had not improved, and that transferring patients to other hospitals because of inadequate nursing support was not acceptable.

- **May 27, 1994:** Dr. Moran sent a letter to the transplant cardiologist, Dr. Gollub, noting that donor hearts had been rejected for staffing problems. Dr. Moran also said he no longer would be able to perform cardiac transplant procedures after July 1, 1994, because of staffing problems.

- **June 3, 1994**: Dr. Moran sent a letter to the Dean of the School of Medicine stating he had not been able to consistently perform normal cardiothoracic surgery procedures since mid-April 1994. Dr. Moran also noted that four donor hearts had been passed up because of the unavailability of adequate postoperative nursing care. He also said he would like to suspend the heart transplant program for a period of time rather than mislead the patients on the waiting list.

- **June 10, 1994**: The hospital's chief of staff wrote to Dr. Moran saying he had met with the Dean and surgeons from the hospital's other transplant programs. They had decided Dr. Moran should not shut down the heart transplant program, but should backlog elective surgeries to manage the caseload until nurses could be trained.

- **June 13, 1994**: Dr. Moran wrote a letter to the transplant cardiologist, Dr. Gollub, in which he said four donor hearts had been passed up during April and May because of inadequate nursing staffing.

- **June 14, 1994:** Dr. Moran wrote to the Dean of the School of Medicine saying there was inadequate nursing staff to cover regular cardiothoracic surgery patients. The letter also noted he had turned down a heart in early June for insufficient nursing availability. He concluded the letter by saying the heart transplant program would be inactive June 12 to June 14 because of insufficient, fully trained and oriented cardiothoracic surgery intensive care unit nursing staff.

- **June 16, 1994:** Dr. Moran again wrote to the Dean, saying that critically ill cardiothoracic surgery patients would be cared for by nurses that did not meet the written unit policies on June 17-19 .

- **June 22, 1994:** In response to an inquiry from the Legislative Research Department after a surgery was canceled, the Medical Center's Director of Governmental Affairs said there was a disagreement between the surgeon and the hospital administration as to the level of nursing staff necessary to support the program The official said the hospital administration was aware that some surgeries had been canceled, but that the number was minimal.

— **June 24, 1994:** Dr. Moran's attorney wrote to the Dean of the School of Medicine, with copies to the Chancellor of the University of Kansas, the Executive Vice Chancellor, the Executive Director of the Board of Regents, Dr. Cheung, and the Vice Chancellor for Hospital Administration. Among other things, the letter noted that the lack of adequate nursing staff made it necessary to reject donor hearts.

After June, the correspondence essentially stopped. Although Dr. Moran had told us he was not satisfied that there was adequate nursing staff at least through the fall of that year, from July on the donor hearts that were turned down for non-medical reasons relating to inadequate staff were all refused because of a lack of available surgeons, not because of a lack of nursing staff.

Other top officials within the Medical Center also were aware in June that at least one donor heart had been turned down for staffing reasons, and all the hospitals in the region with heart transplant programs apparently knew that the Medical Center was turning down hearts. In early June 1994, a donor heart was rejected because Dr. Moran determined there was a lack of adequate intensive care unit nursing staff. The patient was transferred to another hospital by Dr. Gollub at the urging of Dr. Moran.

In addition, the director of the heart transplant program at St. Luke's Hospital said that all the hospitals in the region with heart transplant programs knew that hearts were turned down at the Medical Center. Other hospitals were offered the hearts the Medical Center rejected, and the information given to a hospital when it is offered a heart may include the reason that heart has been rejected by another hospital.

The remainder of this section discussed the factors that appeared to us to contribute to the fact that problems with the heart transplant program weren't appropriately addressed and resolved by the people who knew they existed.

Medical Center Officials Who Knew About the Problems Within The Heart Transplant Program Ignored How Serious They Were, And Failed to Take Appropriate Action to Deal With Them

As noted earlier, officials at two of the six other hospital transplant centers we contacted told us it was inconceivable that donor hearts would be turned down for a lack of staffing. Dr. Gollub, the Medical Center's transplant cardiologist, told us the same thing. These officials also said it would have been inconceivable for hearts to be turned down at their hospitals without everyone associated with the program knowing about it. In fact, the officials could recall a total of only four hearts ever being turned down at all six hospitals because of a lack of staffing.

The fact that so many officials at the Medical Center were aware that the program had staffing problems (both a shortage of nurses and, later and perhaps more importantly, a shortage of surgeons) and that hearts were being turned down, should have sent up a "red flag" about the heart transplant program. It apparently did not.

Officials who knew about Dr. Moran's concerns and attempted to address them did not follow up to see if their actions had, in fact, alleviated the problems. As described earlier, in response to Dr. Moran's correspondence to him, the Dean of the School of Medicine had appointed a staffing study committee to review cardiothoracic nurse staffing. That committee concluded staffing levels were inadequate, and recommended that four additional nurses with cardiothoracic surgery experience be hired or that some general surgery nurses be cross-trained. The hospital agreed with these recommendations.

The Dean told us he was assured by nursing administrators and by the hospital's Chief Operating Officer that the hospital was hiring and cross-training nurses. The transplant cardiologist, Dr. Gollub, told us he was assured of the same thing. However, hospital nursing staff said they never reviewed the actual number of nurses hired to see if they were on target to reaching the recommended number of cardiothoracic surgery nurses.

In addition, even after a donor heart had been turned down for one of his patients for non-medical reasons, Dr. Gollub told us he never suspected there were ongoing problems, and apparently never asked Dr. Moran whether he still was turning down donor hearts. And neither Dr. Gollub nor the Dean of the School of Medicine followed up with Dr. Moran after nurses had been hired and cross-trained to see whether the staffing issue was resolved and donor hearts were no longer being rejected for non-medical reasons.

Had these officials followed up, or ensured that others followed up on their behalf, they would have learned before the problems spiraled out of control that hearts continued to be rejected for non-medical reasons—but by this time because of a lack of available surgeons.

Although the structures were in place to do so, there was no oversight or monitoring of the heart transplant program or its activities. When the Cardiothoracic Surgery Department was folded into the larger Surgery Department, the Chair of the Surgery Department, Dr. Cheung, became Dr. Moran's supervisor. According to the Medical Staff by-laws, as Chair of the Department, Dr. Cheung was responsible for maintaining continuing review of the professional performance of all individuals in the Department. Dr. Cheung told us he never would have been involved in the details of the heart transplant program. When Dr. Moran informed him of the problems that were occurring, however, Dr. Cheung clearly seemed to be in a position to get involved.

Similarly, when Dr. Hannah took over the position as head of the Cardiothoracic Surgery Division, he was Dr. Moran's supervisor. Dr. Hannah told us he didn't really become involved with managing cardiothoracic surgery until November 1994, when he officially become President of the Cardiothoracic Surgery Foundation. He also said he didn't take any responsibility for the heart transplant program until late November 1994, after Dr. Moran informed him he no longer would do heart transplants. Before then, Dr. Hannah told us he didn't want to make things worse for Dr.

Moran, who already was upset at the change in the leadership of cardiothoracic surgery at the Medical Center. Although Dr. Hannah said he didn't know about donor hearts being turned down for non-medical reasons, he was in a position to take more responsibility for the operation of the Cardiothoracic Surgery Division and the heart transplant program.

Had either individual exercised more oversight of Dr. Moran and the activities of the heart transplant program, they would have realized that donor hearts still were being rejected for non-medical reasons.

These officials also failed to bring the problems with the heart transplant program before two official bodies set up to handle doctor and patient-care issues. It appeared to us that both the Executive Committee and the Council on Hospital Governance would have been appropriate groups to bring problems with the heart transplant program to.

The Executive Committee of the Medical Staff is responsible for issues relating to the practice of medicine. Among other duties listed in the Committee's bylaws are coordinating the activities and general policies of the clinical departments, making recommendations to the Vice Chancellor for Hospital Administration on medical administrative matters, taking all reasonable steps to ensure professional ethical conduct, and enforcing rules in the best interests of patient care.

The committee comprises officers of the medical staff, who are elected by the physicians at the Medical Center, the Chairs of each of the Departments, and the Vice Chancellor for Hospital Administration. The Hospital's Chief of Staff chairs that Committee. Although he normally set the Committee's agenda, other members of the Committee could ask to have items placed on the agenda for discussion.

The Chief of Staff told us the Executive Committee wouldn't have been an appropriate place to discuss problems with the heart transplant program because the problems were not presented as "quality of patient care" issues, the main responsibility of the Executive Committee.

Other officials we talked with, including the Executive Vice Chancellor, agreed with us that the Executive Committee would have been an appropriate place to discuss these problems. Yet our review of the minutes of the Executive Committee for calendar year 1994 showed there was no discussion of Dr. Moran, cardiothoracic surgery, or problems with the heart transplant program.

The Council on Hospital Governance is a subcommittee of the Board of Regents and reports to that Board. It comprises two members of the Board of Regents, the Chancellor of the University of Kansas, the Executive Vice Chancellor of the Medical Center, the Vice Chancellor for Hospital Administration, the Dean of the School of Medicine, the Hospital's Chief of Staff, the Vice Chief of Staff, one member of the Executive Committee, the Executive Director of the Board of Regents, and the Hospital's Chief Operating Officer. Many of these officials knew of problems in

the heart transplant program, and knew that donor hearts had been turned down for non-medical reasons.

Because the heart transplant program is a relatively small piece of the Cardiothoracic Surgery Department, which itself is a low-volume program, we wouldn't necessarily have expected the Council to have discussed the nurse staffing problems Dr. Moran was complaining about. However, after the Medical Center received complete information on the number of donor hearts that had been turned down for non-medical reasons in late November-early December, we would have expected this matter to be brought before the Council.

Our review of the Council's minutes from January 1994 through June 1995 showed there was no discussion of any of these issues reflected in the Council's minutes.

The Vice Chancellor for Hospital Administration is the Chair of the Council. He told us he didn't bring the problems with the heart transplant program to the Council because he thought the Acting Chancellor already knew about them. However, the then-Acting Chancellor told us he was not aware of the problems until they were made public in the newspaper article.

Because the Council on Hospital Governance never addressed the issues relating to the heart transplant program, the Board of Regents was never formally informed about these problems. In June 1994, the Executive Director of the Board of Regents received a copy of a letter to Dean Hollander that noted, among many other things, that hearts had been turned down because of inadequate nursing staff. The Chancellor also received a copy of this letter.

We talked with the General Counsel for the Board who said the letter did cause concern, but that the Board's staff thought the staffing issue was being dealt with by the Medical Center and that, therefore, no extraordinary action—such as discussing the matter with the full Board of Regents—was needed. The Board of Regents looked to the Council on Hospital Governance to deal with such matters. The Board's Executive Director said it was the Board's policy to delegate a lot of operating autonomy to the various institutions it oversees. However, he said that these institutions are responsible for keeping the Board informed about important matters.

The University's General Counsel responded to the letter, although the response did not deal specifically with the staffing issue. However, she also told us she thought the Medical Center was addressing the problem.

On May 19, after the *Kansas City Star* article had been published, the Council met in executive session and decided to appoint a Peer Review Committee to investigate the heart transplant program. The results of that Peer Review were scheduled to be available in mid-September 1995.

What Happened to Patients Who Were Awaiting Heart Transplants While the Medical Center Was Not Accepting Patients?

A total of 14 people were on the waiting list at one time or another during the period in which the Medical Center was not doing transplants. Of these 14 patients, four improved enough to be removed from the list, three received transplants at other hospitals, three died, and four are now on waiting lists at other hospitals. It seems unlikely that any deaths were the direct result of the program's problems. During this period, the patients on the waiting list were billed about $500,000 for heart-related services; about $14,000 charged to one patient was written off. These and other findings are described in more detail in the sections that follow.

Of the 14 People on the Waiting List, 4 Were Removed from the List, 3 Received Transplants at Other Hospitals, 3 Died, And 4 Are Now on Waiting Lists at Other Hospitals

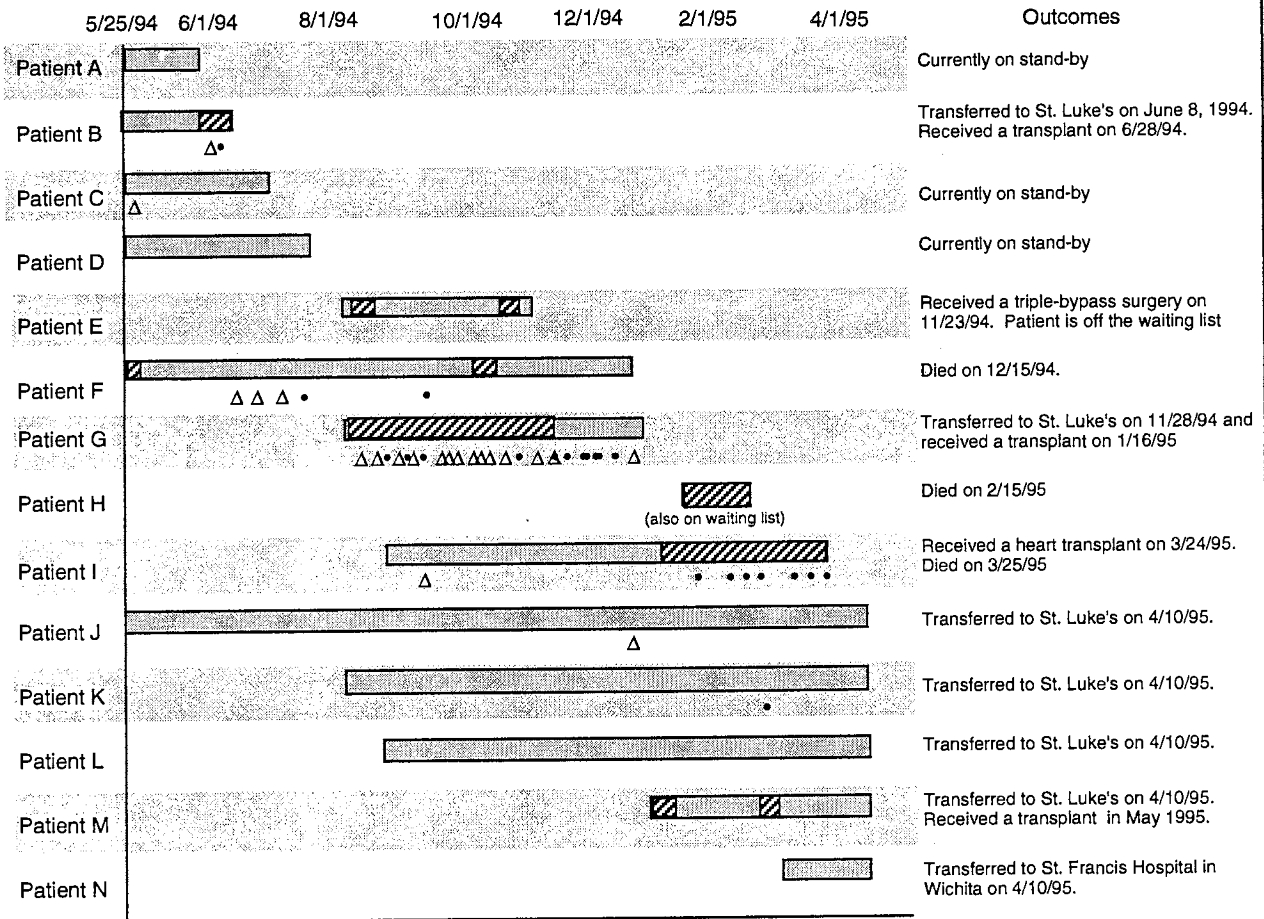
The Medical Center rejected its first heart because of inadequate nursing staff on May 25, 1994, and it shut down the program on April 7, 1995, almost one year later. During that time, 14 people were on the waiting list at one time or another. To see what happened to those patients, we reviewed hospital records and talked to as many of the patients or their relatives as we could.

Several things can happen to patients on a heart transplant waiting list. Patients must be very sick to be put on the list in the first place, so some people die waiting for a suitable heart. Other patients improve enough after being placed on the list to be removed from the active waiting list and placed on a stand-by list. These people don't accrue any additional "seniority" while they are on the stand-by list, but they also don't lose any time they already have spent on the waiting list. Finally, some people receive transplants.

In addition to the usual outcomes, there were two other outcomes at the Medical Center: some people found out about the program's problems and transferred themselves to another hospital, and some people were transferred to other hospitals by the Medical Center when it decided to shut down the program.

The following list summarizes what happened to the 14 people who were on the Medical Center's waiting list for a heart transplant during the time period we reviewed. This information also is summarized, by patient, in the graphic on page 36.

- 3 patients improved enough to be put on stand-by and taken off the active waiting list while at the Medical Center
- 1 patient improved enough to get bypass surgery from Dr. Hannah instead of a transplant, and was taken off the list at the Medical Center



- 2 patients transferred to St. Luke's before the Medical Center's program shut down; both received transplants

- 2 patients died during the period waiting for a transplant at the Medical Center

A Patient Has Been Waiting for a Heart For More Than Two Years

This young patient from western Kansas received his initial evaluation for a heart transplant at the Medical Center on August 18, 1993 and stayed in the hospital until August 31st because of congestive heart failure. He wasn't actually placed on the heart transplant waiting list until November 16 that year. On December 8, the patient was admitted to the hospital a non-heart related condition, and stayed until December 13.

During his stay on the waiting list, the patient told us he asked Dr. Gollub several times why he hadn't received a heart transplant, and was told it was a slow period and there were no problems. On July 11, 1994, the patient was called into the hospital for a transplant, but the heart was turned down for medical reasons.

The patient told us another patient in the program encouraged him to transfer to St. Luke's Hospital, so he asked his insurance company what to do. His insurance agent told him he had talked to Medical Center officials, who told him it was just a slow period for donor hearts.

On January 5, 1995, a donor heart offered for this patient was rejected because there were not enough surgeons available to perform the surgery.

When Dr. Moran quit doing transplants in November 1994, the patient asked about the status of the heart program. He said Dr. Gollub told him another surgeon would be taking Dr. Moran's place.

On April 7, 1995, Dr. Gollub told this patient he would need to transfer to another hospital because the Medical Center's heart transplant program would be closing. As of August 1995, the patient was still on the waiting list at St. Luke's Hospital.

The patient told us that he had heart failure again after learning the Medical Center's program was shutting down and has been in and out of the hospital ever since.

- 1 patient died the day after receiving a transplant at the Medical Center
- 5 patients were transferred to other hospitals when the Medical Center's program was shut down in April 1995. Of those five:
  —1 received a transplant after transferring to St. Luke's Hospital
  —4 are still waiting for a transplant; 3 at St. Luke's Hospital and 1 at St. Francis Hospital in Wichita

The graphic also shows that some people were on the waiting list for several months. In addition, more than half the patients were hospitalized at some point for their heart-related problems.

It seems unlikely that any of the deaths were the result of the problems in the heart transplant program. The Medical Center turned down hearts for non-medical reasons for seven of the 14 patients discussed above. It turned down three hearts for non-medical reasons for one of the patients who died waiting for a heart. However, the hearts offered for this patient may not have been medically suitable. Dr. Moran told us this patient had a condition that would have made it very difficult to find a medically compatible donor heart. The Medical Center had not been offered any hearts for the other patient who died waiting for a heart.

A heart was turned down at least once for one of the five patients who were transferred to other hospitals when the Medical Center's program was inactivated. That patient still is waiting for a heart transplant.

How Much Are Patients Charged for a Heart Transplant?

Many different types of costs are involved in transplanting a heart, such as evaluation and testing, the actual transplant itself, follow-up care, and medication. A patient must first receive an evaluation, which is administered at the hospital over a several-day period. According to the Medical Center, the estimated cost for an evaluation is around $10,000, which includes both hospital and professional charges.

After the evaluation is completed, the cardiologist and cardiothoracic surgeon decide whether the patient should go on the heart transplant waiting list. Once a patient is on the waiting list, monthly evaluations are performed at an estimated cost of $327 per month. In addition, a semi-annual evaluation is required with more extensive testing, at an estimated cost of $1,747 per visit.

According to the Medical Center, the average cost for the heart transplant itself is around $86,000, which includes hospital charges and post-operative care for an average of four weeks. These charges don't include physician fees, which the Medical Center estimated to be around $20,000 per transplant. The post-transplant charges in the 90 days after a patient is discharged are estimated to be around $17,000. Most of the post- discharge fees will occur within this 90-day period.

When all these charges are added together, a patient can expect to be charged about $130,000 for a heart transplant.

A report issued in 1994 by the United Network for Organ Sharing titled "Financing Transplantation" referred to a study completed by the Battelle-Seattle Research Center. This report estimated the approximate costs for a heart transplant to be $91,570. The report did not disclose the parameters included to arrive at this figure.

The Medical Center Billed Patients More Than $500,000 For Heart-Related Services Performed During The Period When It Was Not Doing Transplants

As part of this audit, we were asked to find out how much the Medical Center billed the 14 patients on the waiting list while no transplants were being performed. We reviewed financial data from the hospital that showed how much people were charged initially, and how much had been written off by the hospital because the amount charged was higher than the reimbursement rates negotiated between the hospital and the insurance companies. The difference between these two figures is the amount the patient and his or her insurance company had to pay.

Our review showed these 14 patients were charged a more than $500,000 (after insurance write-offs) for heart-related services from May 25, 1994, through April 10, 1995. Nearly $420,000 of that amount was for Hospital charges, which are shown on the accompanying table. These patients also were charged by several foundations for physicians' services, such as office visits, laboratory fees, and the like. These charges, again taking write-offs into account, amounted to an additional $84,740.

As the table on the following page shows, the Hospital charges ranged from a low of $0 to a high of more than $156,000. The amounts varied so much because patients were on the list for different amounts of time during this period, and some patients required extended in-patient visits.

Charges were written off for just one patient during this time period. According to one of the patients on the waiting list, in June 1994 Dr. Gollub told him that the Medical Center was shutting down the heart transplant program, and that he was going to be transferred to another hospital. (Dr. Gollub said he never told the pa-

tient the program was shutting down.) The patient eventually called the Chancellor's office to complain that he didn't think he should be charged for the time he was in the hospital if the heart transplant program was being shut down.

Hospital Charges for Patients on the Heart Transplant Waiting List May 25, 1994, to April 10, 1995

Patient	Total Charges	Insurance Write-Offs (a)	Total Amount Owed
A	$ 2,149	$ 98	$ 2,051
B	14,166	14,166 (a)	0
C	11,787	4,283	7,504
D	72	56	16
E	5,058	145	4,913
F	13,104	5,185	7,919
G	223,223	66,894	156,329
H	110,714	65,814	44,900
I	190,622	67,788	122,834
J	5,680	996	4,684
K	4,769	1,612	3,157
L	22,768	1,011	21,757
M	38,087	5,717	32,370
N	15,220	4,976	10,244
TOTALS	**$657,419**	**$238,742**	**$418,676**

(a) The amount for Patient B was a write-off by the Medical Center because of a complaint from the patient, and was not insurance related.

Then-Chancellor Budig told us he was not aware of this complaint. However, someone from the Chancellor's office apparently notified the Medical Center about the complaint, because the Medical Center's Chief Operating Officer agreed to write off the $14,166 in expenses incurred during this patient's one-week stay at the hospital.

Another patient told us that, after the article was published in the *Kansas City Star*, he contacted the Hospital and demanded a refund. According to the Medical Center, his request was denied because the hospital charges in question were not related to his placement on the heart transplant list.

One health maintenance organization also is disputing a charge for a heart transplant evaluation that took place between March 29 and April 5, 1995, immediately before the program was inactivated. This payment dispute has yet to be resolved, according to Medical Center officials.

Medical Center officials have argued that all the services performed during this period were medically necessary. Many of these patients were seriously ill and needed to be hospitalized because of their heart problems. Obviously, these patients would need a number of medical services and procedures while they were

awaiting a suitable donor heart, and no one would question whether charges for those services were appropriate.

However, that question could arise for some of the medical services provided for the six patients who had potentially compatible donor hearts turned down. If they had received a heart transplant instead of having the donor heart rejected, would they have needed all the medical services that subsequently were performed?

For example, one patient was in the Medical Center's intensive care unit for 111 days waiting for a heart transplant, which he never received. During that time, 14 hearts offered for him were turned down for non-medical reasons. The first heart was turned down less than three weeks after he entered the hospital. If he had been in another hospital's heart transplant program, he might have had a transplant at that point, and could have cut more than 90 days off his hospital stay. Soon after this patient transferred to another hospital, he received a heart transplant.

Does the Medical Center Have Policies and Procedures in Place That Would Help Minimize the Likelihood That Similar Problems Could Occur in This or Other Departments?

We concluded that the problems that occurred in the heart transplant program could occur elsewhere in the Medical Center. By and large, those problems resulted from individuals not taking actions when they should have, rather than a wholesale lack of policies and procedures. We found that Medical Center officials had a responsibility to ensure that the identified problems with the heart transplant program were resolved, and that they all failed to take reasonable and appropriate actions to ensure that the problems were resolved. We also found, however, that the Medical Center doesn't have systematic ways to ensuring that problems can be resolved, in part because the lines of authority and responsibility have not been clearly communicated to the Medical Center staff. The heart transplant program did not have one person or entity that was responsible for overseeing the operations of the entire program, and this problem could occur in other departments as well.

In addition, although its formal mechanisms for discussing and resolving problems once they are identified appeared to be adequate, those mechanisms won't work if no one uses them, or if the ways in which those official oversight committees can help resolve problems aren't communicated to staff. These and other findings are discussed in the sections that follow.

Medical Center Officials Had a Responsibility To Ensure That the Identified Problems With the Heart Transplant Program Were Resolved

As noted in question one, Dr. Moran wrote numerous letters to his fellow doctors and to Hospital administrators regarding what he perceived to be serious problems with the nursing staff, and explaining that he had turned down donor hearts as a result. Apparently, the people he wrote to, as well as his immediate supervisors, either ignored or failed to understand the seriousness of the problems with the program, and failed to act.

Because Medical Center officials told us Dr. Moran was a volatile individual who frequently made threats about shutting down the transplant program, they said thought he was "crying wolf". At the same time, doctors in the Department of Surgery, the Dean of the School of Medicine, and top hospital administrators also should have been aware that a shortage of surgeons would curtail the heart transplant program.

All these officials, as well as the other officials discussed throughout this report, knew there were serious problems with the heart transplant program. Yet they all failed to take reasonable and appropriate actions to ensure that the problems were resolved.

At the same time, it's obvious the Medical Center has done a poor job of ensuring that its staff are aware of their responsibilities for getting problems taken care of. Such uncertainties are likely to affect not only problems with the heart transplant program, but also problems that could occur within other programs and departments.

The Medical Center Doesn't Have Systematic Ways Of Ensuring That Problems Can Be Resolved, In Part Because The Lines of Authority and Responsibility Have Not Been Clearly Communicated to Medical Center Staff

As we talked with Medical Center officials throughout this audit, one common thread we heard was that they didn't think it was their role or responsibility to keep track of the details of what was going on within the heart transplant program. As discussed in question one and as summarized again below, the program generally operated autonomously without any oversight.

- As Chair of the Department of Surgery, Dr. Cheung was Dr. Moran's supervisor. It appeared to us that he should have had some responsibility for ensuring that, if problems existed within his Department, they were appropriately acknowledged and dealt with. However, Dr. Cheung told us he didn't get involved in the specifics of the heart transplant program.

- Dr. Estes was the Hospital's Chief of Staff and the Chair of the Executive Committee. It appeared to us that he too should have had some responsibility for ensuring that identified problems were appropriately addressed, including bringing them before the Executive Committee. However, Dr. Estes told us that the staffing concerns surrounding the heart transplant program did not involve patient-care issues.

- The Dean of the School of Medicine appointed the staffing study committee, but told us he really was stepping outside his appropriate role when he got into the staffing issue. It appeared to us that he should have taken some responsibility for finding out why Dr. Beggerly had resigned from the Medical Center, and why Dr. Moran stopped doing heart transplants. However, he told us he never talked to those two individuals about those issues.

- Clearly, no one thought it was their responsibility to inform patients about the problems that continued to plague the program.

- All the officials we talked with apparently assumed the problems with the heart transplant program were being worked out, so they didn't think they needed to do anything further.

Unless Medical Center officials act to ensure that all employees are aware of their roles and responsibilities, and unless the lines of authority and responsibility are

clarified, problems in other programs or departments could remain "buried" and unresolved. When such failures occur, the patients are the ones who tend to suffer the ultimate consequences.

As noted earlier, the heart transplant program did not have one person or entity that was responsible for overseeing the operations of the entire program. As we talked with hospital administrators, physicians, and the Dean, it became obvious that no one had collected or analyzed important information relating to the program, talked with all the individuals involved about the program, or got follow-up information about the activities that were occurring. As a result, the Medical Center was not in a position to take a proactive role in identifying problems.

An associate hospital administrator did act as a liaison between the hospital and outside groups, including the Midwest Organ Bank, when information about the transplant programs was needed. However, neither that individual, nor any other individual or group, had a monitoring role over the heart transplant program.

The Medical Center's liver transplant program also has no one in charge, but because of better lines of communication between the transplant surgeon and the liver specialists, problems in the program are more readily identified. However, in this or other programs within the Medical Center, problems could continue to be shielded from Medical Center officials if those involved don't say anything about them, or don't act appropriately once they are aware of them.

The Medical Center Also Has Not Communicated the Ways in Which Official Oversight Committees Can Help Resolve Problems

The Executive Committee and the Council on Hospital Governance also would be appropriate groups to use as a forum for discussing and addressing problems of the type identified in the heart transplant program. In the case of the heart transplant program, however, no one who knew about the problems brought them before either of these groups, even though many individual members of each group were aware of those problems.

There appeared to be some uncertainty among Committee and Council members about the types of problems that should be addressed by these groups, and about whether these problems needed to be brought up if "everyone" essentially knew about them. However, by not bringing these issues and problems up, the knowledge about the problems was limited to a few individuals, and there was never a full discussion of the problems that could have served to effectively take care of them.

If problems arise in other departments, these groups also would be appropriate official channels to use to ensure that significant problems are addressed and resolved. However, the Medical Center will have to ensure that members of the Executive Committee and the Council on Hospital Governance clearly understand the types

of issues that should be brought to their attention, by whom, and when. After that, it will be up to individual members to raise issues for discussion and resolution as appropriate.

What Options Are Available for Heart Transplants In the Kansas City Area if the Medical Center Does Not Do Them?

Heart transplants still would be available at St. Luke's Hospital in Kansas City, Missouri, if the Medical Center permanently closed its heart transplant program. Closing the program wouldn't necessarily save any money, but would cost the Hospital about $1.6 million dollars annually in lost revenue (based on 1993 figures), and may put the Hospital at a disadvantage in competing for contracts with insurance companies and health maintenance organizations. In addition, Kansas Medicaid dollars would be paid to a Missouri hospital. Medical school officials told us that closing the heart transplant program would not affect the Hospital's cardiothoracic surgery residency program. These and other findings are described in more detail in the sections that follow.

If the Medical Center Dropped Its Heart Transplant Program, Heart Transplants Still Would Be Available at Saint Luke's Hospital in Kansas City, Missouri

Until the Medical Center shut down its heart transplant program in April 1995, there were two hospitals in the Kansas City area that did heart transplants: the Medical Center and St. Luke's Hospital. The only other hospital in Kansas that does transplants is St. Francis Hospital in Wichita. That hospital is too far away to serve as a resource for patients in Kansas City because, according to the cardiothoracic surgeon's heart transplant coordinator, patients need to be able to get to a hospital for a transplant within no more than a couple of hours.

St. Luke's Hospital has a large cardiothoracic surgery program and completes approximately 1,000 bypass surgeries each year. In its heart transplant program, St. Luke's has three surgeons who perform the actual transplants, as well as two additional surgeons who retrieve hearts. The Hospital also has three residents who participate in heart transplants. By contrast, at its highest staffing levels, the Medical Center's heart transplant program only had two surgeons to do actual transplants, and two residents to assist in the surgeries.

During the last 10 years, surgeons at St. Luke's Hospital have performed 130 heart transplants, or an average of 13 transplants a year. In 1994, they performed 25 transplants. The Hospital serves all types of patients, including Medicaid and Medicare patients.

During this audit we interviewed the Medical Director of St. Luke's heart transplant program. He told us St. Luke's Hospital would be able to absorb the added volume of patients if the Medical Center were to discontinue its heart transplant program permanently. St. Luke's already has accepted four of the five patients who were on the waiting list when the Medical Center's program was shut down in April 1995. The fifth patient went to St. Francis Hospital in Wichita.

Dropping the Heart Transplant Program Could Harm the Medical Center Financially, And Would Have Other Implications As Well

We tried to determine what impact eliminating the heart transplant program might have on the Medical Center. In doing so, we reviewed revenue and expenditure information and talked with officials at the Medical Center, other hospitals, and insurance companies.

We estimated the Hospital would forego approximately $1.6 million a year (based on 1993 figures) in patient revenues if it dropped the heart transplant program. The $1.6 million figure was derived by adding all in-patient hospital charges attributed to the heart transplant program in calendar year 1993, and subtracting any related write-offs (by insurance companies, for instance) for that time period. We used 1993 because the heart transplant program was in operation the entire year.

These revenues include in-patient stays by people on the waiting list, as well as charges for six heart transplants. Besides the revenue generated from the actual transplant operation, transplant patients tend to have extended stays in the intensive care unit. In addition, they must come to the Hospital for monthly checkups, and for more extensive checkups twice a year. Without the heart transplant program, these revenues would go to other hospitals.

We also tried to obtain information on how much the heart transplant program cost the Hospital for two reasons. First, we wanted to see whether the Hospital would save a significant amount of money if it dropped the program. Second, we wanted to know whether the Medical Center's costs were in-line with the costs of other transplant centers. The Medical Center was unable to provide us with this information. We contacted officials at St. Luke's Hospital to get comparative information on the costs of its heart transplant program, but were told that information could not be provided.

We were able to estimate that $23,000 of General Use money (excluding hospital revenue funds) was spent on the Medical Center's heart transplant program in fiscal year 1994. The rest of the program's costs were paid for from Hospital and Foundation revenues. The total amount of General Use moneys allocated for the cardiologist, cardiothoracic surgeons, and residents involved in the heart transplant program was approximately $235,000. However, the heart transplant program was only a small part of their jobs.

We asked these individuals to estimate how much of their time was spent on the heart transplant program. Using these estimates, we calculated that the State paid about $23,000 in General Use moneys for the heart transplant program. We also would note that the additional cost to the State of having heart transplants at the Medical Center is minimal. As can be seen by the above figures, very little of these individuals' time was spent on the heart transplant program. All of them would be work-

ing at the Medical Center performing other cardiac procedures even if the Medical Center dropped the heart transplant program.

If the Hospital dropped its heart transplant program permanently, it might be at a disadvantage in the future in competing for contracts with insurance companies and health maintenance organizations. Officials at the Medical Center told us heart transplants are important in getting and keeping contracts with insurance companies, health maintenance organizations, and other managed care organizations. They said offering heart transplants is a good marketing tool in competing with other hospitals. The officials noted that with the increasing emphasis on managed care, offering a full range of services to patients and referring physicians may be increasingly important in the future. However, the Medical Center has lost only one contract since shutting down the heart transplant program. That contract, with Humana Hospital, was specifically for heart transplants.

We talked to officials at St. Francis Hospital and Stormont-Vail Regional Medical Center in Topeka to find out why they do not offer heart transplant programs. Officials at both hospitals said it was not economically feasible for community hospitals to offer a heart transplant programs. Instead, they rely on relationships with other hospitals, such as the Medical Center, for ancillary programs like heart transplants.

We also asked them about the impact closing the Medical Center's heart transplant program would have on their hospitals. An official at one hospital said if the Medical Center dropped its heart transplant program, it might affect his own hospital's ability to obtain contracts with managed care organizations because his hospital referred potential heart transplant patients to the Medical Center. The official at the other hospital we contacted said there would be no impact—patients simply would be referred to other hospitals in the region for heart transplants.

We also talked to an official of Blue Cross and Blue Shield, who indicated that closing the Medical Center's heart transplant program would have no effect on its coverage of other hospitals in the region. That individual said it was not necessary for a hospital to offer heart transplant services as a condition of a contract.

Because the Medical Center is the only hospital in Kansas that accepts Kansas Medicaid patients for heart transplants, these patients would go out-of-State for their heart transplants if the Medical Center dropped the program. Since the Medical Center's heart transplant program was inactivated in April 1995, the State's Medicaid program has elected to pay for heart transplants performed at St. Luke's Hospital in Kansas City and St. Francis Hospital in Wichita on an exception basis. Before the program was inactivated, the only option Kansas Medicaid patients had was to get their heart transplants at the Medical Center.

Medicaid officials told us that after the program was reactivated, they intended to again send Medicaid heart transplant patients only to the Medical Center. An official with the Department of Social and Rehabilitation Services told us that some

legislators were concerned Kansas Medicaid dollars would be paid to a Missouri hospital if the Medical Center dropped its heart transplant program. Although this likely would be true, we did not view this as a significant issue.

Dropping the Heart Transplant Program Probably Would Not Have a Big Impact on the Educational Function of the Medical Center

An important part of a medical student's educational experience is the residency period. When students are in their fourth year of medical school, they decide the type of residency (primary care, pediatrics, surgery, and the like) they want to pursue. They then apply to those hospitals where they would like to complete their residency. The students interview with these hospitals and list them in priority order. The hospitals also list the students they interviewed in priority order. After this process is completed, information is compiled in a large database to match students and hospitals. The students and hospitals are notified on the same day as to which students are going to which hospitals.

A residency program can last three years to seven years, depending on the field of study. Any hospital, including those not affiliated with universities, can offer residencies as long as the residency program is accredited by the American Council of Graduate Medical Education. At the end of the residency, a student is eligible to take board examinations for certification in the specialty area studied.

After the residency period is completed, a physician may pursue a fellowship position, which lasts one to two years, to receive more advanced training in a specialty area such as cardiothoracic surgery.

Medical Center officials told us the heart transplant program was such a small part of the cardiothoracic surgery residency that it really did not serve an important educational purpose. A cardiothoracic surgery resident or fellow is involved in numerous cardiothoracic activities. Heart transplants make up only a small portion of their work. In fact, a heart transplant program is not a requirement for a cardiothoracic surgery residency program.

Dr. Moran told us the Cardiothoracic Surgery Department generally had two residents in its two-year accredited training program. He also said that heart transplants were not an integral part of the cardiothoracic surgery residency. Other officials echoed this. (In January 1995, the cardiothoracic surgery residency program lost its accreditation; Dr. Hannah is in the process of trying to win back its accreditation.) On the other hand, one of the residents who had been involved in the Medical Center's cardiothoracic surgery residency program said he thought the heart transplant program was important to his education as a cardiothoracic surgeon.

All the other university hospitals in the region we contacted offer heart transplants. All but one said that heart transplants served an important educational function. One reason they cited for their educational importance was the increasing num-

ber of heart transplants occurring throughout the country. Another possible advantage cited by the Executive Secretary of the Residency Review Committee for Thoracic Surgery for offering a heart transplant program is that the residency program may become more attractive to the top residents throughout the country.

Conclusion

On May 2, 1994, the Medical Center transplanted a donor heart into a patient on its waiting list. It was not until almost 11 months later that the program performed its next transplant operation. That last operation was not successful. The Medical Center voluntarily inactivated its heart transplant program in April 1995. In between these two transplants, the program turned down 21 donor hearts for non-medical reasons related to inadequate staff, a majority of which were transplanted elsewhere, and experienced significant turmoil.

Most of the turmoil appeared to center around the heart transplant surgeons' concerns about the adequacy of post-operative nursing care. In spite of Medical Center efforts to address that concern, it continued to be a point of contention. Nevertheless, that issue accounted for only four of the 21 hearts turned down. The remaining 17 donor hearts rejected for non-medical reasons were turned down because of a lack of surgeons.

Throughout this entire time period, patients already on and added to the heart transplant waiting list were not informed when their chances of getting a transplant at the Medical Center had been significantly reduced—not when concerns about nursing staff were causing the rejection of potentially acceptable donor hearts, not when resignations limited the program to in-house donors, and not even when none of the program's remaining surgeons were doing heart transplants. That seems clearly to be a violation of their right to information necessary for medical care decisions; in this case, a life-and-death decision.

Many Medical Center officials were aware that problems existed in the heart transplant program, and that donor hearts were being rejected for non-medical reasons—something officials in two other hospitals called "inconceivable." By and large, these officials all told us they didn't realize the extent of the problems, or they thought the problems were already being addressed. Some indicated the problems within the heart transplant program weren't their "responsibility," or they would be operating outside their "authority" to take any action.

Whatever the reason, it's hard to understand how so many people could fail to take reasonable actions to determine how serious these prob-

lems were, and to ensure that the problems were resolved, or that the program was shut down until staffing levels returned to normal. It appeared to us that Medical Center officials lost sight of their primary responsibilities to their patients. At the very least, they should have ensured that patients knew their chances of getting a heart transplant were significantly limited until improvements could be made.

Recommendations

Recommendations Related Specifically to the Heart Transplant Program

1. Before deciding whether to reactivate the Medical Center's heart transplant program, Medical Center officials should explore the ramifications of keeping or eliminating that program. In doing so, they should analyze and review the following types of information:

- —the revenue the Hospital would forego by not having the program
- —the program's effect on the Hospital's competitiveness with other hospitals in the Kansas City area
- —the program's effect on the Hospital's ability to negotiate contracts with insurance companies and other managed care organizations
- —the Medical Center's ability and willingness to provide adequate resources to the program

Once this information has been considered, Medical Center officials should report the results of their decision to the 1996 Legislature through the appropriations process.

2. To ensure that the problems identified in this report with the Medical Center's heart transplant program are adequately addressed if the decision is made to reactivate that program, Medical Center officials should do the following:

a. Ensure that staffing and other resources devoted to the program will be sufficient to provide adequate patient care and to have a viable heart transplant program. Among other things, Medical Center officials should decide how many nursing staff and surgeons will be needed to operate the program, what qualifica-

tions they must possess, and whether general surgery nurses can adequately care for cardiothoracic surgery patients. Regarding qualifications, Medical Center officials should require the program and its staff meet all applicable guidelines established by the United Network of Organ Sharing (UNOS).

b. Ensure that cardiothoracic surgeons and nurses are consulted regarding any remaining concerns they have with the merged cardiothoracic surgery and general surgery intensive care units. If actions can be taken to effectively address those concerns while still meeting the Medical Center's goals for a more cost-effective intensive care unit, Medical Center officials should strongly consider taking those actions.

c. Ensure that appropriate officials are kept informed about the heart transplant program's activities. Among other things, the Medical Center should establish a system for periodically reporting and reviewing the program's activities (for example, number of hearts offered, number of hearts rejected, and the reasons for those rejections). In addition, the Medical Center should continue to obtain reports from the Midwest Organ Bank showing all donor heart offers and the reasons for any hearts being rejected.

d. Ensure that decisions about potential heart transplant patients are made jointly by the doctors responsible for those patients' care. The Medical Center should consider requiring the cardiologist and cardiothoracic surgeons to coordinate their efforts on all issues of patient care, including decisions about accepting or rejecting donor hearts, and any changes in the program's ability to provide transplant operations.

e. Ensure that former patients' financial concerns are equitably addressed. Among other things, the Medical Center should review charges to all patients on the heart transplant waiting list between May 25, 1994, and April 10, 1995, to determine whether those charges were incurred after donor hearts offered for patients were rejected for non-medical reasons.

<u>*Recommendations Addressed to the Medical Center in General*</u>

3. To help ensure that the factors that contributed to problems within the heart transplant program don't occur within other areas of the Medical Center, Medical Center administrators should do the following:

a. Ensure that the lines of authority and responsibility within hospital administration and within the Medical Center's clinical and academic departments are clarified. Medical Center officials also should ensure that this information is effectively communicated to all staff, and that all staff understand their responsibilities for identifying, acting on, or reporting problems that may affect the Medical Center's ability to provide adequate patient care. This would include ensuring that members of all committees fully understand their roles and responsibilities, and fully understand the types of issues and concerns those committees should deal with.

b. Ensure that all medical staff have the necessary and appropriate credentials to carry out their responsibilities. Among other things, Medical Center administrators should consider establishing policies requiring a review of privileges whenever there are major changes in a program (such as the resignation of a program's primary surgeon).

c. Ensure that the Statement of Patient Rights clearly specifies what patients are to be informed of, when, and by whom. Medical Center officials should clearly communicate this information to all staff members, and should inform staff that perceived violations of patient rights should be brought to the attention of the Hospital/ Medical Staff Ethics Committee.

d. Ensure that there is timely and effective process for resolving potential conflicts between physicians and nurses regarding the types of nurses needed to provide adequate care. Medical Center officials should consider adopting a mediation process for resolving such conflicts.

APPENDIX A

Chronology of Key Events Related to the Medical Center's Heart Transplant Program

To more fully explain what happened over the 11-month period when no heart transplants were being performed, we have included a chronology of the key events. The chronology starts November 1993, when Dr. Moran wrote to the Acting Dean of the School of Medicine about needing his commitment to strengthen Cardiothoracic Surgery. It ends with an entry for April 1995, which is the date the Medical Center inactivated the heart transplant program

Date	Significant Events	Waiting List Activity	Donor Heart Status
November 1993	Dr. Moran sends a letter to the Acting Dean, saying that he thinks the residency program may lose its accreditation and asking for a commitment from University Administration to strengthen Cardiovascular Medicine before hiring a third surgeon. He mentions that Hospital Administration is currently considering consolidation of the Cardiothoracic and General Surgery ICUs. Dr. Moran says the ICUs must stay separate to provide adequate post operative care to cardiothoracic patients.	18 people are on the waiting list	
January 1994	Dr. Moran and Dr. Beggerly do 3 heart transplants; all 3 patients are alive and doing well.		
March 1994	Cardiothoracic ICU nurse manager resigns. Subsequently, the Cardiothoracic and Surgery ICUs are merged under a single nurse manager.		
April 1994	Because Dr. Moran thought post-operative nursing care was inadequate, he canceled the surgery of an already anesthetized patient. As a result, Dr. Hollander, Dean of the School of Medicine, removes Dr. Moran as Chair of the Cardiothoracic Surgery Department. The Cardiothoracic Surgery Department becomes a division within the General Surgery Department. A subcommittee of the Medical Staff Executive Committee reviews the incident; no action is taken against Dr. Moran.	7 patients are now on the waiting list	
May 1994	Dr. Moran does his last transplant at the Medical Center; two months later the patient died. In a letter to Dr. Gollub, Dr. Moran noted that donor hearts had been rejected because of staffing problems. Dr. Moran also said he would no longer be able to perform cardiac transplant procedures after July 1, 1994, because of staffing problems.	1 patient receives a transplant; 6 patients remain on the waiting list	1 donor heart accepted by and transplanted by the Medical Center, 2 donor hearts refused for medical reasons, and 1 for a lack of adequate nursing staff
June 1994	In letters to Dean Hollander and Dr. Gollub, Dr. Moran says that 4 donor hearts had been refused for a lack of nursing staff. Dr. Moran tells Dean Hollander he would like to suspend the heart transplant program for a period of time rather than mislead the patients on the waiting list. After Dr. Moran refused a donor heart because of inadequate nursing staff for a patient in ICU, the patient was transferred to St. Luke's by Dr. Gollub. The patient said he was told by Dr. Gollub that the Medical Center's heart transplant program was being shut down. Dr. Gollub told us he never said this.	1 patient is placed on the inactive waiting list (no waiting time is accumulated); 1 transferred to St. Luke's and received a transplant; 4 patients remain on waiting list	1 donor heart refused for a medical reason, 3 donor hearts refused for a lack of adequate nursing staff

Date	Significant Events	Waiting List Activity	Donor Heart Status
June 1994	Dr. Estes, the hospital's chief of staff, after meeting with Dean Hollander and surgeons from the hospital's other transplant programs, told Dr. Moran not to shut down the heart transplant program, but to backlog elective surgeries to manage the caseload until nurses could be trained. Dean Hollander begins to recruit a new Cardiothoracic Surgery Chief. In letters to the recruits, he says the two cardiothoracic surgeons with the Medical Center (Dr. Moran and Dr. Beggerly) are considering leaving. In a memorandum to Drs. Moran and Beggerly hospital administrators say they will increase nurse staffing through new hires and by cross-training surgical ICU nurses to be cardiothoracic ICU nurses. Throughout June 1994, Dr. Moran writes several memoranda to Dean Hollander, outlining dates on which the heart transplant program was inactive because of a lack of adequate nursing staff. Dr. Moran's attorney wrote a letter to Dean Hollander, sending copies to the Chancellor, the Executive Vice Chancellor, the Executive Director of the Board of Regents, Dr. Cheung, and the Vice Chancellor for Hospital Administration. Among other things, the letter noted that the lack of adequate nursing staff made it necessary to reject donor hearts. Dr. Gollub begins transferring patients to Dr. Hannah for surgeries in other hospitals.		
July 1994	Staffing review study says Cardiothoracic ICU should have 4 additional cardiothoracic nurses. Hospital administration agrees to provide these additional nurses.	2 patients are placed on the inactive waiting list; 2 patients remain on the waiting list	2 donor hearts refused, 1 for a medical reason and 1 for a lack of available surgeons
August 1994		5 patients added to the waiting list; 7 patients are now on the waiting list	1 donor heart refused for a lack of available surgeons
Sept 1994	Dr. Hannah and his four associates come on board but Dr. Hannah does not supervise Dr. Moran. As of September 9, the only cardiothoracic resident resigns, effectively limiting the heart transplant program to accepting only in-house donors.		4 donor hearts refused for a lack of available surgeons, 3 refused for medical reasons
October 1994			7 donor hearts refused for a lack of available surgeons, 1 donor heart refused for a medical reason

Date	Significant Events	Waiting List Activity	Donor Heart Status
November 1994	Dr. Moran informs Dr. Hannah, in writing, that he will no longer do heart transplants or bypasses. Dr. Beggerly leaves the Medical Center. Dr. Hannah becomes president of the Cardiothoracic Foundation and Chief of the Cardiothoracic Surgery Department. Dr. Hannah takes over responsibility of the heart transplant program at the Medical Center.	1 patient taken off the list after receiving a coronary bypass; 6 patients remain on waiting list	2 donor hearts refused for a lack of available surgeons, 5 donor hearts refused for medical reasons
December 1994		1 patient on the waiting list died; 5 patients remain on the waiting list	1 donor heart refused for a lack of available surgeons, 2 donor hearts refused for medical reasons
January 1995	The Cardiothoracic Surgery Residency program loses its accreditation.	2 patients added to the waiting list, 1 patient taken off and transferred to St. Luke's, where he received a transplant; 6 patients remain on the waiting list	1 donor heart refused for a lack of available surgeons, 1 refused for bad weather, 1 donor heart refused for a medical reason
February 1995		1 patient added to the waiting list; 5 patients remain on the waiting list	5 donor hearts refused for medical reasons
March 1995	The Medical ICU nurses consult the Hospital Staff Ethics Committee because the nurses are concerned that the patients on the waiting list do not know enough (about the problems at the Medical Center), to make informed decisions about their own medical care. Dr. Moran leaves the Medical Center. Dr. Hannah does a heart transplant; the patient dies.	1 patient added to the waiting list, 1 patient received a transplant and later died; 5 patients remained on the waiting list	1 donor heart transplanted by Dr. Hannah, 1 donor heart refused for a medical reason
April 1995	The Medical Center inactivates its heart transplant program.	5 patients were on the waiting list when the program was inactivated. Of those 5, 1 patients was transferred to St. Francis Hospital; the other 4 were transferred to St. Luke's	

APPENDIX B

Summary of Heart Transplant Programs in Selected Hospitals in Surrounding States and Kansas

As a part of this audit, we attempted to gather information from heart transplant programs in the medical schools in surrounding states, and in the other hospitals in the region that have heart transplant programs, St. Francis Hospital in Wichita and St. Luke's Hospital in Kansas City, Missouri. The medical school in Nebraska chose not to respond to our survey.

This appendix provides detailed information about the heart transplant programs in the five other hospitals we talked to, including how many hearts those programs have turned down for non-medical reasons and controls they have in place to prevent problems such as those that occurred at the Medical Center.

	University of Kansas Medical Center	University of Colorado	University of Iowa	University of Missouri	University of Oklahoma	St. Francis Hospital, Wichita	St. Luke's Hospital, Kansas City, Mo.
How long has the hospital been performing transplants?	Since 1984	Since 1988	Since 1985	Since 1989	Since 1988	Since 1986	10 Years
How many transplants have been performed in the last three years? (1992-Present)	22	86	13 per year, on average	39	27	34	56
What is your patient survival rate?	one year: 94% three year: 93%	one year: 90% three year: 88%	one year: 75% or more	one year: 85%	one year: 85% five year: 90%	one year: 94% three-year: 92%	one year: 87% three-year: 82% five year: 72%
Does cardiothoracic surgery have its own intensive care unit?	No	A wing is set aside for cardiothoracic surgery	Yes	Yes	Yes	No	Yes
Do the chief heart transplant surgeon and the transplant physician meet UNOS requirements?	Before November 1994, UNOS requirements were met for both the transplant surgeon and physician. After November, only the transplant physician met UNOS requirements.	Yes	Yes	Yes	Yes	Yes	Yes

	University of Kansas Medical Center	University of Colorado	University of Iowa	University of Missouri	University of Oklahoma	St. Francis Hospital, Wichita	St. Luke's Hospital, Kansas City, Mo.
Do you receive reports of the number of donor hearts accepted/ rejected?	Yes. Currently a report of hearts accepted/rejected is supplied at the request of the Medical Center.	No. The Colorado Organ Recovery has this data which is available upon request.	Twice a year they request a report from the organ bank showing the number of hearts donated in Iowa, the number that stayed in Iowa, the number exported, the reasons the hearts were exported, etc.	No. A report is received every month from the Midwest Organ Bank, but it does not give details on which hospitals rejected the hearts or the reasons for rejection.	No. This information is kept by the Oklahoma Organ Sharing Network. Upon request, this organization can provide information to the hospital. No regular reports, however, are issued to the hospital.	Monthly activity reports are received from the Midwest Organ Bank, but they don't give details on which hospitals rejected the hearts or the reasons for rejection. In May 1995, a report from UNOS was requested for donor hearts accepted/rejected.	Monthly activity reports are received from the Midwest Organ Bank, but they don't give details on which hospitals rejected the hearts or the reasons for rejection.
Have donor hearts ever been refused due to inadequate staffing, lack of beds, or a lack of surgeons?	Yes	Never	Hearts have been refused at least once and possibly twice due to a lack of surgeons.	Never	No	No	The Director knew of two hearts being refused in his entire experience at St. Luke's and John Hopkins Hospitals. One concerned a problem with a surgeon's beeper, and one was turned down because weather prevented them from going to get the heart.
How many surgeons do you have in the heart transplant program, not counting residents or fellows?	Prior to November 1994, two surgeons were in the transplant program. From November 1994 to January 1995, no surgeons were available for heart transplants. One surgeon was available from January to the present period.	Four	Five	Four	Four	Three	Three who can do the transplants and two who can retrieve donor hearts.

	University of Kansas Medical Center	University of Colorado	University of Iowa	University of Missouri	University of Oklahoma	St. Francis Hospital, Wichita	St. Luke's Hospital, Kansas City, Mo.
How many residents/fellows do you have in the heart transplant program?	The program is currently inactive. Before January 1994, there were generally two residents, and from July to September 1994 there was only one resident.	One cardiothoracic surgery resident; three General Surgery residents also assist the heart transplant program.	Six cardiothoracic surgery residents	Two cardiothoracic surgery residents	Four cardiothoracic surgery residents	None specifically assigned to cardiac transplantation. In the general surgery program, residents assist in cardiothoracic transplant cases during the cardiovascular surgery rotation.	Two cardiothoracic surgery residents and one general surgery resident
Is the residency program accredited by the Accreditation Council for Graduate Medical Education?	The cardiothoracic residency program lost its accreditation on January 13, 1995.	Yes	Yes	Yes	Yes	Yes	Yes
Do you view your heart transplant program as having an important educational function?	It is a small part of the educational program.	Yes, both from a surgical and medical perspective.	Yes. The program serves a very important educational function for the medical school's fellows.	Not necessarily. Heart transplants are a very small part of residents' cardiothoracic surgery experience.	Yes. It is becoming more important to residents as transplants are done on a more regular basis.	Yes	The amount of time involved is minor. However, during transplants, the residents play an important role.
Are there controls over the heart transplant that would allow hospital management to know whether hearts are being rejected for non-medical reasons?	Yes. However, these controls, including the weekly transplant committee meeting were not used effectively.	Yes. The surgery and medicine units act as a check and balance.	There are no formal controls, however, enough people are involved that any problem would end up in a committee.	Every week there is a one-hour heart transplant meeting. Those in attendance include cardiothoracic surgeons, cardiologists, residents, and, periodically, a hospital administrator.	Yes. A Heart Transplant Committee, made up of cardiologists, cardiothoracic surgeons, the transplant coordinator, social worker, and cardiothoracic surgery manager meets every two weeks. A Hospital Assistant Administrator also attends.	Yes. The Cardiothoracic Transplant program reports through an established medical center reporting structure. All problems, including staffing, are communicated and dealt with according to policy/ procedure.	The large size of the cardiothoracic surgery program ensures that problems become known quickly. In addition, the administration monitors clinical matters very closely and would respond accordingly.

	University of Kansas Medical Center	University of Colorado	University of Iowa	University of Missouri	University of Oklahoma	St. Francis Hospital, Wichita	St. Luke's Hospital, Kansas City, Mo.
If several months went by without a transplant, would you expect an administrator to notice and try to find out if there was a problem?	It would not be uncommon for the Medical Center to go several months without a transplant.	Yes. A weekly list of patients who are on the waiting list from Colorado Organ Recovery is obtained by request.	With all the hospital's transplant programs there are hundreds of patients and many doctors. It is inconceivable that any major problem could come up that wouldn't be noticed right away.	Not really. It depends on how slow the Midwest Organ Bank is in receiving hearts. Also, the condition of patients on the waiting list may be a reason for hearts to be rejected.	It would not be uncommon for the hospital to go several months without a heart transplant. Administration would be aware, however, due to their regular attendance in the Heart Transplant Committee meetings.	Yes. They would find out through the communication between the medical director, the program manager, and medical center administration. Program status is reviewed routinely with the V.P. of Clinical Operations.	Yes. The administration monitors clinical matters very closely and would respond accordingly.
Assuming that you have to fly somewhere to pick up a donor heart, what is the minimum number of surgeons you would need to perform a heart transplant?	One surgeon to retrieve the donor heart, and one surgeon and one resident to do the transplant.	Two surgeons to retrieve the donor heart, and at least one surgeon to do the transplant.	One surgeon and one resident to retrieve the donor heart, and one surgeon and one resident to do the transplant.	One surgeon and one surgical technician to retrieve the donor heart, and one surgeon and one resident to do the transplant.	One surgeon and one resident to retrieve the donor heart, and one surgeon and one resident to prepare the recipient.	One surgeon to retrieve the donor heart, and two surgeons to do the transplant.	One surgeon to retrieve the donor heart, and one surgeon and one resident or assistant surgeon to prepare the recipient.
Who has the most say in deciding who goes on the waiting list?	Prior to November 1994, it was unclear who had the most say. Dr. Gollub said that Dr. Moran had the most say while Dr. Moran stated that he followed Dr. Gollub's recommendations unless someone strongly objected. After January 1995, Dr. Gollub and Dr. Hannah would make this decision jointly.	Both cardiology (medical) and cardiothoracic surgery have input. The Cardiology Director has the most input on who goes on the waiting list due to the Department's role in evaluating the patient's medical condition.	The Surgical Director and Medical Director of Heart Transplants.	The Cardiothoracic Surgery Chief has the most say as to who goes on the waiting list.	The four cardiothoracic surgeons who actually perform the heart transplants.	The cardiac transplant team.	The cardiologist.

	University of Kansas Medical Center	University of Colorado	University of Iowa	University of Missouri	University of Oklahoma	St. Francis Hospital, Wichita	St. Luke's Hospital, Kansas City, Mo.
Do the surgeon and cardiologist consult each other when hearts are offered?	Prior to November 1994, the cardiologist and the surgeon did not consult each other. After January 1995, the cardiologist and the surgeon consulted each other.	Yes	Yes	Yes	Yes. This has been very beneficial.	It depends on the situation. The surgeon is called directly and may call the cardiologist for more information.	No. The surgeon generally makes the decision on his own.
Who does the organ bank call when a heart is available?	The heart transplant coordinator.	A cardiologist is always on call to receive a call from an organ bank.	The Medical Director of Heart Transplants.	A transplant nurse is on call 24 hours a day. They receive the call from the organ bank and notify the physician.	The heart transplant coordinator.	The surgeon is called directly.	The heart transplant coordinator.

APPENDIX C

Agency Response

On September 8, we provided a copy of the draft audit report to the University of Kansas Medical Center for its review and comments. We also provided a draft audit report to the Chancellor of the University of Kansas and to the Executive Director of the Kansas Board of Regents. The parties receiving the draft decided that the Medical Center, as the audited organization, would provide the written response. That response is included as this appendix.

The University of Kansas Medical Center

Office of the Executive Vice Chancellor

September 20, 1995

Barbara J. Hinton
Legislative Post Auditor
Mercantile Bank Tower
800 SW Jackson Street, Suite 1200
Topeka, KS 66612-2212

Dear Ms. Hinton:

I appreciate the opportunity to provide comments about the draft copy of the performance audit, "Examining Problems with the University of Kansas Medical Center's Heart Transplant Program." I know that members of the Post Audit staff have spent considerable time during the past several months gathering information and reviewing this matter and I am impressed by their effort in carrying out the audit. While we do not necessarily agree with every interpretation in the report, we accept its recommendations and we intend to use them to make significant improvements in our operations.

As I am sure your staff found during their work on this project, the media reports last spring about the Medical Center's heart transplant program created an air of sensationalism which made it even more difficult to obtain a clear picture of a very complex set of issues. The nuances of matters such as credentialing, UNOS membership criteria, the decision-making process for patient care matters, and administrative agendas unrelated to the transplant program could easily cloud the central issues in the inquiry. We recognize that whenever conflicting information is presented, inevitably judgments must be made concerning such conflicts and although your report represents a generally balanced analysis of such information, it should not be surprising that we do not agree with every conclusion stated in the report.

Little purpose would be served at this time by focusing on those statements and conclusions with which we disagree. One issue which does warrant a specific comment, however, is the rejection of import hearts and hearts previously rejected by other programs. Although the report does explain that "import" hearts have been rejected by transplant programs in other regions, we are concerned that not enough information concerning the use of import hearts in the Medical Center's program has been conveyed. As your report points out, the Medical Center's transplant program had an excellent patient survival rate after three years, at 93 percent, far higher than the expected survival rate of 78 percent. This can be attributed to several factors in addition to the quality of care by medical staff and the careful evaluation and screening of recipients. Also very important in this was the proper selection of donor hearts. The Medical Center's program had rarely accepted import

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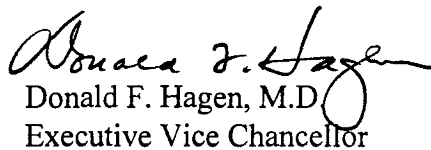
hearts and our information indicates that this had occurred on fewer than 10 occasions during the history of the program. As is reflected in your report, a number of the hearts rejected during the time period in question were hearts that had been rejected by other programs, both import and local hearts. Even though some of these hearts might eventually have been transplanted, we do not believe that conclusions can be reached that those hearts would have met the stringent criteria of the Medical Center's program.

There is much in this report that, together with the report of the Peer Review Committee, will be helpful to us. We are committed to moving forward and ensuring that any problems that might have existed with this program are not repeated.

Please convey to your staff our appreciation of their professional demeanor and the manner in which they undertook this difficult assignment.

Sincerely,



Donald F. Hagen, M.D.
Executive Vice Chancellor

cc: Chancellor Robert Hemenway

Updated Organization Chart
University of Kansas Medical Center
November 1995

During its discussion of this audit, the Legislative Post Audit Committee asked that the organization chart presented on page 29 be updated, and that the updated organization chart be included with future distributions of the audit report. That updated organization chart is shown on the following page.

Organization of the University of Kansas Medical Center
November 1995

(Changes since June 1994 chart that was shown in audit report are noted.)