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Characteristics of Transplant Discharges from Nebraska Hospitals, 1995-1997

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Introduction

This Nebraska Health Data Reporter uses hospital discharge data which has been compiled by the Nebraska Association of Hospitals and Health Systems (NAHHS) to describe the characteristics of individuals who received a transplant for the years 1995, 1996 and 1997.

Summary

Rapid medical and scientific advances enable many thousands of Americans to share the gift of life through organ and tissue donation and transplantation. While about 20,000 Americans per year receive organ transplants, about 4,000 people die in the United States annually - almost 11 each day - waiting for a donated kidney, liver, heart, lung, or other organ. Between 1988 and 1997 the total number of major organ transplants increased by 59%⁽¹⁾.

This Reporter shows that in Nebraska:

- ◆ Most patients were covered by commercial insurance (67.6%) or public insurance (32.3%).
- ◆ Nebraska discharge data generally showed a shorter average length of stay (ALOS) for the most frequent type of transplants than the ALOS for the nation.
- ◆ The most frequent transplants in Nebraska were kidney and liver. National data are similar.
- ◆ The largest percentage of transplant discharges were patients who were in the 15 to 44 (44.6%) and 45 to 64 (36.5%) age groups. This is comparable to national data.
- ◆ The most frequent transplants performed on Nebraska residents were kidney and autologous hematopoietic stem cell.
- ◆ Forty-four percent of transplant discharges were patients who came from other states. Transplants of the liver were the primary reasons for these hospitalizations.



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<http://www.unmc.edu/nebraska>

Executive Summary

Why examine transplant discharges?

- ◆ To show the full range of transplant services taking place in Nebraska.
- ◆ To examine overall transplant trends in Nebraska over time.
- ◆ To describe the characteristics of transplant hospitalizations in Nebraska.

What do the analyses presented in this Reporter show?

Characteristics of Transplants

- ◆ During 1995-1997, there were 753 hospital discharges for transplants in Nebraska. Trend data show an increase in the number of transplant related discharges. Data also show increasing average lengths of stay (ALOS). Forty-four percent were non-Nebraska residents.
- ◆ The most frequent transplant procedures were kidney and liver. These data are similar to data for the U.S.

Characteristics of Patients

- ◆ There were some differences by gender, for all types of transplants. More transplants are performed on men than women. The greatest differences are in heart transplants (68% male versus 32% female) and autologous hematopoietic stem cell transplants (63% female vs. 37% male). These differences are consistent with national data.
- ◆ In both Nebraska and the U.S., the greatest percentage of transplant discharges were patients who were in the 15 through 44 (44.6%) and 45 through 64 (36.5%) age groups. Among children under 15, the most frequent transplant was of the liver followed by bone marrow and hematopoietic stem cell transplants. The most frequent transplants for those ages 15 to 44 were of the kidney followed by bone marrow and hematopoietic stem cell transplants. For those ages 45 to 64, the most frequent transplants were bone marrow and hematopoietic stem cell transplants followed by kidney transplants. The most frequent transplant for those over 65 was of the liver.

Payment for Transplants

- ◆ From 1995 to 1997, the most frequent type of discharge in Nebraska was for kidney transplants, the highest average charge (\$165,108) was for allogeneic bone marrow transplants with purging, and the longest average length of stay (35.3 days) was for heart transplants.

- ◆ In Nebraska, transplant hospitalizations were more likely to be covered by commercial insurance than public or other types of insurance.

Part 1. Introduction

Purpose

This Nebraska Health Data Reporter uses hospital discharge data which has been compiled by the Nebraska Association of Hospitals and Health Systems (NAHHS) to describe the number and type of hospitalizations for transplants in Nebraska during 1995, 1996 and 1997.

Data Relevance

Previous research examining transplants hospitalization characteristics indicate that transplant patients are more likely to be:

- ◆ covered by private insurance ⁽²⁾;
- ◆ male than female, particularly for certain major organs (heart and lung) ⁽¹⁾; and
- ◆ older and more ethnically diverse than 10 years ago ^(1,2).

The goals of examining the characteristics of transplants hospitalizations are to:

- ◆ show the types of transplants that occur most frequently in Nebraska; and
- ◆ provide data for discussions of issues in public policy including:
 - the economic benefit to Nebraska; and
 - legislative and regulatory policy.

Transplantation Defined

Nebraska hospital transplant discharges included several procedures incurred during a hospitalization. We examine first-listed procedures only. For the purposes of this Data Reporter, transplantations are defined as the transfer of cells, tissues, or organs from one area of the body to another or from one organism to another.

Data Note

The data reported in this document include all discharges from Nebraska community hospitals (See Data Notes on page 13). Except where otherwise noted, the discharges are for both Nebraska and non-Nebraska residents. The information used for this report has been stripped of personal identifiers, therefore data may include multiple discharges of a single person within one year.



Part 2. Characteristics of Transplant Hospital Discharges

A. What were the most frequent types of Nebraska hospital discharges for transplants during 1995, 1996 and 1997? How do Nebraska data compare to U.S. data?

Table 1 shows the most frequent hospitalizations for transplants in Nebraska during 1995, 1996 and 1997. These data show that the most frequent transplants in Nebraska were of the kidney and liver. The type and percentage of the most frequent transplant discharges are consistent with national data.

Table 1 - Most Frequent Type of Transplant Hospital Discharges, Nebraska and U.S. 1995, 1996 and 1997⁽¹⁾

| Procedure | Nebraska | | | | U.S. | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | 1997 | 1996 | 1995 | 1995-1997 | 1997 | 1996 | 1995 | 1995-1997 |
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Liver Transplantation | 30.0% | 15.8% | 18.1% | 21.4% | 7.2% | 13.8% | 8.5% | 10.1% |
| Kidney Transplantation | 26.1% | 39.7% | 31.3% | 32.3% | 46.2% | 42.7% | 39.0% | 42.8% |
| Autologous Hematopoietic Stem Cell Transplant | 14.0% | 22.3% | 15.7% | 17.3% | 12.4% | 17.8% | 16.1% | 15.5% |
| Allogeneic Bone Marrow Transplant without Purging | 8.2% | 4.9% | 6.8% | 6.6% | 8.0% | 8.2% | 6.2% | 7.6% |
| Tendon Transfer or Transplantation | 6.6% | 3.2% | 3.2% | 4.4% | 8.2% | 6.4% | 4.0% | 6.3% |
| Allogeneic Hematopoietic Stem Cell Transplant | 4.3% | 0.0% | 0.0% | 1.5% | - | - | - | - |
| Allogeneic Bone Marrow Transplant with Purging | 1.9% | 0.0% | ** | 0.9% | 0.5% | 1.6% | 1.1% | 1.1% |
| Homotransplant of Pancreas | 1.9% | ** | 2.8% | 2.1% | 0.2% | - | - | 0.1% |
| Lung Transplant* | 1.9% | 4.5% | ** | 2.4% | 2.2% | 0.3% | 0.6% | 1.0% |
| Heart Transplantation | ** | 2.4% | 4.8% | 2.9% | 8.1% | 3.9% | 5.6% | 5.8% |
| Other ⁽²⁾ | 3.5% | 5.7% | 15.7% | 8.2% | 7.1% | 5.4% | 18.9% | 9.8% |
| Total | 100.0% (N=257) | 100.0% (N=247) | 100.0% (N=249) | 100.0% (N=753) | 100.0% (N=28,724) | 100.0% (N=33,072) | 100.0% (N=24,569) | 100.0% (N=86,365) |

Sources: Nebraska Association of Hospitals and Health Systems, 1998. National Hospital Discharge Survey 1995, 1996 and 1997.

(1) Calendar years. Reflects an estimated inpatient discharge contribution rate of 91% for 1997, 89% for 1996 and 85% for 1995.

(2) Other includes: Autologous Bone Marrow Transplants, Muscle Transfers or Transplantations, Corneal Transplants Not Otherwise Specified, Other Hand Tendon Transfers or Transplantations, Other Corneal Transplants, Renal Autotransplantations, Heterotransplants of the Pancreas, Bone Marrow Transplants Not Otherwise Specified, Other Hand Muscle Transfers or Transplantations, Auxiliary Liver Transplants, and Pancreatic Transplants Not Otherwise Specified.

*Lung transplants include unilateral and bilateral lung transplants.

**Five or fewer cases.

-Data are unavailable.

B. How many recipients of transplants in Nebraska were residents of other states during 1995-1997? What was their average charge and length of stay?

Tables 2a and 2b compare the number and type of transplant discharges that occur in Nebraska for non-Nebraska residents (excluding foreign nationals) and Nebraska residents. There were 332 transplant discharges of residents from other states, a total of 44.1% of all transplants. Non-Nebraska residents represent approximately \$33.3 million in total charges for transplants. Three types of procedures were more frequent in non-Nebraska residents than Nebraska residents: liver transplantations, stem cell transplants, and bone marrow transplants. Of those receiving liver transplants, the majority came from Iowa (21.0%), Kansas (11.8%), Missouri (10.9%), and Utah (6.7%). The majority of those who received stem cell transplants came from Iowa (20.0%), Missouri (15.3%), Kansas (14.1%), and South Dakota (11.8%). Of those receiving bone marrow transplants, the majority came from Iowa (24.2%), Kansas (20.0%), and Illinois (11.1%). Overall, the majority of the non-Nebraska residents came from Iowa (29.8%), Kansas (13.0%) and Missouri (12.4%).

Table 2a - Most Frequent Transplant Hospital Discharges for Non-Nebraska Residents by Total Charges, 1995 to 1997⁽¹⁾

| Procedure | Number | Total Charges ⁽²⁾ | Average Charge | ALOS |
|---|------------|------------------------------|------------------|-------------|
| Liver Transplantation | 119 | \$16,751,224 | \$140,767 | 27.7 |
| Autologous Hematopoietic Stem Cell Transplant | 78 | \$5,054,925 | \$64,807 | 17.0 |
| Allogeneic Bone Marrow Transplant without Purging | 25 | \$3,720,581 | \$148,823 | 33.4 |
| Kidney Transplantation | 57 | \$3,582,288 | \$62,847 | 10.3 |
| Autologous Bone Marrow Transplant | 20 | \$1,328,028 | \$66,401 | 20.1 |
| Allogeneic Hematopoietic Stem Cell Transplant | 7 | \$718,773 | \$102,682 | 26.7 |
| Homotransplant of Pancreas | 5 | \$342,611 | \$68,522 | 10.8 |
| Heart Transplantation | 5 | \$646,753 | \$129,351 | 40.8 |
| Other ⁽³⁾ | 16 | \$1,162,654 | \$72,666 | 26.7 |
| Total | 332 | \$33,307,837 | \$100,325 | 21.3 |

Table 2b - Most Frequent Transplant Hospital Discharges for Nebraska Residents by Total Charges, 1995 to 1997⁽¹⁾

| Procedure | Number | Total Charges ⁽²⁾ | Average Charge | ALOS |
|---|------------|------------------------------|-----------------|-------------|
| Kidney Transplantation | 186 | \$10,582,874 | \$56,897 | 9.7 |
| Liver Transplantation | 42 | \$8,020,699 | \$190,969 | 38.1 |
| Autologous Hematopoietic Stem Cell Transplant | 52 | \$3,441,416 | \$66,181 | 16.1 |
| Allogeneic Bone Marrow Transplant without Purging | 25 | \$3,132,383 | \$125,295 | 32.9 |
| Heart Transplantation | 17 | \$1,816,921 | \$106,878 | 33.6 |
| Autologous Bone Marrow Transplant | 16 | \$1,163,565 | \$72,723 | 20.2 |
| Homotransplant of Pancreas | 11 | \$1,033,617 | \$93,965 | 16.4 |
| Allogeneic Hematopoietic Stem Cell Transplant | 4 | \$440,481 | \$110,120 | 25.8 |
| Other ⁽³⁾ | 68 | \$3,010,072 | \$44,266 | 8.4 |
| Total | 421 | \$32,642,025 | \$77,535 | 16.2 |

Source: Nebraska Association of Hospitals and Health Systems, 1998.

(1) Calendar years. Reflects an estimated inpatient discharge contribution rate of 91% for 1997, 89% for 1996 and 85% for 1995.

(2) This is an estimate of total charges based upon the average charge multiplied by total cases within the ICD-9-CM Codes.

(3) Other includes: Tendon Transfers or Transplantations, Lung Transplants (Including Unilateral and Bilateral Lung Transplants, Allogeneic Bone Marrow Transplants with Purging, Muscle Transfers or Transplantations, Corneal Transplants Not Otherwise Specified, Other Hand Tendon Transfers or Transplantations, Other Corneal Transplants, Renal Autotransplantations, Heterotransplants of the Pancreas, Bone Marrow Transplants Not Otherwise Specified, Other Hand Muscle Transfers or Transplantations, and Pancreatic Transplants Not Otherwise Specified.



C. What was the average charge and ALOS in Nebraska for the most frequent transplant discharges?

Table 3 shows the average charge and ALOS for transplant discharges in Nebraska for 1995 through 1997. The most frequent transplant discharges - kidney transplants (ICD-9-CM Code 55.69) and liver transplants (ICD-9-CM Code 50.59) - had average charges of \$58,293 and \$153,863 respectively. The average lengths of stay were 9.8 days and 30.4 days respectively. The highest average charge was for allogeneic bone marrow transplants with purging (ICD-9-CM Code 41.02). The longest ALOS for Nebraska transplant discharges was 35.3 days with an average charge of \$111,985 for heart transplants (ICD-9-CM Code 37.5).

Table 3 - Most Frequent Transplant Hospital Discharges by Average Charge, Total Charges and Average Length of Stay (ALOS), Nebraska 1995 to 1997⁽¹⁾

| Procedure | Total | Average Charge | Total Charges⁽²⁾ | ALOS |
|---|--------------|-----------------------|------------------------------------|-------------|
| Kidney Transplantation | 243 | \$58,293 | \$14,165,163 | 9.8 |
| Liver Transplantation | 161 | \$153,863 | \$24,771,924 | 30.4 |
| Autologous Hematopoietic Stem Cell Transplant | 130 | \$65,356 | \$8,496,341 | 16.7 |
| Allogeneic Bone Marrow Transplant without Purging | 50 | \$137,059 | \$6,852,964 | 33.1 |
| Autologous Bone Marrow Transplant | 36 | \$69,211 | \$2,491,593 | 20.1 |
| Tendon Transfer or Transplantation | 33 | \$6,351 | \$209,589 | 1.8 |
| Heart Transplantation | 22 | \$111,985 | \$2,463,673 | 35.3 |
| Lung Transplant* | 18 | \$108,835 | \$1,959,032 | 16.3 |
| Homotransplant of Pancreas | 16 | \$86,014 | \$1,376,228 | 14.6 |
| Allogeneic Hematopoietic Stem Cell Transplant | 11 | \$105,387 | \$1,159,254 | 26.4 |
| Allogeneic Bone Marrow Transplant with Purging | 7 | \$165,108 | \$1,155,755 | 29.1 |
| Other ⁽³⁾ | 26 | \$32,629 | \$848,349 | 8.0 |
| Total | 753 | \$87,583 | \$65,949,863 | 18.4 |

Source: Nebraska Association of Hospitals and Health Systems, 1998.

(1) Calendar years. Reflects an estimated inpatient discharge contribution rate of 91% for 1997, 89% for 1996 and 85% for 1995.

(2) This is an estimate of total charges based upon the average charge multiplied by total cases within the ICD-9-CM Codes.

(3) Other includes: Muscle Transfers or Transplantations, Corneal Transplants Not Otherwise Specified, Other Hand Tendon Transfers or Transplantations, Other Corneal Transplants, Renal Autotransplantations, Heterotransplants of the Pancreas, Bone Marrow Transplants Not Otherwise Specified, Other Hand Muscle Transfers or Transplantations, and Pancreatic Transplants Not Otherwise Specified.

*Lung transplants include unilateral and bilateral lung transplants.

D. What was the most common payer type in Nebraska for the most frequent transplant discharges?

Table 4 shows the payer type for transplant discharges in Nebraska for the combined calendar years of 1995 through 1997. Commercial insurance paid for 67.6% of transplants, and those who have public insurance or who were uninsured (self-pay) represented 32.4% of transplant recipients.

Table 4 - Most Frequent Transplant Hospital Discharges by Insurance Type, Nebraska 1995 to 1997⁽¹⁾

| Procedure | Total | Commercial | | Public⁽²⁾ | |
|--|--------------|-------------------|----------------|-----------------------------|----------------|
| | | Number | Percent | Number | Percent |
| Kidney Transplantation | 243 | 97 | 39.9% | 146 | 60.1% |
| Bone Marrow or Hematopoietic Stem Cell Transplant* | 234 | 212 | 90.6% | 22 | 9.4% |
| Liver Transplantation | 161 | 123 | 76.4% | 37 | 23.0% |
| Tendon Transfer or Transplantation | 33 | 24 | 72.7% | 9 | 27.3% |
| Other ⁽³⁾ | 82 | 53 | 64.6% | 29 | 35.4% |
| Total⁽⁴⁾ | 753 | 509 | 67.6% | 243 | 32.3% |

Source: Nebraska Association of Hospitals and Health Systems, 1998.

(1) Calendar years. Reflects an estimated inpatient discharge contribution rate of 91% for 1997, 89% for 1996 and 85% for 1995.

(2) Public includes Medicaid, Medicare, worker's compensation, and military health plans.

(3) Other includes: Heart Transplantations, Lung Transplantations (Including Unilateral and Bilateral Lung Transplants), Homotransplantations of the Pancreas, Muscle Transfers or Transplantations, Corneal Transplants Not Otherwise Specified, Other Hand Tendon Transfers or Transplantations, Other Corneal Transplants, Renal Autotransplantations, Heterotransplants of the Pancreas, Bone Marrow Transplants Not Otherwise Specified, Other Hand Muscle Transfers or Transplantations, and Pancreatic Transplants Not Otherwise Specified.

(4) Totals will not sum to 100% because one transplant was categorized as self-pay and was not included due to confidentiality concerns.

*Includes Autologous Hematopoietic Stem Cell Transplant, Allogeneic Bone Marrow Transplant without Purging, Autologous Bone Marrow Transplant, Allogeneic Hematopoietic Stem Cell Transplant, and Allogeneic Bone Marrow Transplant with Purging.



E. What are the most frequent transplant hospital discharges by age in Nebraska ?

In Nebraska and in the U.S., the greatest proportion of transplant discharges were for patients between the ages of 15 through 44 years of age (44.6%), followed by those 45 to 64 (36.5%). The majority (60.5%) of kidney transplants were for patients between the ages of 15 and 44. The same age group received more bone marrow or hematopoietic stem cell transplants than any other age group. Those aged 45 to 64 received more liver transplants (37.9%) than other age groups. Of the recipients of tendon transfers or transplants, those ages 0 to 14 received more (39.4%) than other age groups.

Table 5 - Most Frequent Transplant Hospital Discharges by Age, Nebraska 1995 to 1997⁽¹⁾

| <u>Procedure</u> | <u>Total</u> | <u>0 to 14</u> | | <u>15 to 44</u> | | <u>45 to 64</u> | | <u>65+</u> | |
|--|--------------|----------------|----------------|-----------------|----------------|-----------------|----------------|---------------|----------------|
| | | <u>Number</u> | <u>Percent</u> | <u>Number</u> | <u>Percent</u> | <u>Number</u> | <u>Percent</u> | <u>Number</u> | <u>Percent</u> |
| Kidney Transplantation | 243 | 7 | 2.9% | 147 | 60.5% | 80 | 32.9% | 9 | 3.7% |
| Bone Marrow or Hematopoietic Stem Cell Transplant* | 234 | 28 | 12.0% | 104 | 44.4% | 93 | 39.7% | 9 | 3.8% |
| Liver Transplantation | 161 | 41 | 25.5% | 48 | 29.8% | 61 | 37.9% | 11 | 6.8% |
| Tendon Transfer or Transplantation | 33 | 13 | 39.4% | 6 | 18.2% | 7 | 21.2% | 7 | 21.2% |
| Other ⁽²⁾ | 82 | 8 | 9.8% | 31 | 37.8% | 34 | 41.5% | 9 | 11.0% |
| Total | 753 | 97 | 12.9% | 336 | 44.6% | 275 | 36.5% | 45 | 6.0% |

Source: Nebraska Association of Hospitals and Health Systems, 1998.

(1) Calendar years. Reflects an estimated inpatient discharge contribution rate of 91% for 1997, 89% for 1996 and 85% for 1995.

(2) Other includes: Heart Transplantations, Lung Transplantations (Including Unilateral and Bilateral Lung Transplants), Homotransplants of Pancreas, Muscle Transfers or Transplantations, Corneal Transplants Not Otherwise Specified, Other Hand Tendon Transfers or Transplantations, Other Corneal Transplants, Renal Autotransplantations, Heterotransplants of the Pancreas, Bone Marrow Transplants Not Otherwise Specified, Other Hand Muscle Transfers or Transplantations, and Pancreatic Transplants Not Otherwise Specified.

*Includes Autologous Hematopoietic Stem Cell Transplant, Allogeneic Bone Marrow Transplant without Purging, Autologous Bone Marrow Transplant, Allogeneic Hematopoietic Stem Cell Transplant, and Allogeneic Bone Marrow Transplant with Purging.

F. Is a gender difference evident among Nebraska hospital discharges for transplants?

For comparison purposes, **Table 6** shows the number and type of transplants in Nebraska for the combined years 1995 through 1997 by gender. The results show that men have more transplants than women. However, there are a few exceptions. Autologous hematopoietic stem cell transplants, autologous bone marrow transplants and tendon transfers or transplants occurred more frequently in females than males.

Table 6 - Most Frequent Transplant Hospital Discharges by Gender, Nebraska 1995 to 1997⁽¹⁾

| Procedure | Total | Male | | Female | |
|---|--------------|-------------|---------------|---------------|---------------|
| Kidney Transplantation | 243 | 148 | 60.91% | 95 | 39.09% |
| Liver Transplantation | 161 | 89 | 55.28% | 72 | 44.72% |
| Autologous Hematopoietic Stem Cell Transplant | 130 | 48 | 36.92% | 82 | 63.08% |
| Allogeneic Bone Marrow Transplant without Purging | 50 | 28 | 56.00% | 22 | 44.00% |
| Autologous Bone Marrow Transplant | 36 | 15 | 41.67% | 21 | 58.33% |
| Tendon Transfer or Transplantation | 33 | 13 | 39.39% | 20 | 60.61% |
| Heart Transplantation | 22 | 15 | 68.18% | 7 | 31.82% |
| Lung Transplant* | 18 | 11 | 61.11% | 7 | 38.89% |
| Homotransplant of Pancreas | 16 | 9 | 56.25% | 7 | 43.75% |
| Other ⁽²⁾ | 44 | 23 | 52.27% | 21 | 47.73% |
| Total | 753 | 399 | 52.99% | 354 | 47.01% |

Source: Nebraska Association of Hospitals and Health Systems, 1998.

(1) Calendar years. Reflects an estimated inpatient discharge contribution rate of 91% for 1997, 89% for 1996 and 85% for 1995.

(2) Other includes: Allogeneic Hematopoietic Stem Cell Transplant, Allogeneic Bone Marrow Transplant with Purging, Muscle Transfers or Transplantations, Corneal Transplants Not Otherwise Specified, Other Hand Tendon Transfers or Transplantations, Other Corneal Transplants, Renal Autotransplantations, Heterotransplants of the Pancreas, Bone Marrow Transplants Not Otherwise Specified, Other Hand Muscle Transfers or Transplantations, and Pancreatic Transplants Not Otherwise Specified.

*Lung transplants include unilateral and bilateral lung transplants.



References

1. UNOS. (1998). Data highlights: transplant recipient characteristics. 1998 SR & OPTN Annual Report. See http://www.unos.org/Data/anrpt98/ar98_data_02.htm.
2. U.S. Department of Health and Human Services (1993). Patient selection for heart or liver transplantation. Intramural Research Highlights Hospital Cost and Utilization Project No.20 , Feb. 1993.
3. Organ Donation Website. (2000). See <http://www.organdonor.gov>
4. On-line Medical Dictionary. (2000). See <http://www.seoulin.co.kr/UP/medic.html>

APPENDIX A

List of ICD-9-CM codes used in this Data Reporter.

| Type of Transplant | ICD-9-CM Code |
|--|---------------|
| Corneal Transplant | 11.6 |
| Corneal Transplant, not otherwise specified* | 11.60 |
| Other Corneal Transplant* | 11.69 |
| Lung Transplant* | 33.5 |
| Unilateral Lung Transplantation* | 33.51 |
| Bilateral Lung Transplantation* | 33.52 |
| Heart Transplantation* | 37.5 |
| Bone Marrow or Hematopoietic Stem Cell Transplant | 41.0 |
| Bone Marrow Transplant, not otherwise specified* | 41.00 |
| Autologous Bone Marrow Transplant* | 41.01 |
| Allogeneic Bone Marrow Transplant with Purging* | 41.02 |
| Allogeneic Bone Marrow Transplant without Purging* | 41.03 |
| Autologous Hematopoietic Stem Cell Transplant* | 41.04 |
| Allogeneic Hematopoietic Stem Cell Transplant* | 41.05 |
| Liver Transplant | 50.5 |
| Auxiliary Liver Transplant* | 50.51 |
| Other Transplant of the Liver* | 50.59 |
| Transplant of Pancreas | 52.8 |
| Pancreatic Transplant, not otherwise specified* | 52.80 |
| Homotransplant of Pancreas* | 52.82 |
| Heterotransplant of Pancreas* | 52.83 |
| Transplant of Kidney | 55.6 |
| Renal Autotransplantation* | 55.61 |
| Other Kidney Transplantation* | 55.69 |
| Transplantation of Muscle and Tendon of Hand | 82.5 |
| Other Hand Tendon Transfer or Transplantation* | 82.56 |
| Other Hand Muscle Transfer of Transplantation* | 82.58 |
| Reconstruction of Muscle and Tendon | 83.7 |
| Tendon Transfer or Transplantation* | 83.75 |
| Muscle Transfer or Transplantation* | 83.77 |

*Procedures used within this Reporter.

Appendix B

Detailed description of the number and type of Nebraska transplants from 1995 to 1997.

Appendix A1 - Most Frequent Hospital Transplant Discharges, Nebraska 1995⁽¹⁾

| Procedure | Total | Percent | Average Charge | ALOS |
|---|------------|---------------|-----------------|-------------|
| Kidney Transplantation | 78 | 31.3% | \$57,068 | 9.9 |
| Liver Transplantation | 45 | 18.1% | \$156,378 | 33.1 |
| Autologous Hematopoietic Stem Cell Transplant | 39 | 15.7% | \$60,315 | 15.2 |
| Autologous Bone Marrow Transplant | 32 | 12.9% | \$68,100 | 20.7 |
| Allogeneic Bone Marrow Transplant without Purging | 17 | 6.8% | \$122,294 | 35.9 |
| Heart Transplantation | 12 | 4.8% | \$101,751 | 31.2 |
| Tendon Transfer or Transplantation | 8 | 3.2% | \$6,611 | 1.6 |
| Homotransplant of Pancreas | 7 | 2.8% | \$91,570 | 17.0 |
| Other ⁽²⁾ | 11 | 4.4% | \$77,915 | 18.6 |
| Total | 249 | 100.0% | \$83,818 | 19.4 |

Source: Nebraska Association of Hospitals and Health Systems, 1998.

(1) Calendar year. Reflects an estimated inpatient discharge contribution rate of 85%.

(2) Other includes: Bone Marrow Transplants Not Otherwise Specified, Allogeneic Bone Marrow Transplants with Purging, Lung Transplants, Renal Autotransplantations, Pancreatic Transplants Not Otherwise Specified, Other Corneal Transplants, and Other Hand Tendon Transfers or Transplantations.

Appendix A2 - Most Frequent Hospital Transplant Discharges, Nebraska 1996⁽¹⁾

| Procedure | Total | Percent | Average Charge | ALOS |
|---|------------|---------------|-----------------|-------------|
| Kidney Transplantation | 98 | 39.7% | \$61,551 | 10.7 |
| Autologous Hematopoietic Stem Cell Transplant | 55 | 22.3% | \$62,291 | 17.0 |
| Liver Transplantation | 39 | 15.8% | \$105,436 | 19.2 |
| Allogeneic Bone Marrow Transplant without Purging | 12 | 4.9% | \$144,236 | 32.4 |
| Lung Transplant* | 11 | 4.5% | \$115,122 | 14.7 |
| Tendon Transfer or Transplantation | 8 | 3.2% | \$6,594 | 1.9 |
| Heart Transplantation | 6 | 2.4% | \$154,845 | 62.2 |
| Other ⁽²⁾ | 18 | 7.3% | \$50,729 | 9.7 |
| Total | 247 | 100.0% | \$74,745 | 15.6 |

Source: Nebraska Association of Hospitals and Health Systems, 1998.

(1) Calendar year. Reflects an estimated inpatient discharge contribution rate of 89%.

(2) Other includes: Homotransplants of Pancreas, Autologous Bone Marrow Transplants, Heterotransplants of the Pancreas, Muscle Transfers or Transplantations, Corneal Transplants Not Otherwise Specified, Other Hand Tendon Transfers or Transplantations, Renal Autotransplantations, and Other Hand Muscle Transfers or Transplantations

*Lung transplants include unilateral and bilateral lung transplants.

Appendix A3 - Most Frequent Hospital Transplant Discharges, Nebraska 1997⁽¹⁾

| Procedure | Total | Percent | Average Charge | ALOS |
|---|------------|---------------|------------------|-------------|
| Liver Transplantation | 77 | 30.0% | \$176,921 | 34.5 |
| Kidney Transplantation | 67 | 26.1% | \$54,953 | 8.3 |
| Autologous Hematopoietic Stem Cell Transplant | 36 | 14.0% | \$75,502 | 17.8 |
| Allogeneic Bone Marrow Transplant without Purging | 21 | 8.2% | \$144,912 | 31.3 |
| Tendon Transfer or Transplantation | 17 | 6.6% | \$6,115 | 1.8 |
| Allogeneic Hematopoietic Stem Cell Transplant | 11 | 4.3% | \$105,387 | 26.4 |
| Allogeneic Bone Marrow Transplant with Purging | 5 | 1.9% | \$181,065 | 30.0 |
| Lung Transplant* | 5 | 1.9% | \$97,312 | 16.6 |
| Homotransplant of Pancreas | 5 | 1.9% | \$69,696 | 11.2 |
| Other ⁽²⁾ | 13 | 5.1% | \$42,112 | 6.4 |
| Total | 257 | 100.0% | \$103,568 | 20.3 |

Source: Nebraska Association of Hospitals and Health Systems, 1998.

(1) Calendar year. Reflects an estimated inpatient discharge contribution rate of 91%.

(2) Other includes: Heart Transplantations, Muscle Transfers or Transplantations, Other Corneal Transplants, Corneal Transplants Not Otherwise Specified, Renal Autotransplantations, Autologous Bone Marrow Transplants, and Other Hand Tendon Transfers or Transplantations.

*Lung transplants include unilateral and bilateral lung transplants.



Data Notes

Data were collected by the Nebraska Association of Hospital and Health Systems (NAHHS). Nebraska hospitals submit their data to the member's data repository on a regular basis for the purposes of cleaning, archiving and information processing.

Data are reported as they have been submitted to the NAHHS. Therefore, for the three calendar years of data examined in this report, NAHHS was able to capture 91% of the total number of discharges from Nebraska hospitals during 1997, 89% of discharges during 1996, and 85% of discharges during 1995. The data reported in this document include all discharges from Nebraska community hospitals. Data do not include patients hospitalized at the following state or federal facilities:

| Non-Reporting Federal/State Inpatient Facilities | | | |
|--|-------------------------|-----------|--|
| City | Facility Name | Location | Facility Name |
| Bellevue | Offutt Air Force Base | Norfolk | Regional Center |
| Grand Island | Veterans Administration | Omaha | Douglas County Hospital |
| Hastings | Regional Center | Omaha | Veterans Administration Medical Center |
| Lincoln | Veterans Administration | Winnebago | U.S. Public Health Services |
| Lincoln | Regional Center | | |

The information used for this report has been stripped of personal identifiers, therefore data may include multiple discharges of a single person within one year. Information about the socioeconomic characteristics of patients are not collected. Reported data have not been adjusted for severity.

Definitions

AVERAGE CHARGE. Average charge is calculated by dividing the sum of patient charges in dollars by the number of patients within an ICD-9-CM Code.

AVERAGE LENGTH OF STAY (ALOS). Average length of stay is calculated by dividing the sum of inpatient days by the number of patients within the ICD-9-CM Code. Inpatient days are calculated by subtracting day of admission from day of discharge and adding 1. Therefore, persons entering and leaving a hospital on the same day have a length of stay of one.

COMMERCIAL PAYER. This category of payer type includes all private third party payers (insurance companies). These include self-funded employer insurance plans, managed care plans, and federally insured persons enrolled in managed care plans.

ICD-9-CM. International Classification of Diseases, 9th Revision, Clinical Modification. A method of classifying diseases and procedures statistically. The ICD-9-CM provides a means by which to classify morbidity data for the indexing of medical records and for basic health statistics needs. The ICD-9-CM is reviewed annually and updated to reflect changes in diagnoses and treatment in the clinical and inpatient settings.

PUBLIC PAYER. Public payers include worker's compensation, Medicaid, Medicare, and military health plans.

SELF-PAY. Self-pay patients are those who were uninsured at the time of hospitalization. Therefore, the patient is the party responsible for all hospitalization charges. Self-pay discharges are those for which "self-pay" is indicated on the first of the three listed payer fields on the discharge document. In Nebraska, the self-pay category includes charity or uncompensated care, where the hospital may expect little or no reimbursement for the services rendered. This category of discharge is under-reported, and its true rate is unknown.

TOTAL CHARGES. Total charges represent the dollar amount charged for the hospitalization rather than the amount paid or the

actual costs to provide the care. Physician charges are generally excluded from this amount.

TRANSPLANTATION. The transfer of cells, tissues, or organs from one area of the body to another or from one organism to another.

TRANSPLANTATION, ALLOGENEIC (ALLOGRAFT). Transplantation between genetically different members of the same species. These may be between brothers and sisters, parents and children, or between donors and recipients who are not related to each other.

TRANSPLANTATION, AUTOLOGOUS. Transplantation of an organism's own cell or tissues; autologous transplantation may be used to repair or replace damaged tissue.

TRANSPLANTATION, HETEROLOGOUS. Transplantation between animals of different species.

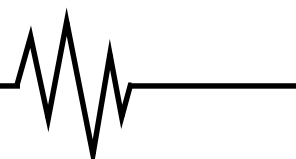
TRANSPLANTATION, HETEROTOPIC. Transplantation of tissue typical of one area to a different recipient site. The tissue may be autologous, heterologous, or homologous.

TRANSPLANTATION, HOMOLOGOUS. Transplantation between individuals of the same species. Usually refers to genetically different individuals.

TRANSPLANTATION, ISOGENEIC. Transplantation between genetically identical individuals, i.e., members of the same species such as identical twins.

TRANSPLANTATION, XENOGENEIC (XENOGRAFT). Transplantation between members of different species; for example, the transplantation of animal organs into humans.

Sources for transplantation definitions: Organ Donation, 2000. See <http://www.organdonor.gov>. On-line Medical Dictionary, 2000. See <http://www.seoulin.co.kr/UP/medic.html>.



About the Nebraska Health Information Project

The Nebraska Health Information Project is a partnership project made possible with the financial support of the State of Nebraska and through additional personal and other resources provided by the University of Nebraska Medical Center. While initiated by Nebraska Unicameral, the ongoing success of the project results from cooperation and collaboration among a number of organizations and individuals, particularly those involved in delivering health care services, financing health care and analyzing health related data.

Other reports have been published by the Nebraska Health Information Project, including annual databooks which present Nebraska health and demographic data at the county, area and state levels. To find out more about these reports and future reports visit our homepage at: <http://www.unmc.edu/nebraska>

The Nebraska Center for Rural Health Research

<http://www.unmc.edu/rural>

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