

**Program Summary**

**Center: Lucile Salter Packard Childrens Hospital at Stanford (CAPC)**  
**Organ: LU: Lung**

<b>Center Activity (01/01/2009-12/31/2009)</b>	<b>Center</b>	<b>Region</b>	<b>United States</b>	<b>Tables for More Information</b>
Deceased donor transplants (n=number)	0	290	1,660	07C,08C,09C
On waitlist at start (n)	0	223	2,019	01,02,03
On waitlist at end (n)	2	207	1,862	01,02
Number of new patient registrations (n)	3	298	2,280	01,02

<b>Waiting List Outcomes ( 01/01/2009-12/31/2009)</b>				<b>Tables for More Information</b>
	<b>Observed</b>	<b>Expected</b>	<b>Statistical Significance of Difference</b>	
Transplant rate (from deceased donors) among waitlist patients	0.00	1.87	Not Significantly Different (a)	03,04,05,06
Mortality rate while on waitlist	0.00	0.45	Not Significantly Different (a)	03,04

<b>Post-transplant Outcomes ( 01/01/2007-06/30/2009)</b>	<b>1 Year</b>		<b>Statistical Significance of Difference</b>	<b>Tables for More Information</b>
	<b>Observed</b>	<b>Expected</b>		
Adult graft survival (%)	NA	NA	NA	10
Adult patient survival (%)	NA	NA	NA	11
Pediatric graft survival (%)	NA	NA	NA	10
Pediatric patient survival (%)	NA	NA	NA	11

The data reported here were prepared by the Scientific Registry of Transplant Recipients (SRTR) under contract with the Health Resources and Services Administration (HRSA).  
 Note: Tables referring to small sample sizes should be treated with caution. Sample sizes can be found in the table referenced in the last column.  
 NA=Not Applicable.

## **A Guide to Reading and Understanding the Center-Specific Reports (CSRs) Prepared by the Scientific Registry of Transplant Recipients (SRTR)**

**Center: Lucile Salter Packard Childrens Hospital at Stanford (CAPC)**

**Organ: LU: Lung**

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### **Overview:**

These Program-Specific Reports contain a wide range of useful information about transplant programs operating in the United States. The information includes many features of the transplant program, such as the number of transplants performed in recent years, waiting time and waiting list outcomes, and post-transplant experience of patients served by this program. The statistics are arranged to allow comparisons to national averages, as well as to the experience for similar patients at other programs in the country. This report is based largely on data submitted by this transplant program for patients on the waiting list and those transplanted within the last five years.

Table 1 provides a picture of the volume and type of waiting list and transplant activity at this program. Lucile Salter Packard Childrens Hospital at Stanford (CAPC) had 0 patients on its waiting list on 01/01/2008 and 2 patients on 12/31/2009. During these two years, 3 patients were added to the list and 1 patient was removed. More about the activity at this program and the types of patients served is found in the Table Details section below and in Tables 1 and 2 (waiting list) and Tables 7, 8, and 9 (transplant).

Waiting times for transplantation differ from facility to facility and also from person to person, depending upon many factors. Tables 3 through 5, which focus on other characteristics of waiting list and waiting time (including risk-adjusted comparisons) are discussed in the details section below.

No survival data are shown for Lucile Salter Packard Childrens Hospital at Stanford (CAPC) since this program did not perform any transplants that were the first deceased donor transplant for a patient during the periods of our patient survival analyses.

Specific circumstances at each program may affect many of the measures reported in these reports. Frequently, staff from transplant programs make public comments regarding these reports, made available in the comments page. We encourage all readers of these reports to consider these comments and to contact the program directly for further information.

### Table Details:

The above overview provides most readers with a quick look at some of the statistics that help describe a transplant program. The following section, for the more interested reader, provides a more detailed accounting of each table and how figures are defined and calculated.

Tables 1 through 6 focus on characteristics of the waiting list process at this program. Table 1 provides an overview of the waiting list activity at this program: not just the size of the waiting list at a given point in time, but also how many people have moved on to and off of this waiting list, and for what reasons. Shown as a percent of the total waiting list size on 01/01/2009, the percent of people removed for a transplant from a deceased donor was 82.2% nationwide, and the percent of people removed because of death was 11.7% nationwide (Note: program-specific numbers are not shown here because this program did not have anyone on the waiting list as of 01/01/2009). Table 2 shows the characteristics of patients on the waiting list at Lucile Salter Packard Childrens Hospital at Stanford (CAPC).

The waiting time at a given transplant program is affected by many factors, including the medical condition and characteristics of the patients listed with this program (Table 2), the availability of organs in the Donation Service Area served by the OPO, and decisions by medical professionals and other patients about organ acceptance. Some of the variability in waiting time may be accounted for by local availability of organs, in which case other programs in the Donation Service Area served by CA Transplant Donor Network may have similar waiting times.

Tables 3 through 6 provide different measures of looking at waiting list outcomes. Table 3 shows a 'risk-adjusted' comparison of two outcomes from the waiting list: transplant rate and death rate. While the national average transplant rate (from deceased donors) is 0.87 transplants per patient year, the rate expected for this program is 1.87. The difference, or 'adjustment', between the national average and expected rate is caused by the fact that this program may treat patients who typically have longer (or shorter) waiting times, based on the characteristics of these patients. The patients on the waiting list at this program experienced a transplant rate of 0.00 per year spent on the waiting list for any person(s) on the waiting list. Compared to the expected rate of 1.87, the difference is not statistically significant ( $p > .05$ ); there is a good possibility that it is due to random chance.

These waiting list rates are measured as the number of transplants (or deaths) per year that any patient spends on the waiting list. It is possible for these rates to be above 1, as would be the case if 2 patients each spent 3 months on the waiting list, and one received a transplant:  $1 \text{ transplant} \div .5 \text{ year} = \text{transplant rate of } 2$ .

While Table 3 provides a waiting list outcome rate that allows easy comparison of risk-adjusted outcomes, statistics from tables 4 through 6 may be more interpretable at a patient level. Table 4 answers the questions: 'What has been the outcome for patients at this program 6 months after being placed on the waiting list? What about at 12 or 18 months?' The table also examines post-transplant outcomes: at 12 months, for example, the table tells if the patient is still on the waiting list, was transplanted and is still alive, or died after transplant.

Table 5 provides another way to look at how quickly patients receive transplants at this program, this time looking at many different kinds of patients. For this program, this table is not produced because it had no new patients on the waiting list during the relevant timeframe.

Table 6 shows the time it takes for a given percentage of patients at this facility to receive a transplant. This is the 'time-to-transplant' among all wait-listed patients, including those who never receive a transplant. (Another common statistic, 'median waiting time,' differs in that it is often calculated only among patients who actually received a transplant. The two are often correlated, but different in magnitude. While median waiting time reflects time waiting among successful candidates, time-to-transplant incorporates a measure of the probability of success in receiving an organ.)

The remainder of the tables, 7 through 11, focus on transplants performed at Lucile Salter Packard Childrens Hospital at Stanford (CAPC) and their outcomes. Tables 7-9 describe the characteristics of transplant recipients, donors, and operations at this program. This program performed no deceased donor lung transplants in the last year (01/01/2009-12/31/2009), so these tables are not produced.

Tables 10 and 11 show post-transplant outcomes. Table 10 shows the survival experience of grafts (transplants) in patients transplanted by this program. Table 11 shows the survival experience of these patients themselves. These may be different because a patient may continue survival after a graft fails through means such as a new transplant, or, for kidney patients, dialysis. Each survival number measures the percentage of patients who have a functioning graft (Table 10) or who are alive (Table 11) at 1 month, 1 year, and 3 years after transplant.

For some organs, an 'expected' survival is not calculated because the characteristics influencing expected survival are not well known.

This program did not perform any transplants that were the first deceased donor transplant for a patient during the periods of our patient survival analyses.

**Table 1**  
**Waitlist Activity Summary (see Tables 2-6 for details)**  
**Date: 01/01/2008 - 12/31/2009**  
**Center: Lucile Salter Packard Childrens Hospital at Stanford (CAPC)**  
**Organ: LU: Lung**

Waitlist Registrations	Counts for this center		Activity for 01/01/2009 to 12/31/2009 as percent of registrants on waitlist on 01/01/2009		
	01/01/2008-12/31/2008	01/01/2009-12/31/2009	This Center (%)	OPTN Region (%)	U.S. (%)
<b>On waitlist at start</b>	0	0	-	100.0	100.0
<b>Additions</b>					
New listings at this center	0	3	-	133.6	112.9
<b>Removals</b>					
Transferred to another center	0	1	-	0.9	1.5
Received living donor transplant*	0	0	-	0.4	0.0
Received deceased donor transplant*	0	0	-	97.8	82.2
Died	0	0	-	18.8	11.7
Transplanted at another center	0	0	-	3.1	1.5
Deteriorated	0	0	-	6.7	6.8
Recovered	0	0	-	6.7	7.7
Other Reasons	0	0	-	6.3	9.2
<b>On waitlist at end of period</b>	0	2	-	92.8	92.2

The data reported here were prepared by the Scientific Registry of Transplant Recipients (SRTR) under contract with the Health Resources and Services Administration (HRSA).

\* These patients were removed from waitlist with removal code indicating transplant; this may not equal the number of transplants performed at this center during the specified time period.

Based on data available as of 04/30/2010. Release at [www.ustransplant.org](http://www.ustransplant.org) on 07/13/2010.

**Table 2**  
**Characteristics of Waitlist Patients**  
**Patients registered on the waitlist between 01/01/2009 and 12/31/2009**  
**Center: Lucile Salter Packard Childrens Hospital at Stanford (CAPC)**  
**Organ: LU: Lung**

Characteristic of Waitlist Candidate	Percent of New Waitlist Registrations 01/01/2009 to 12/31/2009			Percent of All Waitlist Registrations on 12/31/2009		
	This Center (N=3)	OPTN Region (N=298)	U.S. (N=2,280)	This Center (N=2)	OPTN Region (N=207)	U.S. (N=1,862)
<b>All (%)</b>	100	100	100	100	100	100
<b>Ethnicity/Race (%)*</b>						
White	66.7	69.8	82.8	100.0	64.3	81.3
African-American	0.0	4.7	9.1	0.0	8.2	10.1
Hispanic/Latino	33.3	20.1	6.0	0.0	19.3	5.9
Asian	0.0	5.0	1.8	0.0	6.3	1.9
Other	0.0	0.3	0.3	0.0	1.9	0.8
Unknown	0.0	0.0	0.0	0.0	0.0	0.0
<b>Age (%)</b>						
<2 years	0.0	0.0	0.6	0.0	0.0	0.8
2-11 years	33.3	0.7	1.1	50.0	3.4	3.2
12-17 years	66.7	3.7	3.0	50.0	2.9	4.0
18-34 years	0.0	14.1	12.0	0.0	9.7	14.0
35-49 years	0.0	19.5	14.8	0.0	22.7	21.6
50-64 years	0.0	39.6	48.6	0.0	42.5	46.5
65+ years	0.0	22.5	19.9	0.0	18.8	9.9
Other (includes prenatal)	0.0	0.0	0.0	0.0	0.0	0.0
<b>Gender (%)</b>						
Male	0.0	48.3	55.3	0.0	33.8	39.8
Female	100.0	51.7	44.7	100.0	66.2	60.2
<b>Blood Type (%)</b>						
O	33.3	49.3	46.1	50.0	51.2	48.7
A	66.7	41.3	39.3	50.0	40.1	37.8
B	0.0	7.0	11.0	0.0	6.8	10.7
AB	0.0	2.3	3.6	0.0	1.9	2.8
Unknown	0.0	0.0	0.0	0.0	0.0	0.0
<b>Previous Transplant (%)</b>						
Yes	0.0	5.7	5.8	0.0	1.4	3.3
No	100.0	94.3	94.2	100.0	98.6	96.7
Unknown	0.0	0.0	0.0	0.0	0.0	0.0
<b>Primary Disease (%)</b>						
Idiopathic Pulmonary Arterial Hypertension	0.0	9.1	5.3	0.0	13.0	10.8
Cystic Fibrosis	33.3	15.1	13.6	50.0	10.6	13.2
Idiopathic Pulmonary Fibrosis	66.7	50.0	48.2	50.0	34.3	29.3
Emphysema/COPD	0.0	23.2	29.5	0.0	37.2	41.8
Other	0.0	2.7	3.5	0.0	4.8	4.8
Missing	0.0	0.0	0.0	0.0	0.0	0.0

The data reported here were prepared by the Scientific Registry of Transplant Recipients (SRTR) under contract with the Health Resources and Services Administration (HRSA). Percents add to 100% for each Categorization. N=number.

\* Race and ethnicity are reported together as a single data element, reflecting their data collection (either race or ethnicity is required, but not both). Patients formerly coded as white and Hispanic are coded as Hispanic. Race and ethnicity sum to 100 percent.

Based on data available as of 04/30/2010. Release at [www.ustransplant.org](http://www.ustransplant.org) on 07/13/2010.

**Table 3**  
**Transplant and Mortality Rates For Patients After Being Placed on the Waitlist**  
**Patients on the waitlist between 01/01/2008 and 12/31/2009**  
**Center: Lucile Salter Packard Childrens Hospital at Stanford (CAPC)**  
**Organ: LU: Lung**

Waitlist Registrations	This Center		Geographic Summaries, 01/01/2009-12/31/2009		
	01/01/2008- 12/31/2008	01/01/2009- 12/31/2009	OPO/DSA	Region	U.S.
<b>Sample</b>					
Count on waitlist at start *	-	0	39	220	2,008
<b>Transplant Rate</b>					
Person Years **	-	0.4	27.8	210.6	1,905.0
<b>Deceased Donors Only</b>					
Removals for transplant	-	0	71	218	1,660
Transplant rate (per year on waitlist)	-	0.00	2.56	1.04	0.87
Expected Transplant Rate ***	-	1.87	1.28	1.01	0.87
Ratio of Observed to Expected Transplants	-	0.00	2.00	1.02	1.00
95% Confidence Interval: Lower Bound <sup>†</sup>	-	-	NA	NA	NA
Upper Bound <sup>†</sup>	-	-	NA	NA	NA
p-value (2-sided) <sup>††</sup>	.	0.904	NA	NA	NA
How do the rates at this center compare to those in the nation?	.	Not Significantly Different (a)	NA	NA	NA
<b>Mortality rate after being placed on waitlist</b>					
Person Years ****	-	0.4	30.0	223.3	2,047.0
Number of deaths	-	0	6	55	339
Death rate (per year on waitlist)	-	0.00	0.20	0.25	0.17
Expected Death Rate *****	-	0.45	0.27	0.19	0.17
Ratio of Observed to Expected Deaths	-	0.00	0.74	1.27	1.00
95% Confidence Interval: Lower Bound <sup>†</sup>	-	-	NA	NA	NA
Upper Bound <sup>†</sup>	-	-	NA	NA	NA
p-value (2-sided) <sup>††</sup>	.	0.999	NA	NA	NA
How do the rates at this center compare to those in the nation?	.	Not Significantly Different (a)	NA	NA	NA

The data reported here were prepared by the Scientific Registry of Transplant Recipients (SRTR) under contract with the Health Resources and Services Administration (HRSA). NA=Not Applicable.

† The 95% confidence interval gives a range of values for the true ratio of events (transplants or deaths) at the facility to those expected based on the national experience. The true ratio will be between this lower and upper bound 95% of the time.

†† A p-value gives the probability that a difference between observed and expected is due to random chance. A p-value of <.05 is usually considered statistically significant.

(a) This difference could plausibly be just a chance occurrence.

\* Counts in this table may be lower than similar counts in other waiting list tables, such as Table 1. A small percentage (~1%) of patients are found to have died or been transplanted before being removed from the waiting list, so these patients are excluded if the event occurs prior to the start of the study period. Inactive time on the waiting list is included in calculations for this table.

\*\* Person years are calculated as days (converted to fractional years). The number of days from January 1 or from the date of first wait listing until death, transplant, removal from the waiting list or December 31.

\*\*\* The expected transplant rate is adjusted for age, blood type, time on the waiting list, and previous transplantation.

\*\*\*\* Person years are calculated as days (converted to fractional years). The number of days from January 1 or from the date of first wait listing until death, transplant, 60 days after recovery, transfer or December 31.

\*\*\*\*\* The expected mortality rate is adjusted for age, race, ethnicity, gender, primary diagnosis, time on the waiting list, and blood type.

Based on data available as of 04/30/2010. Release at www.ustransplant.org on 07/13/2010.

**Table 6**  
**Time to Transplant for Waitlist Patients\*\***  
**Patients registered on the waitlist between 01/01/2004 and 06/30/2009**  
**Center: Lucile Salter Packard Childrens Hospital at Stanford (CAPC)**  
**Organ: LU: Lung**

Percentile	Months to Transplant*			
	Center	OPO/DSA	Region	U.S.
5th	>72	0.2	0.2	0.2
10th	>72	0.3	0.4	0.4
25th	>72	0.9	1.4	1.5
50th (median time to transplant)	>72	2.6	4.9	6.7
75th	>72	8.7	>72	>72

\* Censored on 12/31/2009; Calculated as the months after waitlisting, during which the corresponding percent of all patients initially waitlisted had received a transplant.

\*\* If cells contain ">72" fewer than that percentile of patients had received a transplant.

Note: Includes deceased and living donor transplants at any center.

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Based on data available as of 04/30/2010. Release at [www.ustransplant.org](http://www.ustransplant.org) on 07/13/2010.

**Center:** CAPCTX1LU

General Comments

In January 2009, Lucile Packard Children's Hospital at Stanford ("CAPC") underwent a re-organization of its pediatric solid organ transplant program. This involved an administrative separation of the pediatric transplant program at Lucile Packard Children's Hospital from the adult solid organ transplant program at Stanford Hospital and Clinics ("CASU"). For this reporting period, 2009 Transplant Volume, Recipient Characteristics and Transplant Rate will be reported under CAPC. For one year and three year patient and graft survival prior to 2009, please refer to CASU.

Lucile Packard Children's Hospital at Stanford continues to have one of the nation's pre-eminent pediatric transplant programs, as demonstrated through both clinical and academic excellence.