

PROJECT DONOR

United States Government Organ Transplant
Life Insurance Policy

The Solution to the Organ Donation Shortage

Project Developers

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I. Executive Summary

It is a well-known fact that organ transplantation technology has progressed to a valid medical therapy, not only saving lives but restoring the afflicted to productive activity. It is also a well-known fact that there are currently not enough organs available to meet the need, largely due to the unwillingness of people and their families to agree to donate organs, either before or after death. Thousands of people die each year due to this shortage and the deficiency would be ameliorated and probably eliminated if all potential organ donors would indeed donate.

Americans overwhelmingly endorse the concept of organ transplantation, but ironically do not fully support the concept by donating. Additionally, the reasons for refusal are not deeply held. Regardless of research efforts to mitigate the shortage, such as split-graft transplants and in-vitro growth of whole organs, a sure answer is to simply increase the number of organs donated, thereby applying the proven, most efficacious technology already in use. Overcoming the barriers to donation is the way to meet the need. An easy, simple, cost-effective method to obtain the requisite donations is a life insurance policy furnished by the United States government, benefits to be payable upon the donation *and transplantation* of the deceased's organs. Utilizing a common and popular financial instrument to convince the public to voluntarily participate in a program with which they already agree, we will solve the organ donation shortage.

II. The Problem

1. Explanation

People die of organ failure caused by various diseases. Allogenic whole organ transplantation (between individuals within the same species, such as human to human) is now a routine medical procedure that saves the lives of many of these people. Alternative transplant therapies are at this time either of limited or no use. Split grafts (transplanting a portion of a donor organ) using liver or pancreatic tissue are used in only selected situations. Growing replacement organs in the laboratory is under development, but its viability will only be realized in the distant future. Xenotransplantation (organs shared between non-human animals and humans) has not worked and is fraught with inherent medical difficulties including the spectre of panepidemics due to known, unknown and/or mutated animal viruses being transmitted to the human recipients with subsequent exposure to others with whom they are in contact.

The transplanting of organs from human to human is a proven life-saving procedure, which has already saved thousands of lives and will continue to do so in the future. Although there are issues to be resolved concerning the logistics of organ procurement, the basic problem is that there are not nearly enough organs donated to meet the need.

2. Statistics

These exhibits appear on the following pages:

- A. Number of U.S. Transplants - historical.
- B. Waiting List - historical.
- C. Reported Deaths on the Organ Procurement Transplant Network (OPTN) Waiting List - historical.
- D. Waiting List - current.
- E. Number of U.S. Organ Donors - historical.
- F. Number of Organs Retrieved Per Donor.
- G. Estimated Annual Number of Potential Donors.

Transplants

Exhibit A

Number of U.S. Transplants from 1988 to May, 1997 by Organ and Donor Type*

Organ	Donor Type	Year									
		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Kidney*	Cad.	7231	7087	7783	7731	7697	8170	8383	8598	8559	3529
	Living	1812	1903	2094	2393	2534	2850	3007	3287	3486	1376
	Total	9043	8990	9877	10124	10231	11020	11390	11885	12045	4905
Liver	Cad.	1713	2199	2676	2931	3031	3404	3593	3878	4012	1668
	Living	0	2	14	22	33	36	60	44	50	20
	Total	1713	2201	2690	2953	3064	3440	3653	3922	4062	1688
Pancreas*	Cad.	244	413	526	530	554	772	840	1021	1011	414
	Living	5	4	2	1	3	2	2	6	10	5
	Total	249	417	528	531	557	774	842	1027	1021	419
Heart	Cad.	1669	1696	2096	2121	2170	2295	2338	2360	2342	949
	Living**	7	9	12	4	1	2	3	0	1	0
	Total	1676	1705	2108	2125	2171	2297	2341	2360	2343	949
Lung	Cad.	33	93	202	401	535	660	708	848	796	349
	Living	0	0	1	4	0	7	15	23	9	2
	Total	33	93	203	405	535	667	723	871	805	351
Heart-Lung	Cad.	74	67	52	51	48	60	70	70	39	21
	Living	0	0	0	0	0	0	0	0	0	0
	Total	74	67	52	51	48	60	70	70	39	21
Intestine+	Cad.			5	12	22	34	23	44	43	26
	Living			0	0	0	0	0	1	2	1
	Total			5	12	22	34	23	45	45	27
Total*	Cad.	10964	11555	13340	13777	14057	15395	15955	16819	16802	6956
	Living	1824	1918	2123	2424	2571	2897	3087	3361	3558	1404
	Total	12788	13473	15463	16201	16628	18292	19042	20180	20360	8360

* based on UNOS Scientific Registry data as of September 20, 1997

* In this table, Simultaneous Kidney-Pancreas transplants are counted *twice*, both in Kidney Transplants and in Pancreas Transplants. The number of Simultaneous Kidney Pancreas transplants performed in each year were: 1988-170, 1989-334, 1990-459, 1991-452, 1992-493, 1993-661, 1994-747, 1995-917, 1996-850

** Living heart donors donate their healthy heart when they become heart-lung recipients.- This is called a "domino" transplant http://www.unos.org/Newsroom/critdata_transplants_ustx.htm

- + Data on Intestine transplants was not collected prior to April, 1994. At that time, information was collected retrospectively for transplants performed January, 1990-March, 1994.

Note: Double kidney, double lung, and heart-lung transplants are counted as one transplant. All other multi-organ transplants are being included in the total for each individual organ transplanted.

Data subject to change based on future data submission or correction.

Waiting List

Exhibits B and C

The size of the Organ Procurement Transplantation Network (OPTN) Waiting List at End of Year 1988 through 1996 by Organ

Organ	Year								
	1988	1989	1990	1991	1992	1993	1994	1995	1996
Kidney	13943	16294	17883	19352	22376	24973	27498	31045	34550
Liver	616	827	1237	1676	2323	2997	4059	5691	7467
Pancreas	163	320	473	600	126	183	222	285	323
Kidney-Pancreas	0	0	0	0	778	923	1067	1234	1463
Heart	1030	1320	1788	2267	2690	2834	2933	3468	3698
Heart-Lung	205	240	225	154	180	202	205	208	237
Lung	69	94	308	670	942	1240	1625	1923	2309
Total	16026	19095	21914	24719	29415	33352	37609	43854	50047

Data based at *snapshot* of the UNOS OPTN waiting lists on the last day of each year.

Reported Deaths on the OPTN Waiting List from 1988 through 1996

Organ	Year								
	1988	1989	1990	1991	1992	1993	1994	1995	1996
Kidney	739	750	917	975	1052	1285	1361	1510	1814
Kidney-Pancreas	0	0	0	0	15	61	71	86	91
Pancreas	6	23	21	37	33	3	13	4	5
Liver	195	284	316	435	495	562	657	799	954
Heart	494	518	612	779	780	763	724	769	746
Heart-Lung	61	77	68	45	44	51	48	28	48
Lung	16	38	50	139	219	252	286	340	385
Intestine	0	0	0	0	0	3	15	19	22
Overall	1502	1666	1962	2360	2580	2902	3055	3421	3916

Based on UNOS OPTN waiting list and removal files as of January 13, 1997. Data subject to change based on future data submission or correction.



http://www.unos.org/Newsroom/critdata_wait.htm

Critical Data

Exhibit D

Weekly Facts about Transplantation for April 15, 1998

This page contains the most frequently requested statistics regarding transplantation and donation, including: numbers of patients on the waiting list, number of transplants performed in 1996, number of donors in 1996 and UNOS membership data. For more detailed data, use the buttons at left or go to the [Data](#) section above. If you can't find what you're looking for, you can submit your [Data request](#) via the Internet.

The UNOS national patient waiting list for organ transplants contains over 58,000 registrations.

National patient waiting list	
39,086	Registration for a kidney transplant.
10,274	Registration for a liver transplant.
373	Registration for a pancreas transplant.
91	Registration for a pancreas islet cell transplant.
1,673	Registration for a kidney-pancreas transplant.
96	Registration for an intestinal transplant.
4,048	Registration for a heart transplant.
235	Registration for a heart-lung transplant.
2,797	Registration for a lung transplant.
58,673	TOTAL

NOTE: UNOS policies allow patients to be listed with more than one transplant center (multiple listing), and thus the number of registrations may be greater than the actual number of patients. As of April 15, 1998, there were 55,215 patients waiting for a transplant in the U.S.

Donors

Exhibit E

The following list of tables shows organ donor information based on data collected from the UNOS Organ Procurement Transplantation Network (OPTN) as of September 20, 1997. Data subject to change based on future data submission or correction.

Donors by Organ and Donor Type

Donors by Race

Donors by Gender

Number of U.S. Organ Donors by Organ and Donor Type from 1988 through May 31, 1997 by Year Donor Recovered

Organ	Donor Type	Year Donor Recovered									
		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Kidney	Cadaveric	3,880	3,817	4,308	4,269	4,277	4,609	4,798	4,997	5,036	2,058
	Living	1,812	1,902	2,095	2,393	2,533	2,851	3,008	3,289	3,489	1,363
	Total	5,692	5,719	6,403	6,662	6,810	7,460	7,806	8,286	8,525	3,421
Liver	Cadaveric	1,835	2,377	2,871	3,167	3,335	3,764	4,095	4,324	4,451	1,855
	Living	0	2	14	22	33	36	60	45	52	20
	Total	1,835	2,379	2,885	3,189	3,368	3,800	4,155	4,369	4,503	1,875
Pancreas	Cadaveric	577	799	951	1,066	1,004	1,243	1,360	1,286	1,233	480
	Living	5	4	2	1	3	2	2	7	12	6
	Total	582	803	953	1,067	1,007	1,245	1,362	1,293	1,245	486
Heart **	Cadaveric	1,785	1,782	2,168	2,198	2,247	2,442	2,526	2,501	2,392	995
	Living	8	8	12	4	1	2	3	0	1	0
	Total	1,793	1,790	2,180	2,202	2,248	2,444	2,529	2,501	2,393	995
Lung	Cadaveric	130	191	275	395	527	790	918	908	750	322
	Living	0	0	1	4	0	12	31	41	12	3
	Total	130	191	276	399	527	802	949	949	762	325
Total	Cadaveric	4,084	4,019	4,512	4,528	4,521	4,861	5,100	5,357	5,416	2,241
	Living	1,825	1,916	2,124	2,424	2,570	2,903	3,102	3,375	3,553	1,386
	Total	5,909	5,935	6,636	6,952	7,091	7,764	8,202	8,732	8,969	3,627

** Living heart donors donate their healthy heart when they become heart-lung recipients. This is called a "domino" transplant

F. Number of Organs Retrieved Per Donor

3.5^{1,2,3}

¹"Through organ recovery improvements, the average number of transplants performed from each deceased donor has increased from 2.7 in 1988 to 3.5 in 1996." U.S. Department of Health and Human Services, "Organ Transplantation: A Success Story," National Organ and Tissue Donation Initiative, Washington, D.C.

²April, 1998, teleconferences with Ms. Carol L. Beasley, MPPM, Managing Director of the Partnership for Organ Donation, Boston, Massachusetts, and Ms. Gwen Mayes, Chief, Operations and Analysis Branch, U.S. Department of Health and Human Services, Division of Transplantation.

³Patrick McNamara and Carol Beasley, "Determinants of Familial Consent to Organ Donation in the Hospital Setting," Clinical Transplants 1997, Cecka and Terasaki, Eds., Los Angeles, California: UCLA Tissue Typing Laboratory.

G. Estimated Annual Number of Potential Donors

13,000

13,000-15,000 ¹

12,500²

10,000-14,000³

12,000-15,100³

¹The number above refers to cadaveric donors. Living donors (essentially only kidneys), potentially numbering 10,000, would add significantly to the donor pool. April, 1998, teleconferences with Ms. Carol L. Beasley, MPPM, Managing Director of The Partnership for Organ Donation, Boston, Massachusetts.

²April, 1998, teleconference with Howard M. Nathan, Executive Director, Delaware Valley Transplant Program, Philadelphia, Pennsylvania.

³Patrick McNamara and Carol Beasley, "Determinants of Familial Consent to Organ Donation in the Hospital Setting" *Clinical Transplants 1997*, Cecka and Terasaki, Eds., Los Angeles, California: UCLA Tissue Typing Laboratory.

Conclusions:

- The number of organ transplants performed is steadily increasing each year (55 per day in 1996).¹
- The number of people on the waiting list for organs is dramatically increasing each year (by 212% from 1988 to 1996).²
- The number of organ donors is increasing each year but at a very slow rate.³
- Approximately 10 people die every day while waiting for an organ. ⁴
- If all potential donors would donate, in theory it would take only 14-1/2 months to acquire the number of organs necessary to transplant the 55,215 people on the April 15, 1998, UNOS national patient waiting list: retrieving an average of 3.5 organs per donor would necessitate 15,776 donors to provide transplants for these people ($55,215 \div 3.5$) and based on a potential annual cadaveric donor pool of 13,000, the organs would be acquired in 14-1/2 months as stated ($15,776 \div 13,000 \times 12$).
- If all potential donors would donate and the patients currently on the waiting list were all transplanted, the only remaining patients waiting for an organ would be the annual new listees. Approximately 33,768 people were added to the waiting list in 1996⁵, requiring 9,648 donors to enable their transplantation ($33,768 \div 3.5$). *In theory*, it would take only 9 months and 74 percent of the potential annual cadaveric donor pool to transplant the newly listed organ transplant candidates ($9,648 \div 13,000$).
- Obviously, the calculated figures and timetables above are theoretical projections only and are based on numbers which are snapshots of an ever-changing, dynamic situation. Realization of the actual numbers, time frames, specific organ matchings, donorrecipient matchings, increases in living donors, and additions to the waiting list all impact on the outcomes attained. Use and/or expansion of transplant community resources is also crucial to the success of transplanting additional patients. *Nonetheless, these figures are significant and of statistical inference.* They show that

¹U.S. Department of Health and Human Services, "Organ and Tissue Donation and Transplantation," *National Organ and Tissue Donation Initiative*, Washington, D.C.

²"Organ and Tissue Donation and Transplantation," op. cit.

³Steven L. Gortmaker, Ph.D., et al., "Organ donor potential and performance: Size and nature of the organ donor shortfall," *Critical Care Medicine*, 1996, Vol. 24, No. 3, p. 432.

⁴Gortmaker, "Organ donor potential and performance," op. cit.

⁵This figure is somewhat high due to double listings. United Network for Organ Sharing (UNOS), 1997 Annual Report, Table 6, p. 234.

if all potential donors donate and if the medical community gears up to handle the influx of transplant procedures now made possible, we can *so/ve* the organ donation shortage (the availability of organs "off the shelf" would promote additional patient wait-listings as a result of physicians being increasingly amenable to prescribing transplantation as a treatment modality, but eventually these referrals would plateau according to the dictates of sound medical practice). At the very least, if there is a significant increase in donation we can save the lives of the ten people who die each day waiting.

3. Transplantation and Donation: An American Dichotomy

Overwhelmingly, Americans endorse the concept of organ transplantation:⁶

- "Nearly nine in ten Americans support the general concept of organ donation."
- "Virtually all respondents agree that organ donation allows something positive to come from a person's death."
- "Nearly four in five Americans would accept a needed organ transplant. Nearly half (46%) of respondents who initially indicated opposition to organ donation indicate they would accept one if necessary."
- "The majority of Americans believe their families support the idea of organ donation."
- "... if a family member requests their organs be donated, nearly all respondents (93%) would be likely to honor that wish."
- "Most Americans (85%) believe organ transplants extend the recipient's life and that the additional years are healthy ones."
- "More than two-thirds of Americans believe that most people who need transplants do not receive them."

Ironically, Americans do not overwhelmingly support the concept *by donating*:⁷

- "Both studies found that family refusal to donate was the principal reason for nondonation. In the Seminoff study, 54% of families declined organ donation when it was offered; in the Gortmaker study (4), the corresponding figure was 52%.⁸
- "More than one-third of Americans (37%) reported they are very likely to donate their own organs after their death and an additional one-third (32%) reported they are somewhat likely to donate. One-quarter (25%) are not likely to donate their organs."⁹

⁶The Gallup Organization, Inc., "The American Public's Attitudes Toward Organ Donation and Transplantation," conducted for The Partnership for Organ Donation, Boston, Massachusetts: February 1993.

⁷Gallup Organization, "The American Public's Attitudes," op. cit.

⁸Patrick McNamara and Carol Beasley, "Determinants of Familial Consent to Organ Donation in the Hospital Setting," *Clinical Transplants 1997*, (Chapter 21) Cecka and Terasaki, Eds., Los Angeles, California: UCLA Tissue Typing Laboratory.

⁹Gallup Organization, "The American Public's Attitudes," op. cit.

- "Although a high percentage of Americans (85%) approve of organ donation, less than half (42%) have themselves made a personal decision about donation of their own organs. Even fewer (25%) have made a decision about the donation of family members' organs."
- "More than half of Americans (55%) either have or are willing to formally grant permission for the donation of their organs. However, only slightly more than one quarter (28%) have already done so."
- "Although more than half of respondents likely to donate their organs have expressed their feelings to family members, a nearly equal proportion have not done so."
- "The results of Table 18 further reflect a substantial lack of critical family discussion with less than one in three respondents indicating that family members have expressed whether or not they wish to have their organs donated after death."

Interestingly, American reasons for not donating are generally vague and tenuous:¹⁰

- "Nearly half of respondents currently unwilling to donate their organs may be amenable to persuasive information since 47% were unable to give a concrete reason for their current stand."
- "Religious barriers to organ donation do not appear to be widespread."
- "The small proportion of Americans who believe they are too old to donate their organs was primarily found among those aged 55 and older."
- "Nearly nine in ten Americans believe doctors use all their resources to save a person before deciding to pursue organ retrieval."
- "Nearly two-thirds of Americans recognize that a brain dead person cannot recover from his or her injuries."
- "Although the majority of respondents recognize that donor families are not required to pay extra medical bills associated with the donation, there is a substantial amount of uncertainty surrounding this issue."
- "More than four in five Americans believe that it is possible to have a 'regular' funeral service for an organ donor."

¹⁰Gallup Organization, "The American Public's Attitudes," op. cit.

- 78% of respondents agree that it is not important for a person's body to have all of its parts when it is buried.
- "There is some concern about disfigurement associated with organ retrieval, although the majority of respondents indicate they are not concerned about this aspect of organ donation."
- "More than half of Americans (58%) disagree that a poor person has as good a chance as a rich person of receiving an organ."

The most important reason why people do not make provisions to be organ donors seems to be a reluctance or unwillingness to think about, acknowledge and deal with our own mortality:¹¹

- "More than one-third of Americans admit to some level of discomfort surrounding thoughts of their own death."
- "Respondents who are likely to donate their organs after death but who are unwilling to discuss this wish with their family indicate a general reluctance to discuss issues surrounding death."

Conclusion:

Americans appreciate the value of organ transplantation and approve its use as a medical therapy. Nevertheless, there is a low rate of organ donation for reasons which are not convincing or deeply held. Recognizing and preparing for death, a requirement for signing donor cards, is ripe territory for benign neglect.

An appropriate compensating benefit often serves to overcome reluctance to act when confronted with distasteful situations.

¹¹ Lloyd R. Cohen, "Increasing the Supply of Transplant Organs: The Virtues of an Option Market," 1995.

III. The Solution

1. United States Government Organ Transplant Life Insurance Policy

A no-cost organ transplant life insurance policy in the amount of \$10,000.00 is issued by the United States government or Congressionally chartered non-profit organization, the benefit payable to a directed beneficiary, upon the transplant of any one or more major organs from a deceased individual. The donor card and/or life insurance contract are revocable by the donor. The names of the beneficiary(s) are strictly confidential, inaccessible to family members, medical personnel and others. The donor card and insurance contract are binding and enforceable in a court of law. No member of the donor's family has the right or power to void the agreement, pursuant to the Uniform Anatomical Gift Act (1987), Section 2.(h).

2. Rationale for Success

Simply put, the \$10,000.00 insurance benefit will serve to overcome people's reluctance to sign donor cards. The reasons for not signing donor cards are for the most part indistinct and indefinite; and including donor beneficiaries as financial beneficiaries in the transplantation process, as we do with doctors, hospitals, transplant organizations and health insurance companies, will increase organ donation to meet the need. Organs will be readily available, thousands of lives will be saved, recipients will in many cases return to productive society and families will regain their future.

Instituting and recording a voluntary, no-cost enforceable insurance contract, with the accompanying signed donor card, will additionally succeed in:

- eliminating painful decisions by the grieving family of a deceased because the deceased will have clearly indicated his or her desire to donate and the formal recording of legal documents will empower Section 2.(h) of the Uniform Anatomical Gift Act.
- eliminating painful donor requests by doctors and administrators of the deceased's family.
- eliminating hospital concerns over lawsuits by establishing a contractual basis for the expeditious acquisition of organs.
- establishing a national donor registry for use in carrying out donors' wishes.

3. Financials

It is axiomatic that cost analyses concerning organ transplantation involve estimation and . extrapolation. In the case of Project Donor, the results are dramatic.

Expenditures

- a) The cost to the United States government for insurance benefit payments to provide transplants for the patients currently on the waiting list is estimated at \$157,760,000.00. This figure is arrived at by the following calculation:

No. of donors needed to satisfy current need x \$10,000.00 per donor = total insurance benefit payments

$$15,776 \times \$10,000.00 = \$157,760,000.00.$$

(See II.2. Conclusions)

This amount would be paid out over time as transplant procedures are completed.

- b) The insurance benefit payments to provide transplants annually are estimated at \$96,480,000.00. This figure is arrived at by the following calculation:

No. of donors needed to satisfy annual need x \$10,000.00 per donor = annual insurance benefit payments.

$$9,648 \times \$10,000.00 = \$96,480,000.00$$

(See II.2. Conclusions)

- c) Administrative costs are estimated at \$250,000.00 per year. This figure is somewhat arbitrary but the following parameters were applicable to its estimation:

- The agency administering the policy must be at least minimally staffed twenty-four hours per day, every day, in order to both process policy contracts and assist with the policy verification requests by Organ Procurement Coordinators which will occur at all hours (see III. 4. Administration).
- Third- party administrators in the medical insurance industry process health claims. The standard cost allocated per claim is \$4.00-\$5.00 which includes a profit margin. ¹²

¹² Kevin Sampson, Health Benefits Associates, Reno, Nevada.

Administration of the organ transplant life insurance policy will be on a non-profit basis. Nevertheless, as an example, applying a \$5.00 cost factor per transaction to 50,000 annual "policy transactions" results in an annual administrative cost of \$250,000.00.

Savings

Successful implementation of Project Donor, resulting in the availability of organs "off the shelf," will accrue savings in health care costs which will no longer be incurred to keep people alive while waiting for transplant. These costs are enormous. Except for kidney disease patients, where costs are handled by Medicare and thus more readily calculated, the money spent in maintaining the various transplant candidates is difficult to ascertain because of large variables in the number of health providers, in and out patient care, differing definitions of costs, etc., etc.

Richard H. Hauboldt, F.S.A., of Milliman & Robertson, Inc., an international actuarial firm, states: "Candidacy costs include the costs of maintaining the patient while awaiting transplantation" and has assigned a cost of \$10,600.00 per month to maintain heart, liver, heart-lung and lung transplant candidates.¹²

The annual health care costs incurred to keep these patients currently on the waiting list alive while waiting for an organ is thus estimated at \$2,207,428,800.00. This figure is arrived at by the following calculation:

No. of above patients as of April 15, 1998, x \$10,600.00 x 12 = annual candidacy costs

$$17,354 \times 10,600.00 \times 12 = \$2,207,428,800.00$$

As can be readily seen by these figures, the difference between the insurance benefit payments and the candidacy costs show a huge net savings by Project Donor, the proceeds of which should be directly applied to the organ transplant procedures, by the recipients of the savings (insurance companies, Medicare, Medicaid). It makes economic sense and the health insurance industry, considering its current coverage of and projected expansion in paying transplant related costs (Exhibit B), should be mandated to participate fully in covering organ transplantation expenses.

Specifically concerning kidney disease patients, Paul W. Eggers, Ph.D., wrote:

¹² Richard H. Hauboldt, F.S.A., *Research Report: Cost Implications of Human Organ and Tissue Transplantations*, Milliman & Robertson, Inc., Brookfield, WI: pp. 28-30.

"Patient registration and monitoring while awaiting transplant can add significant costs to transplantation. In fact, the office of the Inspector General in the Department of Health and Human Services found that waiting list costs were one of the major costs associated with kidney transplantation."¹³

"The results of this study confirm the widely held belief that kidney transplantation is, over time, a less costly alternative to maintenance dialysis. The high initial cost of transplantation is recovered in about 4-112 years with a net discounted savings of about \$42,000 over a 10 year time frame."¹⁴

"In terms of overall cost-effectiveness, kidney transplant has been shown to be consistently superior to dialysis, in terms of both Medicare expenditures and total estimated costs. Similar results have been found in other countries."¹⁵

His findings are particularly significant in that patients waiting for kidneys comprise two-thirds of the OPTN Waiting List.

Conclusion

Obviously the pro forma expenditures and savings presented are affected by such variables as cost estimations, the number of transplants performed over time, the numbers of patients added to waiting lists, etc. Nonetheless, these figures are significant and of statistical inference. **There is a huge projected net savings.**

The benefit payments are made from a fund established by Congress and contributed to by the health insurance industry in accordance with whatever statutory obligations are instituted to maximize the financial benefits of Project Donor in saving lives through transplantation.

¹³Paul W. Eggers, Ph.D., and Lawrence E. Kucken, M.P.A., "Cost Issues in Transplantation," *Surgical Clinics of North America*, Vol. 74, No. 4, October 1994, p.1259.

¹⁴Paul Eggers, Ph.D., "Comparison of Treatment Costs Between Dialysis and Transplantation," *Seminars in Nephrology*, Vol. 12, No. 3 (May), 1992, pp. 284-289.

¹⁵ Eggers, "Cost Issues in Transplantation," p.1264.

4. Administration

Publicizing availability of the life insurance policy is accomplished through existing and aggressive future venues, most notably the new National Organ and Tissue Donation Initiative recently launched by U.S. Department of Health and Human Services (HHS) Secretary Donna E. Shalala. The HHS " . . . announced new partnership efforts with more than a dozen private and volunteer organizations," including the Coalition on Donation, American Medical Association, American Hospital Association and American Bar Association. Appropriate terminology is simply added to educational messages promoting donation, advising the public of their option of receiving a no-cost life insurance policy. Insurance companies and health maintenance organizations could participate in marketing the policy. People sign donor cards and insurance contracts (both in duplicate) simultaneously. Cards and contracts can be requested from UN4S and are offered in tandem at the usual outlets.

The existing system for acquiring and allocating organs remains intact. Certain logistical additions are made to implement the policy:

1. an "insurance agency" is created and staffed by the federal government.
2. copies of signed donor cards and insurance contracts are forwarded to the agency, with the originals retained by the insured. A postcard receipt is returned by the Agency. Both documents may be revoked by the donor by contacting the agency in writing.
3. at death, verification of an insurance policy is completed by the Organ Procurement Coordinator handling the donation process by contacting the agency:
 - a) if the deceased has a policy, a copy of the contract is immediately faxed to the coordinator. By contract, the coordinator can now acquire the organs according to existing procedure.
 - b) if the deceased does not have a policy, decisions about organ donation are handled according to existing procedure.
4. Cadaver Donor Registration/Referral Forms are already submitted to UNOS by the Organ Procurement Organization. Upon receipt of a copy of the Form from UNOS, the insurance agency verifies existence of a policy and pays the benefit amount to the beneficiaries within thirty days or less.
5. The following new form is required:
 - a) life insurance policy contract (Exhibit A).
6. The Cadaver Donor Registration/Referral Form must be amended to include the following information:
 - a) was an insurance policy contract effectuated by the deceased?

IV. Legislation

Changes in law will be required. At the least, the following Acts must be addressed to include the United States Government Organ Transplant Life Insurance Policy.

Uniform Anatomical Gift Act (1987)

- Section 1. define life insurance policy
- Section 2. amend to include specifics of policy
- Section 3. amend to include specifics of policy
- Section 5. amend to include specifics of policy
- Section 7. amend to include specifics of policy
- Section 10.(a) amend as follows: "The United States Government Organ Transplant Life Insurance Policy is not an act of purchase or sale."

National Organ Transplant Act (1984)

Title III, Sec. 301.(a) amend as follows: "The United States Government Organ Transplant Life Insurance Policy is not a transfer of organs for valuable consideration."

V. Project Developers

1. Eugene C. Epstein
2. Alan W. Boessmann, D.V.M. (liver transplant recipient, December 23, 1995)

VI. Exhibits

- A.** United States Government Organ Transplant Life Insurance Policy Contract.

- B.** Letter from Richard H. Hauboldt, F.S.A., Milliman & Robertson, Inc., May 11, 1998, re: transplant coverage.

Exhibit A
United States Government Organ Transplant
Life Insurance Policy
Contract

I. Authorization of the Donor. The person named below (hereinafter to be referred to as "Donor") hereby authorizes and approves, upon Donor's death, an Organ Procurement Organization (OPO) operating within the Organ Procurement and Transplantation Network, as authorized by the National Organ Transplant Act of 1984, and in accordance with the OPO's customary procedures, to remove and recover for the purpose of transplantation, organs from the Donor's body as specified in the Donor's Organ Donor Card.

The rights granted and authorized herein are subject to no limitation or special provisions except those set forth on Donor's Organ Donor Card. Furthermore, the rights granted and authorized by this agreement shall be binding upon all agents, representatives, heirs, and attorneys-in-fact of the Donor.

II. Obligation of the Agency. In exchange for the authorization granted herein by the Donor, the Organ Transplant Life Insurance Agency (hereinafter to be referred to as Agency) shall:

A. Pay to the person(s) trust, business, charity or any other individual(s) or entity of the Donor's choosing, or in lieu of such choice to the Donor's estate, the sum of TEN THOUSAND DOLLARS (\$10,000) upon the successful recovery and transplantation of at least one of Donor's major organs (including but limited to the kidney, liver, heart, lung or pancreas).

B. Maintain the confidentiality of the Donor. The Agency may notify or inform an authorized hospital official or organ procurement officer of the existence of this contract and Donor's intention to be an organ donor. Provided further that in the event of the Donor's death, the Agency may notify the beneficiary named below of the nature and existence of the contract. The Agency is expressly prohibited from disclosing the nature and existence of the contract to any other individual, entity, or organization.

III. Termination Procedure. This contract may be terminated at any time without penalty: (1) by the Agency by written notification to the donor, and (2) by the donor by written notification to the Agency.

IV. Beneficiaries. The Donor elects the following person(s), trust, business, charity or any other individual(s) or entity to receive the insurance proceeds resulting from the fulfillment of the terms of this contract. Failure or inability to designate a recipient(s) will result in payment of the insurance proceeds to the estate of the Donor.

V. Signature. I have read, understood, and agree to all the terms of this document.

Donor

Name:

Street Address:

City/State/Zip:

Social Security Number:

Signature:

Date:

Organ Transplant Life Insurance Agency

Address:

Telephone Number.

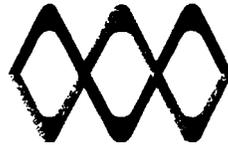
Name and Title of Authorized Agent:

Signature:

Date Received:

A postcard receipt will be sent to the donor by the Agency.

Exhibit B



MILLIMAN & ROBERTSON, INC.
Actuaries & consultants
Internationally WOODROW MILLIMAN

Suite 400,15800 Bluemound Road, Brookfield, Wisconsin 53005-6069
Telephone: 414/784-2250
Fax: 414/784-4116

May 11, 1998

Mr. Alan Boessmann, DVM
15310 Pinion Road
Reno, Nevada 89511

Re: Transplant Coverage

Dear Alan:

During our conversation last week regarding transplant costs and coverage, you asked that I summarize the population distribution by insurance market that we discussed. The distribution of insurance coverage by market can be used to approximate the number of transplants covered by government programs as compared to private markets. Naturally other methods could be used. In addition, included in this letter, are two transplant distributions which we did not discuss, that may provide a more accurate allocation than the population distribution. I understand that you may use this information in your meeting with Health and Human Services when you present your funding idea for certain transplant costs.

I have obtained some updated population estimates since we talked. In the following table, non-Medicare population estimates are from the Employee Benefit Research Institute for 1996. Medicaid numbers were adjusted to account for overlap of coverage. Medicare population is based on my judgment.

Health Insurance Market	Estimated 1996 Population (millions)	Percent
Private	166	62%
Uninsured	41	15%
Public (Medicare/Medicaid)	62	23%
Total	269	100%

Albany, Atlanta, Boston, Chicago, Dallas, Denver, Hartford, Houston, Indianapolis, Irvine, Los Angeles, Milwaukee, Minneapolis, New York, Omaha, Philadelphia, Phoenix, Portland, ME, Portland, OR, St. Louis, Salt Lake City, San Diego, San Francisco, Seattle, Tampa, Washington, D.C., Bermuda, Tokyo

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Population distributions do not reflect that only about 3% of transplants are performed for people over age 65 and that, in the past, Medicare has covered most (I estimate about 90%) of kidney transplants under the End Stage Renal Disease program. The table below shows the expected distribution of transplants taking these two items into account. The total number of transplants is based on M&R research and includes heart, liver, kidney, kidney-pancreas, pancreas, heart-lung, lung and bone marrow. Allocations to non-Medicare markets assume a uniform incidence rate.

Health Insurance Market	Estimated 1998 Transplants, 90% of Kidney Covered by Medicare	Percent
Private	15,910	47%
Uninsured	3,930	12%
Public (Medicare/Medicaid)	13,861	41%
Total	33,701	100%

Recently the waiting period during which an employer plan is primary versus Medicare for kidney transplants under the End Stage Renal Disease program has changed from 18 months to 30 months. I believe that this change could result in only 10% of kidney transplants being covered by Medicare. The impact of the waiting period change will take some time to be realized. As an illustrative example only, the distribution of transplants by insurance market with this assumption is shown below.

Health Insurance Market	Estimated 1998 Transplants 10% of Kidney Covered by Medicare	percent
Private	25,523	75%
Uninsured	3,930	12%
Public (Medicare/Medicaid)	4,248	13%
Total	33,701	100%

Mr. Alan Boessmann, DVM
May 11, 1998
Page 3

The actual transplants by market will vary from the values in this letter. The transplant incidence rate within the non-Medicare markets may not be uniform, especially for Medicaid. This letter should be shared with others only in its entirety. The reader is assumed to be familiar with the different ways of financing health care, both public and private.

If you would like to discuss the values in this letter further, please feel free to call me at 4141784-2250.

Sincerely,

A handwritten signature in cursive script that reads "Richard Hauboldt". The signature is written in black ink and is positioned above the printed name and title.

Richard H. Hauboldt, F.S.A.
Consulting Actuary

RHH/mm