

P. Wamser
P. Goetzing
M. Barlan
M. Gnant
T. Hoelzenbein
B. Watschinger
F. Muehlbacher

Reasons for 50% reduction in the number of organ donors within 2 years – opinion poll amongst all ICUS of a transplant centre

P. Wamser (✉) · P. Goetzing · M. Barlan
M. Gnant · T. Hoelzenbein
B. Watschinger · F. Muehlbacher
Surgical Department University of
Vienna,
Wahringer Guertel 18–20,
1090 Wien, Austria

Abstract To detect the reasons for a massive decrease in the annual number of organ donors and as a means of evaluating the effectiveness of our information programme, a questionnaire was designed and sent to all intensive care units (ICUs) in our catchment area. We wished to obtain information about medical, organizational and capacity problems and negative occurrences that had happened during past retrievals. Although 60% of the answers we received (87% feedback rate) mentioned the additional workload involved in treating an organ donor (and 88% had serious problems because of the shortage of nurses), less than 16% remembered a “lost” donor because of capacity problems. Eighty-six percent recognized our efforts to support them in any respect and were satisfied with the amount of “service” provided by the transplantation (TX) centre. About 45% remembered negative occurrences. More than 85% of all replies asked for more and continuing information related to organ donation and transplantation. We think that the key to a successful TX programme is a system of active care for the ICU staff in all peripheral hospitals; repeated

mailing of updated information brochures, annual lectures about new developments, letters of thanks after each reported donor (including information on the fate of the organs), visiting donor ICU’s accompanied by successfully transplanted recipients, etc. . . . The downwards trend of donor rates in our area clearly shows that it takes more than a stable legal situation to ensure the necessary amount of donor organs, even a very successful TX centre has to work hard to maintain a certain standard of knowledge, information and motivation amongst the staff of the peripheral hospitals. Moreover, the high turnover rate of ICU personnel requires a steady “flow of information” and cooperation between the “transplant people” and their coworkers outside to guarantee a permanent state of awareness concerning organ donation and transplantation. In fact, awareness seems to be the key issue: the activity of sending out the questionnaires was enough to raise the number of reported donors from 72 (estimated in July) to 96 (31 December 1992).

Key words Organ procurement
Organ donation · Transplantation

Introduction

The transplantation (TX) centre at the University of Vienna serves about half of Austria (approx. 40 000 square kilometres) with a population of 3.5 million. Until the end of 1992, a total of 2300 kidney, 320 liver, 300 heart, 30 heart/lung and 30 lung transplantations had been performed. Beginning in 1986, the annual number of organ donors procured within our catchment area rose steadily. In 1990 our team retrieved organs from 146 donors, which means a rate of 41.7 donors per million population.

As the organizational crew of the centre consists of two (doctor) coordinators (and starting in 1991, one additional secretary) alone, the additional workload caused by the enormous amount of retrievals and transplantations caused an almost complete cessation of what we called "PR work". During previous years, team members had regularly visited potential donor intensive care units (ICUs) and held lectures on donation- and transplantation- related topics; we told our coworkers in the peripheral hospitals about the legal situation, indications and contraindications for organ donation and transplantation, correct anaesthetic management of potential donors, as well as the technique and results of transplantations. We invited them to attend transplantations, mailed information booklets, held a symposium on brain stem death assessment and wrote a letter of thanks after every retrieval.

The year 1991 showed a serious downwards trend (115 donors) that continued in 1992. Comparing the number of organ donors until 30 June every year, a projection was calculated that predicted a total number of 72 donors for 1992 (less than 50 % of 1990!) (Fig. 1).

Methods

We decided to conduct an opinion poll amongst all our (and some potential) donor ICUs. Coordinators, surgeons, anaesthetists and

nurses created a questionnaire that consisted of 92 questions touching the following topics:

1. Expenditure of work (when treating a donor)
2. "Behaviour" of the Viennese (and foreign) TX team(s)
3. Our "service" (e.g. enough support by the Viennese TX team)
4. Financial reimbursement to the donor hospital
5. Legal situation
6. Personal/moral/ethical problems
7. State of information concerning knowledge on TX-related topics

We sent 350 questionnaires to 37 ICUs; we asked the medical head as well as physicians and nurses to complete and return the questionnaires. Differences between the answers of both groups (physicians and nurses) were calculated by coded chi-square test and were considered significant if $P \leq 0.05$. Only one of the ICUs that reported donors frequently and three that were regarded as "potential" (and have not reported a donor yet) did not take part in the poll, although we reminded them via telephone calls and letters.

Results

Almost 87 % (32 out of 37) of all ICUs took part in the poll; 75 physicians and 52 nurses (as well as 7 individuals who didn't identify their profession) returned completed questionnaires (six questionnaires were filled out by a "nursing team" and one by a "team of MDs", they were each counted as one reply).

The additional expenditure of work (reporting and treating a potential organ donor) was rated significantly differently by physicians and nurses (Table 1). Moreover, nurses seemed to suffer more from the emotional burden of treating a "dead patient" (Table 2). Of the interviewees, 85.7 % said that they always or almost always got enough support from the Viennese TX team; 10.7 % did not get sufficient help sometimes and 3.6 %, often. Because of organizational problems, 16.1 % remembered not reporting (a) donor(s); neither the kind of problem nor the number of lost donors was mentioned. On being asked who caused these problems, 40.5 % said "Viennese TX team", 14.4 % said "foreign retrieval teams" and 45.2 % said "donor's next of kin".

Almost one out of two questionnaires (44.9 %) mentioned negative occurrences during past organ retrievals; "problems with next of kin", "rude behaviour of the retrieval team(s)", "too many people in the operating theatre", "complicated organization" and "too many telephone calls" were the topics most frequently listed. Capacity (lack of nursing and medical staff) problems were graded as serious by 65 % of the physicians and 50 % of the nurses; only 8 % of the nurses (and no physician) demanded to have none at all.

Financial reimbursement for the donor hospital (as already practiced within Eurotransplant and planned in Austria) was a "hot" topic. More than 50 % of physicians

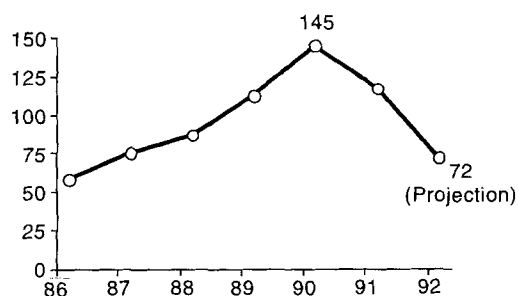


Fig. 1 Annual number of organ donors from 1986 to June, 1992

Table 1 The responses to the question: "How would you grade the additional expenditure of work when treating an organ donor?" are shown in percentages

$P=0.0053$	Physicians	Nurses
None (almost)	78.7	67.9
Considerable	21.3	18.9
Extreme	0	13.2

Table 2 The response to the question: "How would you grade the emotional stress of treating an organ donor?" are shown in percentages

$P=0.0002$	Physicians	Nurses
None (almost)	73.4	46.1
Considerable	25.3	30.8
Extreme	1.3	23.1

Table 3 The responses to the question: "What is your opinion about a financial reimbursement for the donor hospital after each retrieval?" are shown in percentages

$P=0.0061$	Physicians	Nurses
I refuse	41.3	72.6
Maybe ...	33.3	15.7
Good idea	12.0	7.8
Absolutely necessary	13.3	3.9

nurses said strictly "no" (Table 3). Moreover, there was a significant difference in attitude between the nursing and the medical staff (subdividing the physicians into heads of the departments, consultants and registrars revealed no further differences). Forty-four written comments made this point the most controversial in the questionnaire (37 comments against, e.g.: "organ trading", "money for life", "human life has no price", "does not influence my grade of motivation" vs. 7 comments in favour, e.g.: "very important for the donor hospital", "nursing staff is underpaid").

The legal situation in Austria (presumed consent) is well known (94.8%), and when compared to various "opting in" systems, was regarded the optimal model by a huge majority (83.3%). There was also a significant difference between physicians and nurses as far as "ethical or moral problems concerning organ donation, retrieval or transplantation" were concerned. "Fully accepted, no problem" was marked by 86.7% of the physicians vs. only 61.5% of the nurses; 38.5% of the nursing staff felt (at least a little) uncertain about these topics (Table 4). Much to our surprise, this problem was worse in hospitals with a haemodialysis (HD) unit (Table

Table 4 The responses to the question: "Do you feel any moral or ethical problems concerning organ donation/retrieval?" are shown in percentages

$P=0.0012$	Physicians	Nurses
No problem at all	86.7	61.5
A little uncertain	12.0	36.5
Serious doubt	1.3	1.9

Table 5 Moral or ethical problems in hospitals with and without a haemodialysis (HD) unit. There were no further differences when split between physicians and nurses. Answers are shown in percentages

$P=0.0045$	No HD unit	HD unit
No problem at all	100.0	74.3
A little uncertain	0	23.6
Serious doubt	0	1.1

Table 6 The responses to the question: "Can you fully accept the concept of brain stem death?" are shown in percentages

$P=0.0012$	No HD unit	HD unit
No problem at all	87.7	75.4
A little uncertain	9.2	16.9
Serious doubt	3.1	7.7

5) where more consciousness for the topic would be expected. The "concept of brain death" itself was accepted by 88% of the physicians and 75% of the nurses, 3% vs. 8% had serious doubt (Table 6).

The Austrian presumed consent law does not demand any contact with the next of kin. Nevertheless, 34.8% informed (but didn't ask permission of) the donor's relatives more or less regularly; 1.7% do it always. An information slide show was requested by 85.4%. Most of those who didn't already have one, had one during the last year.

Discussion

During the early 1980s transplantation centres all over the world boomed, and the annual number of transplantations grew rapidly [1–3]. The last years of that decade and 1991 and 1992 brought stagnation, if not decreasing figures ([4, 5] Fig. 1). With this background, financial incentives (or reimbursement) of various kinds, on the one hand, became less controversial in recent years [6–8],

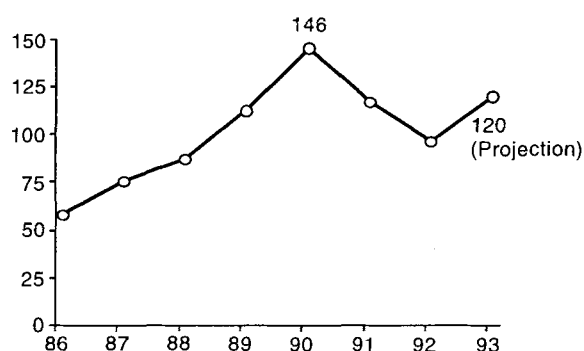


Fig. 2 Annual number of organ donors from 1986 to September 1993

while on the other, there were suggestions for increasing motivation (and donor numbers) [9, 10].

While there are still fierce discussions about the optimal (from the ethical, legal, economic and transplantation-related points of view) form of achieving consent for organ donation [3, 11, 12], presumed consent models have proved to be efficient in Austria [2, 3] and in other countries [1, 4], and (as our poll showed) have a high degree of acceptance by the medical staff. It has already been indicated that the state of motivation and knowledge of the medical staff [13, 14] on all donation- and transplantation-related topics is of utmost importance for

a well-functioning transplantation centre (this refers mainly to the "peripheral" hospitals that report or admit possible donors).

In conclusion, the majority of the staff working in the ICUs referring organ donors to Vienna appreciated the TX team's efforts to support them in any possible way. Many negative incidents had happened (so there is room for improvement, especially regarding the behaviour of the explanation teams and the number of telephone calls), but the general approach towards organ donation and transplantation was positive. The legal situation is common to the medical as well as the nursing staff, although about one-third of the nurses felt uncomfortable as far as brain stem death (and its assessment) is concerned. Financial reimbursement to the donor hospital was rejected by more than 50%.

Almost all interviewees asked for (more) information; this seems to be one of the key issues in running a successful TX programme. Sending out the questionnaires (that bore a lot of information within) caused the number of donors in 1992 to rise from 72 (projected at the end of June) to 96. Restarting the information slide shows at possible donor ICUs in January 1993 caused the figures to rise again. Our projection for 1993 (calculated on 30 September) gave 120, which would mean 34 donors per million population (Fig. 2).

References

1. Roels L, Vanrenterghem Y, Waer M, Gruwez J, Michielsen P (1990) Effect of a presumed consent law on organ retrieval in Belgium. *Transplant Proc* 22:2078-2079
2. Gnant M, Sautner T, Muehlbacher F, Steininger R, Laengle F, Piza F (1989) Professionelle Organgewinnung als Voraussetzung zum Erreichen der notwendigen Transplantationsfrequenz: Erfahrungen mit der Organspende am Transplantationszentrum Wien. *Wien Klin Wochenschr* 23:824-828
3. Gnant M, Wamser P, Götzinger P, Sautner T, Steininger R, Muehlbacher F (1991) Impact of presumed consent law, and decentralized organ procurement system on organ donation: quadruplication of the number of organ donors. *Transplant Proc* 23:2685-2586
4. Michielsen P (1992) Organ shortage-what to do? *Transplant Proc* 24:2391-2392
5. Faltin DL, Jeannet M, Suter PM (1992) The decrease in organ donations from 1985 to 1990 caused by increasing medical contraindications and refusals by relatives. *Transplantation* 54:85-88
6. Sells RA (1992) Some ethical issues in organ retrieval, 1982 to 1992. *Transplant Proc* 24:2401-2403
7. Sells RA (1993) Consent for organ donation: what are the ethical principles? *Transplant Proc* 25:39-41
8. Pellegrino ED (1991) Families self-interest and the cadaver's organs. What price consent? *JAMA* 265:1305-1306
9. Terasaki P (1989) A proposal to increase donations of cadaveric organs. *N Engl J Med* 321:618
10. Taylor RMR (1988) The obligation to ask for organs. *Lancet* I:985-987
11. Kokkedee W (1992) Kidney procurement policies in the Eurotransplant region. "Opting in" versus "Opting out". *Soc Sci Med* 35:177-182
12. Singer PA (1990) A review of public policies to procure and distribute kidneys for transplantation. *Arch Intern Med* 150:523-527
13. Wakeford RE, Stepney R (1989) Obstacles to organ donation. *Br J Surg* 76:435-439
14. Mosimann F, Gehrig D, Friedlender J, Joseph J-M, Billaud F, van Melle G (1990) Organ donation: opinion poll of the medical community in the canton of Vaud, Switzerland. *Transplant Proc* 22:2080-2081