System of Donor Hospital Transplant Coordinators Maintained and Financed by National Transplant Organization Improves Donation Rates, But It Is Effective Only in One Half of Hospitals

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ABSTRACT

Introduction. In 2010, the system of donor hospital transplant coordinators was implemented in 200 hospitals in Poland on the basis of contracts with Poltransplant.

Methods. This study evaluated whether the system (nationwide, maintained and funded by national organization) is sufficient, improved donation after brain death rates, and hospital activities.

Results. Donation indicators over a 21-month period of coordinators' work were compared with the 21-month period before their employment. The number of hospitals with a positive effect and with no effect was analyzed overall and in groups of hospitals with specific profiles. The implemented system resulted in increasing the number of potential donors by 27% (effectively, 24%); increasing utilized organs by 20% and multiorgan retrievals from 54% to 56%; decreasing the rate of utilized organs/actual donors from 2.65 to 2.57; and increasing family refusals from 8.5% to 9.3%. A positive effect was achieved in 102 hospitals (51%). Better results were achieved in regions where donation were initially low, namely, 59% in university hospitals, 63% in hospitals in large cities, 77% in hospitals with 2 coordinators, 67% in hospitals for adults, and 52% in hospitals where the coordinator was a doctor and not a nurse. This system resulted globally in increasing donation rates, but was effective only in one half of hospitals.

Conclusions. Additional activities should be introduced to improve these results (quality systems, trainings, techniques for monitoring potential of donation, changes in profile of a coordinator). A formal analysis of coordinators' activities gives also the national organization a rational basis for their employment policy, taking into account the characteristics of hospitals and coordination teams.

ONE of the main tasks of a modern hospital, apart from the treatment, prophylaxis, and education, is procuring organ donations from living and deceased donors. A donor hospital transplant coordinator is a key person in the process of identification, qualification of the deceased donors, and authorization for retrieval of organs.

In 2010, the Polish Transplant Coordinating Center Poltransplant (national transplant organization and competent authority in organ donation and transplantation), thanks to funds from the Ministry of Health, under the National Program for Development of Transplantation Medicine, initiated a project to employ hospital transplant coordinators in all the hospitals where the identification of the deceased donors, brain death confirmation, and retrieval of organs are possible. There were 410 hospitals in Poland that met these conditions.

Coordinators are employed on the basis of the contracts with Poltransplant, after the terms of the contract are accepted by the hospital management and the candidate. First contracts were signed in July 2010. A strategic task of

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the employee is to run an efficient program for brain dead cadaveric organ donation and, as the result of this program, to increase organ availability. These aims are supported by the implementation of a hospital quality assurance program (monitoring and evaluation of deaths in the surgical intensive care unit) based on the DOPKI (Improving the Knowledge and Practice of Organ Donation) program [1].

Coordinators' activities in the identification of deceased donors, organ retrieval, and monitoring of the potential of donation are reported monthly to Poltransplant and to the hospital manager. Moreover, in accordance with the terms of the contract, coordinators are responsible for training hospital staff on quality measures and the safety of the organ donation.

Criteria for the post of a coordinator were both hospital oriented and candidate oriented. Within the hospital-oriented criteria, it was planned so that the rates of the employment were on a similar level in all *voivodships* (administrative regions), but more coordinators were employed in hospitals located in *voivodships* with primary low donation rates. Hospitals with a considerable donation potential but with low activity and children's hospitals were also included.

In candidate-oriented criteria, apart from the main guidelines (a doctor or a nurse employed in the key wards for an identification of donors—surgical intensive care unit, neurosurgery, or neurology) a specialist training at Postgraduate Studies for Transplant Coordinators in the Medical University of Warsaw [2] was an important factor. In 18 hospitals with a significant potential for organ donation, coordination teams (a doctor and a nurse) were employed. The "additional task" rule in payment was established. Transplant coordinators are funded directly from Poltransplant and receive a fixed salary for being a transplant coordinator (€125 per month); additionally, coordinators are compensated based on the number of organs procured and transplanted (€85 per organ transplanted).

At the end of 2012, 218 trained professional hospital donor transplant coordinators were employed by Poltransplant in 200 hospitals (approximately 50% of total number of hospitals with the potential for donation). Among the 218 coordinators, there were 134 doctors and 84 nurses. One hundred eighty-two work in intensive care units where identification of deceased donors is possible, 27 are persons on other wards, and 9 are administrative staff of their hospitals.

AIMS

The aim of the study was to evaluate whether (1) the nationwide system, which maintained and funded by national transplant organization, is sufficient; (2) it improved donation rates among brain dead donors and hospital activities in the field of brain donor recruitment; and (3) public money was spent properly.

METHODS

For the purpose of the study, evaluation of the system was planned and implemented as follows. First, several donation indicators (for donation after brain death) over a 21-month period of coordinators' work, were compared with the 21-month period before their employment in hospitals where donor coordinators were employed. We compared the number of potential and referred donors, number of effective donors, number of utilized organs, ratio (number of procured organs/effective donors), and the percentage of multiorgan donations.

Second, the number of hospitals with a positive effect (there were no preemployment donations and they took place after, or the number of donations increased or remained at the previous level) and with no effect of the employment (there were no donations either before or after the employment of coordinators, or the number of donations decreased) was calculated and analyzed for all of Poland and in groups of hospitals with specific coordinator or hospital profiles. We evaluated hospitals located in regions with low baseline donation rates and compared them with hospitals in regions with high donation rates (the average rate for Poland in 2011 was 14.5 donations after brain death per million population and was used as the breakpoint). We analyzed university hospitals and compared them with hospitals located in capitals of *voivodships,* as well as comparing larger hospitals located in bigger cities (>100,000 inhabitants) with county hospitals. Finally, we compared pediatric hospitals with hospitals that treat adult patients.

RESULTS

Changes in Donation Rates

Employment of the transplant coordinators in 200 hospitals resulted in the changes of the donation rates (after a 21-month period, compared with the equivalent period before the coordinators started their activity). There was an increase in the number of potential deceased donors reported to Poltransplant by 27% (from 1102 to 1400), an increase in the number of actual deceased donors by 24% (from 868 to 1072); an increase in the number of utilized

Table 1. Donation Activity of Hospitals Before and After the Employment of Donor Coordinators by Region

Region	Hospitals With Coordinators Employed (n)	Activity Maintained or Increased, n (%)	Activity Decreased or Lack of Activity, n (%)
Dolnośląskie	9	4 (44)	5 (56)
Kujawsko-pomorskie	10	5 (50)	5 (50)
Lubelskie	8	7 (88)	1 (13)
Lubuskie	3	2 (67)	1 (33)
Łódzkie	15	9 (60)	6 (40)
Małopolskie	15	9 (60)	6 (40)
Mazowieckie	30	18 (60)	12 (40)
Opolskie	4	3 (75)	1 (25)
Podkarpackie	12	7 (58)	5 (42)
Podlaskie	5	2 (40)	3 (60)
Pomorskie	14	6 (43)	8 (57)
Śląskie	22	13 (59)	9 (41)
Świętokrzyskie	5	2 (40)	3 (60)
Warmińsko-mazurskie	14	2 (14)	12 (86)
Wielkopolskie	24	8 (33)	16 (67)
Zachodniopomorskie	10	5 (50)	5 (50)
Poland	200	102 (51)	98 (49)