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Donation Matters

By David Baxter

Organ donation and transplant organizations across Canada are increasingly challenged by the widening gap between a growing need for transplants and a dwindling supply of organs suitable for transplantation. This has led to an ongoing search for ways to increase the number of organ donations and transplants that occur each year. As part of this search, it is important to evaluate the approaches used both in Canada and elsewhere in order to identify strategies that might increase both donation and transplantation. In this comparative context, Spain is often presented, and presents itself, as the poster child for organ donation and transplantation, with claims made that its cadaveric donation rate, measured as the number of cadaveric donors per million population, is two to three times Canada's "dismally low" rate.

It would be wonderful if Spain's system was in fact capable of more than doubling Canada's donation rate: alas, there has not yet been any statistically valid scientific research that supports - or refutes - the claims that adoption of the Spanish practices would significantly increase Canada's donation rates. This is not to argue that Spain's system is worse, or better, than Canada's, but rather to state that any opinions about its applicability to Canada are not founded in research.

This is not merely of academic interest. Health-care resources are scarce, and any programs introduced to increase donation rates must be based on scientific evidence as to their effectiveness in the Canadian context. Further, representing that changes in the approaches to donation currently used can double donation and transplantation rates in Canada will dramatically increase public expectations, before such changes are made, it is essential that there is clear evidence that they can deliver.

There are two general reasons why, the current comparison of Spain and Canada on the basis of published organ donations per million population has neither statistical nor scientific validity. The first reason is definitional: Spain's high cadaveric donors per million rate is based on the inclusion of donors where no transplants occur, and hence is inflated relative to Canada's rate which includes only donations that culminate in transplants.

The second reason is functional: Spain's mortality rate due to causes most likely to offer the potential for cadaveric donation is 50 per cent above Canada's. Four facts to keep in mind when considering the Spanish system and Canada's potential for organ donation: 42% of the car drivers in urban areas in Spain wear seatbelts compared to 93 per cent in Canada; each year Spain has 150 deaths in motor vehicle accidents per million population while Canada has 96 per million population; over the 1980 to 1998 period, the number of deaths in motor cycle accidents in Canada declined by 50 per cent while the number in Spain increased by 20 per cent; and Spain's age standardized mortality rate due to cerebrovascular disease of 75.4 per 100,000 is 65 per cent higher than Canada's rate of 45.6 per 100,000.

Any comparison between Canada's and Spain's donor rates per million must acknowledge that Spain has much higher mortality rates per million in those causes of death that most commonly have the potential for organ donation. These differences do not mean that Canada's cadaveric donation rates cannot be increased, but rather that efforts to do so must acknowledge that Canada is not Spain, in terms of mortality, geography, or demography.

The fundamental question, which has yet to be answered by research, is "Can the number of donations from cadaveric sources in Canada be increased faster than the demand for organ transplants?" This question cannot be answered in Spain. It can only be answered by hospitals in Canada, through chart audits that indicate the percentage of potential cadaveric donors (in-hospital deaths of people who organs are medically suitable for donation) who ultimately become donors of organs used in transplantation.

If the transplant gap in Canada is to be narrowed, it will require a strategy to increase organ donation that is based on scientifically and statistically valid evaluation of a) the number of potential cadaveric donors in Canada, b) the degree to which this potential is currently realized in transplantation, and c) the effectiveness of other approaches in increasing the realization of such potential. Given the continuing declines in the number of in-hospital deaths due to head trauma resulting from motor vehicle and other accidents, to cerebrovascular disease, and to benign neoplasms, such a strategy will also have to acknowledge that increased cadaveric donation will be a necessary but not a sufficient component of the strategy. Live donors already account for almost half of the donors in Canada: a Canadian organ donation and transplant strategy must also acknowledge the importance of live donors in narrowing the transplant gap.

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