VIEWPOINT

A Potential Solution to the Shortage of Solid Organs for Transplantation

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In the United States, the majority of deaths occur unexpectedly, outside hospitals or in emergency departments.[1] Rarely do these deaths provide opportunities for organ donation. In Europe, unexpected deaths provide substantial numbers of transplantable organs through uncontrolled donation after circulatory determination of death (UDCDD).[2] UDCDD considers decedents candidates for donation even when death is unexpected, regardless of location, as long as preservation begins after all life-sustaining efforts have been exhausted.

More than 124 000 patients are wait-listed for organs in the United States, a number that increases annually despite attrition from 10 500 who die or become too sick for transplantation.[1] United States policy currently promotes organ recovery from 3 sources; neurologic deaths, controlled circulatory deaths, and live donors for kidneys and partial livers.

However, these approaches are incapable of meeting increasing US demand for transplants. During controlled donation after circulatory determination of death (CDCDD), the time from cessation of life support to circulatory arrest often exceeds 60 minutes. Prolonged hypotension leads to irreparable organ damage, thus limiting the effect of CDCDD on organ supply.[3] Live donation primarily affects kidney supply; it is unlikely that altruistic donation will ever meet demand. Although many changes in public policy regarding cadaveric donation are debated (markets and presumed consent), none is likely to become law or make substantial differences in organ supply.

The US organ donation system is neglecting the much larger pool of potential donors who could provide organs following unexpected death outside an intensive care unit. In 2006, the US Institute of Medicine projected that implementation of UDCDD protocols nationwide could generate 22 000 more donation opportunities annually in the United States, substantially reducing waiting times for transplantation.[4] If deaths by traumatic causes are added to the Institute of Medicine estimate, the potential donor pool could increase by as much as 63%.[5]

UDCDD requires initiation of organ preservation soon after death. If the warm ischemic time, which represents the time organs receive inadequate circulation to sustain cellular function, exceeds an organ-specific threshold, organs are not viable. European programs initiate organ preservation without requiring explicit consent,[2] a concept the US public will not allow despite supporting UDCDD.[6] Therefore, some US programs restricted eligibility to deceased persons who had previously registered for organ donation. However, UDCDD programs in the United States experienced recruitment problems by restricting eligibility to previously registered organ donors.[6]

A Respectful Approach to UDCDD Following Unexpected Death

A key challenge in using UDCDD donors is prior consent authorization. The public demands prior consent, but at the same time there is reason to doubt whether family or other authorized persons have the emotional and cognitive wherewithal to authorize organ donation immediately after learning about or witnessing a loved one's unexpected death. Authorized persons are likely overwhelmed and unable to think clearly. Given the difference in circumstances and timing, eliciting authorization to donate following unexpected death should, for ethical reasons, be treated uniquely. We propose a 2-step authorization process following unexpected death to better support grieving family members while increasing opportunities for donation through UDCDD.

The first step, permission for preservation, seeks permission to maintain the body for possible organ donation after unexpected death. This step requires only that families and other authorized persons are able to indicate a choice to begin organ preservation, not a full authorization for donation. For some decedents, organ donation wishes will be known, and opting to support those desires through preservation is all that is requested of authorized persons. If desires are unknown, recognition of societal and human benefit or desire to find meaning in the death might lead to preservation until a final decision about donation can be made later.

One path would be for those who have indicated prior willingness to donate (eg, joined a donor registry), which more likely would lead authorized persons to permit preservation to effectuate the decedent's wishes. The other path would be for those for whom evidence is absent. In the former, authorized persons can be asked to "affirm" the decedent's intention to donate. In cases in which there is no evidence, family members or authorized persons should be asked to "permit" not donation but preservation. It might be too difficult for some family members to provide full authorization for donation in the context of a sudden unexpected death when the decedent's desires regarding donation are unknown.

A decision to preserve organs is less complex and consequential than the decision to donate. The capacity required to permit preservation is lower than that required to authorize donation. Grieving persons could be asked to provide permission to preserve when providing authorization for donation would be beyond their current capacity. Immediately following death, family members would be asked only for permission to begin organ preservation, thereby keeping open the option to donate later. The

decision to begin organ preservation does not commit the family to a decision to donate, but it does maintain donation as an option.

The second step of the proposed 2-step authorization process is authorization to donate. Family members and loved ones initially need time to process the fact that death has occurred. Later they need the opportunity to weigh the pros and cons of donation against the decedent's and family's values.

The proposed schema of "permission for preservation" followed by later consideration of donation serves to protect the decedent's values and family members' autonomy when it comes to making a decision to donate. Moreover, this proposed approach also may increase the likelihood that families will authorize organ donation.[7] The importance of "decoupling" pronouncement of death and requests for organ donation is well established. When conversations about organ donation occur several hours after the decedent's death, in a private setting, with a transplant professional, families are much more likely to authorize donation.[7] If organ preservation is permitted at or close to the time of death, family members can later take the time they need to process death, talk extensively with each other and transplant professionals, and come to a thoughtful decision.

Transitioning to "Unexpected" Donation After Circulatory Determination of Death

In addition, the term "unexpected" could be substituted to describe the death that has happened and the term "permission to preserve" to characterize the request to the family. Describing situations in which death occurs suddenly as "unexpected" rather than "uncontrolled donation" accurately captures the essence of procedures required for approaching authorized persons and preserving organ viability in these circumstances. These terms emphasize the family's experience of the death (unexpected and sudden) rather than using a technical description of the type of donation involved. This supports the aim of being sensitive to specific needs of family members at a time of immense grief and overwhelming stress. Moreover, there is no assumption that donation will necessarily follow death. In crafting policy that ultimately could be used for educational campaigns and guidance documents, terminology must be accessible to and understandable by the general public.

Conclusions

The US organ donation system is not leveraging an approach that could expand the pool of potential donors. UDCDD programs could contribute enough organs to help reduce waiting times for organ transplants. With the appropriate ethical framework to obtain permission for preservation immediately following unexpected circulatory determination of death, with the actual decision to authorize donation made hours thereafter, the pool of potential donors could be greatly expanded while respecting autonomy, choice, and vulnerability.

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