1. **Introduction: a brief overview of “elective ventilation”**

Elective ventilation (hereafter EV) was launched at the Royal Devon and Exeter Hospital in 1990\(^1\). Many things have happened since then in the realm of organs transplantation. Although more than 100,000 transplantations are performed each year around the world, organ shortage is still a major concern everywhere, even in Spain, where the world record in organ donation is held year after year.

The situation is particularly worrisome in the UK. The latest UK activity Report for 2009-2010 states that 552 people died while waiting for their transplant. The rate of organ donation after death is very low – 15.5 per million of population-and the percentage of family refusals is strikingly high (43\%)\(^{ii}\). In spite of that poor performance, a survey conducted by the UK Transplant showed that the British public is massively supportive of organ donation, and that 28\% of the population is registered as organ donors\(^{iii}\).

The second fact that is important to bear in mind is that the same year in which the article written by Riad and Nicholls was published, the Maastricht classification of donation after cardiac death (hereafter DCD) was established\(^{iv}\). In a nutshell, cardiac death is the traditional death criterion originally used when organ transplantation started in the past century and is based on the physiology of circulation and the brain’s metabolism: when the cerebral perfusion pressure falls below 15 mmHg for a prolonged period of time, irreversible ischemia (and necrosis) of the whole brain and cessation of all integrated neurological functions occurs. The standard sign used for the declaration of cardiac death is the loss of arterial pulse

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\(^1\) Hany Riad and Anthony Nicholls, Elective ventilation of potential organ donors, British Medical Journal, 1995; 310: 714-718


with circulatory arrest for a period of two minutes according to the widely followed Pittsburgh Protocol issued in 1993 by the University of Pittsburgh Medical Center.

The Maastricht classification establishes two main versions of DCD: uncontrolled and controlled DCD. In the former case the course of events is, roughly, as follows: cardiac arrest happens outside the hospital and as soon as the emergency services arrive, the resuscitation maneuvers are started and continued until arrival at the hospital where several diagnostic tests are performed in order to determine whether the patient is a suitable donor. Before perfusion (i.e. cannulation) is initiated, the consent of the family is requested or, in some circumstances, the judge’s approval to proceed with no such consent. This is the more common DCD procedure in countries such as Spain, Austria, Belgium or Italy.

In the United States, The Netherlands, and the United Kingdom, among other countries, “controlled” or Maastricht III is the standard procedure. Controlled DCD results from patients, who are already at the hospital and are going to die inevitably in the short term, and who may progress to brain death. The limitation of therapeutic and resuscitation maneuvers, as well as final extubation is then proposed to the family. If they consent, cardio-circulatory arrest is awaited - as a consequence of life-sustaining treatments’ withdrawal- and a 5 minute waiting period is observed before cannulation and organ procurement is started (the period varies among countries). In Finland, Germany and Poland neither type of DCD is permitted.

Although DCD is still in need to be technically refined (as regards to preservation techniques and the period of time which is tolerable for warm ischemia), two reasons contribute to its expansion in several countries: first of all, the decrease in the number of donations after brain death (in Spain, the improvement of road safety is, fortunately enough, a major cause). Secondly, the

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v In the case of Spain, a review of the literature shows only three reported cases of controlled DCD. The option for uncontrolled DCD in Spain was proposed in 1996 (Matesanz R. “Documento de consenso español sobre extracción de órganos de donantes en asistolia”, Nefrología 1996; 16 (Suppl 2): 48-53). A full analysis and assessment of DCD in Spain is given in the National Consensus Document issued by the ONT in 2012: “Donación en Asistolia en España: Situación Actual y Recomendaciones” (available at http://www.ont.es/infesp/Paginas/DocumentosdeConsenso.aspx).
fact that the organs obtained from these donors are, in general terms, as good as those procured from brain death or from living donors\textsuperscript{viii}. DCD has gained credentials and acceptance, but still there are many critics and suspicions about its ethical status.

If we consider the circumstances of Mary’s collapse, the exhumation of EV in the UK boils down to implementing a policy of “uncontrolled” DCD. It is our contention that there are strong ethical reasons to both promote that option in the UK, and, for very similar reasons, implement Maastricht III in a wider fashion in Spain. To that discussion we now turn.

2. The ethical justification of DCD

2.1. DCD as a matter of justice and rights: The most straightforward justification for DCD is that, as well as other strategies for increasing the number of donors\textsuperscript{ix}, more lives are saved at no significant cost. From a moral standpoint, donating organs after death pertains, for us, to the genre of “easy rescue” cases. But in discussing EV what is at stake is not only individual altruism, but distributive justice. We consider that our current institutional and legal frameworks that allow cadaveric organs to perish infringe the basic rights to life and well-being of patients in desperate need. We grant our institutions the power to practice autopsies in corpses even against the deceased’s posthumous wishes or the family’s desires and we don’t see any stringent difference in the case of organ transplantation not to proceed in a similar fashion. DCD is a modest step to reach what seems a desirable outcome: protecting more rights of individuals whose lives and well-being are severely compromised.

However, as opposed to cadaveric organs, it is argued that in DCD cases we are dealing with people not yet dead, whether we consider that some bodily functions are still in place when we remove the organs – which is also the case if we rely on the “whole brain death” criterion- or that the “no touch” period - the 2 to 5 minutes window of time to discard auto-resuscitation- is a “conceptual sleight-of-

\textsuperscript{viii} For the shortcomings in liver transplantation, see M. Thamara P. R. Perera The super-rapid technique in Maastricht category III donors: has it developed enough for marginal liver grafts from donors after cardiac death?, Current Opinion in Organ Transplantation, 2012; 17: 131-136.

\textsuperscript{ix} Tax premiums, reception-conditionality, chain-donation, presumed consent, organ conscription and a market for organ sales, among others.
hand”x: the patient has died because we have decided not to resuscitate. This is why for many critics DCD is a blatant breach of the so-called "dead donor rule”.

2.2. DCD and death: Now, resorting to the situation described in Mary’s case, let us suppose that we finally instituted life-sustaining measures such as mechanical ventilation and we gather the consent of the family to remove her organs once cardiac death is pronounced according to the protocol described: have we killed her by removing her organs?

No. We would claim that the death of Mary is caused by a devastating stroke that has left her brain irreversibly damaged and that probably will cause her the intracranial hypertension that will lead to brain death. It cannot sensibly be said that the array of measures displayed during the dying process – including artificial ventilation which, by itself, is not a treatment, or the maneuvers that are started in order to preserve organ perfusion- were the means to kill Mary for the sake of others’ well-being or interests.

2.3. DCD, end-of-life care and the doctrine of double effect: It is often contended that EV is not performed in the patient’s best interests and that offering ventilation to Mary in order to maximize the chances of obtaining her organs corrupts the purpose of intensive care units. We think neither is the case.

One could claim, along the lines of Govert den Hartoghxii, that if being an organ donor is worthy of praise, far from not being in the patient’s interest, EV could be seemed as “death-dignifying”, as something which is done in the patient’s best interests (Mary’s going down in history as a generous contributor to the well-being of others). That means that EV is provided for the sake of the patient’s posthumous benefits, and the obvious question is if there is such thing as “posthumous interests”, be they benefits or harms. We remain unconvinced about the idea of benefitting or harming someone after death. We consider that posthumous interests ought to be respected, but the reason for doing so is indirect (the interests of living people who might be offended or gratified by the way we treat dead people and their memories).

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The route that leads us to argue that EV benefits Mary is different. Contrary to what others have claimed\textsuperscript{xii} we consider that DCD, which encompasses the decision to terminate life-sustaining treatment, is beneficial to the patient and the family. Even when, as it happens in Mary’s case, the prognosis is absolutely fatal, being admitted to the ICU in order to receive critical care is the best course of action for her, setting aside the further benefit of her becoming DCD donor. Leaving her in the ward or in the emergency room, with no cardiac or respiratory monitoring, will not enable anyone to give appropriate information about when she will die or how death will take place. Even more, once the catastrophic extent of the brain damage is properly diagnosed and the advisability of withdrawing life-sustaining measures is convened, the family will actively be a part in a dignified dying process enhancing the chances of their psychological relief. Of course, not being admitted to the ICU does not preclude the administration of analgesia and sedation, but, beyond mechanical ventilation, she will not receive the rest of the proper care and comfort at the end of life that only ICU’s are capable to provide.

What is critical, then, is whether the driving force for admitting people such as Mary to an ICU and the further measures and treatments administered, is the attempt to take care of her, which includes aiding her to die with dignity and in the absence of pain (if that is her actual or presumed interest)\textsuperscript{xiii}. It should come as no surprise that in those countries in which DCD is performed, the official guidelines, protocols and recommendations stress this commitment in a twofold manner: decisions concerning donation should only be presented to the family when the best clinical judgment recommends life-sustaining withdrawal as the proper course of action for the dying patient, and, the caring and transplantation teams are neatly distinguished\textsuperscript{xiv}. In the French case it is striking to read that intensive care physicians should act “as if Maastricht III” does not exist\textsuperscript{xv}. In a sense, this justificatory strategy has the flavor of the doctrine of double effect, although in the

\textsuperscript{xiii} See for example the Spanish guidelines issued by the Society of Intensive Medicine (SEMYCIUC), Medicina Intensiva, 2008, 32 (3): 121-133.
\textsuperscript{xiv} See the National Consensus Document supra note 5. Interestingly enough, the majority of transplant coordinators in Spain are intensive care physicians, a profile that surely contributes to our efficiency in procuring organs.
\textsuperscript{xv} Annals of Intensive Care, 2012; 2:23. Isn’t it paradoxical to state such a declaration in a document whose audience is mainly comprised by intensive care physicians?
case of DCD, as opposed to the standard double effect cases, the foreseen secondary effect – organs’ procurement- is clearly beneficial.

2.4. DCD and the pre-mortem measures: A different quarrel has to do with the pre-mortem measures instituted for the sake of optimizing organs’ preservation. The array of techniques and drugs and its invasive character vary – cannulation, administration of heparin sodium, cardiopulmonary by-pass\textsuperscript{xvi}, but all of them are thought to be illegitimately administered due to the absence of actual consent and the justificatory umbrella of being displayed in the best interests of the patient\textsuperscript{xvii}.

We think, however, that when the family’s consent has been obtained both to withdraw the life-sustaining measures and to subsequently remove the organs once death has been pronounced, there is no moral objection against those pre-mortem procedures, which, on the other hand, are harmless. In the case of heparinization – used to prevent clotting- it has been claimed that it has a death hastening effect. However, the evidence shows that the risk is mostly speculative and may affect only a marginal set of patients eligible to DCD donation\textsuperscript{xviii}. And as we claimed before, once we are dead our organs should be considered as a public-good resource for transplantation purposes\textsuperscript{xix}.

And yet, a genuine conflict might arise when, as in Mary’s case, we deal with dying people. Suppose that Mary is an altruist person – she would have donated her organs in “normal” circumstances, after a peaceful death- but has been convinced for years that the “medicalization” of death is an evil, that medical treatments should not be administered when a dignified life is no longer possible. She has therefore signed a living will in which she refuses any clinical procedure which does not have significant healing purpose. She has only authorized comfort care in the event that her life is coming to an end and she remains incompetent.

\textsuperscript{xvi} A review of the reported techniques can be found in Bastami, supra note 12 at 966. The catalog of those measures in Spain is found at the National Consensus Document, supra note 5 at 83 ff.
\textsuperscript{xvii} See Bastami et. al., supra note 12. In Spain those measures have the legal coverage of the presumed consent to donate that was established in the early Transplantation Act of 1979. Our system is formally an opt-out one, although in the practice the consent of the family is routinely requested.
\textsuperscript{xix} We should recall that, albeit exceptionally, the imposition of coercive treatments for the benefit of others – compulsory vaccination for example- might be legitimate in order to prevent great harms.
Although she has not technically “opt-out” from organ donation, we think that Mary’s request should be honored, even if that results in the loss of organs\textsuperscript{xx}.

But, what if Mary had expressly opted-in and had also refused any medical treatment beyond comfort care at the end of her life? For Bastami et. al., even in those cases consent for the pre-mortem measures cannot be presumed. In their own words: “One could imagine that most people currently consenting to organ donation by signing a donor card are operating under the assumption that the processes pertaining to donation would start after their death\textsuperscript{xxi}.

2.5. DCD and the dead donor rule: So, at the end of the day, it is the occurrence of “death” the crux of the objection (the violation of the “dead donor rule”), more than the administration of drugs and the initiation of procedures that are done for the benefit of others. But contrary to what Bastami et. al. assume, it is less from clear what people, in general, have in mind when they think about death and what exactly they regard as proper and dignifying care at the end of life. They are probably quite ignorant as to the many subtleties that can be entertained when discussing the moment of death, but they are probably positive in thinking that in cases such as Mary’s we should not bring all the possibilities that medical technology give us in order to sustain what are only residual biological functions. They will probably agree that someone hooked to a ventilator with a catastrophic condition and who will imminently die once unplugged, is more a corpse than a living person. For the purpose of fulfilling their wishes to donate, as well as their interests in a dignified death, those individuals are dead\textsuperscript{xxii}. As Seema K. Shah, Robert D. Truog and Franklin G. Miller have aptly argued, DCD is based on an “anticipatory legal fiction” that serves the purposes of preventing harm and saving lives\textsuperscript{xxiii}.

\textsuperscript{xxi} Bastami, et. al., supra note 12.
\textsuperscript{xxiii} Supra note 12 at 721. In the Spanish legal system, as in many others, we have another famous legal fiction of the same sort: the consideration of having been born a fetus for all the consequences – namely inheriting- deemed as beneficial for him (see article 29 of the Spanish Civil Code).
It could be claimed that, in a sense, we are all dying, so there is no real difference between Mary and us. And yet, in common usage we do distinguish between “alive” and “dying”. It is proper to ask: “how have you been living lately?” and not “How have you been dying lately?” Or “How is your life going?” as opposed to “How is your dying process going?”

3. Concluding remarks: the challenges ahead

UK faces the fabulous challenge of surmounting its poor record of organ recovery. EV or DCD, in its two main manifestations, along with many other measures at the clinical and organizational levels, might be implemented for that goal. In the previous pages we have tried to show that the moral objections raised against EV are not decisive.

As to Spain, after being pioneers in enacting a law of presumed consent in 1979 and the normative change that allowed our hospitals to remove organs from donors after cardiac death with full legal backup since 1999, we have not dared to introduce controlled DCD to a significant extent. Regardless of our persistence in leading the rate of organ donation in the world, the time has come to do so because we are still far from meeting the organs’ demand.

But in Spain, the UK and elsewhere, there is a more phenomenal challenge. We have claimed that DCD is justified on distributive justice grounds and that, to the extent that it is linked to the medical care in the final stages of life, it coheres with the interests of the dying patients and their families. However, the current practice is not optimal given the fact that the organ’s removal might not be possible if the cessation of the cardio-circulatory function does not come about on time. Once the family has assumed the tragedy, the futility of the life-sustaining measures, the unavoidable and imminent death of their loved-one, a final relief comes in the form of a laudable gesture. And yet, it is often the case that things do not turn out as planned; the “death” has not occurred and because of that the organs are ultimately unsuited for transplantation and the dying patient returns to the ICU... to die. So in the very final stage we decide to throw the dices of nature, to let the arbitrary course of physiology have the final say, even if that implies

suffering and frustration for all the parties involved: the family who already understood, accepted and consented to donate; the transplantation team and those waiting for an organ. It seems unreasonable and unfair\textsuperscript{xxv}.

\textsuperscript{xxv} In those cases J. Savulescu and D. Wilkinson have argued for “organ donation euthanasia”; see Should We Allow Organ Donation Euthanasia? Alternatives for Maximizing the number and quality of organs for transplantation, Bioethics, 2012; 26: 32-48, 39-40.