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Citation for final published version:

Hammond-Browning, Natasha 2019. Uterus transplantation: five years after the world's first birth. BioNews (1022) file

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## Altruistic anonymous uterus donation – altruism at the highest level?

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The news broke on 5<sup>th</sup> October 2016 that Baylor Medical Center in the US had performed four uterus transplants. These transplants took place between 14<sup>th</sup> and 22<sup>nd</sup> September 2016, and at the date of the announcement only one uterus was still in situ. The other three uteruses had been removed after tests showed they were receiving insufficient blood flow.<sup>1</sup> Prior to this, 16 uterus donations have occurred worldwide, and so far only a research team in Sweden have carried out transplants that successfully produced live births.<sup>2</sup> The Swedish trial had involved donations from living persons. In one case this was from a family friend, while the other eight were from close family members - five from mothers of the recipients, and one from an aunt, mother-in-law, or sister.<sup>3</sup> Four of the recipients went on to have healthy babies (one is expecting her second child).

In February 2016, the Cleveland Clinic in the US performed a uterus transplant using a deceased donor; this was removed shortly after transplantation.<sup>4</sup> A UK team, Womb Transplant UK, also has ethical approval to perform up to ten transplants from deceased donors, with the first transplant due to go ahead in the near future.<sup>5</sup> The reasons for, and the ethics of, using living or deceased donors has been debated elsewhere, and I do not comment here on which is the preferred source.<sup>6</sup>

However, what is particularly interesting regarding the Baylor trial is that the donated uteruses came from living donors who were unknown to the recipients. Each donor had chosen to donate their uterus anonymously, to undergo a lengthy and, for them, medically unnecessary operation, knowing that the donation was part of a trial and therefore had a high chance of failure.

Altruistic anonymous donation is not unheard of and millions of people donate bodily materials that regenerate, such as blood and bone marrow. Kidney and liver donations to strangers are also on the rise. In the UK, non-directed (anonymous) altruistic living kidney and liver donations are permitted once the donor's medical suitability has been established and consent freely given. Understandably, non-directed altruistic living donation has to date been limited to kidneys and livers due to the fact that most people have two kidneys and are able to function with just one, or can survive well with part of their liver removed.

Uterus donation is very new. Whilst it is not unheard of for women to undergo a hysterectomy for a variety of health reasons, the decision to undergo a hysterectomy in order to donate a uterus to another is very rare.

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<sup>1</sup> Baylor Medical Center, Newsroom, *Uterine Transplant Clinical Trial Update* 5th Oct 2016

<http://media.baylorhealth.com/releases/uterine-transplant-clinical-trial-oct-5-2016>

<sup>2</sup> Brännström M *et al.*, *Livebirth after uterus transplantation* 14<sup>th</sup> Feb 2015 *The Lancet* Vol 385 p607

<sup>3</sup> Brännström M *et al.*, *First clinical uterus transplantation trial: six-month report* (2014) 101(5) *Fertility and Sterility* 1228-1236 at Table 3

<sup>4</sup> Cleveland clinic newsroom, *Update on 1<sup>st</sup> Uterus Transplant* 9<sup>th</sup> March 2016

[https://newsroom.clevelandclinic.org/2016/03/09/update-1st-uterus-transplant/?\\_ga=1.36451300.539383777.1476454296](https://newsroom.clevelandclinic.org/2016/03/09/update-1st-uterus-transplant/?_ga=1.36451300.539383777.1476454296)

<sup>5</sup> Womb Transplant UK, *UK Womb Transplant Research Team receives go-ahead to begin operations* 29<sup>th</sup> September 2015, <http://wombtransplantuk.org/uk-womb-transplant-research-team-receives-go-ahead-to-begin-operations>

<sup>6</sup> For example, Williams N, *Should Deceased Donation be Morally Preferred in Uterine Transplantation Trials?* (2016) 30(6) *Bioethics* 415-424

The clinical trials that are happening throughout the world require that the donor is either deceased, or if living has completed their family prior to donation. The living donors in the Swedish trial were nearly all family members of the recipient, with the exception of one family friend; the majority of people can understand the desire to help another family member, even when this help will require a major operation. In fact, in a systematic review to evaluate the advantages and disadvantages of living and brain-dead donors in uterus transplantation, it was noted that the Swedish team have argued for possible benefits to the donor, including that *'The donor may experience increased psychological well-being by helping a close relative or a good friend to give birth'*.<sup>7</sup> Whilst non-directed altruistic living donation is less common, we recognise the value in donating a kidney or part of a liver, due to the lifesaving and life-prolonging effect for the recipient. However, with uterus transplantation the living donor will personally receive no health benefit, and the donated organ is intended to be used only for a short period of time. The recipient's life will not be saved by the donation, but their quality of life could potentially be raised by the opportunity to carry a child.

Donation of the uterus is not a quick, risk-free procedure. Prospective living donors are put through extensive and time-consuming testing in order to ensure suitability of the donated uterus, as well as undergoing a lengthy hysterectomy procedure. In the Swedish trial, donors were in surgery for between 10-13 hours.<sup>8</sup> As Lavoué *et al* note, *'The main surgical risk is damaging the ureter,'* and this did occur in one of the donors in the Swedish trial, although the damage was repairable.<sup>9</sup> In light of this, and the reasons already stated, I would say that non-directed altruistic donation of a uterus is taking altruism to the next level. As the recipient is unknown, the donors will also not 'benefit' from seeing their family member (hopefully) achieve their desire of gestation and parenthood. The psychological benefits must therefore be minimal in a case of anonymous uterus donation. As Lavoué *et al* note *'...the living donor is exposed to the surgical risk and derives no or few benefit for herself.'*<sup>10</sup>

Altruism is when we act to promote someone else's welfare, even at a risk or cost to ourselves, however we normally know the person for whom we are acting altruistically, even if we have only met them briefly (for example, buying a homeless person a cup of coffee), and we often feel 'rewarded' for our good deed, even if it is with a small gesture such as a 'thank you'. The anonymous US donors have acted selflessly, at cost to themselves, and with no acknowledgement or reward that we know of. According to the Time report on the Baylor transplants, around 50 women volunteered to donate their wombs, surprising the doctors involved.<sup>11</sup> With this news, it is not only the doctors who are surprised, these women are truly selfless.

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<sup>7</sup> V Lavoué *et al* *Which donor for uterus transplants: Brain-dead donor or living donor? A systematic review* Transplantation, 8<sup>th</sup> Sept 2016 online

<sup>8</sup> Brännström M *et al.*, *First clinical uterus transplantation trial: six-month report* (2014) 101(5) Fertility and Sterility 1228-1236 at 1232

<sup>9</sup> V Lavoué *et al* *Which donor for uterus transplants: Brain-dead donor or living donor? A systematic review* Transplantation, 8<sup>th</sup> Sept 2016 online

<sup>10</sup> V Lavoué *et al* *Which donor for uterus transplants: Brain-dead donor or living donor? A systematic review* Transplantation, 8<sup>th</sup> Sept 2016 online

<sup>11</sup> Sifferlin A, *Exclusive: 4 Breakthrough Uterus Transplants Performed in the US* Time, 5<sup>th</sup> October 2016 <http://time.com/4517816/baylor-womb-uterus-transplants/>