



Comments on behalf of the British Transplantation Society

for the

National Institute for Health and Clinical Excellence's

Appraisal Consultation Document on

**Machine perfusion systems and solutions for cold (static) storage of
donated kidneys**

The British Transplantation Society welcomes the NICE appraisal of different methods to preserve kidneys prior to transplantation and would like to congratulate the Institute on the report given the paucity of data upon which to base a recommendation. Moreover we welcome the Institute's decision to perform an early review of its appraisal to assess data from the two ongoing studies of machine preservation.

One area that the Institute has not stressed is the deleterious effect of cold ischaemia that the preservation solutions and techniques are designed to ameliorate. It would be helpful to clinicians were the Institute to recommend that kidneys be transplanted with the shortest ischaemic times possible, and that transplant units need to have improved access to the appropriate facilities including operating theatre time to facilitate this.



Specific comments on the ACD

Specific comments are given below with a reference to the relative paragraph.

Paragraph 1.1.

Belzer produced two solutions that are referred to as Belzer University of Wisconsin solution. For the purposes of the ACD we recommend that NICE always refers to it as University of Wisconsin (ViaSpan) solution when referring to the solution made for static cold storage in order to remove any ambiguity.

Paragraph 2.2

The BTS suggest replacing the word nauseous with nauseated:

"Patients with established renal failure can become tired and **nauseated...**".

The word nauseous may be taken to mean either they feel sick or they make someone else feel sick.

Paragraph 2.4

"Kidney **transplantation**, which involves implanting a kidney from a donor, is the preferred therapeutic option where it is possible. Kidneys for **transplantation** may..."

We suggest that NICE use the word transplantation, rather than transplant, for the act of implanting the kidney.

Paragraph 2.5

"... the time that the organ spends deprived of oxygen before it is **cooled and retrieved....**"

The kidney is first cooled then retrieved. We suggest the word order is reversed as above.

Paragraph 2.7

"Successful **kidney transplantation** removes the need for dialysis ..."

Paragraph 2.8

This paragraph needs to be changed such that it clearly refers to deceased donor kidneys and not all kidneys. The data are not the same as those recorded by UK Transplant (the official body recording these data) and it is not clear where the Institute has obtained them. The UK Transplant website includes an official datafile which I suggest should be the source of your data:

(http://www.uktransplant.org.uk/ukt/statistics/calendar_year_statistics/pdf/yearly_statistics_2006.pdf).

The paragraph could thus be rewritten:

"In the UK in 2005, 76% of people accepted for renal replacement therapy started treatment with haemodialysis and 21% started treatment with peritoneal dialysis. Only 3% of patients received a kidney transplant before they started dialysis. There is increasing demand for kidney transplants; the waiting list has increased by 48% since 1998. Demand for kidneys outstrips supply. In the UK in 2006, **1403 deceased donor** kidneys were transplanted (from 765 **deceased kidney** donors); **6384** people were **active** on the **kidney** waiting list. Therefore, there is a need to increase kidney donation and to make donated kidneys function in the best possible way."

Paragraph 4.1.9

"One retrospective record review (58,607 kidneys transplanted) of kidneys from deceased donors included in the US Collaborative Transplant Study..."

The Collaborative Transplant Study is an international registry based in Heidelberg, Germany. It is not a US registry; indeed it is much more European than US.

Paragraph 4.1.10

The BTS remains uncertain as to the accuracy of the PenTAG data here. The original paper clearly shows a difference at longer ischaemic times. Were the authors consulted regarding the reworking of their data? This is important as it is the only piece of evidence concerning the effects of different solutions at longer ischaemic times.

Paragraph 4.2.4

The registries quoted in this paragraph have not been accurately cited. It should read: "... The characteristics of the cohort modelled were chosen to be consistent with data obtained from **UK Transplant** and **The Renal Registry ...**"

Paragraph 4.2.8

The institute should be mindful that the control group in the Machine Preservation Trial received either UW solution or HTK (Custodiol) solution, the latter being a different preservation solution and one that has not been appraised by NICE. The Institute might wish to consider how this affects the cost analysis which has been done assuming that all the controls received UW solution, which they did not. However the BTS acknowledge that this is another reason why definitive conclusions based on this study cannot be made pending formal publication of its results.

Paragraph 4.3.2

Early graft failure or non-function is also associated with a significantly increased risk of death in the ensuing months¹, something that the Institute might wish to mention in this paragraph.

Paragraph 4.3.6

The BTS is uncertain how the Institute could conclude that "machine perfusion may be marginally more clinically effective than Belzer UW solution for the storage of kidneys from deceased non-heart-beating donors" based upon evidence from two properly powered, randomised controlled trials that gave opposite results. It suggests a bias by the Institute. The BTS recommends that the Institute reconsiders this statement in favour of one which concurs with the statement at the foot of paragraph 4.3.7 in which the Institute states "The Committee concluded that the clinical effectiveness evidence did not allow it to distinguish between the LifePort kidney transporter and cold static storage for the storage of kidneys from non-heart-beating donors."

Appendix B.

The penultimate line of this section spells Donor as Doner. It should be changed to:
"Mr Tom Fearon, Chairman of and nominated by the British Organ **Donor** Society – patient expert"

¹ Macdonald SP and Russ GR. Nephrol Dial Transplant 2002;17: 2212-19
Ojo AO et al. J Am Soc Nephrol 2001;12: 589-97