

Table S1: Original and adjusted median and IQR scores for Round 1 following the exclusion of 22 participants who did not participate in Round 2. Changes are marked in bold.

		Median (IQR)	
		Original (all participants)	Participants of both rounds only
2	There should be an upper age limit of 80 years for listing for transplantation	5 (2-8)	5 (2-8)
3	There should be an upper age limit of 75 years for listing for transplantation	4 (2-7)	5 (2-7)
4	There should be an upper age limit of 70 years for listing for transplantation	2 (1-4)	2 (1-4.5)
5	There should be a maximum BMI exclusion criterion of 40 kg/m ²	6 (2-8)	6 (2-8)
6	There should be a maximum BMI exclusion criterion of 35 kg/m ²	5 (3-8)	5 (3-7)
7	There should be a maximum BMI exclusion criterion of 30 kg/m ²	2 (1-3)	2 (1-3)
8	There should be a minimum BMI exclusion criterion of 20 kg/m ²	2 (2-5)	2 (2-5)
9	There should be a minimum BMI exclusion criterion of 18 kg/m ²	5 (2-6)	5 (2-6)
10	The minimum cardiac work-up undertaken for patients being assessed for transplant listing should include at least an ECG and echocardiogram	7 (5-8)	7 (5-8)
11	The minimum cardiac work-up undertaken for patients being assessed for transplant listing should include a stress test	3 (2-4.75)	3 (2-4)
13	Asymptomatic coronary artery disease identified on pretransplant work up should be revascularised prior to listing for transplantation	5 (3-7)	5 (3-6)
In the evaluation of lower limb peripheral vascular disease, peripheral doppler studies should be done for:			
14	Asymptomatic older patients	5 (2-7)	5 (2-7)
15	All patients with diabetes	7 (4-8)	7 (4-8)
19	History of smoking	6 (4-8)	6 (4-8)

Patients should be routinely screened for malignancies as part of transplant assessment work up. All patients should be screened for:

20	prostate (men)	7 (5-8)	7 (5-8)
21	breast (women)	8 (6-8)	8 (6-8)
22	cervical (women)	8 (7-8)	8 (7-8)
24	colorectal	5 (3.25-8)	5 (3-8)
28	An MDT approach is needed when discussing all patients for listing for transplantation	7 (4-8)	7 (4-8)

The ATTOM Delphi Consensus Study

ATTOM: Access to Transplantation and Transplant Outcomes

This study asks consultant nephrologists and transplant surgeons about factors which affect patient listing for kidney transplantation. We are looking to identify areas of consensus in the renal consultant community.

This survey contains statements about transplant listing which you will be asked to rate. Please indicate how much you agree or disagree with each statement.

This survey is round 1 of the ATTOM Delphi consensus study and takes approximately 5 minutes to complete.

You will be sent a link for round 2 of the ATTOM Delphi study by email within 2 months. You will be provided with the results of the previous round, including the group average response and your previous answer. You will then be asked to rate the statements again. Round 2 will take 5 minutes to complete.

We hope that you will participate in order to help collect views of all consultants in your discipline. Please continue if you are happy to take part in both rounds of this study. Thank you for your consideration in taking part.

1. To indicate that you agree to take part in this study, please enter your details.

These details will not be shared with anyone else and will only be used to contact you for the second round of the study.

Name:

Nephrologist or
transplant surgeon?

Renal Unit:

Email Address:

Please record your agreement with each of the statements below by selecting the appropriate response.

All questions refer to first transplant listing and do not consider re-listing of patients.

2. Transplant work up protocol

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
A written transplant work up protocol is needed for assessment of patients to be listed for kidney transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Upper age limit for listing for transplantation

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
There should be an upper age limit of 80 years of age for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be an upper age limit of 75 years of age for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be an upper age limit of 70 years of age for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Maximum BMI criteria for transplant listing

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
There should be a maximum BMI exclusion criterion of 40 for listing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be a maximum BMI exclusion criterion of 35 for listing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be a maximum BMI exclusion criterion of 30 for listing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Minimum BMI criteria for transplant listing

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
There should be a minimum BMI exclusion criterion of 20 for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be a minimum BMI exclusion criterion of 18 for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Please enter any comments you have about any question on this page:



The ATTOM Delphi Consensus Study

Please record your agreement with each of the statements below by selecting the appropriate response.

All questions refer to first transplant listing and do not consider re-listing of patients.

7. Cardiac work up in assessment for listing

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
The minimum cardiac work-up undertaken for all patients being assessed for transplant listing should include at least an ECG and ECHO.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The minimum cardiac work-up undertaken for all patients being assessed for transplant listing should include a stress test (e.g. exercise tolerance test, thallium stress test, stress echocardiography, dobutamine stress tc scan).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Cardiac assessment

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
Cardiac assessment for patients undergoing listing for transplantation should be stratified by risk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Asymptomatic coronary artery disease

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
Asymptomatic coronary artery disease identified on pre transplant work up should be revascularised prior to listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. In the evaluation of lower limb peripheral vascular disease, peripheral doppler studies should be done for:

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
Asymptomatic older patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All patients with diabetes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Symptomatic patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asymptomatic patients with poor peripheral pulses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patients with asymptomatic bruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
History of smoking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Please enter any comments you have about any question on this page:

Please record your agreement with each of the statements below by selecting the appropriate response.

All questions refer to first transplant listing and do not consider re-listing of patients.

12. All patients should be routinely screened for age and gender appropriate malignancies as listed below as part of transplant work up.

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
Prostate (men)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Breast (women)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cervical (women)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Colorectal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bladder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lung	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Patient compliance

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
Poor compliance (taking medication and/or clinic attendance) should be a factor which influences listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Multi-disciplinary team approach to listing

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
An MDT approach is needed when discussing all patients for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An MDT approach is needed when discussing complex/borderline patients for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Please enter any further comments you have about any of the questions, or this survey, here:

The ATTOM Delphi Consensus Study

Thank you for completing this survey.

The survey for round 2 will be emailed to you within 2 months.

Please look out for emails in your inbox entitled "ATTOM Delphi Study".

Please contact Dr. Sarah Tonkin-Crine at the University of Southampton if you have any queries about this study.

Email: S.K.Tonkin-Crine@soton.ac.uk.

Telephone: 02380 241080

Important: Please note that once you have clicked "done" your responses cannot be changed and you will not be able to open this survey again.

ATTOM Delphi Consensus Study - Round 2

ATTOM: Access to Transplantation and Transplant Outcomes

This is round 2 of the ATTOM delphi consensus study and takes approximately 5 minutes to complete. You have been invited as you previously completed round 1 of the study.

You have been sent your previous answers and the group responses by email. You have the option of changing your answer from round 1 if you wish.

1. Please enter your name and renal unit so that we can match your responses from each round.

Name:

Renal Unit:

ATTOM Delphi Consensus Study - Round 2

Please record your agreement with each of the statements below by selecting the appropriate response.

All questions refer to first transplant listing and listing for a deceased donor kidney. These statements do not consider re-listing of patients or live donor transplantation.

2. Upper age limit for listing for transplantation.

Please respond to each statement individually. For example, if you agree there should be an upper age limit of 75 years, please disagree with the other two statements.

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
There should be an upper age limit of 80 years of age for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be an upper age limit of 75 years of age for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be an upper age limit of 70 years of age for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Maximum BMI criteria for transplant listing.

Please respond to each statement individually. For example, if you agree there should be a maximum BMI exclusion criterion of 35, please disagree with the other two statements.

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
There should be a maximum BMI exclusion criterion of 40 for listing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be a maximum BMI exclusion criterion of 35 for listing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be a maximum BMI exclusion criterion of 30 for listing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Minimum BMI criteria for transplant listing.

Please respond to each statement individually. For example, if you agree there should be a minimum BMI exclusion criterion of 20, please disagree with the other statement.

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
There should be a minimum BMI exclusion criterion of 20 for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be a minimum BMI exclusion criterion of 18 for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Please enter any comments here:

ATTOM Delphi Consensus Study - Round 2

Please record your agreement with each of the statements below by selecting the appropriate response.

All questions refer to first transplant listing and listing for a deceased donor kidney. These statements do not consider re-listing of patients or live donor transplantation.

6. Cardiac work up in assessment for listing

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
The minimum cardiac work-up undertaken for all patients being assessed for transplant listing should include at least an ECG and ECHO.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The minimum cardiac work-up undertaken for all patients being assessed for transplant listing should include a stress test (e.g. exercise tolerance test, thallium stress test, stress echocardiography, dobutamine stress tc scan).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Asymptomatic coronary artery disease

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
Asymptomatic coronary artery disease identified on pre transplant work up should be revascularised prior to listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. In the evaluation of lower limb peripheral vascular disease, peripheral doppler studies should be done for:

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
Asymptomatic older patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All patients with diabetes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
History of smoking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Please enter any comments here:

Please record your agreement with each of the statements below by selecting the appropriate response.

All questions refer to first transplant listing and listing for a deceased donor kidney. These statements do not consider re-listing of patients or live donor transplantation.

10. All patients should be routinely screened for age and gender appropriate malignancies as listed below as part of transplant work up.

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
Prostate (men) (by PSA)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Breast (women) (by mammography, out with National Screening Programme)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cervical (women) (by cervical smear, out with National Screening Programme)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Colorectal (by FOB, out with National Screening Programme)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Multi-disciplinary team approach to listing

	Strongly disagree	Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Agree	Strongly Agree
An MDT approach is needed when discussing all patients for listing for transplantation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Please enter any comments here:

ATTOM Delphi Consensus Study - Round 2

Thank you for completing this survey.

Please contact Dr. Sarah Tonkin-Crine at the University of Southampton if you have any queries about this study.

Email: S.K.Tonkin-Crine@soton.ac.uk.

Important: Please note that once you have clicked "done" your responses cannot be changed

and you will not be able to open this survey again.