**ABDOMINAL AORTIC ANEURYSM STUDY**  
National Confidential Enquiry into Patient Outcome and Death (NCEPOD)

**ANAESTHETIC QUESTIONNAIRE**

### What is this study about?
NCEPOD will be reviewing clinical and organisational issues in the delivery of care to patients who undergo repair of Abdominal Aortic Aneurysms (AAAs), and also patients that are diagnosed with an AAA and die in hospital not having received surgery. Data will be collected for a two-month period from all sites across England, Wales, Northern Ireland, Isle of Man, Guernsey, Defence and the Independent sector. Elective and emergency procedures (conventional and endovascular) carried out by vascular surgeons, general surgeons and interventional radiologists will be included.

This work is supported by the Vascular Surgical Society of Great Britain and Ireland (VSSGBI), the Vascular Anaesthetic Society of Great Britain and Ireland (VASGBI) and the Royal College of Radiologists.

### NCEPOD and the National Vascular Database
Some vascular surgeons contribute to the National Vascular Database. This study will address the care of AAA patients across all specialities and include those that are not operated on.

### Inclusion Criteria for this study:
All adults (≥16 years of age) who either:
- underwent elective or emergency AAA repair (conventional or endovascular) between 1st Feb and 31st March 2004 inclusive. (OPCS Codes: L18.3, L18.4, L18.5, L18.6, L18.8, L18.9, L19.3, L19.4, L19.5, L19.6, L19.8, L19.9) OR
- were admitted with a primary diagnosis of AAA between 1st Feb and 31st March 2004 inclusive but did not undergo surgery and subsequently died in hospital during the same hospital episode (ICD10 codes: I71.0, I71.3, I71.4, I71.8, I71.9).

### Specific exclusions are:
Repeat operations for AAA repairs that are for complications of a previous operation coded as one of the following OPCS codes: L18.3, L18.4, L18.5, L18.6, L18.8, L18.9, L19.3, L19.4, L19.5, L19.6, L19.8, L19.9.

If this patient underwent a repeat operation, please return this questionnaire to the NCEPOD Local Reporter.

### Who should complete this questionnaire?
If you have received this questionnaire, it is because you were the consultant anaesthetist directly involved in the AAA repair, or were supervising the anaesthesia for an AAA repair. Questionnaires have also been sent to the consultant surgeon and radiologist (where applicable) involved.

Please return completed questionnaires to NCEPOD, either directly or via the Local Reporter.

### How to complete this questionnaire
This form will be electronically scanned. Please use a black or blue pen. Please complete all questions with either block capitals or a bold cross inside the boxes provided e.g.

**Was an epidural catheter inserted?**
- Yes
- No
- Unknown

If you make a mistake, please “black-out” the box and re-enter the correct information e.g.

**Was an epidural catheter inserted?**
- Yes
- No
- Unknown

Unless indicated, please cross only one box per question. A list of definitions is provided on the back of the questionnaire. Free space is provided on page 7 for your comments.

Incomplete questionnaires may be followed up.

### Questions or help
If you have any queries about the study or this questionnaire, please contact NCEPOD at AAA@ncepod.org.uk or Tel: 020 7920 0999

Thank you for taking the time to complete this questionnaire. The findings of the study will be published in late 2005.
1. Age on admission

(Patients <16 years are excluded)

2. Gender

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
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<tbody>
<tr>
<td>[ ]</td>
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</tbody>
</table>

**B - DRUGS**

3. Was the patient taking beta-blockers prior to this hospital admission?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
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</tbody>
</table>

4. Was the patient started on beta-blockers perioperatively?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
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</tbody>
</table>

5. Was the patient taking statins at the time of the operation?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
</tr>
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<tbody>
<tr>
<td>[ ]</td>
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</table>

**C - PREOPERATIVE INVESTIGATIONS**

6. Did the patient undergo any of the following investigations within 6 months prior to surgery?

   Please cross ALL that apply

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>UNKNOWN</th>
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</thead>
<tbody>
<tr>
<td>[ ]</td>
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<td>[ ]</td>
</tr>
</tbody>
</table>

   a. Transthoracic echocardiography

      If yes, did the result affect the management?

      | Yes | No | Unknown |
      |-----|----|---------|
      | [ ] | [ ] | [ ]    |

   b. Radionuclide ventriculography (MUGA)

      If yes, did the result affect the management?

      | Yes | No | Unknown |
      |-----|----|---------|
      | [ ] | [ ] | [ ]    |

   c. Stress myocardial perfusion scan

      If yes, did the result affect the management?

      | Yes | No | Unknown |
      |-----|----|---------|
      | [ ] | [ ] | [ ]    |

   d. Exercise ECG

      If yes, did the result affect the management?

      | Yes | No | Unknown |
      |-----|----|---------|
      | [ ] | [ ] | [ ]    |

   e. Ambulatory 24-hour ECG

      If yes, did the result affect the management?

      | Yes | No | Unknown |
      |-----|----|---------|
      | [ ] | [ ] | [ ]    |

   f. Dobutamine stress echocardiography

      If yes, did the result affect the management?

      | Yes | No | Unknown |
      |-----|----|---------|
      | [ ] | [ ] | [ ]    |

   g. Coronary angiography

      If yes, did the result affect the management?

      | Yes | No | Unknown |
      |-----|----|---------|
      | [ ] | [ ] | [ ]    |

7. Was the patient assessed by a cardiologist preoperatively?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
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<tbody>
<tr>
<td>[ ]</td>
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</table>
8. Did the patient have coronary angioplasty as part of their preoperative work up?  
   - [ ] Yes  
   - [ ] No  
   - [ ] Unknown

9. Did the patient have coronary artery bypass as part of their preoperative work up?  
   - [ ] Yes  
   - [ ] No  
   - [ ] Unknown

<table>
<thead>
<tr>
<th>D - THE ANAESTHETIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Grade of most senior anaesthetist present at start of anaesthesia</td>
</tr>
<tr>
<td>- [ ] Consultant</td>
</tr>
<tr>
<td>- [ ] Associate Specialist</td>
</tr>
<tr>
<td>- [ ] Staff Grade</td>
</tr>
<tr>
<td>- [ ] SpR year 3+</td>
</tr>
<tr>
<td>- [ ] SpR year 1/2</td>
</tr>
<tr>
<td>- [ ] SHO</td>
</tr>
<tr>
<td>- [ ] Other</td>
</tr>
<tr>
<td>- [ ] Unknown</td>
</tr>
</tbody>
</table>

11. Did a more senior anaesthetist take responsibility at any time during the operation?  
   - [ ] Yes  
   - [ ] No  
   - [ ] Unknown

   a. If YES, grade of more senior anaesthetist taking responsibility during the operation
   - [ ] Consultant |
   - [ ] Associate Specialist |
   - [ ] Staff Grade |
   - [ ] SpR year 3+ |
   - [ ] SpR year 1/2 |
   - [ ] SHO |
   - [ ] Other |
   - [ ] Unknown |

12. Information about the most senior anaesthetist involved in the operation

   a. Is the most senior anaesthetist a member of the Vascular Anaesthetic Society of Great Britain & Ireland?  
      - [ ] Yes  
      - [ ] No  
      - [ ] Unknown

   b. How many AAA repairs did the most senior anaesthetist give an anaesthetic for in the year April 2002 - March 2003?  
      - [ ] Elective  
      - [ ] Emergency  
      - [ ] Unknown

   i. Where was this information obtained?  
      - [ ] Log book/information system
      - [ ] Memory
### E - THE ANAESTHETIC

#### 13. Date of anaesthetic

<table>
<thead>
<tr>
<th></th>
<th>d</th>
<th>d</th>
<th>m</th>
<th>m</th>
<th>y</th>
<th>y</th>
</tr>
</thead>
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#### 14. Was an epidural catheter inserted preoperatively?

- [ ] Yes
- [ ] No
- [ ] Unknown

**b** If YES,

1. Did the patient receive aspirin in the seven days before surgery?
   - [ ] Yes
   - [ ] No
   - [ ] Unknown

2. Did the patient receive subcutaneous unfractionated heparin in the 6 hours before surgery?
   - [ ] Yes
   - [ ] No
   - [ ] Unknown

3. Did the patient receive fractionated heparin in the 12 hours before surgery?
   - [ ] Yes
   - [ ] No
   - [ ] Unknown

4. What date was the epidural catheter removed?
<table>
<thead>
<tr>
<th></th>
<th>d</th>
<th>d</th>
<th>m</th>
<th>m</th>
<th>y</th>
<th>y</th>
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</table>

#### 15. Intraoperative blood loss

- [ ] <500ml
- [ ] 500ml – 1L
- [ ] 1L – 5L
- [ ] >5L
- [ ] Unknown

*Please cross **ALL** that apply*

#### 16. Transfusion and related drugs given intraoperatively

1. None
2. Aprotinin
3. Bank platelets
4. Bank red cells (autologous, preoperative donation)
5. Bank red cells (homologous transfusion)
6. Fresh frozen plasma
7. Haemodilution
8. Intra-operative cell salvage
9. Tranexamic acid
10. Other
11. Unknown
17. a Patient temperature at end of operation
1 □ >36°C
2 □ 34°C – 36°C
3 □ <34°C
4 □ Unknown

b Site of temperature
1 □ Axillary
2 □ Nasopharyngeal
3 □ Oesophageal
4 □ Tympanic
5 □ Other
6 □ Unknown

18. Was a pulmonary artery flotation catheter used intraoperatively?
□ Yes □ No □ Unknown

19. Was cardiac output measured intraoperatively?
□ Yes □ No □ Unknown

20. Total cross-clamp time
(See definition at end of questionnaire)
□ □ □ minutes □ Unknown

21. Were any inotropes used?
(See definition at end of questionnaire)
□ Yes □ No □ Unknown

22. Were any vasoconstrictors used?
(See definition at end of questionnaire)
□ Yes □ No □ Unknown

23. Did the patient die in theatre?
□ Yes □ No □ Unknown
If YES, please go to question 26b

F - RECOVERY

24. What was the immediate destination of the patient after the operation?
(See definitions at end of questionnaire)
□ Recovery area
□ Level 3 care (e.g. ICU)
□ Level 2 care (e.g. HDU)
□ Level 1 care - vascular surgical ward
□ Level 1 care - general surgical ward
□ Another hospital
□ Other
□ Unknown

Please do not cross recovery area if the patient only received immediate post-anaesthetic care before transfer to one of the other destinations listed.
25. Were the patient’s lungs ventilated mechanically postoperatively?

1  No
2  < 4 hours
3  4 - 24 hours
4  > 24 and < 72 hours
5  > 72 hours
6  Unknown

G - PATIENT OUTCOME

26. a  Did the patient die in hospital following this AAA repair

☐ Yes  ☐ No  ☐ Unknown

If NO, please go to question 26c

b  If YES, Please cross ALL that apply

i  What was the mode of death?

1  Cardiac Failure
2  CVA
3  Ischaemic bowel
4  Multi-organ dysfunction syndrome
5  Renal failure
6  Respiratory failure
7  Sepsis
8  Other
9  Unknown

ii  What was the cause of death stated on the death certificate?

1a  [Space for cause of death]
1b  [Space for cause of death]
1c  [Space for cause of death]
2  [Space for cause of death]

c  Date of death/discharge (if applicable)  

☐  d  ☐  d  ☐  m  ☐  m  ☐  y  ☐  y
27. Please write clearly any additional observations you wish to report about the management of this patient.

Thank you for taking the time to complete this questionnaire

SAMPLE ONLY
## Definitions

### E – The anaesthetic

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Total cross-clamp time</td>
<td>Time to removal of all clamps. This will include any periods of temporary clamping and re-clamping.</td>
</tr>
<tr>
<td>21. Were any inotropes used?</td>
<td>Please indicate if any drugs were given for inotropic effect. e.g. epinephrine, dobutamine.</td>
</tr>
<tr>
<td>22. Were any vasoconstrictors used?</td>
<td>Please indicate if any drugs were given for vasoconstrictor effect e.g. metaraminol, phenylephrine, norepinephrine.</td>
</tr>
</tbody>
</table>

### F – Recovery

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>DEFINITION</th>
</tr>
</thead>
</table>
| 24. Immediate destination of patient after operation | **Recovery**: Patient spent a substantial period of time in recovery. Do not cross if the patient only received immediate post-anaesthetic care before transfer to one of the other destinations listed below.  
**Level 3 care**: Patients requiring advanced respiratory support alone or basic respiratory support together with support of at least two organ systems. This level includes all complex patients requiring support for multi-organ failure.  
**Level 2 care**: Patients requiring more detailed observation or intervention including support for a single failing organ system or post-operative care and those “stepping down” from higher levels of care. This could be a separate High Dependency Unit (HDU) or a high dependency area on a ward.  
**Level 1 care**: Patients at risk of their condition deteriorating, or those recently relocated from higher levels of care, whose needs can be met on an acute ward with additional advice and support from the critical care team. Vascular surgical and general surgical wards would provide Level 1 care.  
**Vascular surgical ward**: Ward in which 50% or more of patients are admitted under the care of a vascular surgeon or a general surgeon with a vascular interest.  
**General surgical ward**: Ward in which less than 50% of patients are admitted under the care of a vascular surgeon or a general surgeon with a vascular interest. |