LOWER LIMB AMPUTATION STUDY
National Confidential Enquiry into Patient Outcome and Death (NCEPOD)

CONFIDENTIAL

Who completed this questionnaire?

Name: ____________________________

Position: __________________________

What is this study about?

NCEPOD is examining remediable factors in the process of care of patients (16 years or older) requiring lower limb amputation (above or below knee) for complications of peripheral vascular disease and/or diabetes mellitus.

Inclusions

Patients who undergo one of the following procedure codes will be included in the study:

• X09 - Amputation of leg
• X12 - Operations on amputation stump

Exclusions

This study does not include patients undergoing a major lower limb amputation for either trauma or malignancy.

How to complete the form:

Information will be collected using two methods; box cross and free text, where your opinion will be requested.

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.

Do surgeons in your hospital perform major lower limb amputations (above-knee, through-knee below-knee) for complications of peripheral vascular disease and/or diabetes mellitus?

☒ Yes ☐ No

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

☐ Yes ☒ No

Unless indicated, please mark only one box per question.

CPD accreditation:

Consultants who complete NCEPOD questionnaires make a valuable contribution to the investigation of patient care. Completion of questionnaires also provides an opportunity for consultants to review their clinical management and undertake a period of personal reflection. These activities have a continuing medical and professional development value for individual consultants. Consequently, NCEPOD recommends that consultants who complete NCEPOD questionnaires keep a record of this activity which can be included as evidence of internal/self directed Continuous Professional Development in their appraisal portfolio.

If you (the clinician completing the questionnaire) would like email confirmation of the completion of this questionnaire for your records, please clearly supply your email address below.

Questions or help?

A list of definitions is provided on page 2 of the questionnaire.

If you have any queries about this study or this questionnaire, please contact amputation@ncepod.org.uk

Or telephone: 020 7251 9060

Thank you for taking the time to complete this questionnaire. The findings of the study will be published in late 2014.
### Definitions

<table>
<thead>
<tr>
<th>ASA status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA 1:</td>
<td>A normal healthy patient</td>
</tr>
<tr>
<td>ASA 2:</td>
<td>A patient with a mild systemic disease</td>
</tr>
<tr>
<td>ASA 3:</td>
<td>A patient with a severe systemic disease</td>
</tr>
<tr>
<td>ASA 4:</td>
<td>A patient with a severe systemic disease that is a constant threat to life</td>
</tr>
<tr>
<td>ASA 5:</td>
<td>A moribund patient who is not expected to survive the operation (American Society of Anaesthesiologists)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical assessment unit (MAU, SAU, etc)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>An area where emergency patients are assessed and initial management undertaken by inpatient hospital teams. The patient is only in this area while early assessment is made and is then moved to another ward or discharged. The working of these units varies; some are purely for medical or surgical cases (MAU, SAU etc.) while some function across various specialties (CDU, AAU).</td>
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</table>

<table>
<thead>
<tr>
<th>Vascular Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A vascular service providing 24/7 access to vascular surgeons and interventional radiologists. This would be defined as a hub in a network that relies on a hub and spoke relationship to provide vascular services for a number of hospitals.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Diabetic Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A diabetes service providing a range of specialist multidisciplinary outpatient clinics and inpatient diabetes care led by consultant diabetes specialists supported by diabetes specialist nurses and dietitians.</td>
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</table>

<table>
<thead>
<tr>
<th>Diabetic Foot Clinic</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A multidisciplinary clinic providing assessment and management of acute and ongoing diabetic foot lesions including ulcers, foot infection, neuropathic lesions, Charcot neuroarthropathy and lower limb ischaemia. This team also focuses on ulcer prevention and prevention of recurrence, through offloading, education and ongoing foot care. This team would usually include a consultant diabetologist, diabetes specialist nurse and or tissue viability nurse, specialist podiatrist, working alongside or with timely access to vascular surgeons, interventional radiologists, orthopaedic surgeons, orthotist and microbiologist.</td>
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<table>
<thead>
<tr>
<th>Levels of ward care</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Level 0: Patients whose needs can be met through normal ward care in an acute hospital.</td>
<td></td>
</tr>
<tr>
<td>Level 1: 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.</td>
<td></td>
</tr>
<tr>
<td>Level 2: (e.g. HDU) 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. (NB: When Basic Respiratory and Basic Cardiovascular support are provided at the same time during the same critical care spell and no other organ support is required, the care is considered to be Level 2 care).</td>
<td></td>
</tr>
<tr>
<td>Level 3: (e.g. ICU) Patients requiring advanced respiratory support alone or basic respiratory support together with support of at least two organs. This level includes all complex patients requiring support for multi-organ failure. (NB: Basic Respiratory and Basic Cardiovascular do not count as 2 organs if they occur simultaneously (see above under Level 2 care), but will count as Level 3 if another organ is supported at the same time).</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Fontaine score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I: Asymptomatic</td>
<td></td>
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<tr>
<td>Stage II: Intermittent claudication</td>
<td></td>
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<tr>
<td>Stage III: Ischaemic rest pain</td>
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<tr>
<td>Stage IV: Ulceration or gangrene, or both</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Formal regional care network</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal hub and spoke relationship between vascular or diabetic services and linked district general hospitals.</td>
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</table>

<table>
<thead>
<tr>
<th>Informal regional care network</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Ad hoc arrangements for the transfer of individual patients requiring more specialist care (vascular, diabetic, renal, anaesthetic) than is available at either a spoke or hub hospital which is outside the usual referral pathway</td>
<td></td>
</tr>
<tr>
<td>CODES FOR SPECIALTY</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td><strong>SURGICAL SPECIALTIES</strong></td>
<td>100 = General Surgery</td>
</tr>
<tr>
<td>101 = Urology</td>
<td>110 = Trauma &amp; Orthopaedics</td>
</tr>
<tr>
<td>103 = Breast Surgery</td>
<td>120 = Ear, Nose &amp; Throat (ENT)</td>
</tr>
<tr>
<td>104 = Colorectal Surgery</td>
<td>130 = Ophthalmology</td>
</tr>
<tr>
<td>105 = Hepatobiliary &amp; Pancreatic Surgery</td>
<td>140 = Oral Surgery</td>
</tr>
<tr>
<td>106 = Upper Gastrointestinal Surgery</td>
<td>145 = Maxillo-Facial Surgery</td>
</tr>
<tr>
<td>300 = General Medicine</td>
<td>330 = Dermatology</td>
</tr>
<tr>
<td>301 = Gastroenterology</td>
<td>340 = Respiratory Medicine</td>
</tr>
<tr>
<td>302 = Endocrinology</td>
<td>350 = Infectious Diseases</td>
</tr>
<tr>
<td>303 = Clinical Haematology</td>
<td>352 = Tropical Medicine</td>
</tr>
<tr>
<td>306 = Hepatology</td>
<td>360 = Genito-Urinary Medicine</td>
</tr>
<tr>
<td>307 = Diabetic Medicine</td>
<td>361 = Nephrology</td>
</tr>
<tr>
<td>314 = Rehabilitation</td>
<td>370 = Medical Oncology</td>
</tr>
<tr>
<td>315 = Palliative Medicine</td>
<td>400 = Neurology</td>
</tr>
<tr>
<td>320 = Cardiology</td>
<td>410 = Rheumatology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CODES FOR GRADE</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>01 – Consultant</td>
<td>02 – Staff grade/Associate specialist</td>
<td></td>
</tr>
<tr>
<td>03 – Trainee with CCT</td>
<td>04 – Senior specialist trainee (ST3+ or equivalent)</td>
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</tr>
<tr>
<td>05 – Junior specialist trainee (ST1&amp;ST2 or CT equivalent)</td>
<td>06 – Basic grade (HO/FY1 or SHO/FY2 or equivalent)</td>
<td></td>
</tr>
<tr>
<td>07 - Nursing</td>
<td>08 - Physiotherapy</td>
<td></td>
</tr>
<tr>
<td>09 - Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please provide a brief summary of this case, adding any comments or information you feel relevant, (please write clearly for the benefit of the specialist advisory group who will be reviewing the questionnaires). You may also type on a separate sheet. You may like to fill in the summary once you have completed the rest of the questionnaire.

NCEPOD attaches great importance to this summary. Please give as much information as possible about the care of this patient.
A. PATIENT DETAILS

1. Age at time of the major amputation to which this questionnaire relates: 

2. Gender:  □ Male  □ Female

B. ADMISSION DETAILS

3a. Date of admission:  □  □  □  □  □  □  □  Unknown
d d m m y y y

3b. Time of admission:  □  □  Unknown (24 hour clock)  □  Unknown
h h m m

4. Admission category
   □ Elective  A time agreed between the patient and surgical service
   □ Planned (urgent)  Within 48 hours of referral/consultation
   □ Emergency  Immediately following referral/consultation, where admission is unexpected and at short notice because of clinical need

5. What was the diagnosis on admission?

6. What was the patient’s ASA status on ADMISSION? (Please tick one box only)
   □ ASA 1  □ ASA 2  □ ASA 3  □ ASA 4  □ ASA 5

7a. What was the pathway of the admission?
   □ i) Elective admission from waiting list
   □ ii) Unplanned admission
   □ iii) Planned urgent admission following a previous vascular surgery outpatient appointment
   □ iv) Unplanned admission following vascular surgery outpatient appointment
   □ v) Inpatient referral (unplanned admission)
   □ vi) Seen in another specialty’s clinic (unplanned admission)
   □ vii) Emergency department (unplanned admission)
   □ viii) Transfer of an inpatient from another hospital
7b. Please indicate source of referral:

- [ ] General Practitioner
- [ ] Diabetes/Foot Clinic
- [ ] Trauma & Orthopaedics
- [ ] District nurse
- [ ] Community podiatrist
- [ ] Other (please specify)

- [ ] Care of the elderly
- [ ] Other medical specialty
- [ ] Renal unit
- [ ] Community diabetic nurse/clinic
- [ ] Community leg/foot ulcer clinic

- [ ] Dermatology
- [ ] General surgery
- [ ] Vascular surgery

8a. Was the patient on a waiting list for an amputation?  
- [ ] Yes
- [ ] No
- [ ] Unknown

8b. If YES, what date was the patient added to the waiting list?  
- [ ] dd
- [ ] mm
- [ ] yy
- [ ] Unknown

8c. If YES to 8a, was this the same amputation that the patient subsequently underwent?  
- [ ] Yes
- [ ] No
- [ ] Unknown

8d. If NO to 8c, please specify the type of amputation originally planned?

**Amputation of leg**

- [ ] X09.1 – Hindquarter amputation
- [ ] X09.3 – Amputation of leg above knee
- [ ] X09.5 – Amputation of leg below knee
- [ ] X09.9 – Unspecified

- [ ] X09.2 – Disarticulation of hip
- [ ] X09.4 – Amputation of leg through knee
- [ ] X09.8 – Other specified

**Operations on amputation stump**

- [ ] X12.1 – Re-amputation at higher level
- [ ] X12.9 – Unspecified

- [ ] X12.8 – Other specified

- [ ] X12.2 – Other specified

**Other**

- [ ] Guillotine/Staged amputation
- [ ] Other (please specify)

8e. If YES to 8a, had the patient’s planned admission been cancelled on a previous occasion?  
- [ ] Yes
- [ ] No
- [ ] Unknown

8f. If YES to 8e, on how many occasions?  
- [ ] dd
- [ ] mm
- [ ] yy
- [ ] Unknown

8g. If YES to 8e, was it cancelled for any other reason other than a clinical one relating specifically to the patient?  
- [ ] Yes
- [ ] No
- [ ] Unknown

8h. If YES to 8e, please give details:
9a. In your opinion, did the time spent waiting for the operation affect the outcome?  □ Yes  □ No  □ Unknown

9b. If YES, please give details:


10. To what type of area was the patient first admitted?

☐ General ward  ☐ Specialist vascular ward  ☐ Assessment ward

☐ Level 2 (HDU)  ☐ Diabetic/Endocrine ward  ☐ Renal ward

☐ Level 3 (ITU)  ☐ Other (please specify)

C. HOSPITAL TRANSFERS

If the patient was not transferred between hospitals prior to surgery please go to question 16a
If the patient was transferred:

11a. In your opinion was there any delay in transfer to the vascular unit?  □ Yes  □ No  □ Unknown

11b. If YES, what was the reason for the delay?


12. If transferred from another hospital was this:

☐ A protocol based transfer within a network (i.e. planned service arrangement (hub & spoke))

☐ A transfer outside of an existing protocol (i.e. an unplanned/emergency transfer)

13. Why was the patient transferred?

☐ Vascular surgery not available at referring hospital

☐ No Level 2 or 3 bed available at referring hospital

☐ Need for other specialist services, e.g. renal dialysis

☐ Receiving hospital was closer to patient’s home

☐ Other (please specify)

14. What was the urgency of the transfer?  □ Urgent  □ Non urgent  □ Unknown

15a. What was the date of the transfer?  □ d d  □ m m  □ y y y y  □ Unknown

15b. What was the time of the transfer?  □ h h  □ m m  (24 hour clock)  □ Unknown
### D. INITIAL ASSESSMENT FOLLOWING ADMISSION

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>16a. What was the grade of doctor responsible for the first assessment</td>
<td>[ ] [ ] [ ] [ ] Unknown</td>
</tr>
<tr>
<td>following admission to the hospital? (Please use grade codes on page 3)</td>
<td></td>
</tr>
<tr>
<td>16b. What was the specialty of doctor responsible for the first assessment</td>
<td>[ ] [ ] [ ] [ ] Unknown</td>
</tr>
<tr>
<td>following admission to the hospital? (Please use specialty codes on page 3)</td>
<td></td>
</tr>
<tr>
<td>17a. What was the date of the first documented assessment by a member of</td>
<td>[ ] [ ] [ ] [ ] [ ] Unknown</td>
</tr>
<tr>
<td>the vascular team?</td>
<td></td>
</tr>
<tr>
<td>17b. What was the time of the first documented assessment by a member of</td>
<td>[ ] [ ] [ ] (24 hour clock) Unknown</td>
</tr>
<tr>
<td>the vascular surgical team?</td>
<td></td>
</tr>
<tr>
<td>17c. What was the grade of doctor responsible for the first assessment</td>
<td>[ ] [ ] [ ] Unknown</td>
</tr>
<tr>
<td>following the transfer of care to a vascular surgeon? (Please use grade</td>
<td></td>
</tr>
<tr>
<td>codes on page 3)</td>
<td></td>
</tr>
<tr>
<td>18a. If not admitted directly to vascular surgery, was there formal</td>
<td>[ ] Yes [ ] No [ ] Unknown</td>
</tr>
<tr>
<td>regular input from vascular surgery to the specialty under which the</td>
<td></td>
</tr>
<tr>
<td>patient was first admitted?</td>
<td></td>
</tr>
<tr>
<td>18b. If YES, what did this constitute?</td>
<td>[ ] Weekly ward round [ ] Review as required [ ] On call service only/referral service</td>
</tr>
<tr>
<td></td>
<td>[ ] Other (please specify)</td>
</tr>
<tr>
<td>19a. Where there any comorbidities present at the time of admission?</td>
<td>[ ] Type 1 diabetes [ ] Type 2 diabetes [ ] Respiratory disease</td>
</tr>
<tr>
<td></td>
<td>[ ] Chronic kidney disease (≥stage 3; GFR &lt;60) [ ] Kidney dialysis</td>
</tr>
<tr>
<td></td>
<td>[ ] Hypertension (requiring medication) [ ] Previous TIA</td>
</tr>
<tr>
<td></td>
<td>[ ] Previous stroke [ ] Atrial fibrillation [ ] Angina</td>
</tr>
<tr>
<td></td>
<td>[ ] Previous myocardial infarction [ ] Congestive cardiac failure</td>
</tr>
<tr>
<td></td>
<td>[ ] Previous coronary stent insertion or CABG [ ] Obesity</td>
</tr>
<tr>
<td></td>
<td>[ ] Previous peripheral vascular stent insertion/reconstruction</td>
</tr>
<tr>
<td></td>
<td>[ ] Concurrent sepsis [ ] Current smoker [ ] Dyslipidaemia</td>
</tr>
<tr>
<td></td>
<td>[ ] Other (please specify)</td>
</tr>
<tr>
<td>19b. If YES, was there potential to improve or control any of the</td>
<td>[ ] Yes [ ] No [ ] Unknown</td>
</tr>
<tr>
<td>comorbidities present?</td>
<td></td>
</tr>
<tr>
<td>19c. If YES, please give details:</td>
<td></td>
</tr>
</tbody>
</table>
20. Which of the following medications was the patient already prescribed prior to admission? (Answers may be multiple)

- [ ] Statins/Lipid modifying drugs
- [ ] Antiplatelet drugs
- [ ] ACE inhibitor
- [ ] Anticoagulants
- [ ] Antibiotics
- [ ] Unknown

E. PRE-ASSESSMENT CLINIC

21. Was this patient assessed in a pre-assessment clinic (prior to admission for amputation)?

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

If NO, please go to question 25
If YES, please go to question 22a

22a. What was the grade of clinician responsible for the assessment? (Please use grade codes on page 3)

- [ ] Unknown

22b. What was the grade of clinician responsible for the assessment? (Please use grade codes on page 3)

- [ ] Unknown

23a. Were any pre-operative therapeutic manoeuvres of rescheduling initiated as a result of attendance at the pre-admission clinic?

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

23b. If YES, please specify:

   

F. PRE-OPERATIVE CARE

24a. Was a discharge plan discussed and recorded at the pre-assessment clinic?

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

24b. If YES, did this include referral to:

- [ ] Occupational therapy
- [ ] Social work
- [ ] Physiotherapy
- [ ] Limb fitting
- [ ] Other (please specify)

25. Was skin viability formally assessed?

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

26. Was a nutrition score calculated?

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

27. What prophylaxis against VTE was prescribed and used?

- [ ] Low molecular weight heparin
- [ ] Compression stockings
- [ ] Pneumatic compression
- [ ] None
- [ ] Unknown
- [ ] Other (please specify)

28. Was this patient screened for MRSA pre-operatively?

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

29. What was the grade of the clinician who proposed the operation? (Please use grade codes on page 3)

- [ ] Unknown
30a. Please state the main indication for amputation:

- Ischaemic rest pain
- Ischaemic rest pain with ulceration and/or gangrene
- Neuropathy
- Neuropathy with ulceration and/or gangrene
- Sepsis
- Severe deformity (charcot osteoarthropathy)
- Other (please specify)

30b. Was this a complication of diabetic foot disease?  
- Yes
- No
- Unknown

30c. When did the patient last attend a diabetic foot clinic? (Please specify)

31a. How was the viability of the IPSILATERAL limb/foot assessed prior to surgery? (In this admission or treatment episode?)

- No assessment
- Clinical assessment
- Duplex ultrasound
- Ankle-brachial pressure index
- Previous major amputation
- NA - bilateral amputation
- Angiography (conventional, MRA, CTA)
- Unknown

31b. In your opinion, was this assessment adequate?  
- Yes
- No
- Unknown

31c. If assessment was not adequate, please specify why not:

32a. How was the viability of the CONTRALATERAL limb/foot assessed prior to surgery? (In this admission or treatment episode?)

- No assessment
- Clinical assessment
- Duplex ultrasound
- Ankle-brachial pressure index
- Previous major amputation
- NA - bilateral amputation
- Angiography (conventional, MRA, CTA)
- Unknown

32b. In your opinion, was this assessment adequate?  
- Yes
- No
- Unknown

32c. If assessment was not adequate, please specify why not:
33. Did the patient receive pre-operative counselling or review by any of the services listed in the table below. (Please mark all that apply)

<table>
<thead>
<tr>
<th></th>
<th>Psychologist</th>
<th>Amputee coordinator</th>
<th>Physiotherapist</th>
<th>Podiatrist</th>
<th>Vascular nurse specialist</th>
<th>Diabetes nurse specialist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seen pre-operatively</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Not usual practice</td>
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<td></td>
<td></td>
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<tr>
<td>No service provided within hospital or Trust</td>
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<tr>
<td>Service provided at another site within Trust</td>
<td></td>
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<tr>
<td>Service provided but support worker not available</td>
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<tr>
<td>Insufficient time for clinical/surgical reasons</td>
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</tr>
<tr>
<td>Unknown</td>
<td></td>
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<tr>
<td>Other (please give details)</td>
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</tbody>
</table>

G. CONSENT

34. What was the grade of the clinician who took consent? (Please use grade codes on page 3)  
   [ ] [ ] [ ] Unknown

35. Was the patient given a written information sheet or DVD regarding the operation, prior to surgery?  
   [ ] Yes  [ ] No  [ ] Unknown

H. PRE-OPERATIVE PREPARATION

36. Which of the following investigations were performed prior to amputation to assess the patient’s risk for surgery?

- [ ] Full blood count (FBC)
- [ ] Arterial blood gases
- [ ] Coagulation screen
- [ ] Estimated glomerular filtration rate (eGFR)
- [ ] Group & save
- [ ] Urea & Electrolytes (U&Es)
- [ ] Electrocardiogram (ECG)
- [ ] Myocardial perfusion scan
- [ ] Cardiopulmonary exercise testing
- [ ] Liver function tests (LFTs)
- [ ] Echocardiogram
- [ ] Respiratory function tests
- [ ] Chest x-ray
- [ ] Other (please specify)
37a. Was this patient seen (as an inpatient) by a consultant vascular surgeon prior to amputation?  

☐ Yes  ☐ No  ☐ Unknown

37b. If YES, what was the date of the first assessment by the consultant vascular surgeon?  

☐ d  ☐ d  ☐ m  ☐ m  ☐ y  ☐ y  ☐ y  ☐ y  ☐ y  ☐ Unknown

37c. If YES, what was the time of the first assessment by a consultant vascular surgeon?  

☐ h  ☐ h  ☐ m  ☐ m  (24 hour clock)  ☐ Unknown

38a. Was this case discussed at a vascular MDT meeting prior to the operation?  

☐ Yes  ☐ No  ☐ Unknown

38b. If YES, what was the date of the meeting?  

☐ d  ☐ d  ☐ m  ☐ m  ☐ y  ☐ y  ☐ y  ☐ y  ☐ Unknown

38c. If YES, was this to discuss possible revascularisation?  

☐ Yes  ☐ No  ☐ Unknown

38d. If YES, was this only to discuss amputation?  

☐ Yes  ☐ No  ☐ Unknown

39a. What was the patient’s ASA status IMMEDIATELY PRIOR TO SURGERY? (Please mark one box only)  

☐ ASA 1  ☐ ASA 2  ☐ ASA 3  ☐ ASA 4  ☐ ASA 5  ☐ Unknown

39b. Was there any substantial deterioration in the patient’s ASA status between admission and surgery?  

☐ Yes  ☐ No  ☐ Unknown

40a. Were prophylatic antibiotics administered to cover the procedure either pre-operatively, on induction or during the operation?  

☐ Yes  ☐ No  ☐ Unknown

40b. If YES, for how many days were they given post operatively?  

☐ NA - not given post operatively

41a. Did this patient require pre-operative pain control?  

☐ Yes  ☐ No  ☐ Unknown

41b. If YES, please indicate the methods used:

☐ Simple analgesics (i.e. paracetamol, NSAIDs)  ☐ Weak opioids (i.e. tramadol, codeine)

☐ Strong opioids (i.e. morphine, fentanyl, oxycodone, pethidine)

☐ Adjuvants (i.e. antidepressants, anticonvulsants)  ☐ Patient controlled analgesia system

☐ Epidural catheter  ☐ Other (please specify)

42. Was the patient seen by the inpatient acute pain team?  

☐ Yes  ☐ No  ☐ Unknown

I. PREVIOUS OPERATIONS OR INTERVENTIONAL RADIOLOGY

43. Has any procedure been undertaken previously on the limb requiring amputation, (prior to surgery)?  

☐ Yes  ☐ No  ☐ Unknown
44a. Please list any relevant interventional radiological procedures or operations (including reconstruction, limb salvage procedure, distal amputations, lumbar sympathectomy) on the limb requiring amputation.

<table>
<thead>
<tr>
<th>Operation (please specify)</th>
<th>Date of operation (dd/mm/yy)</th>
<th>Was this during the same admission as the one for amputation?</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

44b. If any of the previous procedures was an amputation please indicate if a trainee performed this together with their grade (without a consultant in the operating theatre)

<table>
<thead>
<tr>
<th>Operation</th>
<th>Grade of trainee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### J. OPERATION

45a. Was there a clinically significant delay between the decision to perform the amputation and the operation? (Please include delay as a result of cancellation)

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

45b. If YES, how long was the delay?

- Days [1]
- Hours [1]
- Unknown [ ]

45c. If YES, what was the reason for the delay?

- Non availability of surgeon [ ]
- Non availability of anaesthetist [ ]
- Patient requiring additional pre-operative treatment/optimisation/resuscitation [ ]
- Non availability of theatre [ ]
- Non availability of theatre staff [ ]
- Superceded by other cases on emergency list [ ]
- Patient choice (initially refused amputation) [ ]
- Other (please specify) [ ]

46a. Was the operation booked and cancelled?

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

46b. If YES, how many times was the surgery rescheduled?

- [ ]
- Unknown [ ]
47. Please indicate the urgency of the procedure

- [ ] Immediate  Immediate life or limb saving surgery. Resuscitation simultaneous with surgical treatment.
- [ ] Urgent    Acute onset or deterioration of conditions that threaten life, limb or organ survival; fixation of fractures; relief of distressing symptoms including acute surgical admissions not requiring an operation.
- [ ] Expedited Stable patient requiring early intervention for a condition that is not an immediate threat to life, limb or organ survival.
- [ ] Elective   Surgical procedure planned or booked in advance of routine admission to hospital.

48. What type of operation was performed?

Amputation of leg

- [ ] X09.1 – Hindquarter amputation
- [ ] X09.3 – Amputation of leg above knee
- [ ] X09.5 – Amputation of leg below knee
- [ ] X09.9 – Unspecified

- [ ] X09.2 – Disarticulation of hip
- [ ] X09.4 – Amputation of leg through knee
- [ ] X09.8 – Other specified

Operations on amputation stump

- [ ] X12.1 – Re-amputation at higher level
- [ ] X12.9 – Unspecified

- [ ] X12.8 – Other specified

Other

- [ ] Guillotine/Staged amputation
- [ ] Other (please specify)

49a. Please specify the date of this amputation:

- [ ] d d
- [ ] m m
- [ ] y y y y

[ ] Unknown

49b. Please specify the time of the operation:

- [ ] h h
- [ ] m m

(24 hour clock)

[ ] Unknown

50. If the operation undertaken was different to that proposed, please give details as to why


51a. Were there any unanticipated intra-operative problems?

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

51b. If YES, please specify


52a. With the benefit of hindsight, is there anything you would have done differently in the management of this case?  
☐ Yes  ☐ No  ☐ Unknown

52b. If YES, please specify

53. Where was the operation undertaken?
☐ Emergency theatre  ☐ Elective operating list  ☐ Unknown
☐ Other (please specify)

54. What was the grade of the primary surgeon who performed the operation? (Please use grade codes on page 3)  
☐  ☐ Unknown

55. What was the grade of the most senior surgeon present in the operating theatre? (Please use grade codes on page 3)  
☐  ☐ Unknown

56. If there was a supervisor were they:
☐ Scrubbed  ☐ Unscrubbed but in operating theatre in hospital
☐ Unscrubbed in hospital  ☐ Not in the hospital
☐ Other (please specify)

57. Which type of dressing was used post operatively?
☐ Rigid  ☐ Semi-rigid  ☐ Unknown

58a. Did the patient receive a blood transfusion?  
☐ Yes  ☐ No  ☐ Unknown

58b. If YES, how many units?  
☐  ☐ Unknown

58c. If YES, was there a delay in the availability of blood products?  
☐ Yes  ☐ No  ☐ Unknown

59. Which of the following were recorded:

<table>
<thead>
<tr>
<th></th>
<th>During the operation</th>
<th>Post operatively</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse oximetry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central venous pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invasive arterial pressure (intra-arterial catheter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulmonary artery catheter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transoesophageal echocardiography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiac output measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**K. ANAESTHESIA**

61a. What was the date of the first pre-operative anaesthetic review?  

61b. What was the time of the first pre-operative anaesthetic review?  

62a. What was the grade of the first anaesthesia reviewer? (Please use grade codes on page 3)  

62b. What was the specialty of the first anaesthesia reviewer (i.e. vascular anaesthetist)? (Please use specialty codes on page 3)  

63. For the operation, what type of anaesthetic did the patient receive? (Answers may be multiple)  

- General anaesthetic  
- Spinal anaesthetic  
- Epidural  
- Intravenous sedation  
- Other (please specify)  

64. What was the grade of the most senior anaesthetist involved in the operation? (Please use grade codes on page 3)  

**L. POST OPERATIVE CARE**

65. Where was the patient admitted to immediately after leaving the theatre/recovery suite/PACU?  

- Specialist vascular unit  
- Level 3 (ICU)  
- Mortuary (Go to 92)  
- Non vascular ward  
- Level 2 (HDU)  
- Other (please specify)  

66a. Was an escalation of care, requiring transfer to another clinical area, needed during the post operative period?  

- Yes  
- No  
- Unknown  

66b. If YES, where did the patient go?  

- Specialist vascular unit  
- Level 3 (ICU)  
- Level 2 (HDU)  
- Coronary care unit  
- Other (please specify)  

66c. If YES to 66a, were you at any time unable to transfer the patient into a higher care area within the hospital in which the procedure took place?  

- Yes  
- No  
- Unknown  

66d. If YES, why?
67a. Did any of the following post operative complications occur:

- [ ] Post operative bleeding (return to theatre)  [ ] Wound infection
- [ ] Chest infection  [ ] Retention of urine  [ ] Urinary tract infection
- [ ] Respiratory failure  [ ] Cardiac failure  [ ] Cardiac arrhythmia (new)
- [ ] Myocardial infarction  [ ] Stroke  [ ] Post operative delirium
- [ ] Bloodstream infection (bacteraemia)  [ ] Clostridium difficile infection
- [ ] Significant deterioration in renal function  [ ] Deep vein thrombosis
- [ ] Acute renal failure requiring renal replacement therapy  [ ] Pulmonary embolus
- [ ] Pressure sores - contralateral limb
- [ ] Pressure sores - other site (please specify)

67b. Did any of the following occur?

- [ ] Stump cellulitis (infection) without breakdown  [ ] Yes  [ ] No  [ ] Unknown
- [ ] Stump breakdown  [ ] Yes  [ ] No  [ ] Unknown
- [ ] Stump contracture  [ ] Yes  [ ] No  [ ] Unknown

68. Was a falls assessment undertaken? (Answers may be multiple)

- [ ] Pre-operatively  [ ] Post operatively  [ ] Not undertaken  [ ] Unknown

69a. Did the patient experience a fall post operatively?  [ ] Yes  [ ] No  [ ] Unknown

69b. If YES, please give details:

69c. If YES to 69a, was there any adverse consequence to the fall?  [ ] Yes  [ ] No  [ ] Unknown

69d. If YES, please give details:

70. Please describe any OTHER significant post operative complications (with the exception of death):

71. Was a nutritional assessment performed post operatively?  [ ] Yes  [ ] No  [ ] Unknown

72. Were nutritional supplements provided?  [ ] Yes  [ ] No  [ ] Unknown
If you are unable to complete the next few questions, they should be completed in conjunction with the relevant colleagues including nursing, physiotherapy and occupational therapy (or from the nursing records) where required.

73a. Was the patient provided with a wheelchair for their sole use post operatively?  
☐ Yes  ☐ No  ☐ Unknown

73b. If NO, why not? 

74a. Were protocols for early mobilisation used for this patient?  
☐ Yes  ☐ No  ☐ Unknown

74b. If NO, why not? 

75a. If a transtibial amputation was undertaken, was a stump board used?  
☐ Yes  ☐ No  ☐ Unknown  ☐ Not applicable

75b. If NO, why not? 

76a. Were stump compression socks used for this patient?  
☐ Yes  ☐ No  ☐ Unknown

76b. If NO, why not? 

77. Which of the following were involved in the patient’s post operative inpatient care?
☐ Physiotherapist  ☐ Occupational therapist  ☐ Social services
☐ Amputee specialist nurse  ☐ Consultant in rehabilitation medicine
☐ Medicine for the elderly (for rehabilitation)
☐ Clinical psychologist  ☐ Other (please specify) 

78. What type of mattress was the patient cared for on post operatively? 

M. PAIN MANAGEMENT

79. Was the patient referred to an acute pain team post operatively?  
☐ Yes  ☐ No  ☐ Unknown
N. POST OPERATIVE PAIN MANAGEMENT

80. Was a post operative risk assessment for the development of a contralateral heel and/or foot pressure ulcer undertaken on this patient, i.e Waterlow, Braden?  
   □ Yes  □ No  □ Unknown

81. Did the patient develop a contralateral heel and/or foot pressure ulcer during their hospital stay?  
   □ Yes  □ No  □ Unknown

82a. Was the patient referred to an amputation rehabilitation team or disablement services centre post operatively?  
   □ Yes  □ No  □ Unknown

82b. If NO, why not?

O. DISCHARGE

83. What was the outcome of this patient?  
   □ Discharged alive (<=30 days of operation)  □ Still in hospital (>=30 days of operation)  
   □ Died (<=30 days of operation)

If the patient survived, please go to question 84  
If the patient died, please go to question 93

For patients who survived:

84. If discharged alive within 30 days of the operation, where was the patient discharged to?  
   □ Home  □ Another secondary care facility  
   □ Community care facility with rehabilitation services  
   □ Community care - other

85. What was the date of discharge?  
   □ d d m m y y y y  □ Unknown

86. Which rehabilitation services were arranged for the patient following discharge?  
   □ Care of the elderly  □ Rehabilitation medicine  □ Physiotherapy  
   □ Occupational therapy  □ Care in the community  □ Unknown  
   □ Limb fitting  □ Specialist amputation rehabilitation service  
   □ None  □ Other (please specify)
87a. If the patient was transferred from another hospital for their amputation, were they repatriated to the referring hospital following surgery?

   Yes  No  Unknown

87b. Is there a formal written policy for this?

   Yes  No  Unknown

87c. If YES to 87a, was this difficult to arrange?

   Yes  No  Unknown

If the patient was transferred to a secondary care facility (i.e. back to another hospital)

88a. Was the patients wound fully healed prior to transfer back?

   Yes  No  Unknown

89. Please estimate the mileage from the patient’s home address to the limb fitting facility

   Miles  Unknown

90a. Was there a package of care for the remaining limb at the time of discharge?

   Yes  No  Unknown

90b. If YES, what did this include?

90c. If NO, why not?

91. Was a vascular assessment of the contralateral limb undertaken prior to discharge?

   Yes  No  Unknown

92. Was the patient referred to a rehabilitation team whilst in secondary care?

   Yes  No  Unknown

For patients who died:

93. Place of death

   Theatre  Level 3 (ICU)  Level 2 (HDU)

   Recovery room  Specialist ward  General ward

   Other (please specify)

P. AUDIT

94. Was there a critical incident during this admission?

   Yes  No  Unknown

95a. Was the outcome of this case discussed at a multi-disciplinary review/audit/mortality meeting?

   Yes  No  Unknown

95b. If YES, was there a notable conclusion that might influence your future practice in this type of scenario?
95c. If YES to 95b, what was this conclusion?

96. Were details of this case submitted to the National Vascular Database?  
   [ ] Yes  [ ] No  [ ] Unknown

IF THE PATIENT HAD DIABETES PLEASE CONTINUE ON THE NEXT PAGE; IF NOT:

Thank you for taking the time to complete this questionnaire
The Clinical Outcome Review Programme into Medical and Surgical Care is commissioned by the Healthcare Quality Improvement Partnership (HQIP) on behalf of NHS England, NHS Wales, the Northern Ireland Department of Health, Social Services and Public Safety (DHSSPS), the States of Jersey, Guernsey, and the Isle of Man.

NCEPOD
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## LOWER LIMB AMPUTATION STUDY
National Confidential Enquiry into Patient Outcome and Death (NCEPOD)

### CLINICAL QUESTIONNAIRE (DIABETES)

**CONFIDENTIAL**

**NCEPOD number:**

<table>
<thead>
<tr>
<th>R. DIABETES</th>
</tr>
</thead>
<tbody>
<tr>
<td>97a. What type of diabetes did the patient have?</td>
</tr>
<tr>
<td>☐ Type 1</td>
</tr>
<tr>
<td>97b. Which of the following treatments was the patient receiving? (Answers may be multiple)</td>
</tr>
<tr>
<td>☐ Insulin</td>
</tr>
<tr>
<td>☐ Metformin</td>
</tr>
<tr>
<td>☐ Dipeptidylpeptidase-4 inhibitors (&quot;Gliptins&quot;)</td>
</tr>
<tr>
<td>☐ Other (please specify)</td>
</tr>
</tbody>
</table>

**PRE-ADMISSION MANAGEMENT**

| 98a. If an ELECTIVE PROCEDURE was undertaken, was an HbA1c performed prior to surgery to assess recent pre-operative diabetes control? |
| ☐ Yes | ☐ No | ☐ Unknown |
| 98b. If YES, what was the result? |
| ☐ Unknown | ☐ mmol/mol | ☐ % |
| 98c. If the HbA1c was >8.5% or 69mmol/mol was there evidence of an attempt to improve control before admission for the operative procedure? |
| ☐ Yes | ☐ No | ☐ Unknown |
| 98d. If YES to 98c, to which service was the patient referred to improve control? |
| ☐ Diabetes team | ☐ Primary care | ☐ Unknown |
| 98e. If referred to improve control was an HbA1c of <8.5% or 69mmol/mol acheived prior to admission? |
| ☐ Yes | ☐ No | ☐ Unknown |
| 99. If an EMERGENCY PROCEDURE was undertaken, was the HbA1c<8.5% or 69mmol/mol on admission? |
| ☐ Yes | ☐ No | ☐ Unknown |

**PRE-OPERATIVE MANAGEMENT: ON ADMISSION**

| 100a. Was the patient admitted under the diabetes service? |
| ☐ Yes | ☐ No | ☐ Unknown |
| 100b. If NO, was the patient reviewed by a diabetes consultant pre-operatively? |
| ☐ Yes | ☐ No | ☐ Unknown |
100c. If YES, what was the date of the first review? □ □ □ □ □ □ □ □ Unknown

d d m m y y y y

101a. Was a diabetes specialist nurse (DSN) involved in the care of this patient pre-operatively? □ Yes □ No □ Unknown

101b. If YES, did they advise on pre-operative glycaemic control? □ Yes □ No □ Unknown

102. In your opinion, was satisfactory glycaemic control achieved in the peri-operative period? □ Yes □ No □ Unknown

POST OPERATIVE GLYCAEMIC MANAGEMENT

103. Did the patient develop diabetic ketoacidosis (DKA) at any time AFTER their admission? □ Yes □ No □ Unknown

INTRAVENOUS INSULIN INFUSION

104. Did the patient receive an intravenous insulin infusion at any time during the admission? □ Yes □ No □ Unknown

105. In your opinion was hyperglycaemia adequately managed/avoided during the insulin infusion? □ Yes □ No □ Unknown

106. Did hypoglycaemia occur while on the insulin infusion (glucose <4mmol/L)? □ Yes □ No □ Unknown

Thank you for taking the time to complete this questionnaire

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