

ST THOMAS' HOSPITAL VASCULAR CENTRE

Kent & Medway Vascular Network



THE KENT & MEDWAY VASCULAR NETWORK

THE AGREED MODEL OF CARE FOR THE DELIVERY OF VASCULAR SERVICES IN KENT & MEDWAY

MODEL BASED ON THE AGREEMENT BY THE VASCULAR REVIEW PROGRAMME BOARD AND CLINICAL REFERENCE GROUP INCORPORATING EXTERNAL ADVISORS AND VASCULAR GIRFT TO DEVELOP A NETWORK SERVICE BASED ON A SINGLE ARTERIAL VASCULAR CENTRE, A SINGLE ENHANCED NON-ARTERIAL VASCULAR CENTRE AND OTHER SITES SUPPORTED AS NON-ENHANCED NON-ARTERIAL CENTRES. HOSPITALS IN THIS KENT & MEDWAY VASCULAR NETWORK INCLUDE, MEDWAY, MAIDSTONE, CANTERBURY, ASHFORD AND MARGATE

THE KENT & MEDWAY VASCULAR NETWORK WILL LINK WITH THE SOUTH EAST THAMES VASCULAR NETWORK HOSTED BY AND CENTRED ON THE VASCULAR CENTRE AT ST THOMAS' HOSPITAL, LONDON

THE GEOGRAPHICAL PATIENT PATHWAY LINKS THAT CURRENTLY EXIST BETWEEN ST THOMAS' AND PATIENTS IN THE DARTFORD AREA WILL BE PRESERVED (DEPICTED BY BLUE ARROW IN MAP ABOVE)

THE ST THOMAS' VASCULAR CENTRE WILL BE THE TERTIARY REFERRAL CENTRE THAT THE KENT & MEDWAY VASCULAR NETWORK WILL LINK WITH WHERE REQUIRED FOR THE DELIVERY OF COMPLEX VASCULAR CARE NOT AVAILABLE WITHIN THE KENT BASED ARTERIAL VASCULAR CENTRE.

TERMS;

- ⊗ ARTERIAL VASCULAR CENTRE. **THE KENT & CANTERBURY HOSPITAL**. A SINGLE HOSPITAL WITHIN THE NETWORK THAT PROVIDES ALL INPATIENT CARE FOR BOTH ELECTIVE AND EMERGENCY VASCULAR CARE, PROVIDING ALL TYPES OF VASCULAR SURGERY AND VASCULAR INTERVENTIONAL RADIOLOGY. THE ONLY HOSPITAL THAT HAS ON SITE A 24/7 FULL YEAR ROUND SPECIALIST VASCULAR TEAM TO MANAGE ALL INPATIENT ELECTIVE AND EMERGENCY CARE. THE ARTERIAL CENTRE IS THE MANAGERIAL CENTRE FOR THE NETWORK. THE ARTERIAL CENTRE WILL ALSO FULFILL ALL THE COMPONENTS OF CARE AVAILABLE IN AN ENHANCED NON-ARTERIAL VASCULAR CENTRE.
- ENHANCED NON-ARTERIAL VASCULAR CENTRE. **THE MEDWAY HOSPITAL**. A SINGLE HOSPITAL WITHIN THE NETWORK THAT IS RESOURCED TO PROVIDE LOCAL VASCULAR SERVICES THAT DO NOT REQUIRE A 24/7 WORKFORCE PRESENCE AND INPATIENT BASED VASCULAR INTERVENTIONS. THIS HOSPITAL WILL HAVE WEEKDAY PRESENCE OF SPECIALIST VASCULAR TEAMS TO SUPPORT OTHER ACUTE SERVICES WITHIN THE HOSPITAL. THIS HOSPITAL WILL HAVE ENHANCEMENT OF INTERVENTIONAL RADIOLOGY SERVICES TO SUPPORT DAY CASE VASCULAR INTERVENTIONS. THIS SERVICE WILL ALSO SUPPORT THE NEEDS OF NON VASCULAR INTERVENTIONAL RADIOLOGY SERVICES. THIS SITE WILL HAVE DEVELOPED DAY CASE SERVICES TO SUPPORT ACTIVITY WITHIN THE VASCULAR NETWORK, eg RENAL ACCESS SURGERY AND ONGOING FISTULA MANAGEMENT SUPPORT INTERVENTIONS, VENOUS INTERVENTIONS AND MINOR VASCULAR PROCEDURES.


THIS SITE WILL OFFER A COMPREHENSIVE VASCULAR DIAGNOSTIC AND OUTPATIENT AND AMBULATORY CARE SERVICE.

❖ NON-ENHANCED NON-ARTERIAL HOSPITAL. THESE HOSPITALS (MAIDSTONE, WHH, QEQM) THAT PROVIDE ACUTE CARE SERVICES (TYPICALLY, MEDICINE, SURGERY, OBSTETRICS), WILL REQUIRE ON SITE VASCULAR ADVICE AND WILL REQUIRE DIRECT CONTACT LINKS TO THE ARTERIAL VASCULAR CENTRE FOR 24/7 SUPPORT FOR VASCULAR ADVICE AND PATIENT MANAGEMENT.

THESE SITES WILL ALSO SUPPORT THE LOCAL DELIVERY OF VASCULAR OUT PATIENT SERVICES AND WILL HAVE THE REQUIRED ONSITE DIAGNOSTICS TO SUPPORT THE ASSESSMENT OF VASCULAR PATIENTS.

DAY CASE ACTIVITY WILL BE RESTRICTED TO VARICOSE VEIN SERVICES AND MINOR PROCEDURES.

THERE WILL BE NO VASCULAR INTERVENTIONAL RADIOLOGY SERVICES ON THESE SITES.

Pathway Heading	Operational detail of heading.
Elective Referral via primary care.	<p>Outpatient services will be offered at all hospital sites within the Kent & Medway Vascular Network. </p> <p>Kent & Canterbury Medway Maidstone WHH & QEQM</p> <p>The service will maximize the use of diagnosis specific clinics offering a standardized pathway of care. The service will maximize the use of 1 stop clinics where possible.</p> <p>Referral systems currently in use, (GP letter to consultant, GP referral through a centralized booking process, Online booking through NHS choose and book) will be used with an increased use of electronic systems where available. A central point of contact for elective referral management will be based at Canterbury and Medway. This service will be based within the vascular administration department and be specific to the management of vascular referrals.</p> <p>Examples of themed clinic services.</p> <p>Aneurysm Clinics. All AAA referrals of less than 5.5cm made to a Vascular Nurse Practitioner run service where patients have an ultrasound to confirm size, full medical/health assessment, advice and information sharing, enrolment on to a surveillance programme. Standards and timelines to be set as per the National abdominal aortic aneurysm screening programme (NAAASP) standards and service spec in this area. All aneurysms 5.5cm and greater to be seen with a CT scan by vascular consultant in a clinic identified by consultant vascular surgeon. Timeline as per NAAASP, within 2 weeks of diagnosis.</p> <p>Claudication 1 stop clinics. Vascular Nurse Practitioner run clinics to include objective assessments with Doppler ultrasound and treadmill.</p>

Claudication exercise rehabilitation clinics. Current service to be streamlined to offer exercise class rehabilitation for claudication patients utilising existing service set up at Canterbury, WHH and Medway. These clinics to be standardised in format.

The need for additional clinics to be raised within appropriate business case by the Vascular Network.

Ulcer clinics. Vascular Nurse Practitioner run clinics

Vein clinics

Pre-assessment clinics. Multi team clinics to include where appropriate, surgeon, anaesthetist, interventional radiologist and vascular nurse.

Pre-assessment will be run with the requisite specialist vascular staff input to offer vascular focussed pre-assessment.

The network will aim to standardise core group of tests required for patients being considered for arterial intervention. Protocols will be written to support this.

Pre-assessment will take place on both the Canterbury and Medway sites.

Enhanced Pre-assessment for patients requiring treatment at the Vascular Network Arterial Vascular Centre will be undertaken at this hospital site (this will facilitate introduction and orientation to the hospital where care is being delivered). This will be a multidisciplinary pre-assessment involving the operating surgeon, with support of vascular

anaesthetist providing vascular anaesthesia at the arterial centre ⊗

POPS Pre-habilitation and perioperative care

This service will be centred on the Arterial centre and the Enhanced non arterial centre to support the assessment and preparation of patients being considered for arterial intervention.

Summary.

Elective referral via primary care → vascular services contact point → initial consultation at the patient's local hospital in the network

investigations at the local hospital

Multidisciplinary team discussion (MDT)

Follow up consultation at

vascular surgery clinics at the local hospital →

	<p>-if active vascular or endovascular treatment is planned → preoperative assessment at Arterial Vascular Centre or Enhanced Non-Arterial Vascular Centre as appropriate. Treatment at Arterial Vascular Centre or Enhanced Non-Arterial Vascular Centre as appropriate Follow up at local hospital</p> <p>-if no active intervention is required → follow up at local hospital or refer back to primary care</p> <p><u>Interventional radiology (IR) pathways follow a similar approach</u></p> <p>IR Vascular: Primary care <input type="checkbox"/> local vascular surgical clinic <input type="checkbox"/> MDT <input type="checkbox"/> Day case procedure at either Canterbury or Medway, In patient or complex procedure performed at Arterial Vascular Centre Hospital only . <input type="checkbox"/> vascular surgical clinic review <input type="checkbox"/> discharge to community +/- surveillance</p> <p>IR Nonvascular: Primary care <input type="checkbox"/> Local specialty clinic <input type="checkbox"/> Discussion at relevant MDT / IR consultant at local hospital <input type="checkbox"/> day case or admission at appropriate hospital site (under respective specialty) <input type="checkbox"/> review in relevant specialty / IR clinic at local hospital <input type="checkbox"/> discharge to community</p>
<p>Elective referral via other source (screening , non GP).</p>	<p>Elective referral via other sources should follow the same pattern as elective referral via primary care.</p> <p>The Kent & Medway National Abdominal Aortic Aneurysm Screening Programme has established referral pathways within its standard operating procedures. Patients identified with an abdominal aortic aneurysm are referred according to protocols by the Programme Manager.</p>
<p>Emergency pathway.</p>	<p>Emergency Vascular Conditions may be referred from either primary care and the community or from within any hospital including non- arterial hospitals within the network.</p>

The Arterial Vascular Centre Hospital is the central point for communication, acceptance of and management of emergency vascular conditions. A dedicated fully resourced on call team will be available at this hospital 24/7 365 days of year. ⊗

All emergency referrals from the community will be managed by discussion with the Arterial Vascular Centre on call team. Dedicated phone services will be available whereby contact with a minimum grade of vascular registrar will be possible to obtain advice and agree action.

The vascular service should work with the ambulance service to discuss best pathways. For instance, a suspected ruptured AAA should where possible be brought direct to the Arterial Vascular Centre Hospital and not an A&E department that might sit in another hospital within the network.

Emergency vascular referrals in non-arterial hospitals will also be communicated directly to the Arterial Vascular Centre vascular on call team. There will however be local vascular specialist presence for certain hours of the Monday to Friday working week at non arterial hospitals and these personnel will support the assessment and communications required to facilitate the appropriate care for these patients. Clear points of contact and communication lines will be made available


to all departments within all hospitals within the network. ➤ ✦




In most instances emergency vascular referrals will be transferred to the arterial vascular centre hospital if they require it. In rare circumstances, is it likely that the vascular team would need to travel to a non arterial hospital. However all hospitals in the network will be equipped with the required minimum resource for emergency vascular intervention to be undertaken in these situations.

A 'hot clinic facility will be made available at the Canterbury main vascular hospital site within the network to support urgent and emergency non elective referral. ⊗

Emergency referral for ruptured aneurysm or symptomatic aortic aneurysm and acute limb ischaemia should be directed to the Arterial Vascular Centre. ⊗

IR Vascular:

	<p>Enhanced Non arterial Vascular Centre hospital <input type="checkbox"/> Resuscitation <input type="checkbox"/> Vascular surgical discussion on site in day time or with Arterial Vascular Centre vascular surgeon / IR 24/7. <input type="checkbox"/> Imaging locally if stable else transfer to Arterial Vascular Centre.</p> <p>Arterial Vascular Centre <input type="checkbox"/> Resuscitation <input type="checkbox"/> Vascular surgical assessment <input type="checkbox"/> Imaging assessment <input type="checkbox"/> Intervention (Surgical or endovascular) <input type="checkbox"/> ITU / HDU <input type="checkbox"/> vascular ward <input type="checkbox"/> discharge <input type="checkbox"/> vascular surgical clinic review <input type="checkbox"/> discharge to community +/- surveillance</p> <p>IR Nonvascular: Hospital <input type="checkbox"/> Resuscitation <input type="checkbox"/> Respective specialty / A&E consultant assessment <input type="checkbox"/> Imaging assessment <input type="checkbox"/> Discussion with IR at hospital <input type="checkbox"/> IR intervention <input type="checkbox"/> Ward / ITU / HDU under respective specialty <input type="checkbox"/> discharge <input type="checkbox"/> Clinic review in respective specialty</p>
<p>Outpatient services. To include; Location, clinic type Diagnostic requirements for the clinic setting.</p>	<p>Out patient services will be maximised to offer local access. </p> <p>All identified hospitals in the vascular network will offer outpatient clinics supported by full diagnostic facilities. Outpatient services will be offered at all hospital sites within the Kent & Medway Vascular Network.</p> <p>Kent & Canterbury Medway Pembury & Maidstone WHH & QEQM</p> <p>The availability of 1 stop assessment clinics will be maximised according to resource and business planning around capacity and demand.</p> <p>Types of clinics provided will include General vascular Clinic Claudication clinics Ulcer clinics Vein clinics. Diabetic /vascular clinics</p>

	<p>Specialist clinics will be provided in the Arterial Centre and the Enhanced non arterial centre as appropriate and should be allowed to develop as the model evolves.</p> <p>These will include</p> <ul style="list-style-type: none"> Aneurysm clinics Renal Access clinics Neurovascular clinics Lymphoedema clinics Preassessment clinic Interventional radiology clinics <p>All hospitals in the vascular network should be able to provide</p> <ul style="list-style-type: none"> CT MR Ultrasound <p>With vascular assessment capabilities.</p>
<p>Day case services. Type, Location, facilities</p>	<p>Day case vascular services will be provided at the Arterial Vascular Centre and the Enhanced Non-Arterial Vascular Centre hospital sites.  </p> <p>These services will include vascular surgery and vascular interventional radiology.</p> <p>Day case vascular surgery examples:</p> <ul style="list-style-type: none"> Renal access surgery and fistula management. Varicose vein treatments. Temporal artery biopsy. Minor amputations and wound debridement Skin care and skin grafting <p>Interventional radiology:</p> <p>Vascular: Day case angiograms, angioplasties and vascular IR interventions deemed suitable by the network governance team for performance at the enhanced non arterial centre. </p>

	<p>Non vascular: All non-vascular IR activity</p> <p>Day case services at the other non-arterial centres will only include ❖ Varicose vein interventions Minor vascular procedures</p> <p>Facilities (required on both the Arterial Vascular centre and Enhanced Non-Arterial Vascular Centre sites).</p> <p>A day case surgical environment for admission, surgery, recovery and discharge. An interventional radiology suite with support to provide, admission, procedure, recovery and discharge.</p> <p>Administrative support for day care pathway.</p>
<p>Arterial Vascular Centre inpatient services. Type and facilities.</p>	<p>The Kent & Canterbury Arterial centre. ⊗</p> <p>The provider of all inpatient based elective vascular care. The provider of all inpatient based emergency vascular care. The provider of all complex vascular interventions whether suitable for day case or inpatient if clinically defined at MDT that the specialist teams at the arterial vascular centre require this. Dedicated vascular ward. Dedicated elective vascular theatre Dedicated hybrid endovascular theatre. Dedicated vascular emergency CEPOD list. Dedicated Interventional Radiology suite ITU/HDU facilities to support inpatient elective and emergency vascular services. Out-reach critical care team. Agreed service and pathways for all allied speciality support services.</p>
<p>Communication</p>	<p>Arterial Vascular Centre with all hospitals in Network;</p> <ol style="list-style-type: none"> 1. On call team. Hotline to on call registrar. On call rota with contact for consultant. Daytime Vascular Nurse Hotline 2. Central contact for administrative team for all patient enquiries 3. Vascular management team contact.

	<p>4. NAAASP office contact. 5. Vascular Ward contact.</p> <p>Enhanced Non-Arterial Vascular centre; 1. Rota with contact number for attending vascular consultant 2. Vascular Nurse hotline 3. Vascular administrative contact.</p> <p>Non-Arterial Hospitals; 1. Rota with contact numbers for attending vascular consultant and nurse</p> <p>Documentation for all hospitals in network; Vascular staff details and contacts Vascular services offered, type, place, time, how to refer in Standard Operating Procedures Patient and referral pathways Patient Information documentation</p>
<p>Transfer policy & Repatriation</p>	<p>Policy written by Network, shared with all hospitals, primary care and Ambulance service. Policy to include consideration for level of transfer/retrieval team. Policy will be supported by robust information process such as SBAR tool for all transfers. Ambulance services to agree priority status for transfers of vascular patients from out hospital and between hospital. Central contact to transport services. On call consultant in the Arterial Vascular Centre supported by the on call registrar will be responsible for directing patient transfer decisions.</p> <p>Repatriation</p> <p>The majority of vascular surgical patients will be fit to be discharged home relatively soon after treatment and for these repatriation is not a major issue. An outpatient appointment at their local hospital with their vascular specialist should enable a satisfactory episode of care.</p>

A significant proportion, however, will require prolonged rehabilitation and/or attention to social issues e.g. following amputation. The preferred solution, wherever possible, is for these cases to be repatriated directly to either intermediate or community care without the need for repatriation to a Non- arterial centre. If repatriation is deemed the most appropriate course of action then care will need to be transferred to an appropriate non-vascular specialist e.g. Stroke, Diabetes, Care of Elderly, General Surgery, Orthopaedic Surgery.

Earlier repatriation to Non-Arterial Centres will make it easier for the Arterial Centre to accept transfers and improve continuity for outpatient follow-up. Clinical Staff at the Non-Arterial centre will need to have the necessary competencies to manage post-op vascular patients. VNS support in the Non-Arterial Centre will provide vital ongoing care, along with supervision from the visiting vascular consultant. One of the key roles of the VNS will be to link up with community care thus supporting continuity of care for patients in the community.

There will be no named vascular inpatient beds in Enhanced Non-Arterial centre and other non-arterial centres as this has potentially serious implications for continuity of care and cover, both in and out-of-hours. Vascular review by visiting surgeons and locally based VNSs will need to continue to be a feature of care and nominated consultants and vascular nurses will be identified to offer support on the repatriation site.

Close working between the various relevant agencies will be important to ensure that following acute vascular treatment, patients who are no longer deemed to require an acute vascular bed at the Arterial centre should be transferred promptly along the most appropriate pathway.

Limb fitting and rehabilitation.

The network will continue to provide full support for amputees using the current Gillingham service with local support at the arterial centre site.

A business case will be developed to explore the opportunity for a Kent & Medway community based service similar to that offered in Lambeth by the GSKT Vascular services.

<p>On call service model Vascular Surgery/Vascular IR</p>	<p>The Arterial Vascular Centre will provide the required multidisciplinary team to deliver consultant delivered care supported by non-consultant medical staff and vascular nurses and other allied professionals. The vascular on call team will have the full support of other service areas including, diagnostics, theatres, critical care, ward and medical specialities.</p> <p>The on call vascular team must be able to provide consultant grade patient assessment and treatment including open surgery and endovascular interventional radiology treatments. The service may provide this using appropriate personnel including vascular surgeons, vascular and endovascular surgeons and vascular interventional radiologists.</p> <p>The minimum rota will be 1 in 8 with prospective cover.</p> <p>A surgeon of the week model will be implemented and business planning and future business case development will inform regarding the expansion of workforce.</p>
	<p><i>The detail on the following sections will be completed in detail as the pathway elements are agreed at this stage please just consider the headlines to inform the above headings.</i></p>
<p>Workforce;</p>	<p>Consultant Vascular and Endovascular Surgeons Consultant Interventional radiologists Consultant Vascular anaesthetists</p> <p>All clinicians will be offered the opportunity to join the network and work within the arterial centre. Elective and On call sessions will be considered in these dialogues and job planning where appropriate.</p> <p>Consultant POPS / Medicine (GIRFT action) This service will support the pre-habilitation care of older, complex patients undergoing elective and emergency surgery. There would be a pre- and post-operative focus to identify risks and mitigate these with planned strategies. This service would follow the principles of the well-established services based in London and other parts of the country.</p> <p>Non consultant medical team Vascular nurse specialists. The role of Vascular Nurse Specialists (VSNs) will become increasingly important in the delivery of vascular services generally, especially at Non-Arterial Centres. The role of the VNS will need to be reviewed</p>

	<p>and developed in order to support consultant colleagues in out-patient clinics, facilitate the management of inpatient referrals and act as a link for patients being worked up for inpatient treatment at the Arterial Centre. The VNSs already take a very proactive approach, acting as the patients advocate and delivering front line care but in the future they will become the principle point of liaison between the Arterial and Non-Arterial centre and it will be extremely important to harness and further develop this precious resource.</p> <p>NAAASP Screening programme staff Theatre staff; nurse, ODPs, advanced scrub practitioners IR specialised nurses Radiographers Sonographers Vascular services co-ordinators Secretaries and admin support Physiotherapists & disablement & rehabilitation staff.</p>
<p>Management & Governance</p>	<p>Vascular services to be a distinct speciality of its own managing vascular surgical and endovascular services within the whole network. Working within the host Trust governance framework. Lead by Lead Clinician for Vascular Surgery Supported by; Lead Clinician Interventional Radiology Vascular services manager Vascular services lead nurse Vascular services finance business partner Vascular services human resources business partner Vascular services information and systems support Vascular services audit co-ordinator.</p> <p>A Vascular Network clinical governance board will be responsible for all aspects of quality assurance, risk assessment and performance management. Education and learning will be part of this board's remit.</p>

	<p>A network MDT will be in place with defined Terms of reference A network M&M/Audit/Governance monthly meeting will be held with a defined ToR and minutes and action plans.</p> <p>All elective and emergency vascular services will be undertaken in adherence to the following NICE guidance and any new and updated published guidance.</p> <p>All activity will be performed according to Commissioned contracts and directives including Referral to Treat criteria.</p> <ul style="list-style-type: none"> • CG10 Type 2 diabetes foot care (January 2004) • CG66/87 Diabetes – type 2 (update) (May 2008/May 2009) • CG68 Stroke (July 2008) • CG92 Venous thromboembolism – reducing the risk (January 2010) • CG119 Diabetic foot problems-inpatient management (March 2011)CG127 Hypertension (August 2011) • CG147 Lower limb peripheral arterial disease (August 2012) • TA167 Endovascular stent-grafts for the treatment of abdominal aortic aneurysms (February 2009) • TA210 Vascular disease – clopidogrel and dipyridamole (December 2010) • IPG52 Endovenous laser treatment of the long saphenous vein (March 2004) • IPG60 Thrombin injections for pseudoaneurysms (June 2004) • IPG74 Balloon angioplasty with or without stenting for coarctation or re-coarctation of aorta in adults and children (July 2004) • IPG79 Stent placement for vena caval obstruction (July 2004) • IPG127 Endovascular stent-graft placement in thoracic aortic aneurysms and dissections – guidance (June 2005) • IPG163 Stent-graft placement in abdominal aortic aneurysm – Guidance (March 2006) • IPG229 Laparoscopic repair of abdominal aortic aneurysm (August 2007) (February 2009) • IPG388 Carotid artery stent replacement for asymptomatic extracranial carotid stenosis (April 2011) • IPG390 Endovascular stent-grafting of popliteal aneurysms – (April 2011) • IPG389 Carotid artery stent placement for symptomatic extracranial carotid stenosis – (April 2011)
Facilities	<p>The Arterial Vascular Centre will require a dedicated and geographical distinct “Vascular Village” resource to provide its clinical and administrative services. All staff delivering the service should be co-aligned in suitable offices and administrative areas.</p>

Administrative areas should be close to clinical parts of the village ie, ward, clinic, vascular lab, theatres and critical care.

A comprehensive support structure will be available from other services such as imaging diagnostics, pathology, cardiopulmonary assessment facilities etc.

The following facilities and infrastructure will be available at the arterial centre:

- Outpatient Clinics – will include access to nurses experienced in ulcer and wound dressing. Doppler ultrasound machines will be available. There will be access to Doppler machines in the clinic.
- Vascular Laboratory – the vascular laboratory service will be available for the diagnosis and assessment of arterial and venous disease.
- Vascular Ward – patients with vascular disease will have access to dedicated vascular beds. There will be 24 dedicated beds to accommodate the routine elective work and emergency admissions. These beds will be staffed by an appropriate skill mix of nurses who have been trained in the care of vascular patients. Doppler investigation will be available on the ward.
- Interventional radiology suite with access to nursing staff who have been trained in vascular procedures.
- Operating Theatres – a 24 hour NCEPOD emergency theatre will be accessible at all times to undertake emergency vascular procedures. A vascular operating theatre with experienced vascular theatre staff will be available for elective activity. Facilities for endovascular aneurysm repair will be available with facilities as described by the Joint Working Group to produce guidance on delivering an Endovascular Aneurysm Repair Service
- Anaesthesia – elective vascular services will have dedicated vascular anaesthetic input into elective services, from anaesthetists experienced in dealing with the vascular patient and with a special interest in this area.
- Intensive Treatment Unit (ITU) and High Dependency Unit (HDU) – Facilities with full renal support will be available on-site to support the vascular service.

Limb Fitting Service – a local limb fitting service will be provided, which meets the standards set by The British Society of Rehabilitation Medicine.

The Enhanced Non-Arterial Vascular Centre will require an administrative area to support the on site service. Clinical areas need to be provided for the required service activity along the models identified previously.

	<p>The Non-Arterial Hospitals will require outpatient clinic facilities, supportive diagnostics and an appropriate on site office area for visiting clinicians.</p>
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Appendices – Clinical Pathways & Referral Protocol and Activity Summaries

These were developed by the network workstreams that were convened over the last 3 years of the process.

These workstreams involved stakeholders within the prescribed specialities and across the whole network.




These pathways were updated to reflect output from the 3 vascular network away days and the patient engagement meetings.

Activity summaries identify the core procedures undertaken at the Arterial centre and non-arterial centres and are indicative for guidance use by the capacity planning workstream based on other data sources detailing expected and projected activity.




Kent and Medway Vascular Clinical Network
Standard Template


Name/Type of Pathway AAA Abdominal Aortic Aneurysm

Key:

-  Single Arterial Centre
-  Enhanced Non Arterial Centre
-  Non Enhanced Non Arterial Centre




NB: colour code each point, as per key above, to where intervention takes place.

Diagnosis or Intervention Confirmed
Briefly outline how this happens. Who, what, when etc
Abdominal Aortic Aneurysm (AAA); an Aorta equal or greater than 3cm in size on ultrasound cross sectional imaging (CT/MRI)
Screened, Kent & Medway National AAA Screening Programme (NAAASP). Works within its defined protocols and governance contract. Ultrasound diagnosis.
Outcomes: Normal and discharge; aneurysm for surveillance; aneurysm referred to treatment.
Screening and surveillance venues total 36 sites within Kent & Medway and include
  
Incidental finding; from primary or secondary care: referred in to vascular service – phone call, fax, email, clinic appointment may all be chosen as methods of contact.

Point of contact Vascular Specialist Nursing Team (working with admin team). Any incidental aneurysms found, whether from screening or incidentally, that measure 7.5 cms or more should be fast tracked to the On-call Vascular team for admission at . 




Vascular Nurse Appointment in clinic _ will be speciality defined clinic.

Size dependent management strategy; 3-4.5cm 1 year follow up scan; 4.5-5-5cm 3 monthly scan; 5.5cm or greater refer to treat.

Surveillance follow up will involve   

Aneurysm intervention only at 

Emergency AAA. Via Community, primary care/ ambulance service. Attends a hospital with an Accident and Emergency or ambulance authorised emergency care centre.

First point of contact could involve;   




Treatment for emergency AAA would only 



Pre-operative / Pre-Intervention Phase

- Outline what should happen when and by whom, to include diagnostics as well as patient review and pre-operative optimisation.
- Best practice, if relevant (outline the standards / source of best practice e.g. NICE guidance and/or outline proposed service improvement)



For aneurysms under consideration of treatment:

Consultation with vascular specialist in clinic Vascular Cons Surgeon (Vascular Nurse Specialist), outpatient appointment, Standard within 2 weeks of diagnosis.   


CT scan aorta standardised .



Risk assessment investigations; bloods, echocardiogram, ECG, lung function, cardiac perfusion

scan, CPEX testing   possibly 

Multidisciplinary team meeting  ideally most staff together  Video Conf


Pre-assessment clinics with surgeon anaesthetist, vascular nurse Speciality specific service.


 

Inter speciality referral (cardiac, renal);  

Emergency AAA.

Clinical diagnosis, suspicion and ultrasound to confirm presence of AAA.

Immediate referral to 

CT Aorta not to delay transfer. Only on instruction of 

Immediate blue light transfer on referral.

Palliative care for non-intervention decisions. Patient could remain at  



Peri-Operative / intervention phase by

Outline what happens in this phase:

- When e.g. procedure should be performed within x amount of time of decision to operate
- Who
- Where
- Is HDU / ITU likely
- Best practice, if relevant (outline the standards /source of best practice e.g. NICE guidance and/or outline proposed service improvement)

Referral to treatment standard 8 weeks

Open AAA surgery

Endovascular (EVAR) AAA surgery

Complex EVAR (abdominal)

Thoracic Aortic Aneurysm Intervention Tertiary Centre St Thomas London

Dedicated Vascular Team; surgeon and endovascular surgeon, interventional radiologist, vascular anaesthetist, theatre team including interventional radiology competent staff, radiographers, support staff.

Dedicated Vascular ward

Critical care, ITU, HDU

Theatre Specialist Vascular theatre for open

Specialist MHRA specification Endovascular Imaging theatre for Endovascular

Emergency AAA intervention ITU

Elective open AAA HDU

Elective EVAR Vascular ward HDU



Post Op phase

Outline key interventions that take place, by who, what (diagnostics etc), when (time period) and how. Description to include patient reviews, confirmation of length of stay, where and onward referral

Outline best practice, if relevant (outline the standards / source of best practice e.g. NICE guidance and/or outline proposed service improvement)



Length of stay good practice;

Open AAA surgery 5 days



EVAR Day case and 1 night stay



Complex EVAR 2/3 days


Discharge; default to discharge home.

Telephone follow up service  

Outpatient follow up clinics   

EVAR imaging follow up protocol Ultrasound X-ray CT 3 months and 1 yearly  

Outcome Measures and recording; National Vascular Registry.  

Audit meetings and case review. 

Enablers

For each of the phases, as part of the pathway development, if there is best practice / service improvement requirements, what are the enablers to implement these.

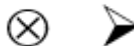
Set up AAA specific clinics



Centralise complex EVAR in transition to single site



Joint contracts to allow network staff to move between sites



Resource telephone follow up service

Streamline pre-assessment; network CPEX service



Integrate IT systems within network.

Resource data audit clerk

Job plan changes for network focussed service activities.




Adopt NICE guidance NICE AAA guidance due end 2018

Kent and Medway Vascular Clinical Network

Standard Template

Guidance Notes – Lower Limb Amputations

The pathways relate to the new service model as part of the Network arrangement . Therefore at each interventional point of care, insert colour coded circles to indicate where the treatment takes place, as shown below:




	<p>Single Arterial Centre</p> <p>A single hospital within the network that provides all inpatient care for both elective and emergency vascular care, providing all types of vascular surgery and vascular interventional radiology. The only hospital that has on site a 24/7 full year round specialist vascular team to manage all inpatient elective and emergency care. The arterial centre is the managerial centre for the network. The arterial centre will also fulfil all the components of care available in an enhanced non-arterial vascular centre.</p>
	<p>Enhanced Non Arterial Centre</p> <p>A single hospital within the network that is resourced to provide local vascular services that do not require a 24/7 workforce presence and inpatient based vascular interventions. This hospital will have an enhanced weekday presence of specialist vascular teams to support other acute services within the Hospital. This hospital will have enhancement of interventional radiology services to support day case vascular interventions. This service will also support the needs of non-vascular interventional radiology service. This site will have developed day case services to support activity within the vascular network, e.g. renal access surgery and on-going fistula management support interventions. This site will offer a comprehensive vascular diagnostic and outpatient and ambulatory care service.</p>
	<p>Non Enhanced Non Arterial Centre</p> <p>Any number of hospitals that provide acute care services that at times will require on site vascular advice and will require direct contact links to the Arterial centre for 24/7 support. These sites will not have a daily specialist vascular presence; however the ability to offer full vascular diagnostics and outpatient services for the local population will be available.</p>

Kent and Medway Vascular Clinical Network
Standard Template







Name/Type of Pathway _____ LOWER LIMB AMPUTATION _____

Emergency and Elective

Key:

-  Single Arterial Centre
-  Enhanced Non Arterial Centre
-  Non Enhanced Non Arterial Centre

NB: colour code each point, as per key above, to where intervention takes place.

Diagnosis or Intervention Confirmed	
Briefly outline how this happens. Who, what, when etc	
  	Patient referred by GP or other health care professional for consideration for major or minor lower limb amputation (MLLA) .
  	Consultant vascular surgeon review of the patient at site of referral or transfer to the arterial centre if the patient cannot await review locally. Consultant agrees that amputation is necessary. If the patient is at NENAC then arrange for patient transfer to SAC or ENAC.



Pre-operative / Pre-Intervention Phase

- Outline what should happen when and by whom, to include diagnostics as well as patient review and pre-operative optimisation.
- Best practice, if relevant (outline the standards / source of best practice e.g. NICE guidance and/or outline proposed service improvement)

- ⊗ ➤ Named Consultant Vascular Surgeon
- ⊗ ➤ Physiological optimisation with review by diabetic team, physicians and anaesthetists as appropriate
- ⊗ ➤ Pain team review and appropriate management
- ⊗ ➤ Assessment by rehabilitation team
- ⊗ ➤ Commence appropriate antibiotics as per microbiology protocols
- ⊗ ➤ Nutritional, pressure area, falls risk and VTE assessments
- ⊗ ➤ Commence discharge planning



Peri-Operative / intervention phase by

Outline what happens in this phase:

- When e.g. procedure should be performed within x amount of time of decision to operate
- Who
- Where
- Is HDU / ITU likely
- Best practice, if relevant (outline the standards /source of best practice e.g. NICE guidance and/or outline proposed service improvement)

- ⊗ ➤ Procedure performed during normal working hours, ideally on a planned operating list
- ⊗ ➤ Procedure should be performed within 48 hours of the decision to operate

- ⊗ ➤ No operation to be deferred more than once except for medical reasons
- ⊗ ➤ Consultant vascular surgeon to operate or supervise a trainee
- ⊗ ➤ Consultant anaesthetist or post FRCA trainee should be present
- ⊗ ➤ Routine antibiotic and DVT prophylaxis
- ⊗ ➤ Appropriate level of critical care bed should be available
- ⊗ ➤ Appropriate access to blood products



Post Op phase

Outline key interventions that take place, by who, what (diagnostics etc), when (time period) and how. Description to include patient reviews, confirmation of length of stay, where and onward referral

Outline best practice, if relevant (outline the standards / source of best practice e.g. NICE guidance and/or outline proposed service improvement)

- ⊗ ➤ 24/7 access to critical care and medical specialty cover
- ⊗ ➤ Acute pain team review on day 1 and according to need thereafter
- ⊗ ➤ Diabetic team review at least twice a week and according to need
- ⊗ ➤ Wound and pressure area care as per local protocols
- ⊗ ➤ Early mobilisation, physiotherapy and rehabilitation
- ⊗ ➤ Referral to rehabilitation prosthetic team
- ⊗ ➤ Patient education in safe mobilisation, stump care and general health

⊗ ➤ Early discharge planning

⊗ ➤ Follow up by rehabilitation team with rapid access to the vascular team as needed

❖ OFF SITE REHABILITATION UNIT

“A specialist rehabilitation unit is a more appropriate environment than an acute ward for amputees who no longer require active medical treatment, but have not yet reached the stage where they can manage at home” (POVS 2015).

MANAGING NHS TRUST

Preferably community NHS trust rather than acute trust. The unit will be run like the unit at Lambeth by a community rehabilitation team fully trained in amputation rehabilitation - physiotherapists, OT's, etc. The patients' medical management will be by local GPs with rapid access to the vascular teams as necessary. The Disablement Services Centre (DSC) will continue with provision and fitting of prostheses with clinics run by a consultant in rehabilitation as currently happens.

TYPE OF FACILITY

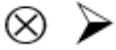
8 – 12 bedded Nurse led facility.

PERIOD OF REHABILITATION

Duration of in-patient rehabilitation will be for 6 weeks in the first instance. Further extension is possible, if the expected goals are not met and it is anticipated that it is likely the patient will be able to achieve the goals set out initially by extending for another period of 6 weeks.

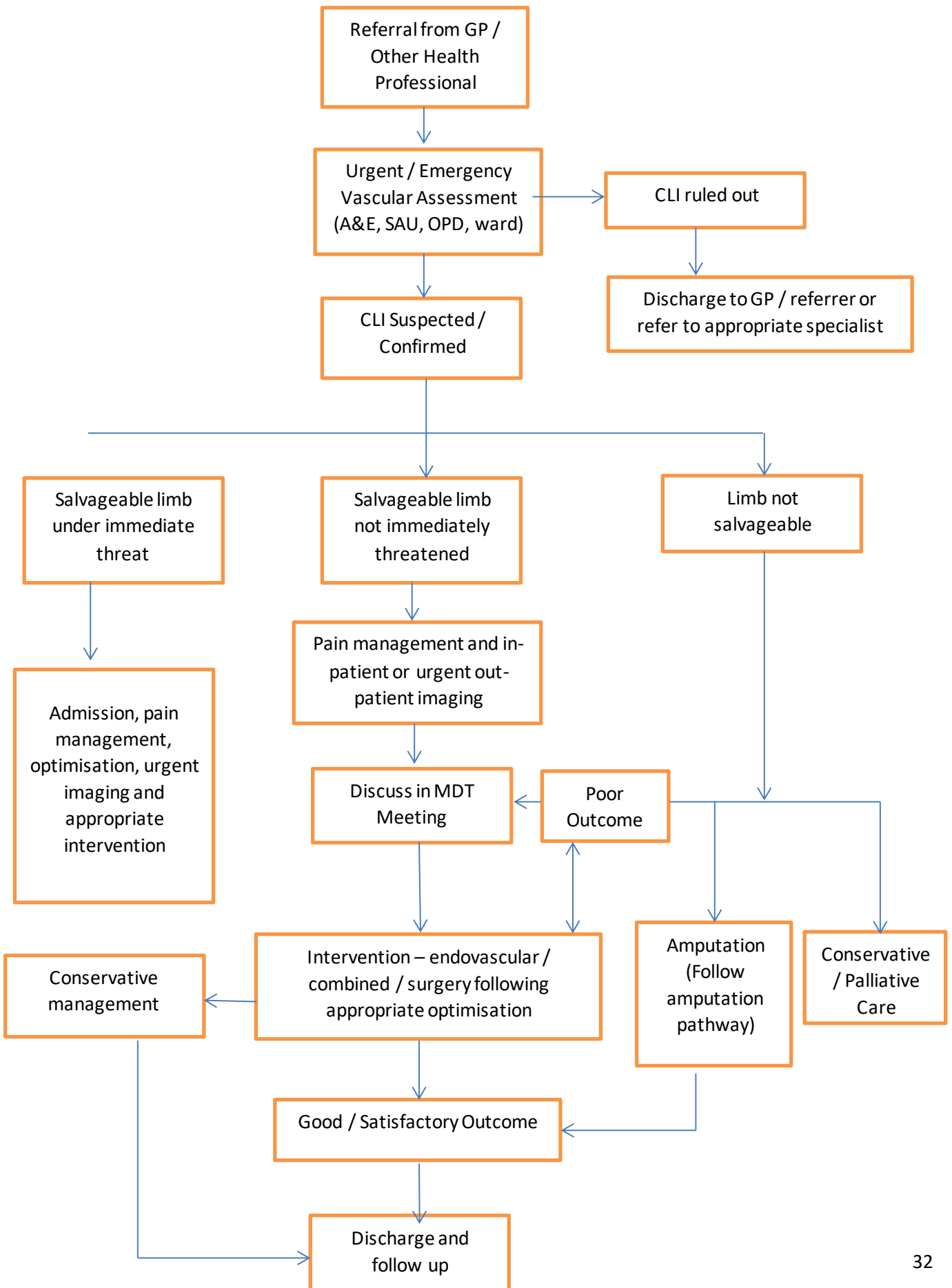
Enablers

For each of the phases, as part of the pathway development, if there is best practice / service improvement requirements, what are the enablers to implement these.

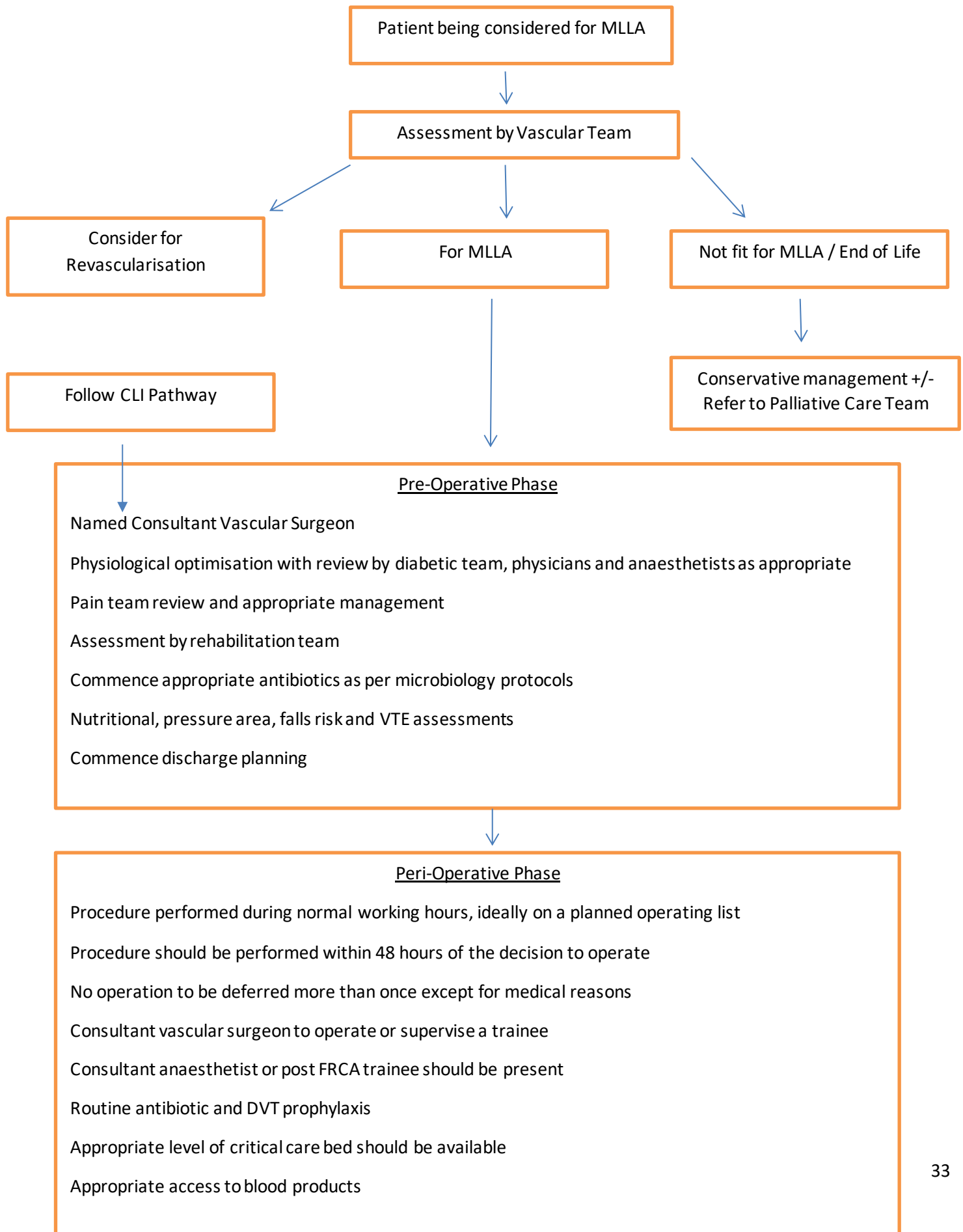


- Consultant Vascular Surgeon
- Consultant Vascular Anaesthetist
- Junior doctors
- Ease of access to theatres
- Podiatrist
- Physiotherapy / Occupational Therapy
- Limb Fitting / Rehabilitation
- Collaboration with other specialties
 - Diabetology (multi-disciplinary diabetic foot team)
 - Cardiac and plastic surgery,
 - Physicians (care of the elderly, dermatology, cardiology, renal services, stroke medicine, palliative care)
 - Laboratory services (haematology, blood bank)

CRITICAL LOWER LIMB ISCHAEMIA PATHWAY



MAJOR LOWER LIMB AMPUTATION (MLLA) PATHWAY (1)



MAJOR LOWER LIMB AMPUTATION (MLLA) PATHWAY (2)

Post-Operative Phase

24/7 access to critical care and medical specialty cover

Acute pain team review on day 1 and according to need thereafter

Diabetic team review at least twice a week and according to need

Wound and pressure area care as per local protocols

Early mobilisation, physiotherapy and rehabilitation

Referral to rehabilitation prosthetic team

Patient education in safe mobilisation, stump care and general health

IN-PATIENT AMPUTEE REHABILITATION AND ENABLEMENT SERVICE

LOCATION

To be decided – preferably at a site away from the main vascular hub.

MANAGING NHS TRUST

To be .decided – preferably community NHS trust rather than acute trust. The unit will be run like the unit at Lambeth by a community rehabilitation team fully trained in amputation rehabilitation - physiotherapists, OT's, etc. The patients' medical management will be by local GPs with rapid access to the vascular teams as necessary. The Disablement Services Centre (DSC) will continue with provision and fitting of prostheses with clinics run by a consultant in rehabilitation as currently happens.

ENTRY TYPE

Referrals are received from Plastic Surgeons, Orthopaedic Surgeons and Vascular Surgeons for an in-patient rehabilitation following an elective, revision or emergency amputation.

TYPE OF FACILITY

8 – 12 bedded Nurse led facility

AREA COVERED

Kent & Medway

PRE-AMPUTATION

Consultation will be arranged with the appropriate member of the Amputee Rehabilitation MDT Team if the elective amputation is planned.

PRIMARY PATIENTS

Referrals are received following initial amputation or revision amputation from acute hospitals for in-patient rehabilitation. Wherever possible, a member of the Amputee Rehabilitation MDT Team will visit and assess the patient's suitability for undergoing in-patient rehabilitation.

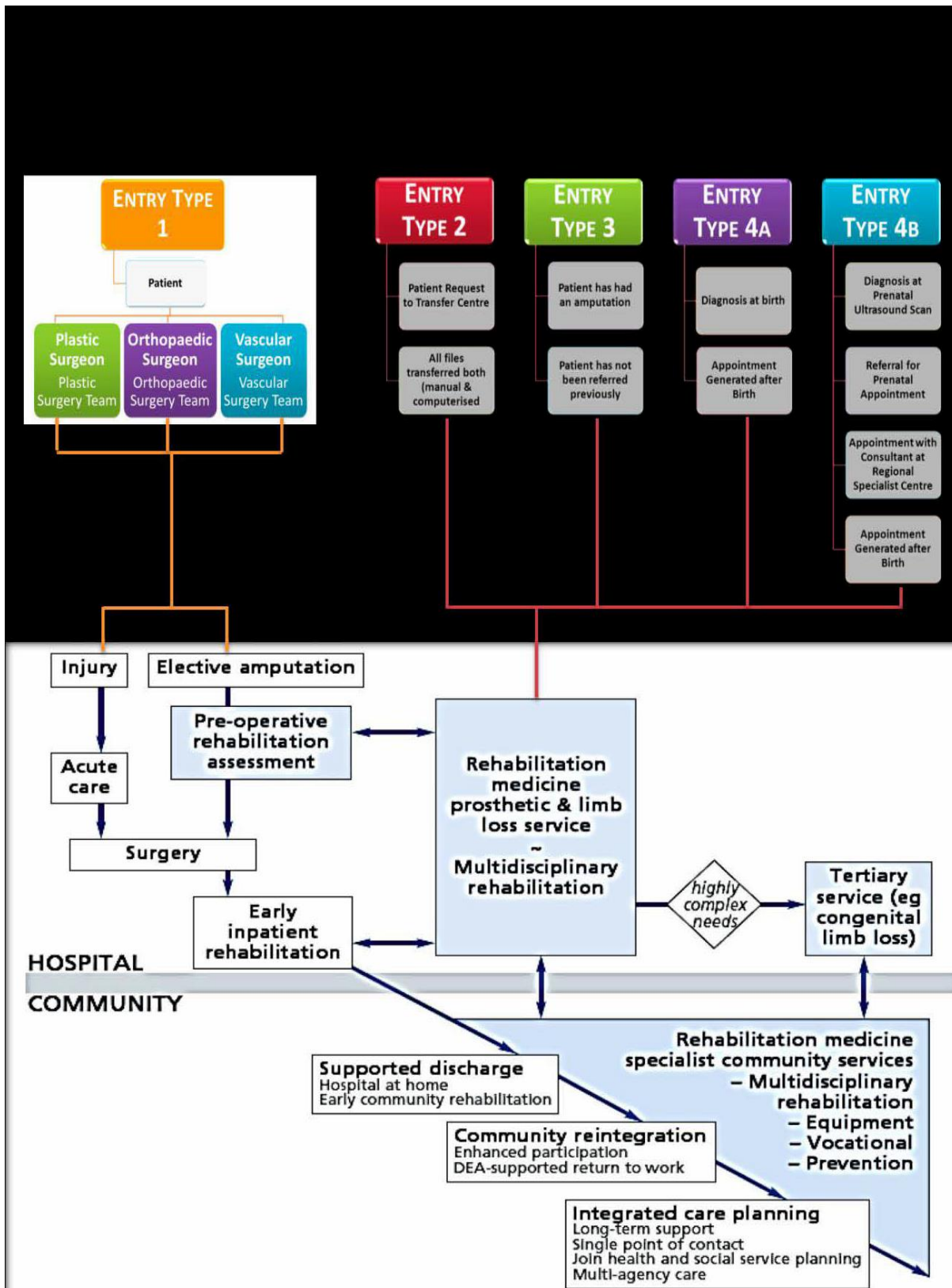
ADMISSION CRITERIA

- 18 years of age or over with a major lower limb amputation or revision surgery
- Medically stable without risk of rapid deterioration
- Diabetes controlled so there have been no hypoglycaemic events or hyperglycaemic events with BM>28 over the preceding 48 hours
- No regular acute or specialist medical/nursing input required
- Assessed by therapists as ready to actively participate rehabilitation

- Patient centred achievable goals agreed in consultation and collaboration with the patient and their carer/family prior to admission
- Patient consents to admission to ARU
- A discharge destination is identified on the referral and a plan is in place, actionable within 7 weeks
- Be predicted to cooperate with rehabilitation
- Not awaiting planned surgical intervention to the amputation stump
- Wounds must be sufficiently healed for volume control rehabilitation to commence, e.g. Juzo, PPAM Aid / Femurette
- Assessed for a wheelchair and onward referral made
- MRSA /C. Difficile status, determined by single room availability.

PERIOD OF REHABILITATION

Duration of in-patient rehabilitation will be for 6 weeks in the first instance. Further extension is possible, if the expected goals are not met and it is anticipated that it is likely the patient will be able to achieve the goals set out initially by extending for another period of 6 weeks.






Kent and Medway Vascular Clinical Network

Standard Template

Carotid Guidance Notes

The pathways relate to the new service model as part of the Network arrangement . Therefore at each interventional point of care, insert colour coded circles to indicate where the treatment takes place, as shown below:




	<p>Single Arterial Centre</p> <p>A single hospital within the network that provides all inpatient care for both elective and emergency vascular care, providing all types of vascular surgery and vascular interventional radiology. The only hospital that has on site a 24/7 full year round specialist vascular team to manage all inpatient elective and emergency care. The arterial centre is the managerial centre for the network. The arterial centre will also fulfil all the components of care available in an enhanced non-arterial vascular centre.</p>
	<p>Enhanced Non Arterial Centre</p> <p>A single hospital within the network that is resourced to provide local vascular services that do not require a 24/7 workforce presence and inpatient based vascular interventions. This hospital will have an enhanced weekday presence of specialist vascular teams to support other acute services within the Hospital. This hospital will have enhancement of interventional radiology services to support day case vascular interventions. This service will also support the needs of non-vascular interventional radiology service. This site will have developed day case services to support activity within the vascular network, e.g. renal access surgery and on-going fistula management support interventions. This site will offer a comprehensive vascular diagnostic and outpatient and ambulatory care service.</p>
	<p>Non Enhanced Non Arterial Centre</p> <p>Any number of hospitals that provide acute care services that at times will require on site vascular advice and will require direct contact links to the Arterial centre for 24/7 support. These sites will not have a daily specialist vascular presence; however the ability to offer full vascular diagnostics and outpatient services for the local population will be available.</p>

Kent and Medway Vascular Clinical Network
Standard Template











Name/Type of Pathway: Carotid Intervention Pathway

Emergency/ Elective

Key:

-  Single Arterial Centre
-  Enhanced Non Arterial Centre
-  Non Enhanced Non Arterial Centre




NB: colour code each point, as per key above, to where intervention takes place.

Diagnosis or Intervention Confirmed
Briefly outline how this happens. Who, what, when etc
Duplex confirms stenosis >50% with CTA confirming stenosis >50% (symptomatic patients) using NASCET criteria with Rankin score of 3 or less   
(Asymptomatic carotid stenoses of >70% to be entered into a trial after MDM discussion)
Referrals to Single Arterial Centre  from HASU or TIA Clinics (all sites)   
Imaging within 7 days of event (NICE guidelines) – to be carried out at all sites   





Pre-operative / Pre-Intervention Phase



- Outline what should happen when and by whom, to include diagnostics as well as patient review and pre-operative optimisation.
- Best practice, if relevant (outline the standards / source of best practice e.g. NICE guidance and/or outline proposed service improvement)

Imaging as above ALL SITES   

Referral to Single Arterial Centre 

Central point of referral with “fitness for surgery” questionnaire – if questionnaire and imaging satisfactory then transfer to Single Arterial Centre for surgery on the next available list 

Carotid Endarterectomy – within two weeks of event 

Multi-disciplinary meeting – for difficult cases, carotid artery stenting cases (if this procedure is to be undertaken at the Single Arterial Centre) or asymptomatic carotid stenosis – to occur twice a month at single arterial and enhanced non arterial centres via teleconference link  



Peri-Operative / intervention phase by

Outline what happens in this phase:

- When e.g. procedure should be performed within x amount of time of decision to operate
- Who
- Where
- Is HDU / ITU likely
- Best practice, if relevant (outline the standards /source of best practice e.g. NICE guidance and/or outline proposed service improvement)

Operation within two weeks of event (NICE Guidelines) at Single Arterial Centre 

Surgeons with interest in carotid surgery to undertake procedure (GB, WE, SS, TR & LS)

Patients to be transferred from all sites to Arterial Centre to be operated on by any of these surgeons on next available list. ⊗

Post-operative care – High dependency unit bed ⊗

Post Op phase

Outline key interventions that take place, by who, what (diagnostics etc), when (time period) and how. Description to include patient reviews, confirmation of length of stay, where and onward referral

Outline best practice, if relevant (outline the standards / source of best practice e.g. NICE guidance and/or outline proposed service improvement)

24-48 hours inpatient stay before discharge from Arterial Centre ⊗

If require further rehabilitation for transfer back to Stroke Units from referring hospital ⊗ ➤



Outpatient follow-up by nurse telephone call at 4 weeks post-operatively. If there are any problems identified by this call for formal review in clinic (nearest vascular clinic to patient) ⊗ ➤ ◆

Data to be submitted to NVR

Enablers

For each of the phases, as part of the pathway development, if there is best practice / service improvement requirements, what are the enablers to implement these.

Development of HASU's and co-ordinated pathways with them




Carotid surgery co-ordinator – to act as a central point of referral (fitness for surgery questionnaire), co-ordinate transfer of patients in timely manner, liaise with surgeons, co-ordinate MDM, submit asymptomatic patients to trials, telephone follow-up of patients and co-ordinate carotid artery stenting if this is developed. ⊗

Development of carotid artery stenting – dependent on numbers and expertise available ⊗

**Kent and Medway Vascular Clinical Network
Standard Template for Pre-Assessment**

**Model for Pre Assessment for the K&M Vascular Clinical Network
Elective AAA, carotid and limb revascularisation procedures**

Key:

-  Single Arterial Centre
-  Enhanced Non Arterial Centre
-  Non Enhanced Non Arterial Centre

NB: colour code each point, as per key above, to where intervention takes place.

Current Pre – Assessment Process

Briefly outline how this happens now across the hospitals within the Network? Who, what, when, how etc.?

What are the issues (SWOT) in the way the system works now?

Is there any best practice that can be adopted /shared learning from existing practices?

Kent & Canterbury Hospital:

- Paper based system.
- Patient's pre-assessed by Vascular Specialist Nurses in the first instance.
- ASA 3/4 and complex surgery pre-assessed by Consultant Vascular Anaesthetist.
- Work up standardised following Vascular Society recommendations.
- Echocardiography and lung function testing routine for more complex patients and procedures.

Medway Maritime Hospital:

- Electronic system (SaferSleep).
- All patients pre-assessed by a pre-assessment nurse who predominantly deals with vascular patients.
- ASA 3/4 and complex surgery pre-assessed by Consultant Anaesthetist (not necessarily a vascular anaesthetist).
- Work up standardised following Vascular Society recommendations.
- Cardio-pulmonary exercise testing (CPET) routine for more complex patients and procedures.

At both sites, vascular anaesthetists occasionally attend MDT meetings.



Pre-Assessment for the Kent and Medway Vascular Clinical Network

- Outline what should happen when and by whom, and where pre assessment should take place and what tests are involved etc. as part of patient review and pre-operative optimisation.
- Best practice, if relevant (outline the standards / source of best practice e.g. NICE guidance and/or outline proposed service improvement)
- Outline the benefits for the patients and clinicians within the Network



Single Arterial Centre



Enhanced Non Arterial Centre for patients being treated on this site, excludes inpatient intervention

- Pre-assessment to take place at both sites using one system.
- Electronic system (SaferSleep) to be used as standard.
- SaferSleep to be customised as required fitting the needs of vascular anaesthetists across the network.
- SaferSleep records to be accessible to all clinical staff across both sites.
- CPET testing to be routine for ASA 3/4 patients and those having complex surgery.
- CPET to be offered at both sites.
- Consideration to be given for web based or telephone pre-assessment for ASA 1/2 patients having day surgery.
- POPS consultant team to be involved in inpatient pathway referral as part of prehabilitation and preassessment.
- Consultant Vascular anaesthetists to see and assess all inpatient procedure referrals to the arterial centre. (Consultant vascular anaesthetists must undertake activity at the arterial centre)
- POPS and Anaesthetic consultants to attend MDT.



Non Enhanced Non Arterial Centre

- No pre-assessment to take place.

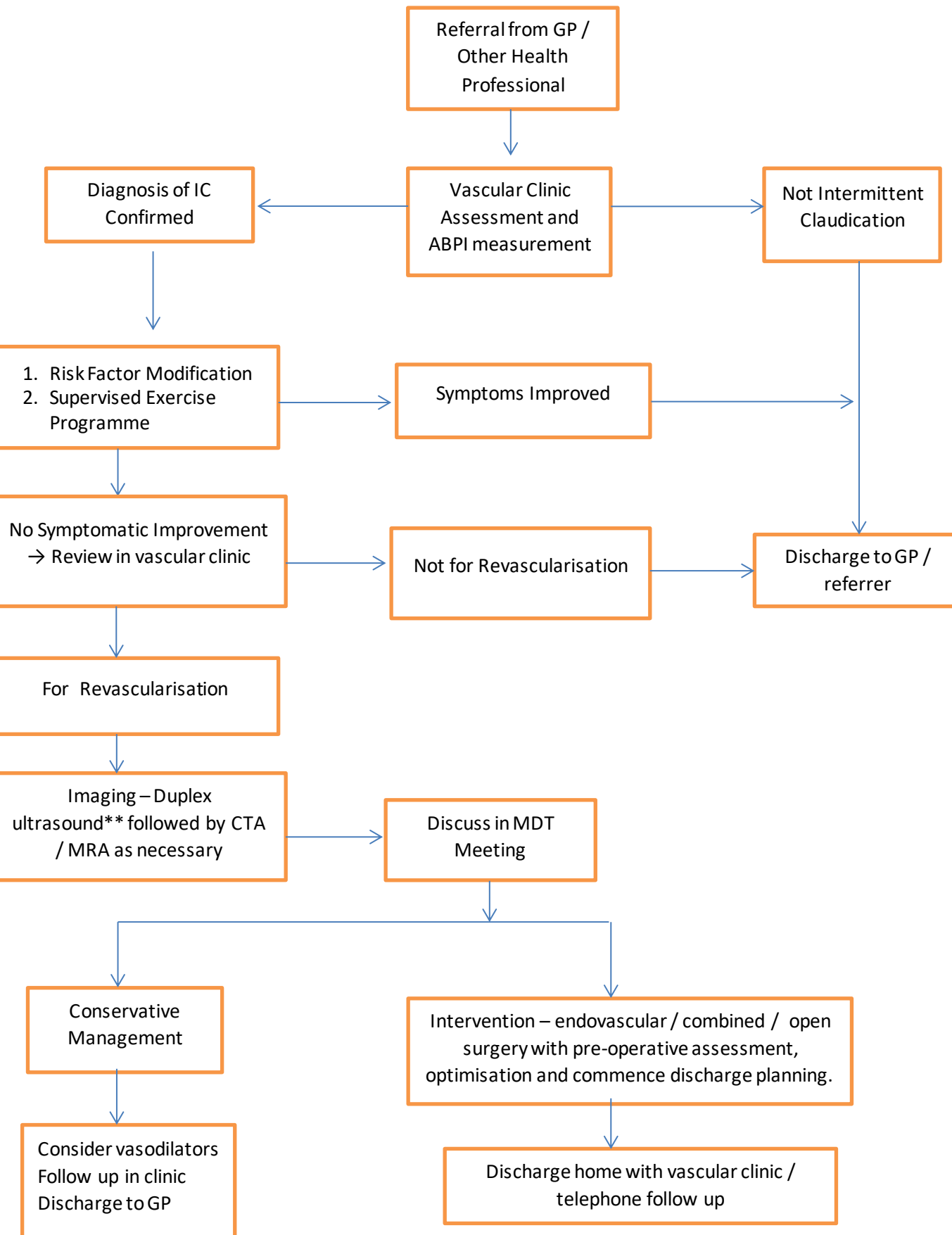
MANAGEMENT PATHWAYS FOR PATIENTS WITH PERIPHERAL VASCULAR DISEASE

References

NICE Peripheral Arterial Disease guidelines 2016

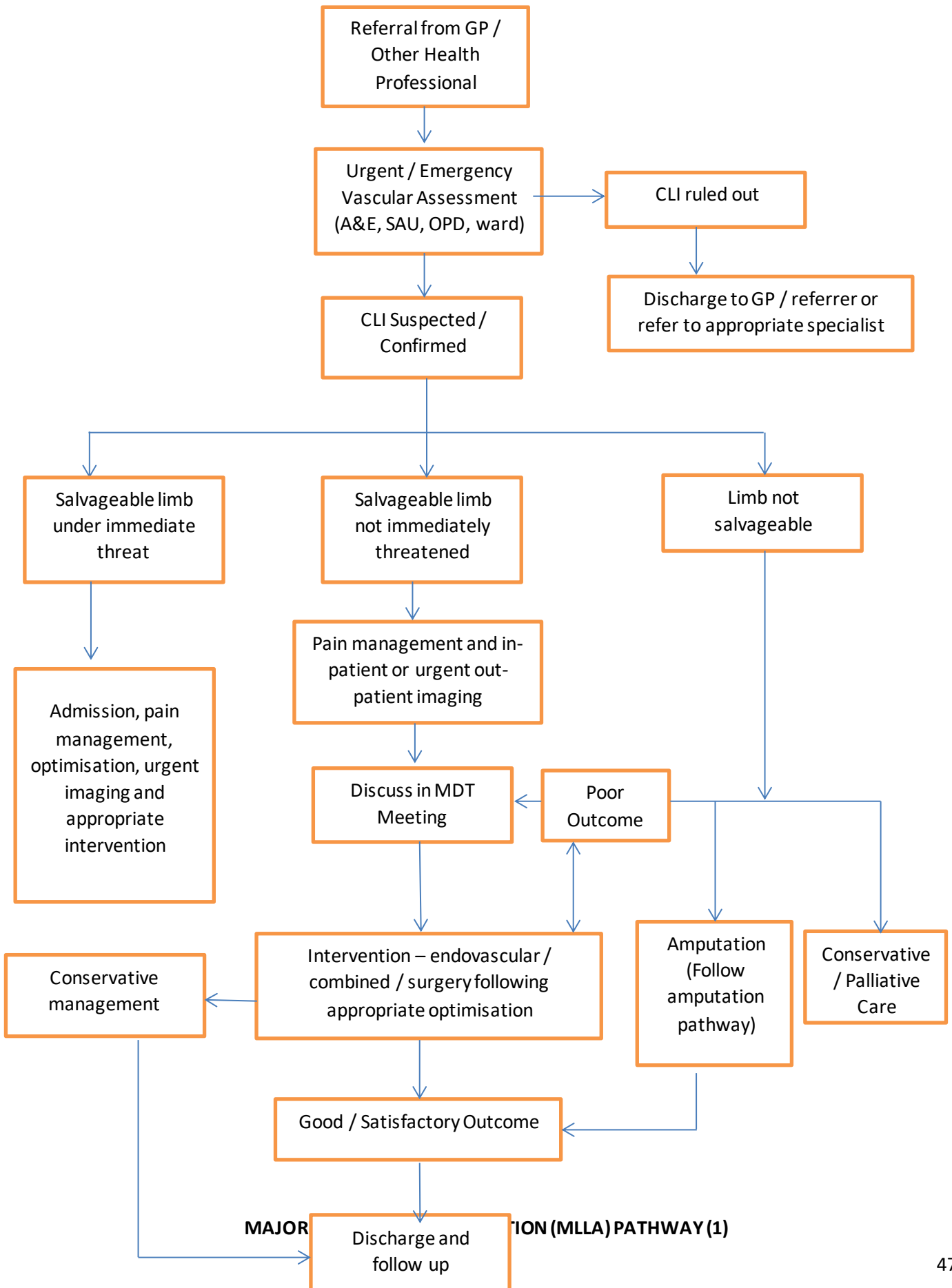
Vascular Society Major Amputation Guidelines 2016

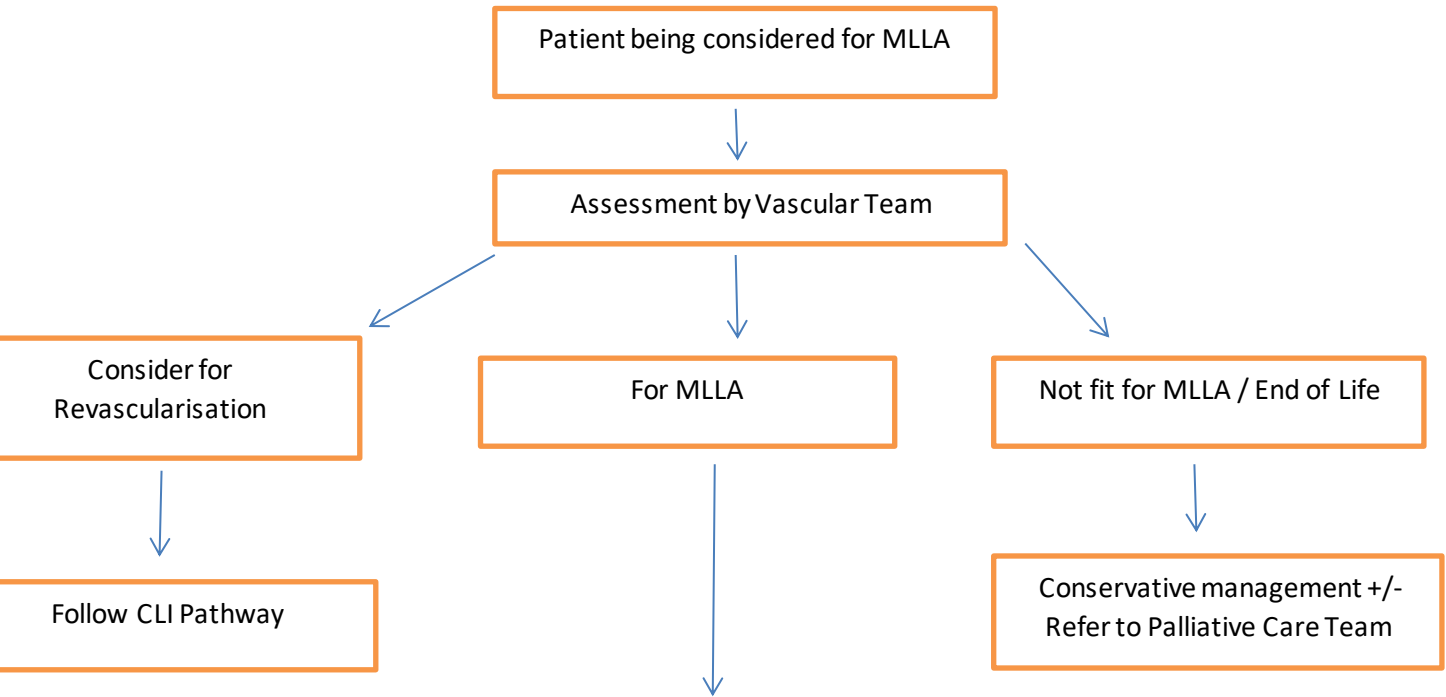
INTERMITTENT CLAUDICATION MANAGEMENT PATHWAY



**Currently all WKVC patients with suspected IC get duplex ultrasound following initial clinical assessment

CRITICAL LOWER LIMB ISCHAEMIA PATHWAY





Pre-Operative Phase

Named Consultant Vascular Surgeon
 Physiological optimisation with review by diabetic team, physicians and anaesthetists as appropriate
 Pain team review and appropriate management
 Assessment by rehabilitation team
 Commence appropriate antibiotics as per microbiology protocols
 Nutritional, pressure area, falls risk and VTE assessments
 Commence discharge planning

Peri-Operative Phase

Procedure performed during normal working hours, ideally on a planned operating list
 Procedure should be performed within 48 hours of the decision to operate
 No operation to be deferred more than once except for medical reasons
 Consultant vascular surgeon to operate or supervise a trainee
 Consultant anaesthetist or post FRCA trainee should be present
 Routine antibiotic and DVT prophylaxis
 Appropriate level of critical care bed should be available
 Appropriate access to blood products

Post-Operative Phase

24/7 access to critical care and medical specialty cover

Acute pain team review on day 1 and according to need thereafter

Diabetic team review at least twice a week and according to need

Wound and pressure area care as per local protocols

Early mobilisation, physiotherapy and rehabilitation

Referral to rehabilitation prosthetic team

Patient education in safe mobilisation, stump care and general health

Early discharge planning

Follow up by rehabilitation team with rapid access to the vascular team as needed

IN-PATIENT AMPUTEE REHABILITATION AND ENABLEMENT SERVICE

LOCATION

To be decided – preferably at a site away from the main vascular hub.

MANAGING NHS TRUST

To be decided – preferably community NHS trust rather than acute trust. The unit will be run like the unit at Lambeth by a community rehabilitation team fully trained in amputation rehabilitation - physiotherapists, OT's, etc. The patients' medical management will be by local GPs with rapid access to the vascular teams as necessary. The Disablement Services Centre (DSC) will continue with provision and fitting of prostheses with clinics run by a consultant in rehabilitation as currently happens.

ENTRY TYPE

Referrals are received from Plastic Surgeons, Orthopaedic Surgeons and Vascular Surgeons for an in-patient rehabilitation following an elective, revision or emergency amputation.

TYPE OF FACILITY

8 – 12 bedded Nurse led facility

AREA COVERED

Kent & Medway

PRE-AMPUTATION

Consultation will be arranged with the appropriate member of the Amputee Rehabilitation MDT Team if the elective amputation is planned.

PRIMARY PATIENTS

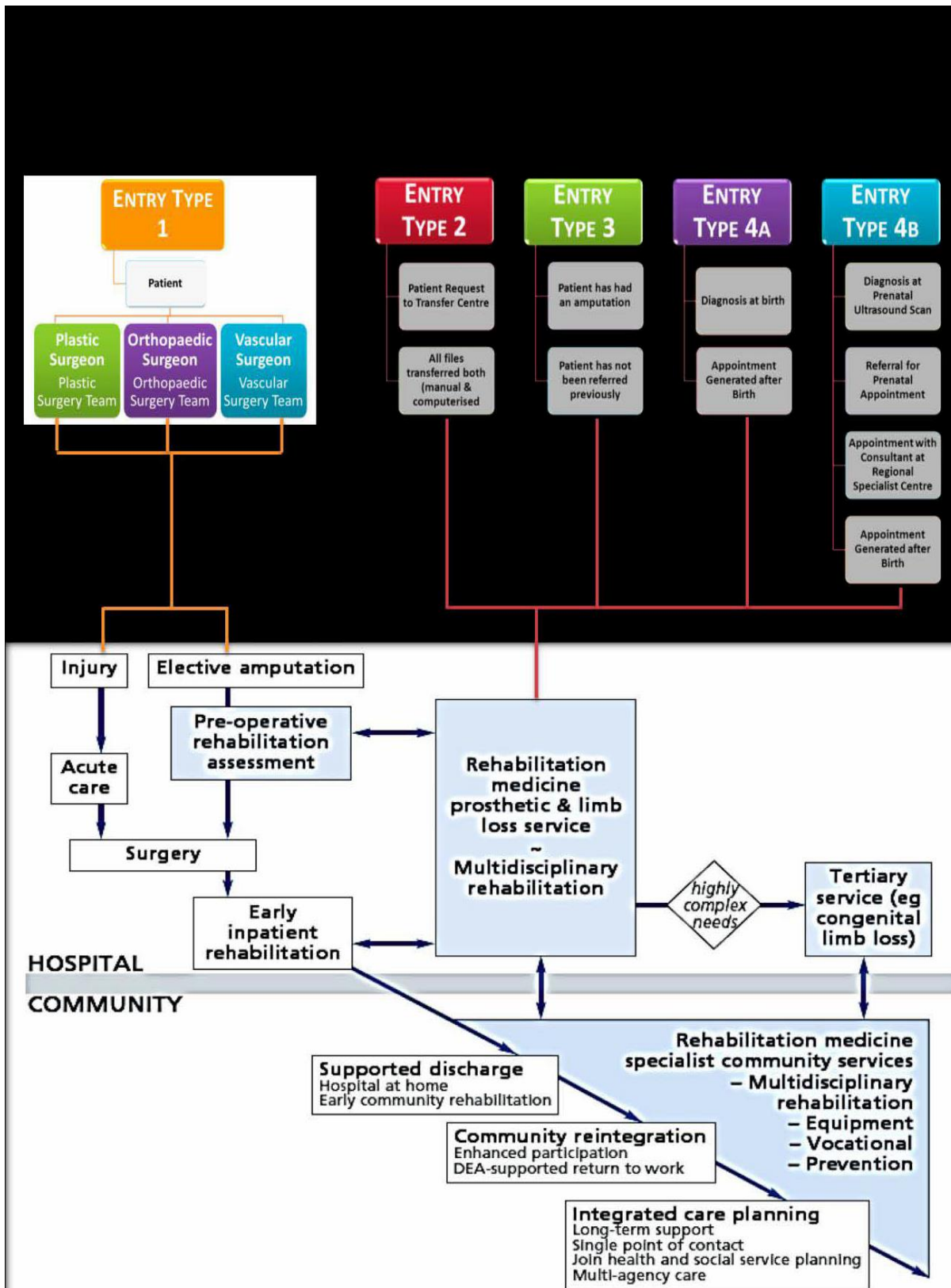
Referrals are received following initial amputation or revision amputation from acute hospitals for in-patient rehabilitation. Wherever possible, a member of the Amputee Rehabilitation MDT Team will visit and assess the patient's suitability for undergoing in-patient rehabilitation.

ADMISSION CRITERIA

- 18 years of age or over with a major lower limb amputation or revision surgery
- Medically stable without risk of rapid deterioration
- Diabetes controlled so there have been no hypoglycaemic events or hyperglycaemic events with BM>28 over the preceding 48 hours
- No regular acute or specialist medical/nursing input required
- Assessed by therapists as ready to actively participate rehabilitation
- Patient centred achievable goals agreed in consultation and collaboration with the patient and their carer/family prior to admission
- Patient consents to admission to ARU
- A discharge destination is identified on the referral and a plan is in place, actionable within 7 weeks
- Be predicted to cooperate with rehabilitation
- Not awaiting planned surgical intervention to the amputation stump
- Wounds must be sufficiently healed for volume control rehabilitation to commence, e.g. Juzo, PPAM Aid / Femurette
- Assessed for a wheelchair and onward referral made
- MRSA /C. Difficile status, determined by single room availability.

PERIOD OF REHABILITATION

Duration of in-patient rehabilitation will be for 6 weeks in the first instance. Further extension is possible, if the expected goals are not met and it is anticipated that it is likely the patient will be able to achieve the goals set out initially by extending for another period of 6 weeks.






Kent and Medway Vascular Clinical Network

Standard Template

Renal Access Guidance Notes

The pathways relate to the new service model as part of the Network arrangement. Therefore at each interventional point of care, insert colour coded circles to indicate where the treatment takes place, as shown below:




	<p>Single Arterial Centre</p> <p>A single hospital within the network that provides all inpatient care for both elective and emergency vascular care, providing all types of vascular surgery and vascular interventional radiology. The only hospital that has on site a 24/7 full year round specialist vascular team to manage all inpatient elective and emergency care. The arterial centre is the managerial centre for the network. The arterial centre will also fulfil all the components of care available in an enhanced non-arterial vascular centre.</p>
	<p>Enhanced Non Arterial Centre</p> <p>A single hospital within the network that is resourced to provide local vascular services that do not require a 24/7 workforce presence and inpatient based vascular interventions. This hospital will have an enhanced weekday presence of specialist vascular teams to support other acute services within the Hospital. This hospital will have enhancement of interventional radiology services to support day case vascular interventions. This service will also support the needs of non-vascular interventional radiology service. This site will have developed day case services to support activity within the vascular network, e.g. renal access surgery and on-going fistula management support interventions. This site will offer a comprehensive vascular diagnostic and outpatient and ambulatory care service.</p>
	<p>Non Enhanced Non Arterial Centre</p> <p>Any number of hospitals that provide acute care services that at times will require on site vascular advice and will require direct contact links to the Arterial centre for 24/7 support. These sites will not have a daily specialist vascular presence; however the ability to offer full vascular diagnostics and outpatient services for the local population will be available.</p>

Kent and Medway Vascular Clinical Network
Standard Template

Name/Type of Pathway ___Renal Access

Emergency / Elective

Key:

-  Single Arterial Centre
-  Enhanced Non Arterial Centre
-  Non Enhanced Non Arterial Centre

NB: colour code each point, as per key above, to where intervention takes place.

Diagnosis or Intervention Confirmed

Briefly outline how this happens. Who, what, when etc

- (1) Patients with a diagnosis of Chronic Kidney Disease who are referred to Nephrology and have eGFR around 15 and on downward trajectory, expected to need dialysis within months.
- (2) Patients having problems with their dialysis access (Gradual failure, Aneurysmal dilatation, Steal syndrome etc).
- (3) Sudden failure of Access

Pre-operative / Pre-Intervention Phase

- Outline what should happen when and by whom, to include diagnostics as well as patient review and pre-operative optimisation.
- Best practice, if relevant (outline the standards / source of best practice e.g. NICE guidance and/or outline proposed service improvement)



Patients in groups (1) & (2) needs to be seen in Access Clinic within 2 weeks. At present weekly Access clinic is available only in the Arterial centre in Canterbury but this could be made available in the enhanced non-arterial centre every other week (Depending on demand). Patients will be seen by a multi-professional team (Access Surgeon, Vascular Access Nurse, Imaging professional – Sonographer or Radiologist) and will have clinical as well as imaging assessment prior to deciding on appropriate intervention. Most patients will be suitable for simple primary access creation under LA which can be done at the arterial centre as well as enhanced non-arterial centre. More complex interventions may need MDT discussion as well as anaesthetic assessment and are best carried out in the arterial centre. The choice of procedure and best practice protocols are described by VASBI and KDOQI (There are no NICE guidelines at present).



All sudden failures need admission to Renal unit for continuing renal replacement therapy by alternative means (Line dialysis/PD) and an attempt could be made for salvage of the access. For this ideally the arterial centre where this work could be done should be co-located with the Renal unit.



Patients may need various imaging techniques (Duplex, Venography, Fistulography, CT angiography, MRI etc) and the more complex evaluation is best done at the arterial centre whilst Duplex and Venography could be carried out in the enhanced non-arterial centre.

Peri-Operative / intervention phase by

Outline what happens in this phase:

- When e.g. procedure should be performed within x amount of time of decision to operate
- Who
- Where
- Is HDU / ITU likely
- Best practice, if relevant (outline the standards /source of best practice e.g. NICE guidance and/or outline proposed service improvement)



Primary access creation timing will depend on the rapidity of deterioration of renal function and in most cases when patients are referred to Access clinic they have an eGFR of 15 or less and falling. These patients should have their primary access creation within 6 weeks from referral. Most of these operations can be done under LA and can be done both at arterial centre as well as enhanced non-arterial centre (See above). HDU or ITU care is very unlikely to be needed.



More complex access creation (BBT/Grafts etc) that is likely to need GA is best reserved for the arterial centre.

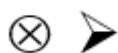
There are no NICE guidelines in this area but there is best practice tariff (Dialysis with lines reimbursed approx 5K/year less than dialysis with a fistula or graft) as well as guidelines by VASBI.

Delivering the service via enhance non-arterial centre as well as the arterial centre will be a service improvement in that the service will be delivered with better/more local access for patients.

Post Op phase

Outline key interventions that take place, by who, what (diagnostics etc), when (time period) and how. Description to include patient reviews, confirmation of length of stay, where and onward referral

Outline best practice, if relevant (outline the standards / source of best practice e.g. NICE guidance and/or outline proposed service improvement)



Most of the primary access creation will be as day cases. However, the patients will need review by Access nurses for independent recording of outcomes and quality assurance.



More complex access creation and access salvage is unpredictable and will need in-patient care under the Renal team to meet their on-going renal replacement therapy as well as other medical needs.

There are no best practice guidelines at present.

Enablers

For each of the phases, as part of the pathway development, if there is best practice / service improvement requirements, what are the enablers to implement these.

Provision of time to discuss/agree proposals with all stake holders

Identification of clinic/theatre space for Access work

Review of Job plans

Investment in sonographers/Radiologists to support the service

Identification of funding streams (for eg – for travel to enhanced non-arterial centre for clinic/theatre

Referral Protocol for Vascular A&E or Inpatient Emergencies in Non-Arterial Hospitals

1. Introduction

- In March 2019 an external review of the provision of vascular services serving Kent and Medway recommended that all emergency vascular surgery be centralised at the Kent and Canterbury Hospital (K&CH) in Canterbury, Kent.
- This protocol is to assist with the implementation of this service change from **INSERT DATE** onwards and with the piloting of the new referral pathway in the interim.

2. Management of vascular emergencies presenting to non-arterial A&E

- Patients arriving at a non-arterial hospital with a vascular condition requiring emergency intervention should have a confirmed diagnosis and be referred within one hour of arrival.¹
- If a vascular surgeon is on site in the out-patient clinic or day surgery unit, the case should be discussed with them during the normal working hours.
- Suspected vascular emergencies should be discussed with the on call vascular team at K&CH via the East Kent Hospitals NHS Foundation Trust's switchboard (01227 766877) or through a mobile number **(INSERT NUMBER)**
- Clinical criteria to assist these discussions are contained in Appendix 1.

3. Management of in-patient vascular emergencies

- If a vascular surgeon is on site in the out-patient clinic or day surgery unit, the case should be discussed with them during the normal working hours.
- Where arterial surgery is currently carried out, spoke hospitals should retain regularly maintained and sterilised vascular operating instrument trays. They should also maintain a

¹ The Provision of Services for Patients with Vascular Disease 2012 (November 2011)

selection of arterial grafts to enable on site management of intraoperative emergencies. A standardised detailed list of the required equipment will follow.

- If there is no vascular surgeon on site cover or out of hours contact the Vascular on-call team at the K&CH via the EKHUFT switchboard or through a mobile number **(INSERT NUMBER)**.
- Clinical criteria to assist these discussions are contained in Appendix 1.

4. Intra-operative vascular emergency

If vascular surgical input is required due to intra-operative vascular injury during non-vascular operations:

- contact the vascular surgeon who may be on site in the out-patient clinic or day surgery unit
- If there is no vascular surgeon on site cover or out of hours, contact the Vascular on call team at the K&CH via the EKHUFT switchboard or through a mobile number **(INSERT NUMBER)**.
- Such conditions may either be treated on site or transferred to K&CH.

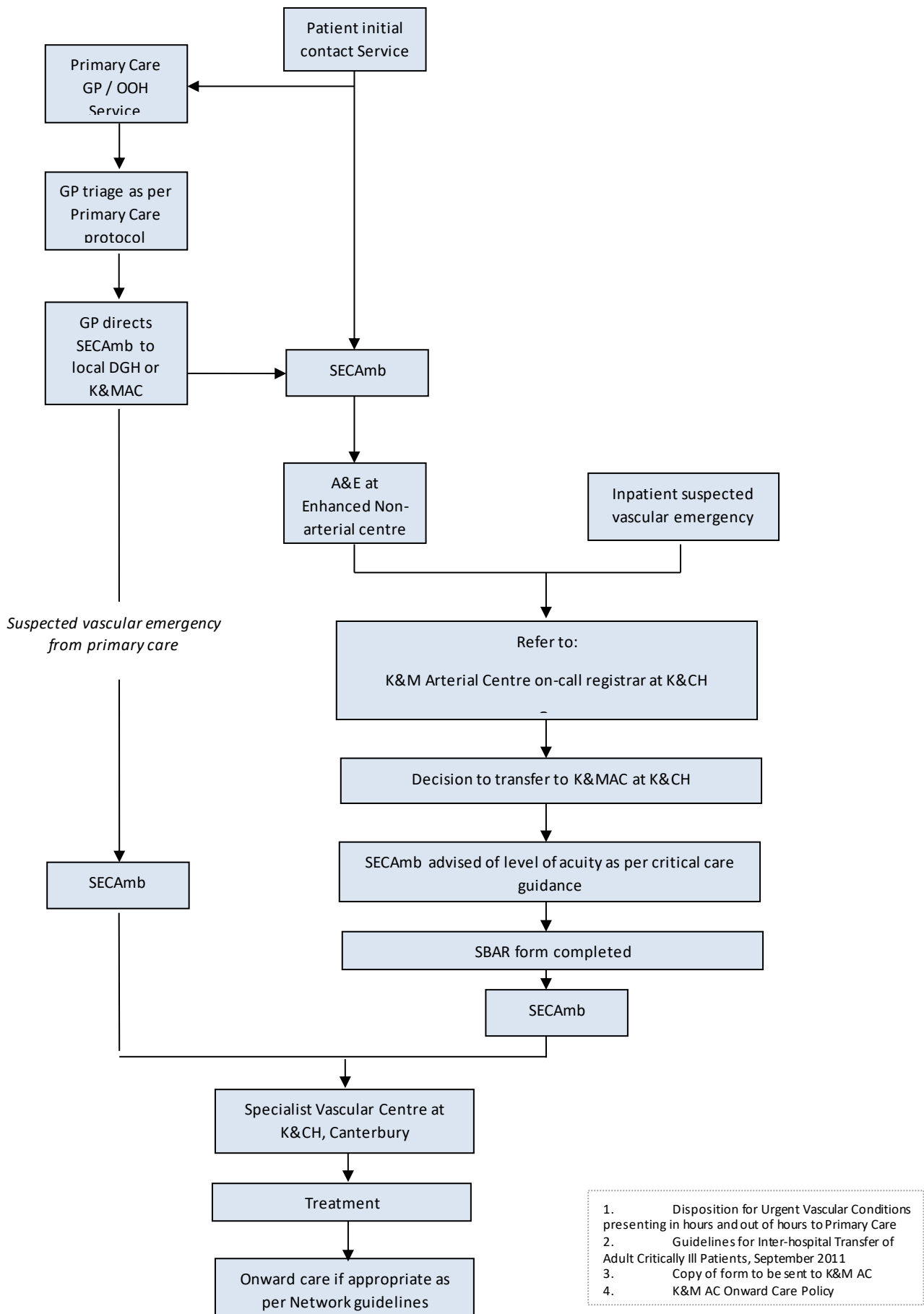
5. For transfers to the K&M Arterial Centre (K&MAC) at K&CH, Canterbury

- SECAmb is to be notified of the level of acuity
- A *SBAR* form should be completed, copies of which are available in A&E and ICU
- One copy of the transfer form should be returned to **XXXX**
- Services should be arranged to minimise transfer times (target – less than 1 hour)¹.
- 95% of patients should be triaged, referred and have arrived at the vascular unit within two hours of arrival at the spoke hospital. All hospitals should audit their transfer times and audit their service provision against locally agreed standards*
- For further information please refer to Kent Critical Care Network's Critical Care transfer guidelines.

6. List of non-Arterial hospitals

- Medway Maritime Hospital, Medway NHS Foundation Trust
- Maidstone Hospital, Maidstone & Tunbridge Wells NHS Trust
- William Harvey Hospital, Ashford
- Queen Elizabeth The Queen Mother Hospital, Margate
- Pembury Hospital, Pembury, Maidstone & Tunbridge Wells NHS Trust

The following flowchart outlines the emergency referral process:



Appendix – Management in A&E and Inpatients in Enhanced non-arterial hospitals

Kent and Medway Vascular and Interventional Radiology Network Management of Vascular Emergencies presenting to A&E Departments at Enhanced Non-arterial Hospitals		
Urgency Grade ²	Condition	Action ³
A	Arterial Haemorrhage: <ul style="list-style-type: none"> • Ruptured AAA • Ruptured other aneurysms/grafts • Aorto-visceral fistulae • Penetrating arterial injury Non-penetrating Arterial Injury: <ul style="list-style-type: none"> • Crush injury with ischaemia • Supracondylar fractures with persistent ischaemia after reduction • Other combined bony and arterial injury 	<ul style="list-style-type: none"> ➤ Inform on call team at K&CH and document time ➤ Blue-light transfer to K&CH
B	Acute Limb Ischaemia: <ul style="list-style-type: none"> • Embolus • Occluded graft • Thrombosed popliteal aneurysm Crescendo TIA <ul style="list-style-type: none"> • Three or more TIAs within the preceding 24 Hours Limb or life threatening Diabetic Infection: <ul style="list-style-type: none"> • Foot or calf abscess with systemic sepsis • Any diabetic infection with acute or acute on chronic renal failure 	<ul style="list-style-type: none"> ➤ If a vascular surgeon is on site in the out-patient clinic or day surgery unit, the case should be discussed with them during the normal working hours. ➤ Inform on call team at K&CH and document time ➤ Blue-light transfer to K&CH
C	Critical Limb Ischaemia:	<ul style="list-style-type: none"> ➤ If a vascular surgeon is on site in the out-patient clinic or day

² Enhanced Non-arterial hospitals are not to accept GP referrals for grades A and B vascular emergencies. Instead, referring GPs should be advised to refer directly to the K&CH.

³ Adherence to action guidelines will be audited on regular basis.

	<ul style="list-style-type: none"> • Toe necrosis • Arterial ulcer • Rest pain • Diabetic foot with no signs of systemic sepsis 	<p>surgery unit, the case should be discussed with them during the normal working hours.</p> <ul style="list-style-type: none"> ➤ Discuss with on call team at K&CH and document ➤ Either admit to receiving hospital or arrange an urgent local outpatient appointment
D	<p>Other</p> <ul style="list-style-type: none"> • Microemboli • Vasculitis • Venous ulcers/bleeding • Above knee great saphenous vein thrombophlebitis 	

ACTIVITY SUMMARY for Index procedures

This data is from the NVR. As queried on August 5th 2019

Allowance should be made

1. Angioplasty data is reliant on IR consultants Feedback is that many do not enter data ?
2. 2018-2019 data may be a little under reported due to complete submissions of data entry not being made
3. Maidstone activity should be reflected within Medway activity due to current pathway
4. Pembury activity currently unknown

Procedures

The table below shows the total number of inpatient procedures that took place in 2019/20 at EKHUFT and at MFT. The activity undertaken at MFT includes patients admitted from the Maidstone catchment area.

Procedure Type	EKHUFT 2019/20 (Full Year)	MFT 2019/20 (Full Year)
Open Aortic Aneurysm	52	10
EVAR Aortic Aneurysm	54	20
Subclavian Artery	0	4
Lower Limb - Reconstruction Surgery	48	48
Lower Limb - Amputation (Major)	78	66
Lower Limb - Amputation (Minor)	70	98
Emergency Femoral Artery	0	2
Elective Iliac Artery Ops	4	0
Carotid Endarterectomy	32	10
IR - Angioplasty	270	94
Renal Access	128	46
Total inpatient activity	736	398

