Commissioning For Patients:

Guidance on National Commissioning of Specialised Services for People of All Ages with Limb Loss

Produced in collaboration by stakeholders and members of
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the British Society of Rehabilitation Medicine (Fergus Jepson, Consultant in Rehabilitation Medicine);
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the National Prosthetic Centre Managers Forum (Sue Charlesworth, Chair)

THIS GUIDANCE WILL BENEFIT THE PATIENT BY:

- ✓ improving health and well-being outcomes for persons suffering with limb loss and any related conditions by offering a personalised care
- ✓ facilitating and enabling Patient Choice and Putting People First
- ✓ the elimination of post-code prescribing by equality of access to the highest quality services

THIS GUIDANCE WILL BENEFIT THE SERVICE BY:

- ✓ reducing emergency bed days through improved care in primary care and community settings
- ✓ close collaboration between Health and Social Care Services
- ✓ the implementation of the "Common Core Principles to Support Self Care"
- ✓ honouring the Cross Government guarantees to our Armed Forces, Veterans and their Families
- ✓ ensuring a competent workforce with the skills and knowledge to deliver specialised, high quality services to patients

EVIDENCE OF EFFECTIVENESS IN LIMB LOSS REHABILITATION

Patient outcomes and long-term independence are core components to effective limb loss rehabilitation and re-ablement. So whilst keeping people out of hospital is important, consideration must be given to an individual patient's outcomes and quality of life particularly given the effectiveness of specialised and intensive inpatient rehabilitation, compared with generic rehabilitation or home care following amputation. The benefits of such an approach have been reported in three large studies although these used statistical methods to reduce selection bias rather than randomised allocation to different treatment arms.[1,2,3] These studies describe consistent patterns of improved survival, function, use of prosthesis, discharge home, reduced redo or additional amputations, and a reduction in other hospital admissions. This evidence has not supported the current trend towards outpatient- and community-based services. More local audits have described higher rates of limb use and shorter hospital stays compared with older published work.[4] There is a need for further review of the outcomes of current outpatient-based services.[5]

Chronological age is not a barrier to using a prosthesis, and even the very elderly may walk again, if their comorbidities permit.[6]

Limb loss rehabilitation is an active field for research into both high-tech developments, for example femoral osseo-integration (the direct structural and functional connection between living bone and the surface of a load-bearing artificial implant) for amputees who cannot manage with conventional sockets, and low-tech service changes, which will apply to many amputees.[7]

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FOREWORD

Professor the Lord McColl CBE FRCS FACS

Co-chair of the Associate Parliamentary Limb Loss Group

I congratulate all concerned on the production of this Guidance on National Commissioning of Specialised Services for People of All Ages with Limb Loss.

Patients record their thanksgiving for the wealth of knowledge, skills and experience in rehabilitation and independent living, of all the individuals and organisations involved in the Services concerned. I welcome their belief that, given the necessary resources and the benefits of national specialised commissioning, they will together further enhance and extend patient choice and high standards already achieved.

Sam Gallop CBE

Double amputee since 1944 and
Advocate of the Associate Parliamentary Limb Loss Group

Limb Loss and associated primary or secondary injuries are for life!

Every morning you get up out of bed or into your Wheelchair or specialised seating, don your artificial limbs or have them put on for you, as long as you are able. Pain, real or so-called phantom, is always lurking and ready to pounce.

We live in a high tech and robotic world of warfare for military and civilians, of high speed transport, high speed living, and life-giving and life-preserving medical skills. Disabilities therefore daily become more and more severe and complex. To quote one surgeon: *"Losing legs is often the least of it. Eviscerated abdomens; burst lungs; sheared groins and severe contaminations are the day-to-day fare"*.

Yet I know from personal experience that, if you and your blessed professionals are given the resources, you can make your way in the world and give back to others the help you have received. I therefore welcome this Guidance with the wish that it should help and enable others as I have been helped and enabled.

INTRODUCTION

This guidance places the patient at the heart of everything specialised rehabilitation and re-ablement centres[8] do. This guidance focuses on their independence, their goals and their Quality of Life. This guidance empowers and liberates clinicians to innovate, with the freedom to focus on improving healthcare services.

Following this guidance will reward quality, efficiency, support patient choice and diversity. Quality and patient outcomes provided through the efficient and effective use of vital resources is a constant but dynamic process by this specialised service guidance, whilst innovations and best practices continue to evolve.

Each year there are 6,000+ referrals to specialised rehabilitation and re-ablement centres[8] following a single or multiple amputations or as a result of congenital limb deficiency.

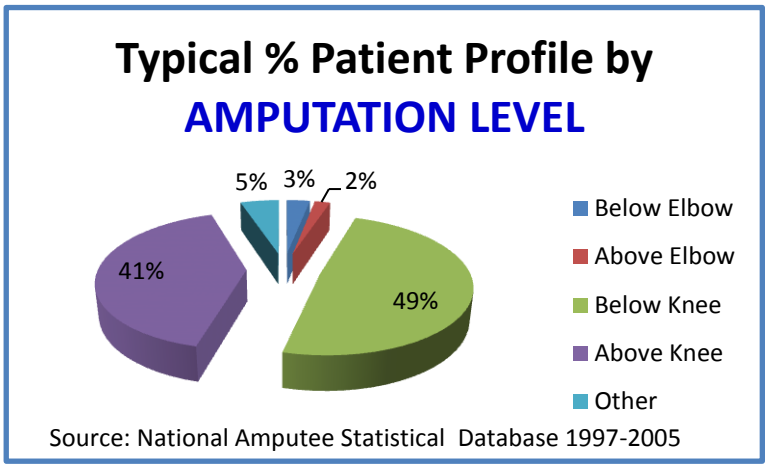
Over 90% of these referrals relate to lower limb amputation or limb loss, and nearly 80% of these referrals are aged 55 or over. The major cause of amputation is peripheral vascular disease, with diabetes mellitus being a significant factor in up to 50% of cases.

These are life-long conditions but it should be recognised that limb loss can be managed effectively through specialised rehabilitation and re-ablement services and can provide the individual patient with improvements in Quality of Life and Independence.

The rehabilitation and re-ablement of individual patients is provided by a specialised multi-disciplinary team. The needs of patients of all age groups are addressed including physical, mental, pain management, social, emotional and spiritual with the emphasis on individual outcomes, independence and prevention.

Dr David Colin-Thomé OBE, the National Director for Primary Care & Medical Adviser says: ***"Delivering improvements for people with long term conditions isn't just about treating illness, it's about delivering personalised, responsive, holistic care in the full context of how people live their lives."***[9]

The rehabilitation and re-ablement of amputees and patients with congenital limb deficiency is a specialised service and to date has been commissioned by specialised commissioners. The services are regarded as specialised for the following reasons:



- amputation as a condition is a complex disability, and it is important to distinguish and recognise the levels of complexity at the many levels of amputation
- due to the general complex nature of the patients limb loss, and the co-morbidity implications due to the life-long nature of the condition
- the specialised equipment service activity is both low volume, time intensive and relatively high cost
- the maximum utilisation of scarce specialised expertise is achieved by concentrating skilled resources in relatively few centres[8]
- economies of scale are achieved by concentrating the specialised equipment required for assessment and provision, as well as any workshop facilities, in relatively few centres[8]
- it is vital that patients have access to their peer group for support, learning and improving independence

THE IMPACT OF THIS COMMISSIONING GUIDANCE ON QUALITY INNOVATION PRODUCTIVITY AND PREVENTION (QIPP)[10]

QIPP is engaging large numbers of NHS staff to lead and support change. At a regional and local level there are QIPP plans which address the quality and productivity challenge, and these are supported by the national QIPP work streams which are producing tools and programmes to help local change leaders in successful implementation.

These commissioning guidelines tie in with the 12 work streams in the following manner:

COMMISSIONING AND PATHWAYS

Safe care:

- ✓ Appropriate assessment and treatment leads to
  - Improved mobility
  - Decrease in falls
  - Decreased time spend in a wheelchair thus a decreased risk of pressure sores and other co-morbidities
  - Decrease in inappropriate prescriptions

Right care:

- ✓ This document aims to change thinking on the commissioning of these services putting the citizen and the patient at the centre of management with patient centred management and informed patient choice.
- ✓ The tariff system outlined in this document aims to provide true value for the patient and following on to patient choice in the care delivery

Long term conditions:

- ✓ This documents explains the needs of the patient population and the aims of managing those at risk to prevent disease progression
- ✓ Empowering patients through patient centred approaches and informed patient choices that maximise self-management including individual care plans and improved knowledge and information
- ✓ The service will provide joined up (between the patient, the specialised rehabilitation team and acute/community/social services) and personal (informed patient choice, care plan) services.
- ✓ The service will provide strong professional and clinical leadership (consultant led specialised multidisciplinary team) with stated provision for workforce development in terms of training and research and development.

Urgent care:

- ✓ The service will provide the right care (patient choice, patient goals and satisfaction of outcome measures) given by the right person (the consultant led specialised multidisciplinary team) at the right place (outlined hub model)
- ✓ Emergency and urgent appointments lead to patient attending the appropriate service (specialised rehabilitation centre to see specialised MDT) rather than seeking GP or A&E, thus decreasing inappropriate GP and A&E appointments

AS, a 71 year old single below knee amputee says: ***"recently I had successful revision surgery, which I requested and was agreed and organised by my consultant. As a result I have just received my new leg. What a difference it has made to my life already! For example I recently had to visit my limb centre for a check-up on the limb, and for the first time I felt confident enough to take the bus, that being three buses there and three buses back."***

"This new limb that was provided by my consultant and prosthetist at my specialist rehabilitation centre, has now improved the Quality of my Life, and I now feel more independent."

"Whilst I did worry about the process of getting a new limb. In hindsight, I have been expertly guided through the process by specialists and this helped me to make the right choices in terms of the equipment available."

PROVIDER EFFICIENCY

Administrative efficiency and optimal management:

- ✓ The service will provide local and national information on additional support that may be available via charities, local and national disability services such as sports and recreational venues (in line with 'Be active, be healthy: a plan for getting the nation moving' Department of Health 11/02/2009) and vocational services.

Procurement:

- ✓ A tariff based system in tandem with national price setting for components ensures maximum local efficiency

Productive care:

- ✓ The service will improve productivity in both the ward and community setting.
- ✓ The tariff system and monitoring ensure linkage of workforce and productivity to finance and quality measures

Medicine use and procurement:

- ✓ A consultant with a special interest (as defined by the Royal college of Physicians) will ensure efficient use of medicines

SYSTEM ENABLERS

Primary care contracting and primary care commissioning:

- ✓ This service will change the commissioning framework to a tariff system and ties in with the QIPP national work streams as outlined in this section

Technology and digital vision:

- ✓ This service will have to include an IT system that is relevant and in support of regional and local IT strategies that ensures compatibility and interoperability of IT systems.

In summary further improvements will ensure that any service or equipment provided is done so

- ✓ in a patient-led NHS: strengthening individual choice and management of their own care, and ensuring they have a strong voice in the service they receive

- ✓ by delivering better Quality based health and well-being outcomes: shifting the focus and resources towards the better health and well-being outcomes, including national health outcome measures, patient-reported outcomes, and patient experience measures

- ✓ a more autonomous, transparent and accountable system: creating a long-term sustainable framework of institutions for the NHS, with greater autonomy from political interference and greater accountability to patients and the public, focused on their individual outcomes

- ✓ with fewer high level measures but an ability to drill-down in a coherent framework

Outcomes orientated around key national themes which sit comfortably with: effectiveness, experience and safety, and also reflecting NHS 'value' and 'contribution'

KEY SERVICE OUTCOMES TO PATIENTS OR SERVICE USERS

These specialised services seek to empower patients, provide them information about their condition(s) and offer them individual choice(s) about where and how and with what they are or can be treated The ability to return to normal life and work is a key service outcome thereby improving the individuals quality of life whilst reducing the need to rely on the Government for any benefits. ***"The value of rehabilitation is highlighted by the fact that 66% of working age amputees retain their employment"***[11] and this is achieved by providing services that:

> **LW**, a single below knee amputee said: ***"The specialist mobility centre provides a service where I can be seen by a consultant, prosthetist, nurse and orthotist all under the same roof and if required within the same visit."***

✓ Person (Patient) centred service[12]: Informed Patient Choice[13]
- Information[13]
  - The patient or advocates are provided access to all the information
- Choice[14]
  - The patient chooses the management based on information, evidence-based advice and personal circumstance within the frame work of the practical and financial limitations of the service
- Timing of treatment[14]
  - Appointments need to flexible and include emergency appointments for early recognition, prompt diagnosis and treatment / management[13]
- Specialised amputee and congenital limb deficiency consultant led rehabilitation team management[8,16,17]

✓ Maximise independence with focus on
- Mobility[18]
  - Provision of appropriate artificial limbs (prosthetic limbs)
  - Provision of appropriate complex orthotics
  - Review of wheelchair provision
  - Provision of appropriate specialised mobility training e.g. walking school training with specialised physiotherapists and or wheelchair training with specialised occupational therapists (see Appendix B)
  - Liaison with and shared care with specialised community services[19] e.g. physiotherapy, occupational therapy, orthotics and social services
- Activities of Daily living (ADLs)[19]
  - Washing & dressing, food preparation and consumption, personal hygiene
  - Provision of lower limb (leg) artificial limbs for mobility
  - Provision of upper limb (arm/hand) artificial limbs for carrying out activities
- Occupational/Vocational management[18,20]
  - Getting patients back to work
  - Assisting patients in work to stay in work
- Pastimes and hobbies[18]
  - Prosthetic appliances e.g. bicycle adaptations for upper limb amputees or limb deficiency
  - Orthotic appliances
- Social and mental wellbeing[21]
  - Counselling for amputee (including management of Post-Traumatic Stress Disorder)
  - Provision of appropriate cosmetic limbs[14]

> **LW**, also said: ***"'The service provided at the clinic is very flexible and responsive. I have always found that appointments can be provided quickly with people who understand my specific needs."***

✓ Service provider outcomes[22,23]
- All patients offered prosthetic rehabilitation and re-ablement services
  - Improved access
  - Improved outcomes related to patient centred choice
- Decreased acute re-admissions
  - Improved liaison with community services
  - Risk assessments for ADLs, mobility
- Increased patient satisfaction
  - Patient Centred Choice means the start point is that which will satisfy the patient
  - Dynamic nature of rehabilitation means that as the patients goals change so does the rehabilitation and re-ablement

> **LW**, added: ***"The speed of response ensures that any problems I have are treated early and do not deteriorate."*** & ***"I cannot praise the service provided by the specialist mobility centre highly enough."***

KEY PRIORITIES

The Service should be provided in specially designed and adapted facilities to meet the needs of prosthetic patients.[25]

The Service should have separate Paediatric Facilities and be responsive to the special needs of children with limb deficiency and limb loss.[25]

Service Provision should be monitored on an on-going basis by the Care Quality Commission.

All Centres[8] should be in receipt of third party accreditation in respect of quality, service delivery and customer service standards e.g. ISO 9001-2008 & Customer Service Excellence.[25]

The Service Provider[25] should be able to demonstrate on-going monitoring and review of:

- ✓ Effectiveness[26]
  - the use of preventative best practices
  - enhancing the quality of life for people with long-term conditions
  - helping people to recover from episodes of ill health or following injury
- ✓ Patient Experience and Satisfaction with the service[26]
  - patient waiting times for appointments and whilst waiting for treatment at the Centre[8]
  - outcome measures including but not exclusively the following areas
    - achievement of rehabilitation goals
    - socket fit and comfort[27]
    - mobility and activity levels
    - emotional issues
    - positive experience of care
- ✓ Safety[26]
  - complaints and plaudits.
  - adverse incidents and accidents.

HB said: ***"After an accident in 2007, which resulted in a 7 month stay in hospital due to extensive injuries I became an above knee amputee. I then required a considerable amount of rehabilitation & support, and I was lucky enough to be sent to the Specialist Mobility Rehabilitation Centre."***

"It became evident that due to my injuries and complications, nothing was straight forward! Although I was re-assured that I had the specialist team working with me."

"I needed extensive physiotherapy as I had considerable muscle wastage. Along with this my pelvis was off set and this damage to the pelvic area meant difficulties for the prosthetist when trying to make a socket for a limb."

"All of this treatment required close supervision from the consultant as to where the bones could be loaded and when an infection reoccurred, the teams fast and early response resulted in successful treatment. The back-up of the on-site nurses meant dressings could be monitored and changed."

"The fact that this team were able to work collectively in their areas of expertise provided me with solutions to my new medical/physical situations and i believe resulted in a positive outcome. The main outcome being that I am able to walk again but I have also been able to return to work and most importantly to being an active mum to my children."

Service Providers should be actively involved in the on-going development of service delivery in collaboration with User Groups and Support Groups.

The Service Provider must ensure that patients' privacy and dignity is maintained and that equality and diversity is observed at all times. It should be able to respond to requests for a patient's partner or carer to accompany them during their treatment and to requests for treatment by staff of the same sex where possible. Facilities must include the opportunity for patients to be treated in single treatment rooms when requested.[25]

The Service Provider must ensure that policies are in place to cover all aspects of Health and Safety and to demonstrate monitoring/action plans to resolve problems:

- ✓ Patient safety – Incident and accident reporting mechanisms and infection control.
- ✓ Equipment Issues – MHRA reporting, reuse of components, Planned Preventative Maintenance.

The Service Provider must offer flexibility in appointment times to meet the needs of individuals, including "out of hours" appointments where necessary.[26]

The Service Provider must supply suitable transport services for patients who are unable to make their own way to appointments due to medical reasons and should be able to demonstrate that the use of this service is monitored and cost effective.[25]

The Service Provider must have a generic IT system which enables them to store and manage information and run operational systems. Full clinical notes must be kept in a modular and electronic format and throughout their contact with the Service, patients should be able to request access to information on all aspects of their care.[26]

The Service Provider should be able to demonstrate that patients have access to the following information at the Centre: [8,25]

- ✓ Information about the Centre[8] and the services provided including opening times, contact details and access.
- ✓ Contact details of the named clinicians involved in their care.
- ✓ Details of Patient User Groups and Support Groups, Patient support systems, National Charities and Organisations in relation to limb loss.

Service Providers must ensure that all Clinicians/Healthcare Professionals have:

- ✓ Annual performance reviews which should include appraisal of performance and objective setting.
- ✓ Annual Development Plans to enable them to undertake any required training and to perform to their maximum potential.
- ✓ Protected time for Continuing Professional Development.

The Service Provider must be able to demonstrate that:[25]

- ✓ Patients receive the most appropriate treatment to meet their needs.
- ✓ Records are kept of audit activity in relation to clinical effectiveness.
- ✓ They participate effectively in Clinical Governance/Audit and that they comply fully with Information Governance requirements.
- ✓ Professional registration is routinely monitored.
- ✓ They wholly support Continuing Professional Development, Research & Development and other education and training.
- ✓ It ensures that the 10 C's, extracted from the relevant patient led prosthetic Users Charters are met (see Appendix A[28]).

JK, a transfemoral amputee said: ***"As a high above the knee amputee I have both a medical and physical condition which utilises many experts including my Consultant, Prosthetists and Physiotherapists. I can only commend the support I had from my Specialist Mobility Rehabilitation Centre where these entire specialist services were under one roof to support me. Due to the individual nature of my condition my visits to the limb centre may mean I see all or part of the team of experts but I can always rely on being provided with the correct support whether it be from my Consultant, to Prosthetics or Physiotherapy as they are all interlinked and are vital part of what, I would describe as my therapeutic family."***

JA, a transtibial amputee said: ***"I have been a patient of a Specialist Rehabilitation Centre for 3 ½ years since I became an amputee, and I have found that having all the services under one roof benefit's the patients tremendously" "Simple things like parking and easy access are invaluable when having to use a wheelchair." "During my visits I have had need to access the majority of services, from the Consultant who assessed my continuing needs, nurses who have looked after my dressings, physiotherapists who have taught me how to walk again, Counselling to help me with the trauma and phantom limb pains, prosthetists and technicians who have built and maintained my prosthetic limbs to the reception staff who all provide a professional but friendly supportive service." "The continuity of care and building a relationship with the team has enabled me to be involved in new developments such as adaptations to my limbs that allow me to be a more active limb user and I am also a patient member of the on-site service user group."***

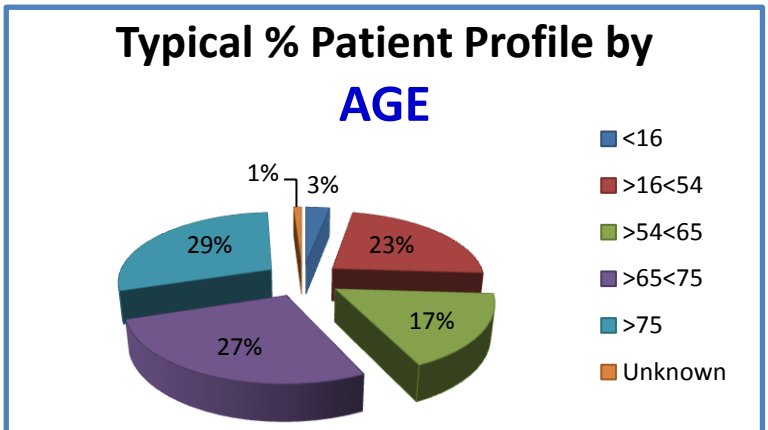
SERVICE DELIVERY

This guidance describes the specialised rehabilitation and re-ablement services that provide the bespoke and customised services and equipment that enable adults and children with limb loss to live as independently as possible in their community or residential environment.

For all services provided, it is the complexity and severity of the individual's condition, and the expertise required to assess and support that condition supported by any subsequent provision or maintenance of equipment for each individual that defines the specialised rehabilitation and re-ablement and equipment service as opposed to the nature of the service and the equipment itself.

Specialised equipment services are characterised by:

- the complexity of service user needs (complex physical/cognitive/language/sensory disability, which are often in combination)
- age
- expert assessment
- user and carer rehabilitation, re-ablement and training to maximise effectiveness and independence
- timely review and re-assessment for changing needs
- on-going, life-long maintenance and or replacement and individual patient support.



Source: National Amputee Statistical Database 1997-2005

A hub and spoke model is an effective service delivery model for specialised equipment services with the hub playing a key co-ordinating and educating role whilst supporting the spokes ensuring high standards are maintained even when dealing with less complex cases.

The critical mass of people dealt with by the hub ensures the multi-professional team has the range and level of skills to deal with complex cases.

The need for integrated and coordinated specialised rehabilitation and re-ablement and equipment services to maximise the individual patient outcome for each limb loss person has resulted in individual patient targeted assessments, which capture and harness developments and innovations in best practice and technological advancements.

The specialised rehabilitation and re-ablement service centre[8] should have a "Navigator", buttressed by User organisations, The Navigator would, to quote the Royal College of Physicians, "***steer clients through rehabilitation services ensuring well planned and timely transfer between services to ensure optimal use of limited resources.***"[29] This ensures that the patient has a single pathway rather than a number of parallel pathways, which can be out of synch with each other.

This guidance describes broadly the amputee and limb loss services including prosthetics services provided.[17]

These specialised rehabilitation and re-ablement service centres[8] provide life-long care to people with limb loss. Pre-amputation, re-amputation, pre- and ante-natal consultations are also provided as required. The surgical episode is excluded from this guidance but routine liaison with all referring surgical units is generally normal and is seen as good practice.

Amputee and limb loss rehabilitation and re-ablement service centres[8] provide a range of services in order to deliver the outcomes highlighted and referred to in the Key Service Outcomes to Patients and Service Users Section. These include:

- information for patients and carers
- a specialised rehabilitation consultant led service
- specialised assessment and review
- prescription, provision and maintenance of individualised prosthetic limbs
- prescription of silicone cosmeses
- specialised gait re-education
- pain management and psychological support
- educational, vocational, leisure, mobility and driving advice

The service will be provided by a specialised multi-disciplinary amputee rehabilitation team with training in the field of prosthetic rehabilitation, which include the following and are led by a Consultant in Rehabilitation Medicine with a special interest in amputee rehabilitation: Prosthetists; Occupational Therapists; Physiotherapists; Podiatrists; Orthotists; Clinical Nurse Specialists; Dieticians; Psychologists / Counsellors; Prosthetic Technicians; Rehabilitation Engineers; Healthcare Assistants; Social Workers; Technical, Clinical and Administrative support staff and Peer Group Volunteers (See Appendix B for more information about these specialised roles).

The service will provide the appropriate level of support for education and workforce development for the current workforce and trainee workforce.

The team will work in close liaison taking an interdisciplinary and holistic approach to individual patient outcomes. The service will be able to demonstrate how the specialised service interacts and liaises with local and community services to ensure patients receive the most appropriate care in the most appropriate location.

Close links with referring services, e.g. vascular surgery, orthopaedic surgery, plastic surgery, diabetic teams, paediatric teams, diagnostic imaging, obstetric and General Practice services are critical for optimal patient outcomes. These form the entry points into the amputee and congenital limb deficiency service (see Appendix C)

Preoperative consultation with the Rehabilitation Medicine Consultant is advisable to secure the best outcomes.[29]

Post-amputation rehabilitation involves the fitting of prostheses and walking training for some, but not all, patients. Other issues for rehabilitation include depression[31,32], sexual dysfunction[33], pain and monitoring of surviving limb and optimal preventative measures. Rehabilitation Medicine consultants contribute to the multidisciplinary team by diagnosing, investigating, and treating physical complications such as pain, skin disorders,[34] sweating,[35] infections and venous thromboses, as well as psychological complications such as depression and 'catastrophising'.[36] Secondary or tertiary prevention is also a key function with regard to skin and foot pathology, cardiovascular disease,[37] osteoporosis and drug complications. As in other fields of Rehabilitation Medicine, the consultant also functions more broadly in the facilitation of specific aspects such as vocational rehabilitation, and the provision of wheelchairs, special seating, orthoses and assistive technologies.[30]

Models of Service Delivery

Pre-amputation - Consultation should be arranged with appropriate members of the Prosthetic Centre's[8] multidisciplinary team. This is also applicable and should be offered to parents on identification of an unborn child with congenital limb absence

A Rehabilitation and re-ablement programme should commence pre-operatively if possible.

Primary patients - New amputees will have appropriate access to all the disciplines available to the service as well as community and other services in their own locality.

Established amputees - These patients have undergone a period of rehabilitation and re-ablement following amputation and achieved their maximum potential in terms of mobility, independence and participation. They will

normally require input from part of the team in order to review and maintain their prosthetic provision but will not always require on-going medical monitoring or therapy.

Changing needs - Children, young adults and other patients with more complex problems require a more flexible model of care which provides longer term involvement with the full multidisciplinary team.

Non Prosthetic Limb Users – These patients may access the service at any time for advice and/or appurtenances.

The existing commissioning mechanisms and currencies shown in the Multi-Disciplinary Model of Service Delivery in Appendix D, and are supplied by regional specialised centres[8] (see Appendix E) are by:

- out-patient attendances
- non face to face out-patient appointments
- cost per case
- block contracts
- Local tariff(s)

Any tariff system should recognise the inherent complexities of the different levels of amputation and associated comorbidities. When commissioning these services it is sensible to consider two types of care pathways that are immediately related to provision. For ease of differentiation they are described as the Patient and the Client, as follows:

1. **The rehabilitation and re-enablement phase – Patient**

This phase covers 3 main clinical situations where intensive rehabilitation is required.

- New amputation having been carried out
  - Patient undergoing an amputation for the first time on that limb
  - Revision of amputation to a higher level e.g. transtibial converted to transfemoral

- Amputee returning to the service having been in the community
  - Patients who for whatever reason (bio psychosocial) were unable to participate original post-amputation rehabilitation e.g. depression
  - Patients medical status changes e.g. CVA

- Amputees transferring into a service from other areas and other countries
  - Full assessments need to be made e.g. all patients need to be treated equally
  - Limb provision may be inadequate or absent e.g. refugees frequently do not have adequate provision such as wearing a limb created for a different individual or no limb at all

This phase requires a full amputee rehabilitation assessment carried out by the consultant led specialised amputee rehabilitation team.

The tariff should account for the full assessment and required follow-on management until the patient was an established user (see below) or non-limb use was confirmed. This includes wound management, investigations, physiotherapy etc.

2. **The established user - Client**

This phase starts when the first phase finishes when the patient meets the following criteria

- The patient has been medically assessed, treatment provided with successful and stable outcome e.g. stump wound healed, phantom limb pain managed
- The patient has been discharged from physiotherapy e.g. patients gait is optimised
- The patient does not need any specialised amputee occupational therapy e.g. patient satisfied that no further treatment will improve use of myoelectric prosthesis
- Primary limb is delivered and deemed 'fit for purpose' by the patient and the specialised multi-disciplinary team
- Communication with the GP to state the patient has graduated to level of 'established user'

This phase allows for

- On-going review is required because patients with prostheses may need socket adjustments, a different type of prosthesis to facilitate a new activity, or treatment for pain or other complications. Most children are reviewed three times a year in the school holidays, and established users should bring their limbs back for preventive maintenance by individual arrangement dependent upon use or no later than 18 months.[29]
- Full access to the medical assessment e.g. assessments for medical issues such as sore, infections, swelling, bursa formation, sinus formation, veracious hyperplasia
- Full access to explore assess for prosthetic change required (Consultant led specialised multi-disciplinary team) e.g. suspension (how the artificial limb is held on) and component changes frequently when the patient enters the established phase and can lead to significant increases in component cost
- Full access to therapeutic intervention e.g. provision of a different knee unit frequently requires gait re-education and provision of a different hand or elbow unit frequently requires occupational therapy intervention

A Tariff structure

There should be generic contract templates to ensure that what can be done once is not done many times; such templates will foster value for money and patient-effectiveness and long-termism; and will not inhibit local initiatives.

The 2 matrices outlined below correspond to the 2 stages outlined above with respect to upper and lower limb patients. The total tariff is a summation of

- Individual Patient Activity Level utilising the specialised international standards for amputation rehabilitation commonly known as the K codes.
- Cosmesis chosen by the patient e.g. high definition looks real but is heavier
- Complexity of components leads to increase in cost but can lead to significant improvements in mobility and function and dexterity e.g. k2 user increasing walking distance from 25 to 50 meters leading to benefits such as improved mobility and decreased care costs
- Outlined tariffs for specialised multi-disciplinary team costs and maintenance cost
- Each line would be summative dependant on the joints to be replaced with prosthetic joints, the final column is summative to the resultant tariff for that individual patients limb.
- Multiple limb loss is accounted for i.e. if all 4 limbs were involved there would be 4 tariffs required for that patient.

	UPPER LIMB TARIFF					
	Anatomical site of amputation	Partial Hand / Digits	Hand/ Wrist	Elbow	Shoulder	Tariff Sum
EQUIPMENT	Cosmetic standard	A1	A2	A3	A4	
	Cosmetic high definition	B1	B2	B3	B4	
	Body powered	C1	C2	C3	C4	
	Myoelectric	D1	D2	D3	D4	
PERSONNEL COST	Rehabilitation/Re-ablement MDT component	E1	E2	E3	E4	
	Established patient MDT component	F1	F2	F3	F4	
	Maintenance component	G1	G2	G3	G4	
					TOTAL	

	LOWER LIMB TARIFF MATRIX						
	Anatomical level of amputation		Partial Foot / Digits	Through Ankle / Transtibial	Through Knee /Transfemoral	High Transfemoral/ Through Hip	Tariff Sum
EQUIPMENT	Cosmetic standard		a1	a2	a3	a4	
	Cosmetic high definition		b1	b2	b3	b4	
	Activity level K1	Simple	c1s	c2s	c3s	c4s	
		Complex	c1c	c2c	c3c	c4c	
	Activity level K2	Simple	d1s	d2s	d3s	d4s	
		Complex	d1c	d2c	d3c	d4c	
	Activity level K3	Simple	e1s	e2s	e3s	e4s	
		Complex	e1c	e2c	e3c	e4c	
	Activity level K4	Simple	f1s	f2s	f3s	f4s	
		Complex	f1c	f2c	f3c	f4c	
PERSONNEL COST	Rehabilitation / Re-ablement MDT component		g1	g2	g3	g4	
	Established patient MDT component		h1	h2	h3	h4	
	Maintenance component		j1	j2	j3	j4	
						TOTAL	

Example 1
A new patient provided with a high activity (K4) complex transtibial prosthesis with standard definition cosmesis a2 + f2c + g2, these would be actual costs that would be in the left column and they would be added the resultant total.

Example 2
An established transtibial patient requiring specialised multi-disciplinary team input due to a bursa formation would have an additional tariff of h2.

APPENDICES

APPENDIX A

THE 10 CS'

EXTRACTED FROM THE *em*POWER PATIENT LED PROSTHETIC CHARTER[28]

Choice	Information about the choices available to the User must be forthcoming
Comfort	Equipment must provide adequate support and comfort to enable the User to achieve optimal function and independence
Capability	Equipment must be appropriate to each User's requirements, mechanically safe and easily maintained
Cosmesis	Equipment must be cosmetically acceptable commensurate with optimal function
Competence	All staff and trainees must have the appropriate educational and career opportunities in order to develop and sustain their competencies and skills
Capacity	Budgets must provide adequate Capacity for cost-effective and patient-effective services
Consultation	Patients and Carers must be Equal Partners with Professionals in the planning and the operation of services
Consistency	Services delivered must not vary with location except where explicable by clinical variables
Calibration	Key performance indicators must calibrate the degree to which services improve health and social outcomes for individuals and for populations
Caring	is the Catalyst

SPECIALISED MULTI-DISCIPLINARY AMPUTEE REHABILITATION TEAM

This team (with the possible exception of the dietician, podiatrist and social worker) would be based in the rehabilitation and re-ablement centre[8] and with in-reach to the wards.

Consultant in Rehabilitation Medicine (usually with an interest in special interest in amputee rehabilitation)
The consultant should be responsible for the overall clinical care of the patient, although it is appropriate for other team members to lead on specific areas of care. In the current NHS structure, the consultant physician is generally considered to be the most appropriate team leader. The role of the Consultant in Rehabilitation Medicine is well described in the Royal College of Physicians' Report, Medical Rehabilitation for People with Physical and Complex Disabilities (2000) and the Clinical Governance Supplement of Clinical Rehabilitation. Supporting medical staff may include an Associate Specialised, Staff Grade doctor or a Clinical Assistant for service provision, and a Specialised Registrar in Rehabilitation Medicine undertaking training. The Consultant in Rehabilitation Medicine should have completed the accredited training for a Consultant in Rehabilitation Medicine (currently CCST in Rehabilitation Medicine includes 3 months mandatory training in Amputee Rehabilitation)[39]. However to specialise in this field will need an extra 12 months in the area. This equates to a total of 15 months full-time (3 months compulsory plus 12 months optional)[40].

For an appointment at the Tertiary Referral specialised rehabilitation and re-ablement centre[8] the Consultant should have this extra training and experience particularly in the management of congenital limb deficiency, complex and multiple limb loss and more specialised prosthetic techniques[41].

Prosthetists
Prosthetists are all registered Allied Health Professionals with the Health Professions Council[42] and have undertaken degree education with a recognised UK or overseas University.

Prosthetists provide the best possible artificial replacement for patients who have lost or were born without a limb.[39]

Prosthetists should be conversant with the guidelines published by the British Association of Prosthetists and Orthotists (BAPO, 2000) and available on their website (www.bapo.com). Within their HPC registration all Prosthetist / Orthotists are able to assess, diagnose, and prescribe and provide appropriate prosthetic treatment. [43]

Designated Prosthetists should manage or oversee the prosthetic care of patients with the rarer types of limb loss (e.g. congenital limb deficiency or upper or multiple limb loss) in order to develop and maintain the specialised experience necessary to meet the needs of these patients. This approach should be considered for all children and is supported by the Prosthetic Paediatric Consortium.[40]

Physiotherapists
Specialised physiotherapists[44,45] should be experienced in amputee management, including (lower limb) prosthetic training, have a good understanding of prosthetics, be able to look after amputees with complex problems, and be conversant with the evidence-based clinical guidelines produced by British Association of Chartered Physiotherapy in Amputee Rehabilitation (BACPAR). They should be able to liaise with and advise the physiotherapists in the referring and rehabilitating hospitals. Education of colleagues is particularly important. It is recommended that at least one physiotherapist within each Centre[8] has a relevant post-graduate accredited qualification in Amputee Rehabilitation and should be graded as a clinical specialised. In Tertiary Referral Centres knowledge of upper limb prosthetics and paediatrics is also necessary.[40]

Occupational Therapists

Occupational Therapists undertake prosthetic limb training for patients with upper limb amputation or congenital deficiency, including training in one-handed activities where relevant. They also undertake training for activities of daily living for both upper and lower limb amputees and arrange home or school visits in liaison with physiotherapists and community therapists. A suitably experienced occupational therapist (Lower Limb Prosthetic Occupational Therapist or LLPOT and Upper Limb Prosthetic Occupational Therapist or ULPOT are now attached to Occupational Therapists in Trauma and Orthopaedics or OTTO) should be a member of the core clinical team at all specialised rehabilitation and re-ablement centres.[8,40]

Clinical Nurse Specialists

Clinical Nurse Specialists (CNS) are nurses trained in the holistic care of amputees. They should have undertaken training in tissue viability and wound management and have a good understanding of prosthetics and Amputee Rehabilitation. Many will have undertaken counselling courses to enable them to assist patients to deal with the emotional effects of their amputation. The role of the CNS in rural areas incorporates the maintenance of close links between hospitals and the specialised rehabilitation and re-ablement centres.[8,40]

Psychologists / Counsellors

A counselling service must be provided by Clinical counsellors who have experience of working in a Rehabilitation setting. Although basic counselling will indirectly be provided by many members of the specialised multi-disciplinary team, patients at all centres[8] should have the option of seeing a qualified Clinical Counsellor. The counsellor should be available to see relatives or carers of the amputee.[40]

A clinical Psychologist with experience in dealing with the particular problems of patients with physical disabilities should be readily available to see selected patients.[40]

Rehabilitation Engineers

A Rehabilitation Engineer should be available to advise on technical matters related to the quality, risk management, maintenance, assessment and prescription (e.g. gait analysis) procurement and disposal of prosthetic devices. Rehabilitation Engineers can be either Clinical Scientists or Clinical Technologists. The former are registered under the Health Professions Council (HPC), the latter are expected to be registered in early 2005, transferring from the current register coordinated by the Institute of Physics and Engineering in Medicine (IPEM).[40]

Podiatrists

A Podiatrist should be available, particularly to provide care for the remaining foot in unilateral lower limb diabetic or dysvascular amputees, or appropriate links with local podiatric services must be established.[39]

Orthotists

Orthotists are all registered Allied Health Professionals with the Health Professions Council[42] and have undertaken accredited degree education with a recognised UK or overseas University.

Orthotists should be conversant with the guidelines published by the British Association of Prosthetists and Orthotists (BAPO, 2000) and available on their website (www.bapo.com). Within their HPC registration they are qualified and able to assess, diagnose, prescribe, and provide appropriate orthotic treatment.[43]

Dieticians
Provides counselling regarding nutrition issues to improve health, aid in optimal weight maintenance and healthy living.

Prosthetic Technicians
Prosthetic technicians can either work within the NHS or for a private contractor supplying a prosthetic service to the NHS. The prosthetic technician's main role is to manufacture the various types of prosthetic devices (prostheses) supplied by their unit. Prosthetics patients require prostheses to replace missing limbs in order to allow them to lead as independent a life as possible.

Technicians are supplied with a measurement sheet, body cast, body tracing or a job card by a prosthetist. The technician will then be required to use their skills to manufacture the required prostheses, which can be manufactured using a wide range of materials, including plastics, metals, leather, carbon fibre, and composite materials. Many of the prostheses manufactured are bespoke - designed specifically for each patient. Frequently the technician will be involved in the design stage.[46]

Healthcare Assistants
Healthcare assistants under the guidance of a qualified healthcare professional. The role can be very varied depending upon the area in which the person is employed. Their role includes : washing and dressing, feeding, helping people to mobilise, toileting, generally assisting with patients overall comfort, monitoring patients conditions by taking temperatures, pulse, respiration's and weight.[47]

Social Worker
A hospital Social Worker/Care Manager should be available to establish the appropriate links with Social Services; identify any continuing health care needs, give advice regarding benefits and other financial matters, and to be involved with plans for discharge from the acute hospital.

Peer Group Volunteers
Are available on part-time basis to talk to patients (who are interested) and help patients.

PATIENT PATHWAYS

THE REHABILITATION AND/OR RE-ENABLEMENT PHASE

The following represent the pathways of referrals to the service. The commonest form of referral is from the vascular surgeons, but this also carries for orthopaedic and plastic surgeons.

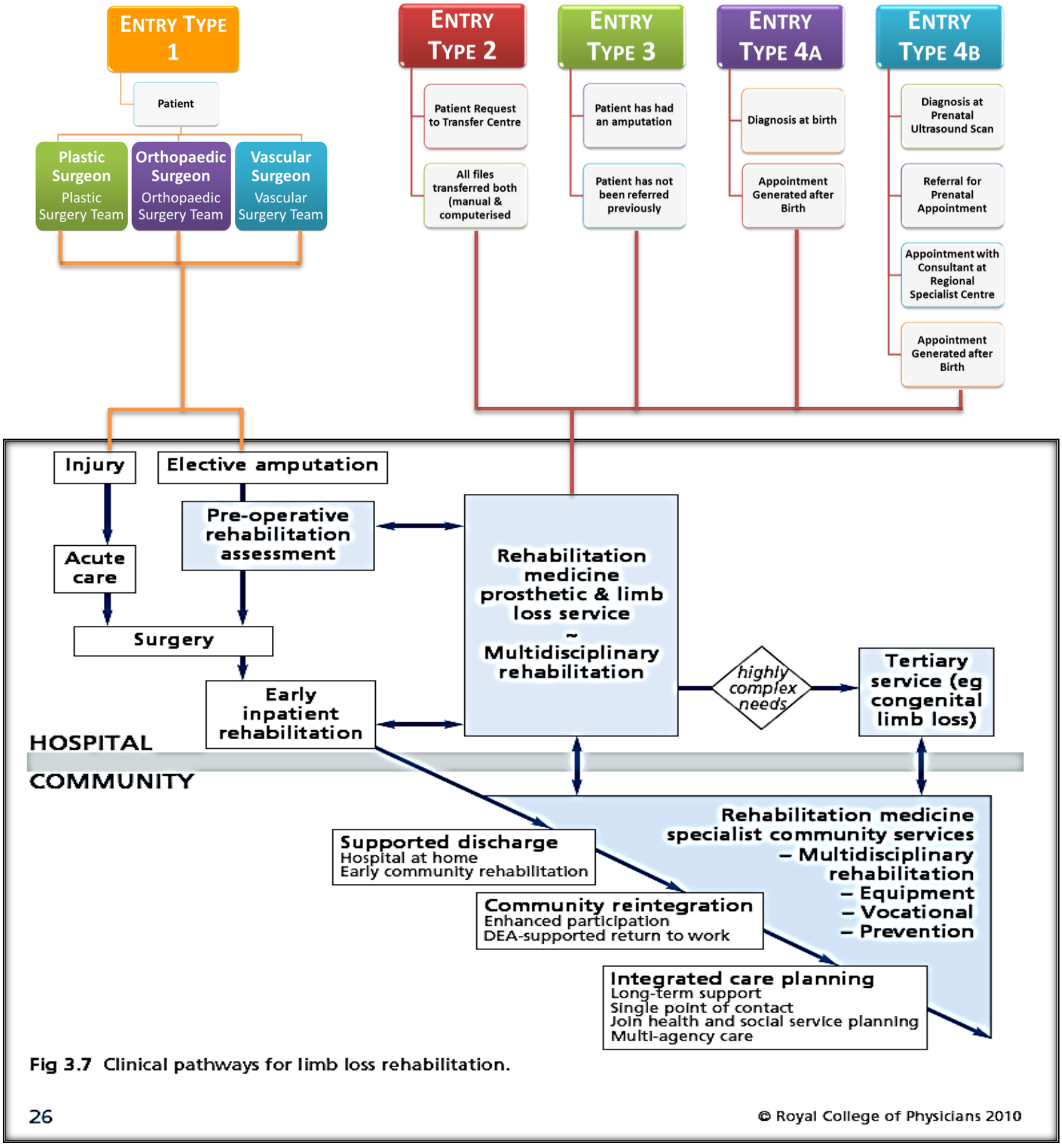


Fig 3.7 Clinical pathways for limb loss rehabilitation.

26

NOTE: The above chart has been adapted to reflect the different limb loss patient groups and patient pathways *(adapted from and includes* ***Source:*** *p.26 of the Royal College of Physicians Medical rehabilitation in 2011 and beyond. A report of a working party. London: RCP, 2010)*.

Additional Notes

Entry Type 2 and 3 Patients

Will receive a full assessment by the Specialist Amputee Rehabilitation Team

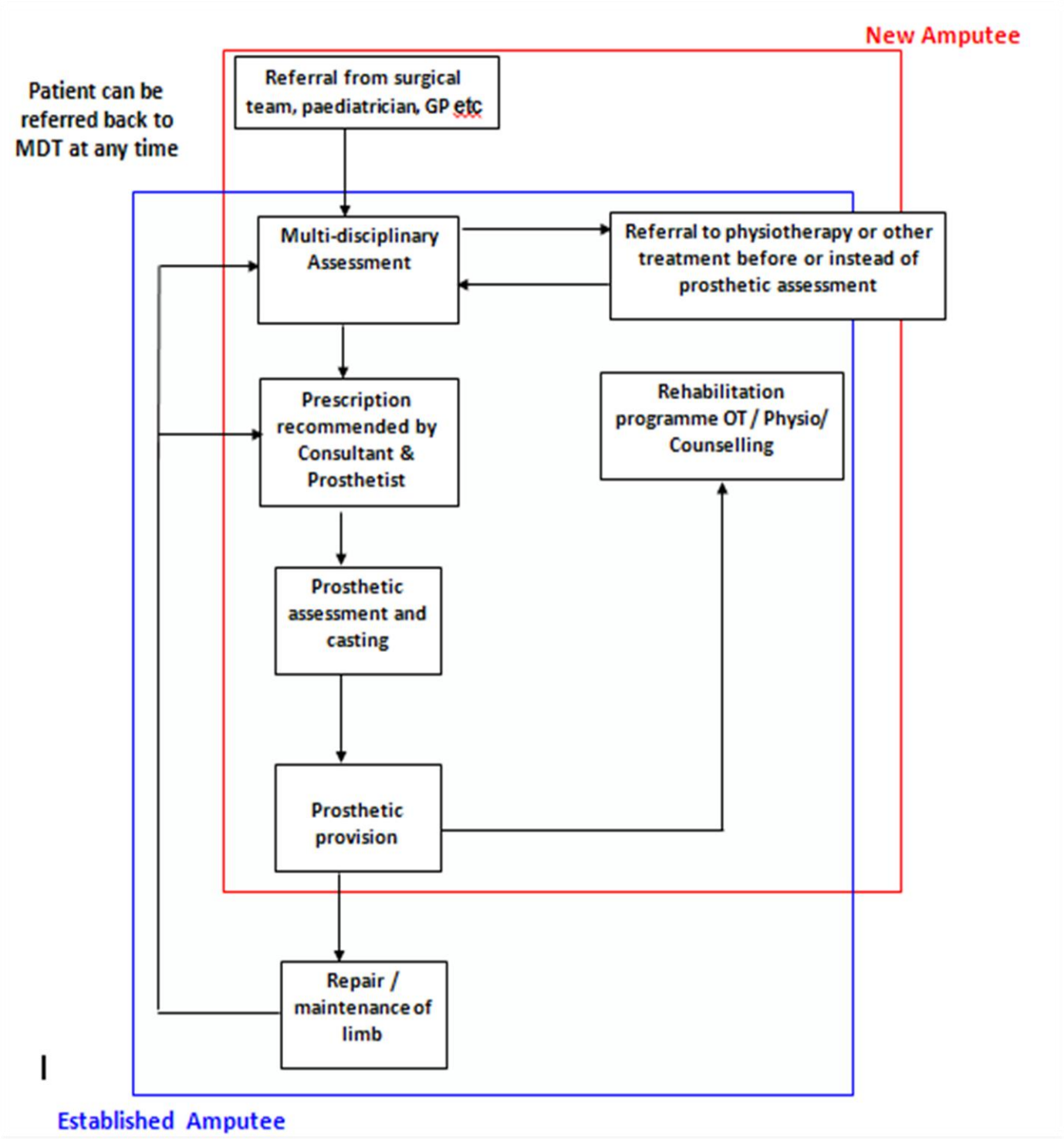
Outcomes may include:

- Repair or Replacement of an artificial limb
- Assessment of the limbs in the patient's possession
- Full medical rehabilitation assessment of patient providing individual patient plans including outcomes
- Further Episodes of Rehabilitation provided by the Specialist Amputee Rehabilitation Team as Patient needs or is deemed necessary
- Referral back to routine care when patient optimised

Entry Type 4a and 4b Patients

Engagement in Congenital limb deficiency services with full and continuous discussion and agreement with the parents and carers regarding on going therapies, medical assessments and prosthetic and orthotic interventions

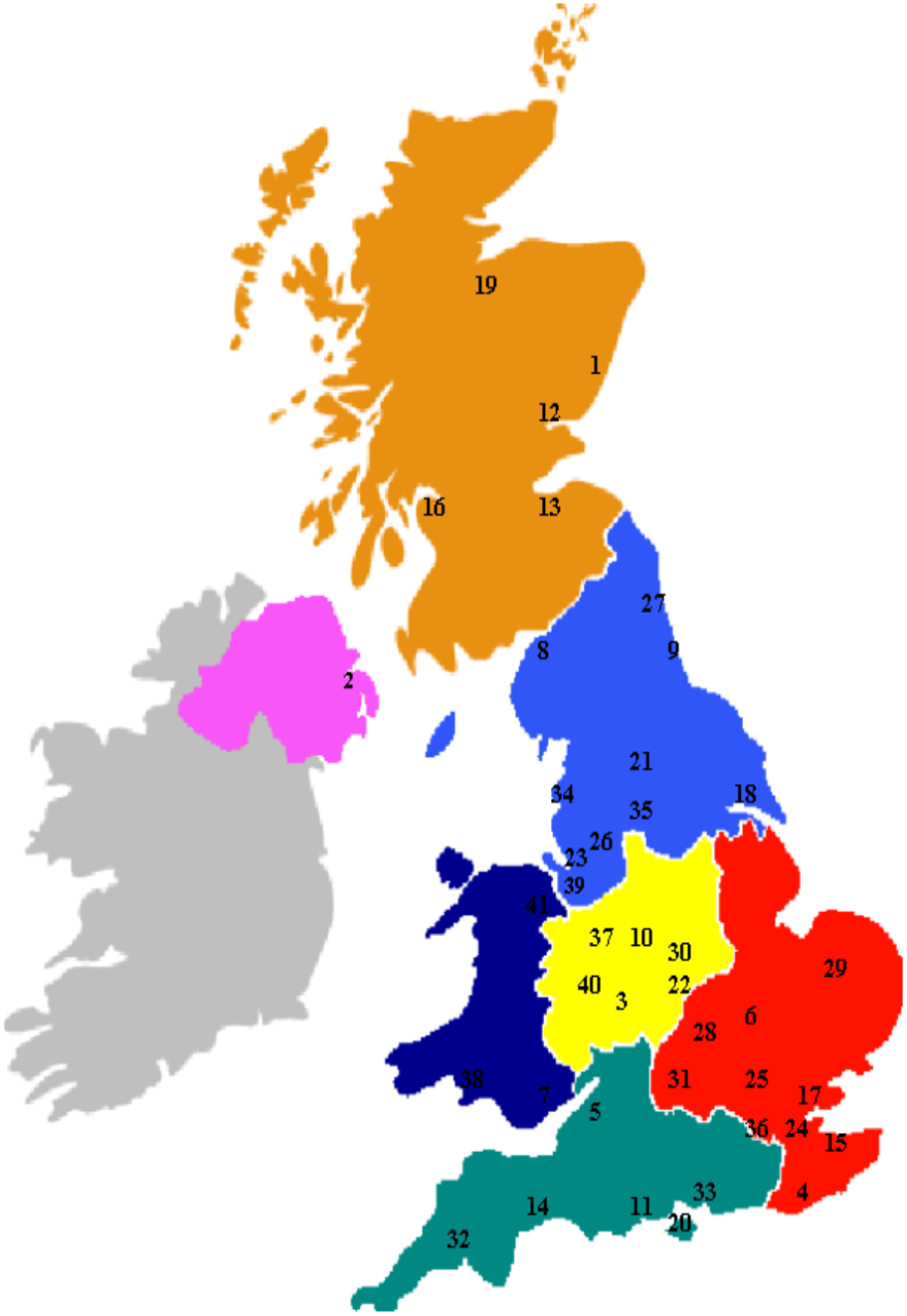
THE MULTI-DISCIPLINARY MODEL OF SERVICE DELIVERY



NB: Patient can access Counselling, Clinical Psychology, Physiotherapy and Occupational Therapy at any time. Established patients can access any part of the pathway at any time.

SOURCE: p.11 National Service Specification for Prosthetic and Amputee Rehabilitation Services – National Prosthetic Managers Group

THE SPECIALISED PROSTHETIC CENTRES[8] ARE SHOWN AND LISTED BELOW:



1. Aberdeen
2. Belfast
3. Birmingham
4. Brighton
5. Bristol
6. Cambridge
7. Cardiff
8. Carlisle
9. Cleveland - (Middlesborough)
10. Derby
11. Dorset - (Bournemouth)
12. Dundee
13. Edinburgh
14. Exeter
15. Gillingham
16. Glasgow
17. Harold Wood
18. Hull
19. Inverness
20. Isle of Wight
21. Leeds
22. Leicester
23. Liverpool
24. London –Holderness Centre (Charing Cross)
    London – Southwark
    London – Douglas Bader Centre (Roehampton)
25. Luton & Dunstable
26. Manchester
27. Newcastle
28. Northampton
29. Norwich
30. Nottingham
31. Oxford
32. Plymouth
33. Portsmouth
34. Preston
35. Sheffield
36. Stanmore
37. Stoke
38. Swansea
39. Wirral
40. Wolverhampton
41. Wrexham

Visiting Centre availability in:

Colchester
Isle of Man

Anna's new hand

Recently young Anna Welch visited the Roehampton LFC to be fitted for a new prostheses. Thanks to her for all the pictures of her visits and for telling us what happened when she was there.

I went to the hospital on six trains. This is St. Mary's hospital

There are lots of toys to play with there. This is Fiona's (OT) room.

First I put two socks on my little arm to keep it clean.

Then Nick wraps a plaster cast bandage round my little arm.

I have to hold it still while it sets hard.

This is it! Nick writes my name on it and marks lot of other things on.

He will use parts of my old hand for the new one and put on a new glove,

Today I went back to the hospital. I have a new hand. I can open it...

...and hold on to things with it. Here I am holding the glue.

I have cut out lots of things and I have made Fiona a card.

My favourite time is when I can ride the tricycle.

I like my special hand when I'm on Fiona's tricycle.!

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