

North West Coast Strategic Clinical Network

Diabetes Footcare Pathway Blueprint (2017)





North West Coast
Strategic Clinical Networks

Diabetes Footcare Project 1: Pathway Development

Written 2017

Main Author:

Dr Paul Mackenzie MSc, BA (Hons), DipHE, RGN.

Senior Network Manager (Strategic Clinical Network)

Purpose of the project 1 paper

To set out the revised NWC SCN blueprint of NWC region diabetes footcare pathway

Recommendations

That it is agreed that the diabetes footcare pathway to be used as a blueprint for developing or adopting the pathway for local use across NWC.

Foreword

“With a 5 year mortality rate of more than 50% in diabetes patients with foot ulcers and 80% in patients who have a diabetes related amputation, diabetes foot ulcer 5 year mortality rates are similar or even worse than many types of common cancers (Armstrong DG, Wrobel J, Robbins JM. Int Wound J. 2007 Dec; 4(4): 286-7), (Diabetes Foot NICE NG19 Guidance).”



Professor Aftab Ahmad

There are an estimated 4.5 million people with diabetes in UK alone. An estimated 10% or around 450,000 of diabetes patients develop a foot ulcer at some point in their lives. More than 7000 diabetes related amputations are reported in the UK per year. These figures suggest that potentially 200,000 diabetes patients with foot ulcers may not be alive in 5 years and more than 5500 patients with diabetes related amputations every year have less than 5 years to live.

Breast cancer and prostate cancer each report around 11000 deaths per year, which potentially are lower than the estimated 40000 expected deaths per year after developing a diabetes related foot ulcer and amputation. Various other associated causes such peripheral vascular and ischemic heart disease may be associated with this high mortality in diabetes related foot ulcer patients, but they must be considered as part of the same underlying disease process, which must be addressed.

Not only is it imperative to highlight this high mortality rate among diabetes related foot disease, it is important to address this high mortality disease process with the same vigour and resources apportioned to many cancers with a similar or lower mortality rate.

Despite various national and international guidelines the management of this killer disease process remains variable across the country. The amputation rate seems to be increasing still. The paucity of data around the development of superficial ulcer and its progression to an infected foot ulcer to amputation remains a major problem in tackling the issue. It is almost impossible to identify the where a superficial ulcer progressed so rapidly or so quietly to an amputation. More importantly, why the ulcer developed in the first place?

We need a robust foot care pathway starting from the day of the diagnosis of diabetes with every step accountable following the development of a superficial ulcer in diabetes patients. The pathway must be clear, concise and progressive to ensure the patient is appropriately managed at the right place by the right team and if needed progressed to the next stage of management. A complete loop must be in place with immaculate communication between clinicians and healthcare workers managing the diabetes foot. There must be accurate time lines, which are strictly met to avoid any delays in the management. These steps need to be monitored, reported and audited to continuously improve care and practices. Each step

should trigger a reminder and sign post to the next step for ease of use and to ensure no step can be missed out.

The North Coast Strategic Clinical Network (SCN) has worked on this principle for the last 3 years to develop such a robust pathway. I started the process after the DUK report highlighted significant variation in the amputation rate and type a few years ago. The pathway has been developed by the help and hard voluntary work of the regions patients, GPs, diabetologists, vascular and orthopaedic surgeons managing diabetes related foot diseases, podiatrists, diabetes specialist nurses, CCG commissioners, managers and the SCN team. I would like to say thank you to everyone who gave their time to help improve patient care.

The pathway may be implementable in many places as it stands or can be modified to meet local needs. We believe this will be the first of many steps to standardise and improve foot care in our diabetes patients”.

Professor Aftab Ahmad

A handwritten signature in black ink, appearing to read 'Aftab', with a long horizontal stroke extending to the right.

BSc MBBSFRCP (UK) MD (UK) PG Cert (Teaching) PG Cert (Management)
Consultant Physician in Diabetes & Endocrinology and General Internal Medicine,
Strategic Clinical Network Lead for Diabetes, North Coast,
Advancing Quality Alliance Diabetes Lead for North West,
Clinical Sub-Dean and Honorary Senior lecturer for Liverpool University

Contents

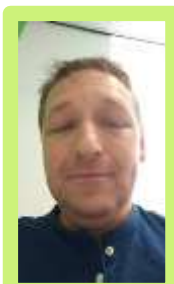
Subject	Page
North West Coast (NWC) Members comments	6
1. Introduction	8
2. National Focus on Diabetes foot care/ NWC Diabetes Data	10
3. National guidelines and standards relevant to foot care in diabetes patients	12
4. Diabetic foot problems: prevention and management NICE guideline (NG19)	14
5. Diabetes Transformation Funds	15
6. NWC Approach to diabetes foot care	16
7. Pathways	
Pathway guidance /key	20
Primary Care Foot Care Pathway	21
Community Podiatry/ Foot Protection Service Footcare Blueprint	22
Hospital Care Footcare Blueprint	23
Complete Diabetes Footcare Blueprint	24
Risk stratification table	25
Diabetes Footcare Forms and Download	26
8. References	27
9. Acknowledgements/ Key contacts	30

North West Coast Strategic Clinical Network: Members comments



"Diabetes associated foot problems have the potential to have a significant negative impact on the lives of our patients. It may be the bodies early warning of underlying cardiovascular risks, such as heart attacks and strokes. By having a foot-care pathway we aim to spot early and prevent life impacting problems".

Andrew Sharpe:
Advanced Podiatrist (Southport and Ormskirk NHS Trust)



"As a Type one diabetic with a history of foot ulceration having this pathway is hugely important. High quality foot care can as dramatic as it sounds prevent life changing amputation and the importance of such a pathway to facilitate the high quality care should not be underestimated".

Andy Lavender:
Patient



"How often do we consider our feet? STOP and THINK. The NHS spends £1 Billion annually on foot care for people with diabetes. Up to 80% of diabetes related amputations, with a 50% five year mortality, are avoidable. Achieving treatment targets, smoking cessation, seamless transition along Foot Care Pathway saves lives. Foot care is vital".

Dr Nigel Taylor:
GP Clinical Lead for Diabetes (South Sefton CCG)



"We can prevent 80% of lower limb amputations in people with diabetes. Active foot ulcer prevention and aggressive foot ulcer management are the keys to this. This can only be achieved through a comprehensive, integrated and seamless pathway of delivering foot care to all patients with diabetes".

Dr Dhanya Kalathil:
Consultant Diabetologist (Royal Liverpool and Broadgreen University Hospitals NHS Trust)



Diabetes is the leading cause of non-traumatic lower limb amputation. Loss of protective sensation has been identified in 78% ulcers. A structured foot care pathway providing clear instruction and defining roles of Healthcare professionals is the key to the detection of a foot "at risk".

"Every time you see a patient with diabetes always remove the patient's shoes and socks and inspect the feet" (Paul W Brand CBE 1914-2003)

**Janet Singleton and Katherine
Mason**

**Inpatient Diabetic Specialist Nurses
(University Hospitals of
Morecombe Bay)**

1. Introduction

This report provides an overview of the diabetes footcare pathway in the NWC Strategic Clinical Network (SCN).

- 1.1. Diabetes mellitus is becoming a greater public health problem in the UK with prevalence estimated to be more than 4 million people. This is expected to rise further to around 5 million people in the next decade.¹
- 1.2. A major contributing factor to diabetes morbidity is inadequate foot care and foot complications. Foot problems contribute to an increasing burden on acute services making it the main reason for diabetes related hospital admissions. Active foot ulceration in the diabetes prevalent population has been estimated to be between 2-3%², with a lifetime risk of ulcer development being close to 25%.³
- 1.3. There have been few studies that articulate the global epidemiology of foot care. In a Chinese systematic review and meta-analysis the authors found that the global prevalence of diabetic foot ulceration is 6.3% (95%CI: 5.4–7.3%), and the prevalence in North America, Asia, Europe, Africa and Oceania was 13.0% (95%CI: 10.0–15.9%), 5.5% (95%CI: 4.6–6.4%), 5.1% (95%CI: 4.1–6.0%), 7.2% (95%CI: 5.1–9.3%), and 3.0% (95% CI: 0.9–5.0%). The authors concluded that diabetic foot disease was more prevalent in males than in females. They also concluded that it was more prevalent in type 2 diabetic foot patients than in type 1 diabetic foot patients. The patients with diabetic foot ulcer tended to be older, had a lower body mass index, more hypertension and diabetic retinopathy. They also reported a more prevalent history of smoking history.⁴ Overall it is estimated that 15% of patients will suffer from diabetic foot ulceration during their lifetime.⁵ Although it is difficult to ascertain accurate figures for the prevalence of diabetic foot ulceration the prevalence of this complication has been reported between ranges from 4%-27%.^{6,7}
- 1.4. Diabetes related foot problems place a significant burden on health service including high costs. These have been estimated to cost around £580 million with £307 million spent on ulceration in the primary care setting. This is broken down into £219 million for inpatient ulcer care and £55 million for amputation care. This highlights the economic burden.⁸
- 1.5. Over the last several years there have been improvements in amputation care, but there remains considerable variation across the country in respect of amputation rates and outcomes due to active foot disease.⁹ In 2012 a 10-fold variation in amputation incidence was reported across 151 PCTs within diabetic and non-diabetic populations.¹⁰

1.6. Diabetes can be debilitating physically and psychologically this has a considerable impact on community rehabilitation and social care needs as well as emotional wellbeing. Diabetic related psychological disorders due to foot amputation and foot disorders might be more widespread than first thought with patients experiencing, acute anxiety disorders, and severe depression and adjustment disorders.^{11, 12, 13} Amputations have also shown to impact significantly for body image disturbance.¹⁴ Understanding the wider determinants and effects other than biomedical are also important in order for clinicians to empathize with patients.¹⁵ Another aspect that affects patients and should not be overlooked is the loss of control with many patients reporting that they feel powerless.¹⁶ This is why it is essential to support patients to regain independence through proactive self-care management and in order to do this effectively patients need the relevant and appropriate tools, structured education is one such tool.

1.7. A number of studies have demonstrated that proper management of diabetic foot ulcers can greatly reduce, delay or prevent complications such as infection, amputation, gangrene, and even death.^{17, 18, 19} Many studies indicate that aggressive and proactive multidisciplinary foot care management has a significant effect, leading to better outcomes for patients with diabetic foot disease.^{20, 21} Outcomes improve if the multidisciplinary team is coordinated by an endocrinologist and a podiatrist and is associated with a reduction in the frequency of major amputations in patients with diabetes.²² Moreover, The American Diabetes Association concluded that a preventive care team, defined as a multidisciplinary team, can decrease the risks associated with diabetic foot ulceration and amputation by up to 50%-85%.²³ Strong multidisciplinary podiatric care has been shown to not only reduces the risk of amputation, but also dramatically impacts the decreased rate of hospitalisation and subsequent rate of re-ulceration.²⁴

1.8. Utilising pathways and algorithms have been reported to be useful to follow in the community setting and have demonstrated the essential skills that are required for the management of complex lower extremity wounds. These can be utilised with rapid algorithmic referral pathways to facilitate multidisciplinary approaches in the community setting.²⁵

2. National Focus on Diabetes Foot care

2.1. The NHS is serious about improving diabetes care and associated complications.

- Diabetes accounts for around 10% of the annual NHS budget. This is nearly £10 billion a year, or £1 million every hour.

- 80% of NHS spending on diabetes goes on managing complications, most of which could be prevented.
- Around 6,000 people with diabetes have leg, foot or toe amputations each year in England – up to 80 per cent of people die within five years of having an amputation.
- People with diabetes are more likely to be admitted to hospital with a foot ulcer than with any other complication of diabetes. Foot ulcers and amputations account for around £1 in every £150 the NHS spends each year.

2.2. The main reason that is attributed to poor foot care outcomes is the result of poor quality annual foot checks or that patients are not being informed about their risk status at the end of their foot check.

- Some people with active foot disease not being referred to a team of specialists quickly enough. These diabetes-related foot problems can deteriorate in a matter of hours leading to adverse complications including amputation.
- Many people with diabetes are not having their feet checked when they stay in hospital, even though the National Institute for Health and Care Excellence recommends every hospital inpatient with diabetes should get their foot checked during their stay. This should include removal of shoes and socks and close examination of the feet.
- Too many hospitals still do not have specialist foot care teams or, if these teams are in place, are not referring patients with foot disease to them quickly enough.

NWC Diabetes Data

There are variations across the North West Coast SCN region with highest rates for minor amputations occurring in Liverpool, South Sefton, Blackpool and Fylde and Wyre CCGs. Higher rates of major amputations also occur in South Sefton, Fylde and Wyre and Blackpool CCG with St Helen's CCG also having higher rates than other areas in the NWC.

These CCGs are seeking to maximise diabetes transformation funds to improve Footcare Multidisciplinary Teams. (All data relates to the period 1/4/2013 to 31/3/2016. Source: North West DSCRO).

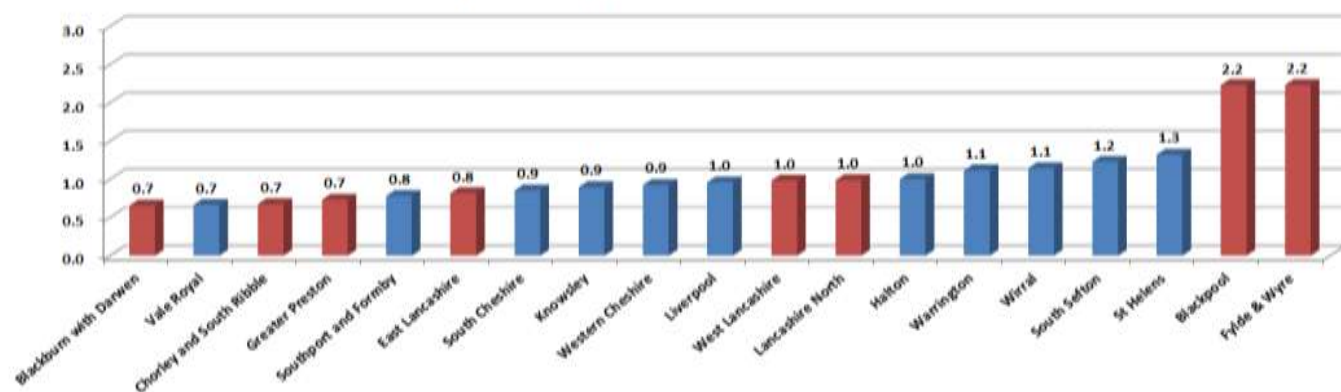
CCG Code	CCG Name	STP	Number of adults with diabetes (QOF)	Total Amputations (Number)	Total Amputations (Annual rate per 1000 adults with diabetes)	Major amputations (Number)	Major Amputations (Annual rate per 1000 adults with diabetes)	Minor amputations (Number)	Minor Amputations (Annual rate per 1000 adults with diabetes)
00Q	Blackburn with Darwen	Lancashire and South Cumbria	10,679	66	2	21	0.7	45	1.4
00R	Blackpool	Lancashire and South Cumbria	10,600	157	5	71	2.2	86	2.7
00X	Chorley and South Ribble	Lancashire and South Cumbria	9,868	79	3	20	0.7	59	2.0
01A	East Lancashire	Lancashire and South Cumbria	20,776	209	3	51	0.8	158	2.5
02M	Fylde & Wyre	Lancashire and South Cumbria	8,806	128	5	59	2.2	69	2.6
01E	Greater Preston	Lancashire and South Cumbria	10,925	78	2	24	0.7	54	1.6
01K	Lancashire North	Lancashire and South Cumbria	8,769	68	3	26	1.0	42	1.6
02G	West Lancashire	Lancashire and South Cumbria	6,103	33	2	18	1.0	15	0.8

CCG Code	CCG Name	STP	Number of adults with diabetes (QOF)	Total Amputations (Number)	Amputations (Annual rate per 1000 adults with diabetes)	Major amputations (Number)	Amputations (Annual rate per 1000 adults with diabetes)	Minor amputations (Number)	Amputations (Annual rate per 1000 adults with diabetes)
01F	Halton	Cheshire and Merseyside	7,979	82	3	24	1.0	58	2.4
01J	Knowsley	Cheshire and Merseyside	9,290	75	3	25	0.9	50	1.8
99A	Liverpool	Cheshire and Merseyside	25,328	284	4	73	1.0	211	2.8
01R	South Cheshire	Cheshire and Merseyside	9,368	74	3	24	0.9	50	1.8
01T	South Sefton	Cheshire and Merseyside	8,138	99	4	30	1.2	69	2.8
01V	Southport and Formby	Cheshire and Merseyside	6,820	42	2	16	0.8	26	1.3
01X	St Helens	Cheshire and Merseyside	11,342	115	3	45	1.3	70	2.1
02D	Vale Royal	Cheshire and Merseyside	5,508	47	3	11	0.7	36	2.2
02E	Warrington	Cheshire and Merseyside	10,743	95	3	36	1.1	59	1.8
02F	Western Cheshire	Cheshire and Merseyside	13,687	105	3	38	0.9	67	1.6
12F	Wirral	Cheshire and Merseyside	18,644	181	3	64	1.1	117	2.1

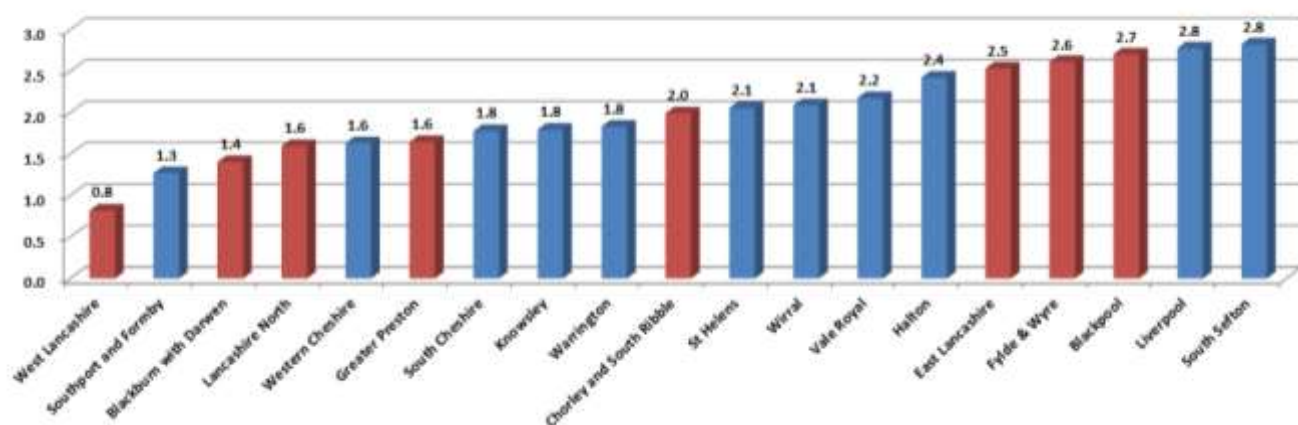
■ Lancashire and South Cumbria

■ Cheshire and Merseyside

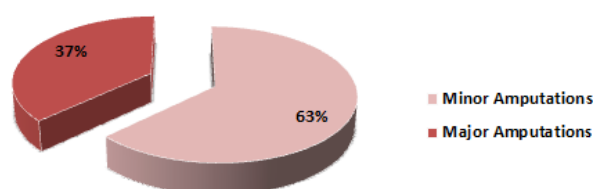
Major Amputations (Annual rate per 1000 adults with diabetes)



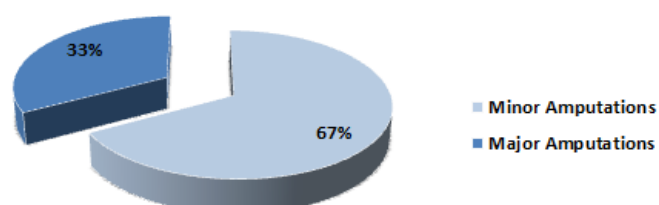
Minor Amputations (Annual rate per 1000 adults with diabetes)



Lancashire & South Cumbria



Cheshire & Merseyside



All data relates to the period 1/4/2013 to 31/3/2016. Source: North West DSCRO

3. National guidelines and standards relevant to foot care in diabetes patients

NHS Outcomes Framework 2014-15. ²⁶	<ul style="list-style-type: none"> Domain 1: Preventing people from dying prematurely Domain 2: Enhancing quality of life for people with long-term conditions Domain 3: Helping people to recover from episodes of ill-health or following injury Domain 4: Ensuring that people have a positive experience of care Domain 5: Treating and caring for people in a safe environment and protecting them from avoidable harm
Public health outcomes framework for England 2013– 16. ²⁷	<ul style="list-style-type: none"> Domain 2: Health Improvement. People are helped to live healthy lifestyles, make healthy choices and reduce health inequalities Domain 4: Healthcare, public health and preventing premature mortality
Adult social care outcomes framework 2014-15. ²⁸	<ul style="list-style-type: none"> Domain 2: Delaying and reducing the needs for care and support Domain 3: Ensuring that people have a positive experience of care and support
CCG outcomes indicator set 2014-15. ²⁹	<ul style="list-style-type: none"> Domain 1: Under 75 mortality from cardiovascular disease Domain 2: Ensuring people feel supported to manage their condition <ul style="list-style-type: none"> People with diabetes who have received nine care processes People with diabetes diagnosed less than one year referred

	<p>to structured education</p> <ul style="list-style-type: none"> • Unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s • Complications associated with diabetes including emergency admission for diabetic ketoacidosis and lower limb amputation <ul style="list-style-type: none"> ○ Domain 3: Emergency admissions for acute conditions and re-admissions within 30 days of discharge from hospital ○ Domain 4: Ensuring that people have a positive experience of care <ul style="list-style-type: none"> • Patient experience of GP out-of-hours services and patient experience of hospital care • Responsiveness to in-patients' personal needs ○ Domain 5: Patient safety incidents reported
Quality and outcomes framework (QOF) 2015-16. ³⁰	<ul style="list-style-type: none"> ○ The contractor establishes and maintains a register of all patients aged 17 and over with diabetes mellitus, which specifies the type of diabetes, where a diagnosis has been confirmed ○ The percentage of patients with diabetes, on the register, with a record of a foot examination and risk classification: 1) low risk (normal sensation, palpable pulses), 2) increased risk (neuropathy or absent pulses), 3) high risk (neuropathy or absent pulses plus deformity or skin changes in previous ulcer) or 4) ulcerated foot within the preceding 12 months ○ The percentage of patients newly diagnosed with diabetes, on the register, in the preceding 1 April to 31 March who have a record of being referred to a structured education programme within 9 months after entry on to the diabetes register
CCG Improvement Assessment Framework 2016/17. ³¹	<ul style="list-style-type: none"> ○ Diabetes patients that have achieved all the NICE-recommended treatment targets: Three (HbA1c, cholesterol and blood pressure) for adults and one (HbA1c) for children ○ People with diabetes diagnosed less than a year who attend a structured education course
NHS Five Year Forward View (5YFV). ³²	<ul style="list-style-type: none"> ○ Roll out of National Diabetes Prevention Programme ○ Strengthen primary care so it is the foundation for personalised NHS care ○ Building the capacity and capability within primary care to support the prevention agenda and provide ○ Proactive care for people with long term conditions, especially those with complex care needs. ○ Demonstrating different ways of organising and delivering care, particularly when harnessed to investment in ○ Technology innovations. This will support the wider new care models work.
NICE Quality Standard. ^{33, 34, 37}	<ul style="list-style-type: none"> ○ NICE Quality Standard (NG19): Diabetic foot problems: prevention and management ○ NICE Quality Standard Lower Limb Peripheral Vascular Disease (CG147) ○ Peripheral arterial disease (QS52)

4. Diabetic foot problems: prevention and management NICE guideline (NG19)

This guideline updates and replaces NICE guidelines CG10 and CG119, and the recommendations on foot care in NICE guideline CG15.

- 4.1.** The NICE guidance covers preventing and managing foot problems in children, young people and adults with diabetes.³³ The guideline aims to reduce variation in practice. Commissioners should ensure that;
- **A foot protection service** for preventing diabetic foot problems, and for treating and managing diabetic foot problems in the community.
 - **A multidisciplinary foot care service** for managing diabetic foot problems in hospital and in the community that cannot be managed by the foot protection service. This may also be known as an interdisciplinary foot care service.
 - **Robust protocols and clear local pathways** for the continued and integrated care of people across all settings, **including emergency care and general practice**. The protocols should set out the relationship between the foot protection service and the multidisciplinary foot care service. Regular reviews of treatment and patient outcomes, in line with **the National Diabetes Footcare Audit**.
- 4.2.** The foot protection service should be led by a podiatrist with specialist training in diabetic foot problems, and should have access to healthcare professionals with skills in the following areas:
- Diabetology
 - Biomechanics and ortho
 - Wound care
- 4.3.** The multidisciplinary footcare service should be led by a named healthcare professional, and consist of specialists with skills in the following areas:
- Diabetology
 - Podiatry
 - Diabetes specialist nursing
 - Vascular surgery
 - Orthopaedic surgery
 - Biomechanics and orthoses
 - Interventional radiology
 - Casting
 - Wound care
 - The MDTFC service should have access to plastic surgery, rehabilitation, psychological and nutritional services

- Healthcare professionals may need to discuss, agree and make special arrangements for disabled people and people who are housebound or living in care settings to ensure equality of access to foot care assessments and treatments for people with diabetes. Each hospital should have a care pathway for people with diabetic foot problems who need inpatient care.
- A named consultant should be accountable for the overall care of the person, and for ensuring that healthcare professionals provide timely care

Care within 24 hours of a person with diabetic foot problems being admitted to hospital, or the detection of diabetic foot problems (if the person is already in hospital)

4.4. Patient information and support

Provide information and clear explanations to people with diabetes and/or their family members or carers (as appropriate) when diabetes is, during assessments, and if problems arise. Information should be oral and written, and include the following:

- Basic foot care advice and the importance of foot care.
- Foot emergencies and who to contact.
- Footwear advice.
- The person's current individual risk of developing a foot problem.
- Information about diabetes and the importance of blood glucose control.
- Type 1 diabetes in adults, patient education and lifestyle advice in the NICE pathway on type 2 diabetes in adults, education and information for children and young people with type 1 diabetes and education and information for children and young people with type 2 diabetes in the NICE pathway on diabetes in children and young people.

5. Diabetes Transformation Funds

5.1. The NHS Shared Planning Guidance for 2017-2019 set out transformation funding for supporting improvement in the treatment and care of people with diabetes. Around £44 million of transformation funding will be used to improve treatment and care for the 2.8 million adults and children diagnosed with Type 1 and Type 2 diabetes.

The four areas of treatment and care include;

1	Increasing uptake of structured education
2	Improving achievement of the NICE recommended treatment targets (HbA1c, blood pressure and cholesterol for adults, HbA1c only for children)
3	Reducing the number of amputations by improving access to multi-disciplinary foot care teams
4	Reducing lengths of hospital stays by improving access to specialist inpatient support.

Improving care of diabetes patients within these areas of focus will have a direct effect on foot care improvement; however, there is a specific emphasis upon the development of a foot care MDT.

- 5.2.** Fourteen out of nineteen CCGs from the two Sustainability Transformation Plan (STP) areas in the NWC SCN applied for the transformational funding for MDT Foot care totalling approximately £1.9 million. The NWCSN will work with successful areas to support the implementation and progress of the improvements identified for delivery. Over £1.5 million of funding has been secured.

6. NWC Approach to diabetes foot care

- 6.1.** NWC Primary Care Foot care Pathway & Lower Limb Peripheral Vascular Pathway (Diabetes).

In 2013/14 a diabetes primary care foot pathway was developed in Cheshire and Merseyside Clinical Network. The initiative was led by a number of lead clinicians, podiatrists, patients and other multidisciplinary team members and was aligned to secondary care foot care pathways. The pathway received national recognition and has been shared on a number of national websites. Additional supporting materials were also made available to improve the quality of initial foot screening including a training package and e-learning tool which was designed to support the face to face competency based training sessions. The package provided participants with the knowledge and skills required to identify those with low risk feet and to be able to identify and refer anyone with increased risk, high risk or ulceration appropriately and promptly for specialist management. The guidelines were developed utilising specific foot care and diabetes guidance (NICE CG10 and NICE CG147). ^{35,36}

- 6.2.** In 2016/17 the SCNs received funding to improve diabetes and a team has been established working in the NWC patch. In light of more recent NICE diabetes and peripheral arterial disease foot care related guidelines has meant that the primary and secondary care foot pathways needed to be updated and aligned to current evidence and good practice. ^{33,36,37}

- 6.3.** The development of the new pathways has followed the ethos of the previous good work of the diabetes network. The current pathway has been developed adopting the previous principles: The primary care pathway is designed to ensure:

- All patients with diabetes have access to regular high quality foot screening which includes risk stratification.

- Foot screening is delivered by an appropriately trained workforce and quality assurance is built into the process.
- Foot problems are identified early resulting in rapid assessment and treated when required.
- Patients are provided with high quality supporting education.
- Active foot disease is rapidly identified and referred for urgent medical/ surgical input.
- Patients requiring access to specialist support from a podiatry foot protection team have rapid access to these services.
- Patients requiring access to a specialist multi-disciplinary foot care team have rapid access to these services.
- All members of the primary and secondary care foot service, commissioners and patients are clear on the expected minimum timescales and pathway for referral and treatment.
- A focus is placed on management of diabetes to reduce the risk of foot and other diabetes related complications.

6.4. The Diabetes Network has re-established a working group that has reviewed the pathways in light of changes to evidence, guidance and policy and have developed a new refined and integrated pathway for adoption and spread across the region. The group consists of commissioners, patients, diabetologists, vascular surgeons, GPWSi, podiatrists, diabetes nurse specialists, GPs and other stakeholders. The appendix attached provides an interactive approach to viewing and following the care pathway for diabetes foot care. This will be made available to health professionals across the NWC region.

6.5. A joint NWCSN and regional All Party Parliamentary Vascular Foot care event in April 2017. The aim of the Lancashire and South Cumbria Diabetes Footcare Event was to provide a forum for all those involved in diabetes footcare to come together and discuss ways to improve quality of life for patients and their carer(s), reduce amputation rates, improve patient experience and reduce the cost to health and social care. Essentially, to encourage change across a complex system of care. There were around 244 diabetes related amputations in Lancashire in the past year alone and it is believed that 4 in 5 diabetes amputations could be avoided. Over 80 people attended the event and discussed several key areas.

Pitch	Key point
Footcare Pathway	It is worthwhile to articulate the pathway in its entirety; this can be broken down and simplified once all information necessary is captured.
How can we teach patients to live without pain?	Focus on a catchphrase to capture attention of the public and promote patient self-care to live without pain.
Local access to specialist vascular opinion	High level engagement with CCGs and Trusts is needed.
How can we effectively engage with the government?	Funding needs to follow the patients, if there is a budget following a patient, there would be a clinician following the patient throughout the pathway.
Health Education	Identify the health behaviour change that the person believes they can achieve, in manageable bites, to empower them to make further changes.
Talking about mortality conversations	Conversations around risk factors early on.
Should podiatrists/allied health professionals carry out BP/AF tests as part of routine neuro/vascular services?	Currently a missed opportunity to capture early diagnosis.
Peripheral Arterial Disease service - how do I influence my podiatry manager/commissioners for my Trust to do this?	The clinical network will work with vascular clinical representatives to adopt good practice and to follow good practice guidelines and standards.
Compulsory Mandatory Training	We need to focus on education, particularly for front line staff dealing with diabetes patients.
How do we move from reactive services towards proactive cardiovascular focused services?	Redesign of the process from foot screening onwards.
Vascular Podiatry Service	Here is a need to renew patient cardiovascular risk factor information booklets.
How to encourage patient attendance structured education?	Patients need lifetime education.

Delegates at NWCSCN and All Party Parliamentary Group Vascular event.



*The number
of
amputations
in Lancs and
South
Cumbria STP
in 2016.*

7. Footcare Pathways

Primary Care Footcare Blueprint 2017

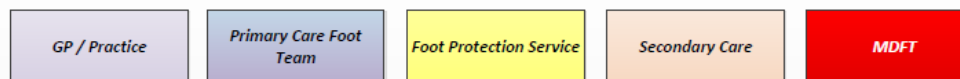


Contents:

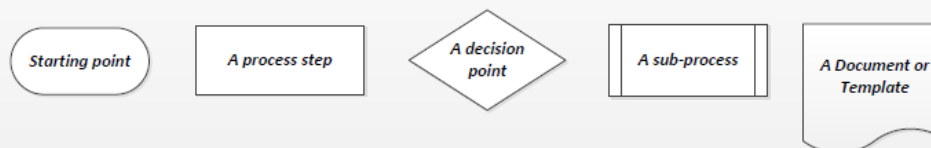
- Blueprint
- Foot Examination Template
- Stratification Tool
- Template forms

Blueprint key:

Colour code for responsible organisation:



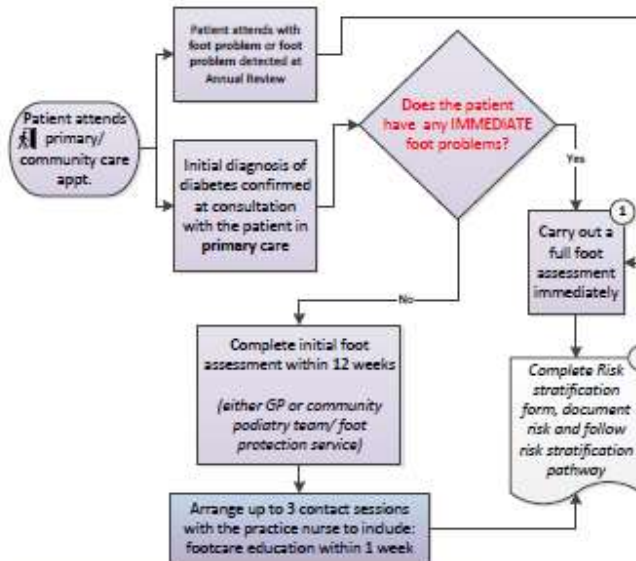
Type of blueprint action:



Primary Care Footcare Blueprint 2017



Foot screening and risk stratification tool [Click for Homepage](#)



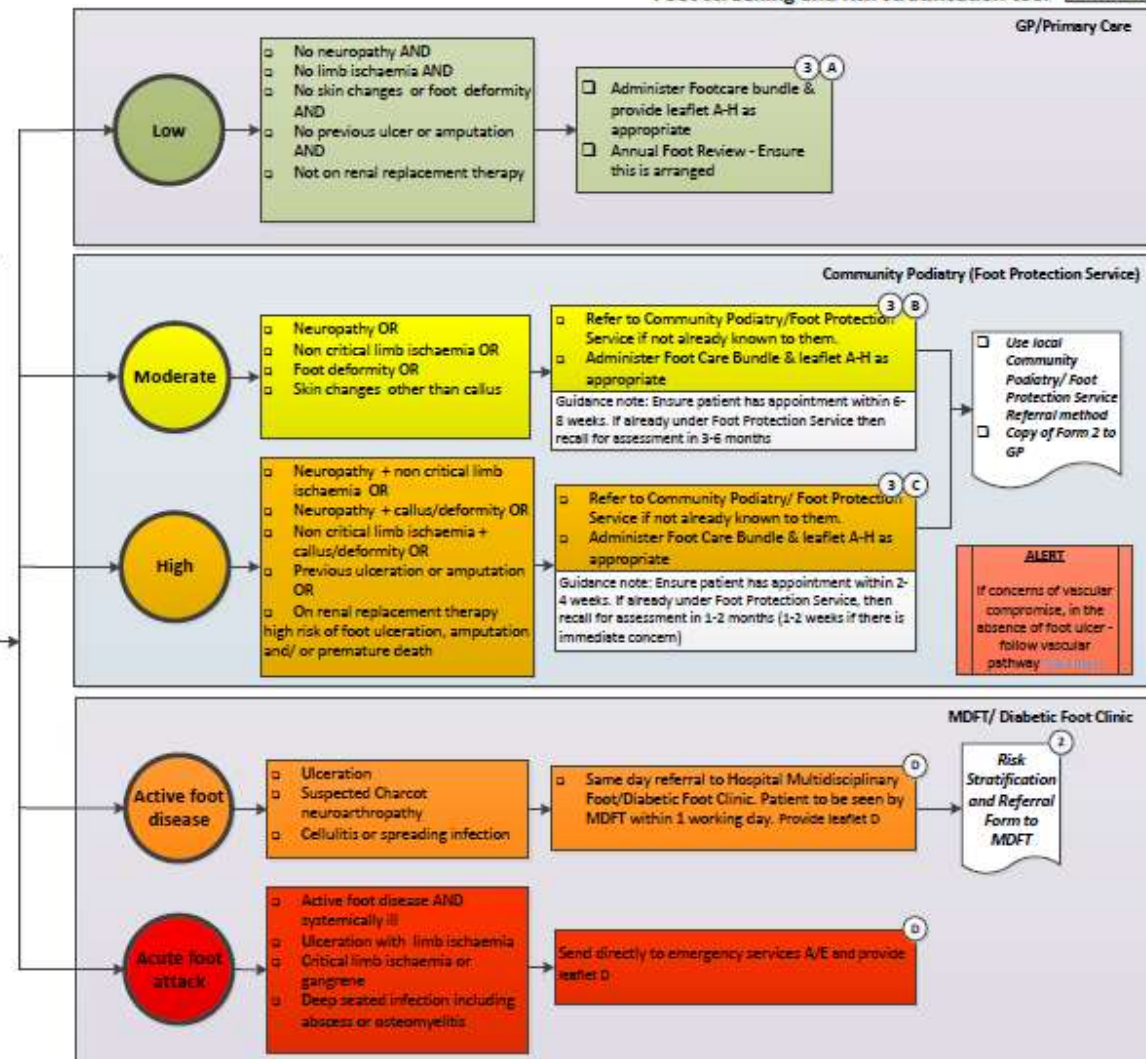
Roles and Responsibilities	
GP	<ul style="list-style-type: none"> To assess new diabetes patients feet Utilise risk stratification tool READ code appropriate activity
FPS	<ul style="list-style-type: none"> Receive and act upon the GP referral within appropriate timescales Provide discharge information as required - Inform GP practice
MDFT	<ul style="list-style-type: none"> Receive and act upon the GP referral within appropriate timescales Provide discharge information as required - Inform GP practice
Patient	<ul style="list-style-type: none"> Inform the GP of any foot problems Attend any appointment Receive information leaflets

Forms and Guidance & Patient Information	
Focused Foot Examination	1
Risk Stratification & Referral Form	2
Footcare Bundle	3
Inpatient Foot Pathway	4
Outpatient Record Sheet	5
MDT Discharge Summary	6
Additional information to MDFT after discharge from Emergency Floor	7
Discharge Letter following inpatient stay	8
Low Risk Foot	A
Moderate Risk Foot	B
High Risk Foot	C
Looking After Your Foot Ulcer	D

To view/download forms, please click the appropriate number/letter
[Click here to access the Claudication and Neuropathic Pain Assessment](#)

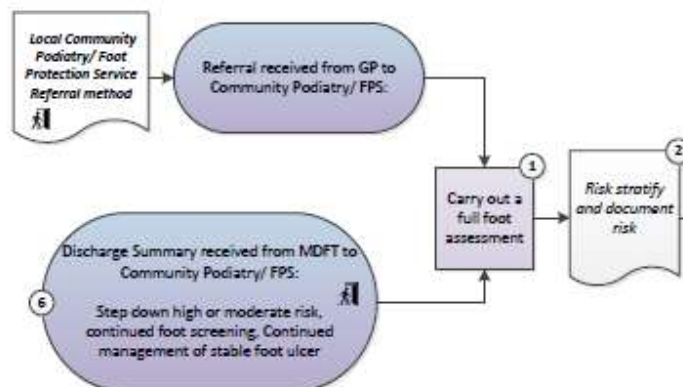


North West Coast Strategic Clinical Networks



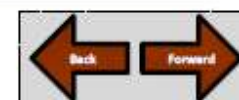
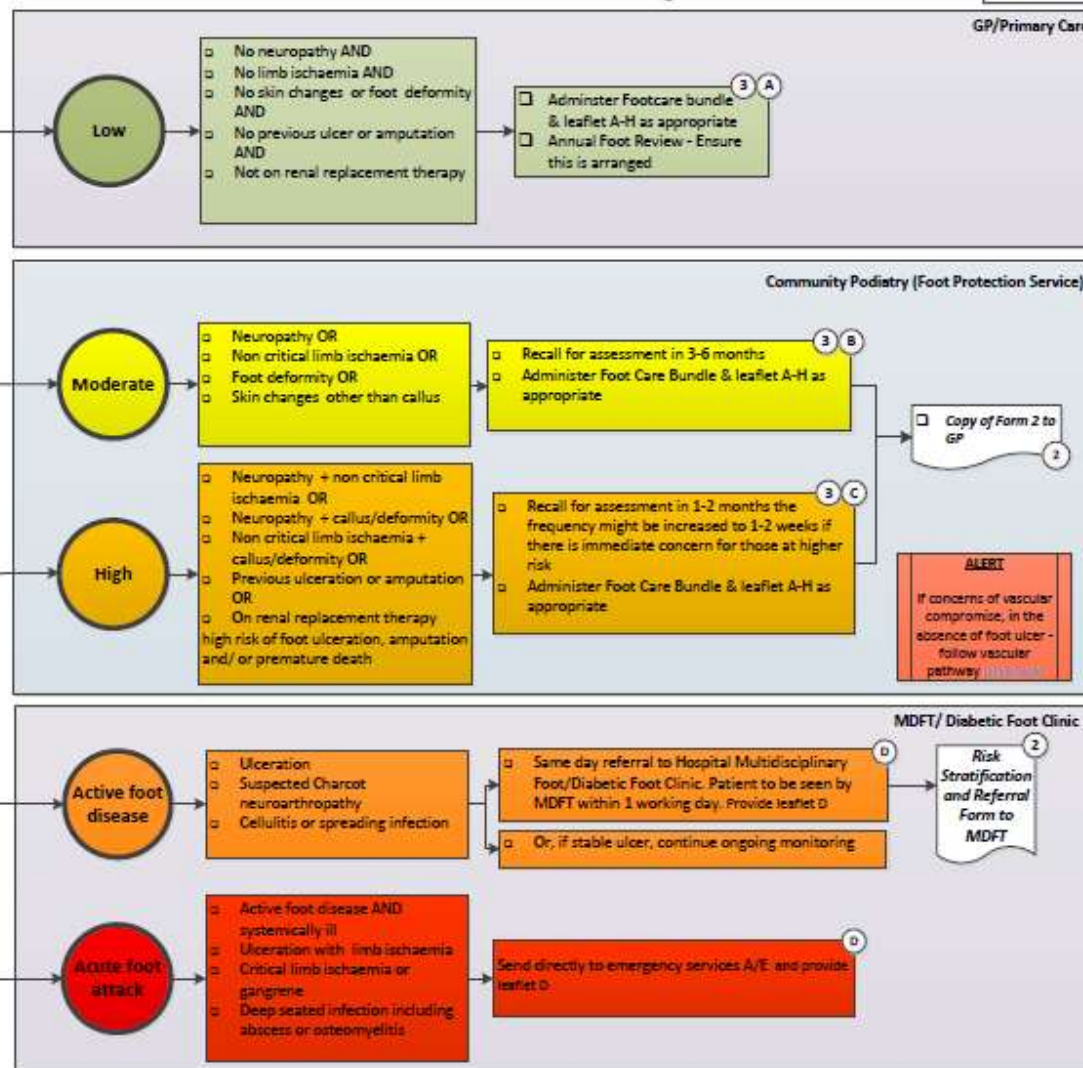
Forms and Guidance & Patient Information			
Focused Foot Examination	1	Additional information to MDFT after discharge from Emergency Floor	7
Risk Stratification & Referral Form	2	Discharge Letter Following Inpatient Stay	8
Footcare Bundle	3	Low Risk Feet	A
Inpatient Foot Pathway	4	Moderate Risk Feet	B
Outpatient Record Sheet	5	High Risk Feet	C
MDT Discharge Summary	6	Looking After Your Foot Ulcer	D
To view/download forms, please click the appropriate number/letter			
Click here to access the Claudication and Neuropathic Pain Assessment			

Roles and Responsibilities	
GP	
<input type="checkbox"/>	Refer appropriate patients
<input type="checkbox"/>	To receive patient discharge summary and code on GP clinical system.
FPS	
<input type="checkbox"/>	Review patient within appropriate timescales
<input type="checkbox"/>	Receive and act upon discharge information or referral
MDFT/Hospital	
<input type="checkbox"/>	Manage active foot ulceration
<input type="checkbox"/>	Discharge mod/high back to FPS
<input type="checkbox"/>	Provide discharge information to GP/FPS
Patient	
<input type="checkbox"/>	Ensure that appointments are kept
<input type="checkbox"/>	Contact GP or FPS if any new problems occur



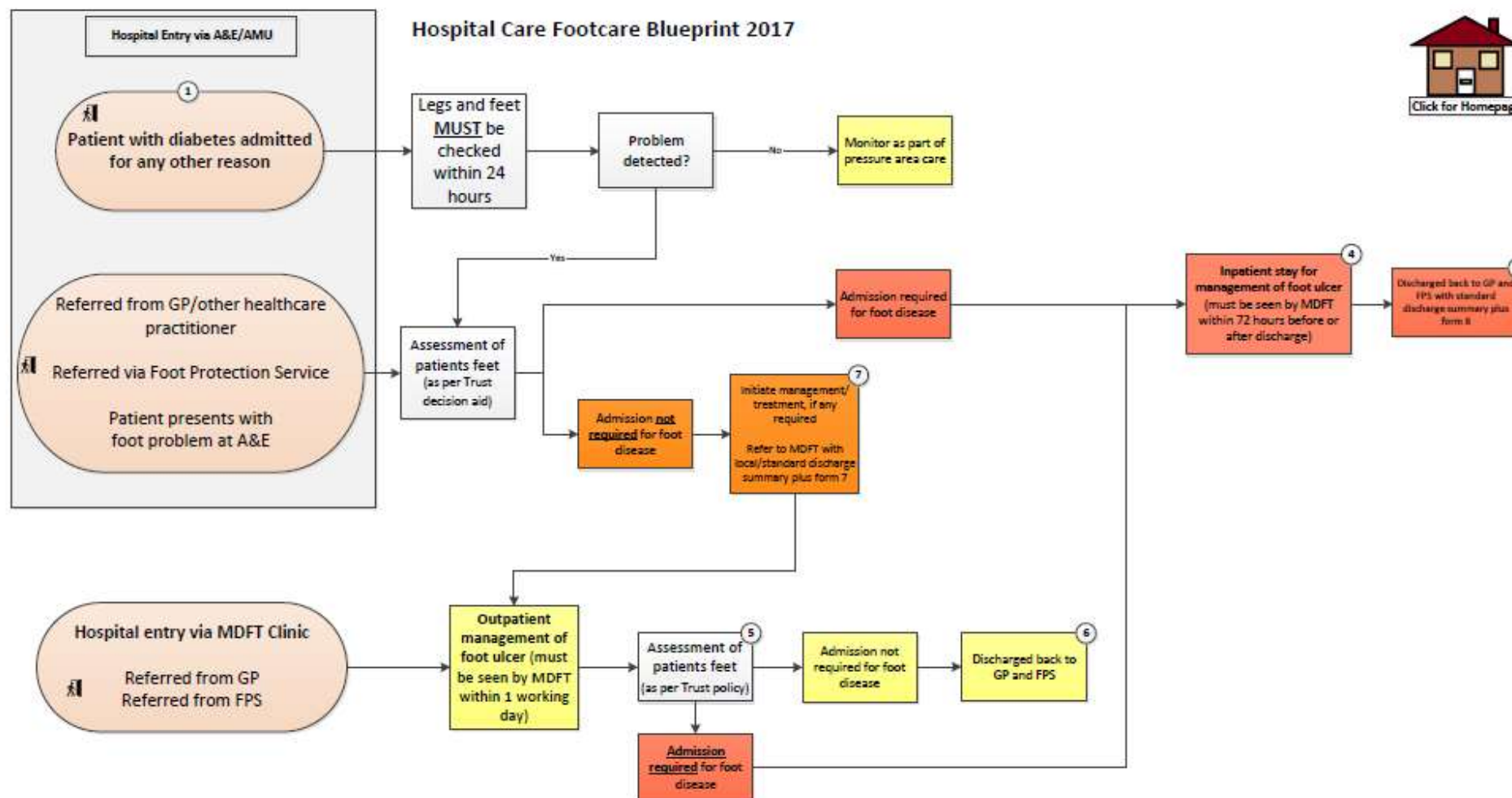
Community Podiatry/ Foot Protection Service Footcare Blueprint 2017

Foot screening and risk stratification tool





Hospital Care Footcare Blueprint 2017

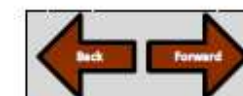


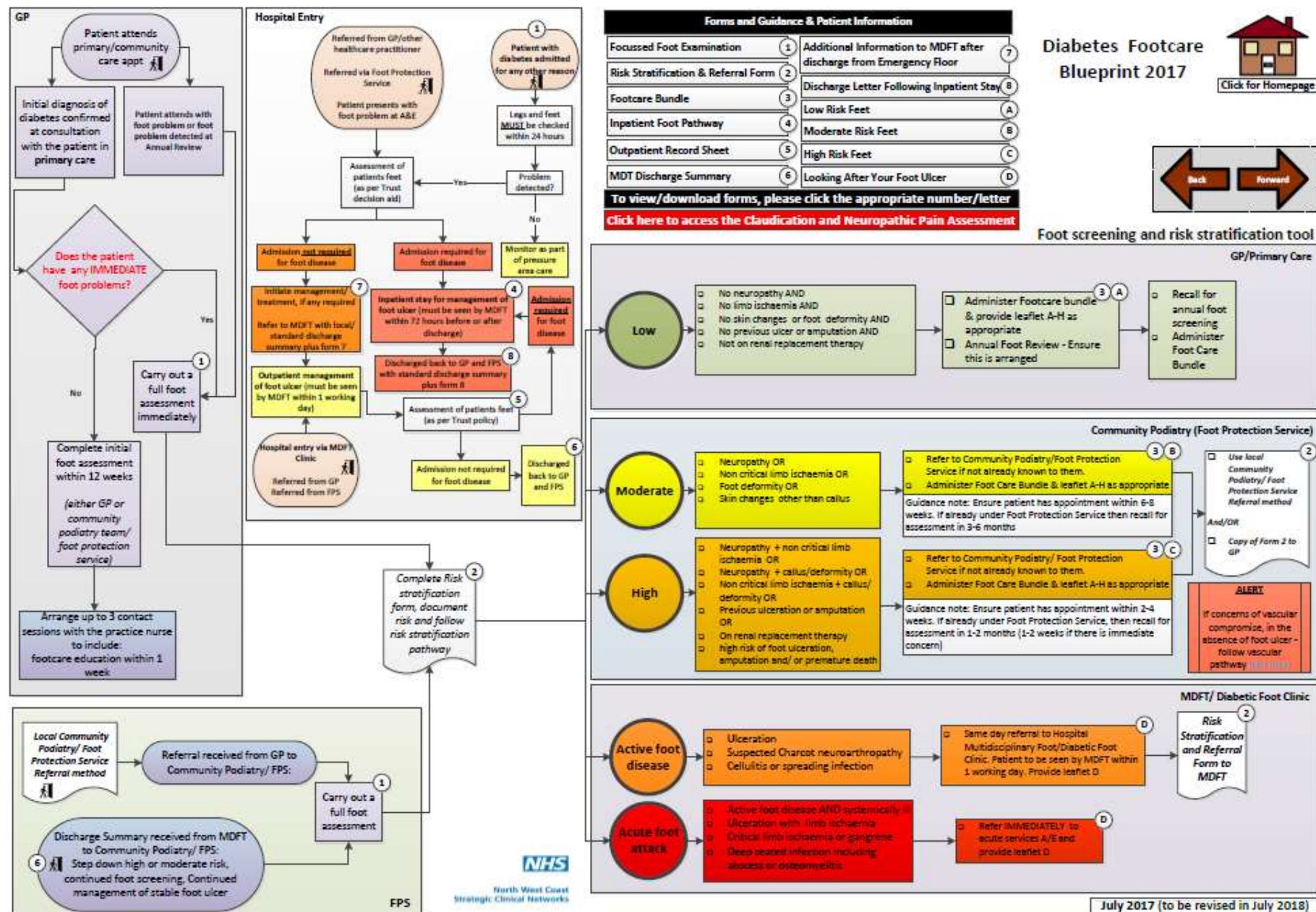
Forms and Guidance & Patient Information		
Focused Foot Examination	1	Additional Information to MDFT after discharge from Emergency Floor
Risk Stratification & Referral Form	2	Discharge Letter Following Inpatient Stay
Footcare Bundle	3	Low Risk Foot
Inpatient Foot Pathway	4	Moderate Risk Foot
Outpatient Record Sheet	5	High Risk Foot
MDT Discharge Summary	6	Looking After Your Foot Ulcer

To view/download forms, please click the appropriate number/letter

[Click here to access the Claudication and Neuropathic Pain Assessment](#)

Roles and Responsibilities	
GP <input type="checkbox"/> Receive patient discharge summary and code on GP clinical system.	MDFT <input type="checkbox"/> Identify a named consultant for patient care <input type="checkbox"/> Provide timely follow-up appointment <input type="checkbox"/> Completion of referral/ discharge forms <input type="checkbox"/> Refer to FPS for ongoing management/ continued screening on discharge
FPS <input type="checkbox"/> Review patient within appropriate timescales <input type="checkbox"/> Receive an act upon discharge information or referral	Patient <input type="checkbox"/> Ensure that appointments are kept <input type="checkbox"/> Contact GP or Foot protection service if any new problems occur





Risk Stratification

RISK STRATIFICATION	DEFINITION	ACTION
Low Risk	<ul style="list-style-type: none"> No neuropathy AND No limb ischaemia AND No skin changes or foot deformity AND No previous ulcer or amputation Not on renal replacement therapy 	<ul style="list-style-type: none"> Administer Foot Care Bundle Recall for Annual Foot Screening
Moderate Risk	<ul style="list-style-type: none"> Neuropathy OR Non critical limb ischaemia OR Foot deformity Or Skin changes other than callus 	<ul style="list-style-type: none"> Administer Foot Care Bundle Refer to Foot Protection Service – Ensure patient has appointment within 6-8 weeks
High Risk	<ul style="list-style-type: none"> Neuropathy + non critical limb ischaemia OR Neuropathy + callus/deformity OR Non critical limb ischaemia + callus/deformity OR Previous ulceration or amputation OR On renal replacement therapy 	<ul style="list-style-type: none"> Administer Foot Care Bundle Refer to Foot Protection Service – Ensure patient has appointment within 2-4 weeks
Active Foot Disease	<ul style="list-style-type: none"> Ulceration Suspected Charcot neuroarthropathy Cellulitis or spreading infection 	<ul style="list-style-type: none"> Administer Foot Care Bundle Refer to Foot Protection Service – Ensure patient has appointment within 1 working day
Acute Foot Attack	<ul style="list-style-type: none"> Active foot disease AND systemically ill Ulceration with limb ischaemia Critical limb ischaemia or gangrene Deep seated infection including abscess or osteomyelitis 	<ul style="list-style-type: none"> Administer Foot Care Bundle Refer IMMEDIATELY to acute services



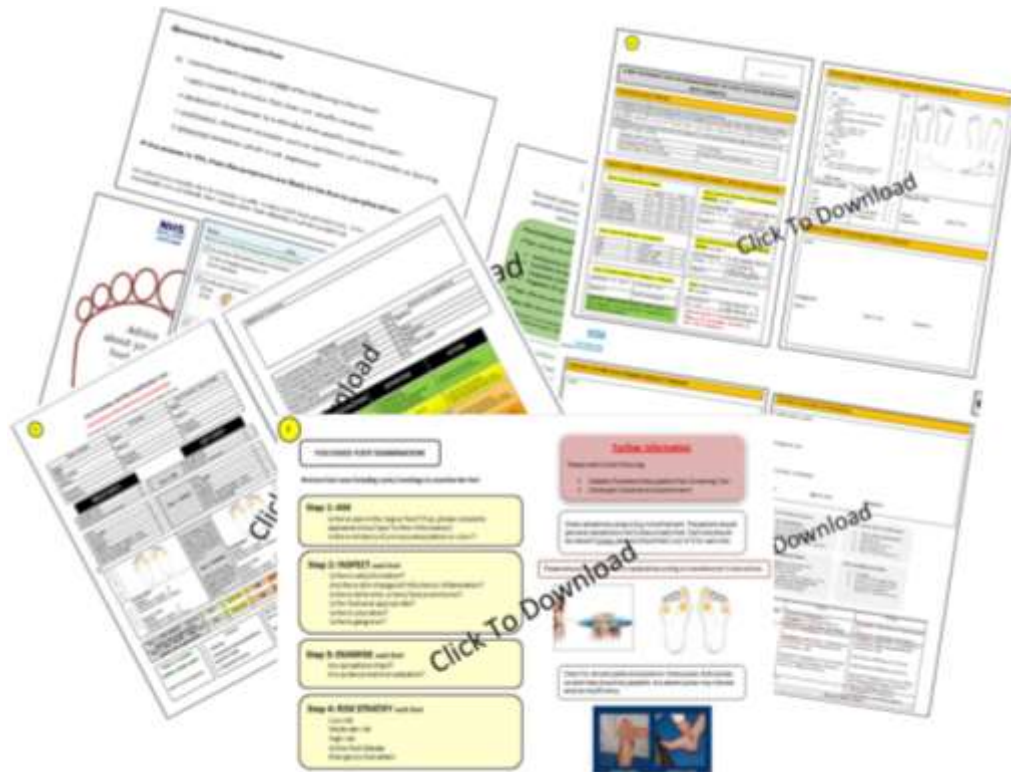
FOOT CARE BUNDLE

- Document risk level for each foot individually
- Inform patient of risk for each foot individually
- Provide general foot care advice
- Provide Foot Care Information Leaflets based on individual risk
- Provide emergency contact numbers in case of development of acute foot problems



Information and forms

Please follow the link in order to access the relevant forms and information sheets available in this pathway. You will be able to adapt or use the forms freely



Forms and Guidance & Patient Information			
Focussed Foot Examination	1	Additional Information to MDFT after discharge from Emergency Floor	7
Risk Stratification & Referral Form	2	Discharge Letter Following Inpatient Stay	8
Footcare Bundle	3	Low Risk Feet	A
Inpatient Foot Pathway	4	Moderate Risk Feet	B
Outpatient Record Sheet	5	High Risk Feet	C
MDT Discharge Summary	6	Looking After Your Foot Ulcer	D
To view/download forms, please click the appropriate number/letter			
Click here to access the Claudication and Neuropathic Pain Assessment			

[Click here](#)

To access and download the Pathway, forms and information

8. References

- ¹ HSCIC (2015) 'Clinical Audit and Registries Management Service'. *National Diabetes Inpatient Audit. Report*, England and Wales, June 2016.
- ² Lim, J., Ng, N., Thomas, C (2017) 'Prevention and treatment of diabetic foot ulcers'. *Journal of the Royal Society of Medicine*; 0(0): pp 1–6.
- ³ HSCIC (2016) 'Clinical Audit and Registries Management Service'. *National Diabetes Foot Care Audit report 2014-2015*. Report, England and Wales.
- ⁴ Zhang, P., Lu, J., Jing, Y., Tang, S., Zhu, D., Bi, Y (2017) 'Global epidemiology of diabetic foot ulceration: a systematic review and meta-analysis'. *Annals of Medicine*. Vol. 49(2):pp 106–116.
- ⁵ Leone, S., Pascale, R., Vitale, M., Esposito, S (2012) 'Epidemiology of diabetic foot'. *Infez Med*; **20** Suppl 1: 8-13
- ⁶ Richard, JL., Schuldiner, S (2008) 'Epidemiology of diabetic foot Problems'. *Rev Med Interne*; 29 Suppl 2: S222-S230
- ⁷ Nather, A., Bee, CS., Huak, CY., Chew, JL., Lin, CB., Neo, S., Sim, EY (2008) 'Epidemiology of diabetic foot problems and predictive factors for limb loss'. *Journal Diabetes Complications* 2008; 22: 77-82.
- ⁸ Kerr, M., Rayman, G., Jeffcoate, WJ (2014) 'Cost of diabetic foot disease to the National Health Service in England'. *Diabetes Medicine*; 31: 1498–1504.
- ⁹ Shaw, JE (2014) 'Diabetes and amputation: are we making progress?' *Wound Practice and Research*. Vol 22(4):pp 194-195.
- ¹⁰ Holman N, Young RJ & Jeffcoate WJ. Variation in the recorded incidence of amputation of the lower limb in England. *Diabetologia* 2012; 55:1919-2512.
- ¹¹ Bahari, R (2015) 'The Psychological Impact of Diabetic Limb Problems'. *International Medical Journal Malaysia: Volume 14(2)*; pp3-7.
- ¹² Neeru, B., Gagandeem, K., Pal, AJ., Bajwa, SS., Harbandna, S., Rajesh, K (2015) 'Psychological, psychiatric and clinical implications of diabetic foot ulceration: A prospective analysis. *Journal Social Health Diabetes :Vol 3*: pp89-94.
- ¹³ Chapman, Z., Shuttleworth, CMJ., Huber, JW (2014) 'High levels of anxiety and depression in diabetic patients with Charcot foot'. *Journal of Foot and Ankle Research* 2014, 7:2: pp1-8.
- ¹⁴ McDonald, S., Sharpe, L., Blaszczyński, A (2014) 'The psychosocial impact associated with diabetes-related amputation'. *Diabetes Medicine*;31(11):1424-30.

- ¹⁵ Vileikyte, L (2005) 'The psycho-social impact of foot damage. *Diabetic voice*. Vol 50: pp 11-13.
- ¹⁶ Pereira, M., Salomé, G., Guimarães Openheimer, D., Espósito, V., Almeida, S., Ferreira, L (2014) 'Feelings of Powerlessness in patients with Diabetic Foot Ulcers. *Wounds*: 26(6):pp 172-177.
- ¹⁷ Alavi, A., Sibbald, RG., Mayer, D., Goodman, L., Botros, M., Armstrong, DG., Woo, K., Boeni, T., Ayello, EA., Kirsner, RS (2014) 'Diabetic foot ulcers: Part II'. Management. *Journal American Acad Dermatology*; 70: 21.e1-2124.
- ¹⁸ Schaper, NC., Apelqvist, J., Bakker, K (2003) 'The international consensus and practical guidelines on the management and prevention of the diabetic foot'. *Curr Diab Rep*; 3: 475-479
- ¹⁹ DiPreta, JA (2014) 'Outpatient assessment and management of the diabetic foot'. *Med Clin North America*; 98: 353-373.
- ²⁰ Sloan, F., Mark, N., Grossman, S (2010) 'Receipt of Care and Reduction of Lower Extremity Amputations in a Nationally Representative Sample of U.S. Elderly'. Health Research and Educational Trust: *Health Services Research*. Vol 45(6 Pt 1):1740-62.
- ²¹ Nasiri, M., Adarvishi, S (2015)' Literature review on the management of diabetic foot ulcer'. *World J Diabetes* 2015 February 15; 6(1): 37-53.
- ²² Wang, C., Ma, L., Yang, C, Liu, D., Sun, K., Song, W., Luo, B., Li, Y., Xu, M., Zhang, S., Li, F., Ren, M., Yan, L (2016) 'Reducing major lower extremity amputations after the introduction of a multidisciplinary team in patient with diabetes foot ulcer'. *Biomedcentral Endocrine Disorders*) 16:38.
- ²³ Seaman, S (2005) 'The role of the nurse specialist in the care of patients with diabetic foot ulcers'. *Foot Ankle International*; 26:19-26.
- ²⁴ Lepow, B D., Bluth, DM (2015) 'It takes a team'. *Podiatry Management*. Aug; pp 100-102.
- ²⁵ Fitzgerald, R (2012) 'Lower Extremity Amputation Prevention'. *Podiatry Management*. June/July. Pp 187-191.
- ²⁶ DH (2013) 'NHS Outcomes Framework; 2014-15'.
- ²⁷ DH (2012) 'Public health outcomes framework for England; 2013 to 16'.
- ²⁸ DH (2014) 'Adult social care outcomes framework; 2014-15'.
- ²⁹ NHS England (2015) 'CCG outcomes indicator set; 2014-15'.
- ³⁰ NHS Digital (2016) 'Quality and outcomes framework (QOF); 2015-16'.
- ³¹ NHS England (2016) 'CCG Improvement Assessment Framework 2016/17'.

- ³² NHS England (2014) 'NHS Five Year Forward View (5YFV)'.
- ³³ NICE guideline (NG19), (2016) NICE Diabetic foot problems: prevention and management
- ³⁴ NICE guideline (CG147), (2012) 'Peripheral arterial disease: diagnosis and management'.
- ³⁵ NICE guideline (CG10), (2003) 'Type 2 diabetes the prevention and management of foot problems: How top down implementation removed waiting times (up to 18 months waits)'.
- ³⁶ NICE guideline (CG147), (2012) 'Peripheral arterial disease: diagnosis and management'.
- ³⁷ NICE guideline (QS52), (2014) 'Peripheral arterial disease'.

9. Acknowledgements

The Diabetes Network Team would like to thank and acknowledge the contributions from the diabetes foot care working groups in Cheshire & Merseyside, the three steering groups in Cheshire, Merseyside and Lancs & South Cumbria and the patient representatives and delegates at the Lancs & South Cumbria All Part Parliamentary Group Vascular Disease who contributed to the draft pathway development.

Name	Title	Organisation
Lancashire and Cumbria patients and clinicians who contributed to the pathway development at the All Party Parliamentary Footcare Event in April 2017		
Members of the NWCSCN Footcare Pathway Working Group		
Prof Aftab Ahmad	Consultant Physician in Diabetes & Endocrinology and General Internal Medicine	NWC Strategic Clinical Network Lead for Diabetes. (Royal Liverpool and Broadgreen University Hospitals NHS Trust)
Dr Dhanya Kathithil	Consultant Diabetologist	(Royal Liverpool and Broadgreen University Hospitals NHS Trust)
John Lee	Quality Improvement Project Manager	NWC Strategic Clinical Network
Mike Mayers	Programme Manager	NWC Strategic Clinical Network
Mel Saunders	Quality Improvement Project Manager	NWC Strategic Clinical Network
Laura Crompton	Quality Improvement Project Manager	NWC Strategic Clinical Network
Dr Paul Mackenzie	Senior Network Manager	NWC Strategic Clinical Network
Andrew Sharpe	Advanced Podiatrist	(Southport and Ormskirk NHS Trust)
Dr Nigel Taylor	GP Clinical Lead for Diabetes	(South Sefton CCG)
Susan Marchant	Diabetes Nurse Specialist	(Royal Liverpool and Broadgreen University Hospitals NHS Trust)
Dr Catherine Wall	GP and Diabetes and Urgent Care	West Cheshire CCG
Dr Lesley Hodgson	GP Clinical Lead for Diabetes	Wirral CCG
Tanvir Khokhar	Podiatry Lead & Advanced Practitioner	The Royal Liverpool & Broadgreen University Hospitals NHS Trust
Dr Mike Merriman	GP Clinical Lead for Diabetes	Knowsley CCG
Tina Ewart	Locality Manager	South Sefton CCG
Sam Ashton Mort	Podiatrist	5 Boroughs Partnership
Mark Lavender	Patient	Cheshire
Mr Tom Nicholas	Consultant Vascular Surgeon	Warrington and Halton Hospital FT
Dr Surya Rajeev	Consultant Endocrinology & Metabolic Medicine	Aintree University Hospital Trust
Andy Lavender	Patient	Cheshire

Key Contacts

Dr Paul Mackenzie (Senior Network Manager) email: paul.mackenzie@nhs.net
Mike Mayers (Quality Improvement Programme Manager) email: mike.mayers1@nhs.net
Mel Saunders (Quality Improvement Project Manager) email: melanie.saunders1@nhs.net
John Lee (Quality Improvement Project Manager) email: john.lee@nhs.net
Laura Crompton (Quality Improvement Project Manager) email: laura.crompton@nhs.net