Report on the National Diabetes Foot Care Audit (NDFA) Quality Improvement Collaboratives

The National Audit Quality Improvement programme aims to help services to improve care and outcomes for people with diabetes across four of the National Diabetes Audit workstreams. This work is being undertaken through creating Quality Improvement Collaboratives (QICs) focused on:

- Inpatient care - National Diabetes Inpatient Audit (NaDIA)
- Pregnancy and pre-conception care - National Pregnancy in Diabetes Audit (NPID)
- Foot care - National Diabetes Foot Care Audit (NDFA)
- Transition from young peoples to adult diabetes services – National Diabetes Transition Audit (NDTA)

(See Appendix 1 for map of QIC sites across all four audit workstreams)

Quality Improvement Collaboratives can support healthcare improvement (Schouten et al, 2008). The collaborative design features may affect the extent to which teams improve. Those features that may be associated with greater improvement were built into the NDA quality improvement collaboratives:

- Leadership support
- Teamwork
- Teams that remain intact and continue to gather data
- Facilitators perceived as being helpful
- The sharing of improvement ideas
- The use of Plan-Do-Study-Act
- Interactive learning sets and conference calls.

This report details the aims, interventions tested, lessons learnt, results and conclusions of the National Diabetes Foot Care Audit (NDFA) Quality Improvement Collaborative commissioned to run from 2018-20.

National Diabetes in Foot Care Audit

Since it was established in 2014, the NDFA has consistently found that having a severe ulcer is strongly linked with worse outcomes for people with diabetes. This includes lower rates of healing, higher rates of major amputations and higher risk of death. It is vital that all people with diabetes who have a foot ulcer or are at increased risk of developing one are seen quickly. Early referral means that ulcers will be less severe and will lead to better outcomes.

The NDFA team wanted to support improvement in foot care for people with diabetes. Consultation with health care professionals, people with diabetes and policy makers clearly identified that this should focus on reducing the time to, and wound severity at, specialist assessment. This focus recognises the findings of the national audit and the known costs to people with diabetes and to services. Specifically, we sought to improve:

a) Patients' prompt access to a healthcare provider upon developing a wound
b) Prompt primary care referral for specialist assessment
c) Availability of specialist assessment appointments

This work was undertaken through the creation of a National Diabetes Foot Care Audit Quality Improvement Collaborative (NDFA QIC).

NHS Digital and Diabetes UK invited services in England and Wales, who wanted to set local improvement aims related to the above aspects of care, to apply to become part of the NDFA QIC. Each service was asked to identify a multidisciplinary team relevant to their local improvement aim(s) including, for example, a consultant diabetologist, a vascular specialist, a podiatrist, a GP or practice nurse and/or a quality improvement professional. Teams were also asked to provide evidence of support from their Trust Chief Executive and to make a commitment to meet monthly.

25 teams applied to be part of the NDFA QIC. Selection was based upon diverse team membership, demonstrable executive support, geographical spread and measurable aims articulating what they wanted to improve and by how much. Twenty teams from across England and Wales were successful in their applications to become a part of the NDFA QIC although several teams dropped out before the initial workshop. The teams that formed the NDFA QIC were:

- The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust
- South Tees Hospitals NHS Foundation Trust
- Pennine Acute Hospitals Trust
- Dorset County Hospital NHS

- Great Western Hospitals NHS Foundation Trust
- Torbay and South Devon NHS Foundation Trust
- St George's Hospital. South West London STP
- South Warwickshire Foundation Trust
- Princess Royal University Hospital /King's College Hospital
- East Suffolk North Essex Foundation Trust
- University Hospitals of Leicester NHS Trust
- Norfolk and Waveney Sustainability and Transformation Programme
- Lancashire Care NHS foundation Trust
- Cambridge University Hospitals
- East Lancashire Hospitals NHS Trust
- University College London Hospitals
- Croydon
- Royal Liverpool And Broadgreen University Hospitals
- Cardiff and Vale LHB
- Cornwall Partnership NHS trust

The NDFA QIC teams:

- Attended a workshop (Appendix 2) to develop the skills to improve the quality of care and outcomes, share practice and develop a tailored improvement plan to address local needs
- Took part in facilitated webinars and teleconferences
- Received coaching to devise and plan delivery of the developed local improvement plan(s)
- Shared resources such as patient information sheet, clinical systems templates and pop-ups
- Were given the opportunity to showcase improvements and share lessons at a further workshops at the end of the first year

Each NDFA QIC team identified and tested interventions to achieve their aims of reducing the time to, and wound severity at, specialist assessment. Broadly, these interventions fell into five main types:

Educational approaches for health care professionals

Examples of this include:

- Face to face and online training with wide range of healthcare professionals
- Applying to different sources for funding to deliver education sessions

Educational approaches for people with diabetes

Examples of this include:

- Patient evenings to inform of options for local specialist assessment
- Development and dissemination of patient information materials

Collaborative working

Examples of this include:

- Development of new referral and treatment pathways
- Engaging with the stakeholders
- Creating improved links between primary and secondary care

Building capacity

Examples of this include:

- Increase in walk-in/self-referral clinics
- Re-configured clinics to allow for more new patient appointments
- Development of one-stop wound assessment clinic

Improved use of systems and processes

Examples of this includes:

- Building Root Cause Analysis into regular practice
- Setting up a database to capture data and review regularly with MDFT
- Including NDFA forms in routine wound care paperwork

Presented below are exemplar case-studies from 8 of the 20 sites which formed the NDFA QIC.

Reports from individual participating QICs

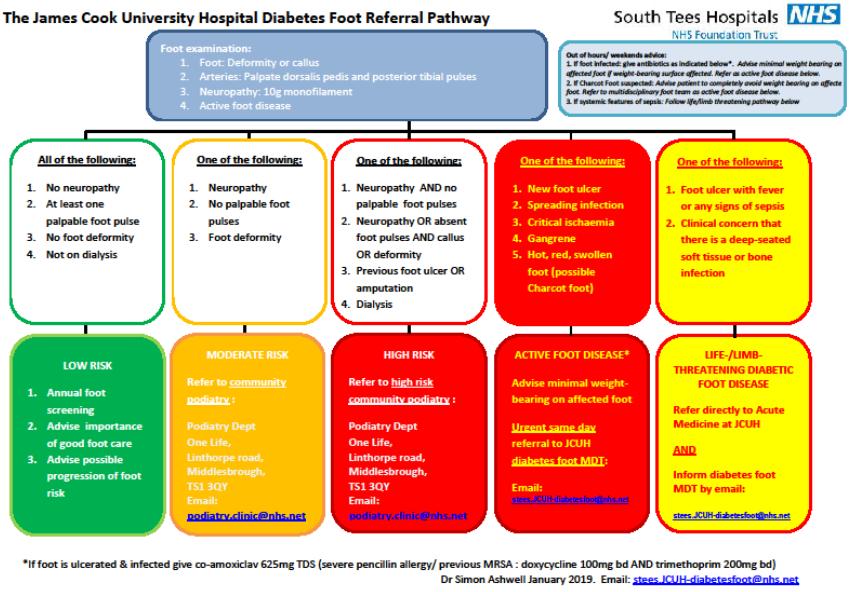
Case study 1: South Tees Hospital NHS Foundation Trust

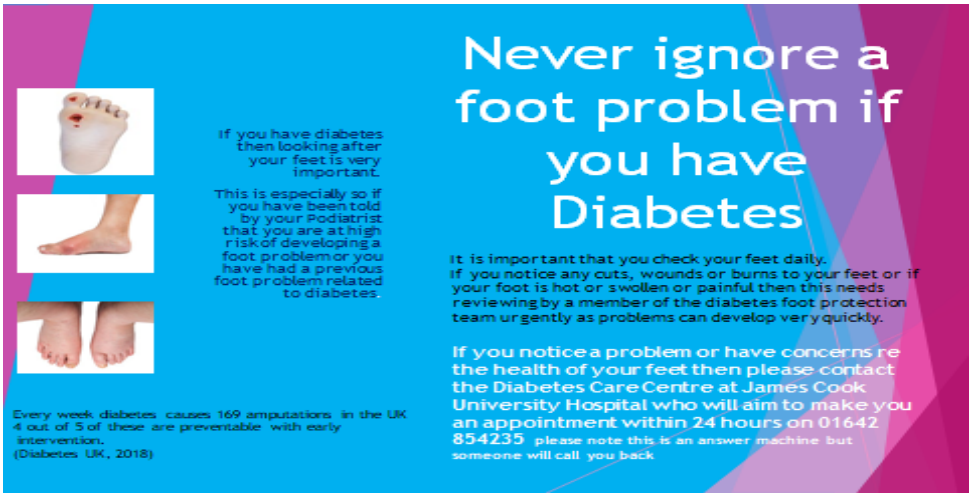
Aims:

- To increase the number of self-referrals to the Diabetes foot multidisciplinary team service to above the NDFA mean of 29% within 12 months (Oct 2019)
- All service users to be offered an appointment within 1 working day of the foot service receiving their referral (within 12 months – October 2019)
- To do this without additional expenditure

Interventions tested:

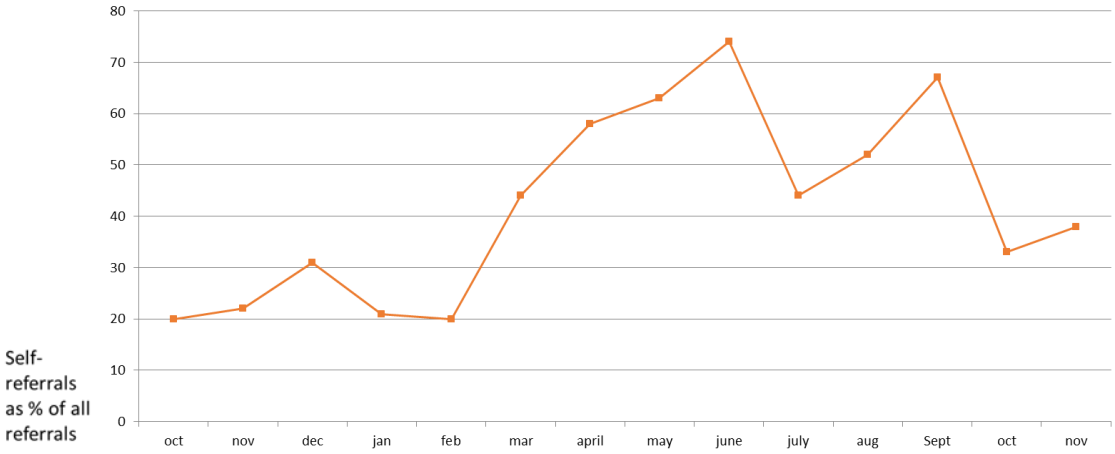
- Engaged with the stake holders: Community Podiatrists, Patients GPs ,PNs, receptionists
- Set up a database to capture our data and review monthly
- Provided an education session to community Podiatrists explaining rationale with regards to what we are trying to achieve so that they could educate all patients with diabetes re self-referral
- Designed, printed and displayed a poster for waiting rooms in community podiatry venues to educate patients
- Ordered 'Foot Attack' booklets and created a standard practice to give these to patients on discharge from the secondary care diabetes service
- Re-configured our clinics to allow for more new patient appointments
- Created a new referral pathway for all foot risk categories including active disease. This includes email addresses for all referrals



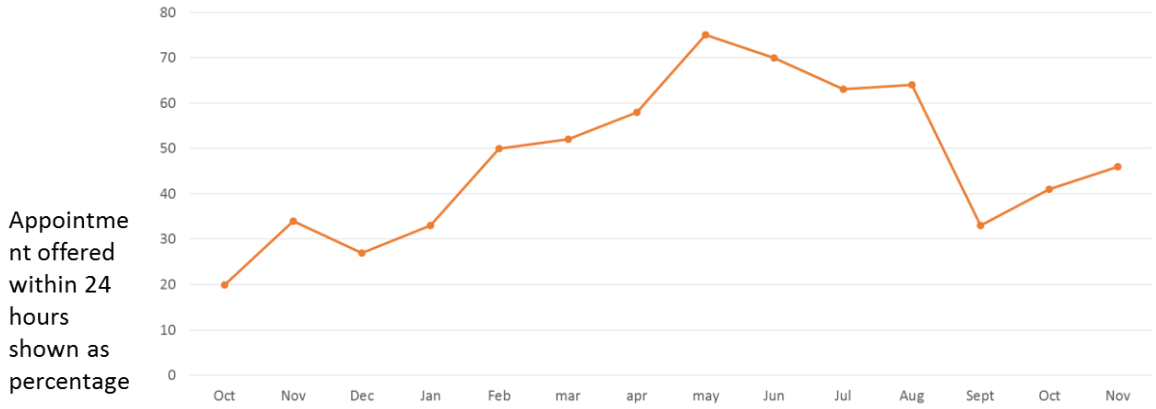


Results:

Aim 1 – increase self-referral >29 %



Aim 2 – offer 100% patients an appointment within one working day



13.5% people refuse an appointment at the first available opportunity. 73% due to personal choice

Key lessons:

- Make it clear patients need to phone for appointment rather than ‘drop in’.

- Podiatry telephone triage to ensure active ulceration
- Community ‘did not attend’ rate post discharge from secondary care has increased.
- Reception staff supported about the need for urgent appointment when calling patients

Conclusions:

- Significant clinical improvements and efficiencies can be made without additional funding
- Simple process changes bring results
- Value of time out to reflect on and improve clinical service

Next steps:

- Need for regular time out sessions
- Need for rolling programme of aims and improvements

Case study 2: Lancashire and South Cumbria NHS Foundation Trust

Aims:

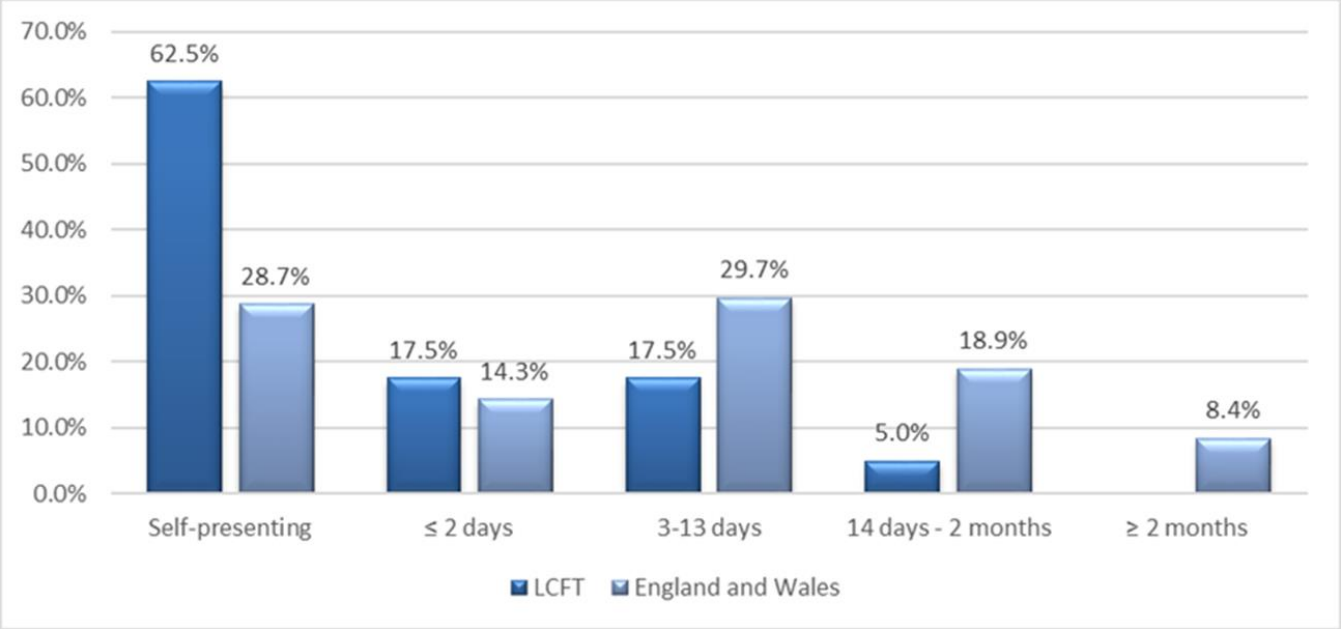
- To reduce the interval to 0-13 days between first assessment and assessment by MDT by 20% by April 2020

Interventions tested:

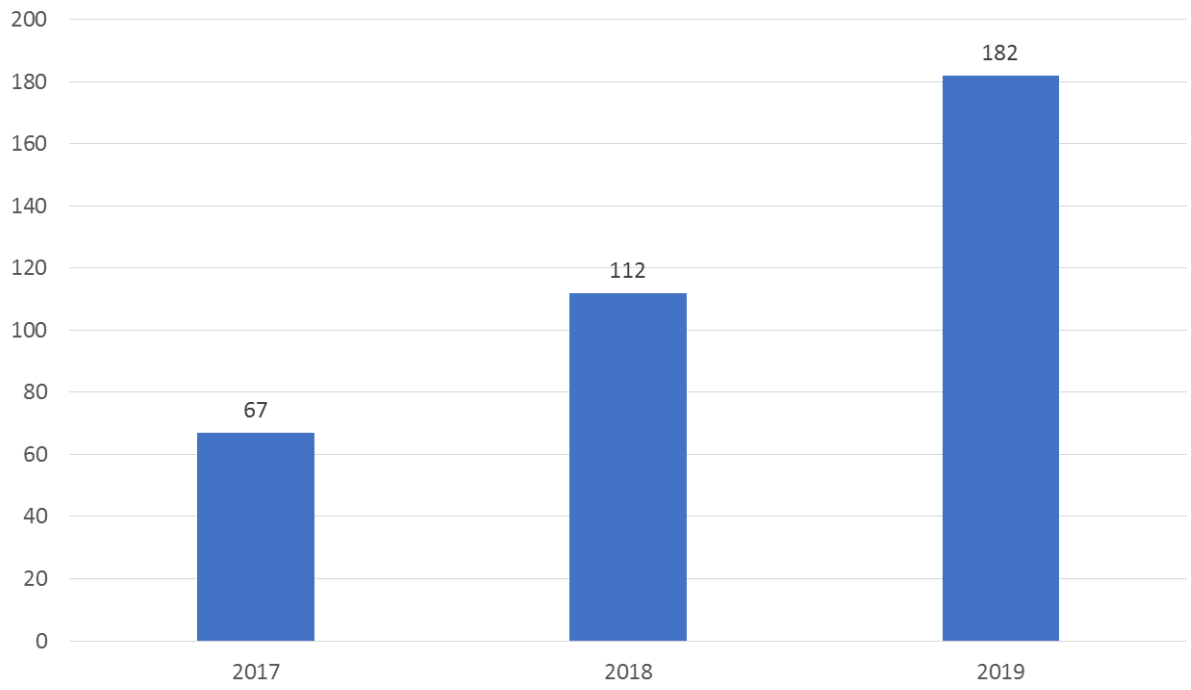
- We reviewed our data
- Provided training and awareness to podiatrist about completing the NDFA forms correctly to encourage compliance
- As part of compliance review and feedback:
    - Identified the need to add patients name to the form to reduce time on patient outcomes
    - NDFA form now included in podiatry wound care paperwork
    - Added weekly reminders to all calendars
- Created and delivered 6 GP/Practice nurse education session – raised awareness of the NDFA and importance of early referral
- Working with a GP collaborative to update training on diabetic screening to practice nurses, and provided opportunities to observe our Consultant-led diabetic foot ulcer clinic
- Creating better links with practice nurse
- Providing education and observation at specialist clinics

Results:

Interval to first expert assessment



NDFA forms received



Key lessons:

- The form to be completed needs to be accessible and not impose extra time for the clinician – from as early as possible in the process
- Ensure the information needed to provide the information is on the form e.g patients name and GP

Conclusions:

- Staff compliance was initially frustrating for project leaders, but subsequently understanding feedback and the challenges allowed these to be overcome by adding the form to an existing process
- Forms didn't facilitate easy response to 6 and 12 week outcomes – adding new field reduced time and resource needed to provide the information
- Podiatry professional lead reflected weekly reminders effective
- Developed good relations with GP colleagues and highlighted importance of diabetic foot ulcer referrals
- Working with one GP within a collaborative opened doors to other GPs in the collaborative of 5.
- Strengthening relationships within our Primary Care Networks

Next steps:

- Continue to work with GP practices and especially those that delay referral if this information can be obtained

- To target the ‘self referrers’ by highlighting the importance of early referral information shared by LSCFT foot care assistants who carry out foot screening in GP practices
- To work with local pharmacy groups to understand how many contacts they have with patients with diabetes calling in for foot advice with/without a foot ulcer
- To explore if introducing business cards for foot screeners and pharmacies to give to patients would be viable

Case study 3: South Warwickshire NHS Foundation Trust

Aims:

- To improve the quality of NDFA data capture within community podiatry by aspiring to input 100% patients on access plan onto the audit
- To reduce late referral/chronicity of active foot problems by observing reduction of the mean time of first presentation of wound to referral for specialist foot assessment :
    - 5 poorest by 50%
    - reduction 14 days SWCCG

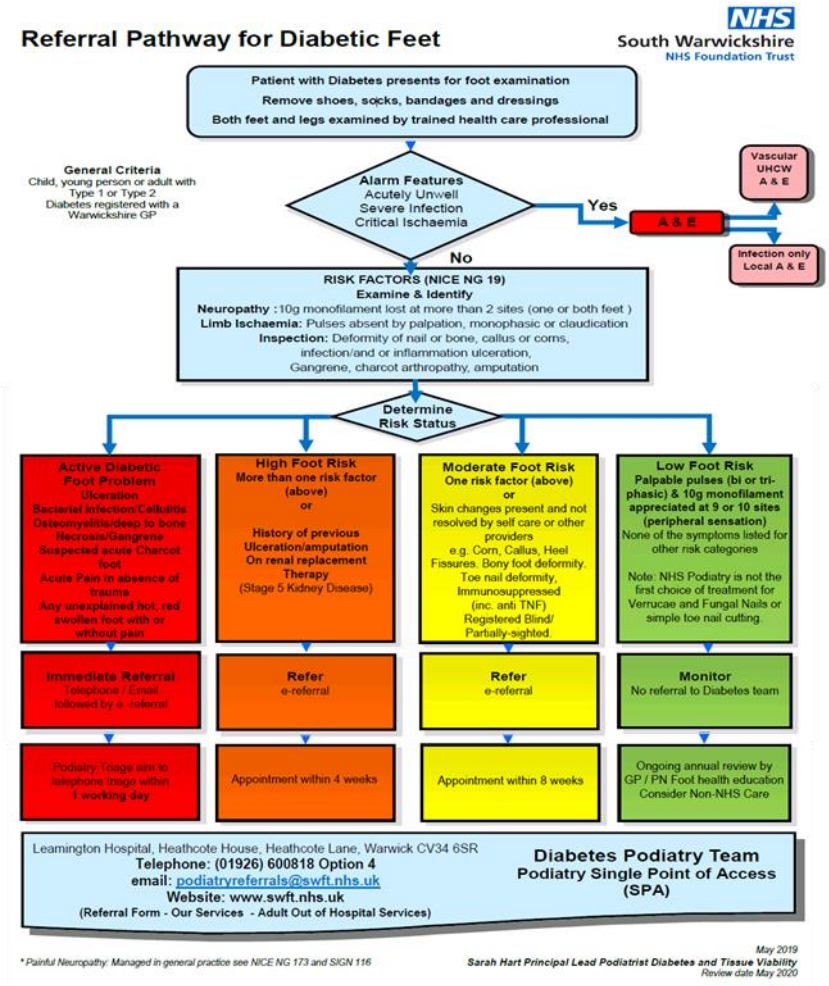
Interventions tested:

To improve the quality of NDFA data capture we:

- Designed and introduced electronic record on our wound evaluation form that collected data for NDFA
- Agreed with the information analyst :
    - Weekly email prompts for notes to be reviewed at 12 and 24 week data set
    - Quarterly quality data prompts
- Allocated podiatry staff resource
- Identified caseloads on wound management access plans
- At the beginning of project we performed a baseline 1st audit (Jan 2019) reviewing all patients with diabetes on a wound management access plan to establish if they had a completed open or closed current NDFA form for the index ulcer. Barriers to completion were identified.
- Departmental training shared audit results plus re-taught how to complete electronic NDFA
- 2nd Re-audit June 2019 data (delayed until Sept 2019 due to unprecedented staff sick leave).
- Feed back of results on team day by specialist podiatrist. Emails to all department and individuals who were identified required additional support.
- Staff suggested a prize for the best performing locality.
- 3rd Re-audit December 2019.
- Celebrated teams who had achieved best data input and best improved data.

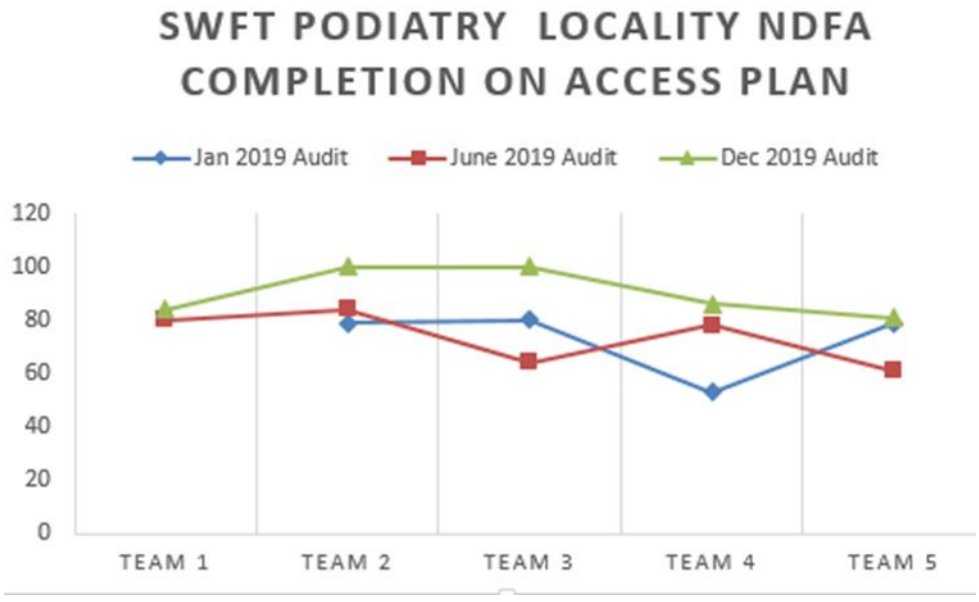
To reduce late referral/chronicity of active foot problems we:

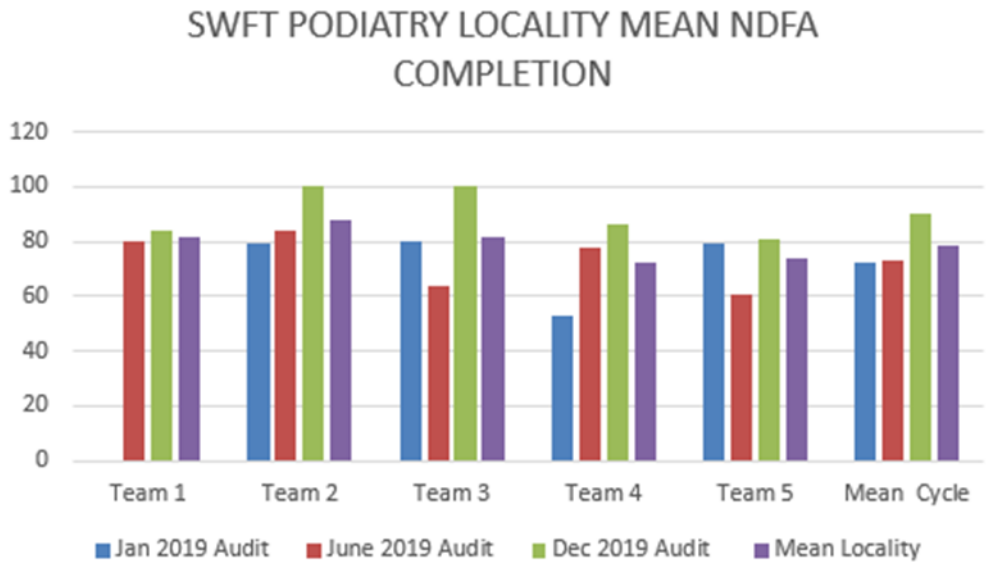
- Provided training to practice nurses and health care assistants (initially funded by MDFT transformational funding):
- 2 x year, full day, diabetes foot assessment and referral
- 2x year half day vascular assessment and wound management trainings with revision on Diabetes foot referral



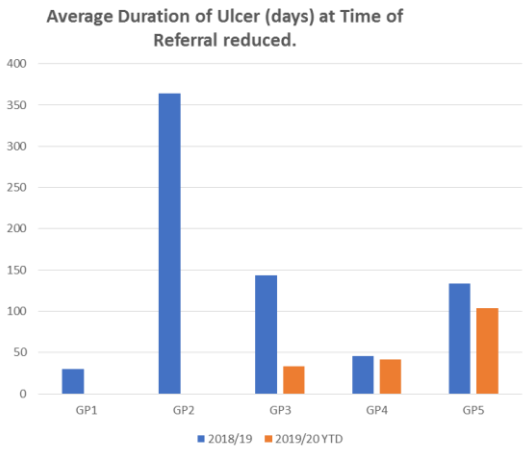
Results:

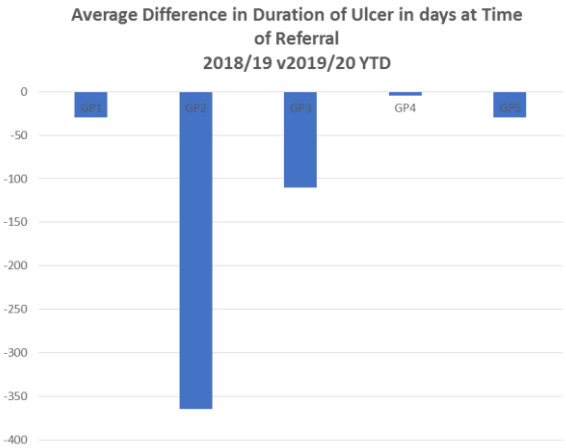
- Across the full year we have made a mean 6% improvement on all data.
- Overall we have improved our trust completion of NDFA from mean 72.75% 1st Audit (Jan 2019) to 90.2% 3rd Audit(Dec 2019) a 17.45% difference.
- All teams improved on the 3rd Audit: 2 out of 5 teams achieved 100% input.



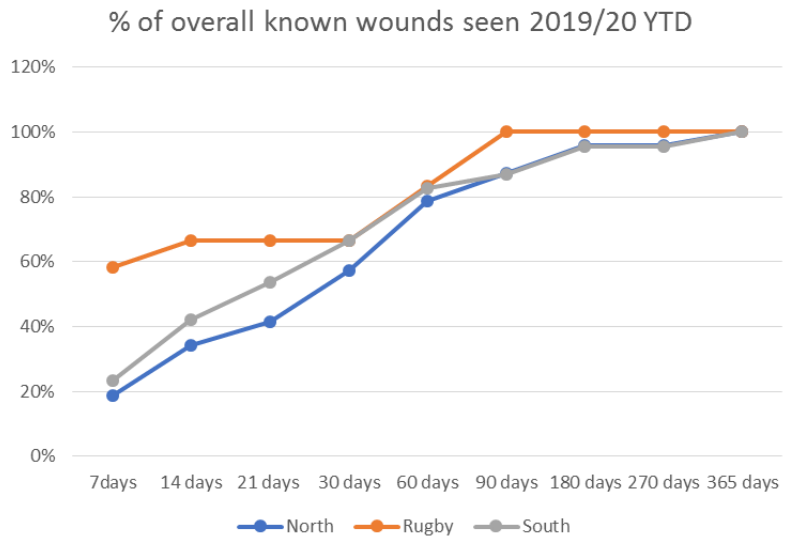


- Our data for 5 GP Practices (SWCCG) with most delayed referrals showed 62% reduction





- Our data demonstrated:
    - Whole county average improvement of 12.6 days (54 to 41.4)
    - A 3.3 day reduction (48.3 to 45) delay for SWCCG
    - All 3 CCG's were offered the same training. (Better performing have highest training attendance rate)



Key lessons:

- Teams can successfully capture 100% NDFA input within community podiatry when facilitated by an electronic record. To achieve and maintain this teams need:
    - funded/supportive access to IT developers and information analysts to facilitate development of electronic record and timely/effective data prompts and quality analysis at agreed intervals.
    - a leader(s) with enthusiasm/willingness to drive improvement who is able to delegate audit and review data to locality champions
    - an audit cycle in place which can monitor deterioration and/or improvement
    - opportunities to feedback, support and encourage the team/department.
    - small teams, that regularly meet, have a visible leader with regular team briefs and encourage staff will improve the fastest.
- Identify and address key barriers to completion of NDFA
    - Staff not previously involved in paper NDFA collation e.g. new starters, bank staff, staff that do not work on the Diabetes & TV team
    - Misunderstanding of what should be captured on NDFA
    - “Lack of time” to ask/agree consent.
- Despite severe challenges to staffing resource (40-50% below wte) change and quality improvements can be made if there is drive and enthusiasm from key leaders however achievement of change/results is likely to be much slower.
- Projects that involve teams and IT out of scope of influence require commitment and ideally identified funded resource to achieve success within a specified time framework.
- Celebrate achievements and find ways to overcome barriers and share your teams learning.

Conclusions:

- Teams can successfully capture 100% NDFA input within community Podiatry when facilitated by an electronic record, information analysis, effective leadership and embedded audit.
- Delayed Active Diabetic Foot referrals to the multi-disciplinary footcare team (MDFT)/ podiatry can be reduced by providing Practice Nurse and Health Care Assistant Diabetic Foot risk assessment and referral pathway training.
    - The higher the percentage (and nearer to 100%) of nurse and HCA's that attend training the greater the reduction
    - When 100% of the GP practices have been trained this has the additional health economy benefit of improving timely referrals for patients without diabetes with active foot problems, which with what is known about the diabetic foot is likely to improve outcomes.
    - Training resource needs to be ongoing and focused on those that have not attended to further reduce CCG delay.
- Electronic Foot Risk Stratification success requires funded and agreed IT provision support and time until full achievement of it's goals. To facilitate projects shorter than 1-2 year utilising electronic systems partners need to be on the same IT system; as a consequence IT projects require strategic long term buy in from senior management.

Next steps:

- To sustain and maintain high quality and quantity of NDFA capture within SWFT:
    - Delegate roles by introducing, in the North and South of County, 2 middle leaders "NDFA - Quality Improvement Champions" to maintain audit/analysis of capture who will feedback to team/department. They will be supported by leadership.
    - Retain 3-6 monthly audit until achieve compliance of 96% or above for 2 audit cycles then extend to 8 and then 12 month cycle.
    - When improvement is embedded reduce sample to 30 patients at each locality caseload.
    - Develop a supporting document for new starters "how to complete new NDFA" and "How to"- audit NDFA quality handbook" for our Champions
- Share learning with West Midlands Diabetes Foot Network to act as catalyst and challenge for other providers to improve their data capture.
- Identify human resource to identify barriers and support/encourage GP practices that have not attended Diabetic Foot risk assessment and referral training.
- Share data and findings of QIC with the new Health Care Partnership to agree priorities and identify way forward aspiring to 100% practice nurse attendance training. Identify barriers. To expedite this bid for additional short term financial resource as well as continuing to work with industry.
- Transformation MDFT review of electronic foot risk stratification sustainability and development of plan to move forward.

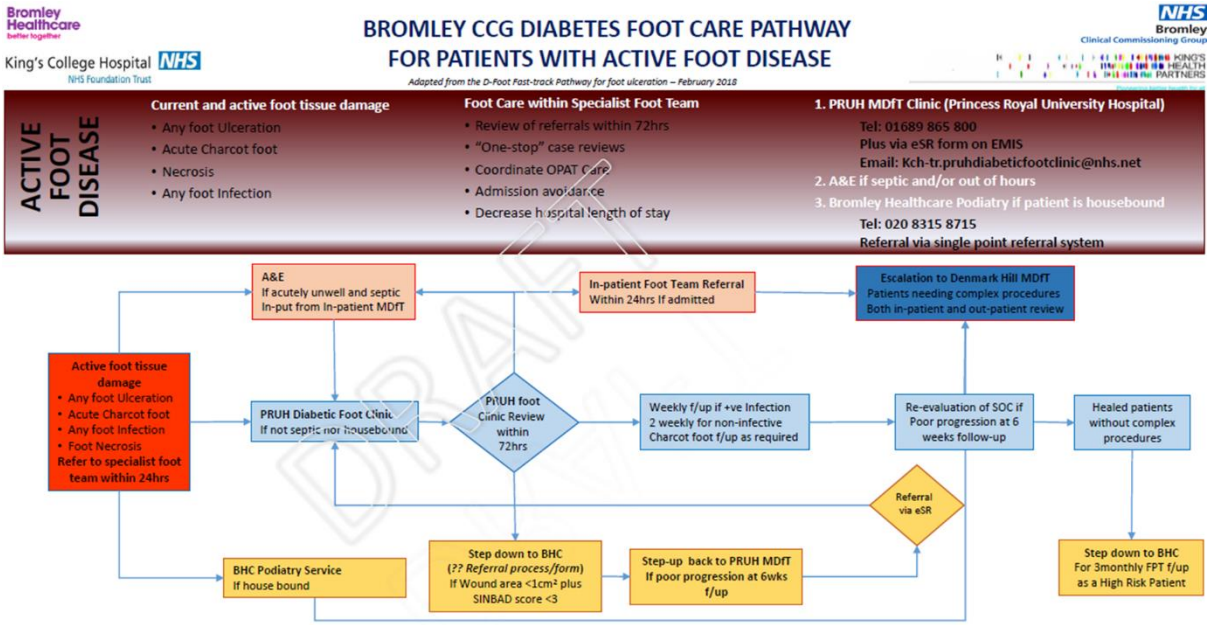
Case study 4: King's College Hospital/Bromley Healthcare

Aims:

- To reduce the time to specialist review, with a decrease in episodes not seen for >2months from 29.7% to 0% (a national average of 8.7%).
- To reduce the number of patients presenting with severe ulcers (SINBAD of ≥3) by 50% (was at 62.2% vs national average of 45.6%)
- To decrease the number of foot disease related admission by 50% (was at 66.7% vs national average of 21.3%)
- To decrease the number of minor amputations by 50% (was at 13.9% vs national average of 7.2%)

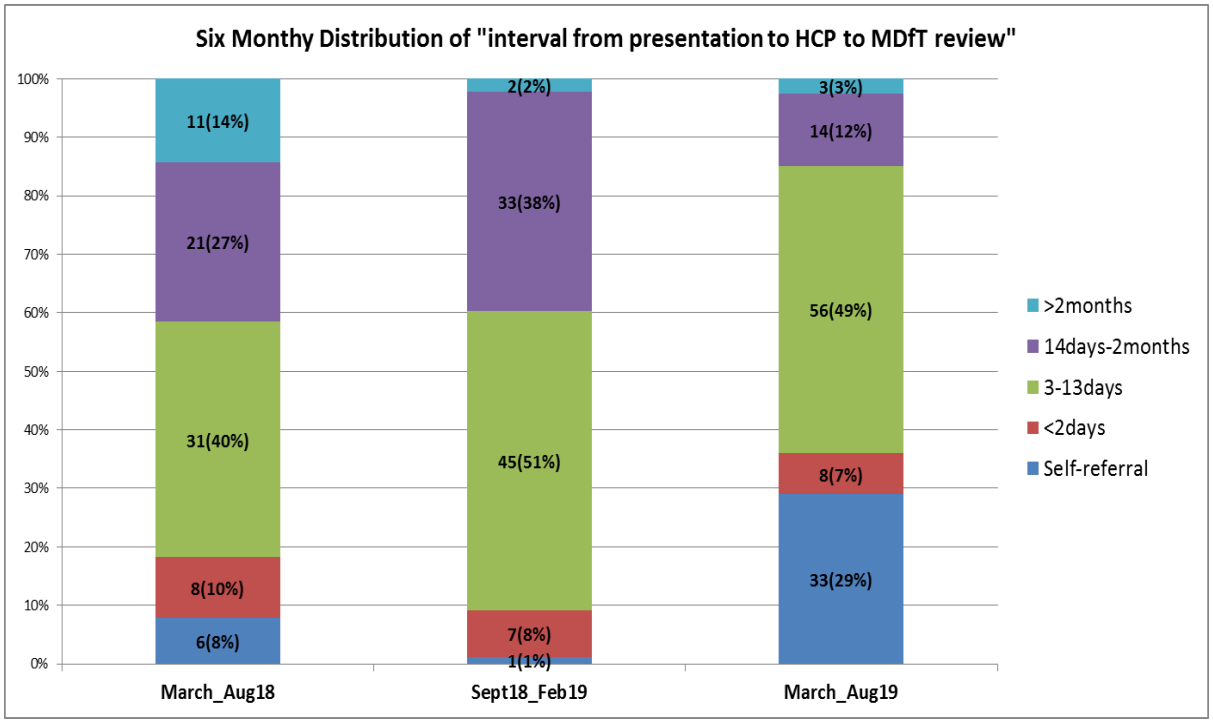
Interventions tested:

- Agreed pathway of early referral to MDFT with a hub-spoke model with primary care, secondary care and tertiary care between (Bromley Healthcare - PRUH MDFT – Denmark Hill MDFT)
- GP and Community training days
- Patient evenings to inform of pathway and encourage early referrals.
- Regular communication between community team and secondary care clinic team
- Better communication between discharged patient and their ability to call MDFT clinic directly if needed
- Conducted a root cause analysis for minor and major amputations

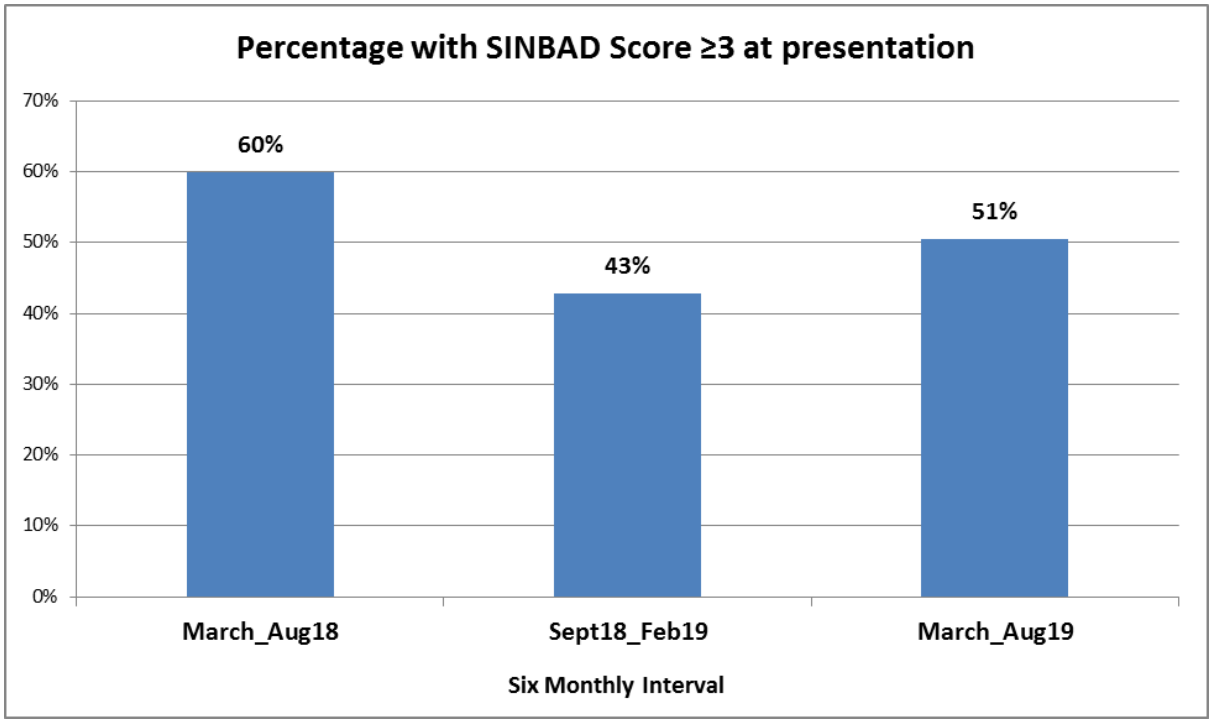


Results:

AIM 1: To reduce the time to specialist review, with a decrease in episodes not seen for >2months from 29.7% to 0% (a national average of 8.7%).



AIM 2: To reduce the number of patients presenting with severe ulcers (SINBAD of ≥3) by 50% (was at 62.2% vs national average of 45.6%)



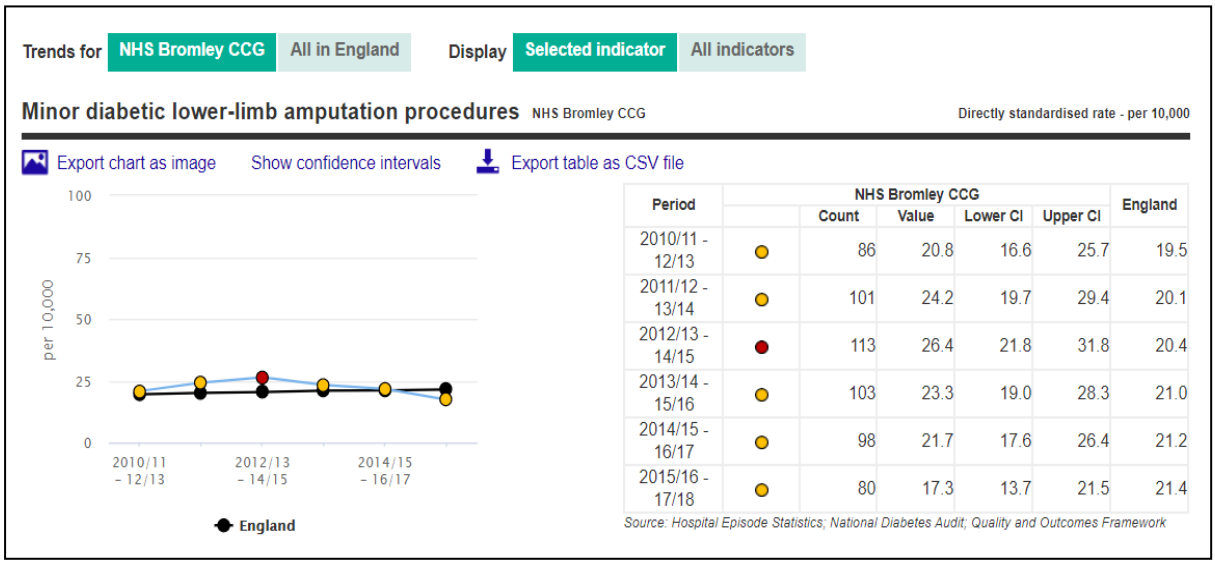
There was an initial decrease to 43% but back up to 51%. The aim is to get down to less than 30%.

AIM 3: To decrease the number of foot disease related admission by 50% (was at 66.7% vs national average of 21.3%)

PRUH Episodes of DM with AFD	2015/16	2016/17	2017/18	2018/19
Number of spells	395	348	323	446
Total bed days	4617	4115	3811	5629
Median LOS	6	6	8	7
Mean LOS	11.7	11.8	11.8	12.6

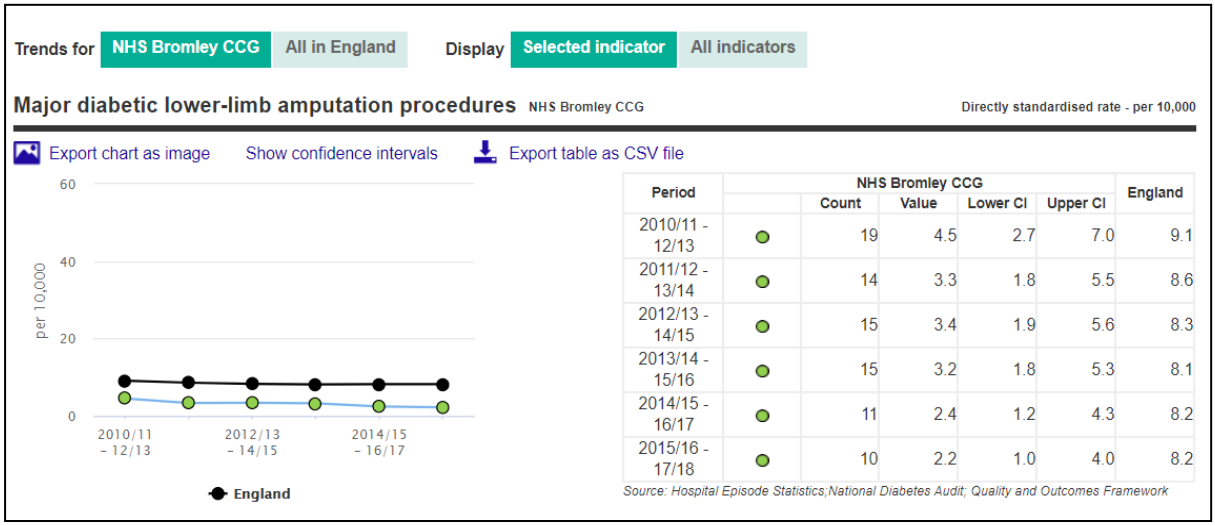
Initial increase in number of diabetic foot admissions but full data for 2019/20 pending. The initial increase may be a reflection of more patients being admitted locally.

AIM 4: To decrease the number of minor amputations by 50% (was at 13.9% vs national average of 7.2%)



Period	NHS Bromley CCG				England
	Count	Value	Lower CI	Upper CI	
2010/11 - 12/13	86	20.8	16.6	25.7	19.5
2011/12 - 13/14	101	24.2	19.7	29.4	20.1
2012/13 - 14/15	113	26.4	21.8	31.8	20.4
2013/14 - 15/16	103	23.3	19.0	28.3	21.0
2014/15 - 16/17	98	21.7	17.6	26.4	21.2
2015/16 - 17/18	80	17.3	13.7	21.5	21.4

Source: Hospital Episode Statistics; National Diabetes Audit; Quality and Outcomes Framework



Period	NHS Bromley CCG				England
	Count	Value	Lower CI	Upper CI	
2010/11 - 12/13	19	4.5	2.7	7.0	9.1
2011/12 - 13/14	14	3.3	1.8	5.5	8.6
2012/13 - 14/15	15	3.4	1.9	5.6	8.3
2013/14 - 15/16	15	3.2	1.8	5.3	8.1
2014/15 - 16/17	11	2.4	1.2	4.3	8.2
2015/16 - 17/18	10	2.2	1.0	4.0	8.2

Source: Hospital Episode Statistics;National Diabetes Audit; Quality and Outcomes Framework

Initial indication of a decrease in number of minor and major amputations but await national data to confirm.

Key lessons:

- Failure to factor in cost of consultant time for the service development
- Failure to factor in the expected increase in patient numbers and clinical space, with the improvement in early referrals
- Rapidly changing workforce within GP and community team, hence the need for regular publicity of referral pathway, which is challenging to maintain as the patient case load increases

Conclusions:

- It is a great deal of effort to achieve and sustain the quality improvement aims or requirements needed
- The actions undertaken to try and meet these aims needs to be of a continuous effort or repetition of the actions needed
- Still work in progress

Next steps:

- Business case for more staffing
- Efforts to acquire more clinic space - to be able to accommodate more patients
- Continuous effort to circulate or improve awareness of referral pathway i.e. GP training days, GP bulletins, patient meetings
- Await results of NDFA 2018/19 and further on

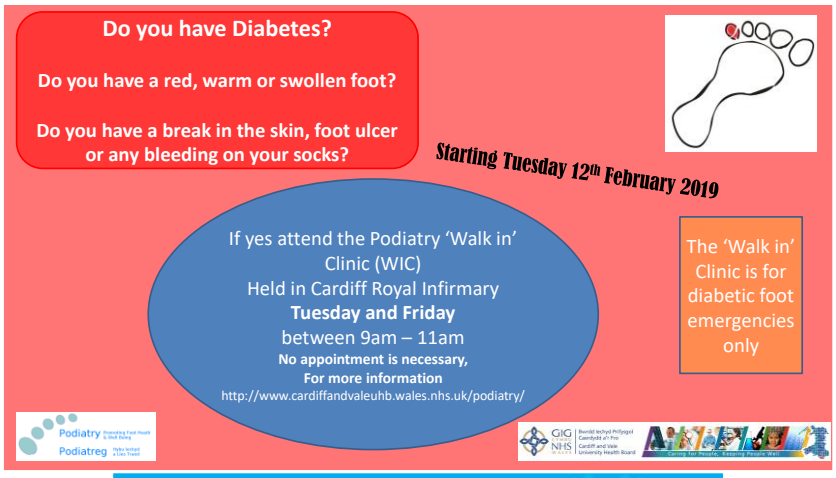
Case study 5: Cardiff and Vale University Health Board

Aims:

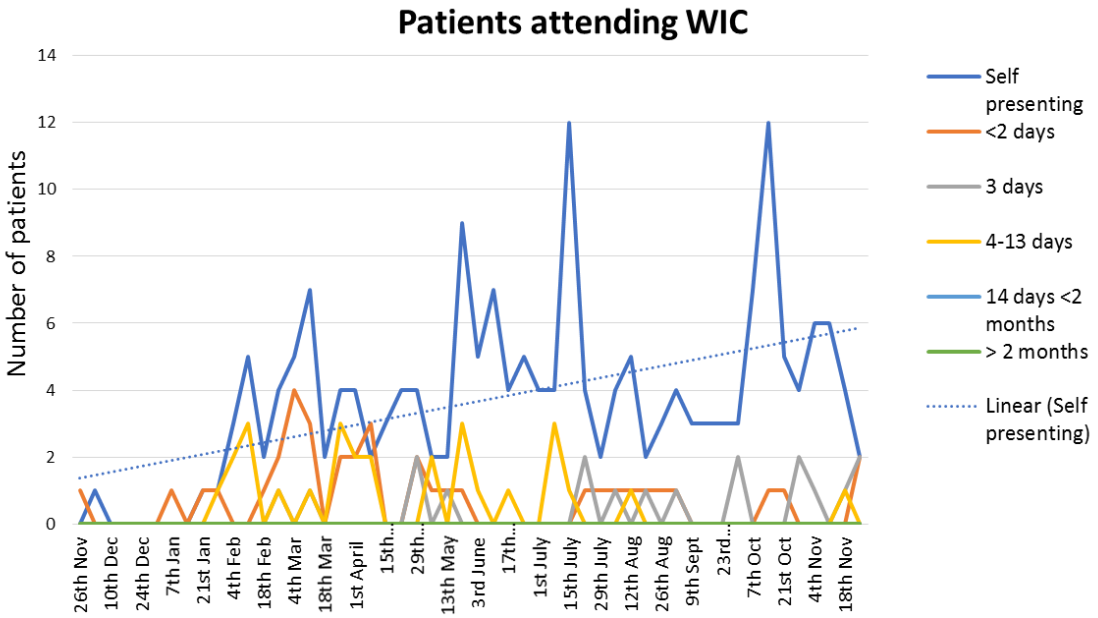
- The number of patients attending first expert assessment (with the podiatry service) within 3 days will be increased by 20% within the NDFA audit cycle

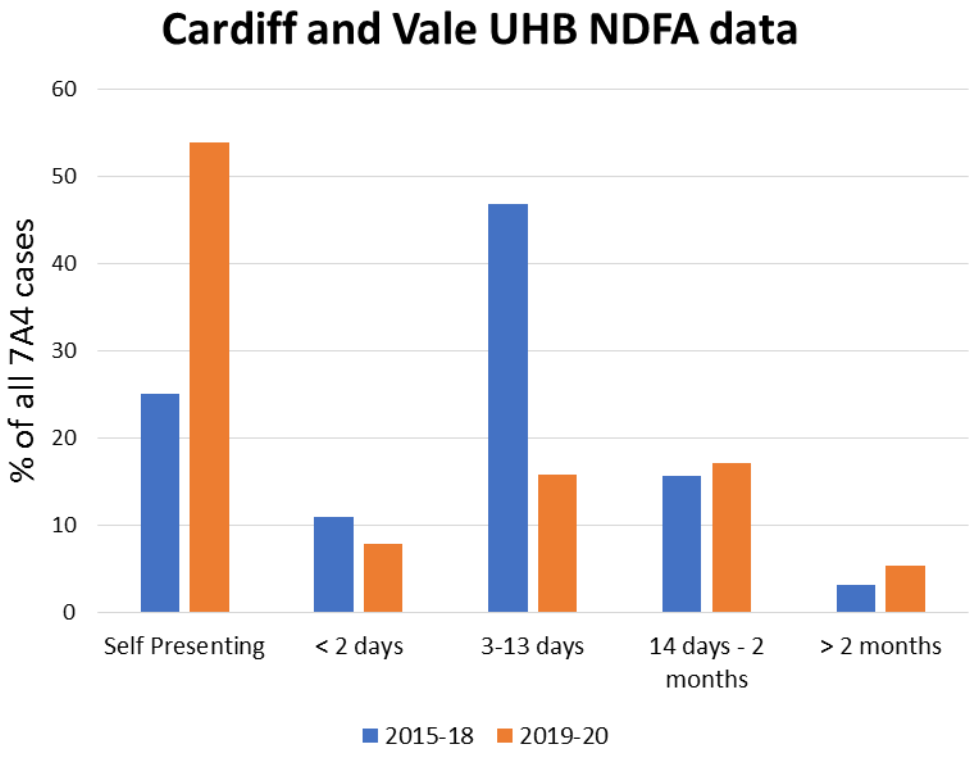
Interventions tested:

- Developed a 'walk-in' clinic which is held twice weekly to allow access to a healthcare professional with the competent skills to direct care as necessary when presented with an acute diabetic foot episode



Results:


Patients attending WIC
Number of patients
14
12
10
8
6
4
2
0
26th Nov
10th Dec
24th Dec
7th Jan
21st Jan
4th Feb
18th Feb
4th Mar
18th Mar
1st April
15th...
29th...
13th May
3rd June
17th...
1st July
15th July
29th July
12th Aug
26th Aug
9th Sept
23rd...
7th Oct
21st Oct
4th Nov
18th Nov
Self presenting
<2 days
3 days
4-13 days
14 days <2 months
> 2 months
Linear (Self presenting)


Cardiff and Vale UHB NDFA data
% of all 7A4 cases
60
50
40
30
20
10
0
Self Presenting
< 2 days
3-13 days
14 days - 2 months
> 2 months
2015-18
2019-20

Key lessons:

- Communication with other health care professionals within primary care and patient reference groups
- Patient activation essential
- Need for independent prescribing to enable a 'one stop shop'
- Important to address attendance

Conclusions:

- New model of service delivery supports the Principles of Prudent Healthcare
- 'Treating those with the greatest health need first'
- 'Avoid unnecessary harm, waste and variation'
- Activation of patient to self-manage and know where to go at point of crisis

Next steps:

- Review of the clinic from staff and patients' perspective
- Use patient stories
- Walk-in clinic roll out across Cardiff and Vale UHB for all foot wounds, not purely diaetic foot ulcers
- Analysis of outcomes since the introduction of walk-in clinic
- Supports a movement towards a 'foot crisis prevention prudent healthcare model' across Wales

Case study 6: Cambridge University Hospitals NHS Foundation Trust

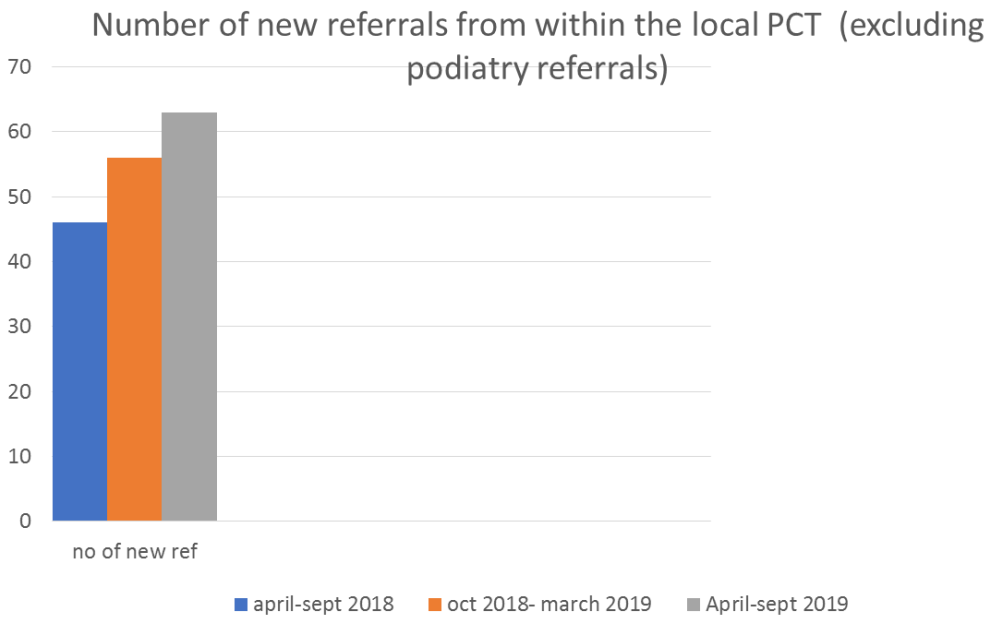
Aims:

- Our aim has been to reduce the number of delayed referrals (ulcers present for over 14 days) to the diabetes foot team here at Addenbrookes Hospital

Interventions tested:

- We provided an information bulletin which was rolled out across Cambridgeshire to local GPs, practice nurses and district nurses. This was rolled out April 2019 (see link): https://www.cambridgeshireandpeterboroughccg.nhs.uk/health-professionals/news-and-resources/news-archive/gp-news-2019/diabetes-bulletin-april-2019/
- Education sessions to local GP services were held to provide education and highlighting the importance of early referral into our service.

Results:



- There was an increase of 36% in new referrals over a six month period between April – September 2019 when compared to the same period in 2018
- However this may be following a natural trend of increase of overall referrals as the previous 6 months had shown a similar increase

Key lessons:

- Communication and providing education with other healthcare professional is vital to establish and improve links across the local healthcare services to highlight the need for early referral

- Staffing barriers (i.e shortages, long term sickness etc) to dedicate time for improvement work

Conclusions:

- Staff time and commitment needed to support improvement
- This is still very much a work in progress

Next steps:

- Continue to support the NDFA in collating vital information around diabetic foot disease
- Review of team members commitment to support the ongoing work of the NDFA project

Case study 7: Norfolk and Waveney Diabetes Foot Care Partnership

Aims:

- 80% of patients presenting to a health care professional to be seen by a specialist diabetic footcare service within 14 days of first presentation.

Interventions tested:

- Formed an STP wide working group, including:
    - Representatives from all 3 providers of Podiatry services to Norfolk and Waveney STP
    - Diabetes specialist podiatrists
    - STP lead for diabetes
    - Commissioning manager for footcare in diabetes
- Regular meetings to:
    - Work towards aims / goals
    - Identify and eliminate barriers
    - Delegate workstreams
    - Agree funding applications

Workstream 1: Education for Private non-registered Foot Health Practitioners

- Identified that access to NHS preventative podiatry care in Norfolk / Waveney subject to criteria
- Patients with low podiatric need are not accepted
- Many patients choose to see private nonregistered practitioners, whose experience / knowledge of the diabetic foot may be poor
    - £6.5K HEE funding won to provide education sessions to this group to provide basic information regarding assessment , red flags, patient education and referral of the diabetic foot
    - 4 afternoon workshops in different locations
    - Over 90 attendees
    - Feedback excellent

Workstream 2: Education for care homes

- People with diabetes resident in care / nursing homes are often at a disadvantage with respect to accessing diabetes foot care
- Most do not receive an annual diabetic foot screening to identify risk factors as this is usually provided in surgery and residents are noted as an exemption from QOF.
- Preventative footcare often provided by private providers - these may or may not be HCPC registered podiatrists. Accessing acute specialist footcare when a foot ulcer develops is often delayed or not initiated at all as a result of staff ignorance, patient immobility, transport or other factors that make trips to hospital difficult (e.g.dementia).
- A significant proportion of emergency foot admissions to hospital are for patients resident in care homes; additionally, on admission to hospital for any other reason,

this group are far more likely than any other to have an existing acute foot complication noted on admission.
    - £6.5K HEE funding won for this project
    - We designed a diabetic foot daily check and care tool for use in Norfolk care homes, to ensure that residents with diabetes receive a daily foot check and that any concerns are escalated appropriately
    - Delivery of several education sessions to care home staff across STP, in a 'train the trainer' format, to allow dissemination to all care home staff
    - Over 300 staff trained in using the foot checker tool
    - CQuINN incentive to social care funded beds to use the checker tool

Workstream 3: Education for NHS Podiatry Staff

- £12K HEE funding won to allow delivery of the College of Podiatry 'Diabetic Foot Module' locally for all NHS Podiatrists working in Norfolk & Waveney STP.
    - Improve the knowledge and skills of the podiatrists which will lead to fewer people with diabetes developing problems and better first line management of diabetic foot complications
    - All podiatrists passed this course
    - Increased knowledge in the diabetic foot and its management
    - An increased enthusiasm for delivering great care
    - More confidence in the management of the acute foot

Workstream 4: Engagement with Primary Care

- Focus group workshop with primary care staff from one CCG in the STP to identify reasons for late referral to acute foot clinics
- 3 reasons identified:
    - Poor Education (primary care clinicians not aware of protocols / significance)
    - Poor Education (patients not aware to check feet and seek help asap)
    - System barriers (differing procedures / practices between each practice)
- Actions:
    - £6K charitable funding won to provide 3 diabetic foot in primary care study days (in 2020)
    - 1000 posters printed (industry funded) for primary care to display for patients – 'peek and seek' campaign

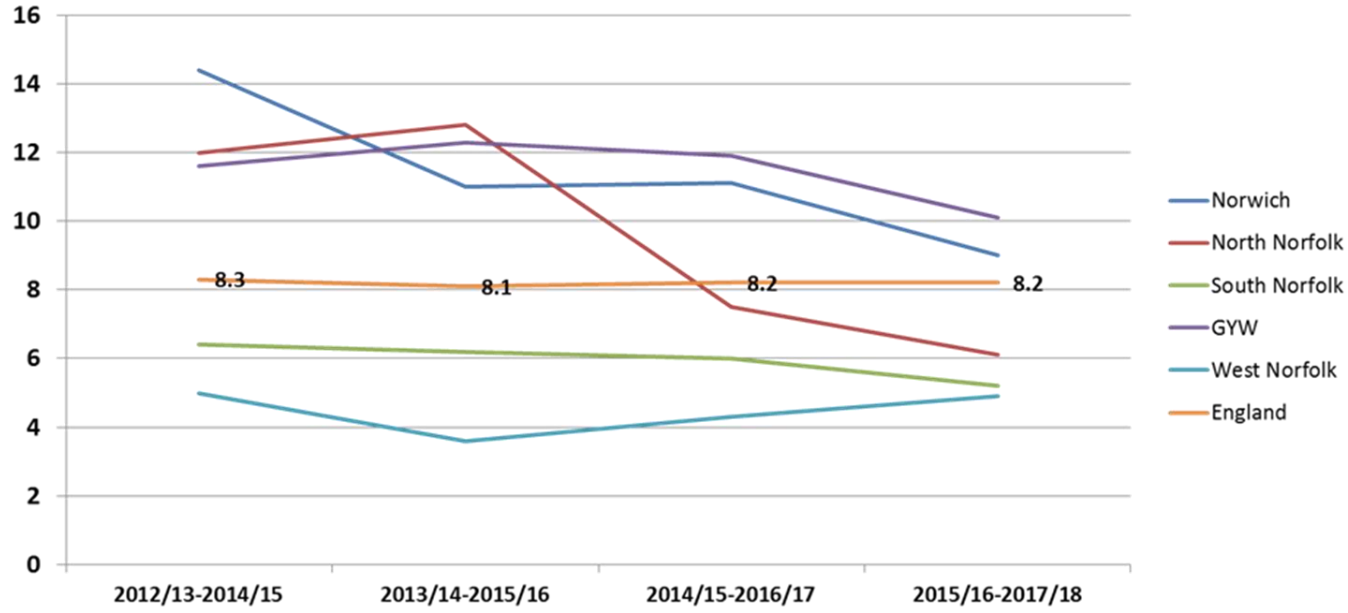
- Recognition that we cannot change individual practices ways of working, but we can articulate what good diabetes footcare looks like. So was created the Norfolk and Waveney 'Standards for Diabetes Footcare in Primary Care'
- Set of auditable standards for practices to aspire to
- STP endorsed
- Included:
    - Expectations for foot screening – staff training and updating
    - All patients screened and issued written advice re risk result, daily check and sos (via DiabetesUK information prescriptions)
    - Onward referral as required
    - Emergency care - expectation that all staff should understand significance of diabetes related foot complications and
    - Refer appropriately
    - Use local antibiotic guidelines

Workstream 5: Engagement with Community Nursing

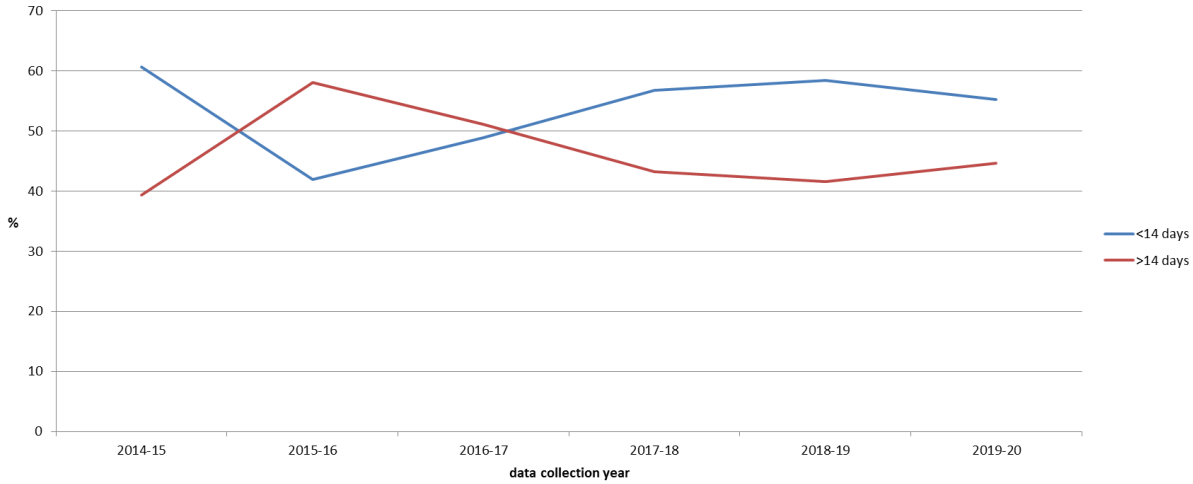
- Community nursing often first service to treat diabetic foot wounds, with care often delivered by Health Care Assistants
- Often in housebound or care home setting where access to good diabetes care may be difficult
- Accessing acute specialist footcare when a foot ulcer develops is often delayed or not initiated at all as a result of staff ignorance, patient immobility, transport or other factors that make trips to hospital difficult (e.g.dementia)
- Actions:
    - Creation of Diabetic Foot Intranet page for all community staff. Includes
        - Referral information
        - Training resources & guidelines
        - Patient education resources
    - Held community nursing focus group to identify barriers to referral
    - Modified nursing wound assessment template on SystmOne
        - Added 'Diabetic foot' tab to allow recording of any DFU lesions
        - Added referral guidance pop up
        - Added link to auto populated referral letter and
        - Created email referral address to allow immediate action whilst on visits
    - Communication of changes via weekly comms and team meetings

Results:

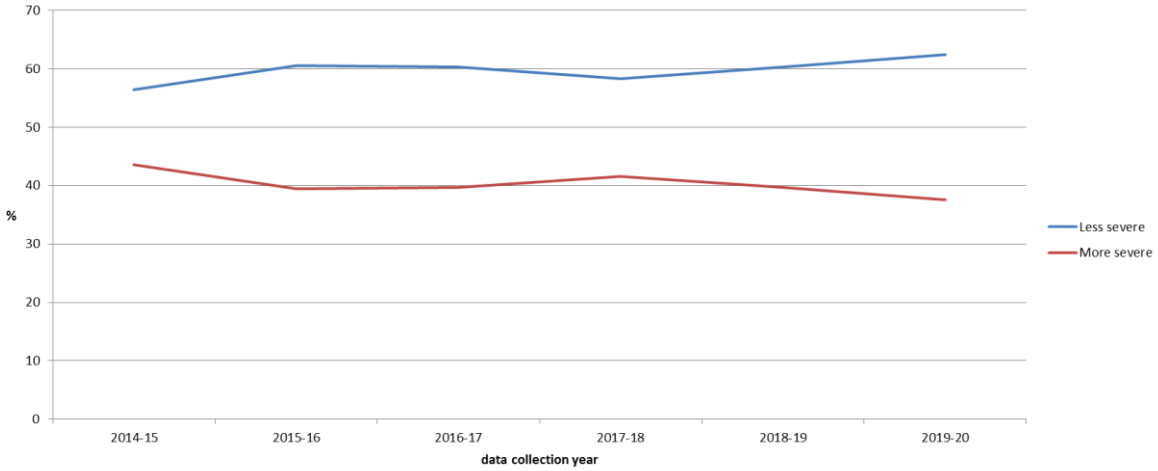
DSR Spells Major Amputation rates per 10,000 population years



Time to 1st assessment



NDFA data – Severity



- 100% of attendees at the Foot Health Practitioner study days found the sessions beneficial and requested further study opportunities
- NHS Podiatrists report an increased confidence in management of the diabetic foot
- Empirical reduction in late referrals from community nursing
- Increasing traffic to intranet site
- Improved relationships with primary care
- Perhaps most importantly, previously a group of separate specialist acute foot teams working in isolation, we are now a strong group with the contacts and skills to identify issues, act and bring others on board.

Key lessons:

- Find people with a similar passion and work with them
- Be prepared to put in the hours – often in addition to the day job!

- Engage with the STP leads
- Bid for as much outside funding as you can
- Data does not always give the whole story – audit of patients waiting over 14 days for 1st assessment revealed a significant proportion was as result of patient choice (transport, scheduling convenient appt), which is not reflected in NDFA data

Conclusions:

- Interventions will take time to embed
- We hope to see a reduction in time to 1st assessment at next NDFA year end
- Overall the QIC has given us the tools and drive to make changes to reduce the variation in care across the STP patch

Next steps:

- Further workstreams in progress
    - Successful bid for toe pressures kits and STP wide protocol
    - Professional study days in 2020 for primary care
    - FHP study day
    - Non-medical prescribing for specialist podiatrists
- Continuous evaluation of data
- Service development to reduce inequality

Case study 8: Torbay and South Devon NHS Foundation Trust

Aims:

Aim One: To reduce the number of foot ulceration episodes, related to diabetes complications, taking longer than 12 weeks to heal.

Aim Two: To reduce the severity of foot ulceration (measured as a SINBAD score of less than three) at ulcer presentation to the foot protection team.

Aim Three: To reduce the time between first presentation to any healthcare professional and first assessment by the foot protection team to less than two working days.

The time frame for aim achievement was within 12 months, with the ambition to reduce current NDFA recorded levels of each element by 50%:

Interventions tested:

Aim One

- Introduced new roles, clinics and assessment tools including:
    - One-stop wound assessment clinic – streamlining pathway for new referrals, includes:
    - Neurological, biomechanical and vascular assessment (ABPI and TBPI)
    - Direct urgent referral - to MDFT, radiology, dupplex, pathology
    - SKELLEN assessment tool development – to aid identification of most at risk of ulceration due to neuropathy and deformity
    - New offloading roles dedicated to ulceration prevention and acute ulceration management
    - Development of HOPE (help overcoming problems effectively) Programme with diabetes focus – non-clinical support for engagement and self-management

Aim Two

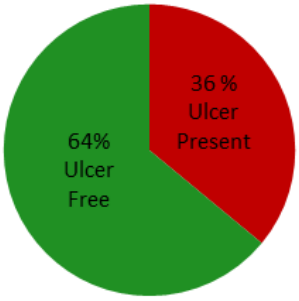
- Updated education for service users, practice nurses and ward based staff, to help recognise and inform of referral need and process – face-to-face and online video
- Inpatient Podiatry - Automatic alert system for new hospital admissions with previous history of ulceration to allow rapid assessment

Aim Three

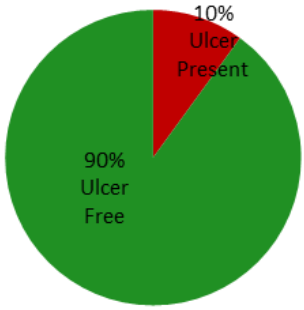
- Podiatry staff training and incentive development following completion of:
    - Identification of main causes for delay in first presentation and first assessment by foot protection team
    - Audit results – number of system reported ulceration episodes verses NDFA form completion rates

Results:

Aim One: Presence of fore and mid foot ulceration in those at risk due to neuropathy and diabetes - Pre and 12 month post implementation of Skellen Assessment Tool



Pre-Skellen Tool

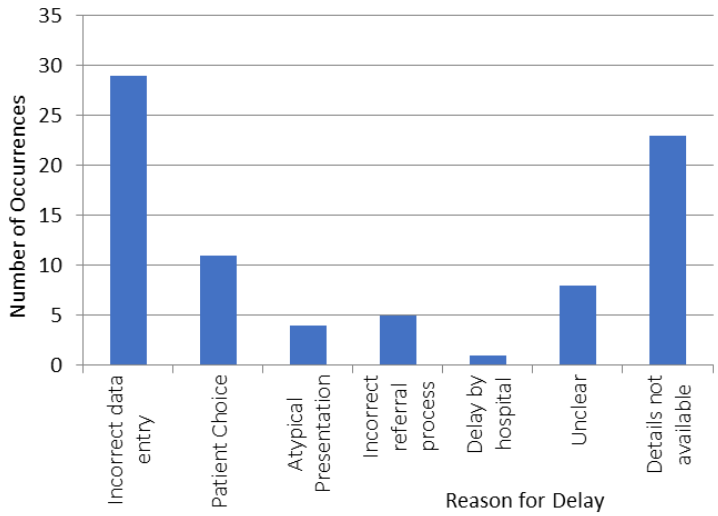


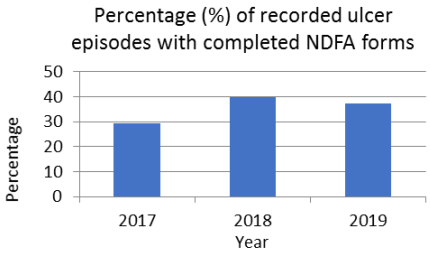
Post- Skellen Tool

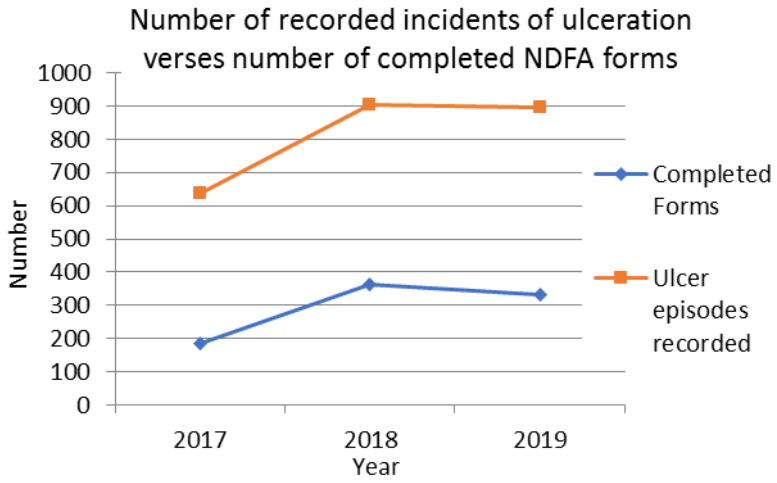
Aim Two: Data collection still in progress due to delays. Face to face education all of wards/GP practices still in progress. Healthcare videos live since June 2019

Aim Three: Audit of NDFA forms with more than 2 weeks between presentation to healthcare professional and 1st assessment by multi-disciplinary team determined large number of forms incorrectly completed.

1st assessment date usually incorrect







Key lessons:

- Plan and develop realistic aims, in areas where your team has influence to instigate change
- Be pragmatic when estimating time frames required to plan and implement changes, as well as measuring outcomes
- Expect plans to change throughout progress
- Small changes can make big differences

Resources available:

Hope Programme:

https://www.torbayandsouthdevon.nhs.uk/services/hope-programme/

Health and Care Diabetes in the Foot videos:

http://videos.torbayandsouthdevon.nhs.uk/diabetes

Conclusions:

Aim One:

- Changes to the identification and management of those at risk of ulceration due to diabetes and neuropathy have recorded a 26% improvement in ulceration prevention.
- The impact of better provision of offloading, such as total contact casting, on acute active foot problems is still being analysed.

Aim Two:

- Improvement to training and resources available to healthcare professionals and service users have shown early signs of earlier presentation to podiatry.
- Raising the profile of podiatry and widening dissemination of resources to continue.
- Assessing impact of change in place still required

Aim Three:

- Data quality improvements
- Suspected that foot ulceration quick to heal with low SINBAD scores are under represented within data
- 1st assessment date often inaccurate
- Despite incentives and previous training low NDFA form completion still exist – new strategy required

Next steps:

- Introduce named podiatrists to support each community and practice nursing team within the community setting, to improve communication, build excellent working relationships and trust
- Develop new pathway for management of diabetes foot complications in the emergency department, continue with incident reporting and ward staff training
- Develop new strategy for accurate completion of NDFA forms
- Continue:
    - Data collection to assess impact of changes to pathways and assess accuracy of data inputted
    - Regular meetings to maintain momentum and review achievements
    - Raise profile of podiatry through social media and professional training
    - Develop business plan for access to electronic note keeping systems
    - Maintain network with other departments/trusts to information share

The NDFA Quality Improvement Collaborative

The next steps:

During the teleconferences participants requested a further face-to-face meeting where they could get more detail about each other's projects. Members of the collaborative said they were keen to continue to collaborate. Diabetes UK have agreed to pilot a 12-month teleconference based structure that mirrors the multi-site calls during the funded collaborative. In addition, opportunities for face-to-face meetings of the QIC alumni will be sought at future diabetes events.

The collaborative provided a structure whereby teams could work together on a common challenge. This showed that they were willing to ask for and share resources and lessons. There remains to opportunity to consider how similar support might be provided to those teams that participate in the in-patient audit but were not able to be part of the NDFA QIC.

Lessons learnt:

Teams were selected from those that applied, it is therefore possible that those teams that were part of the collaborative were different from those that were not. Nevertheless, a summary of the activity of teams is provided here to enable others seeking similar improvements to consider whether the tested interventions might be beneficial to them.

Participating teams identified a number of lessons, these included:

- The importance of developing relationships beyond existing clinical colleagues, and in particular, between diabetes specialists and those providing support and care in primary and public health settings.
- Aligning work to commissioner priorities was important. These priorities were not always well understood by clinicians. Developing diabetes specialists' understanding of the content and development of commissioner priorities may further support improvements in diabetes care.
- Many teams described the creation of new working relationships and practices. Collaborative members may have benefitted for longer support than the initial year-long project in order to support change management and share lessons.
- Collaborative members reduced duplication (for example, in the development of information resources), shared resources and described important improvements. They also shared lessons and supported each other through difficult change management experiences. In many cases, they did this against a background of staffing pressures. It is anticipated that providing an opportunity to collaborate in this way is cost effective, but there is a need for a formal evaluation of the process and outcomes of the collaborative.

Comment on the NDFA Quality Improvement Collaboratives

Professor William Jeffcoate- NDFA Clinical Lead

Nottingham University Hospitals Trust, Nottingham, UK

The field of diabetic foot ulcers has always been a neglected one – despite its very considerable importance in terms of suffering and cost. It is also a very difficult field in which to improve the quality of overall care because this relies on the effective integration of multiple professional groups. It is primarily for such reasons that this QIC programme is so relevant and the main themes that emerge from the reports from individual centres are so valuable. It is interesting that different centres chose different targets in making the necessary changes to the structure of care but it is so encouraging to learn how much effort has been made in relation to professional education and of the obvious appreciation of all those involved. But despite some new barriers also being identified, it is clear that this work has resulted in considerable improvements in outcome in some centres – even within the short space of 12 months – with a general trend to earlier referral of new cases, improved documentation of performance and reducing incidence of major amputation. One centre has also been able to report what is arguably the most important result of all: that of decreasing ulcer onset in a population at risk. It is very much to be hoped that the experience and enthusiasm gained in this project can now be used to stimulate continuing improvement throughout England and Wales.

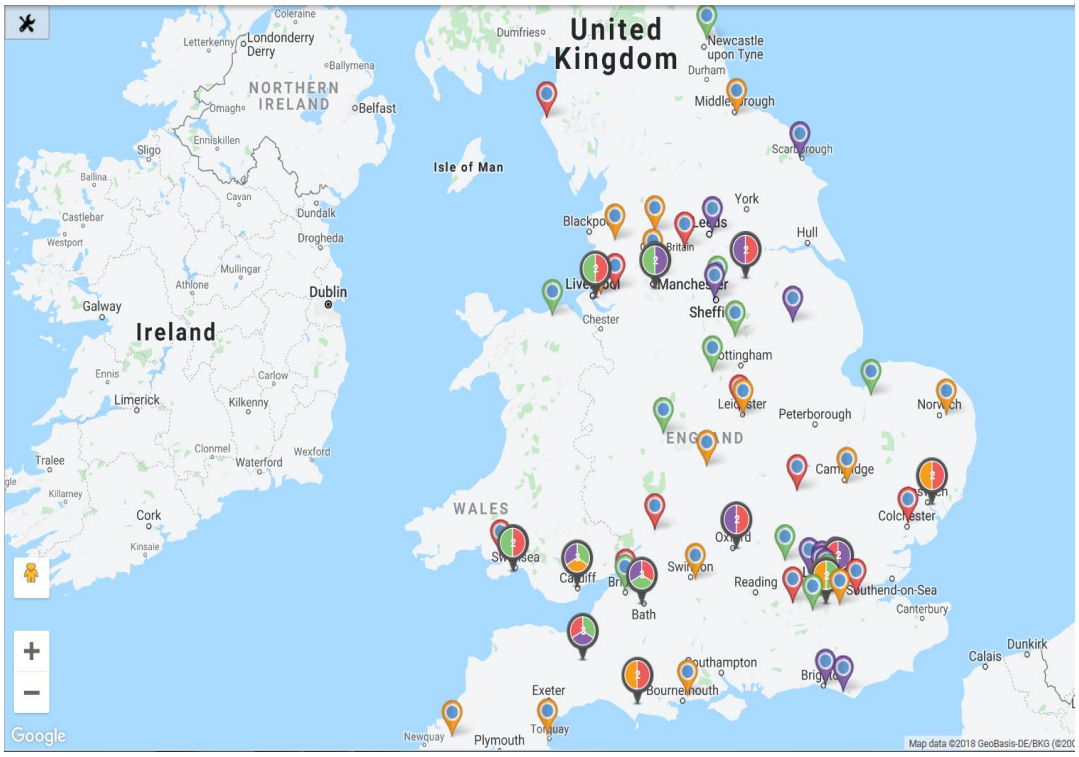
For further information on this work, contact: nda@diabetes.org.uk

Acknowledgements: We would like to thank all the teams who participated in the collaborative for their willingness to share their experience.

Appendix 1:

National Diabetes Audit

Quality Improvement Collaborative 2017-2020 sites



National Diabetes Foot Care Audit (NDFA)

National Diabetes in Pregnancy Audit (NPID)

National Diabetes Inpatient Audit (NaDIA)

National Diabetes Transition Audit (NDTA)

Appendix 2: Workshop programme

Date	Thursday 18th October 2018
Venue	etc.venues Norton Folgate Bishopsgate Court , 4-12 Norton Folgate London, E1 6DQ
9.00 – 9.30	**Registration and Breakfast / Tea/Coffee**
9.30 – 9.50	Welcome and background
9.50 – 10.10	Setting aims
10.10 – 10.45	The costs of foot care – Marion Kerr
10.45 – 11.00	**TEA/COFFEE**
11.00 – 11.20	Engaging others *Building upon the application and post-application support to set measurable aims.* *Patients, carers and colleagues on the team.*
11.20 – 11.40	Building an executable strategy *The use and population of driver diagrams*.
11.40 – 12.30	Tracking improvement and capturing plans *Reviewing data over time and developing a sustainable, local measurement plan*.
12.30 – 1.00	**LUNCH**
1.00 – 2.00	Analysing local practices and capturing plans *Developing process maps and using reliable design to improve care*
2.00 – 3.30	PDSA & COM-B **(and tea/coffee break!)** *The place and development of plan-do-study-act cycles within the model for improvement, and how they can be integrated with behaviour change theory.*
3.30 – 4.00	Driver action diagram *Extending local driver diagrams and making commitments about the next steps.*
4.00 - 4.30	Present driver diagrams and describe next steps *Learn what others are planning and have opportunity to win award!*
4.30 – 4.45	Next steps for the Collaborative
1.00 – 2.00	Analysing local practices and capturing plans *Developing process maps and using reliable design to improve care*