

# Root Cause Analysis of Major and Minor Amputation in York

**Developed by the Yorkshire & Humber Diabetic Foot Network**

In attempt to reduce the high rates of amputation in the area, staff at York Teaching Hospitals Foundation Trust implemented a process for conducting a root cause analysis (RCA) for major and minor amputations.

## AT A GLANCE

5/7

**5 of 7 vascular centres in the Yorkshire & Humber using the tool**



**New training available for practice nurses**



**Development of personalised materials has improved patient knowledge and understanding at appointments**



## PROGRAMME SUMMARY

- Root cause analysis tool implemented in York was developed by Yorkshire & Humber Diabetic Foot Network.
- One consolidated tool has been developed to facilitate better understanding of the factors in local pathways that contribute to major diabetic foot amputations.
- York have focussed their own Quality Improvement Programme through using the tool. The tool has enabled local quality improvement initiatives across the region supporting ambitions to reduce the overall number of major amputations in Yorkshire & the Humber.

## STAFF FEEDBACK

*"The introduction of the "amputation root cause analysis meeting" over the last 16 months has provided an opportunity for the MDT to reflect on the difficulties in managing complex DM feet. The meeting continues to shine light on systemic problems as well as re-enforcing best practise. The team approach to managing DM feet was adopted in 2010 and has demonstrated significant improvements in our regional service. This meeting is a natural extension to this and has highlighted the need to involve more interested parties, including CCGs, patient groups, district nursing and even members of parliament, in order to continue to improve this service.*

*The York Vascular Service is very grateful to Kath and the podiatry service for setting up this meeting."*

*Andy Thompson - Lead Clinician Vascular Services York Teaching Hospitals NHS Foundation Trust.*

## **IN DETAIL**

### **The Challenge**

In 2014, the amputation rates for 15 out of 24 CCGs in the region were higher than the England average and Scarborough and Ryedale had the highest amputation rates in England<sup>1</sup>.

Mortality rates after amputation are high, with up to 70% of people dying within 5 years of having an amputation<sup>2</sup>. Amputation also reduces quality of life and can lead to disability which may affect mobility, living conditions, relationships and employment.

It has been proposed that 80% of amputations are avoidable with good, preventative foot care<sup>3,4</sup> and the members of the Yorkshire & Humber Diabetic Foot Network saw this as an opportunity to improve care and outcomes for patients through reviewing the treatment pathway and potential delays in diagnosis, service access and potential sub optimal care that patients may have received. This insight can then be utilised to improve diabetic foot pathways to address the root causes identified.

### **The Solution**

A Root Cause Analysis (RCA) tool has been created using factors that influence the incidence of amputations (both before and after referral).

The aims of the RCA were to answer two main questions for each amputation:

1. Was this amputation potentially preventable? Not all are. If so, what lessons can be learnt, where did things go wrong?
2. Did the patient have appropriate pre and post-operative care?

The RCA tool was developed by a Multi-Disciplinary working group led by Marie Walker (Lead Podiatrist H&EYH) and Dr Rajiv Gandhi (Y&H Diabetic Foot Lead – Diabetes Clinical Network).

Four pre-existing RCA tools used locally within the region were also used to establish data fields for the Yorkshire & Humber tool. The new tool is available in both electronic and hard copy format.

### **The Impact**

Following a pilot in Sheffield, York and Hull in 2016, the RCA tool has been in used across the region for since September 2016.

Analysis of the compiled regional data will take place in September 2017.

Within York, the RCA tool has uncovered three main causes for minor amputation:

1. Poor patient decision making e.g. having neuropathy and wearing tight shoes, or removing wound dressings thereby losing protection against infection
2. Late presentation by patients to clinicians.
3. Late referral to specialist podiatry services/MDFT

One third of minor amputations had not been referred to podiatry until after the wound that resulted in amputation was established, even though these patients should have been classified as high risk at screening. However, there is often more than one causal factor influencing the outcome.

The podiatrists also conducted a 'risk' questionnaire with their own patients and found that only 22% knew their risk. As a result of these findings, the requirement for both staff and patient education has been identified.

The podiatry team has since developed 'screening and foot assessment for onward referral' training which is available for all practice nurses to attend. They have also developed personalised leaflets for patients and now dedicate time with patients to discuss patients' risk with them using colour photographs to illustrate ulceration and at risk skin. This has resulted in 67% of their patients reporting their risk status at follow up appointments. To re-enforce these improvements, the podiatry team will continue providing these personalised leaflets and 'risk discussions' with patients.

1 <https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKewiPitqDtODVAhVPIIAKHZHUBN0QFggoMAA&url=http%3A%2F%2Fwww.yhscn.nhs.uk%2Fmedia%2FPDFs%2Fcvd%2FDiabetes%2520Files%252024%252009%252015%2FYH%2520footcare%2520profiles%25202015%2520-%2520V2%25201.pptx&usg=AFQjCNHgHR6sFo07SXuX3yhwwcBL44AdHw>

2 <https://www.nice.org.uk/guidance/ng19/resources/diabetic-foot-problems-prevention-and-management-1837279828933>

3 <https://www.theguardian.com/society/2014/mar/19/diabetes-unnecessary-amputations>

4 <https://www.diabetes.org.uk/putting-feet-first>

## **WANT TO KNOW MORE?**



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