Norfolk and Norwich University Hospitals NHS
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Prevention and Management of Diabetes Related Foot Problems

The Law According to NICE

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NICE National Institute for Health and Care Excellence

NICE guideline

Diabetic foot problems: prevention and management

NICE guideline
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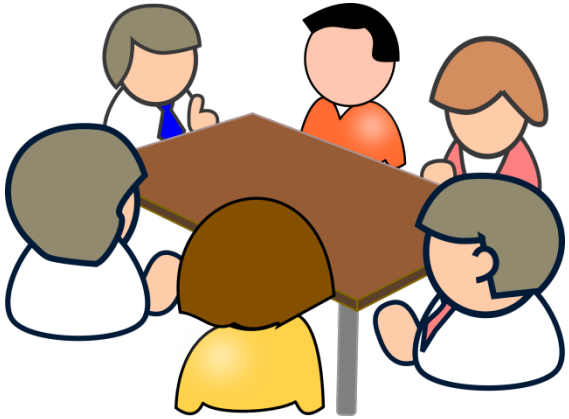
nice.org.uk/guidance/ng19

Writing the Guideline

- Guidelines Group
  - Clinical experts
  - Patient representatives
  - National Institute for Health and Care Excellence (NICE) members
- Reviewing evidence



Care Across all Settings

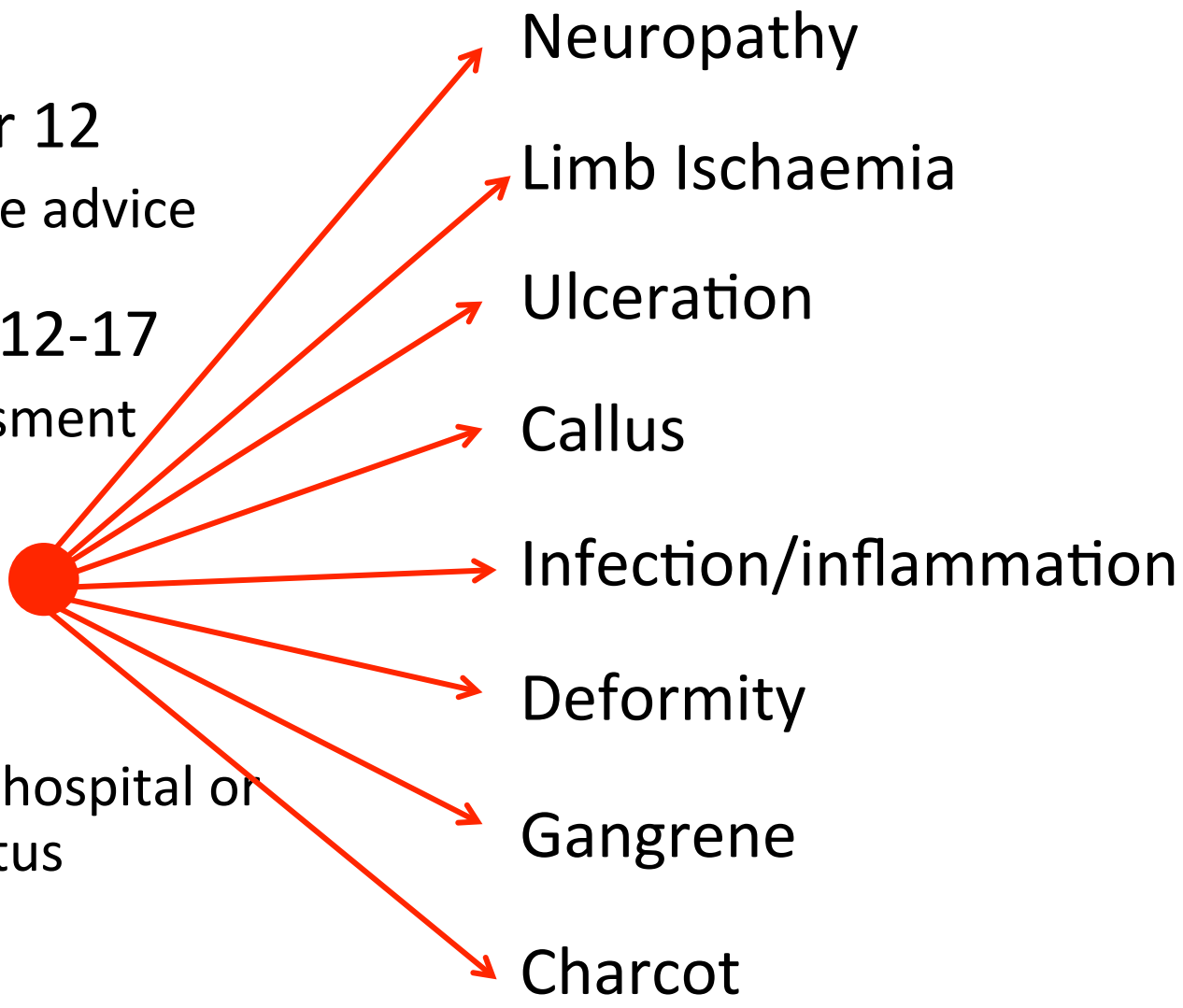
- Training and competency
- Special arrangements for people with disabilities
- Integrated pathways
  - Screening
  - Foot Protection Service
  - Multidisciplinary Foot Service
  - Orthoses and footwear

Key Priorities for Implementation

- Care within 24 hours of a person being admitted to hospital
- Care across all care settings
- Assessing the risk of developing a diabetic foot problem
- Diabetic foot problems
- Diabetic foot infection
- Charcot arthropathy

Assessing the risk

- Children under 12
  - Basic foot care advice
- Young people 12-17
  - Annual assessment
- Adults
  - On diagnosis
  - Annually
  - Admission to hospital or change in status



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B

BLOOD GLUCOSE AND FOOT MONITORING CHART (adults, not pregnant)

Patient Name:
OR PATIENT LABEL

Hospital Number:

Date of birth: *(dd/mm/yyyy)*

	A SINGLE reading in a RED area requires action
	TWO consecutive readings in the AMBER areas require action
	This is the ACCEPTABLE glucose range
	This is the IDEAL glucose target range

Consultant: **Ward:**

Date *(dd/mm/yyyy):*	
Time:	
Blood glucose reading (mmol/L)	

Blood glucose readings (mmol/L)

Diabetes Inpatient Specialist Nurse bleep - 0407 - available Monday to Friday 9am to 5pm

30 25 20 15 10 5 0

A SINGLE READING HERE REQUIRES ACTION

TWO CONSECUTIVE READINGS HERE REQUIRE ACTION

A SINGLE READING HERE REQUIRES ACTION

Ketone levels

Blood	
Urine	++++
	+++
	++
	+
	Nil
Initials	

ALL ACTION TAKEN MUST BE DOCUMENTED IN THE HOSPITAL NOTES

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Date of admission *dd/mm/yyyy*.....

Affix patient label here

Initial foot examination for people with diabetes to be carried out within 24 hours of admission

Neurological assessment – The Ipswich touch test.

Ask patient to close their eyes for the whole test. **LIGHTLY** touch the tips of the toes in order of 1-6

Ask the patient to say 'yes' if they can feel the touch. Circle as appropriate

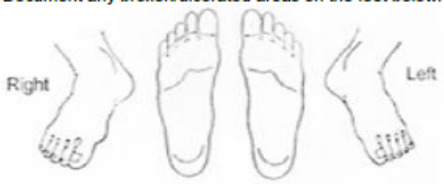
If you have circled more than 1 'N' then neuropathy is present)

Risk Factors – Y indicates a risk factor (please circle)

Current ulceration/pressure area	Y	N
Previous ulceration	Y	N
Toe, foot or leg amputation	Y	N
Neuropathy (refer to neurological assessment)	Y	N
Peripheral arterial disease	Y	N
Dialysis	Y	N

Ensure the patient is at a minimum on an airflow mattress if a risk factor is present and follow care guidance for skin and tissue viability.

Document any broken/ulcerated areas on the feet below.



If you have noted any foot/heel ulcerations please refer to the diabetic foot clinic on ICE.

Print name..... Sign..... Date *dd/mm/yyyy*.....Time *24 hour clock* .....

Daily foot examination for people with diabetes

Remove socks and shoes and examine feet and heels for any new ulceration/pressure areas.

Date *dd/mm/yyyy* / time *24 hours clock*	Ulceration/pressure area		Print name, signature, designation
	Yes	No	
	Yes	No	
	Yes	No	
	Yes	No	
	Yes	No	
	Yes	No	
	Yes	No	

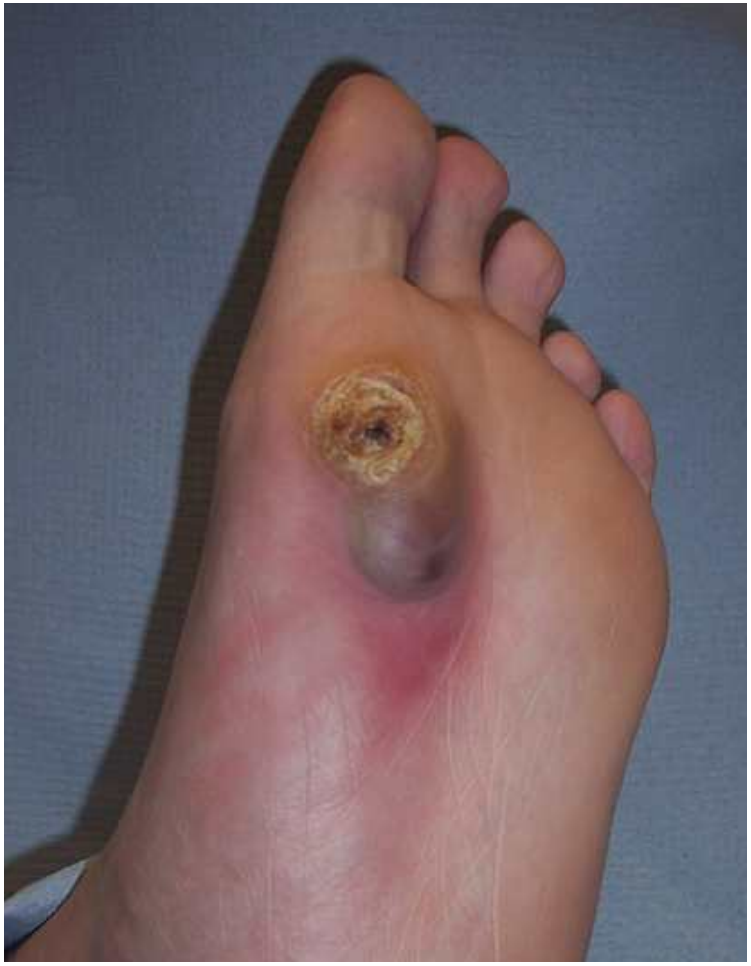
If any new ulceration/pressure areas are noted please complete another initial diabetic foot examination (as above) and **refer to the diabetic foot clinic on ICE. Please complete a Datix report for all newly identified pressure ulcers and refer to a tissue viability nurse** if pressure ulcer identified as grade 2 or above.
Ensure the patient is at a minimum on an airflow mattress.

Diabetic Foot Problems

- Low risk (0 risk factors)
  - Annual foot assessment and education
- Moderate (1 risk factor)
  - Referred to Foot Protection Service, for new patient assessment in 6-8 weeks
  - Follow up 3-6 months
- High (2+ risk factors)
  - Refer to Foot Protection Service, for new patient assessment within 2-4 weeks
  - Follow up 1-2 months no immediate concern
  - 1-2 weeks immediate concern (picture)

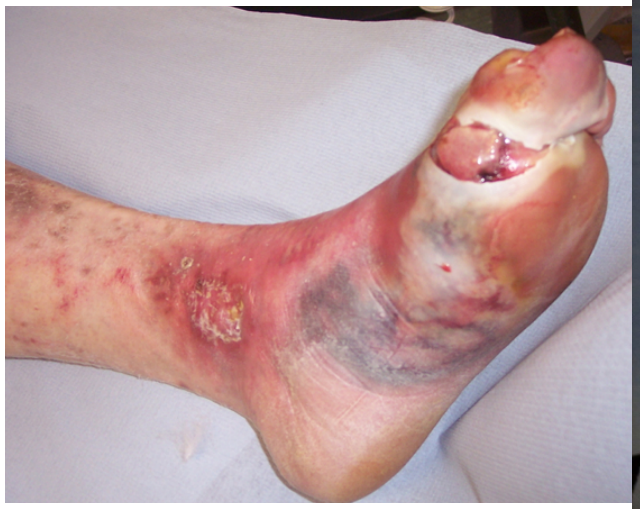
Active Diabetic Foot Problems

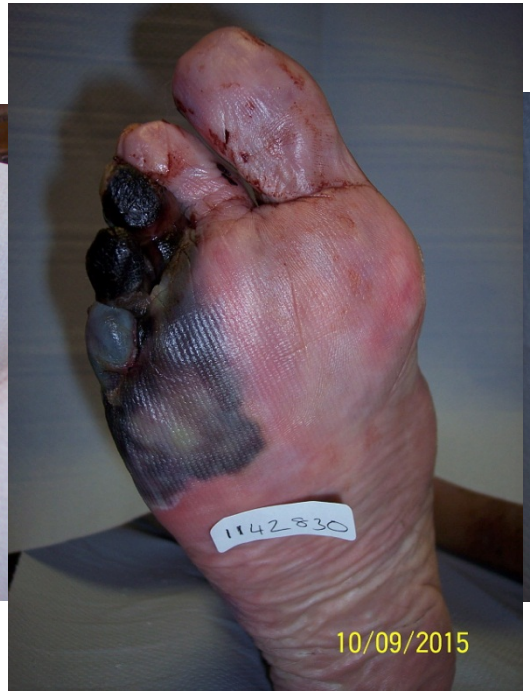
- Refer people with active diabetic foot problems with 1 working day to the Foot Protection Service or Multidisciplinary Foot Service according to local protocols and pathways
- Triaged within 1 further working day
- Remember the undiagnosed increased risk of cardiovascular disease

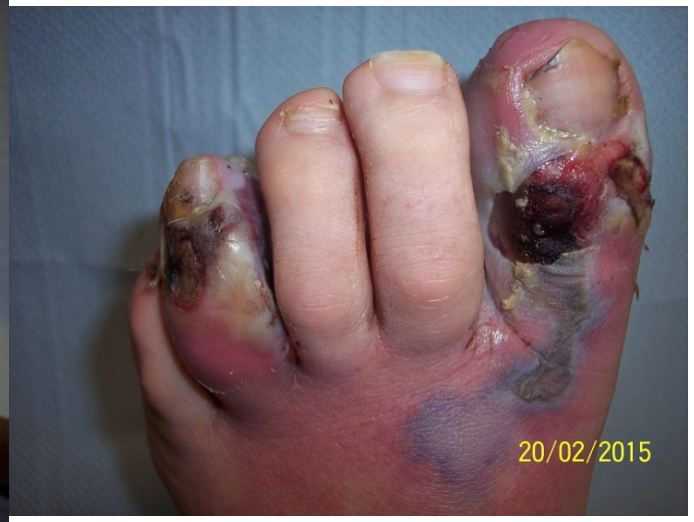


Limb and Life Threatening

Immediate referral to acute services for limb or life threatening diabetic foot problems

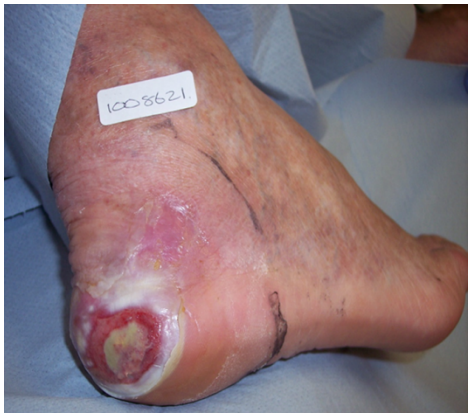


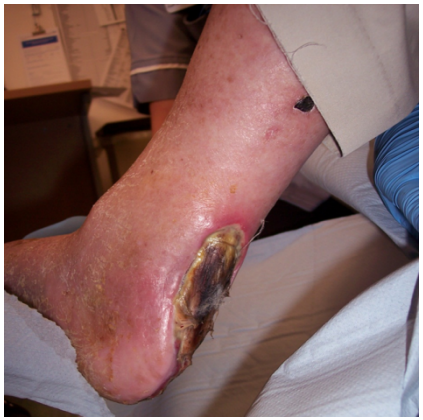


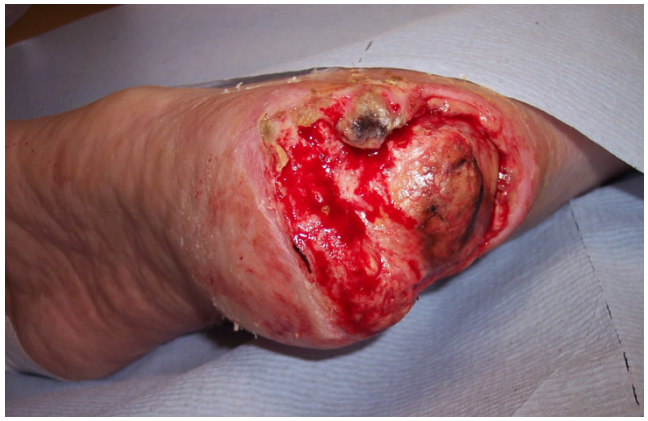


Hospital Acquired Ulceration

All moderate and high risk patients are given pressure redistribution devices







	2010	2011	2012	2013
Patients who developed a foot lesion during their admission	2.2% (257)	N/A	1.6% (210)	1.4% (196)

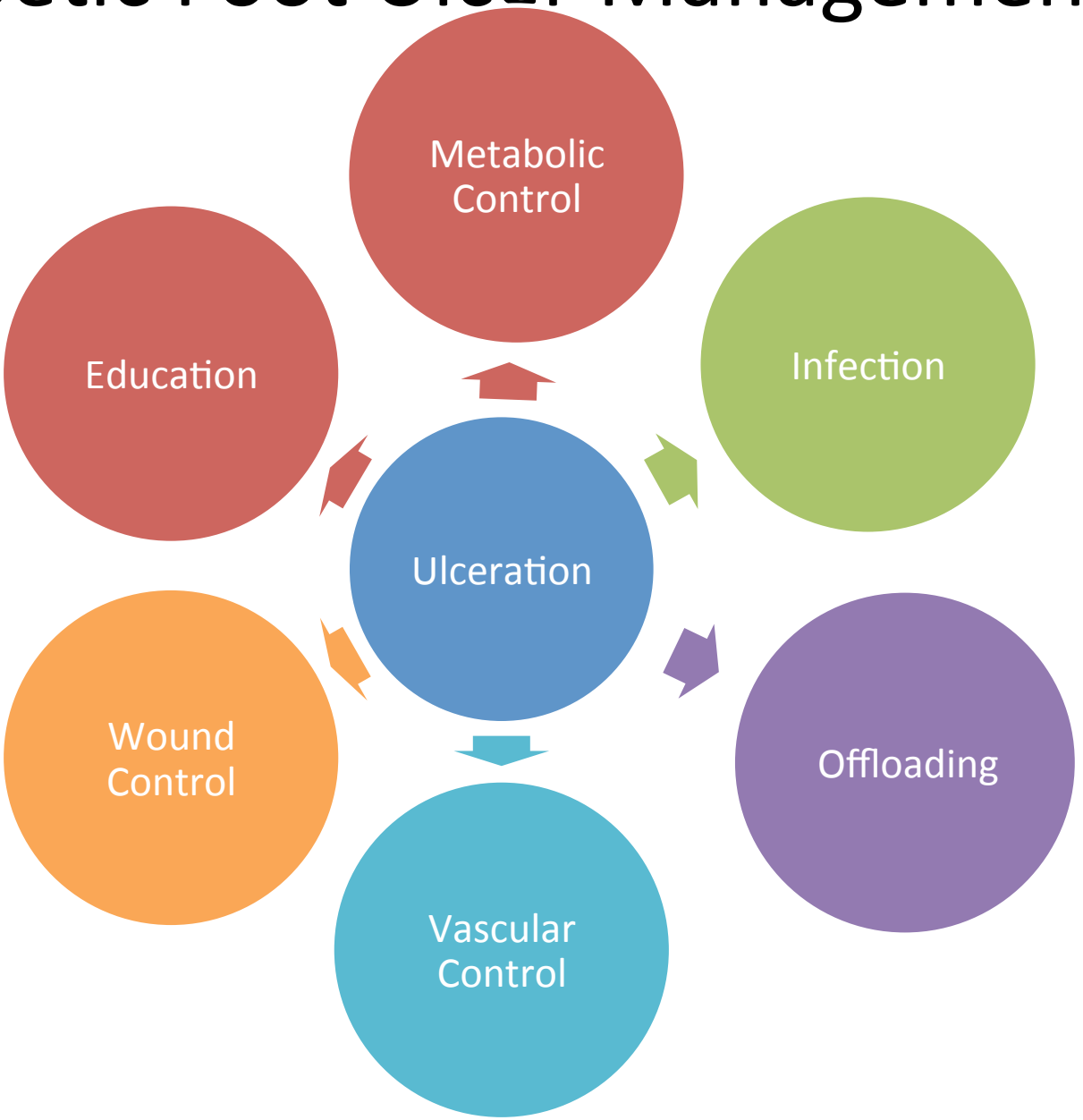
http://www.hscic.gov.uk/catalogue/PUB13662/nati-diab-inp-audi-13-pres.PDF

Texas Classification

SINBAD Classification

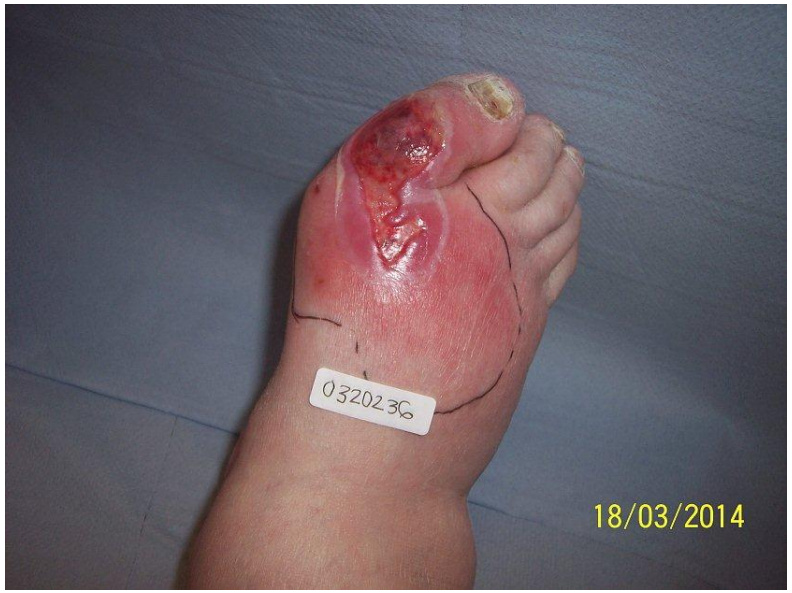
SINBAD SCORING for Index Ulcer:				
Please tick (✓) yes or no on each line				
Site= Index Ulcer Hindfoot	No		Yes	
Ischaemia: Clinical PAD?	No		Yes	
Neuropathy: Sensory loss?	No		Yes	
Bacterial infection: Clinical?	No		Yes	
Area: 1cm^2 or more?	No		Yes	
Depth: to tendon or bone?	No		Yes	

Diabetic Foot Ulcer Management



Diabetic Foot Infection

- Use soft tissue or bone samples from the base of a debrided wound
- Locally developed antibiotic guidelines
- Consider osteomyelitis
- X-ray
- Consider MRI if x-ray inconclusive



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The Foot Formulary

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Quick Reference Guideline Table 2: Antibiotic Management of Diabetes Related Foot Infections In Adults

	FIRST CHOICE		PENICILLIN ALLERGY		
	PARTIAL OR FULL THICKNESS	*EXTENDING TO UNDERLYING SOFT TISSUE/ BONE*	*PARTIAL OR FULL THICKNESS*	*EXTENDING TO UNDERLYING SOFT TISSUE/ BONE*	**DURATION**
MILD#	Co-amoxiclav 625mg tds PO	Co-amoxiclav 625mg tds PO	Clarithromycin 500mgs bd PO	Clarithromycin 500mgs bd PO Metronidazole 400mgs tds PO	Review after 1-2 weeks. May require an additional 1-2 weeks of treatment. See guidance below re LFT monitoring if treatment continues beyond 2 weeks
MODERATE#	Co-amoxiclav 625mgs tds PO If co-amoxiclav has previously been used with no success then consider using Clindamycin 150mg-300mg qds PO instead	Co-amoxiclav 625mgs tds PO +/- Ciprofloxacin 500mgs bd PO If co-amoxiclav has previously been used with no success then consider using Clindamycin 150mg-300mg qds PO instead of co-amoxiclav See guidance note 2 & 5 re adding in ciprofloxacin	Clindamycin 150mg - 300mg qds PO	Clindamycin 150mg-300mg qds PO +/- Ciprofloxacin 500mgs bd PO (see guidance note 2 & 5 below re adding in ciprofloxacin)	2-4 weeks
SEVERE BORDERLINE ADMISSION (this regimen will be reviewed regularly as to whether admission is necessary)	Ceftriaxone 1-2g od IM* (see notes below re IM administration) Ciprofloxacin 500mgs bd PO Metronidazole 400mg tds PO If MRSA positive use teicoplanin in place of ceftriaxone.		Ceftriaxone 1-2g od IM* (see notes below re IM administration) Ciprofloxacin 500mgs bd PO Metronidazole 400mg tds PO See guidance note 1 below re penicillin allergy. In true penicillin allergy or if MRSA positive use Teicoplanin IM* 400mg od (see notes below re IM administration) Ciprofloxacin 500mg bd PO Metronidazole 400mg tds PO		2-4 weeks
SEVERE NEEDS ADMISSION	Tazocin 4.5g tds IV If polymicrobial infection suspected with MRSA then add in vancomcyin 1g bd IV to the above. (see guidance notes 3 below)		Clarithromycin 500mg bd IV Metronidazole 400mg tds IV Ceftazidime 1g tds IV (2g tds IV if very severe). Substitute with Ciprofloxacin 500mg bd PO in true penicillin allergy. (see guidance note 1) If polymicrobial infection suspected with MRSA then add in vancomcyin 1g bd IV to the above regimen (omitting clarithromycin). See guidance note 3.		2-4 weeks

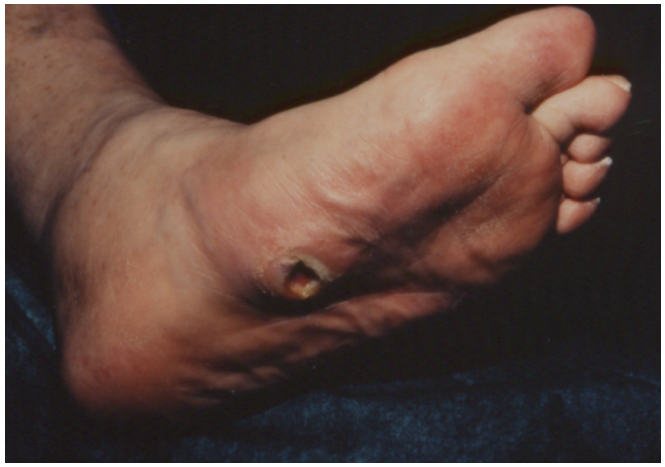
*IM antibiotics should only be given where there are appropriate facilities available to treat anaphylaxis. Ceftriaxone 2g IM should be given as two separate 1g injections in different sites.

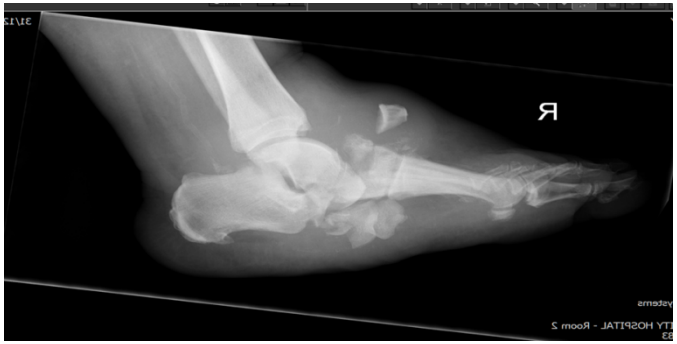
If patient is MRSA positive then prescribe according to sensitivities (combination of 2 of the following oral antibiotics, doxycycline, trimethoprim, rifampicin, fusidic acid (but do not use fusidic acid in combination with rifampicin). Discuss with a Medical Microbiologist on 4588 if sensitivities not available.
Co-amoxiclav may cause cholestatic jaundice if use is prolonged, especially in patients over 65 years. If treatment continues over 2 weeks liver function tests (LFTs) should be carried out. Cholestatic jaundice may occur up to 6 weeks after treatment is stopped.

Gooday C et al Diabetic Medicine 2013;30(5):581-589

Charcot Arthropathy

- Simple fractures can progress to CA
- Suspect CA redness, warmth, swelling and/or deformity with or without pain
- Advise or arrange for non-weight bearing until assessment by MDFS
- Treat with a non-removable off-loading device
- Monitor temperature, serial x-rays





Challenges of Implementation

- Resources
  - Capacity of Foot Protection Service & Multidisciplinary Foot Service
  - Waiting times
- Integration
  - Effective and timely communication
  - Agreeing local pathways and policies
  - Centralisation of vascular services
- Training & Competency
  - Staff turnover, recruitment
  - Backfill for training

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