Meet the Expert: Diabetes Foot Disease and the NADC Foot Network Working Party

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ADS / ADEA Annual Scientific Meeting
August 30th – September 1st, 2017

Disclosure of Potential Conflicts of Interest

- Name: Professor Stephen Twigg

In connection with my presentation, I disclose COI with the following organizations/companies.

A position of a board member or advisor	Chair of the National Association of Diabetes Centres - Foot Network (NADC-FN)
Honoraria for lectures	-
Clinical commissioned/ joint research grant	NSW Dept of Health: Translational Research Grant Scheme – Diabetes Debridement Study
Scholarship grant	-

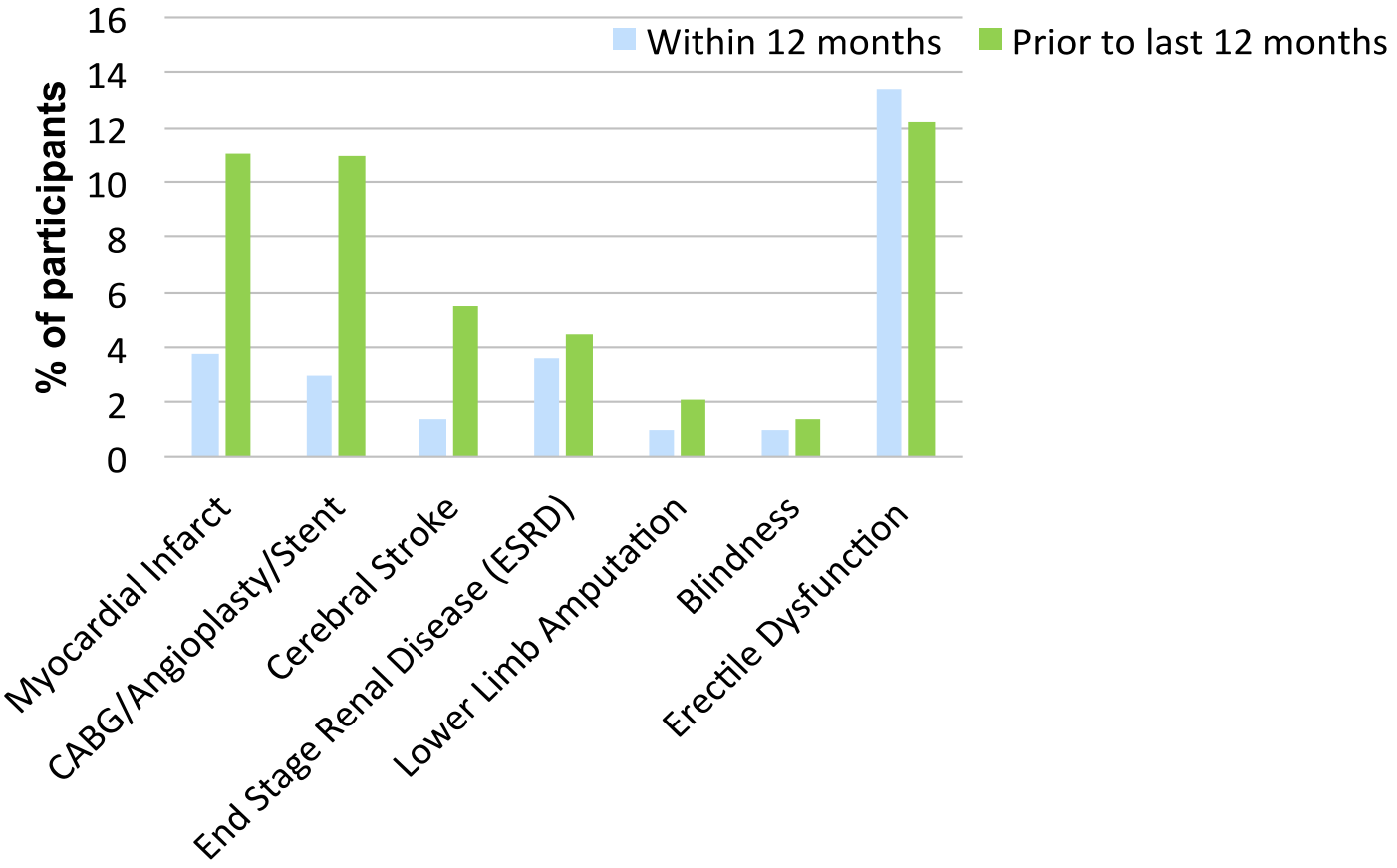
The Agenda

- The status of diabetes foot care in Australia
- Integrated foot care as a national priority
- Methods to integrate and improve foot outcomes in diabetes
  - key concepts in foot care
  - national initiatives
  - the work of the NADC foot network

The Agenda

- The status of diabetes foot care in Australia

Chronic Diabetes Complications in Australia (ANDA 2015)



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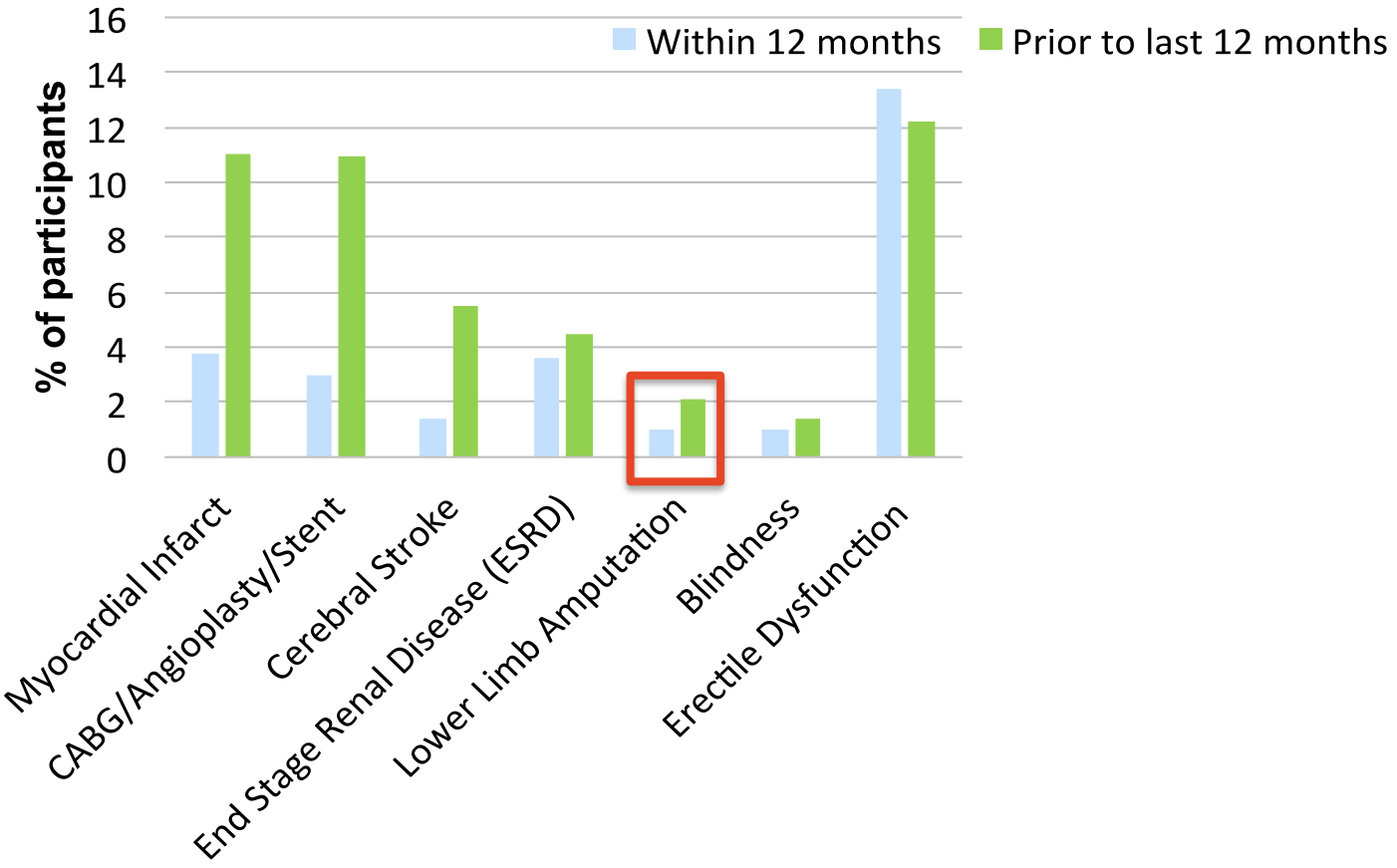
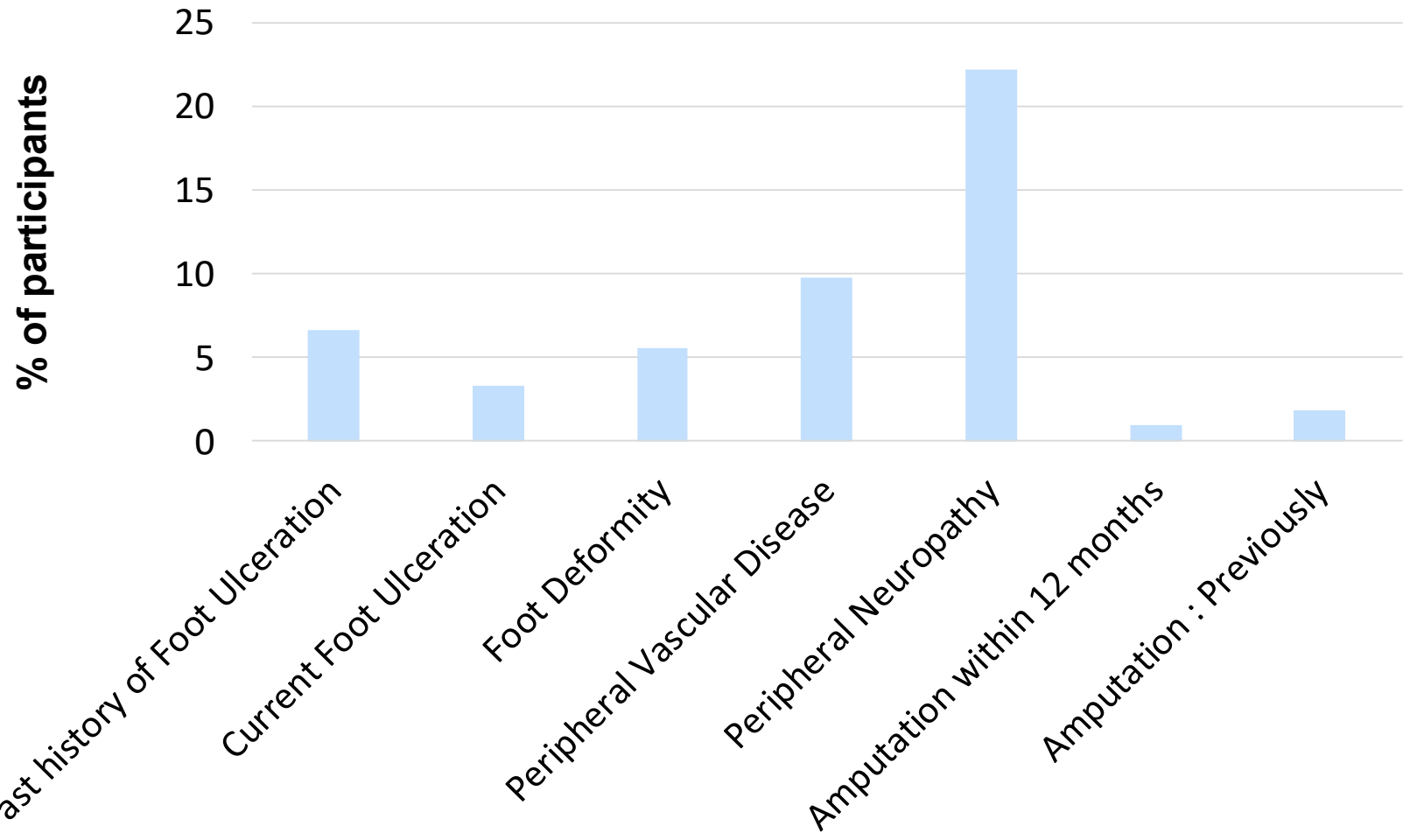


Foot Disease in Diabetes (ANDA 2015 Data)



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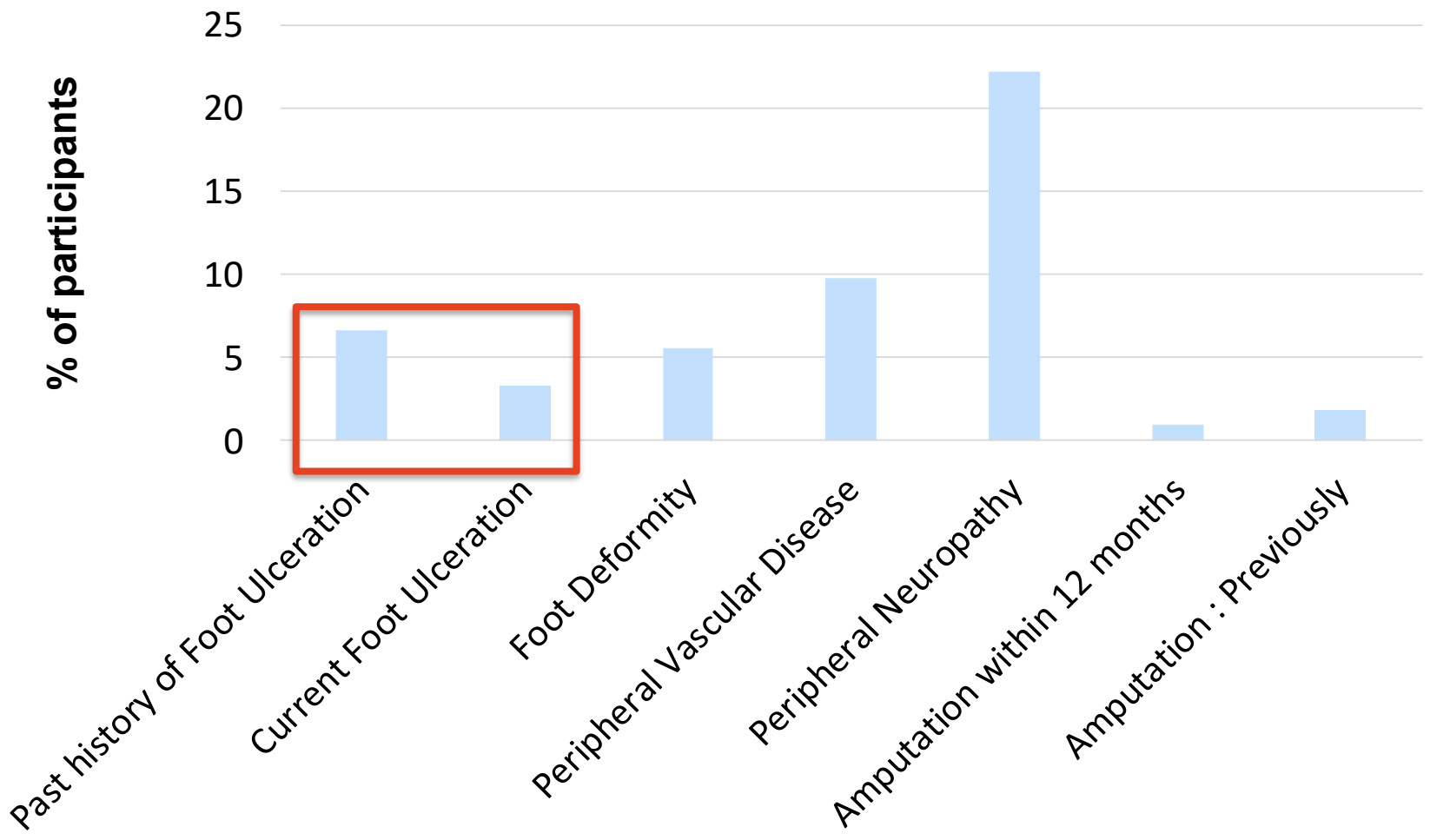
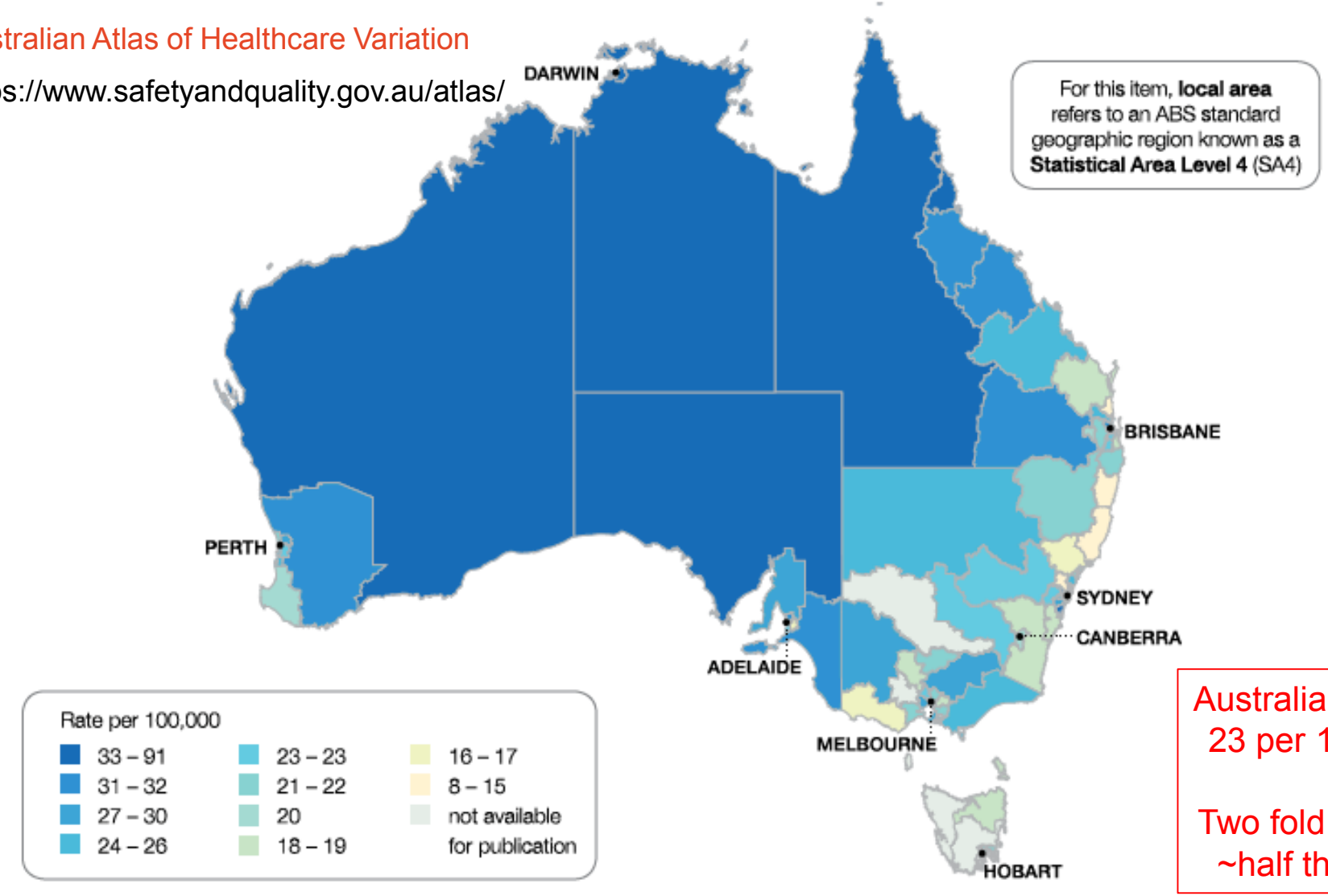


Diabetes-related lower limb amputation hospital admissions 18 years and over - Australia

Figure 136: Number of diabetes-related lower limb amputation admissions to hospital per 100,000 people aged 18 years and over, age standardised, by local area, 2012–13

Australian Atlas of Healthcare Variation

https://www.safetyandquality.gov.au/atlas/

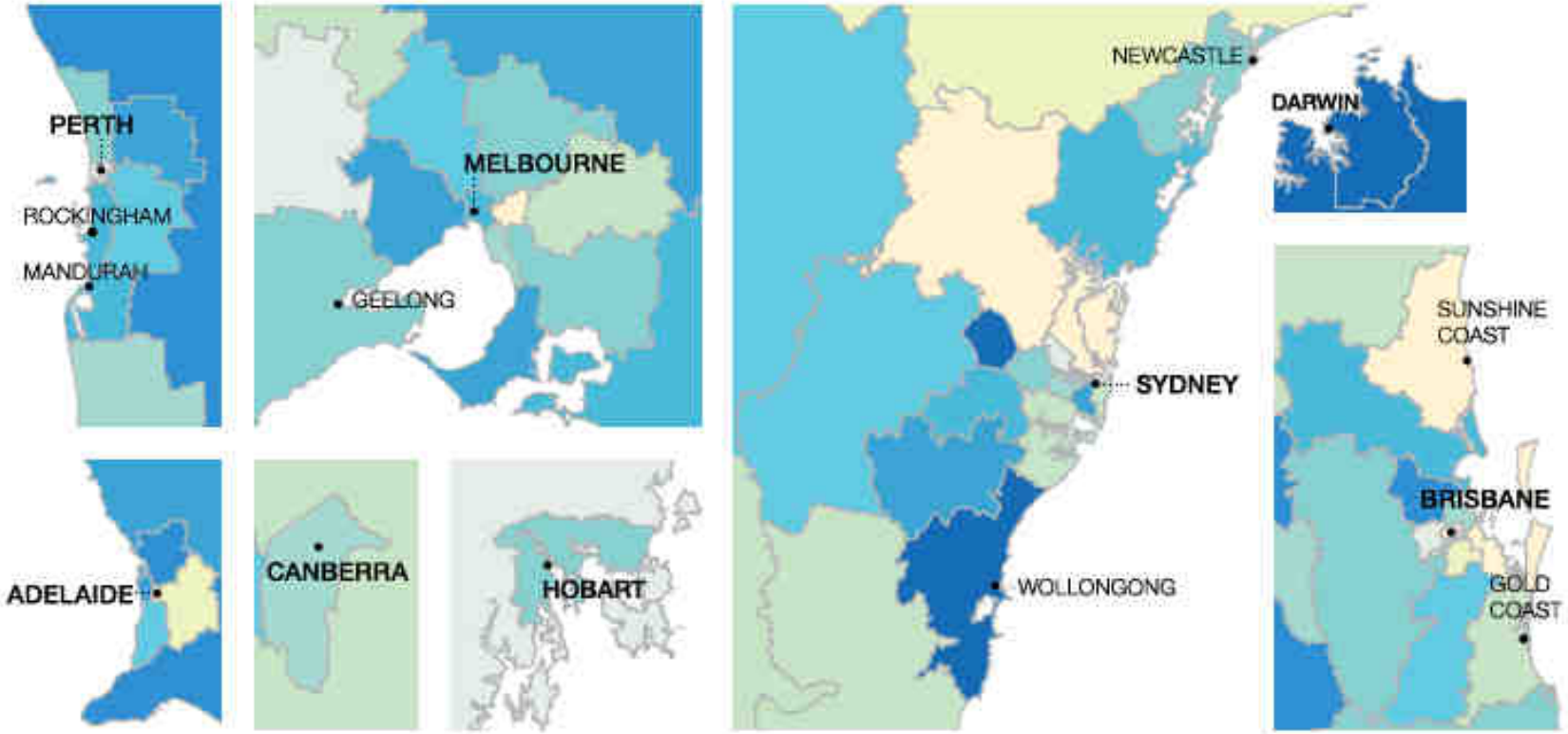


Australian rate:
23 per 100,000

Two fold the UK,
~half the USA

Diabetes-related lower limb amputation hospital admissions 18 years and over - Australian Capital Cities

Figure 136: Number of diabetes-related lower limb amputation admissions to hospital per 100,000 people aged 18 years and over, age standardised, by local area, 2012–13



Australian Atlas of Healthcare Variation

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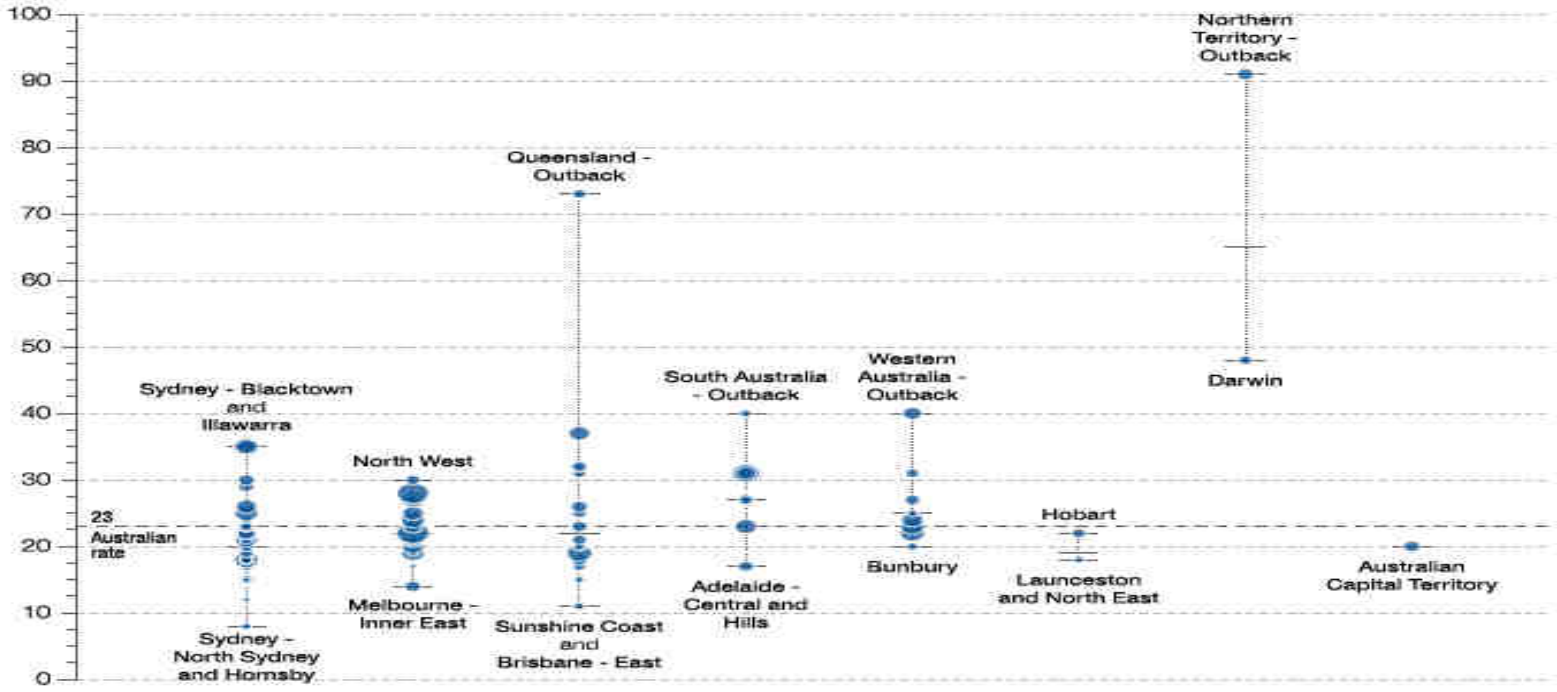
States and Territories

Number of diabetes-related lower limb amputation admissions to hospital per 100,000 people aged 18 years and over, age standardised, by local area, state and territory, 2012–13

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT
Highest rate	35	30	73	40	40	22	91	–
State/territory	20	22	22	27	25	19	65	20
Lowest rate	8	14	11	17	20	18	48	–
No. admissions	1,331	1,081	834	417	480	88	99	55



For this item, **local area** refers to an ABS standard geographic region known as a **Statistical Area Level 4** (SA4)

The size of each circle represents the number of admissions in each local area

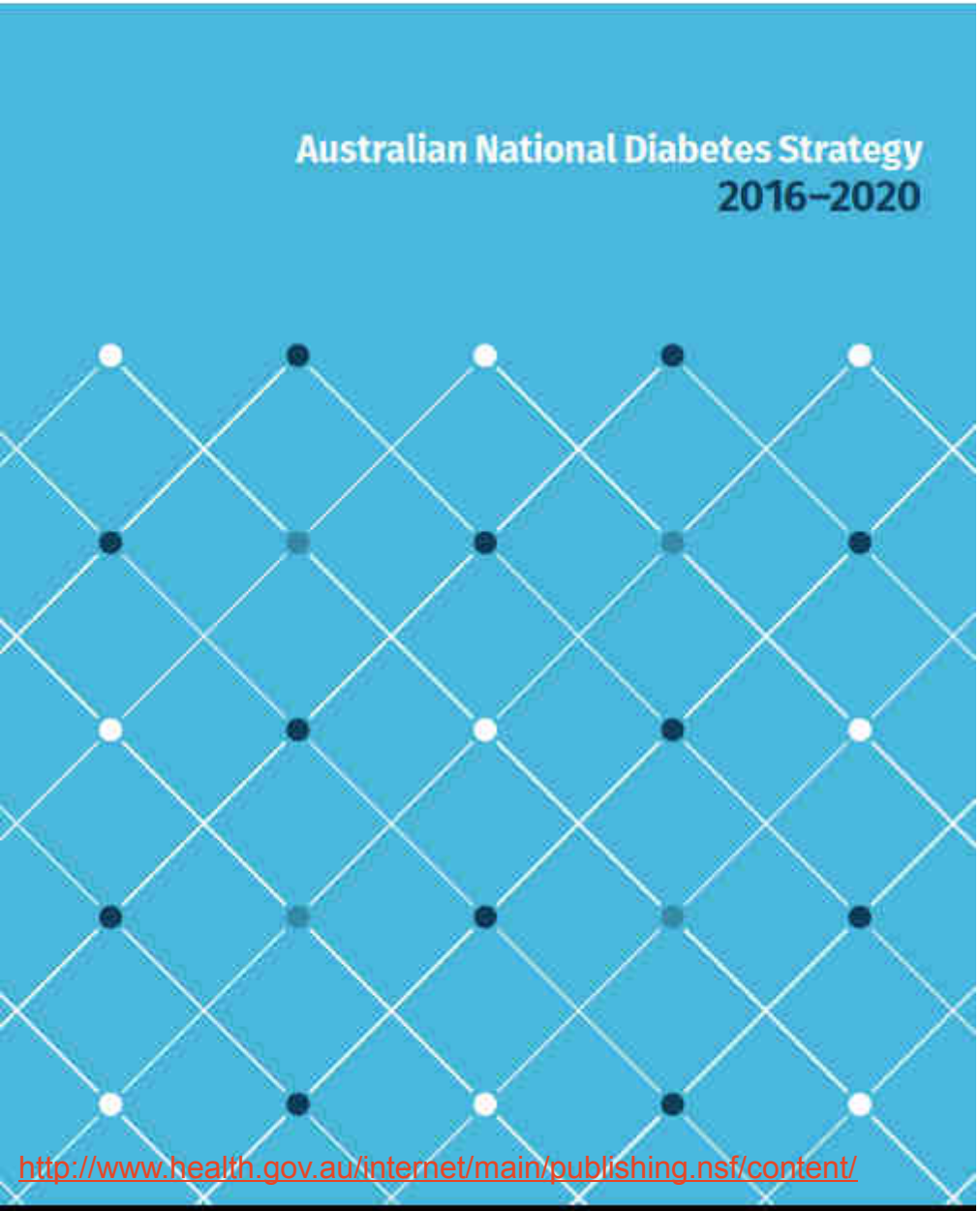
Notes:
Rates are standardised based on the age structure of the Australian population in 2001.
State/territory and national rates are based on the total number of admissions and people in the geographic area.

Sources: National Health Performance Authority analysis of Admitted Patient Care National Minimum Data Set 2012–13 (data supplied 09/04/2014) and Australian Bureau of Statistics Estimated Resident Population 30 June 2013.

The Agenda

- The status of diabetes foot care in Australia
- Integrated foot care as a national priority

Australian Government
Department of Health



http://www.health.gov.au/internet/main/publishing.nsf/content/

- The National Diabetes Strategy 2016-2020 was endorsed by the Australian Health Ministers Advisory Council on 2 October 2015, and publically released 13 November 2015.

- A main goal in the strategy is to:

- 'Reduce the occurrence of diabetes-related complications and improve quality of life among people with diabetes'.

NHMRC of Australia

Clinical Care Guidelines

National Evidence-Based Clinical Care Guidelines for Type 1 Diabetes in Children, Adolescents and Adults

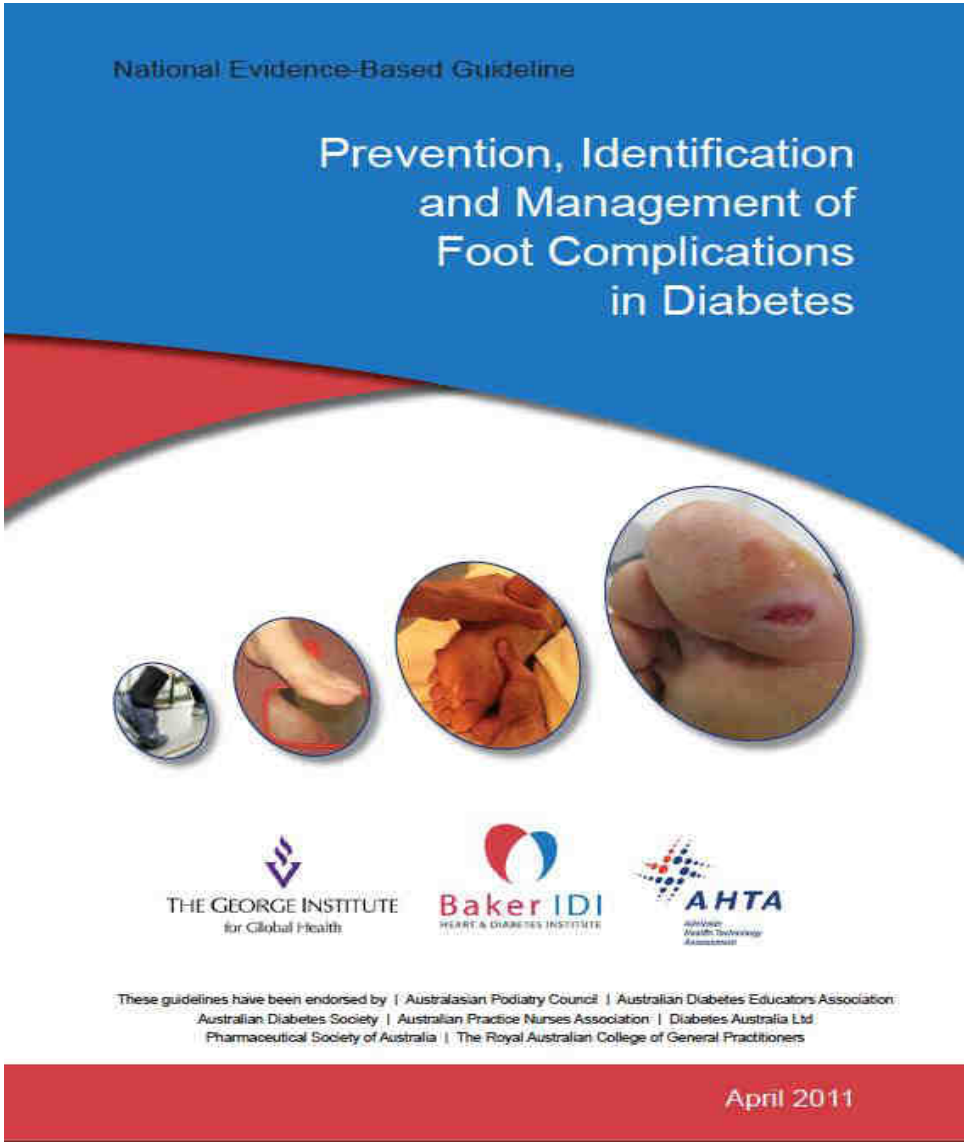
Australian Diabetes Society

ads Australian Diabetes Society

diabetes australia

An access site :http://www.nhmrc.gov.au/guidelines/publications/cp102

https://www.bakeridi.edu.au/Assets/Files Foot_FullGuideline_23062011.pdf



The Agenda

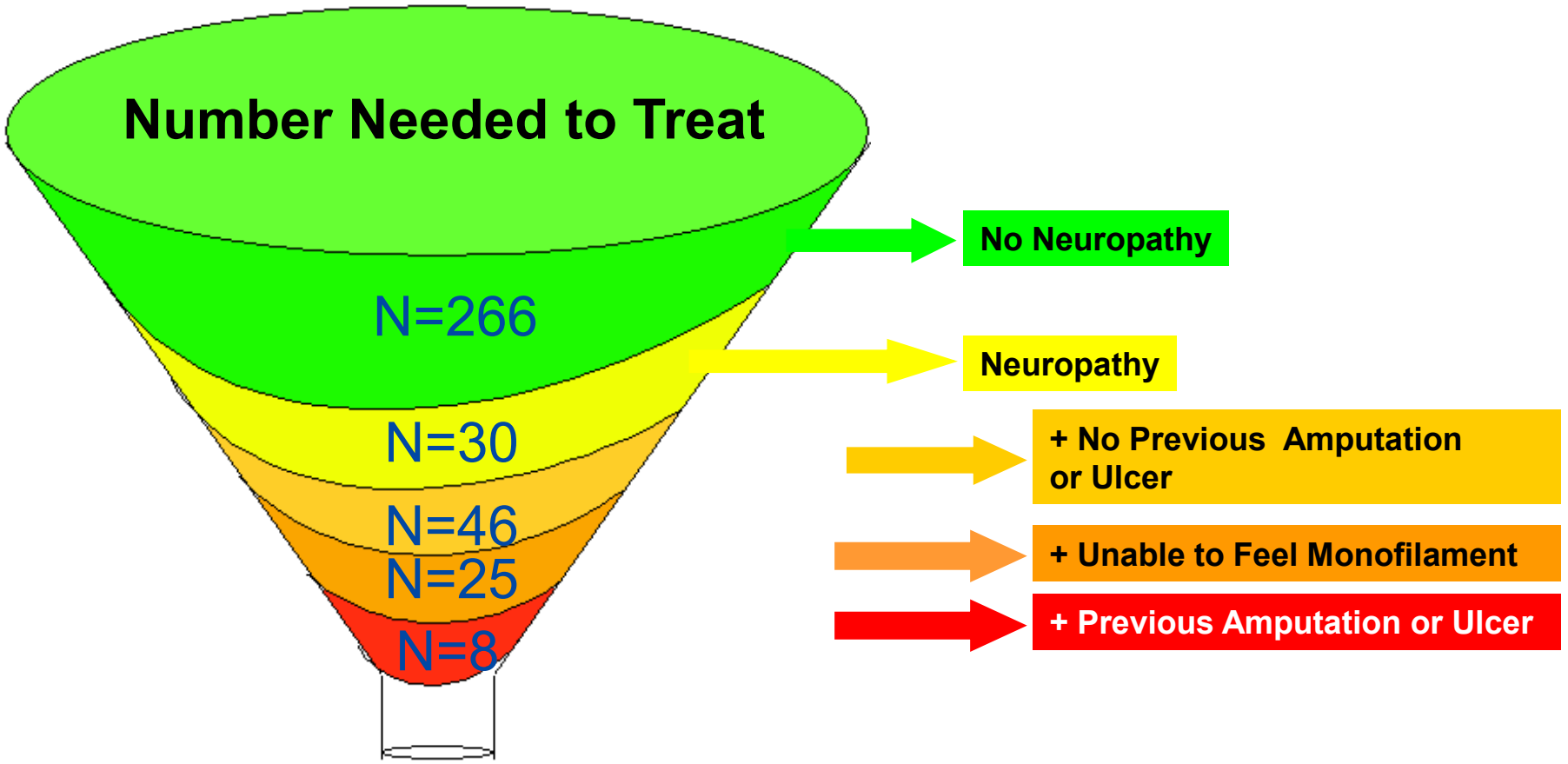
- The status of diabetes foot care in Australia
- Integrated foot care as a national priority
- Methods to integrate and improve foot outcomes in diabetes
  - key concepts in foot care

Finances, Diabetes Foot Assessment and Care

Patient Care Needs vs Available Resources

Finances are limited: Not Every Patient with Diabetes Needs the Same Foot-care Approach!

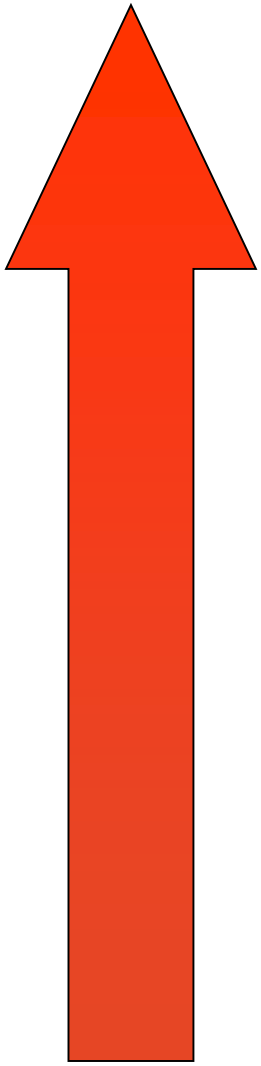
Prevention at Every Stage: Number Needed to Treat to Prevent One Foot Ulcer per Year



To prevent one foot ulcer per year

Presumes 55% risk reduction; Yue DK et al

Stratified of Intensity of Foot Care Required Based on Foot Ulcer Risk



Ulcer Risk

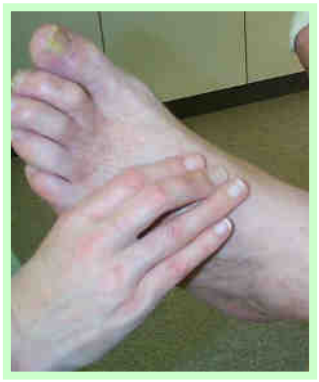
Ulcer Present — Diabetes High Risk Foot Service (HRFS)

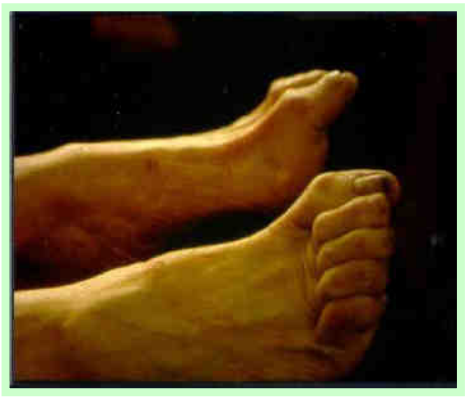
High — Foot Education and Regular Community Podiatry Preventive Care

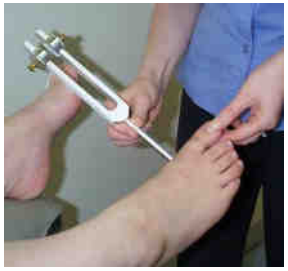
Low — General Information

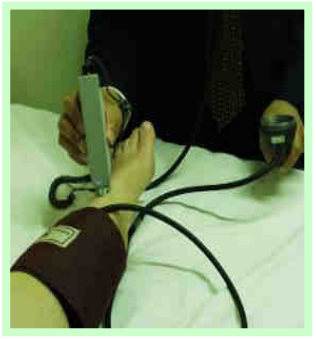
NHMRC Clinical Care Guidelines: Diabetes and Foot Disease 2011

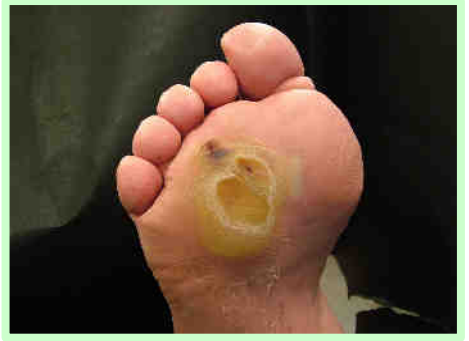
Diabetes Complications Screening in Foot Disease Can Stratify Foot Ulcer Risk and Required Care

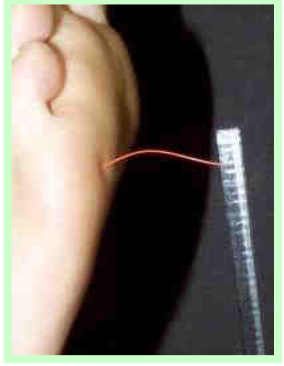


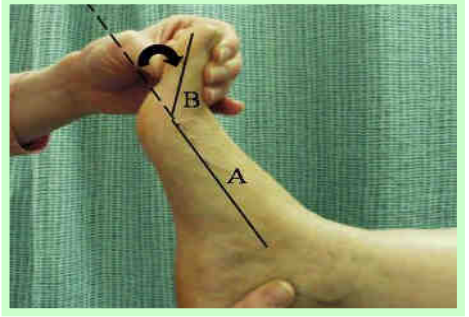


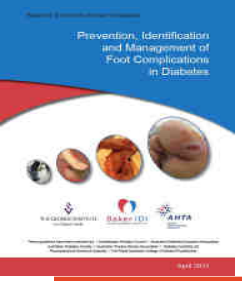












Not Everyone with Diabetes Requires the Same Intensity of Foot Care: Risk Stratification

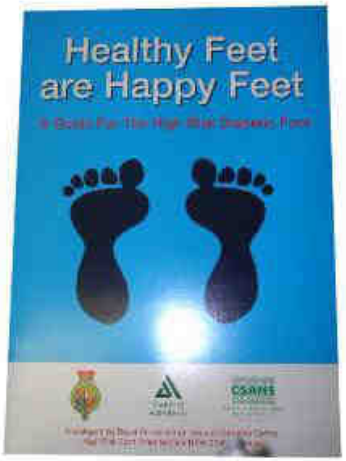
Risk Profile	Risk Characteristics	Recommendations	Frequency
0	No risk factors	No specific referral Podiatry care (private) for general foot problems. (+/- GP Management Plan (GPMP) /Team Care Arrangement (TCA))	Annual
1	Peripheral Neuropathy	Podiatry care and High risk education (Public or Private care setting) GPMP/TCA	6 months
2	Peripheral Neuropathy and Deformity OR Peripheral Arterial Disease	Podiatry care and Education (Public or Private care setting) GPMP/TCA	3 months
3	Previous Ulcer or Amputation	As above	1-3 months
4	Active foot ulceration, infection or suspected acute charcot's neuroarthropathy / fracture.	Prompt High Risk Foot Service Referral (assess urgency)	Until issues resolved

Stratifying Management of Feet in Patients with Diabetes

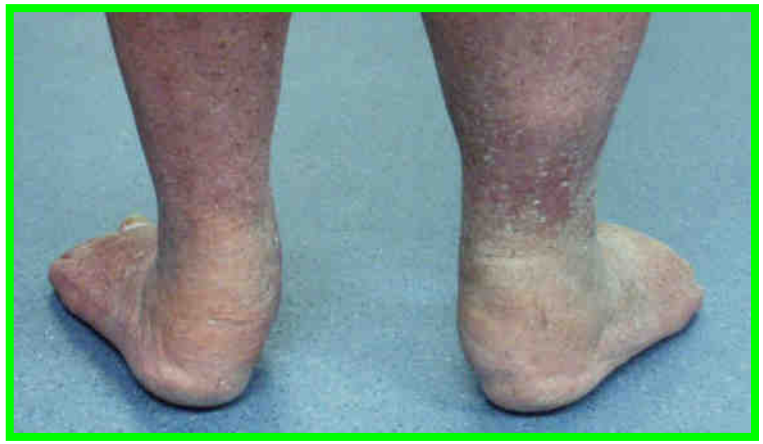
- Low risk feet for diabetic foot ulcer
  - Simple advice
  - Patient can self manage feet

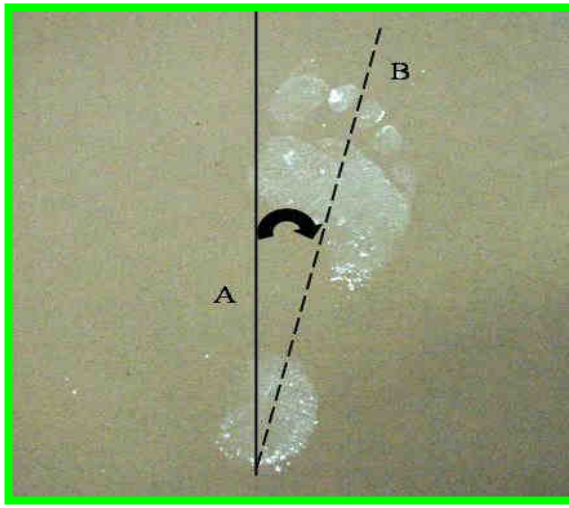
- High risk feet for diabetic foot ulcer
  - Insensate neuropathy
  - Peripheral arterial insufficiency
  - Major mechanical foot problems
  - Educate intensively
  - Practical demonstration
  - Significant behavior changes
  - Preferably manage by podiatry

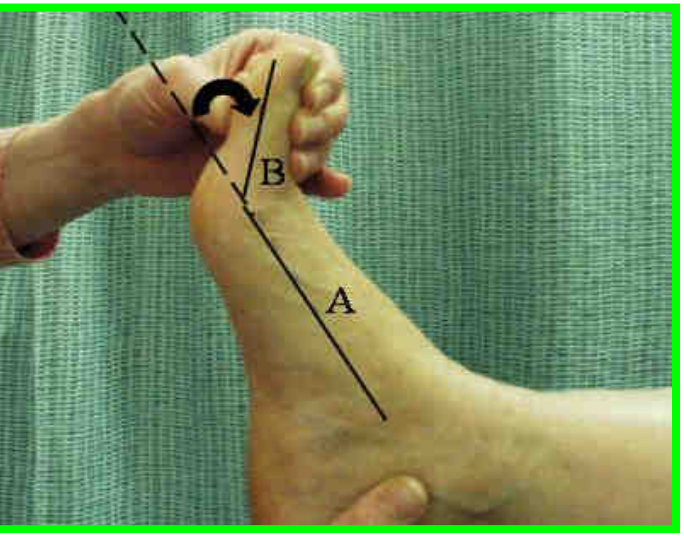
- Diabetic foot ulcer
  - Management by high risk foot servic
    preferably
  - Education
  - Follow-up by podiatrist

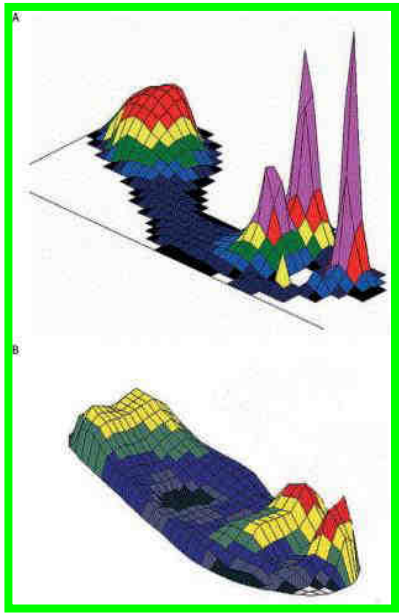


Biomechanical Factors Associated with Hallux Ulcers and Their Measures

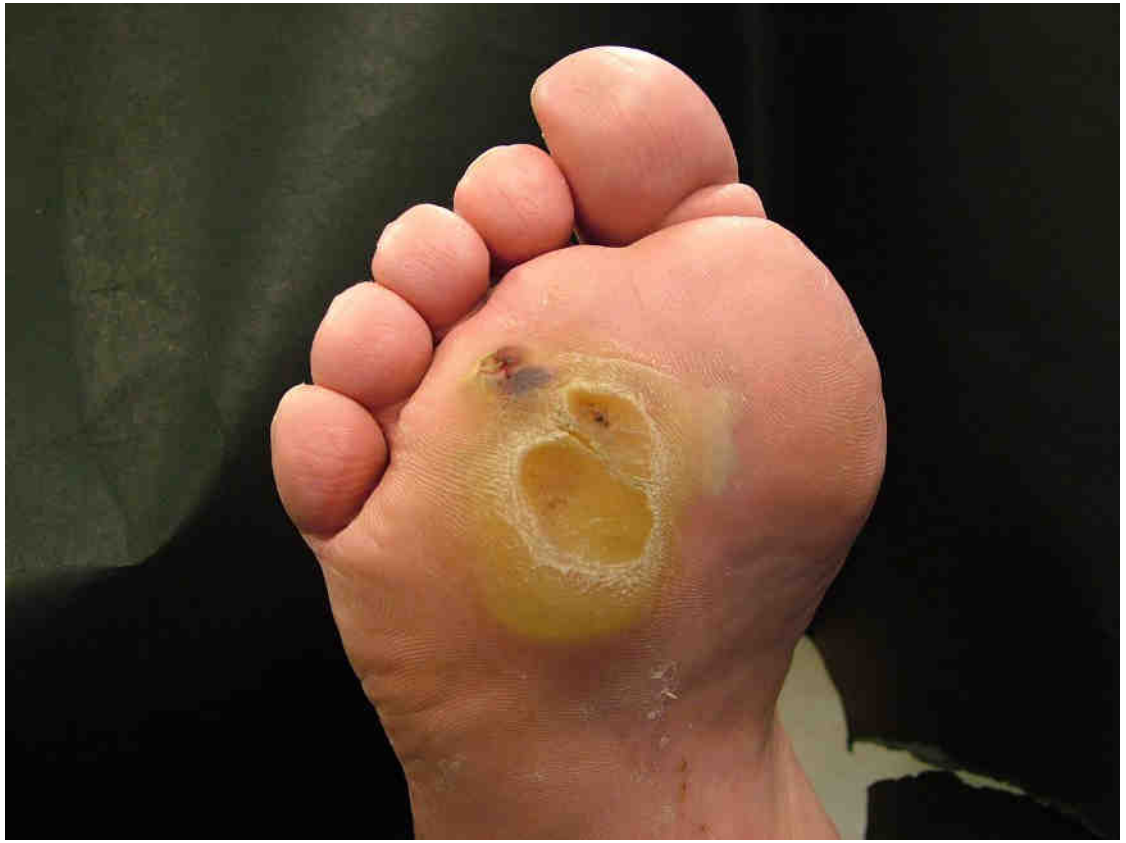








Prevent and Treat Callus



Health Pathways: Where Should Foot Complications in Diabetes Ideally be Managed?

Primary and Secondary Preventive care

Tertiary Ambulatory care

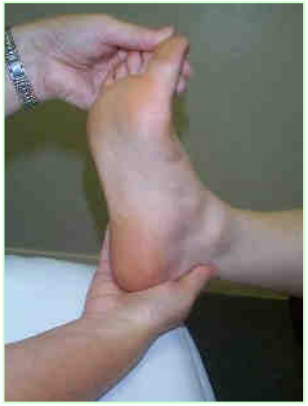
Tertiary Hospital care

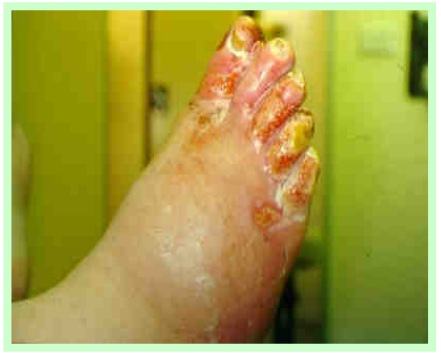
Multidisciplinary

Community care

Inpatient care

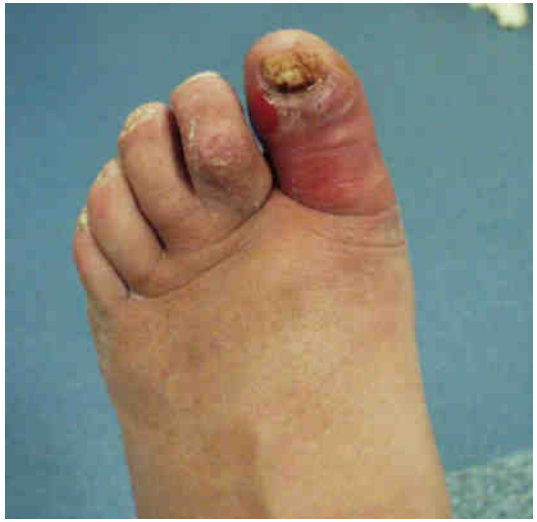
High-Risk Foot Service (HRFS) Ambulatory

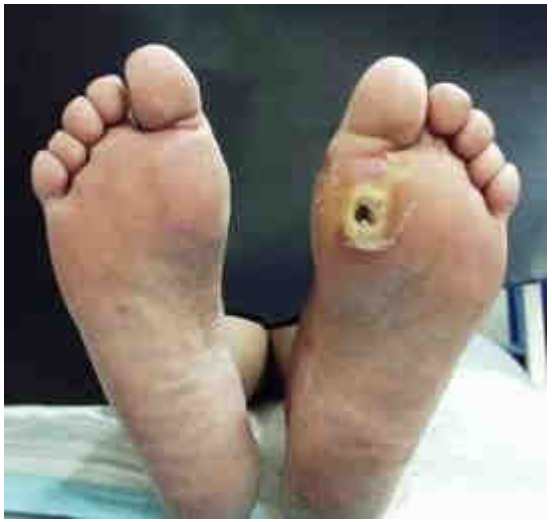


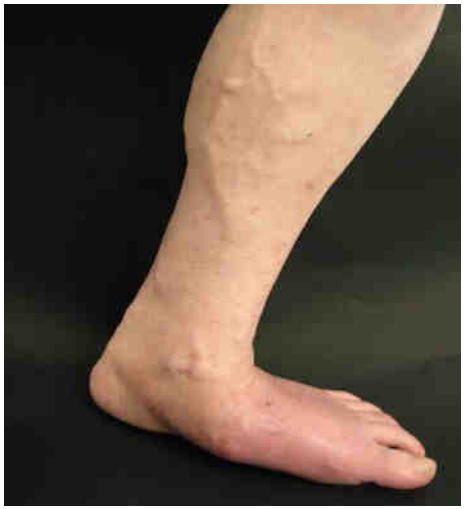


Bergin SM et al., for the ADFN
Med J Aust. 2012;197(4):226-9.

Typical High Risk Foot Service (HRFS) Entrants in People with Diabetes







How to treat foot ulcers in diabetes

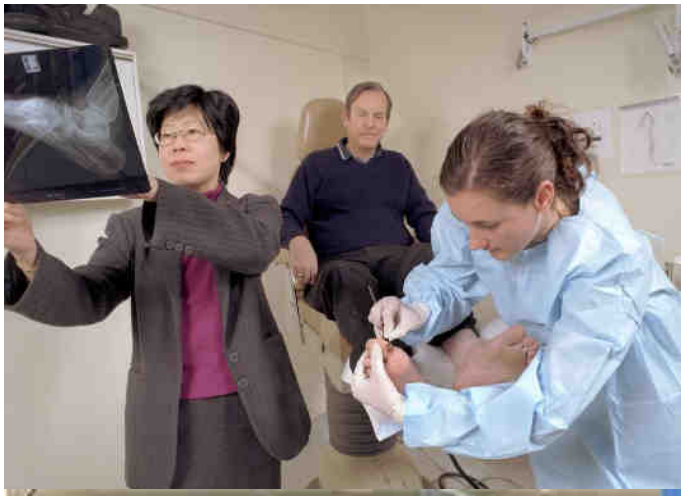
- A multifaceted, patient targeted approach
  - Assessment
  - Treatment integration:
    - Pressure offloading
    - Antibiotics
    - Debridément
    - Revascularisation

This is not ideal!

Multidisciplinary High Risk Foot Care Services Delivery

Many other team members

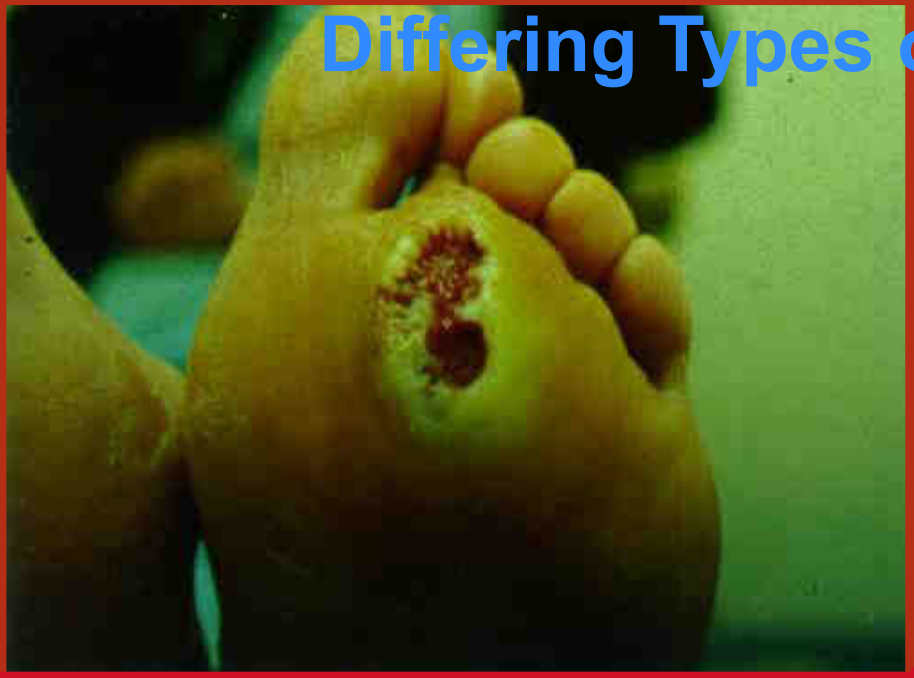
Together
Everyone
Achieves
More

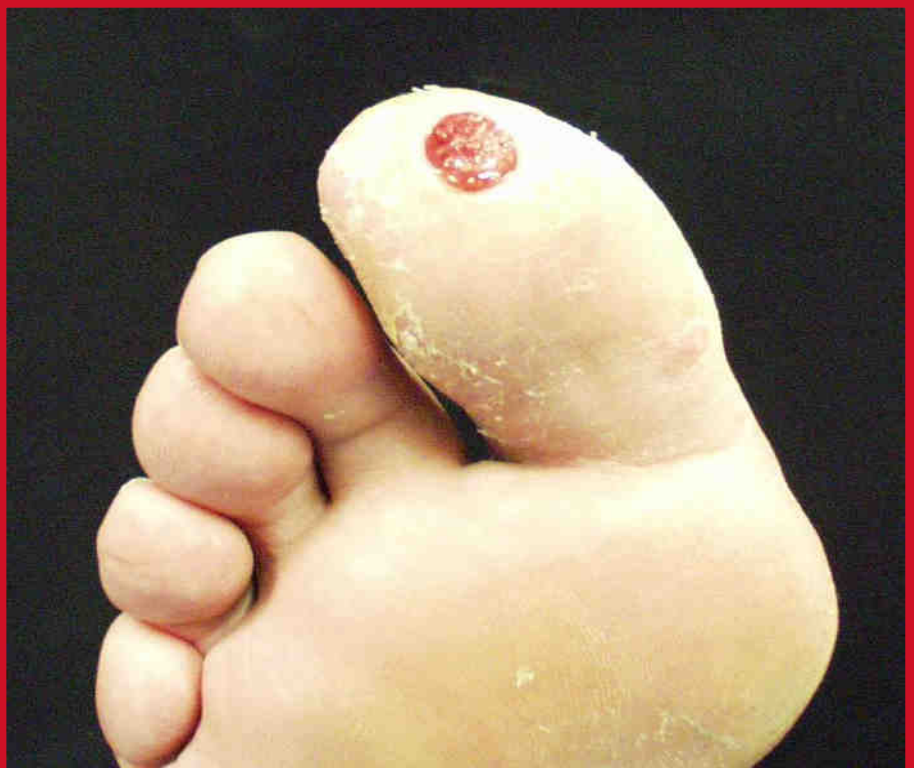


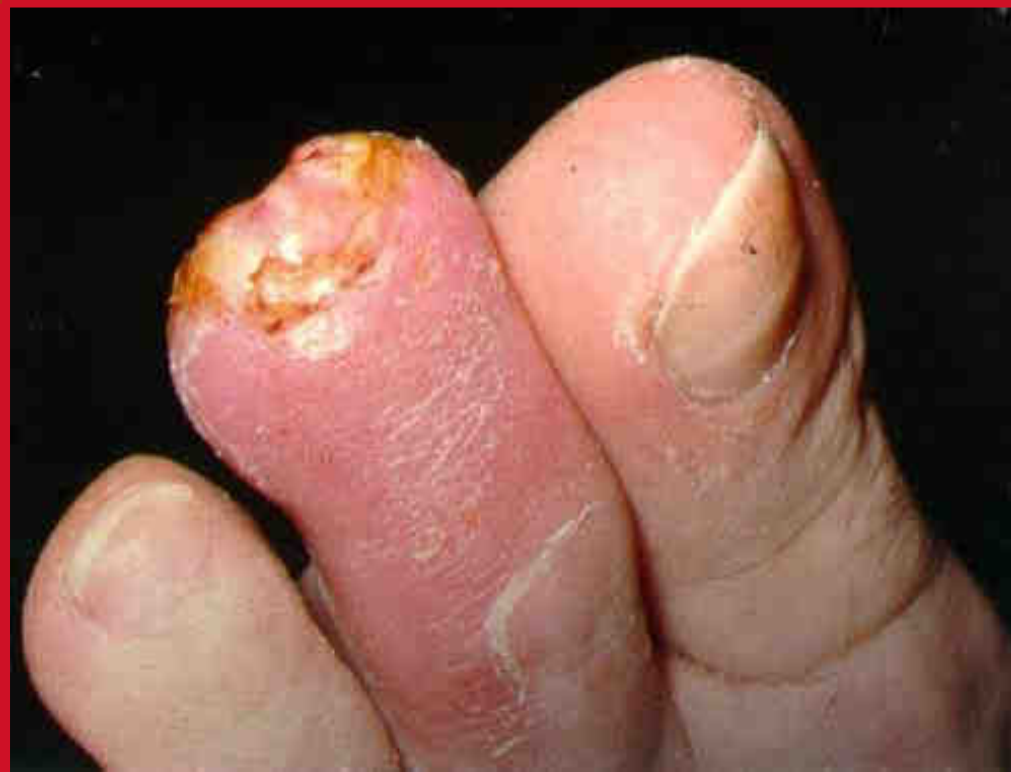
Holistic patient care is essential

Royal Prince Alfred Hospital
Diabetes Centre

Differing Types of Diabetes Foot Ulcer







The Agenda

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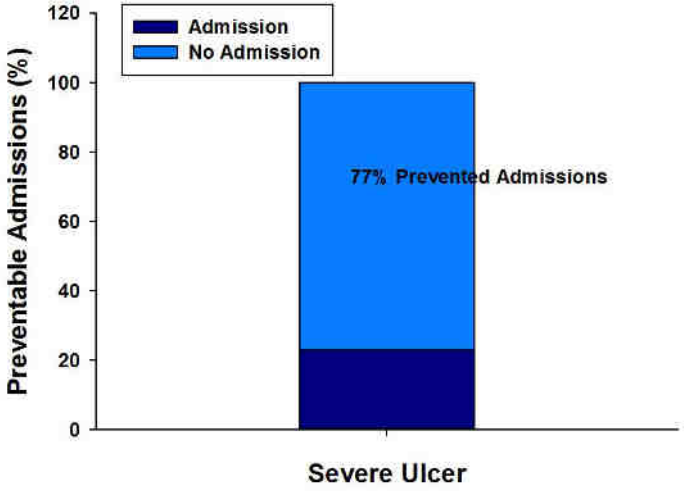
The Diabetes HRFS Has A Supportive Evidence Base

- The Diabetes HRFS can:
  - Prevent hospital admissions
  - Reduce length of hospital stay
  - Reduce major amputations
  - Be cost-effective



Severe Ulcers Classification
Tendon or Bone
Infected or not Infected

References:

Horswell, R.L., J.A. Birke, and C.A. Patout Jr. A Staged Management Diabetes Foot Program Versus Standard Care: A 1-Year Cost and Utilization Comparison in a State Public Hospital System. *Archives of physical medicine and rehabilitation*, 2003;**84**(12):1743-1746.

Rerkasem, K., et al. The development and application of diabetic foot protocol in Chiang Mai University Hospital with an aim to reduce lower extremity amputation in Thai population: a preliminary communication. *International Journal of Lower Extremity Wounds*, 2007;**6**(1):18-21.

Rerkasem, K., et al. A multidisciplinary diabetic foot protocol at Chiang Mai University Hospital: cost and quality of life. *International Journal of Lower Extremity Wounds*, 2009;**8**(3):153-156.

Yesil, S., et al. Reduction of major amputations after starting a multidisciplinary diabetic foot care team: single centre experience from Turkey. *Exp Clin Endocrinol Diabetes*, 2009;**117**(7):345-349.

A document for clinicians and administrators to improve quality, safety and consistency in the delivery of foot care for patients with serious foot complications

Aims to improve:

- ✓ Patient experiences
- ✓ Health outcomes
- ✓ Effective use of resources

Development of HRFS Standards, 2015+:

A document written by clinicians for clinicians

- The Greater Metropolitan Clinical Taskforce (later, as ACI), convened an Endocrine Network in 2007
  - Identified the need for patients and referrers to have access services for people with diabetes-related foot complications. To know what services are available and how to refer to them
  - Requested a directory of services – how do we define a HRFS?
- An analysis of current services (site visits) undertaken
- Clinicians from across NSW met, reviewed international and national guidelines and current practice and reached a consensus.

- 11 consensus standards:
  - People
  - Equipment
  - Data/outcomes

Health Care Professional Educational Projects: Australian Diabetes Society NDSS - Promoting Optimal Diabetes Foot Care

Audiovisual resources:

- Being developed by ADS
- ✓ The Foot Examination
- ✓ Preventive foot care
- Managing basic diabetes foot complications (available July 2017)

https://diabetessociety.com.au/diabetesfoot/

ads
Australian Diabetes Society

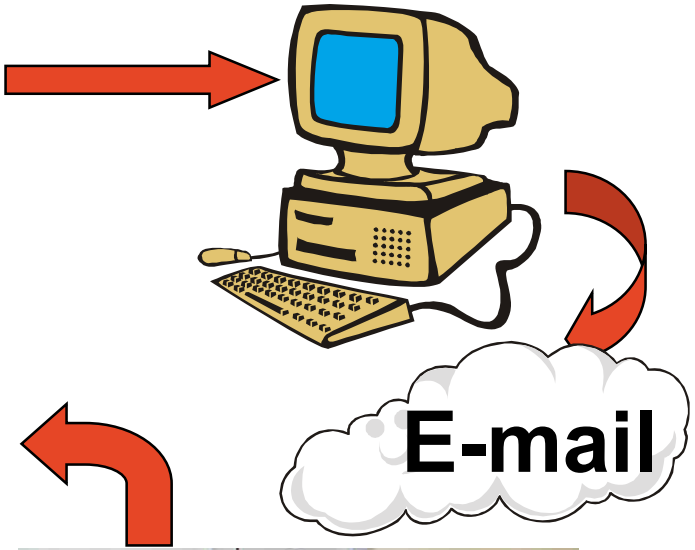
Challenges in Diabetes Foot Care in Australia

- The geography and fewer people living in rural areas
- Stratifying foot complications risk in people with diabetes
- Preventive foot care for those at increased risk
- Providing timely access to diabetes high risk foot services
- Achieving outcomes in diabetes HRFS
- Providing efficient hospital inpatient foot care in diabetes
- Adequate funding models and incentives at all levels

Challenges in Diabetes Foot Care in Australia
- Some 'Solutions'

- The geography and fewer people living in rural areas
- Systematic services mapping, Telehealth linkages
- Stratifying foot complications risk in people with diabetes
- Primary health care education in diabetes foot care
- Preventive foot care for those at increased risk
- Community podiatry services provision
- Providing timely access to diabetes high risk foot services
- Defining HRFS and standards; services mapping
- Achieving outcomes in diabetes HRFS
- Defining Key Performance Indicators with incentivisation
- Providing efficient hospital inpatient foot care in diabetes
- Integrated multidisciplinary models of care are needed
- Adequate funding models and incentives at all levels
- Present the business case to key government funding agencies

TeleHealth and Diabetes HRF Services



Real-time

- Medical Data