

Diabetes Foot Disease and the NADC Foot Network

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The Agenda

- The status of diabetes foot care in Australia
- Integrated foot care as a national priority
- Methods to help integrate and improve foot outcomes in diabetes
 - High-Risk Foot Service initiatives
 - Work of the NADC Foot Network

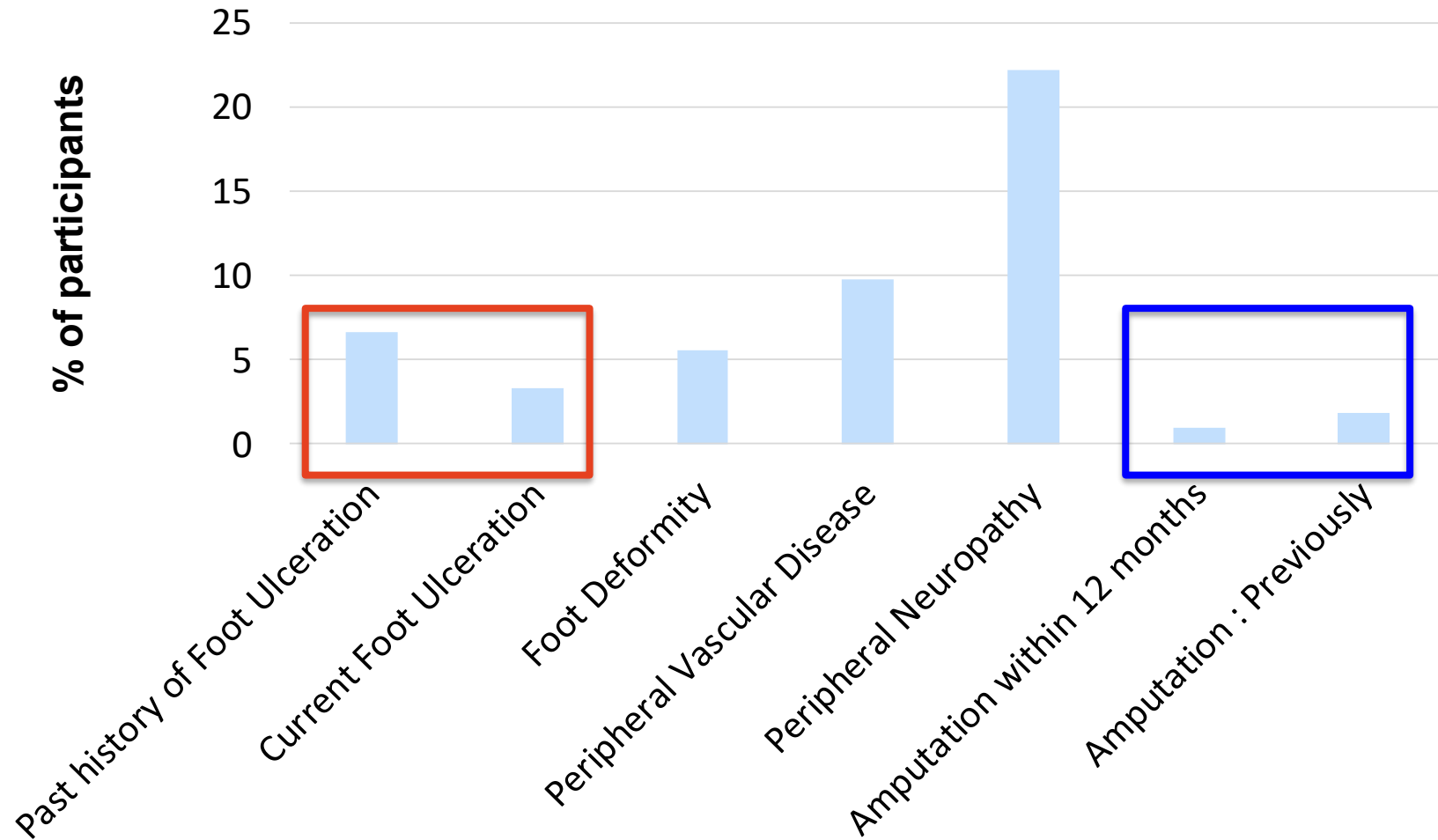


The Agenda

- The status of diabetes foot care in Australia



Foot Disease in Diabetes (ANDA 2015 Data)

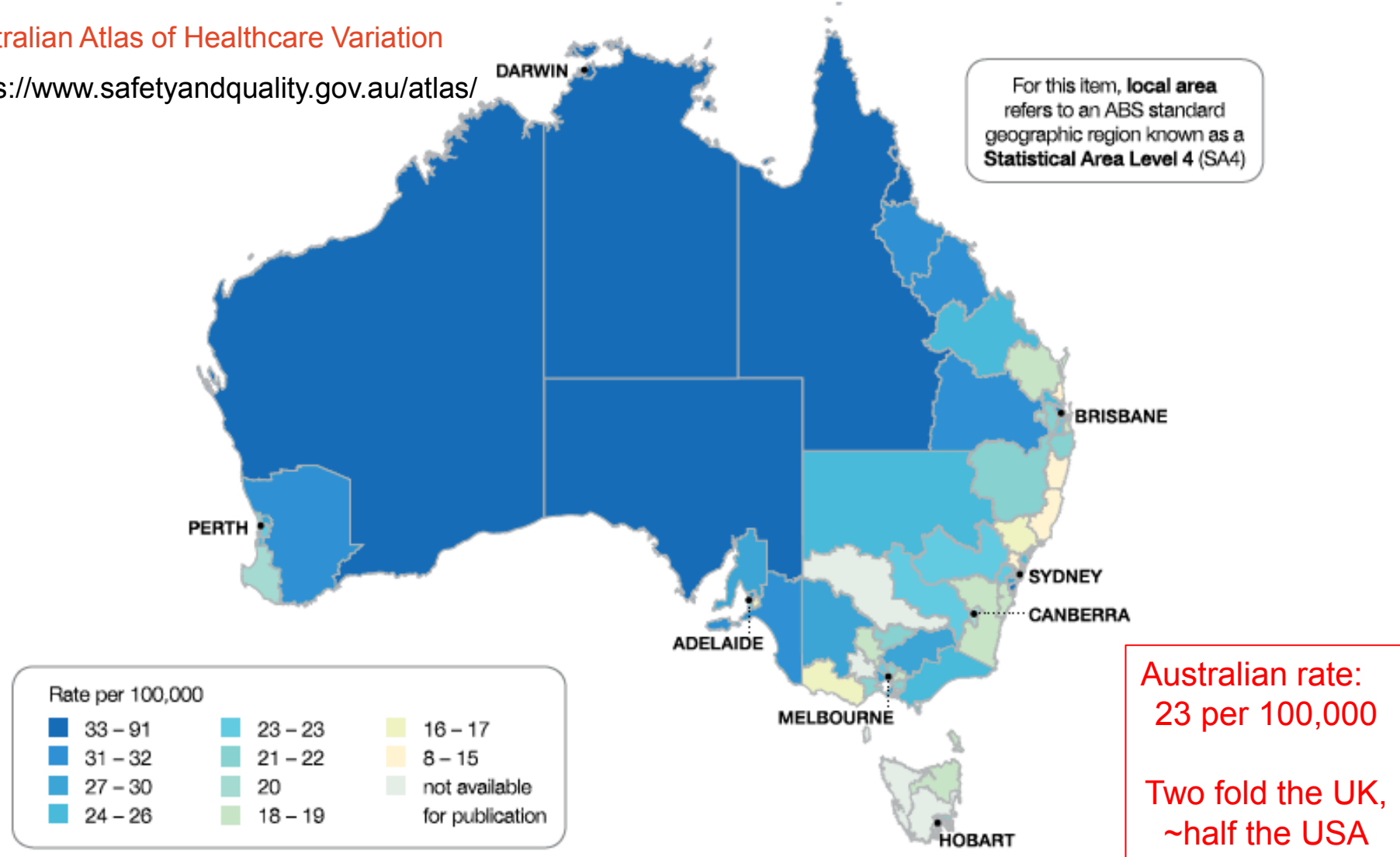


Diabetes-related lower limb amputation hospital admissions 18 years and over - Australia

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

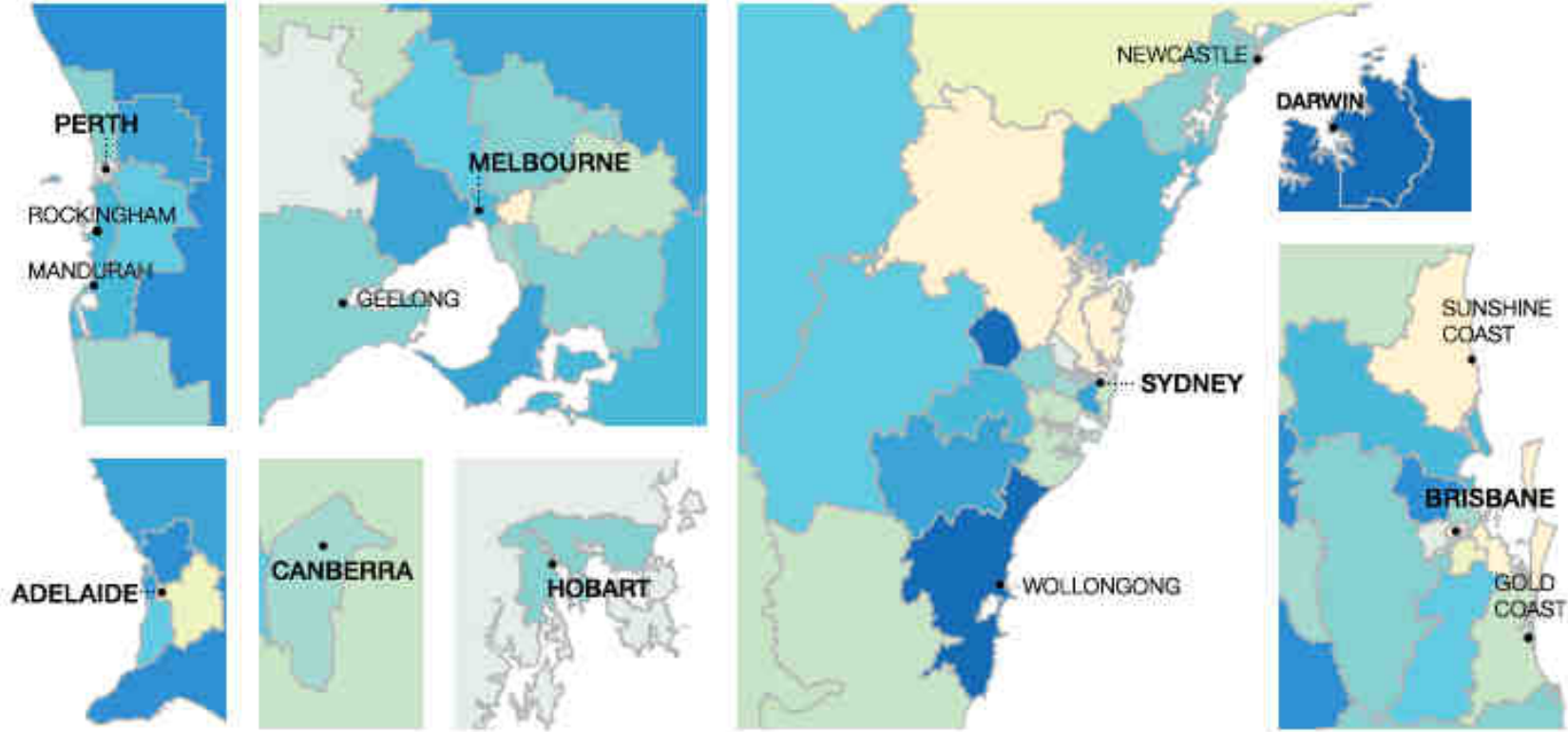
Australian Atlas of Healthcare Variation

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



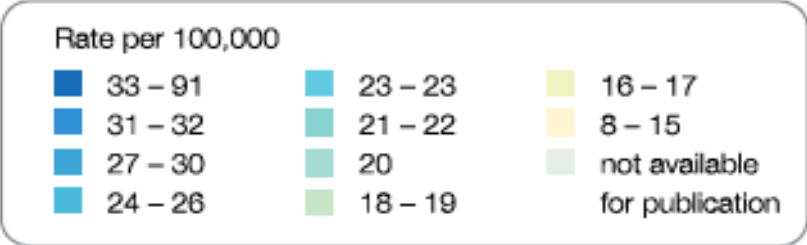
Diabetes-related lower limb amputation hospital admissions 18 years and over - Australian Capital Cities

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

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



The Agenda

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- Integrated foot care as a national priority





Australian National Diabetes Strategy 2016–2020

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

- The National Diabetes Strategy 2016-2020 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’.



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




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




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

NHMRC of Australia Clinical Care Guidelines

National Evidence-Based Guideline

Prevention, Identification and Management of Foot Complications in Diabetes



These guidelines have been endorsed by | Australian Podiatry Council | Australian Diabetes Educators Association | Australian Diabetes Society | Australian Practice Nurses Association | Diabetes Australia Ltd | Pharmaceutical Society of Australia | The Royal Australian College of General Practitioners

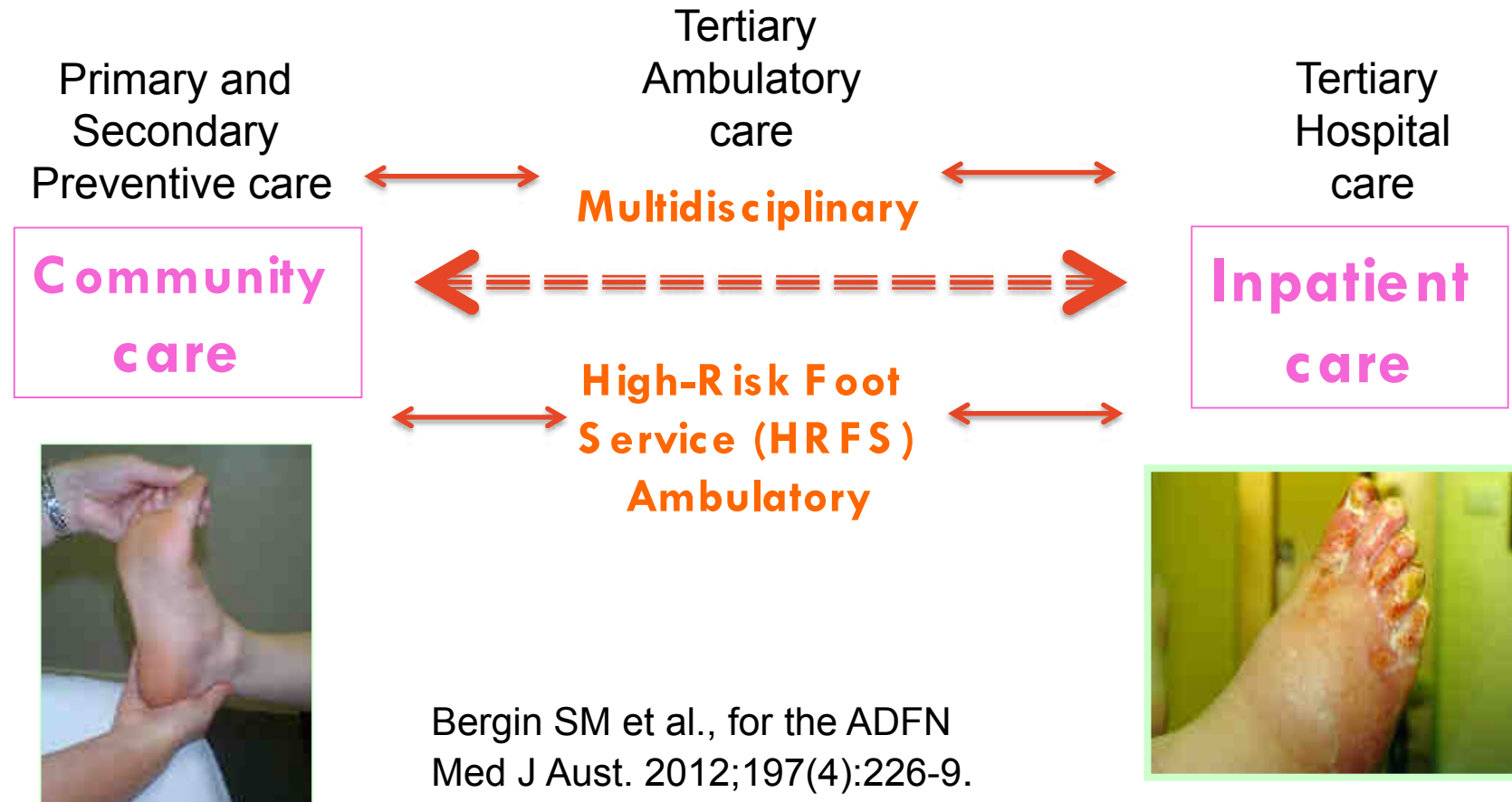
April 2011

The Agenda

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- Integrated foot care as a national priority
- **Methods to integrate and improve foot outcomes in diabetes**
 - High-Risk Foot Service initiatives

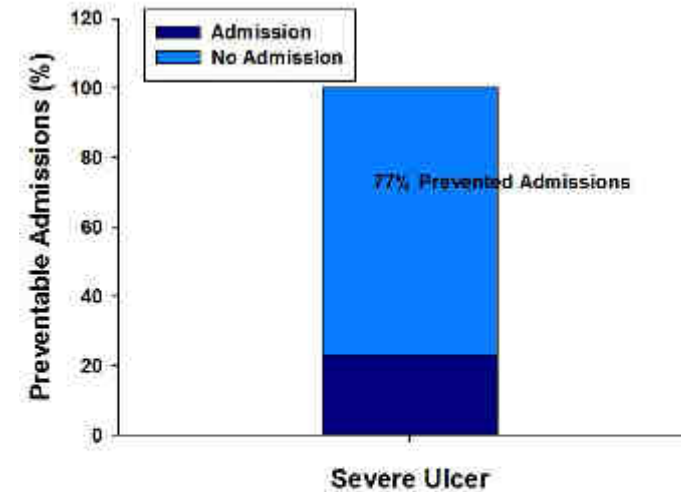


Health Pathways: Where Should Foot Complications in Diabetes Ideally be Managed?



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.

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



Multidisciplinary High Risk Foot Care - Services Delivery

Many other team members

Together
Everyone
Achieves
More



Holistic patient care is required



Royal Prince Alfred Hospital
Diabetes Centre

How to treat foot ulcers in diabetes

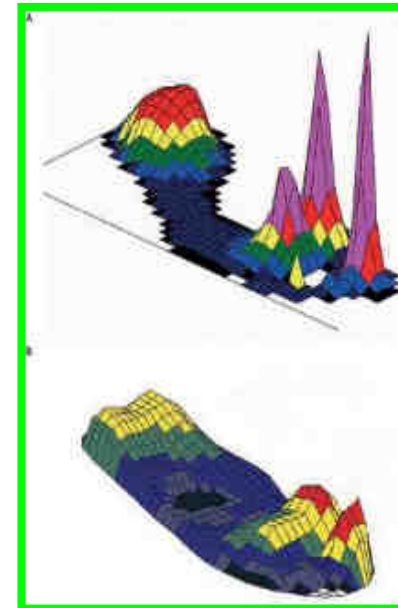
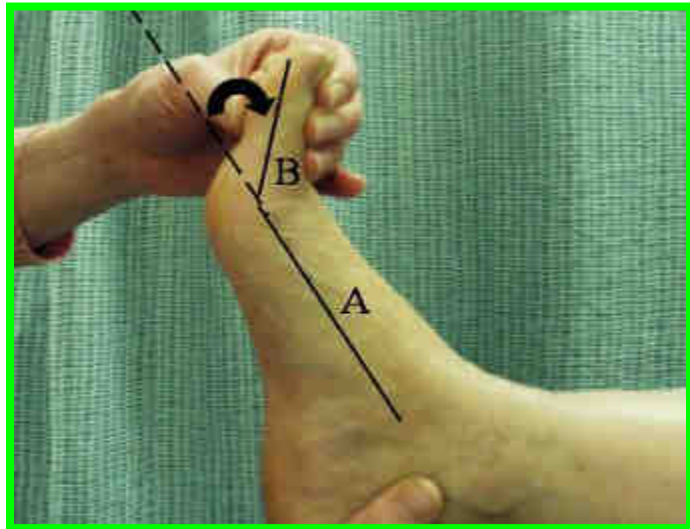
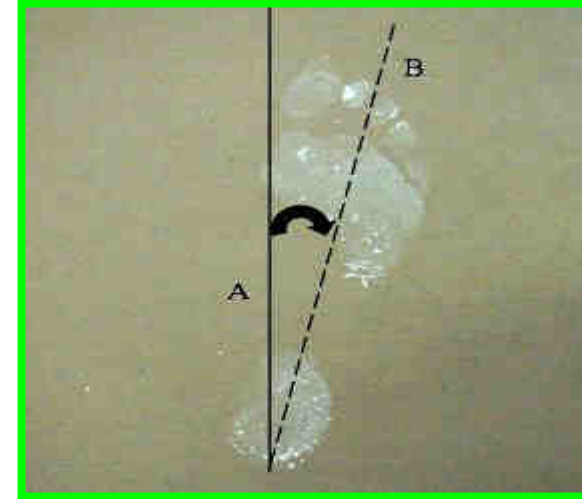
- **A multifaceted, patient targeted approach**
 - **Assessment**
 - **Treatment integration:**
 - **Pressure offloading**
 - **Antibiotics**
 - **Debridement**
 - **Revascularisation**



Differing Types of Diabetes Foot Ulcer



Some Biomechanical Factors Associated with Hallux Ulcers and Their Measurement





Standards for High Risk Foot Services (HRFS) in NSW

2015: 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



ACI Standards for HRFS: 1- 4

- 1. Multidisciplinary:** Skilled Nurse, Senior Dr, Podiatrist with access to Vascular, Orthopaedics, Orthotist / Pedorthist, others
- 2. Co-ordinated** by senior clinician(s)
- 3. Administrative support**
- 4. Treatment Guidelines:** Agreed upon and adhered to.



ACI Standards for HRFS: 5-7

- 5. Continuity of care across non-admitted and admitted (inpatient) care settings.**
- 6. Intake criteria and referral pathways** that are documented, communicated and adhered to.
- 7. Located within a health facility** with access to investigations and hospital services including admission.



ACI Standards for HRFS: 8-11

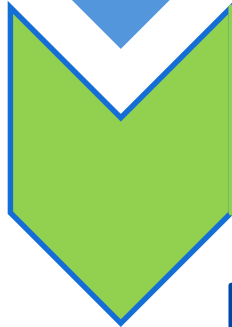
8. **Equipment:** instruments for assessment and treatment
9. **Pressure reduction methods accessible:** total contact casting and other foot pressure reducing devices, orthoses, footwear prescription/application
10. **Products:** wound care
11. **Monitoring of outcomes:** systematic data collection and measuring of performance



Development and Implementation of the Standards



Standards were released state-wide in March 2015 to all LHDs except Sydney Children's Hospital Network



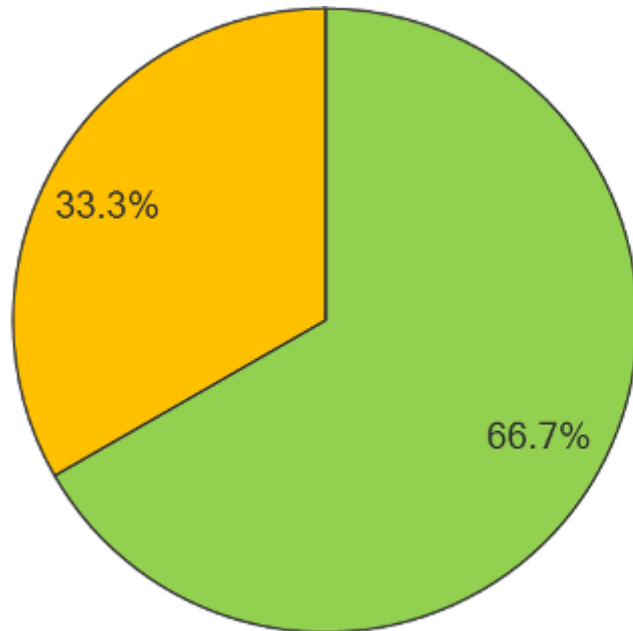
Self-assessment tool provided to interested sites to compare current service delivery to minimum and best practice standards; responses reviewed.



- Completed mapping exercise and re-establish linkages between sites primarily through Telehealth
- Further addressed the business case and potential resource allocation including within NSW DoH.

Self-Assessment Results

Standard 4: Use of guidelines

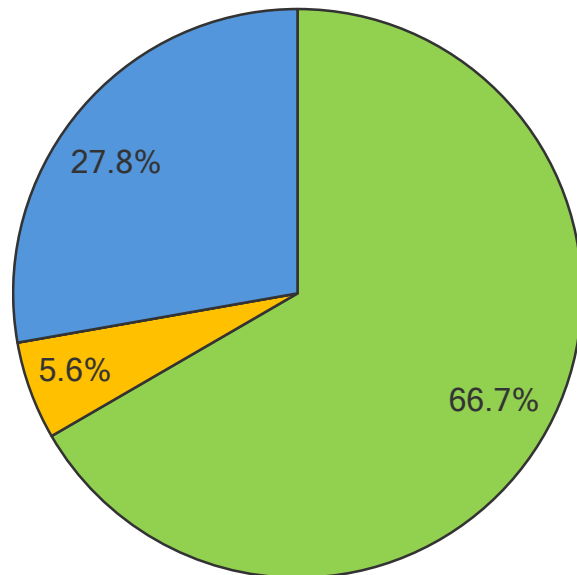


The clinicians are aware of relevant evidence based and best practice guidelines that are being followed but these may not have been locally written

Locally written guidelines and protocols are in date and are used by clinical staff

Self-Assessment Results

Standard 6: Intake criteria defined, communicated and adhered to.



There is no clearly defined criteria for referral

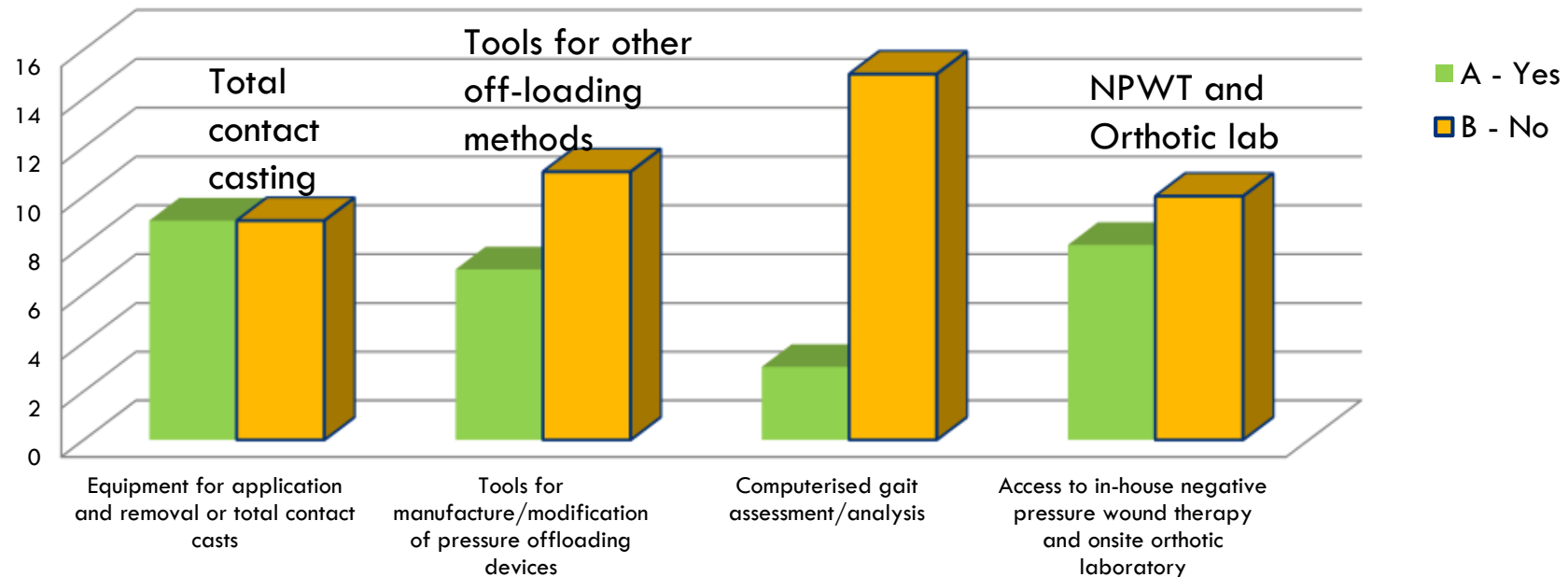
There are clearly defined criteria for patient referral

There are clearly defined criteria for referral but such does not include management of Charcot neuroarthropathy

Opportunities for Improvement

- Standard 9
 - 61% of sites do not have access to all the equipment required to meet the minimum standards

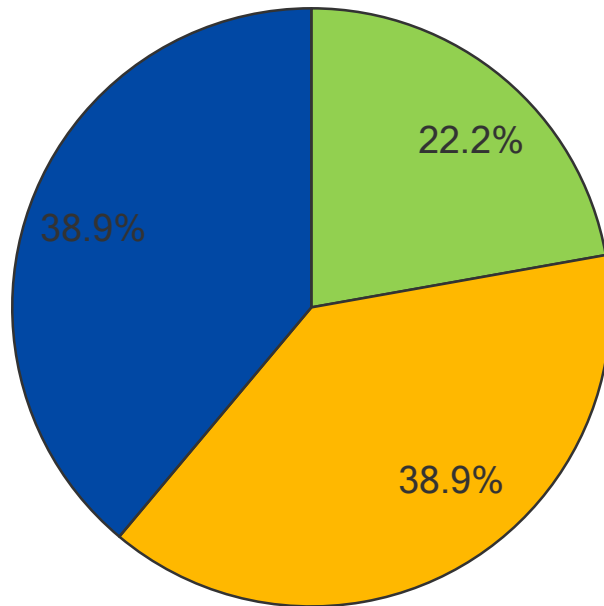
Access to relevant equipment



Opportunities for Improvement

Standard 11

- 22% of sites are collecting the data to meet the minimum standards, with 39% collecting no data at all



The HRFS only collects partial data and some KPIs

The HRFS collects minimum data and develops KPIs such as wound severity using validated wound grading system, time to presentation, date of ulcer occurrence and healed date, outcome: healed, deceased, amputation. KPIs include time to healing based on the severity of the wound, proportion of wounds healed, rate and time to ulcer recurrence, time to presentation/referral

The HRFS does not collect routine data or monitor outcomes

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How do the NADC aims link to HRFS?

- With over **120 member centres**, the NADC aims to improve standards, methods and models of **diabetes care** – this includes improving the management standards in diabetes related foot disease
- The NADC has been providing a robust accreditation process to diabetes services for many years
- Promoting and maintaining standards as HRFS of excellence is seen as a bolt on to NADCs already **well established accreditation program**



National Association of Diabetes Centres - Foot Network (NADC-FN)



National Association of Diabetes Centres - Foot Network (NADC-FN)



MISSION

- To establish and maintain **reduced morbidity and mortality** caused by diabetes-related foot disease

AIM

- To realise a coordinated national process of prioritising high quality and accessible foot assessment and management across the spectrum of foot disease in diabetes.



National Association of Diabetes Centres - Foot Network (NADC-FN)

➤ NADC FN Working Party (WP) Membership (stakeholders):

- National Association of Diabetes Centres
- Australian Diabetes Society
- Wounds Australia
- Advanced Practicing Podiatrists - High Risk Foot Group
- Australian Podiatry Council (APodC)
- Diabetic Foot Australia (DFA)
- Pedorthic Association of Australia (PAA)
- Agency for Clinical Innovation (ACI)
- Australian Diabetes Educators Association (ADEA)
- Australian Primary Care Nurses Association (APNA)
- Diabetes, Obesity and Metabolic Translational Research Unit (DOMTRU)



National Association of Diabetes Centres - Foot Network (NADC-FN)

➤ The NADC FN WP process:

- Using a **HRFS standards setting document** derived from the NSW State Dept of Health Agency for Clinical Innovation
- WP consensus review process face to face held on June 23rd, 2017
- The standards will be set nationally with accompanying indicators
- Indicators will include participating in annual foot audits and/or collecting a minimal data set
- Next WP face to face – November 10th
- Standards and indicators will translate into a HRFS accreditation program
- The business case for integrated foot care supporting HRFS will then be further put to local, state and national Health Departments
- A FN Reference Group support the FN WP where required



In doing some initial investigations, the NADC located 120 services that either identify themselves as HRFS or offer services to individuals at high risk.



- Is this reality?
- Against what standards are these evaluating their care and management of foot complications?
- Do they have a multidisciplinary team?
- Are they providing best practice, evidenced based care?
- The NADC FNWP wants to answer these questions.



'One Vision' – A HRFS Mapping in Progress

Belgium

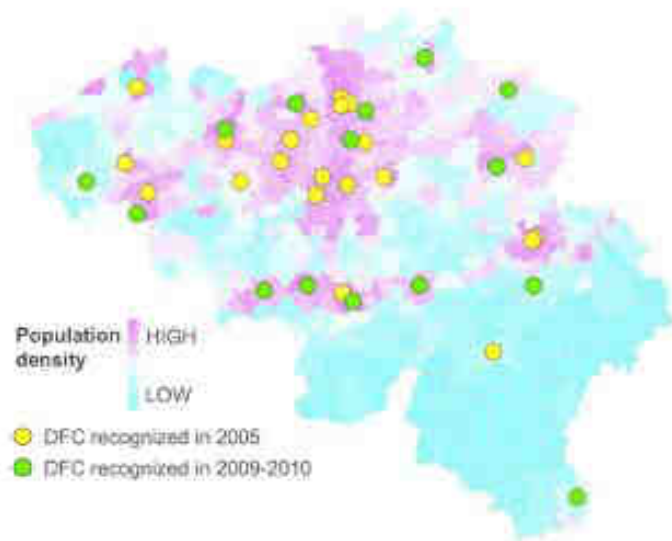


Figure 1. Geographical distribution of Diabetic Foot Clinics in Belgium, recognized in 2005 and 2009-2010

Australia

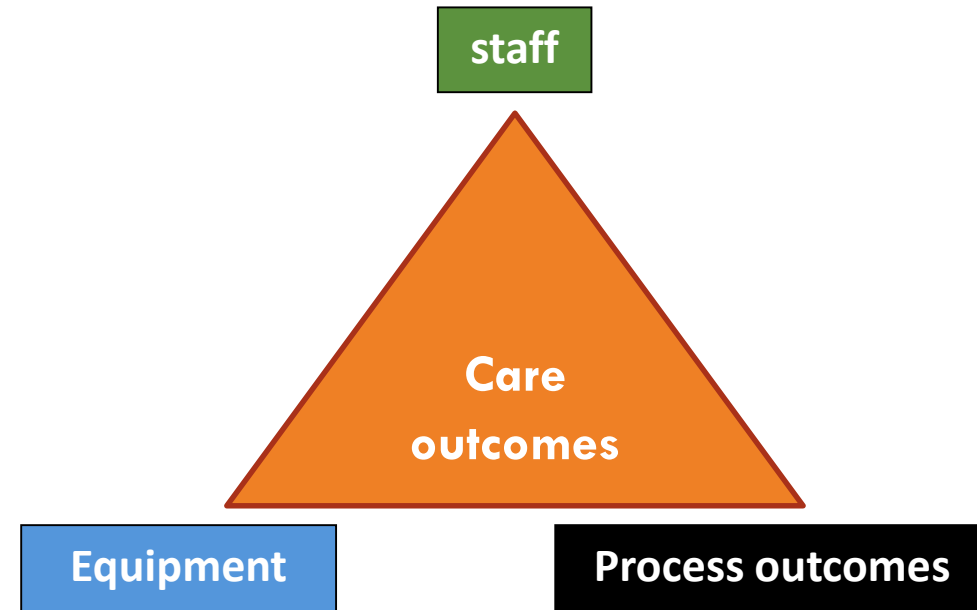


Morbach S. et al

DIABETES/METABOLISM RESEARCH AND REVIEWS
Diabetes Metab Res Rev 2016; 32(Suppl. 1): 318-325.

NADC FN WP - Standards [in Draft]

- Consolidated standards:
 1. **Multi-disciplinary approach**
 2. **Coordination and Administration**
 3. **Evidence-based clinical management**
 4. **Continuity of care**
 5. **Access and defined intake criteria**
 6. **Locality and Equipment**
 7. **Pressure offloading and foot-ware**
 8. **Wound care products**
 9. **Quality improvement**



- Minimum vs Best Practice Indicators

NADC FN WP – Some Clinical Indicators [in Draft]

1. Multi-disciplinary approach
 - staff skills sets, % presence, interdisciplinary communication
2. Coordination and Administration
 - champion, co-ordinator, administrative support
3. Evidence-based clinical management
 - local guidelines, patient protocols, regular guidelines/protocols reviews
4. Continuity of care
 - ward consultations, direct admissions, handover, inpatient data
5. Access and defined intake criteria
 - documented intake criteria, timing access documented, area provision



NADC FN WP – Some Clinical Indicators [in Draft]

6. Locality and Equipment
 - basic equipment, pressure analysis, gait analysis software
7. Pressure offloading and foot-ware
 - offloading equipment, orthotics lab and devices mod., NPWT, TCC onsite
8. Wound care products
 - access to and rational use of products
9. Quality improvement
 - KPIs, internal audits, benchmarking



Major 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

Acknowledgements



➤ National bodies:

- NHMRC of Australia
- Federal Dept of Health and Ageing
- The National Association of Diabetes Centres and the Australian Diabetes Society
 - Ms Natalie Wischer, Ms Leanne Mullan
 - Prof. Sophia Zoungas, Prof. Sof Andrikopoulos, Prof. Jonathan Shaw
- National Diabetes Services and Supply scheme
- **NADC FN Working Party and Reference Group members**

➤ State Bodies:

- ACI Network NSW Dept of Health
- NSW Diabetes Task Force

➤ Local bodies:

- Ms Vanessa Nube, Head of Podiatry, SLHD and NSW DoH ACI FN Co-chair
- Diabetes Centre, Dept of Endocrinology, Royal Prince Alfred Hospital, Sydney

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