AUSTRALIAN DIABETES FOOT REGISTRY

national annual report '25

ads Australian Diabetes Society

nadc National Association of Diabetes Centres

ST VINCENT'S HOSPITAL SYDNEY

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FOREWORD

The Australian Diabetes Foot Registry (ADFR) is now embedded across High Risk Foot Services nationally, enabling effective outcome monitoring and ongoing quality improvement. The success of this project is in large part attributable to the unified vision and tireless commitment of clinicians working in these services. It is a privilege to support this work within a strong investigative community, and to enclose this second National Annual Report.

This release corresponds to the fourth annual reporting cycle with Site Annual Reports produced since 2022. For participating services, Site Annual Reports mark a midway milestone, preceded by data collection and quality optimisation, and followed by scrutiny and reflection as a local team. Quality improvement is driven by recognising gaps in care as well as areas of excellence, with thoughtful planning of next steps, timely execution and periodic re-evaluation. Resources are available to guide this process, such as the Quality Improvement Template (see Appendix).

The ADFR reports site data anonymously and clinicians within each service are best placed to interpret the site-specific findings. The Table of Contents allows easy navigation to sections of interest. When interpreting tables and figures be sure to read the accompanying text and footnotes. While multiple processes are in place to optimise data quality, reliability of fields may be questionable when there is greater than 5% missing data or underreporting of outcomes (e.g. healing, mortality).

Field revisions introduced in mid-2024 have continued to mature and are incorporated into this annual report for the first time, strengthening the insights presented. Examples include clinician-assessed alignment of offloading prescription with best-practice, time to first vascular surgical assessment for outpatients and inpatients, and breakdown of cumulative time admitted into inpatient and HITH length of stay.

The last 12 months has also seen strong advocacy for the ADFR in the 2030 Australian Strategy for Foot Health and Disease in Diabetes, public release of the Data Dictionary, progressive uptake of the Registry in Queensland and Central Australia, and sharing of learnings with colleagues in New Zealand and the Netherlands. Crucially we welcomed Jessica White, Project Support Officer, and Benjamin Charles, Data Analyst. As a small but dedicated team we look forward to harnessing the ongoing growth of the ADFR and advancing our analytic capability.

The enthusiastic involvement of clinicians from participating services is sincerely appreciated. In addition to the people living with diabetes-related foot disease who are represented in the data, the following parties are gratefully acknowledged for their integral role: the Australian Diabetes Society, the National Association of Diabetes Centres (NADC) and NADC Foot Network, St Vincent's Hospital Sydney, and the ADFR Advisory Committee (A/Prof Sof Andrikopoulos, Ms Natalie Wischer OAM, Prof Stephen Twigg, A/Prof Peter Lazzarini and Ms Georgina Frank).

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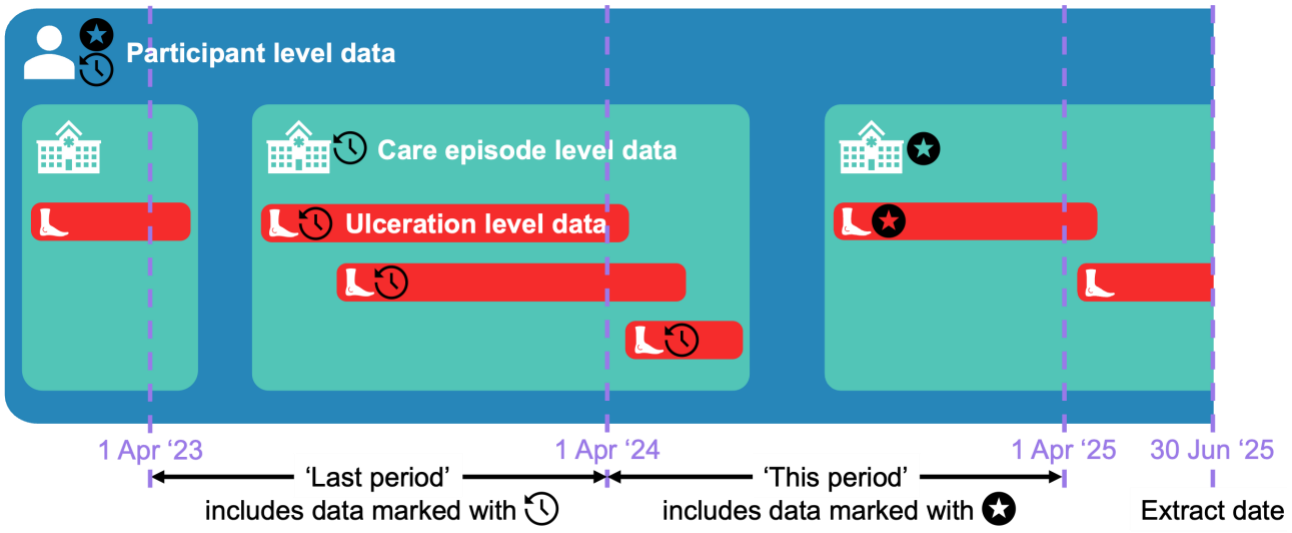
UNDERSTANDING THE REPORTING PERIOD

Since 2024 Annual Reports have focussed on a 12-month period leading up to the data extract date. Benchmarking figures in the 2024 report made comparison to *all* preceding data, whereas from 2025 onward comparison will be made to the preceding 12-months. This approach enables sites to compare trends year to year. Note the 'last period' is reanalysed for this report, and therefore may vary slightly from the 2024 report, to ensure data included are as up-to-date and accurate as possible.

Figure 1 conceptualises how temporality of data is handled for reporting. The key points are:

1. The period to which data is assigned is determined by the date of care episode commencement (i.e. the 'Date of initial assessment').
2. 'This period' includes care episodes (and associated data) commenced between 1 April 2024 and 1 April 2025. As an exception, if a site inaugurated data collection during this period, then 'this period' started on their project commencement date.
3. 'Last period' includes care episodes (and associated data) commenced between 1 April 2023 and 30 March 2024, where available.
4. Ulceration data are only included if initially assessed on or before 1 April 2025, as sufficient follow-up is required to accurately report healing outcomes (i.e. minimum 12-weeks elapsed at time of data extraction).
5. Tables typically include data from this period only. The exception is recurrent ulceration and mortality analyses, which are performed at a participant level using all available data up until the data extract date.
6. Benchmarking figures compare data from this period to data from last period.

Figure 1. Contextual example of participant timeline and division of data into periods



OVERVIEW

SITES

A total of 32 High Risk Foot Services (42 sites including peripheral locations) participated in the mid-2025 national data pull. Contributing sites are recognised below grouped by state or territory. Where applicable, NADC Accreditation status at time of reporting is indicated as Centre of Excellence (COE) or Core.

Australian Capital Territory
Canberra Hospital (COE)

New South Wales
Bankstown-Lidcombe Hospital
Campbelltown Hospital (Core)
Gosford (Core) & Wyong Hospitals
Liverpool Hospital (COE)
Nepean Hospital (Core)
Port Macquarie Community Health Campus
Royal Prince Alfred Hospital (COE)
St Vincent's Hospital Sydney (COE)
Wollongong Hospital (Core), Shoalhaven District Memorial Hospital & Wollongong Community Health Centre

Northern Territory
Alice Springs Hospital

Queensland
Mater Hospital Brisbane

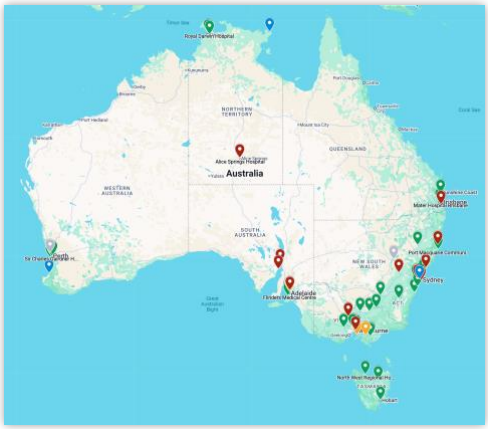
South Australia
Flinders Medical Centre (Core), Marion GP Plus Health Care Centre & Noarlunga Hospital
Royal Adelaide & The Queen Elizabeth Hospitals

Tasmania
Launceston General Hospital
North West Regional Hospital
Royal Hobart Hospital (Core)

Victoria
Albury Wodonga Health
Austin Hospital
Box Hill & Maroondah Hospitals (COE)
Footscray Hospital (COE)
Goulburn Valley Health
Grampians Health Ballarat
Latrobe Regional Hospital (Core) & Latrobe Community Health Service
Northeast Health Wangaratta
St Vincent's Hospital Melbourne (COE)
The Northern Hospital

Western Australia
Fiona Stanley Hospital (COE)
Fremantle Hospital (COE)
Royal Perth Hospital (COE) & Bentley Health Service
Sir Charles Gairdner Hospital (COE)
St John of God Midland Public & Private Hospitals

Given the breadth of services represented in this report, site-to-site comparisons should be interpreted with caution. Several factors independent of the service may influence outcomes, such as geography, infrastructure, and resourcing.



Visit our live map of participating sites to view their current project status. Since the 2025 national data pull an additional 3 services have commenced data collection. Also note, since the 2024 national data pull 3 services have suspended contribution.

DATA CONTRIBUTION

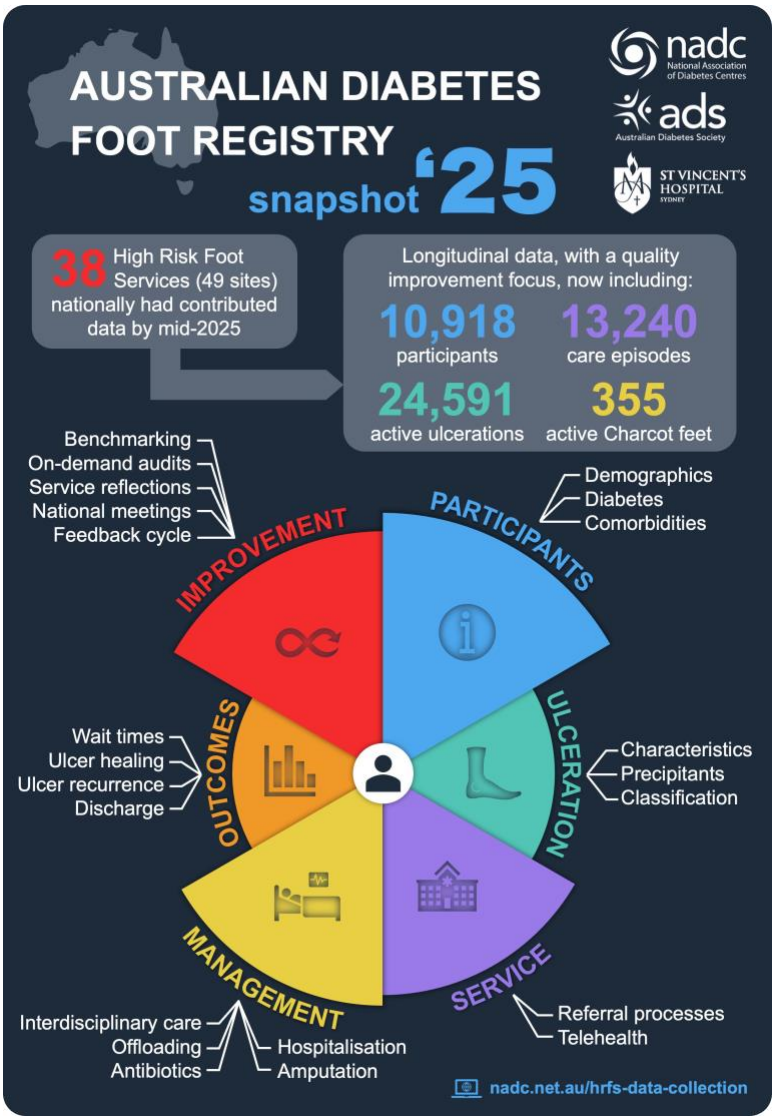
Table 1 shows numbers reportable from the registry this period. Figure 2 presents a snapshot of total data reposited at the time of data extraction.

Table 1. Numbers reportable from registry this period

	National
Participants	3590
Care episodes	3766
Ulcerations	5865

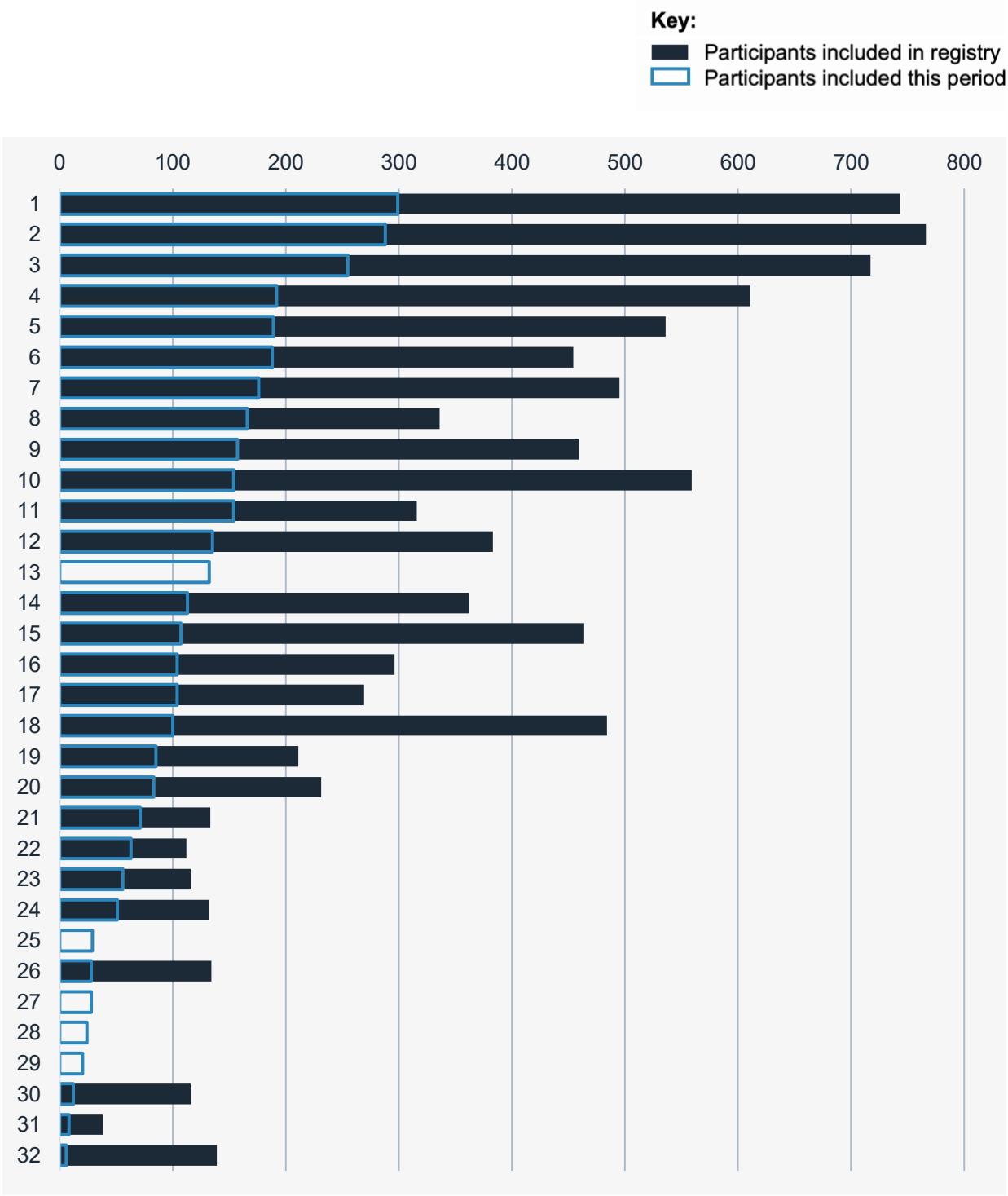
Data is n

Figure 2. Australian Diabetes Foot Registry data snapshot



In Figure 3, sites are ordered by the number of participants included this period. In addition, the total number of participants contributed to the registry is shown. Note the project commencement date varies between sites, and for five sites this period comprises less than 12 months of data collection.

Figure 3. Participants per site



Data is n

DATA CONTEXT

Data included in this report is likely to represent a subset of each total service cohort. To provide context, the submission process included derivation of estimates to the following questions:

1. What percentage of all people with active foot complications attending the service have diabetes and are in turn eligible for inclusion? – see Figure 4.
2. What percentage of those eligible for inclusion (i.e. people with diabetes and active foot complication/s) attending the service are represented in the database? – see Figure 5.

For Figures 4 and 5 most sites (66%) obtained required data by manual audit of a representative time-period. Otherwise, the data was extracted from administrative sources (31%), with only one site resorting to best approximation by consensus (3%).

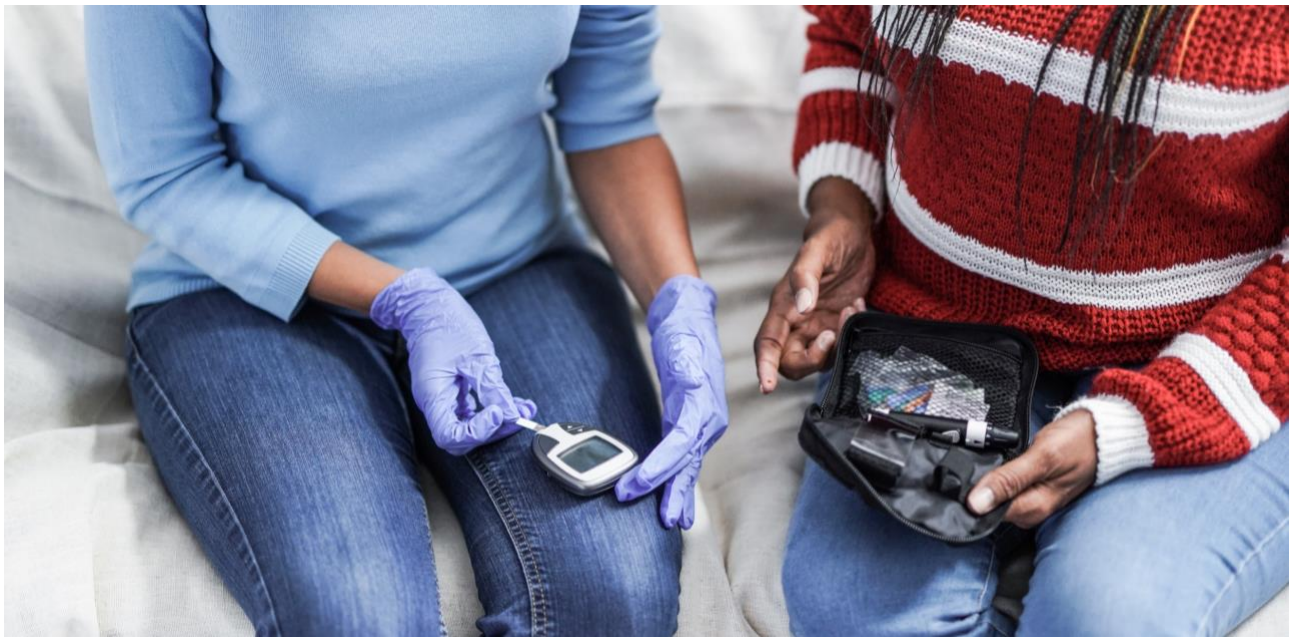
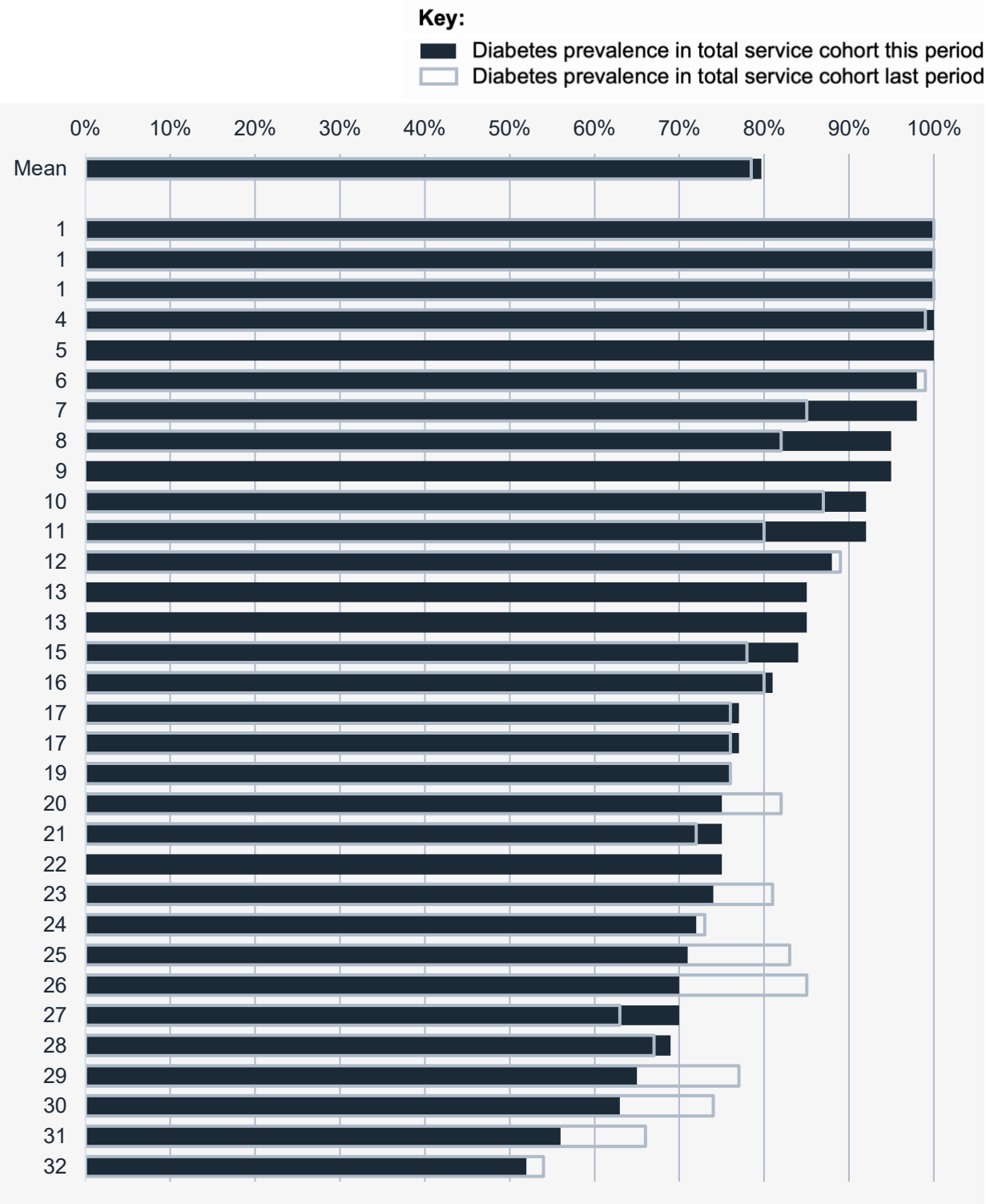


Figure 4 demonstrates that services predominantly manage diabetes-related foot complications. Sites are ordered by reported prevalence of diabetes in their total service cohort this period. Many services also provide care to other cohorts not eligible for inclusion, such as people without diabetes who have foot ulceration secondary to vascular disease.

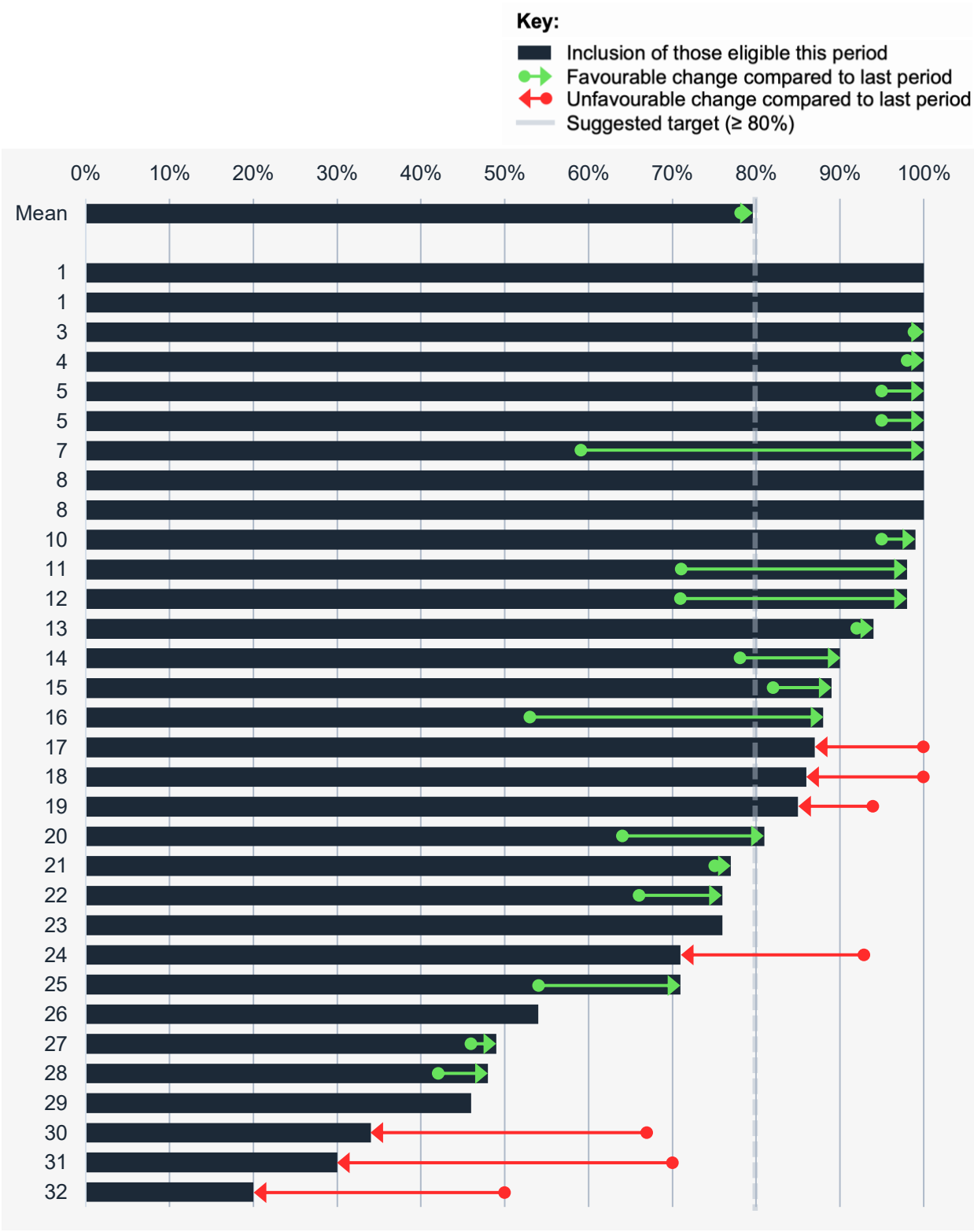
Figure 4. Estimated prevalence of diabetes in total service cohort



Data is %
Last period data not available for five sites
Equally numbered when site characteristics identical

Figure 5 suggests data capture of the target population continues to improve. Nationally, data now represents 80% of those eligible, as compared to 78% last period. Sites are ordered by estimated case ascertainment, which tends to increase as data collection matures at a site level.

Figure 5. Estimated data capture as subset of those eligible



Data is %
Last period data not available for five sites
Equally ranked when site characteristics identical

DATA QUALITY

A concerted effort has been made to minimise missing data in the Registry. Throughout this Report the proportion of missing data is specified per field, and potential for bias should be considered when this proportion is high (e.g. greater than 5%).

In some cases, data calculated from date fields were excluded as missing if the calculated time interval was negative or date entry was incomplete. Table 2 shows the number of exclusions per variable or outcome this period.

Sites are guided through data quality procedures to address missing data, particularly for required fields, as well as date errors prior to each annual national data pull. In 2024 real-time validation within REDCap databases was enhanced and new features were added to the Audit Tool. These changes likely account for the very low numbers of date errors this period as compared to previous years.

Table 2. Date errors necessitating exclusion in analyses

	National
Age	1
Ulcer duration	89
Time to initial review	19
Time to first availability	15
Time to interdisciplinary review	46
Ulcer healing	11
Ulcer free	29
Time in service	6

Data is n

PARTICIPANTS

Participants may have had multiple care episodes this period. Unless stated otherwise, only the most recent participant data is reported in this section.

DEMOGRAPHICS

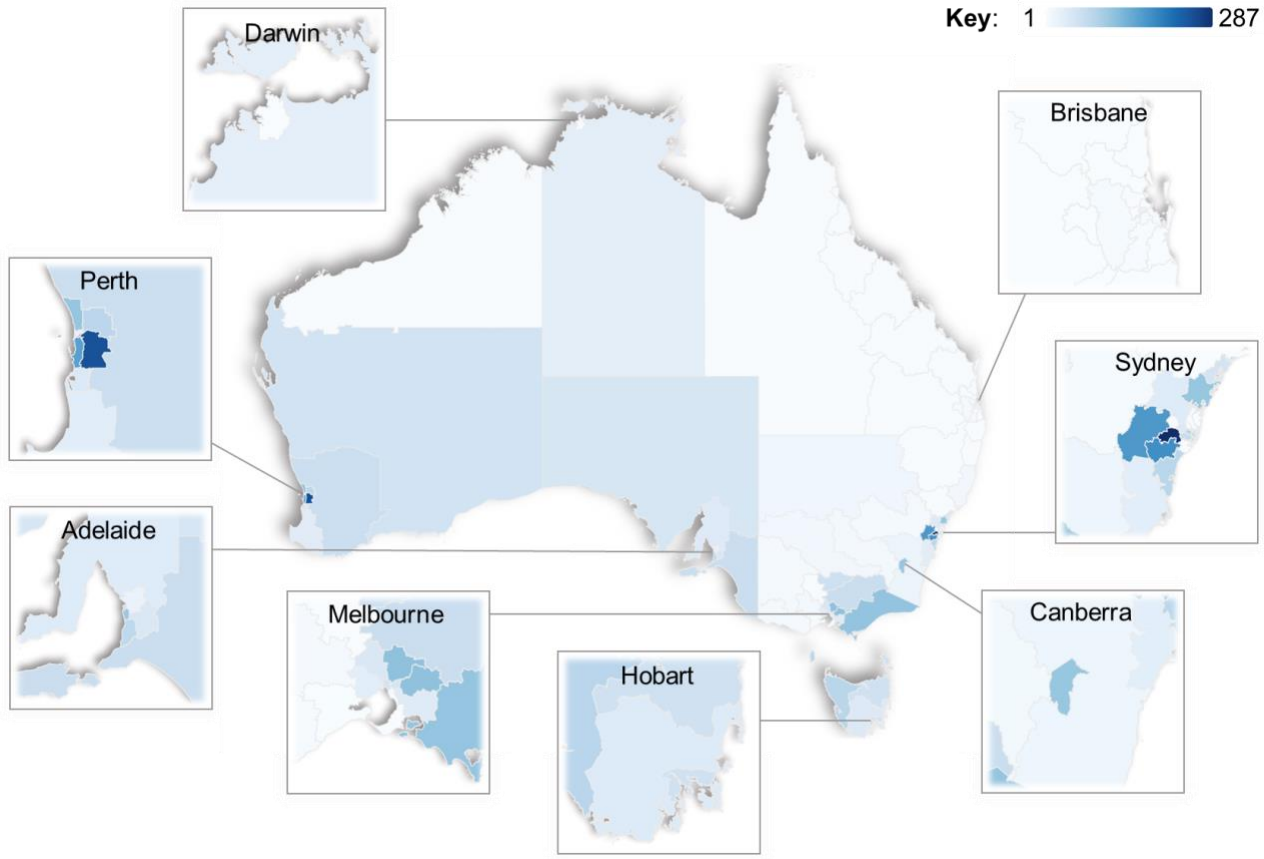
Table 3. Basic demographics of participants

		National (n = 3590)		Missing data	
Age	(years)	67.0	(± 13.1)	1	(0%)
Sex	(men)	2686	(75%)	1	(0%)
Ethnicity					
	Oceanian	2717	(77%)		
	European	520	(15%)	0	(0%)
	Asian	146	(4%)		
	Other	166	(5%)		
Aboriginal and/or Torres Strait Islander		219	(6%)	0	(0%)

Data is mean (± SD) or n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

Figure 6 is a heat map by SA4 areas showing national data from this period.[1] An important contextual observation is that participants tend to reside within capital cities. Accordingly, outcome variation could be expected for services operating in rural and remote areas. Valid postcode data (non-required field) was available from 3669 of 3766 (97%) care episodes.

Figure 6. National distribution from residential postcodes per care episode



Data is n care episodes
Regions defined by Statistics Area Level 4, Australian Bureau of Statistics[1]

Table 4. Diabetes characteristics of participants

		National (n = 3590)	Missing data
Type	1	267 (7%)	1 (0%)
	2	3293 (92%)	
	Other	26 (1%)	
Duration	(years)	17 (10-25)	203 (6%)
HbA1c	(%)	7.9 (6.8-9.7)	864 (24%)
	(IFCC)	63 (51-83)	

Data is n (%) or median (IQR)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

Table 5. Diabetes complications affecting participants

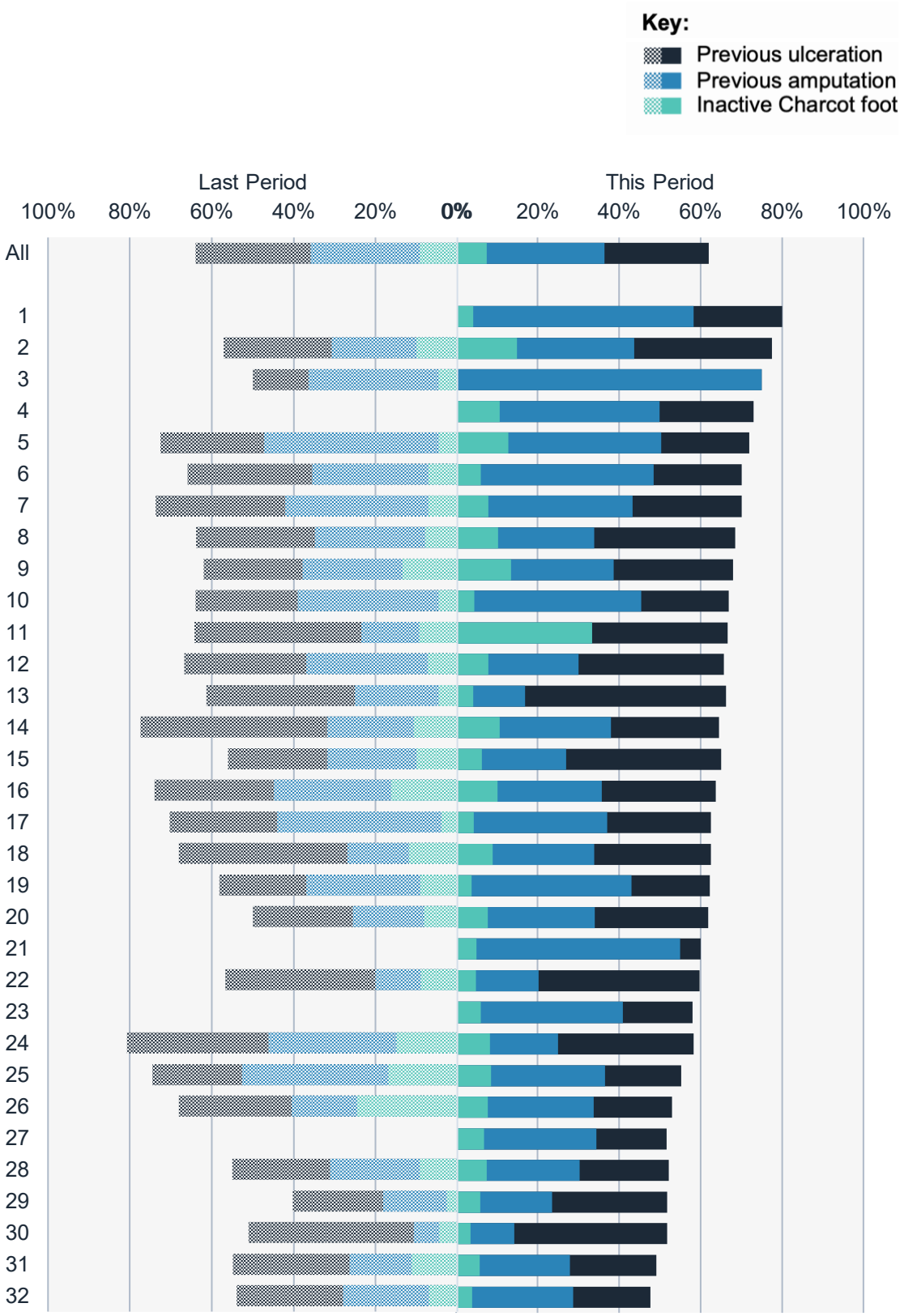
	National (n = 3590)	Missing data
Macrovascular complications		
Peripheral artery disease	1529 (45%)	9 (0%)
Ischaemic heart disease	1078 (31%)	
Cerebrovascular disease	346 (10%)	
Microvascular complications		
Peripheral neuropathy	3011 (86%)	3 (0%)
Retinopathy	716 (20%)	
Nephropathy	935 (27%)	
Other	143 (4%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

Figure 7 combines national data as ‘All’ then sites are ordered by prevalence of previous ulceration this period. A reflection of like data from last period is also shown where available.

This period, previous ulceration data were missing for 3 (0%) participants nationally. Previous amputation data were missing for 1 (0%) participant nationally. Inactive Charcot foot data were missing for 7 (0%) participants nationally.

Figure 7. Previous diabetes foot complications affecting participants



Data is % with complications superimposed
Not stated / inadequately described / missing data not included in denominator for %
Last period data not available for five sites
Site 3 had equal proportion of previous ulceration and amputation this period

In Table 6 participants could have one or more previous amputations, which may be unilateral or bilateral. The extent of previous amputation field therefore allowed multiple selection.

Table 6. Amputation extent for participants with previous amputation

	National (n = 1286)	Missing data
Minor amputation		
Hallux	437 (34%)	
Other digit/s	694 (54%)	
First ray	84 (7%)	
Lesser ray/s	180 (14%)	0 (0%)
Transmetatarsal	128 (10%)	
Major amputation		
Below knee	150 (12%)	
Above knee	33 (3%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

COMORBIDITIES

Table 7. Macrovascular risk factors of participants

	National (n = 3590)	Missing data
Hypertension	2365 (68%)	3 (0%)
Dyslipidaemia	1460 (42%)	
Smoking		9 (0%)
Current	622 (20%)	
Past	1206 (39%)	
Never	1284 (41%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

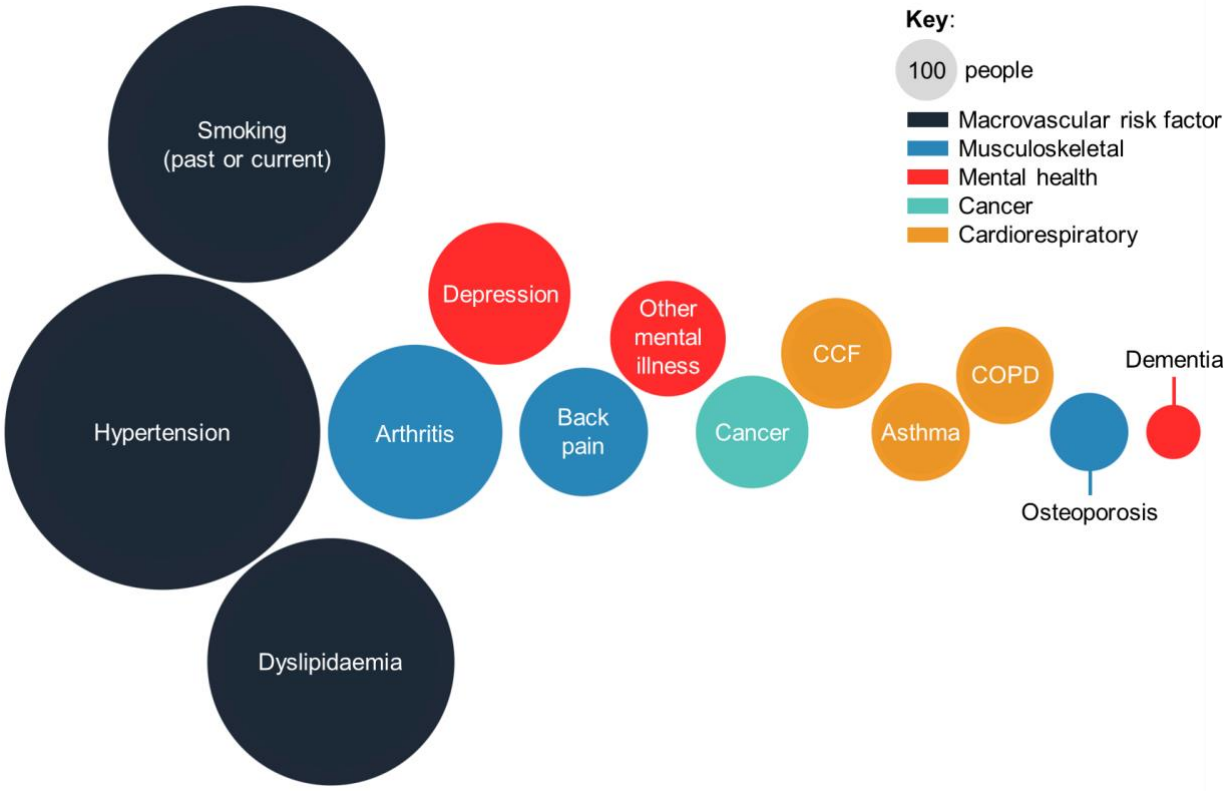
Table 8 displays selected chronic conditions which, in addition to diabetes and cardiovascular disease addressed in the previous section, are common, pose significant health problems and are the focus of ongoing national surveillance efforts.[2]

Table 8. Other common conditions affecting participants

	National (n = 3590)	Missing data
Arthritis	737 (21%)	3 (0%)
Asthma	241 (7%)	
Back pain	406 (12%)	
Cancer	314 (9%)	
COPD	237 (7%)	
CCF	303 (9%)	
Dementia	78 (2%)	
Mental health		
Depression	493 (14%)	
Other	330 (9%)	
Osteoporosis	156 (4%)	

Data is n (%); COPD, chronic obstructive pulmonary disease; CCF, congestive cardiac failure
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

Figure 8. Diagrammatic representation of comorbidity burden in cohort



Data is n signified by size of bubble

Table 9 shows estimated glomerular filtration rate (eGFR) as an indicator of kidney function. An abnormal eGFR is defined as a reading of less than 60 mL/min/1.73m^2 in alignment with the National Health Measure Survey.[3]

Table 9. Kidney function status of participants

	National (n = 3590)		Missing data	
eGFR (mL/min/1.73m^2)				
≥ 60	1342	(56%)		
30-59	701	(29%)	950	(28%)
15-29	187	(8%)		
< 15	170	(7%)		
Renal replacement therapy				
None	3321	(94%)	5	(0%)
Dialysis	182	(5%)		
Functioning renal transplant*	30	(1%)		

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %
*Field option added from July 2024; may be inaccurate for care episodes predating this amendment

ULCERATION

Participants may have multiple foot ulcerations, which are each described and classified at the *initial* ulceration assessment. As such, this section presents baseline data per ulceration this period.

DESCRIPTORS

In Table 10, the location was described as extensive if ulceration extended beyond a single region. Plantar aspect includes digital apices given commonalities in aetiology and management.

Table 10. Site of ulceration at initial assessment

	National (n = 5865)	Missing data
Location		
Hallux	1300 (22%)	
Lesser toe	1802 (31%)	
Forefoot (not toe)	1550 (26%)	4 (0%)
Midfoot	443 (8%)	
Heel	602 (10%)	
Extensive	164 (3%)	
Aspect		
Plantar	2492 (43%)	7 (0%)
Non-plantar	3366 (57%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

In Table 11 area estimate was derived using the formula:[4]

$$\text{Area } (\text{cm}^2) \approx \frac{\pi * [\text{maximum diameter (mm)}] * [\text{perpendicular diameter (mm)}]}{4 * 100}$$

Involvement of deeper structures was ascertained from the ulceration classification, noting that in the case of WIfI depth grade is location dependant.[5]

Table 11. Size of ulceration at initial assessment

	National (n = 5865)		Missing data	
Area (cm^2)	0.8	(0.2-2.6)	139	(2%)
Depth (mm)	2.0	(1.0-4.0)	161	(3%)
Skin/subcutaneous	4018	(69%)	25	(0%)
Deeper structures	1822	(31%)		

Data is n (%) or median (IQR)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

In Table 12, recurrence is defined as repeat ulceration at the same site as a previous ulceration, with an intervening period of healing or complete re-epithelisation. Note as distinct from recurrent at the same site, recurrent ulceration per participant is reported separately in Table 30.

Table 12. Factors attributed to ulceration onset

	National (n = 5865)		Missing data	
Precipitant				
Acute trauma, footwear	873	(15%)	4	(0%)
Acute trauma, other	771	(13%)		
Burn	133	(2%)		
Chronic trauma / deformity	1318	(22%)		
Pressure injury	556	(9%)		
Surgical	950	(16%)		
Other / unknown	1260	(21%)		
Recurrent (at same site)	962	(16%)	25	(0%)

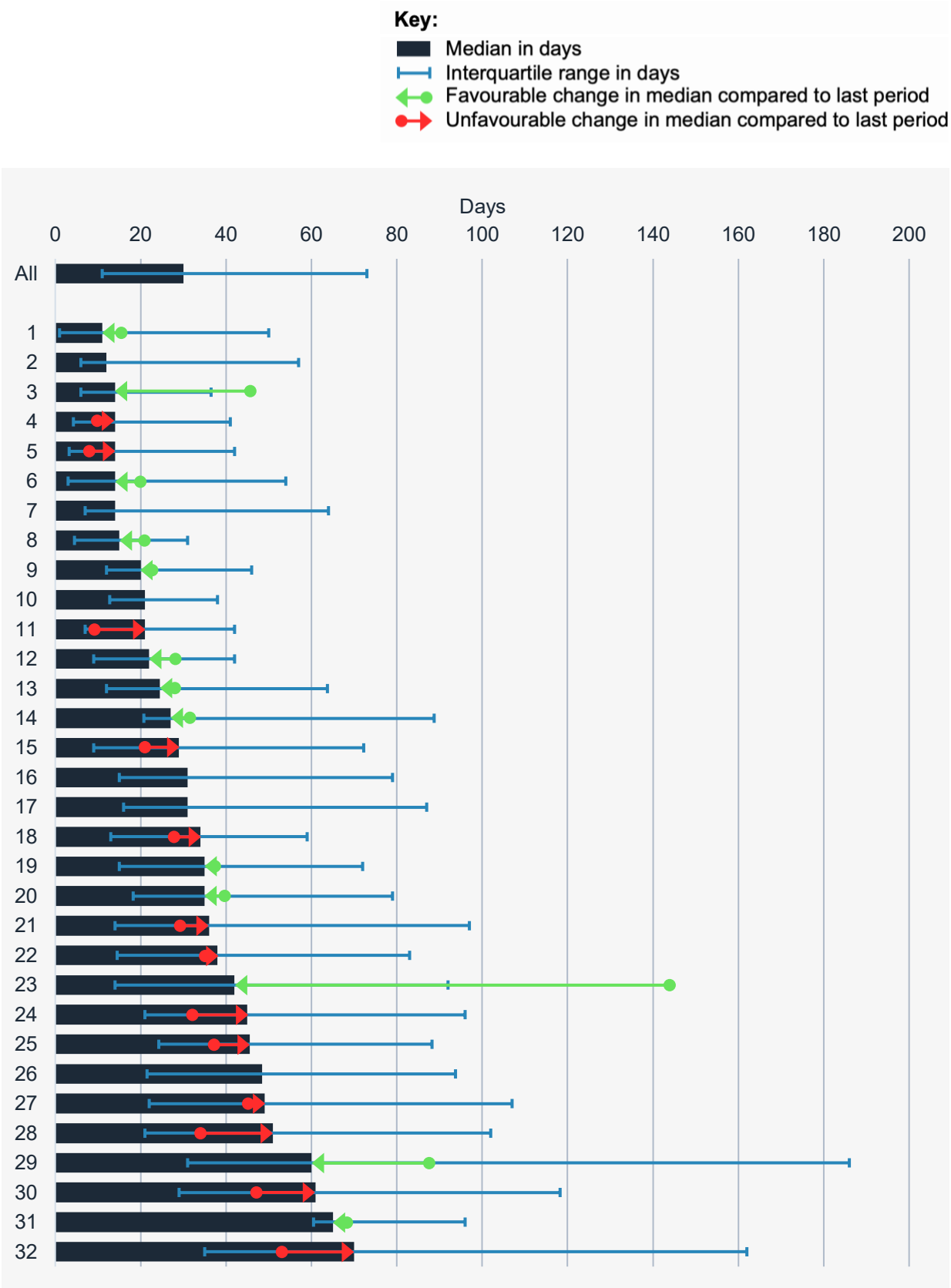
Data is n (%) or median (IQR)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

DURATION

Figure 9 combines national data as ‘All’ then sites are ordered by median ulceration duration this period. Duration is calculated from the approximate date the participant first noticed the ulceration to the date that specific ulceration was initially assessed by the service.

This period, duration data were missing for 89 (2%) ulcerations nationally. Duration data excluded due to date errors were counted as missing. Comparison is made to the last period unless change in the median value was less than 2 days or no previous data is available.

Figure 9. Ulceration duration at initial assessment



Data is days including weekends
Last period data not available for five sites

Ulceration duration may be a useful indicator of community awareness and escalation pathways, with greater duration suggesting delayed detection or referral. This should be considered alongside wait time metrics, which are reported in the Outcomes section.

In the case of superficial ulceration without infection or ischaemia initial management in the primary care setting may be appropriate.[6] Therefore, in Table 13 duration is presented for ulceration subgroups as classified by the SINBAD system.[7] At a national level there remains no indication that more severe or ischaemic ulceration prompts expedited presentation to a High Risk Foot Service.

Table 13. Ulceration duration at initial assessment by severity

	National (n = 5865)	Missing data
SINBAD score		201 (3%)
< 3/6	29 (10-71)	
≥ 3/6	30 (12-74)	
SINBAD ischaemia		
Pulse/s	28 (10-68)	
No pulses	32 (13-82)	

Data is median (IQR) days including weekend days
Ulcerations with inadequately described duration (including date errors) and/or SINBAD classification excluded as missing

CLASSIFICATION

In Table 14 contributors to ulceration this period, particularly neuropathy, ischaemia and infection, are defined according to the SINBAD system.[7] 'Other' type implies an atypical aetiology (e.g. vasculitic, neoplastic).

Table 14. Contributing aetiologies to ulceration on initial assessment

	National (n = 5865)	Missing data
Type		
Neuropathic	3410 (58%)	
Ischaemic	359 (6%)	12 (0%)
Neuroischaemic	1646 (28%)	
Other	438 (7%)	
Infection (any severity)	2602 (45%)	28 (0%)

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

SINBAD fields are calculated from the descriptors and classification entered at the initial ulceration assessment. The SINBAD score is summated from these binary fields across six categories, namely site, ischaemia, neuropathy, bacterial infection, area and depth.[7]

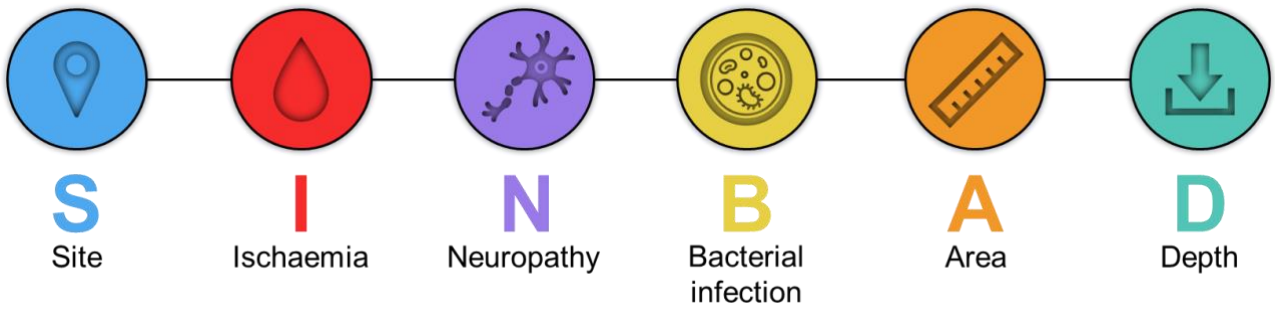
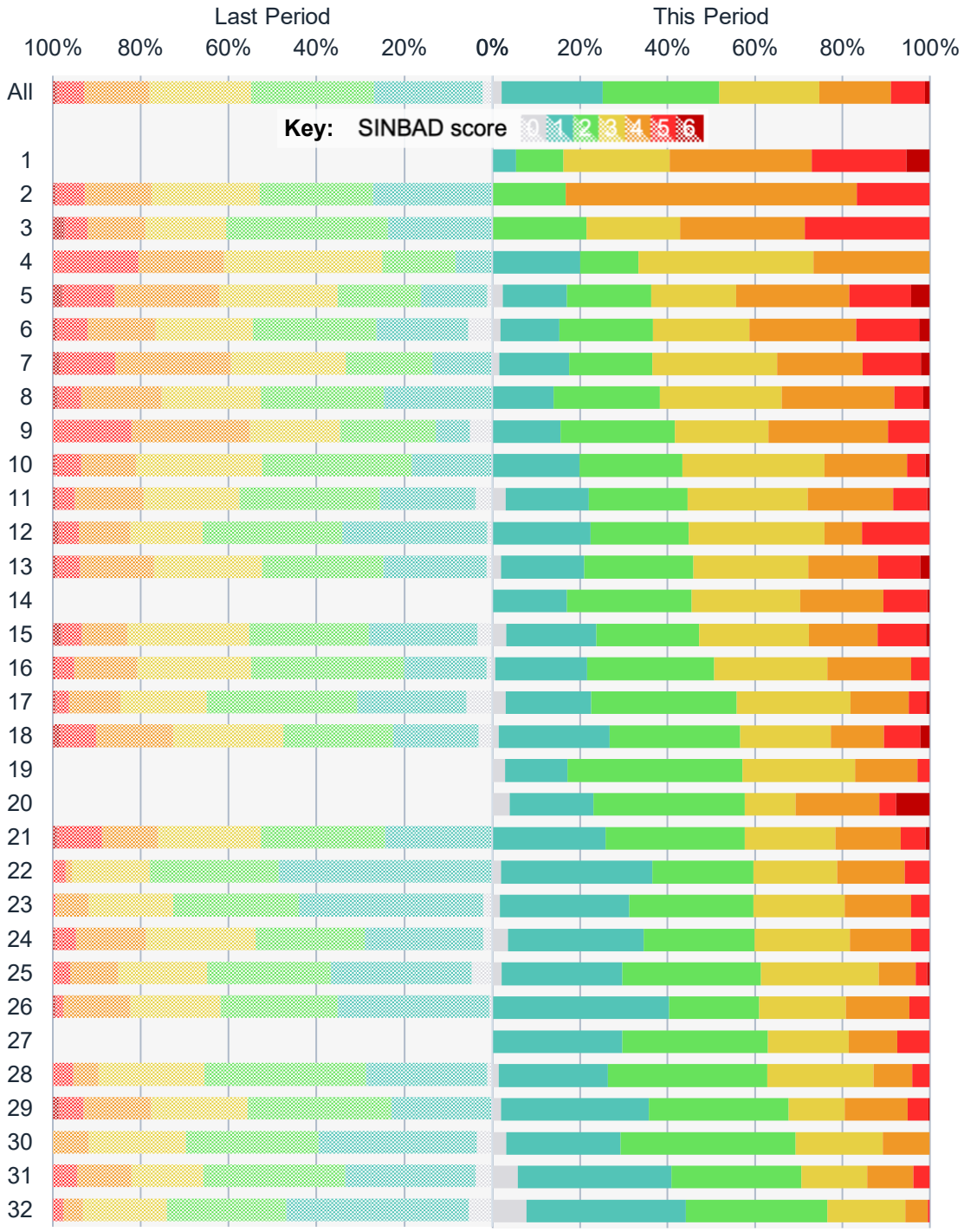


Figure 10 combines national data as 'All' then sites are ordered according to decreasing prevalence of severe ulceration this period, which is defined as SINBAD score ≥ 3. A reflection of like data from last period is also shown where available. Severity of ulceration in the cohort is an important consideration when comparing subsequent management and outcome data.

Required data for SINBAD scoring was missing for 149 (3%) ulcerations nationally.

Figure 10. SINBAD scoring of ulceration

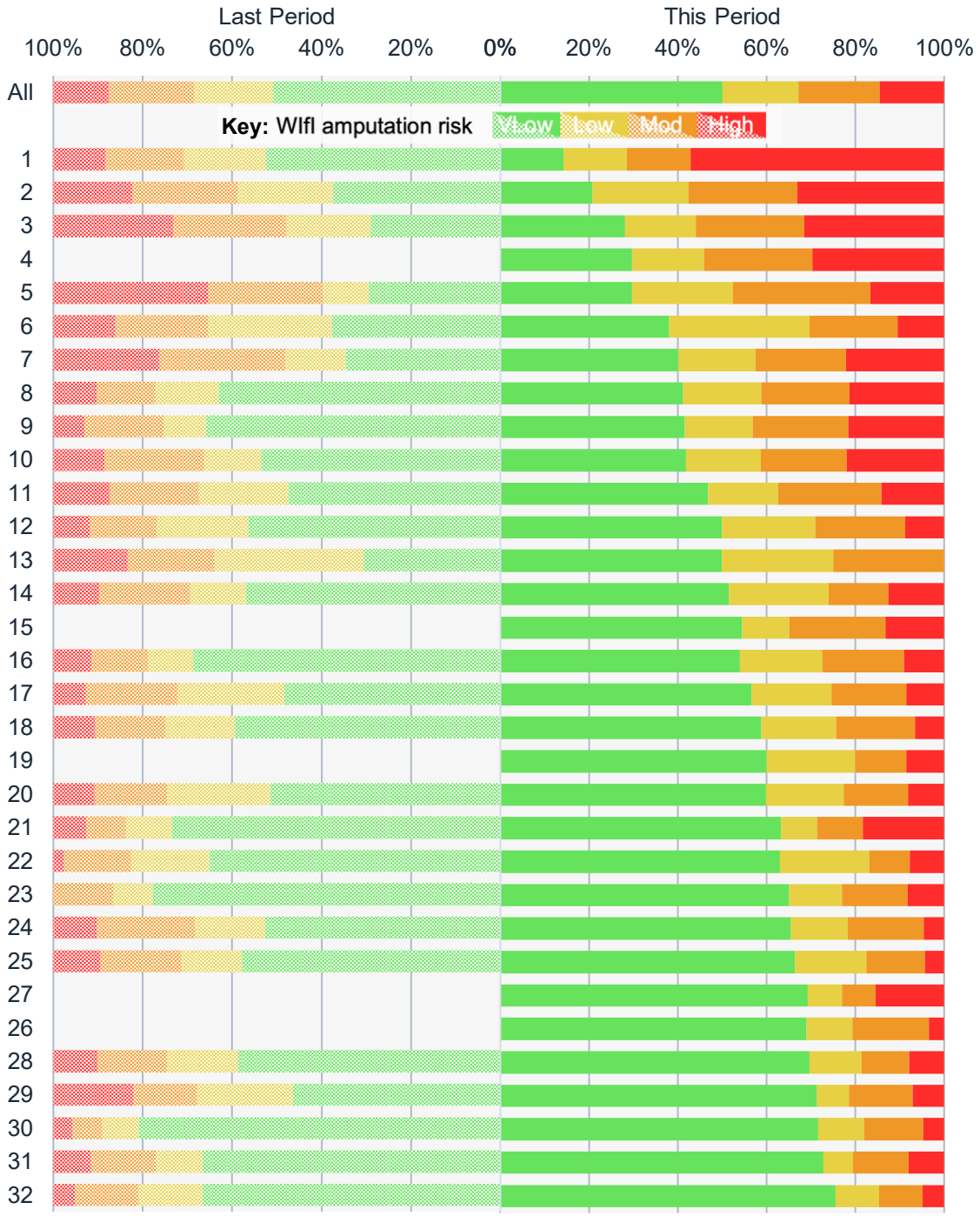


Data is % of ulceration with respective SINBAD score
Not stated / inadequately described / missing data not included in denominator for %
Last period data not available for five sites

The WIfI classification system incorporates wound, ischaemia and infection grading from which the one-year risk of major amputation with medical therapy alone can be estimated.[5] Figure 11 combines national data as 'All' then sites are ordered according to decreasing prevalence of ulceration exceeding the very low WIfI amputation risk category this period. A reflection of like data from last period is also shown where available.

WIfI classification data were missing for 402 (7%) ulcerations nationally. Completion of ischaemia grading has markedly increased from previous years, likely due to improved access to the required equipment.

Figure 11. WIfI amputation risk categorisation of ulceration



Data is % of ulceration with respective WIfI amputation risk; VLow, very low; Mod, moderate
Not stated / inadequately described / missing data not included in denominator for %
Last period data not available for five sites

SERVICE

REFERRALS

This section describes the source of High Risk Foot Service referrals this period, which is recorded per care episode. For the subset of referrals originating from a hospital within or external to the area health service, Table 16 further describes the admission status of participants at the time of referral. Inpatient referrals are categorised according to whether the foot ulceration was the primary reason or a secondary reason for admission.

Table 15. Service setting from where referrals originated per care episode

	National (n = 3766)	Missing data
Hospital		
Within area health service	1908 (53%)	
External to area health service	247 (7%)	
Community		
Aboriginal health service	18 (0%)	1 (0%)
Community health service	301 (8%)	
General practice / medical centre	881 (24%)	
Non-government organisation	23 (1%)	
Private practice	238 (7%)	
Patient initiated*	107 (3%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %
*Field option added from July 2024; may be inaccurate for care episodes predating this amendment

Table 16. Admission status if referral originated from hospital

	National (n = 2155)	Missing data
Admitted		
Inpatient, foot ulcer primary	1153 (54%)	
Inpatient, foot ulcer secondary	224 (10%)	0 (0%)
Non-admitted		
Emergency department	183 (8%)	
Outpatient clinic	595 (28%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

Table 17. Discipline of referrer per care episode

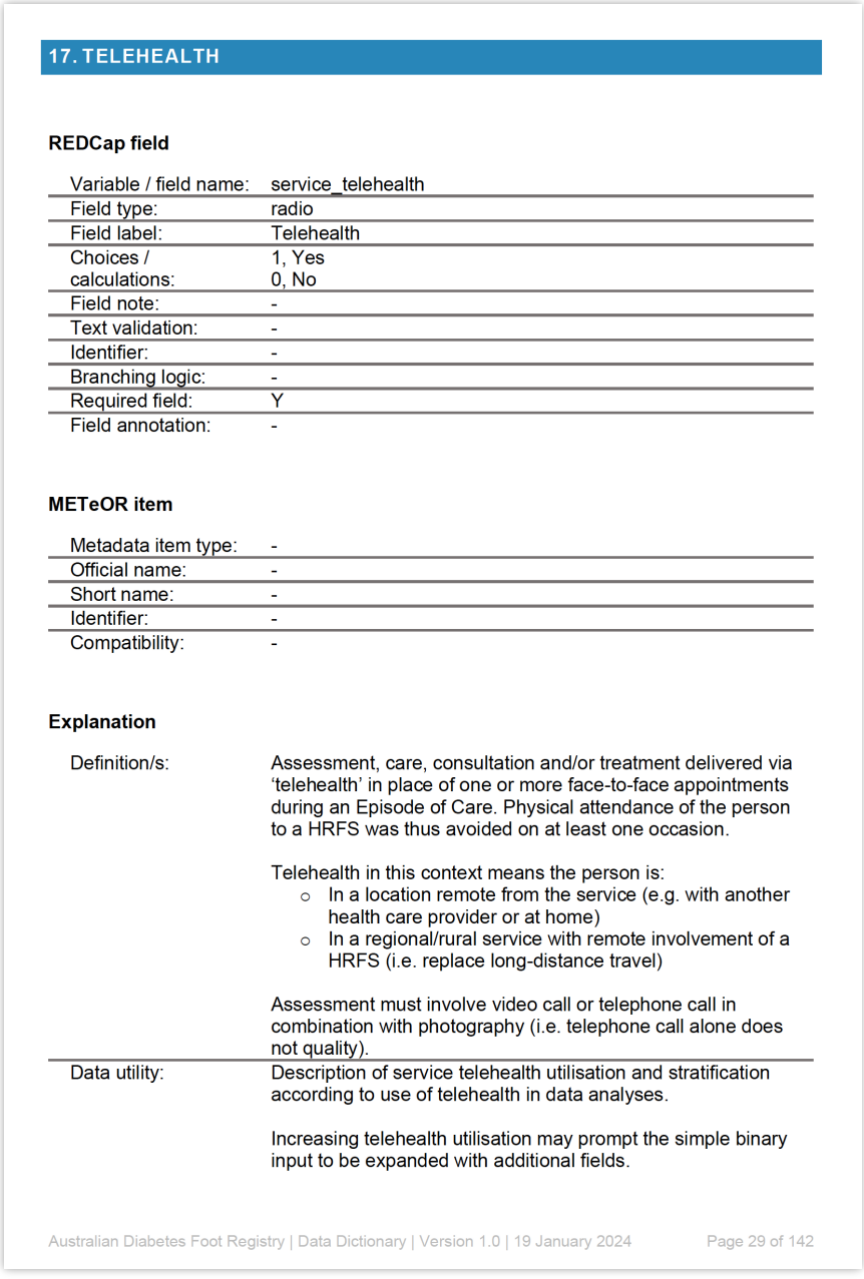
	National (n = 3766)	Missing data
General practitioner	972 (26%)	
Endocrinologist	74 (2%)	
Orthopaedic surgeon	53 (1%)	
Vascular surgeon	807 (22%)	
Podiatrist	830 (22%)	0 (0%)
Nurse	324 (9%)	
Diabetes educator	20 (1%)	
Patient initiated*	110 (3%)	
Other	526 (14%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %
*Field option added from July 2024; may be inaccurate for care episodes predating this amendment

TELEHEALTH

Figure 12 combines national data as ‘All’ then sites are ordered according to highest recorded utilisation of telehealth this period. Like data from last period is superimposed where available.

Use of telehealth is recorded per care episode as a binary field. If selected the implication is that at least one appointment was delivered via telehealth (i.e. video call or phone call with photos), which avoided the participant attending a High Risk Foot Service in person. To demonstrate utility of the Data Dictionary, an excerpt further defining the telehealth field is shown below.



17. TELEHEALTH

REDCap field

Variable / field name:	service_telehealth
Field type:	radio
Field label:	Telehealth
Choices / calculations:	1, Yes 0, No
Field note:	-
Text validation:	-
Identifier:	-
Branching logic:	-
Required field:	Y
Field annotation:	-

METeOR item

Metadata item type:	-
Official name:	-
Short name:	-
Identifier:	-
Compatibility:	-

Explanation

Definition/s:	Assessment, care, consultation and/or treatment delivered via ‘telehealth’ in place of one or more face-to-face appointments during an Episode of Care. Physical attendance of the person to a HRFS was thus avoided on at least one occasion. Telehealth in this context means the person is: ○ In a location remote from the service (e.g. with another health care provider or at home) ○ In a regional/rural service with remote involvement of a HRFS (i.e. replace long-distance travel) Assessment must involve video call or telephone call in combination with photography (i.e. telephone call alone does not quality).
Data utility:	Description of service telehealth utilisation and stratification according to use of telehealth in data analyses. Increasing telehealth utilisation may prompt the simple binary input to be expanded with additional fields.

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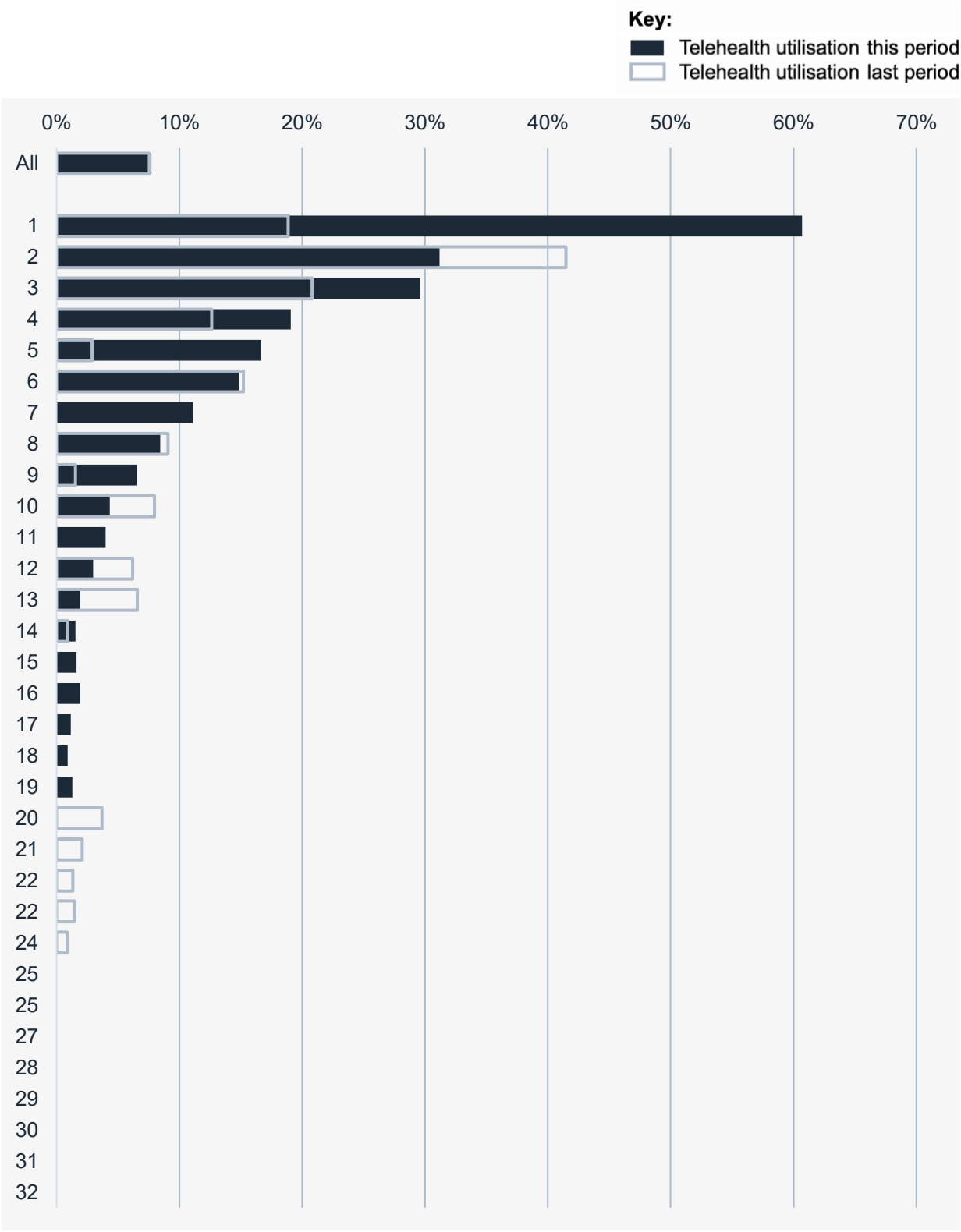
Required data for telehealth was missing for 0 (0%) care episodes nationally.

Figure 12. Telehealth utilisation per care episode



Data is %; note upper bound of x-axis 70%
Last period data not available for five sites
Equally numbered when site characteristics identical

MANAGEMENT

Management complexity is captured in a continuous data collection instrument that is updated throughout each care episode. Additional information on interdisciplinary care, offloading, antibiotics, and hospitalisation may have been recorded after the extract date. Therefore, this section presents the management data available at the time of extraction for each care episode during this period. Benchmarking figures also include comparative data from the previous period, which may differ from the last report due to ongoing data entry and increased data maturity.

INTERDISCIPLINARY CARE

Table 18. Disciplines involved per care episode

	National (n = 3766)		Missing data
Podiatrist	3722	(99%)	4 (0%)
Endocrinologist	1963	(52%)	
Orthopaedic surgeon	221	(6%)	
Vascular surgeon	2092	(56%)	
Pedorthist / orthotist	455	(12%)	
Diabetes educator	807	(21%)	
Dietitian	233	(6%)	
Wound nurse	710	(19%)	
Infectious diseases	1427	(38%)	
Rehabilitation	35	(1%)	
Aboriginal health	28	(1%)	
Psychology*	11	(0%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %
*Field option added from July 2024; may be inaccurate for care episodes predating this amendment

In Figure 13, the reported indicators align with the NADC Collaborative Interdisciplinary Diabetes High Risk Foot Services (iHRFS) Standards.[8] While the target for vascular consultation was met by approximately half of services, minimum core staffing is seldom met. For many services, achieving the minimum core staffing target is limited by availability of a Credentialled Diabetes Educator. Models of care vary between services, which is an important consideration in reviewing this figure.

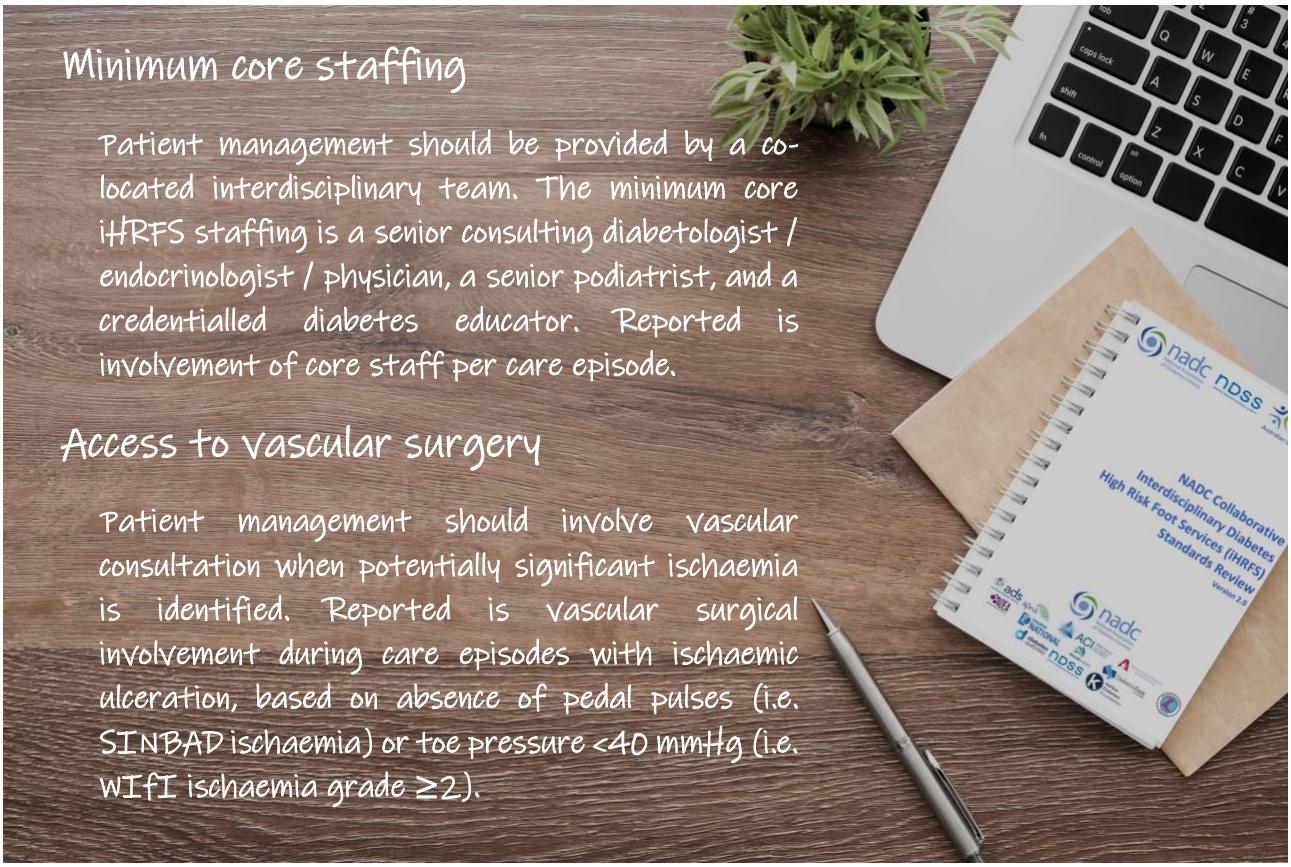
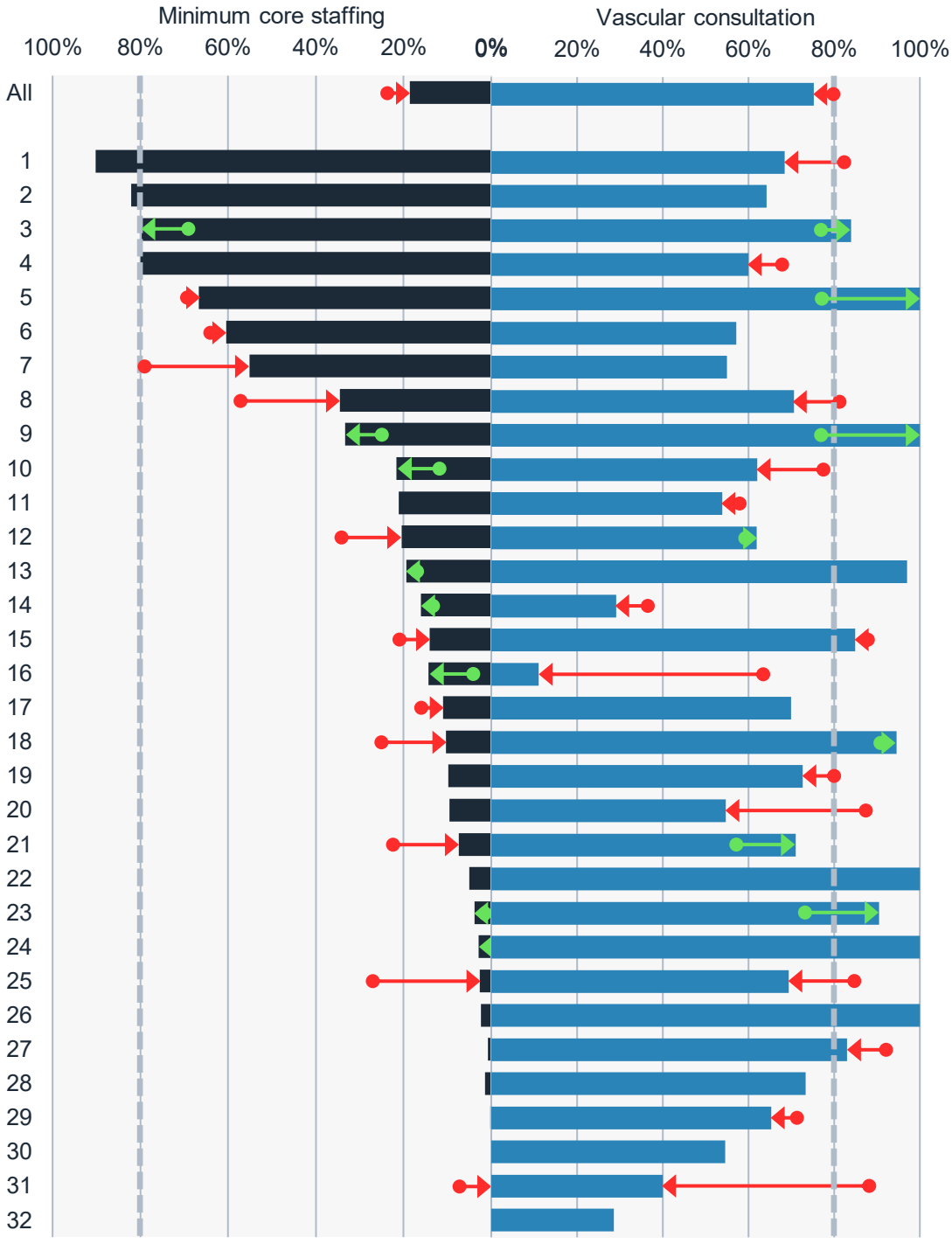


Figure 13 combines national data as 'All' then sites are ordered according to lesser involvement of minimum core staffing. Comparison is made to the last period unless the change was less than 2% or no previous data is available.

This period, minimum core staffing was involved in 702 (19%) care episodes nationally. Required data for minimum core staffing was missing for 4 (0%) care episodes.

A subset of 1342 care episodes nationally involved ischaemic ulceration. For this subset, vascular consultation occurred in 1009 (75%) care episodes. Required data for vascular consultation and/or ischaemic ulceration was missing for 9 (0%) care episodes.

Figure 13. Indicators for interdisciplinary management per care episode



Data is %; minimum core staffing to left & vascular consultation to right of y-axis
Last period data not available for five sites

OFFLOADING

Table 19 shows the proportion of care episodes where 'any' offloading was utilised this period, with that subset then forming the denominator in subsequent categorisation by device. One or more offloading devices may be used during a care episode, and therefore this field allowed multiple selection. Offloading selection should be considered in view of your site ulceration characteristics. Devices are defined in the Australian Evidence-Based Guidelines for Diabetes-Related Foot Disease.[9]

Table 19. Offloading device utilisation per care episode

	National (n = 3766)		Missing data
Offloading			
Any	3206	(86%)	
None	515	(14%)	
Device/s (if 'any' offloading used)			
Non-removable knee-high			
Total contact cast	59	(2%)	
Other	43	(1%)	6 (0%)
Removable knee-high	796	(25%)	
Removable ankle-high	1840	(57%)	
Therapeutic footwear	381	(12%)	
Surgical offloading	99	(3%)	
Foot orthoses	430	(13%)	
Felted foam*	345	(11%)	
Other	457	(14%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %
*Field option added from July 2024; may be inaccurate for care episodes predating this amendment

National underutilisation of best practice offloading for ulceration has been flagged by previous reports and continues to be observed. Acknowledging choice of offloading device may be influenced by several factors,[9] additional information has been collected since July 2024 to understand this apparent divergence from best practice.

A subset of 2014 care episodes nationally involved one or more plantar ulcerations. For this subset, use of a non-removable knee-high device was recorded for 73 (4%) care episodes. Required offloading device data was missing for 3 (0%) care episodes.

Table 20 shows the reported alignment of offloading prescription with best practice this period, presented for all care episodes and for the subset that involved one or more plantar ulcerations. Because the choice of offloading and the clinical scenario could change during a care episode, this field allowed multiple selections.

Table 20. Offloading alignment with best practice*

	National	Missing data
All care episodes	(n = 3766)	219 (6%)
Best practice	1665 (47%)	
Not optimised, contraindication/s	728 (21%)	
Not optimised, patient factor/s	1057 (30%)	
Not optimised, service factor/s	122 (3%)	
Not applicable	298 (8%)	
Subset involving plantar ulceration	(n = 2014)	110 (5%)
Best practice	852 (45%)	
Not optimised, contraindication/s	431 (23%)	
Not optimised, patient factor/s	656 (34%)	
Not optimised, service factor/s	75 (4%)	
Not applicable	104 (5%)	

Data is n (%)
Contraindication-, patient- and service-related factors defined in the Data Dictionary
*Field added from July 2024; may be inaccurate for care episodes predating this amendment

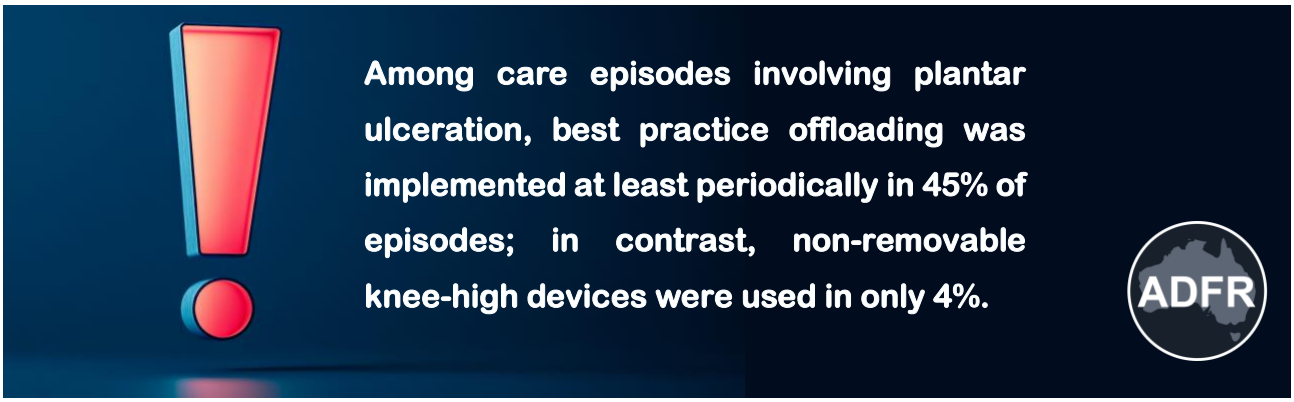


Table 21 categorises the most current footwear recommendation per care episode this period. Not applicable may suggest use of bilateral offloading devices or presence of major amputation. Footwear definitions are available in the Diabetic Foot Australia Guideline on Footwear for People with Diabetes.[10]

Table 21. Prescription of footwear per care episode

	National (n = 3766)	Missing data
Off-the-shelf	2148 (57%)	1 (0%)
Pre-fabricated medical grade	635 (17%)	
Custom-made medical grade	189 (5%)	
Not applicable	783 (21%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

ANTIBIOTICS

Table 22 shows the proportion of care episodes this period where 'any' antibiotic therapy was prescribed, with that subset then forming the denominator in subsequent categorisation by route. One or more antibiotic courses via different routes may be used during a care episode, and therefore this field allowed multiple selection.

Table 22. Antibiotic utilisation per care episode

	National (n = 3766)	Missing data
Antibiotics		8 (0%)
Any	2484 (66%)	
None	1262 (34%)	
Route/s (if 'any' antibiotics used)		
Oral	2198 (88%)	
Parenteral		
Outpatient	195 (8%)	
Inpatient	909 (37%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

HOSPITALISATION

Table 23 shows the proportion of care episodes this period where 'any' hospital admission was recorded, with that subset then forming the denominator in subsequent categorisation by reason. One or more hospital admissions and/or reasons may be applicable per care episode, and therefore this field allowed multiple selection.

Table 23. Hospital admission overview per care episode

	National (n = 3766)		Missing data
Hospital admission			
Any (≥ 1 admission)	1611	(43%)	
None	2136	(57%)	
Reason/s (if 'any' admission)			
Antibiotics	1009	(63%)	
Revascularisation	425	(26%)	8 (0%)
Surgical debridement	289	(18%)	
Minor amputation	676	(42%)	
Major amputation	72	(4%)	
Surgical offloading procedure	21	(1%)	
Hospital-in-the-home	204	(13%)	
Other procedure/investigation	205	(13%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

Table 24 further details the extent of amputations. A subset of 879 care episodes nationally involved amputation. Participants could have one or more amputations during a care episode, which may be unilateral or bilateral. Therefore, this field allowed multiple selection.

Table 24. Amputation extent per care episode

	National (n = 736)	Missing data
Minor amputation		
Hallux	176 (24%)	
Other digit/s	336 (45%)	
First ray	65 (9%)	
Lesser ray/s	130 (17%)	0 (0%)
Transmetatarsal	71 (9%)	
Major amputation		
Below knee	60 (8%)	
Above knee	12 (2%)	

Data is n (%)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %

Table 25 summarises cumulative length of stay per care episode this period. Values are calculated per care episode that involved one or more admissions at time of data extraction. Total days includes both inpatient days and HITH days, while inpatient days excludes HITH. For the subset of care episodes that involved HITH admission cumulative HITH days are reported separately.

Table 25. Cumulative length of stay per care episode

	National	Missing data
Subset involving any admission	(n = 1611)	
Total days	9.0 (5.0-19.0)	54 (4%)
Inpatient days (excl. HITH*)	8.0 (4.0-15.0)	
Subset involving HITH admission	(n = 204)	
HITH days*	21.0 (13.3-33.0)	18 (9%)

Data is median (IQR)
Total days includes both inpatient days and HITH days
*Field added from July 2024; may be inaccurate for care episodes predating this amendment

OUTCOMES

WAITING TIME

Figures 14 and 15 combine national data as 'All' then sites are ordered according to increasing median waiting time this period, not including weekend days. The figures do not account for urgency of ulceration. Comparison is made to the last period unless the change was less than 0.5 days or no previous data is available.

This period, required data for time from referral to initial review was missing for 19 (1%) care episodes nationally.

The 80th percentile is shown to assist interpretation in context of the NADC Collaborative Interdisciplinary Diabetes High Risk Foot Services (iHRFS) Standards.[8] It appears the targets for non-urgent referrals remain unmet nationally.

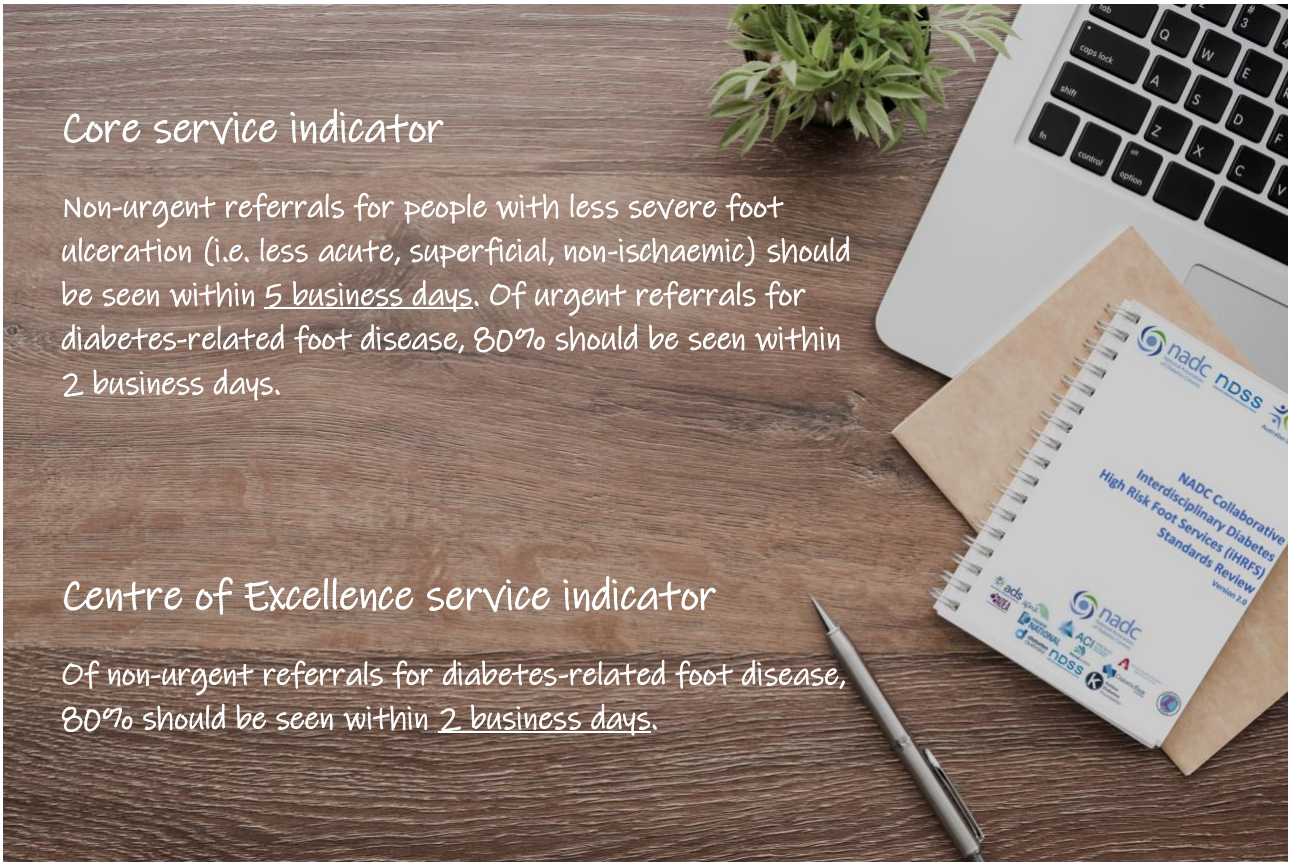
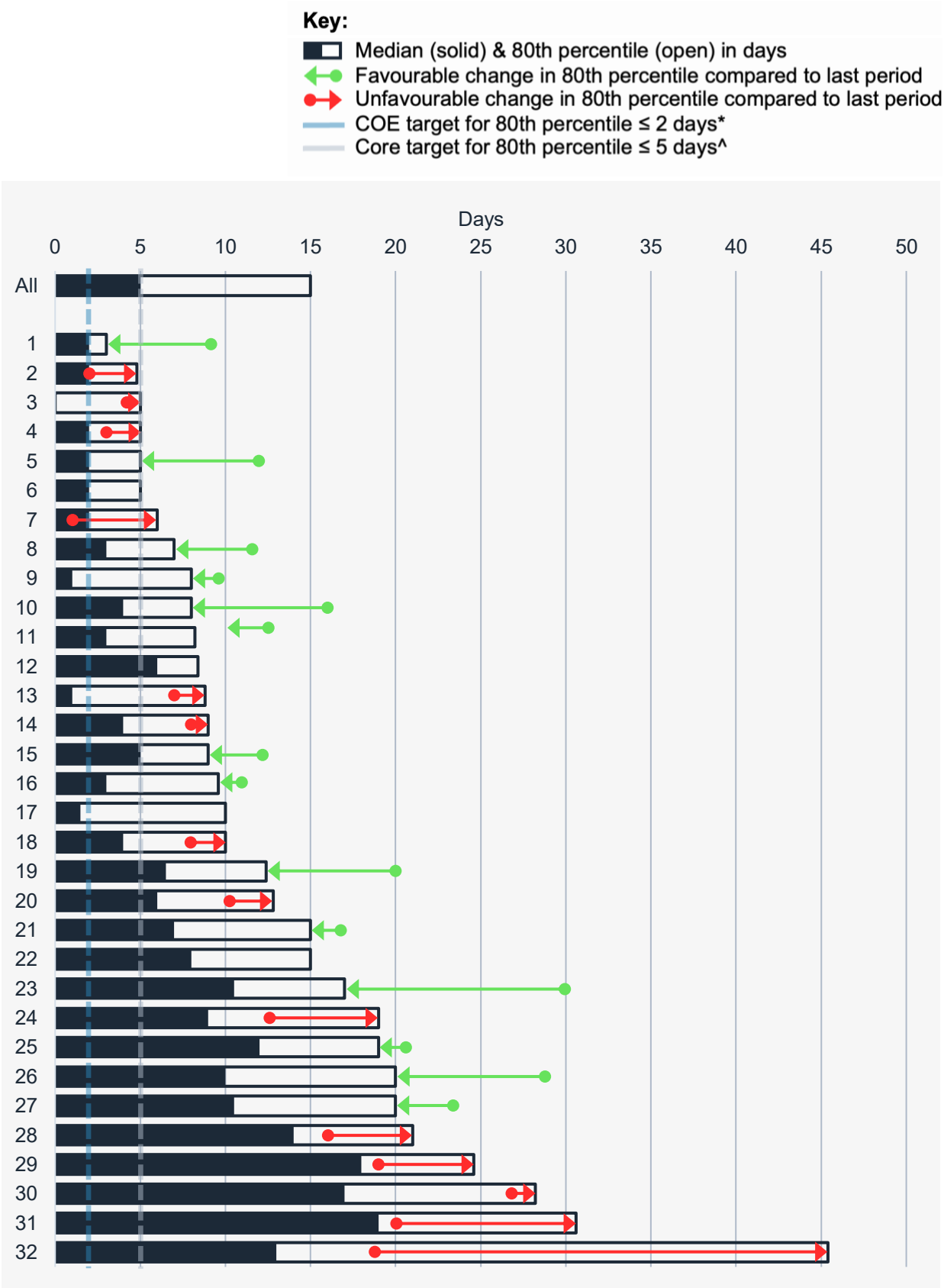


Figure 14. Time from outpatient referral to initial review per care episode

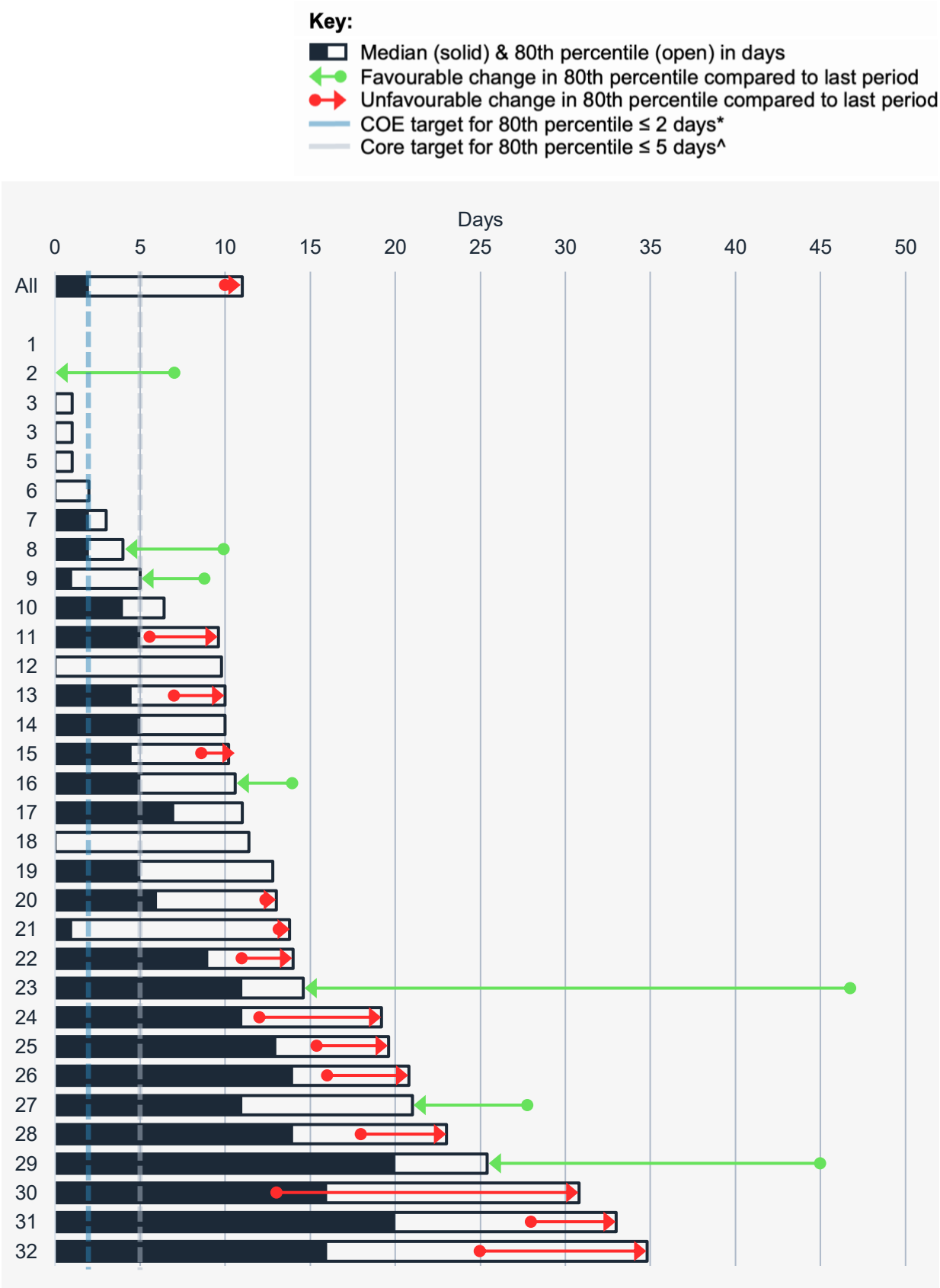


Data is days excluding weekends

*COE service indicator & ^Core service indicator with reference to NADC Collaborative Interdisciplinary Diabetes High Risk Foot Services Standards (detailed at beginning of this section)

Last period data not available for five sites

Figure 15. Time from inpatient referral to initial review per care episode



Data is days excluding weekends
*COE service indicator & ^Core service indicator with reference to NADC Collaborative Interdisciplinary Diabetes High Risk Foot Services Standards (detailed at beginning of this section)
Last period data not available for five sites

Tables 26, 27, 28 and 29 show alternative waiting time metrics for this period. These are distinct from time from referral to initial review presented in Figures 14 and 15. Table 26 considers the first appointment offered, thus accounting for participant factors that may have delayed the initial review. This metric may better reflect appropriateness of triaging and service availability. In Table 27 the same metric is presented for ulceration subgroups as classified by the SINBAD system.[7]

Table 26. Time from referral to first appointment offered per care episode

	National (n = 3766)	Missing data
Outpatients	4.0 (14.0)	15 (0%)
Inpatients	1.0 (11.0)	

Data is median (80th percentile) days excluding weekends
First appointment offered assumed to be initial review date if first appointment offered field incomplete
Care episodes with date errors relating to this metric excluded as missing

Table 27. Time from referral to first appointment offered by ulceration severity

	National (n = 3766)	Missing data
SINBAD score		133 (4%)
< 3/6	5.0 (15.0)	
≥ 3/6	2.0 (10.0)	
SINBAD ischaemia		
Pulse/s	3.0 (12.8)	
No pulses	3.0 (12.0)	

Data is median (80th percentile) days excluding weekends
First appointment offered assumed to be initial review date if first appointment offered field incomplete
Care episodes with date errors and/or inadequately described SINBAD classification excluded as missing

Tables 28 and 29 examine time from referral to receiving interdisciplinary care. Table 28 presents the subset of care episodes that involved *any* interdisciplinary input this period. In this context, 'interdisciplinary' means involvement of at least two disciplines and does not require minimum core staffing to have been met. Table 29 considers timeliness of vascular surgical consultation in the subset of care episodes that involved one or more ischaemic ulceration.

Table 28. Time from referral to first interdisciplinary review per care episode

	National (n = 3038)	Missing data
Outpatients	8.0 (24.0)	46 (2%)
Inpatients	4.0 (18.0)	

Data is median (80th percentile) days excluding weekends
Care episodes with date errors relating to this metric excluded as missing

Table 29. Time from referral to vascular review for ischaemic ulceration per care episode

	National (n = 1009)	Missing data
Outpatients	12.0 (33.0)	96 (10%)
Inpatients	2.0 (20.0)	

Data is median (80th percentile) days excluding weekends
Ischaemic ulceration defined by absence of pedal pulses (i.e. SINBAD ischaemia) or toe pressure <40 mmHg (i.e. WIfI ischaemia grade ≥2)
Care episodes with date errors relating to this metric excluded as missing
Field added from July 2024; may be inaccurate for care episodes predating this amendment

ULCERATION

Ulceration healing outcomes are reported for all ulcerations included this period. Sufficient follow-up is ensured by setting the end date for the audit period 12-weeks ahead of the data extract date. See the section on Understanding the Reporting Period for more information.

For Figures 16, 17 and 18, ulceration without a specified outcome is assumed to be non-healed. Completeness of outcome data is critically important, and this is emphasised to contributors, particularly for sites with healing rates below the national average. Sites are encouraged to enter outcomes in real-time and prior to data extract missing outcome data can be retrospectively entered.

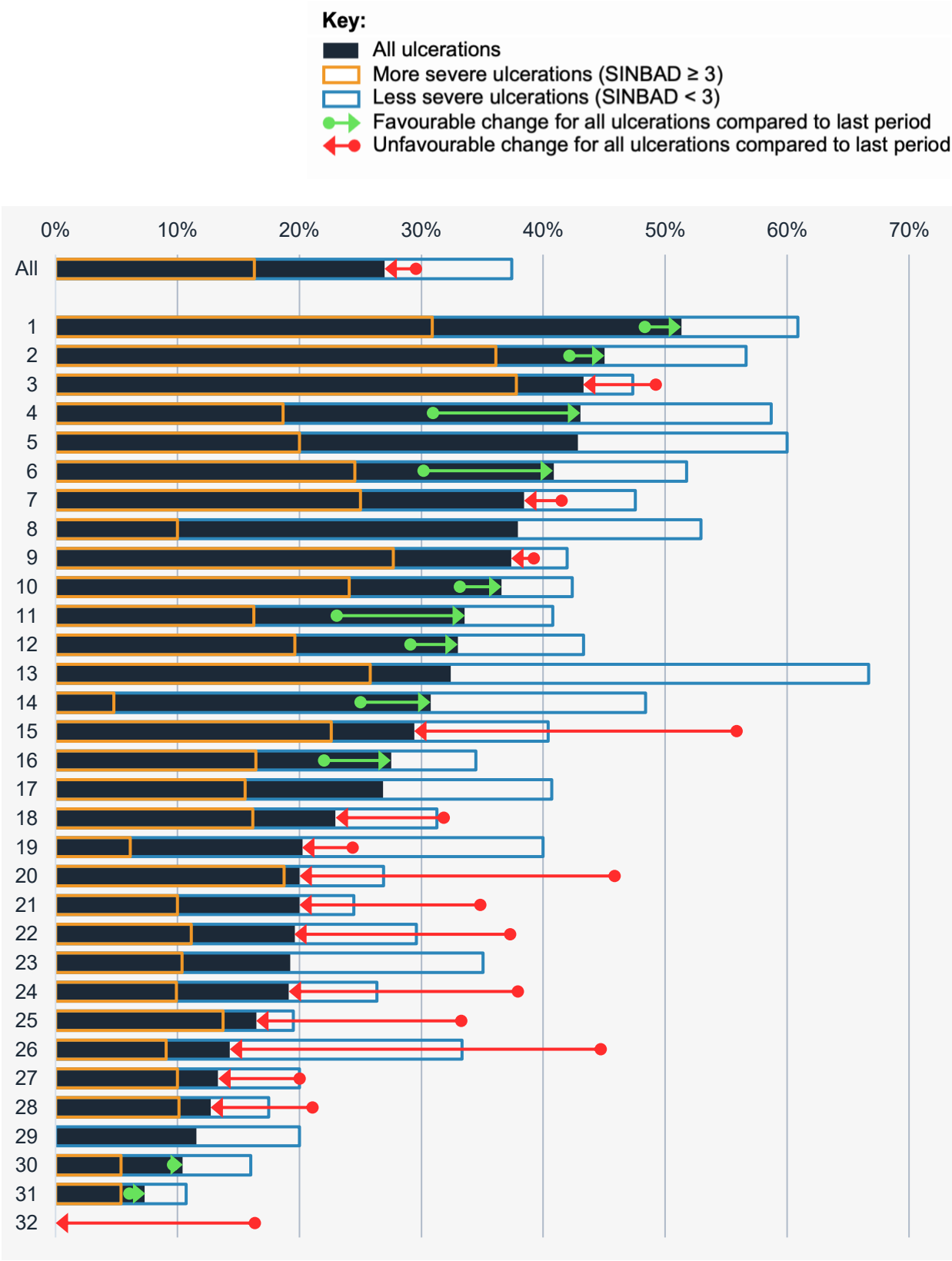
Figures 16 and 17 are identical in showing the ulceration-level healing outcome at 12 weeks from initial ulceration assessment. National data is combined as 'All' then sites are ordered according to decreasing healing rates this period. Comparison is made to the last period unless no previous data is available. This period, date errors relating to healing necessitated exclusion of 6 (0%) ulcerations nationally.

Data superimposed on Figures 16 and 17 are different and based on baseline SINBAD classification where available.[7] Figure 16 shows subgroups according to ulceration severity (i.e. SINBAD score), whereas Figure 17 shows subgroups according to presence of pedal pulses (i.e. SINBAD ischaemia). This period, SINBAD data were missing for 149 (3%) ulcerations nationally.

Figure 18 by contrast shows the person-level healing outcome at 12 weeks. Again, national data is combined as 'All' then sites are ordered according to decreasing 'ulceration free' rates this period. Comparison is made to the last period unless the change was less than 2% or no previous data is available. This period, date errors relating to healing necessitated exclusion of 11 (0%) ulcerations nationally in this analysis. Further, care episode commencement was unable to be validated due to date errors for 29 (1%) care episodes nationally, resulting in their exclusion from this analysis.

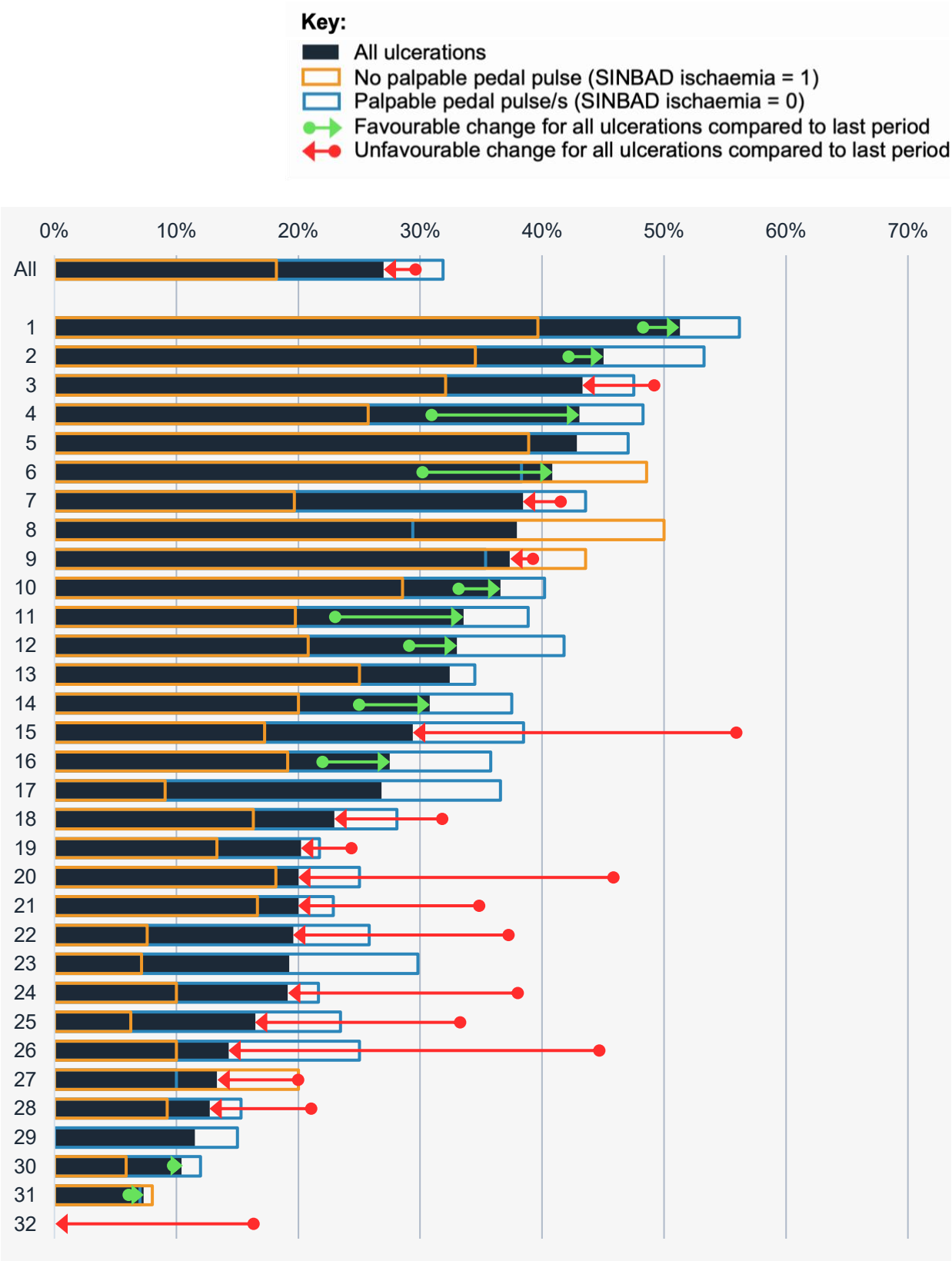
This ulceration free outcome is measured from the initial assessment per care episode. The outcome is met if the participant is alive with no active ulceration, including no recurrent ulceration if a new care episode has commenced. The outcome can be met via amputation provided there is surgical site closure / healing. It is suggested that this outcome is of greater significance to the participant than the healing of a discrete ulceration.

Figure 16. Ulceration healing at 12 weeks from initial assessment with severity subgroups



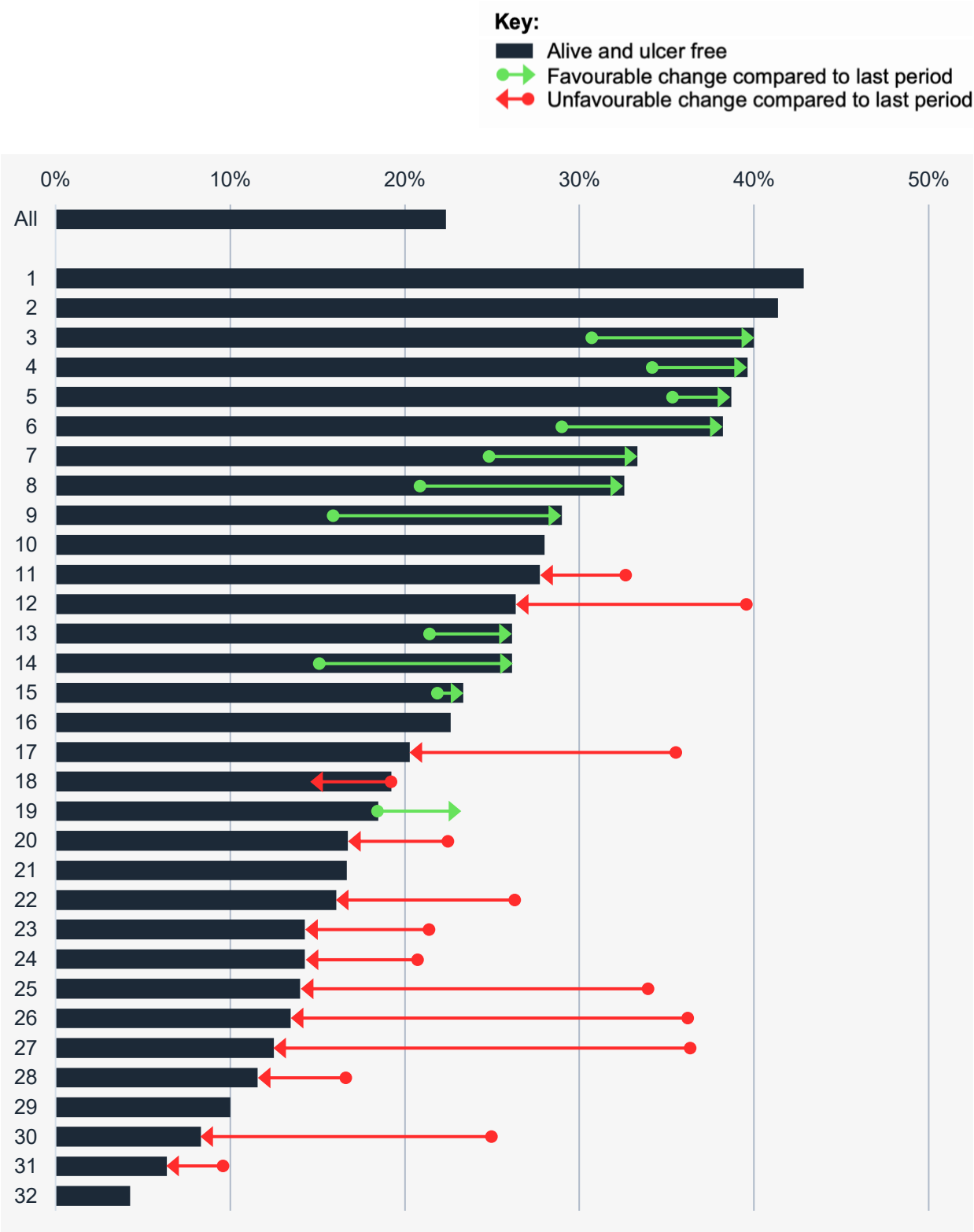
Data is %
Ulceration with inadequately described baseline SINBAD classification not included in subgroup data
Incomplete ulceration outcome data is included as non-healing rather than missing
Last period data not available for five sites

Figure 17. Ulceration healing at 12 weeks from initial assessment with ischaemia subgroups



Data is %
Ulceration with inadequately described baseline SINBAD classification not included in subgroup data
Incomplete ulceration outcome data is included as non-healing rather than missing
Last period data not available for five sites

Figure 18. Ulceration free at 12 weeks from initial assessment per care episode



Data is %
Ulceration free outcome met if participant is alive with no active ulceration, and any amputation sites have closed / headed
Last period data not available for five sites

Table 30 considers recurrence of ulceration for the subset of participants that became ulceration free at *any* timepoint. Importantly, analysis of recurrence was undertaken utilising *all* available data rather than being constrained to data from this period. Care episodes were included if the 'Date of initial assessment' occurred between each site's project commencement date and the end of this period (i.e. 1 April 2025). The follow-up period ends at the data extract date or, if earlier, the deceased date. See the section on Understanding the Reporting Period for more information.

Thus, the analysis of recurrence included 5008 (55%) participants nationally. As previously mentioned, ulcerations with incomplete outcome data are considered non-healed. Time to recurrence is measured from the first ulceration free timepoint per participant.

As distinct from Table 12 that reported recurrent ulceration at the same anatomical site, this analysis is a person-level outcome. In this context, recurrent ulceration is defined as a "new foot ulcer in a person who has a history of foot ulceration, irrespective of the location and time since the previous foot ulcer."[11]

Table 30. Recurrent ulceration following first ulceration free outcome per participant

	National (n = 5008)	
Time followed once ulceration free (weeks)	80.6	(40.0-120.4)
Participants with recurrent ulceration (during follow-up)	1298	(26%)
Time to recurrent ulceration (weeks)	20.4	(7.1-44.6)

Data is n (%) or median (IQR)

DISCHARGE

Table 31 shows the proportion of care episodes recorded as being completed this period, with that subset then forming the denominator in subsequent categorisation by ongoing care arrangement. Time in service only included completed care episodes.

Table 31. Completion of care episodes and ongoing care arrangements

	National (n = 3766)		Missing data	
Care episode status				
Complete	2008	(54%)	23	(1%)
Not complete	1735	(46%)		
Ongoing care arrangement (if 'complete')				
Prevention service as healed	937	(47%)		
Prevention service before healing*	195	(10%)		
External healthcare provider	265	(13%)		
External High-Risk Foot Service	139	(7%)		
External acute hospital	100	(5%)	23	(1%)
Residential aged care service	49	(2%)		
Palliative care service	13	(1%)		
At own risk	80	(4%)		
Deceased	123	(6%)		
Lost to follow-up*	90	(4%)		
Other	17	(1%)		
Time in service (weeks)	10	(4-19)	6	(0%)

Data is n (%) or median (IQR)
Not stated / inadequately described / missing data not included in total n per variable or in denominator for %
*Field option added from July 2024; may be inaccurate for care episodes predating this amendment

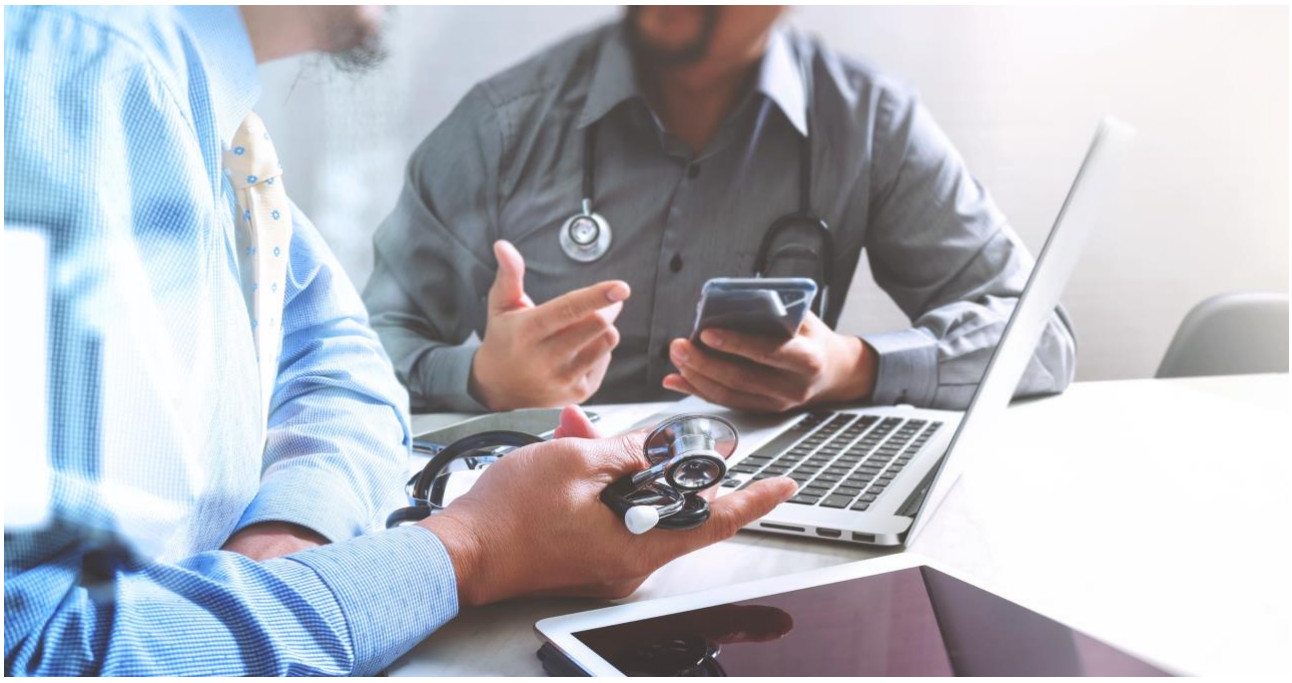
Table 32 summarises observed mortality in the cohort; however, results are limited by data completeness and should be interpreted with caution. The analysis was undertaken utilising all available data rather than being constrained to data from this period. Care episodes were included if the 'Date of initial assessment' occurred between each site's project commencement date and the end of this period (i.e. 1 April 2025). Follow-up extended to the data extract date, providing a minimum follow-up of 12-weeks. See the section on Understanding the Reporting Period for more information.

Mortality is likely to be underreported in the registry because, in the absence of data linkage, deaths must be entered manually. Participants are assumed to be alive unless a death is specifically documented, and services may not be aware of deaths occurring outside care episodes.

Table 32. Mortality events recorded in registry

	National (n = 9110)
Participants deceased	724 (8%)
Duration of follow-up (years)	1.7 (0.9-2.5)
Indicative mortality rate (per 100 person years)	4.5

Data is n (%), median (IQR) or rate as specified



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APPENDIX

QUALITY IMPROVEMENT

The following Quality Improvement Template provides a structured approach to data driven evaluation of your service. Work through the template as a team, taking time to reflect on both existing strengths and potential improvements. Importantly, agree upon and monitor the success of quality improvement projects.

More resources relating to quality improvement are available at https://nadc.net.au/qi/.

ATTENDEES

1.
2.
3.
4.
5.
6.

DATE __ / __ / __

EXISTING STRENGTHS

Identified area of strength	How was this achieved?	How will this outcome be maintained?
e.g. no data quality issues	regular data quality checks	scheduled monthly data quality review
1.		
2.		
3.		

POTENTIAL IMPROVEMENTS

Identified area for improvement	What outcome is sought?	Priority (low / medium / high)
e.g. below national average on vascular consultation	increase to within 10% of national average	high
1.		
2.		
3.		

(table continued)

How will this be achieved?	How will success be monitored	Deadline	Responsible
meet with vascular surgical team; mandate vascular consultation if WIfI ischaemia grade ≥2	setup REDCap report to directly monitor outcome	12 months	A.B.
1.			
2.			
3.			

Notes