



Utilisation of public podiatry and diabetes services by the Aboriginal and Torres Strait Islander community of the Central Coast of NSW

West M¹, Chuter V¹, Follent D², Hawke F¹ (2016)

¹ Discipline of Podiatry, Faculty of Health and Medicine, University of Newcastle, Australia

² Chronic Disease Team, Nunyara Health Department, Central Coast Local Health District, New South Wales, Australia

*Corresponding author contact details: Matthew West, email: Matthew.West@newcastle.edu.au,

ph: 02 4349 4496, address: University of Newcastle, PO Box 127, Ourimbah 2258

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Abstract

Objective: To investigate the participation of the Australian Aboriginal and Torres Strait Islander community in public sector podiatry and diabetes services on the Central Coast, NSW.

Methods: Clinical data were audited from the Central Coast Local Health District (CCLHD) podiatry and diabetes departments from 2009 to 2013, including data from two acute hospitals, two sub-acute hospitals and ten community-based health centres.

Results: Over the 5 year audit period, the frequency of appointments for Aboriginal and Torres Strait Islander people in the podiatry wound services approximately doubled. By 2013, an Aboriginal and Torres Strait Islander person in the wound service attended on average 3.5 times more appointments per year than a non-Indigenous person in that service. Over the audit period, the number of Aboriginal and Torres Strait Islander people who accessed the diabetes service approximately doubled, while there was comparatively small growth (9.50%) in the number of Aboriginal and Torres Strait Islander people who accessed podiatry services.

Conclusions: Aboriginal and Torres Strait Islander people in the CCLHD podiatry wound service accessed the service more frequently than non-Indigenous people and this discrepancy widened over the audit period. Most Aboriginal and Torres Strait Islander people in the CCLHD diabetes service did not access CCLHD podiatry services.

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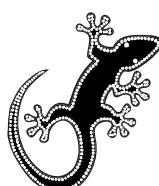
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Implications: Aboriginal and Torres Strait Islander community members may experience greater severity, chronicity and/or recurrence of podiatric wounds than non-Indigenous people. One strategy to potentially improve podiatric outcomes is to establish an early intervention pathway from diabetes to podiatry services within CCLHD.

Objective

Diabetes-related lower limb amputations comprise approximately 9.6% of health care costs associated with diabetes (1). Aboriginal and Torres Strait Islander community members experience a higher instance of diabetes than non-Indigenous Australians (2). Rates of hospitalisation as a result of diabetic complications are four times greater in the Aboriginal and Torres Strait Islander community

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than any other group of Australians (3). *The Fremantle Diabetes Study* found that Aboriginality is independently associated with a 4.8 fold increase in likelihood of diabetes-related foot ulcer (4). A separate study found that the rate of diabetes-related major lower limb amputation is up to 38 times higher in Aboriginal and Torres Strait Islander people than in age-matched non-Indigenous counterparts (5). Recent data for far north Queensland showed Aboriginal and Torres Strait Islander people make up 18% of people attending high risk foot service but more than 50% of people undergoing lower limb amputations (6). These findings suggest podiatry service utilisation by Aboriginal and Torres Strait Islander people with diabetes may be reduced despite the increased risk of foot ulcer in this population.

The purpose of this audit was to investigate the participation of the Aboriginal and Torres Strait Islander population in the Central Coast Local Health District (CCLHD) podiatry and diabetes services.

Methods

Ethics approval was provided by the CCLHD Director of Clinical Governance. As this study was a clinical audit, approval was not required from the Aboriginal Health and Medical Research Council.

Data from the 5 year period 01/01/2009 to 31/12/2013 were extracted from the Integrated Clinical Information System (ICIS) by the Performance of Revenue Improvement Department of the CCLHD on the 29/06/2015. No age or gender limitations were applied. Self-identified Aboriginal and Torres Strait Islander status is reported as Aboriginal and Torres Strait Islander, non-Indigenous or unknown.

Table 1. Diabetes and podiatry services: Individual participation rates and occasions of service

		Number of individual participation in each service year on year				
Population		2009	2010	2011	2012	2013
Diabetes Service	Aboriginal and Torres Strait Islander	46	42	48	80	88
	non-Indigenous	1305	1314	1392	1472	1713
Podiatry Service	Aboriginal and Torres Strait Islander	18	16	18	13	17
	non-Indigenous	1053	1003	951	863	830
		Number of Occasions of Service (OOS) provided year on year				
Population		2009	2010	2011	2012	2013
Diabetes Service	Aboriginal and Torres Strait Islander	113	182	196	385	488
	non-Indigenous	3707	4290	4730	5573	7686
Podiatry Service	Aboriginal and Torres Strait Islander	115	114	117	117	126
	non-Indigenous	4133	4373	4015	4140	4054

Service provision within ICIS is reported as an 'occasion of service' (OOS). OOS was defined by: the department the date, the medical record number of the patient, patient gender, Aboriginal and Torres Strait Islander status, the code and description of the type of service delivered (Service Type Description), and the date of the service delivery. Only primary service data were retrieved. Secondary services provided within an appointment were not identified by this audit.

Results

In 2009, the CCLHD diabetes service recorded 46 Aboriginal and Torres Strait Islander and 1,305 non-Indigenous participants and the podiatry service recorded 18 Aboriginal and Torres Strait Islander and 1,053 non-Indigenous participants. Over the audit period, the number of Aboriginal and Torres Strait Islander and non-Indigenous individuals accessing the podiatry service decreased (Table 1). In contrast, the number of Aboriginal and Torres Strait Islander individuals participating in the diabetes service approximately doubled (+48%) and the number of non-Indigenous individuals in the diabetes service increased by 31.26%. Twelve of 198 (6.06%) Aboriginal and Torres Strait Islander patients included in the audit accessed both diabetes and podiatry services.

Diabetes service OOS for both Aboriginal and Torres Strait Islander and non-Indigenous people increased over the audit period (Table 1). OOS for non-Indigenous individuals approximately doubled (+107.34%) while there was a greater than three-fold increase in OOS for Aboriginal and Torres Strait Islander people (+331.85%). Podiatry service OOS increased by 9.50% for Aboriginal and Torres Strait Islander people and decreased by 1.91% for non-Indigenous people.

Fifty seven percent of services accessed by Aboriginal and Torres Strait Islander individuals were for wound care while neurovascular screening (15.28%) and general treatments (15.11%) accounted for most other service provision (Table 2). Wound care was also the most common service (36.73%) for non-Indigenous individuals, followed by general treatment (27.31%) and neurovascular screening (21.49%). Rates of 'did not attend clinic' represented 8.12% and 8.59% of all recorded OOS for Aboriginal and Torres Strait Islander and non-Indigenous participants respectively

Over the audit period, the number of Aboriginal and Torres Strait Islander people attending wound care services remained stable while the number of non-Indigenous people attending the service increased (Table 3). Mean number of visits per person per year accessing wound services was higher for the Aboriginal and Torres Strait Islander population and increased between 2009 and 2013 (14.00 to 26.00). Mean visits of non-Indigenous people accessing wound care remained stable (7.23 to 8.34).

Table 2. Description of podiatry services accessed

Service Category	Aboriginal and Torres Strait Islander	Non-Indigenous	Unknown	Total
Biomechanical assessment	1	34	0	35
Case management	0	7	2	9
Charcot assessment	0	61	11	72
Correspondence	4	118	12	134
Did Not Attend clinic	48	1,780	285	2,113
Emergency treatment	1	45	13	59
General treatment other	89	5,659	1,218	6,966
Oedema	0	3	2	5
Miscellaneous assessments	0	6	1	7
Nail surgery		4	1	5
Neurovascular screening	90	4,445	1,354	5,889
Orthotic therapy	2	72	1	75
Other	18	866	180	1,064
Wound care	336	7,609	577	8,522
X ray	0	6	1	7
Total	589	20,715	3,658	24,962

Table 3. Podiatry service attendance for wound care

Year	Aboriginal and Torres Strait Islander				Non-Indigenous			
	N=	mean	SD	Range	N=	mean	SD	Range
2009	4.00	14.00	3.36	8.00	171	7.23	6.88	34.00
2010	4.00	15.50	11.12	22.00	196	8.34	8.05	39.00
2011	4.00	16.25	12.01	23.00	199	7.35	6.67	29.00
2012	4.00	18.75	10.78	23.00	207	7.94	7.53	35.00
2013	3.00	26.00	22.06	44.00	222	7.34	6.86	34.00

Conclusion

Aboriginal and Torres Strait Islander individuals participating in the diabetes service between 2009 and 2013 increased by 91%. In 2013, 5% of people accessing the diabetes service were Aboriginal and Torres Strait Islander people. Aboriginal and Torres Strait Islander people comprise approximately 2.89% of the regional population (7). The proportional overrepresentation of Aboriginal and Torres Strait Islander people within the diabetes service reflects the known higher prevalence of diabetes among Aboriginal and Torres Strait Islander people (8). Importantly, the number of Aboriginal and Torres Strait Islander people attending the podiatry service did not change notably over the audit period despite the central role of podiatry in the prevention and management of diabetic foot complications. Considering the key role that podiatry plays in preventing long term morbidity and mortality among people with diabetes, it was expected that an increase in people accessing the diabetes service would be reflected by an increase in number of people accessing the podiatry service.

Within podiatry, OOS for Aboriginal and Torres Strait Islander people increased by 10%, while the number of individuals attending remained relatively static. The most common type of service provided to Aboriginal and Torres Strait Islander people was wound care. The small proportion of OOS related to preventative care may reflect underutilisation of CCLHD podiatry services or be due to access to private sector podiatry services through the national *Chronic Disease Management Plan*. The consistent increase in the mean number of appointments for wound care per Aboriginal and Torres Strait Islander person per year possibly indicates greater severity, chronicity and/or recurrence of wounds among the Aboriginal and Torres Strait Islander community. Due to the relatively small number of Aboriginal and Torres Strait Islander individuals included in this audit, the calculated means are particularly sensitive to outliers. The findings of this audit are limited to the CCLHD. An audit of a larger population in a broader geographical would provide a more robust description of participation.

Implications

The number of people accessing CCLHD diabetes service increased considerably over the audit period and this increase was not reflected in the podiatry service. Within podiatry, wound care was the most frequently reported primary service for both Aboriginal and Torres Strait Islander and non-Aboriginal and Torres Strait Islander. Of those people accessing the podiatry wound care service, Aboriginal and Torres Strait Islander people on average had substantially more appointments per year than non-Indigenous people, suggesting that Aboriginal and Torres Strait Islander

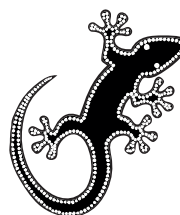
community members may experience greater severity, chronicity and/or recurrence of wounds requiring podiatric intervention than non-Indigenous people. Further research into the engagement between the Aboriginal and Torres Strait Islander community and both public and private podiatry services is required to facilitate effective health care delivery and to reduce the burden of diabetic foot complications in this population. One strategy to potentially improve podiatric outcomes is to establish an early intervention pathway from diabetes to podiatry services within CCLHD.

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Director Professor Neil Drew
Address Australian Indigenous *HealthInfoNet*
Edith Cowan University
2 Bradford Street
Mount Lawley, WA 6050
Telephone (08) 9370 6336
Facsimile (08) 9370 6022
Email healthbulletin@ecu.edu.au
Web www.healthbulletin.org.au

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