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Supplementary Material

Implementation strategies to overcome barriers to diabetes-related footcare delivery in primary care: a qualitative study

Leanne Mullan[A,F], *Karen Wynter*[A,B,C], *Andrea Driscoll*[A,B] *and Bodil Rasmussen*[A,B,C,D,E]

[A]Deakin University School of Nursing and Midwifery, 1 Gheringhap Street, Geelong, Vic. 3220, Australia.
[B]Centre for Quality and Patient Safety, Deakin University, 1 Gheringhap Street, Geelong, Vic. 3220, Australia.
[C]Western Health Partnership, 176 Furlong Road, St Albans, Vic. 3021, Australia.
[D]Faculty of Health and Medical Sciences, Blegdamsvej 3B, 2200 Copenhagen, Denmark.
[E]Faculty of Health Sciences, University of Southern Denmark and Steno Diabetes Center, Campusvej 55, DK-5230 Odense M, Denmark.
[F]Corresponding author. Email: leannemullan@hotmail.com

Appendix S1: Background Information

Invitation to Participate in Research

Deakin University is conducting research into the "**Barriers and enablers to preventative and early intervention footcare among people with diabetes**". You have been invited to participate in this research because you have been identified as a key health policy decision maker within Australia. The research team would like to gain your insight into the feasibility of universally implementing strategies, identified by primary care healthcare professionals, as essential for supporting the delivery of best practice footcare to people with diabetes.

Background: Over 1.3million Australians have diabetes and an estimated 283 are diagnosed daily[1]. One of the most common, feared and costly complications of diabetes is diabetes-related foot disease[2]. Approximately every 30 seconds a lower limb is lost somewhere in the world as a result of diabetes[2]. Over 4,400 diabetes-related amputations were conducted in Australia in 2012-13[3]. Amputation rates in New South Wales (NSW) have been recorded as 18 per 100,000 population, surpassing the rates in the United Kingdom (UK), Norway, Canada, Netherlands, New Zealand, Sweden, France and Switzerland[4]. Amputation related hospital admissions are up to 11.4 times higher in some rural and remote areas compared to metropolitan areas[5].

It is acknowledged that the Department of Health has recently invested greatly into diabetes-related footcare, with its launch of the national Foot Forward project, that aims to help people with diabetes to understand the importance of foot checks and also support healthcare professionals, through training and the development of standardised tools, to ultimately support best-practice diabetes-related footcare. While evidenced-based clinical guidelines and assessment tools exist for the prevention, assessment and management of diabetes-related foot disease, the successful translation of these into clinical practice is influenced by many factors. In order to address barriers to footcare, discussions are required with national key decisions makers to understand how current work in the 'diabetes foot' space can be successfully implemented and translated into clinical practice, particularly in primary care.

The first phase of research conducted by our team identified current footcare practices amongst Australian primary care healthcare professionals (General Practitioners (GPs) and Credentialled Diabetes Educators (CDEs)). This research identified that in the presence of acute diabetes-related foot complications, primary healthcare practitioners are not always adhering to best practice footcare recommendations.

The second phase of research obtained information from GPs and CDEs working in Australian primary care on the barriers and enablers they face in the delivery of preventative and early intervention footcare to people with diabetes. Key factors which act as barriers include:

- Limited access to services (tertiary high-risk foot services, telehealth, podiatrists, specialists)
- Poor care integration (lack of communication, feedback and multidisciplinary care)
- Lack of education (lack of confidence, education and experience, skill variability of healthcare professionals, lack of focus on footcare in nursing training, fear and disgust of feet, lack of interest in footcare, clinical inertia and a lack of mentorship/training)
- Lack of resources (lack of funding and physical resources, inadequacies of current Medicare rebate system (wound care and the enhanced primary care program), time limitations, waitlists and competing priorities of care)
- Lack of processes (lack of guidelines and supportive policy, underuse/lack of recall systems, lack of standardisation of current practices (assessment tools, care pathways) and ambiguity of referral processes)
- Negative stigma (negative stigma attached to diabetes healthcare professionals)

We would appreciate your involvement in the third phase of this research, which involves participation in a 15-minute semi-structured interview. Please refer to the Plain Language Statement for more information.

[1]Diabetes Australia (2019) 'NDSS national diabetes snap shot' (Diabetes Australia: Canberra, ACT) Available at https://www.ndss.com.au/about-the-ndss/diabetes-facts-and-figures/diabetes-data-snapshots/ [Verified 21 September 2019]

[2]International Diabetes Federation (2017) 'IDF diabetes atlas 8th edition' (IDF: Brussels, Belgium) Available at https://www.diabetesatlas.org/ [Verified 21 September 2019]

[3]Diabetes Australia (2018) 'Facts and figures' (Diabetes Australia: Canberra, ACT) Available at https://www.diabetesaustralia.com.au/fact-and-figures [Verified 24 May 2019]

[4] The Bureau of Health Information. (2016). *Healthcare in focus: How does NSW compare.* Retrieved from http://www.bhi.nsw.gov.au/BHI_reports/healthcare_in_focus/2016/_nocache

[5]Australian Commission on Safety and Quality in Health Care. (2016). 'Australian atlas of healthcare variation 2016'. (Australian Commission on Safety and Quality in Health Care: Sydney, NSW) Available at http://www.safetyandquality.gov.au/atlas/ [Verified 21 September 2019]

Appendix S2: Interview Guide

- Thank participant for their willingness to participate in the interview
- Ensure verbal and written consent for participation obtained
- Advise that all information will remain confidential and data will be deidentified for the purposes of reporting and publication
- Check if they have read over the one-page background information. If not, provide participant with a verbal summary – including:
    - Primary healthcare professionals have identified several factors that impact their ability to provide diabetes-related footcare in primary care.
    - Barriers to providing footcare include:
        - Limited access to services
        - Poor care integration
        - Lack of education
        - Lack of resources
        - Lack of processes
        - Negative stigma

Domain measured	Example question (to initiate discussion)
Strategies	Please outline potential strategies, at a policy or health system level, that address the barriers identified by healthcare professionals, in their delivery of diabetes-related footcare?
Implementation	How could these strategies be successfully implemented into primary care clinical practice?

Appendix S3: Completed Node System

Initial nodes	Consolidated node	Number of participants discussing theme	Total number of references
Data collection, benchmarking and audits	Quality improvement and incentives	6	17
Incentives (quality improvement incentives, MBS incentives)			
Community and consumer education	Education and community awareness	7	34
Workforce development			
Education and training			
Onsite visits, coaching, mentoring			
Equipment provision	Resourcing and support systems	7	20
MBS funding			
Human resourcing			
Information system support			
Models of care	Models, pathways and referrals	6	24
Health pathways			
Care pathways			
Referral pathways			
Care escalation			
Agreed model of care and referral pathways	Co-design, consultation, collaboration, consolidation, co-commissioning	7	49
Co-design			
Co-commissioning			
Community consultation			
Cultural consideration and consultation			
Integrated service delivery, partnerships, shared care, hub & spoke			
Stakeholder collaboration			
Roles and responsibilities			

Appendix S4: Coding Rules

Node	Coding Rule	Example
Incentives and quality improvement	Any comment that discusses auditing, benchmarking or data collection being linked to incentivisation as well as financial incentivisation schemes	*I would say that having PHNs, primary health networks, better educating general practitioners and CDEs about the service incentive payments scheme and how to actually complete the cycle of care is the way to go.*
Education and community awareness	Any comment that discusses workforce development including education, training, coaching, mentorship or shadowing as well as comment that discuss community or consumer education and awareness	*It's education, but that's education of clinicians as well as individuals who've got the bad feet.*
Resourcing and support systems	Any comment that discusses resourcing including human resources, information technology resources, funding, Medicare or private health subsidies, equipment or environmental resources	*You need ways if you want to go around to other practices and teach, they need to have a way to be paid so that if they're taking an afternoon out of their own practice to go around and upskill, there needs to be a way for them to be reimbursed so that their practice can keep going. Generally, the primary health networks sometimes have funding that will support things like that.*
Models, pathways and referrals	Any comment that discusses models of care, health or care or referral pathways or escalation of care	*We use the health pathways. …you go into the health pathways thing and it gives you all of the best practice guidance on what to do with everything, and the referral pathways and the clinicians that are involved.*
Co-design, consultation, collaboration, consolidation and co-commissioning	Any comment that discusses the involvement of two or more stakeholders within strategy development, including partnerships, coordination, integration, consultation, collaboration, co-design or co-commissioning	*Despite evidence-based guidelines being there it's actually bringing the stakeholders together and defining roles and responsibilities of each of those providers. It's really about who has the FTE (full time equivalent), who has funding to do the work that needs to be done. What are the roles and responsibilities of each of those providers in this model? And then what is some of the workforce capacity issues?*