

Cutting costs while improving care

Samoa's Diabetic Foot Clinic

Introduction

In partnership with the National Health Service in Samoa, Motivation Australia established a Diabetic Foot Clinic (DFC) at Tupua Tamasese Meaole (TTM) Hospital in Apia, Samoa. A retrospective study of medical records provided an opportunity to compare the costs and benefits of the DFC with those of acute hospital care and amputation.

Background

Diabetes and other non-communicable diseases have created a significant health burden in Pacific Island countries. High prevalence of diabetes, and late presentation, leads to large numbers of acute hospital admissions, amputations and high mortality.

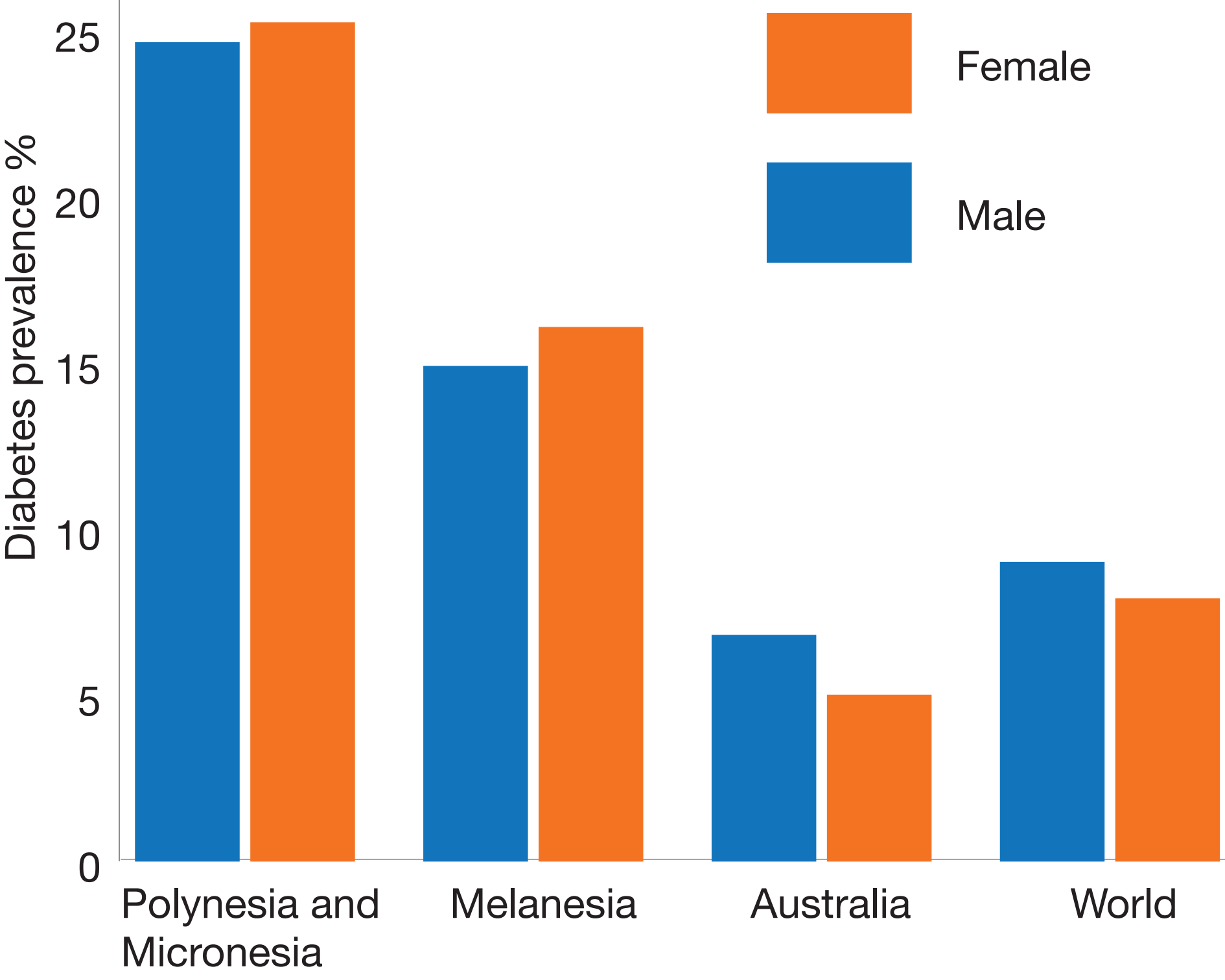


Fig 1: Age-standardised diabetes prevalence by sex in people aged 18 years and older - 2014

Despite Samoa's small population of just under 200,000, Apia's TTM Hospital performed more than one hundred lower limb amputations in 2014. There were many more admissions for surgical debridement.

The risk of people in the Pacific Islands developing ulcers that become septic is increased due to [1, 2]:

- Poor management of diabetes
- Lack of appropriate footwear
- Lack of education on how to prevent foot wounds
- Exposure to sea water and other contaminants
- Fear of amputation leading to delayed treatment
- The use of traditional medicine

Diabetic foot care could, over the long term, reduce the rate of hospital admissions and avoidable diabetic amputations by 49-85% [3]. However, the majority of Pacific Island countries lack the resources required to provide effective diabetic foot care due to limitations in:

- Available skilled workforce, including nurses, podiatrists, orthotists, doctors, endocrinologists and vascular surgeons
- Specialist training and information about best practice diabetic foot care,
- Support to develop strong service systems utilising sustainable approaches to diabetic foot care.
- Access to dressings, offloading supplies and appropriate footwear
- Multidisciplinary co-operation within health systems

In Samoa, prior to implementation of the DFC, inpatient treatment was the only recognised and measurable intervention for people with diabetic foot ulcers.

Purpose

Sustaining a new initiative such as a DFC in countries where health resources are limited is challenging. The purpose of this study was to strengthen the advocacy for improved diabetic foot care in the Pacific Region, this research set out to identify the economic benefits of a DFC within the Pacific context.

Method

The economic costs and benefits of the DFC were compared to acute hospital care and amputation within TTM Hospital:

- **Ethics approval** - received from Ministry of Health.
- **Review of records** - Medical records were reviewed for 563 people admitted for diabetic foot ulcers to TTM Hospital between June 2013 and June 2015; and for 46 people treated at the DFC between June 2015 and May 2016.
- **Qualitative interviews** - NHS personnel and people accessing the DFC were interviewed to obtain their insights into the value of the clinic.

Results

Hospital admission

- Of 563 people admitted with diabetic foot sepsis, 667 hospital admissions were recorded
- The average length of each admission was 11 days
- No ulcers healed during admission
- 30% of admissions resulted in an amputation

Diabetic foot clinic

- 46 people attended the DFC, with an average of 10 appointments each
- 70% received ulcer offloading
- 50% of ulcers had healed 11 months later, with a mean healing time of 105 days
- No amputations occurred for those people accessing the DFC, and only one person required admission to TTM



Conclusions

- Through wound management and offloading the DFC was effective in improving wound healing for non-infected wounds and reducing the risk of developing an infection.
- **Treatment costs via the DFC were nearly 8 times lower than the cost of acute hospital admission and surgical intervention for diabetic foot sepsis.**
- This leads to better clinical outcomes and reduced economic burden on the health system.
- Compared to those accessing the DFC, ulcers of people admitted to TTM Hospital tended to be infected. Within this study an assumption was made that treatment at the DFC prevented infection and the need for hospitalisation, and therefore the associated costs.
- There is more work to be done to strengthen Samoa's DFC, expand the reach and increase timely referrals.
- Motivation Australia is using these findings to encourage the establishment of more multi-disciplinary DFC services within Samoa and throughout the Pacific Islands.

DIABETIC FOOT CLINIC: SAT\$924 / PERSON



HOSPITAL ADMISSION: SAT\$7,239 / PERSON



Samoa's Diabetic Foot Clinic

Samoa's DFC, which began in June 2015, draws on best practice in diabetic foot management to provide four coordinated, locally appropriate inputs for people with non-infected diabetic foot ulcers:

1. Primary wound care
2. Orthotic offloading
3. Provision of ongoing diabetes and foot care education
4. Referrals to appropriate allied and medical services

The core DFC team (podiatrist, nurse and orthotist), participated in a training and mentoring programme, led by Motivation Australia using our 'Keep Moving' training modules. During the initiation period, regular updates on progress were given to TTM's medical team to build awareness and support for the clinic.

In the first year, file reviews and interviews with DFC personnel and people accessing the service provided valuable learning. As well as the specific benefits of wound healing, many people accessing the DFC commented on how the DFC had helped them improve their general health behaviours. This included improving their diet, use of medication, exercise levels and quitting smoking. These changes were attributed to:

- **Improved understanding** - Effective and sustained education enabled people to better understand the effect of diabetes on their body
- **Regular blood glucose testing** - Feedback from regular testing allowed further insight into the effect of diet and medication on their body
- **Encouragement and positive support** - People accessing the DFC highlighted the positive support and encouragement from the DFC team, in comparison to a judgemental attitude
- **Positive reinforcement** - Seeing reductions in their own and other's wounds and the sharing of stories helped people to see what was possible.

Acknowledgements

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1. Win Tin, S.T., et al., Diabetes related amputations in Pacific Islands countries: A root cause analysis of precipitating events. Diabetes Research and Clinical Practice, 2013. 100(2): p. 230-234.

2. Kumar, K., et al., Descriptive analysis of diabetes-related amputations at the Colonial War Memorial Hospital, Fiji, 2010-2012. Public Health Action, 2014. 4(3): p. 155-158.

3. Bakker, K., J. Apelqvist, and N.C. Schaper, Practical guidelines on the management and prevention of the diabetic foot 2011. Diabetes/Metabolism Research and Reviews, 2012. 28(S1): p. 225-231.



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