

# THE FOOT-HEALTH AND MORTALITY OF ADULT PATIENTS WITH DIABETES IN REGIONAL AUSTRALIA: FINDINGS FROM AN EPIDEMIOLOGICAL STUDY WITH TWO-YEAR FOLLOW-UP

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## AIM

Diabetes-related foot complications pose a significant burden to health care systems [1] and can be devastating to an individual [2]. Australian research indicates these complications may be disproportionately found in socially disadvantaged populations, including living in regional and remote areas [3,4]. However, there is limited epidemiological research that reports on the foot-health of people with diabetes within Australian regional settings. The aim of this pragmatic two-year cohort study was to explore the incidence of diabetes-related foot morbidity and mortality in people residing in regional Australia.

## METHODS

Adults with diabetes were recruited from predominately community-based, publicly-funded podiatric services in the Australian regional area of Northern Tasmania (Figure 1).

**Figure 1 The geographical catchment of the study (South-East Australia)**



Data was collected prospectively for two years at each occasion of service at each site, and electronically recorded in tablet computers. Patient occasions of service were aligned with usual clinical management in the services.

The primary variables of interest were the incidence of foot ulceration, major or minor limb amputation and death. Other variables of interest were UT Texas risk classification at baseline and subsequent visits, age, sex, rurality, socio-economic disadvantage, diabetes type and duration, knowledge of diabetes and smoking status.

Descriptive analysis was undertaken for the primary variables of interest for patients. Mortality data was derived from service notes for all patients enrolled at baseline.

## RESULTS

There were 443 patients (262 males and 181 females) from Northern Tasmania who completed baseline assessments, with 210 (47.4%) having a UT Texas risk classification of 3 or above (Table 1). Mean age at baseline was 65 (SD 13.0, range 19-97). Sixty (13.5%) participants had type I diabetes and 383 (86.5%) had type II.

**Table 1 Patient characteristics at baseline**

UT Risk Classification Texas	n (%)
No Neuropathy	157 (35.4)
Neuropathy	63 (14.2)
Neuropathy and deformity	11 (2.5)
History of pathology	81 (18.3)
Neuropathic ulcer	67 (15.1)
Acute Charcot	6 (1.4)
Infection	19 (4.3)
Ischaemia	39 (8.8)

There were 4,622 patient occasions of service in total. Median number of follow-up visits was 4 (IQR 4, 13, range 1, 98). Three hundred and fifty (79.0%) participants had at least one follow-up visit, with 283 (63.8%) participants still being followed-up at 12 months, 239 (53.9%) at 18 months and 182 (41.1%) at 24 months.

There were 164 (37.2%) participants who developed incident ulcers during the study period and 29 (6.5%) who underwent incident amputations. There were 56 deaths (12.6%).

## CONCLUSIONS

Public podiatric services in regional Australia are managing patients at significant risk of serious diabetes-related foot morbidity and death. The two-year incidence of ulceration and amputation in this study from Northern Tasmania is high, and likely to be an underestimation. The high proportion of patients who died after two years is a new and important finding in an Australian context.

Patients currently presenting to regional Australian public podiatry services require multi-disciplinary health care in accordance with national and international guidelines. There is a disparity that needs to be addressed between current funding models for these services and the level of diabetes-related foot morbidity the services are managing.

## References

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