Small areas, big issues: uncovering geographic disparities in diabetes-related amputations across Queensland over time

*Aim*

Diabetes-related lower limb amputations are among the leading causes of preventable hospitalisation in Queensland. This study aims to identify geographic variation in minor and major diabetes-related amputations in Queensland, and how these vary over time.

*Methods*

Hospital admissions data was obtained for all people with diabetes admitted to a Queensland hospital during 1st July 2012 to 30th June 2020. This analysis included only Queensland residents with both a diabetes code (ICD-10AM code E11-E14) and lower limb amputation procedure code in the same hospital episode. Amputation type was separated into minor and major based on location being below or above the ankle joint, respectively.

Bayesian hierarchical spatial and spatio-temporal models were used to examine incidence patterns across 82 geographical areas in Queensland by sex and type of amputation. Areas were based on patient residential address. Maps were used to examine modelled standardised incidence ratios (SIRs), as well as how likely the area was to be below/above the average incidence via exceedance probabilities

*Results*

Large variation was observed for both minor and major amputations, markedly for males. Far North Queensland areas had among the highest modelled standardised incidence ratios for people with both minor (SIRs 2.4-3.9 in multiple years) and major amputations (SIRs 1.3). Overall minor amputation rates increased over time, while major amputations varied, but precise trends varied by area.

*Conclusion.*

The study results suggest that several areas in Queensland, most noticeably the far north, require greater support for people with diabetes-related foot disease.