

# The effect of organizational arrangements on people with type 2 diabetes and foot ulcers in Scotland

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## Abstract

### Background

A recent meta-analysis showed that specific organizational arrangements may decrease the risk of lower extremity amputations among subjects with type 2 diabetes (T2D) affected by foot ulcers (DFU). We aim to translate these results into algorithms to extract cohorts from routine data from the Scottish Diabetes Register (SCI-Diabetes). We used models to estimate the actual effectiveness of different practices and discuss transferability of the approach to other contexts e.g. the English database of general practitioners.

### Methods

A multidisciplinary team mapped the Scottish database to the outputs of meta-analysis, adopting the standard set for diabetes of the International Consortium for Health Outcomes Measurement. Algorithms extracted a standardized retrospective cohort for 2016-2019. Records up to 5 years before first entry into the cohort were used for case-mix. Proportional hazards were used for multivariate modelling. Results were expressed in terms of hazard ratios with 95% confidence intervals.

### Results

In 2016-2019, a total of 275,386 adults with T2D were registered in SCI-diabetes. Among them, 1,843 (0.66%) had an amputation, of which 777(42%) had a previous DFU diagnosis. We applied the criteria derived from meta-analysis and the definitions of the diabetes standard set to calculate columns included in the case-mix for predictive modelling. The refinement of multivariate models is still in progress and all adjusted hazard ratios will be included in the revised version of this abstract to be presented at the Conference.

### Conclusions

Epidemiological evidence on diabetes care can be directly translated into algorithms for extracting dynamic cohorts from high quality diabetes registers. Results can be generalised to different types of national databases, adjusting for the heterogeneous dataset structures.

### Key messages

- Sets of criteria and definitions adopted for the conduction of meta-analyses can be translated into algorithms to extract cohorts and test models of real-world evidence from routine national databases.
- The Scottish Diabetes Register was successfully used to confirm the effectiveness of organizational arrangements in diabetes in normal practice.