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Longditudinal Study of Type-2 Diabetics - Do the morbidly obese really have better outcomes?

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Background

Diabetes continues to utilise 10% of the NHS budget and have considerable impact on people's lives. Abertawe bro Morgannwyg Health board identified diabetes and obesity as a strategic priorities. Working in collaboration with SAIL and We Predict ABM identified this as an area for which greater insights could be gained from linked data. Type-2 diabetes is not easily identified through ICD-10 and READ codes but if new diabetics can be identified through linked data and followed up over time local areas can understand the progression locally, which populations are at risk of serious outcomes and where interventions may be made.

Objectives

To identify newly diagnosed type-2 diabetics and matched controls in order to produce and analyse difference to the key outcomes of interest âĂŞ death, retinopathy, myocardial infarction, CVD, CKD and amputation. In addition to produce sub group analysis - including by age group, gender, BMI and deprivation.

Approach

A stakeholder group of GPs, managers, NHS analysts and SAIL employees were consulted. Several approaches to define and identify newly diagnosed type 2 diabetics were considered. The final algorithm consisted of a combination of 227 linked primary and secondary care codes. All 635,552 patients in the historical data set were eligible for inclusion. Suitable matched controls (patients who did not have a Type-2 Diabetes diagnosis matched based on Gender and Age Group) were identified, and allocated a synthetic 'date of diagnosis' or date of entry into 'study'. The 'cases' and controls were then followed up to each of the key outcomes of interest for as long as data was available (in some cases 20 years). Using 'R' relevant analysis including survival curves were produced. After feedback to key stakeholders different approaches to presenting (visualising) the outputs were developed. Finally all the statistics and visualisation was automated.

Results

47,848 people were identified with a new a diagnosis of diabetes. Large differences in mortality were clearly evident in people with diabetes in ABM HB - for example 10 years in middle aged men when diagnosed with diabetes compared to those who were not.

There were some surprising results where people with higher BMIs appeared to have better outcomes when compared to groups of people in similar categories but with lower BMI. However this finding was not consistent - there was a difference in micro vascular and macro vascular outcomes.

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