



Public Health
England

Protecting and improving the nation's health

Diabetes Prevalence Model

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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Summary

It is estimated that 3.8 million people aged 16 years and over in England have diabetes (diagnosed and undiagnosed). This is equal to 8.6% of the population of this age group.

Diabetes prevalence is higher in men than in women, 9.6% versus 7.6%.

Prevalence is higher in people from South Asian and black ethnic groups compared with people from white, mixed or other ethnic groups, 15.2% versus 8.0%.

There is a clear association between increasing age and higher diabetes prevalence, from 9.0% aged 45 to 54 to 23.8% aged 75 years and over.

At CCG level, diabetes prevalence ranges from 6.5% to 11.5%. CCGs with the highest estimated diabetes prevalence have high proportions of South Asian and black ethnic groups and high levels of deprivation.

Comparisons with the 2014/15 Quality and Outcomes Framework suggest that 76% of people with diabetes have been diagnosed and are included on GP registers. It is estimated that there are 940,000 people with diabetes that are undiagnosed.

By 2035, diabetes prevalence is expected to increase to 4.9 million or 9.7%.

Introduction

The diabetes prevalence model provides estimates of total (diagnosed and undiagnosed) diabetes prevalence for people aged 16 years and over in England.

Diabetes refers to a condition where the amount of glucose in your blood is too high. There are two main types of diabetes: type 1 diabetes and type 2 diabetes. Type 1 diabetes develops when the body is unable to produce any insulin. Type 2 diabetes develops when the body is unable to produce enough insulin or the body's cells don't react to insulin. It is estimated that approximately 90% of diabetes is type 2. The diabetes prevalence model does not make a distinction between the type of diabetes.

The model was developed using data from the latest three years of Health Surveys for England (HSE), 2012, 2013 and 2014. The estimates take into account the age, sex, and ethnic group distribution, as well as deprivation of the area. Estimates are created using resident populations and GP registered populations.

The 2014 Office for National Statistics (ONS) population projections were used for the resident population based estimates. The numbers of patients registered by GP practice in April 2015 were used for the registered population based estimates. Full details of the model methodology can be found in the technical document on the National Cardiovascular Intelligence Network (NCVIN) website.

Diabetes prevalence estimates have been produced for local authorities, clinical commissioning groups (CCG) and for the whole of England and are provided for 2015, 2016, 2017, 2018, 2019, 2020, 2025, 2030 and 2035.

As with all modelled data, there is a degree of uncertainty associated with these estimates, therefore they should be considered indicative only. The estimates are available to download at: www.ncvin.org.uk

A full list of references can be found in the technical document.

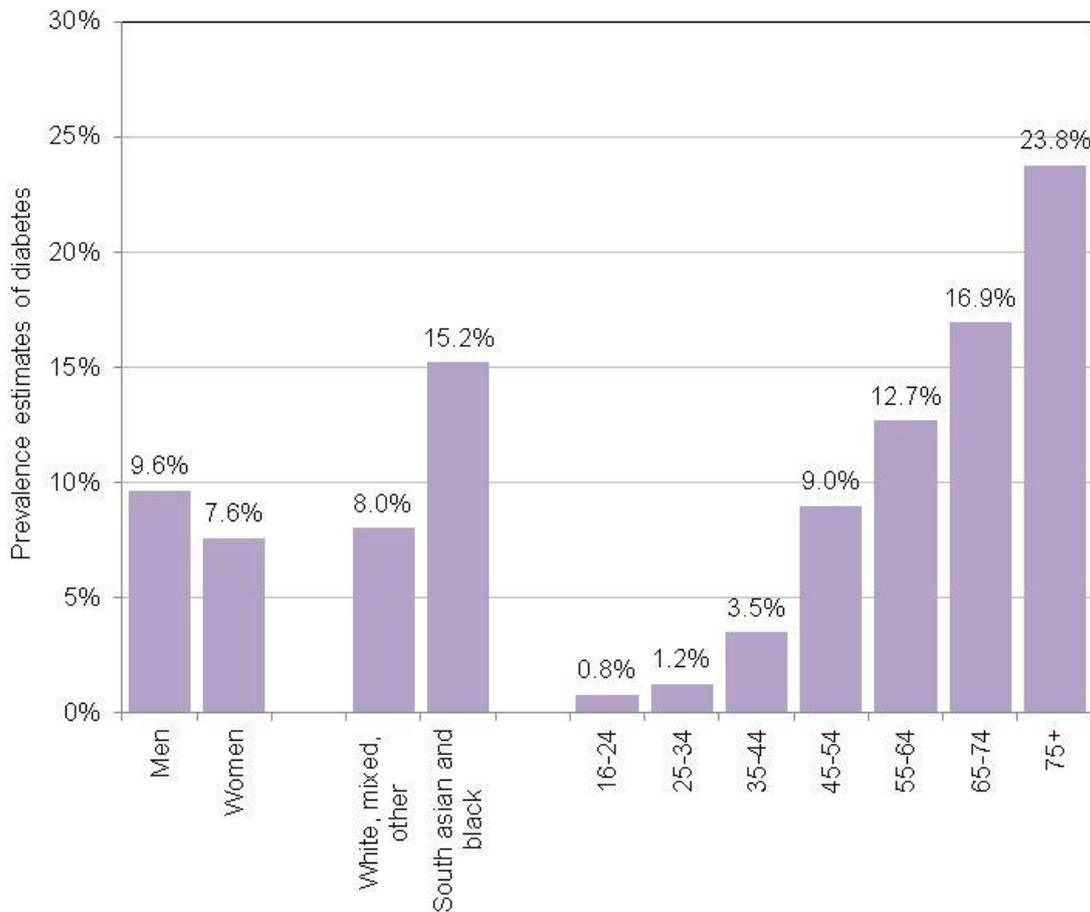
Current prevalence of diabetes

It is estimated that in 2015 there are 3.8 million people aged 16 years and over living with diabetes (diagnosed and undiagnosed). This is equal to 8.6% of the population of this age group. Diabetes prevalence is higher in men than in women, 9.6% versus 7.6% (Chart 1). Prevalence is higher in people from South Asian and black ethnic groups compared to people from white, mixed or other ethnic groups, 15.2% versus 8.0%.

There is a clear association between increasing age and higher diabetes prevalence, from 9.0% aged 45 to 54 to 23.8% aged 75 years and over. It is estimated that approximately 2% of adults aged 16 to 44 have diabetes. This equates to 400,000 people of this age group with diabetes – 10% of total diabetes cases.

At CCG level, diabetes prevalence ranges from 6.6% to 11.5% (1.7-fold variation). CCGs with the highest estimated diabetes prevalence have high proportions of South Asian and black ethnic groups and high levels of deprivation. In addition, CCGs which have high estimated prevalence also have higher levels of deprivation and/or high proportions of elderly people. CCGs with the lowest estimated diabetes prevalence have higher proportions of younger age groups and lower levels of deprivation.

Chart 1. Summary of expected diabetes prevalence (diagnosed and undiagnosed) for England in 2015 by age group, sex and ethnicity



Comparison with the Quality and Outcomes Framework

Comparisons between estimates of diabetes for 2015 and the 2014/15 Quality and Outcomes framework (QOF) suggest that 76% of adults who have diabetes are included on GP registers. It's estimated that there are around 940,000 adults with diabetes who have not been diagnosed or registered. Note comparisons with QOF are made using the registered population based estimates.

At CCG level, the ratio of observed diabetes prevalence to expected diabetes prevalence ranges from 0.53 -0.93 (Map 1). CCGs with low ratios of observed to expected prevalence are distributed across England, although there are larger proportions of CCGs in the South and London region with lower ratios. The ratios are indicative of the proportion of total people with diabetes diagnosed but will also be sensitive to uncertainties in the model.

Future diabetes prevalence

By 2035, diabetes prevalence is expected to increase to 4.9 million or 9.7% (Chart 2). These estimates have been produced using the 2014-based population projections produced by the ONS and assumed no change in the age, sex and ethnic specific prevalence rates of diabetes. It was also assumed that there was no change in the proportion of people who are overweight or obese.

Estimating this far into the future introduces additional level of uncertainty and therefore it is advised that these estimates are used with caution.

Map 1: Ratio of observed (QOF) to expected diabetes prevalence by CCG

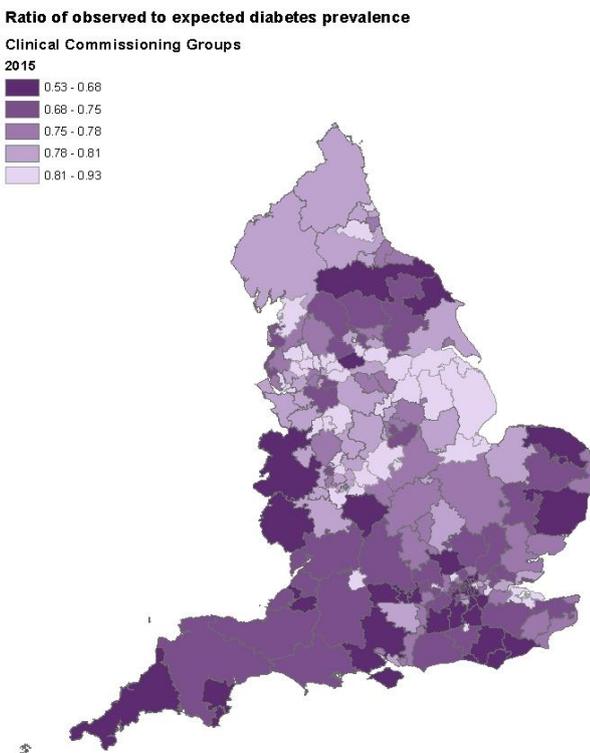
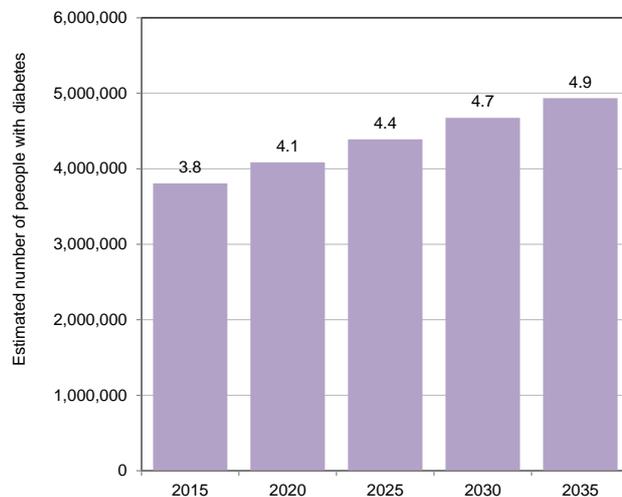
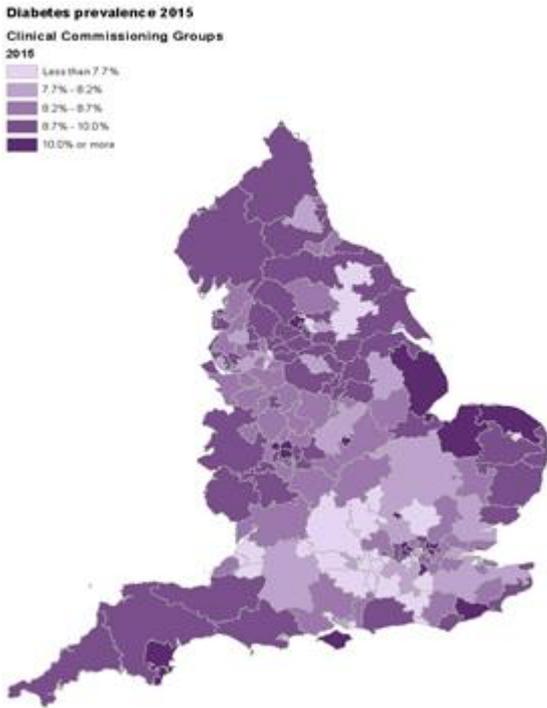


Chart 2: Estimates of diabetes prevalence 2015 – 2035

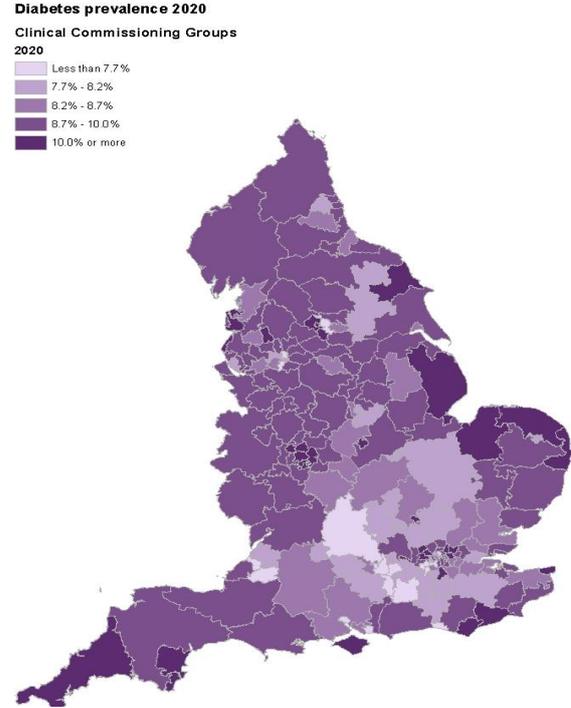


Maps 2 – 4 show the estimated diabetes prevalence for 2015, 2020, 2025 and 2030 by CCG. Prevalence of diabetes is not expected to increase uniformly across England and ranges from an increase of 6.3% to 24.6% by CCG. CCGs with high estimated increase in diabetes are due to projected significant increases in age.

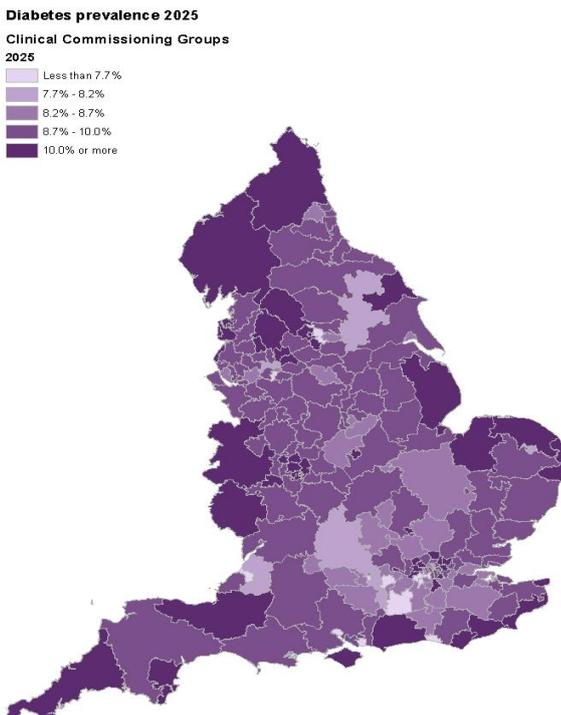
Map 2: Diabetes prevalence in 2015 by CCG



Map 3: Diabetes prevalence in 2020 by CCG



Map 4: Diabetes prevalence in 2025 by CCG



Map 5: Diabetes prevalence in 2030 by CCG

