



Application number/Title: 20650 - Using the UK Biobank to validate and refine two diabetes risk prediction tools

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Keywords provided by the Applicant PI to describe the research project:

Diabetes, prediabetes, risk, prediction, ethnicity

Application Lay Summary:

1a: We aim to:

- 1) Externally validate two diabetes risk prediction tools (Leicester Self-assessment score and the Leicester Practice risk score) using a national data set
- 2) Refine the ethnicity components of the two risk prediction tools and assess if this refinement improves performance

1b: Risk prediction tools predict the likelihood of an individual either having or developing a particular condition. We have developed and validated two risk prediction tools to identify people at high risk of either undiagnosed type 2 diabetes (T2DM) or prediabetes. Early identification allows earlier initiation of treatment which may prevent complications in those with undiagnosed T2DM. T2DM can be prevented or delayed in those with prediabetes through lifestyle change. The work proposed meets UK Biobank's overall aim by improving the detection and therefore diagnosis of prediabetes and T2DM, which will improve treatment and prevention and therefore outcomes.

1c: We have developed two tools which identify people at high risk of having either undiagnosed T2DM or prediabetes. These tools use data from risk factors (e.g. age and ethnicity) to assess risk. In clinical practice (but not in this project), those with a high risk score would be offered a blood test. One was

designed for members of the public; the other for GPs. We want to test how well these work using a national dataset. Additionally both contain a very crude measure of ethnicity (white versus other) we want to refine this and test whether this improves performance.

1d: Full cohort with HbA1c data