

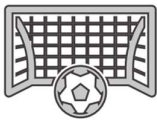
## Diabetes Data Science Catalyst Project summaries

### Project Title 1: Medication use in people with diabetes



#### Challenges addressed by the proposed project

The treatment options for people with diabetes have increased dramatically in the last 10 years. For people with type 1 diabetes this is largely technology based, with the development in glucose sensors and insulin pump technology. For people with type 2 diabetes the newer treatments can help with weight loss and improve heart and kidney function as well as improve diabetes control. However these treatments are expensive, and the use of the treatments is not equal within the UK – geographically, across different ethnic groups and by differing social and economic status.



#### Project Goal - how will the project be the solution to address/ understand the challenge or problem?

#### The aims of this project will be to:

- 1) Map the inequalities in prescribing treatments with outcomes (results of treatments), i.e. is variation in prescribing related to variation in outcomes.
- 2) Find out if some treatments work better in some groups and less well in other groups, i.e. by being more targeted in treatment can we achieve better outcomes and reduce health care costs.

How will we do this?

We will use UK wide prescribing data and securely link this data to people's ethnicity, socio-economic status and to outcomes of diabetes. We will first map the prescriptions of diabetes treatment and technology across the UK and relate this to variation in socio-

economic status, ethnicity and other demographic factors. We will then investigate how well drugs work in different populations to allow us to work out if treatment should differ – for example, should people of South Asian ethnicity have different diabetes drug treatment than White British populations. Finally, we will use the ‘random’ prescribing variation by GP practices as a tool to mimic a randomised controlled trial to allow us to explore which drugs have the best outcomes (A randomised controlled trial is a clinical trial in which subjects are randomly assigned to one of two groups: one receiving the intervention that is being tested, and the other receiving an alternative (conventional) treatment).



**How could this project provide impact e.g. how will it benefit patients/NHS, inform policy etc?**

By securely accessing data from patients across the UK we will be able to build a picture of the types of diabetes treatments prescribed to patients and find out where the differences are in the use of the treatments. We will share the results of this project both within the scientific community, the NHS and publicly. The impact of this project may be able to help inform policies to reduce inequalities in access to diabetes treatments.