Application number/Title: 43920 - The epidemiology of infectious diseases within UK Biobank

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Keywords provided by the Applicant PI to describe the research project:
Cancer, cardiovascular, genetics/genotyping, infectious diseases, risk-factors

Application Lay Summary:

Infectious diseases (IDs) are a major cause of mortality and morbidity, with estimates that IDs cause 15% of cancers worldwide. Yet evidence suggesting that IDs are involved in the development of other chronic diseases has been limited to studies with case-control designs, this is where both the disease and ID are measured at the same time so it is not possible to determine which occurred first, or small samples in specific groups of people (i.e. individuals with poor immune systems).To address these limitations, UKB, a large study consisting of mainly healthy participants at recruitment who have their health outcomes captured through follow-up of medical records, has measured the presence of twenty different IDs in 10,000 participants.

As part of this project we have several aims. First, we will explore the relationship between sociodemographic, lifestyle and health-related characteristics and IDs. For example, are socioeconomic factors related to increased or decreased risk of IDs? Are ID's related to cardiovascular factors such as blood pressure or obesity? Second, we will use the genetic data to explore whether certain genes are linked to a higher presence of certain IDs using genome wide association studies. Third, we will explore whether the presence of IDs at recruitment is associated with an increased risk of certain chronic diseases, such as cancer, cardiovascular disease and neurological conditions.

This project will increase our understanding of what factors are associated with IDs, including non-genetic and genetic factors, and what role IDs potentially have in the development of chronic diseases.