Major Compulsory Revisions

This is a useful opinion piece arguing the case for support for well characterised cohorts and bio banks to study interactions between biological, genetic and environmental factors related to NCDs. The usefulness could be extended by taking the opportunity to comment on the implications of the authors' points for understanding these interactions globally, which would mean considering the implications for low- and middle-income countries as well as developed countries.

It would be useful for the authors to expand the title to make it more explanatory about the content of the paper - "bio banking across the phenome" is admirably concise but the title should briefly convey the focus of this paper on NCDs and indicate what sort of paper it is in dealing essentially with policy aspects.

The paper would benefit from an Introduction explaining what the paper is about and what purpose it serves - at the moment the reader jumps right into the consideration of important policy aspects of the need for cohorts and bio banks for NCD research without an explanation of the background and some signposting as to what sort of paper this is, why does it focus on NCDs (as opposed to infectious diseases, for example) and what it's purpose is.

In setting the scene a brief comment would be useful on the global burden of NCDs, including reference to the large and growing burden of NCDs in low- and middle-income countries.

In explaining the usefulness of research on NCDs using biobanks and cohorts for "public health" and "prevention", some consideration would be useful of the distinction between potential prevention benefits for individuals and for populations.

A brief explanation would be useful of developments in the world of genomic research, so that. The reader may understand the advantages of research using cohorts and bio banks compared to case control studies and their consortia.

An important point apparent from Table1 is that all the cohort studies listed are from developed countries - a comment would be useful on the need for these studies in low- and middle-income countries also, and the potential benefits not only in relation to potential disease prevention in these settings but also to the
improved overall understanding of NCDs arising from studies in populations of greatest genetic variation (which are in Africa).

Minor essential revisions

Some typo errors: comorbidity instead of comorbity, pleiotropic instead of pleiotropic.

Is there good evidence that caffeine intake is a risk factor for NCDs?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests