

# PROJECT PROPOSAL

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## 2023 Academic Entry Year – Cohort 2

### Supervisory Team

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## Project Details

**Title:** Intersectional inequalities in obesity management and related multimorbidity

**Summary:** Capitalising on the Clinical Practice Research Datalink (CPRD), this PhD project will, firstly, investigate inequalities 1) in access to NHS weight management interventions and 2) in the associations of obesity with incident multimorbidity. Unlike existing research in this area, this work will be grounded in intersectionality, a theory explaining how systems of discrimination and oppression are interlocking and interactive, producing inequalities that cannot be understood in isolation. The student will refine and apply a new gold-standard multilevel approach for modelling intersectional inequalities. The PhD project will, secondly, investigate the extent to which intersectional inequalities in obesity-related multimorbidity might be explained by disparities in access to NHS weight management interventions. This work could use qualitative and/or quantitative methods depending on the student's interests and career plan. Together, the results of this PhD will provide a comprehensive picture about which parts of the population access obesity management services the least and (perhaps therefore) suffer the greatest obesity-related disease burden. In addition to publications in top tier medical journals, this research will be disseminated to obesity organizations and governing bodies, with the intention that the results are used to promote health equity through changes to policy and practice.

**Theme(s) the project most closely aligns to:** Cardio-vascular, obesity and renal; Diabetes and lifestyle

**How the PhD project and training would be appropriate for NMAHPs or GPs:** This PhD project would capitalise on the successful candidate's interest in the management and treatment of obesity within the NHS. The candidate would develop the skills necessary to work with CPRD data that they themselves might have helped collect. The focus of the project on intersectional inequalities and multimorbidity is highly relevant. By the end of their studies, the student will have 1) expert knowledge on these topics, which they will be able to draw upon in their clinical and/or allied health work, and 2) the skills necessary to lead their own related research studies and Fellowship applications.

**How the project addresses health inequalities:** This project is on health inequalities. Traditionally quantitative exploration of inequalities has focused on the role of a limited set of characteristics, such as sex and ethnicity, using conventional (additive) regression modelling. It is hard to see how the results from such investigations could be used for targeted interventions and policy changes. For example, if South Asian males with obesity are more likely to develop type two diabetes than white British adults with obesity, we only know that interventions and policy changes should consider this higher risk in the entire South Asian population. Such failure to understand the intersectional nature of inequalities restricts us to overly simplistic narratives and results in some disadvantaged groups "falling through the cracks" in healthcare, potentially exacerbating social injustices and inequities. By taking an intersectional approach to the study of health inequalities, our project will paint a much more detailed picture and identify which specific groups access obesity management services the least and suffer the most from obesity. Drawing the power of the large-scale data in the CPRD, this project will be able to consider inequalities between many different intersectional groups of people (e.g., with protected characteristics, by socioeconomic position, or living in different geographical areas).

## Leicestershire Healthcare Inequalities Improvement DTP

**Aim:** To reveal complex webs of intersectional inequalities in obesity management and related multimorbidity by developing advanced quantitative models that are grounded in sociological theory

**Background:** Obesity represents an important target for multimorbidity prevention.<sup>1</sup> Understanding which parts of the population access obesity management services the least and (perhaps therefore) suffer the most from obesity is important for policy changes. Despite this, little is known about inequalities between different groups of people in 1) access to NHS weight management interventions (e.g., advice, referrals, and prescription of antiobesity drug)<sup>2</sup> and 2) in the associations of obesity with incident multimorbidity. Existing exploration of such inequalities has typically focused on the role a limited set of characteristics (e.g., sex and ethnicity) using quantitative models that are not well-aligned with sociological theory.<sup>3</sup> Originating in Black Feminist thought, one germane theory, called “intersectionality” is concerned with the ways in which systems of discrimination and oppression are interdependent and interactive, producing inequalities that cannot be understood in isolation.<sup>4</sup> The MAIHDA (multilevel analysis of individual heterogeneity and discriminatory accuracy) approach provides an elegant and efficient solution for modelling intersectional inequalities but is still in its infancy.<sup>5,6</sup> This project will focus on theory-driven MAIHDA modelling of intersectional inequalities in obesity management and related multimorbidity in the Clinical Practice Research Datalink (CPRD).

1. Kivimäki M et al. Body-mass index and risk of obesity-related complex multimorbidity: an observational multicohort study. *Lancet Diabetes Endocrinol* 2022;10(4):253-63.
2. <https://oen.org.uk/managing-obesity/nhs-tiered-care-weight-management-pathway/>
3. Bann D et al. Socioeconomic inequalities in body mass index across adulthood: coordinated analyses of individual participant data from three British birth cohort studies initiated in 1946, 1958, and 1970. *Plos Med* 2017;14(1):e1002214.
4. Nash JC. Re-Thinking Intersectionality. *Feminist Rev* 2008; 89:1-15.
5. Merlo J. Multilevel analysis of individual heterogeneity and discriminatory accuracy (MAIHDA) within an intersectional framework. *Soc Sci Med* 2018;203:74-80.
6. Evans RC et al. A multilevel approach to modeling health inequalities at the intersection of multiple social identities. *Soc Sci Med* 2018;203:64-73.
7. Booth HP et al. Access to weight reduction interventions for overweight and obese patients in UK primary care: population-based cohort study. *BMJ Open* 2015;5(1):e006642.