**University of Leicester**

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| **Project Reference** | BRC Studentships |

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| **Additional Supervisor** | Dr Natalie Darko |

**Section 2 – *Project Information***

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| **Project Title** | Optimising the design and analysis of trials in multiple long term conditions ​ |
| **Project Highlights:** | 1. | PhD will identify, understand and prioritize methodological uncertainties associated with conducting trials in those with multiple long term conditions |
| 2. | PhD utilises an array of methodological approaches – systematic review, consensus study, survey and interviews.  |
| 3. | PhD contributes to an area of national and global priority  |
| **Project Summary**  |
| **Background:** ​The number of people with multiple long-term conditions (MLTCs) is increasing. By 2035 two-thirds of adults aged over 65 will be affected. Living with MLTCs is associated with high treatment burden, poor quality of life and premature mortality. Improving care for people with MLTCs is a global and national priority. There have been limited numbers of trials which have focussed on testing interventions to improve outcomes in people with MLTCs. Currently, little methodological guidance exists to support researchers when designing studies in this challenging and evolving area.​​This project will seek to identify, understand and prioritise methodological uncertainties associated with conducting trials in people with MLTCs.​ **Research Plan:** This PhD will comprise of 4 elements (numbered)**. ​**Current practice and methodological uncertainties for future research will be established by conducting a systematic review (1) and consensus study (2). Previous systematic reviews for MLTC trials will be updated. The identified studies will be used to assess current methodological approaches. A multi-stage Delphi study will then be conducted to establish methodological research priorities in MLTC trials. The results from the systematic review will inform the first stage. The views from patient/public/carers will also be incorporated. An online survey (3) will be conducted to learn more about the experiences of methodologists & clinicians in designing and analysing trials in MLTCs. The survey will aim to capture additional data/views/experiences which would not be included in research publications. Interviews (4) will be conducted with survey participants from a range of background and experiences to get greater depth of information. **Expected outcomes and impact:** ​Results of the project will be disseminated through high impact journal publications and presentation at national and international conferences. To optimise the impact of this work, the findings will inform the development of a short course which focuses on MLTCs trial methodology. The person undertaking this PhD will develop a host of research skills from the range of interdisciplinary methodologies being used within the project, adequate training and supervisor expertise is in place to ensure this. At the end of the PhD, the student will be supported to apply for fellowship funding to extend this work. More efficient trial methodology reduces research waste, elucidates effective treatments/interventions, and speeds up implementation into clinical practice. Therefore, the impact of this award will be better care options for people with MLTCs leading to better outcomes. ​  |
| **References**Academy of Medical Sciences. Multimorbidity: a priority for global health research. AMS, 2018.Lamont T, Bower P, Hay E, Mahtani K, Salisbury C. How can we fund research for people, not conditions? BMJ 2022; 379 :o2799 doi:10.1136/bmj.o2799Smith, S.M., Wallace, E., Clyne, B. *et al.* Interventions for improving outcomes in patients with multimorbidity in primary care and community setting: a systematic review. *Syst Rev* 10, 271 (2021). <https://doi.org/10.1186/s13643-021-01817-z> |