**University of Leicester**

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| **Project Reference** | BRC Studentships |

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| **Additional Supervisor** | Prof Jon Arcelus (external) |

**Section 2 – *Project Information***

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| **Project Title** | Establishing normative ranges for cardiopulmonary function in transgender people: a pilot, feasibility study​ |
| **Project Highlights:** | 1. | The use of cutting edge imaging with cardiac MRI and cardiopulmonary exercise testing |
| 2. | A unique collaboration between Cardiovascular Sciences, Lifestyle and Psychiatry. |
| 3. | This project will promote disease prevention, diagnosis and management in an underserved and marginalised group in society. |
| **Project Summary**  |
| **Background**: Quantitative evaluation of cardiac volumes and function is critical for identifying disease states. Central to this is establishing appropriate reference ranges, to permit differentiation between normal and pathological states. Accordingly, age and sex-specific reference values have been established using cardiovascular magnetic resonance imaging (MRI), the gold standard non-invasive imaging modality for characterising cardiac morphology and function. In the England and Wales 2021 census, 262 000 people (0.5%) identified as transgender. To date, there are no published studies evaluating cardiac volumes and cardiopulmonary function in people undergoing cross-gender hormone treatment. In order to distinguish health from pathological states, it is vital to establish appropriate reference ranges, and also to determine the impact of cross-gender hormone treatment on cardiac volumes and function. **Research Plan:*** ​A cross-sectional study involving 50 people on cross-gender hormone treatment, involving detailed characterisation of cardiopulmonary function
* The study population will comprise 50 adults (aged ≥18 years; 25 transfemale and 25 transmale) who have been on cross-gender hormone treatment for ≥ 2years, recruited from the community and from the Nottingham Centre for Transgender Health network (the largest national network in Europe for the care of transgender people.
* Study assessments will involve (but will not be limited to) the following assessments:
* High field-strength MRI assessment of the heart
* Cardiopulmonary exercise testing
* Spirometry
* Quadriceps strength assessment
* Additionally, a qualitative assessment will be undertaken to explore potential barriers to research participation.

**Expected outcomes and impact:** ​The proposed pilot study will test the feasibility of recruitment from the transgender community, and identify potential barriers to research participation. These findings will inform the design of a larger, definitive multi-centre cross-sectional study with a view to determining normative ranges in this population.   |