**Position Title:** Heart Failure Summer Research Student: Comparative effectiveness of the different components of care provided in heart failure clinics - systematic review and network meta-analysis

**Research Institute:** Toronto General Research Institute

**Department/Program:** Program for Health Technology Assessment and Data Science and Program for Health System and Technology Evaluation

**Principal Investigator** Valeria E. Rac

**Reports to:** Valeria E. Rac

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**Suggested placements start date:** May 2, 2022

**Funding:**
- Funding through TRCHR Scholarship Program YES
- Funding through supervisor/PI research funding NO

**Description of the placement:**
Heart failure (HF) is a complex chronic condition, leading to frequent hospitalization, decreased quality of life, and increased mortality. Recent estimates suggest that HF affects one million Canadians, with at least 50,000 new patients diagnosed each year. HF is also associated with an enormous economic burden, costing Canada an estimated $3 billion each year. Current guidelines recommend that multidisciplinary care be provided in specialized HF clinics. A number of studies have demonstrated the effectiveness of these clinics; however, there is a wide range in the services provided across different clinics.

This ongoing systematic review and network meta-analysis aims to identify the aspects of HF clinic care that are associated with the best outcomes: a reduction in mortality, hospitalization, and visits to emergency department (ED) and improvements to quality of life.

Relevant electronic databases were systematically searched to identify eligible studies. Controlled trials and observational cohort studies of adult (≥ 18 years of age) patients are included if they evaluated at least one component of guideline-based HF clinic care and reported all-cause or HF-related mortality, hospitalizations, or ED visits or health-related quality of life assessed after a minimum follow-up of 30 days. Both controlled trials and observational studies are included to allow us to compare the efficacy...
of the interventions in an ideal context versus their effectiveness in the real world.

To our knowledge, this is the first evidence synthesis to evaluate the comparative effectiveness of the different components of care offered in HF clinics. The findings from this systematic review will provide valuable insight about which components of HF clinic care are associated with improved outcomes, potentially informing clinical guidelines as well as the design of future care interventions in dedicated HF clinics.

| Educational objectives: | The student research program is an 'in-house' initiative for multi-level research students consisting of formal seminars, discussion forums, and direct health research experience in the field of heart failure, mechanical circulatory support, and cardiac transplantation. In addition, through the Program for Health Technology Assessment and Data Science and Program for Health System and Technology Evaluation, and over the course of the placement, student will be introduced to many methodological approaches relevant for health services and health technology assessment research.

During the placement, the student will:

- Learn about heart failure and clinical care patients receive in HF clinics by performing a rigorous evidence synthesis (systematic review and network meta-analysis), and by attending institutional rounds
- Acquire skills on evidence synthesis/conduct of systematic review and network meta-analysis
- Acquire statistical skills on data analysis and be supported by highly trained and experienced methods team
- Improve oral and written communication skills by continuous communication with other members of the research, presentation at the student and general rounds, and contribution to abstract and academic papers

| Proposed deliverables at the end of the placement: | During the placement, the student is expected to disseminate project results in at least two of the following:

- institutional rounds (e.g., heart failure, THETA student and general rounds)
- contribute to an abstract submission and conference presentation in national (e.g., Canadian Cardiovascular Society, Canadian Association for Health Services and Policy Research) or international (e.g., American Heart Association) meetings |
| Education and experience required: | • contribute to a submission of publication to a peer reviewed journal  
This is an exciting opportunity for an undergraduate student who is interested in learning about heart failure and how to conduct a systematic review and meta-analysis.  
Qualification and skills:  
• Enrolled in the Research Application Support Initiative (RASI) Program that supports students that are Indigenous, Black and economically disadvantaged to gain research experience.  
• Satisfactory university academic achievement  
• Interest in health services and clinical research  
• High degree of attention to detail  
• Ability to work as a member of a team  
• Knowledge and experience in the use of computer software applications including Microsoft Office programs (required), statistical programs (preferable) |
| Contact Information | Application Process:  
Interested candidates should provide:  
- copy of their CV  
- indicate their preferred project and supervisor at TRCHR  
- cover letter highlighting their relevant experience and a brief summary (250 words max) describing their educational goals with respect to the TRCHR Student Placement Scholarship.  
Please email your application package to patricia.deokie@uhn.ca by 5pm on Monday, March 21, 2022.  
In some circumstances, suggestions for an alternate project may be provided to successful applicants.  
Note: All applicants will be asked to complete an anonymous survey to ensure that our programs include considerations for EDI. The questions are voluntary and the information collected will not be used to evaluate any individual or application. It will be collected and held by the program coordinator and only shared as de-identified, aggregated information to inform the TRCHR Outcomes best practices. |