



Project Profile

Lead: Yushy Zhou



1. Project Title

Predicting the need for surgery

2. Project Summary

The PhD project is based around improving patient selection and informing patient decision making in the context of knee replacements. This overarching goal will be achieved in three key phases.

The first will be to develop a predictive tool for patients with arthritis to use before knee replacement surgery. The tool will provide patients a likelihood for improvement in health after they have their knee replaced. The idea is that with this information provided by the tool, patients can make more informed decisions about their health. For example, if the tool predicted a high likelihood for improvement, then this may provide reassurance for patients that knee replacement is the right option for them. On the contrary, if the tool predicted a low likelihood for improvement, then this may direct patients to consider other treatment options or undertake lifestyle changes like losing weight, to improve their outcome after knee replacement.

Once the predictive tool has been developed, the second phase of the PhD will involve testing the tool in a clinical trial. We will recruit patients who have knee arthritis from all around Australia to participate in the trial. The key question we would like to ask is “does the use of the predictive tool change your willingness for surgery?” The reason for asking this question is to better understand how this predictive tool influences patients in their health-based decision making.

The last phase of the PhD involves understanding the economic impact of using predictive tools in the greater healthcare context. We want to calculate precisely how much money the health system could save if our predictive tool was implemented widely in clinical practice. This will justify the tool’s use from an economic and policy point of view.

3. Project Assistance

The following types of assistance from the consumer includes:

- Non-scientific input into study design and findings
- Feedback on appropriateness of interview schedules
- Review and feedback of outputs (eg. information sheets, website and prediction tool) for general public



4. Time Commitment

The Research Lead has requested a commitment of roughly 1 hour a month. Meetings may be held via video conference or in-person as the consumer prefers.

5. A bit more about the Researcher...

I first decided to embark on a PhD back in late 2020. At the time, I was working as an Orthopaedic Registrar in New Zealand gaining clinical experience to progress my career. However, due to the COVID-19 pandemic and closure of borders, I was unable to see my partner for over 12 months as she was based in Melbourne. I came to a crossroads, and from there made the decision to take time out of my clinical job to undertake full time research. In my experience, I have found research is often the driver of clinical excellence. As a result, in August 2021 I made the move across the ditch to begin my PhD at the Department of Surgery based at St. Vincent's Hospital, Melbourne, Clinical School.