

Research Project Details	
Title	Prospective Validation of a Model for Predicting Delayed Displacement of Distal Radius Fractures: A Pilot Study
Investigator(s)	Dr. Prism Schneider, University of Calgary
Funding Period	2022-2024
Budget	\$40,000.00
Issue/Rationale	<p>Most wrist fractures can be safely treated without surgery using cast immobilization, but some need delayed surgeries after a few weeks to correct the wrist alignment and make sure it heals in the proper position. There is a need to early identify patients presented with wrist fracture who may require delayed surgery. If the decision that a participant will benefit from surgery can be planned earlier, this will reduce unnecessary time in a cast, time off work, and delay of surgery. In a previous study, our team identified several x-ray measures that may identify patients who may need delayed surgery. The present study aims to confirm if these x-ray features, with potential additional baseline clinical parameters, will better identify patients who need delayed surgery. This will enable surgeons and patients to make better decisions regarding surgical versus nonsurgical treatment at the initial consultation, based on the patient's clinical and x-ray parameters.</p>
Objective(s)	<ol style="list-style-type: none"> 1) Validate the previously developed model of radiographic parameters that predict delayed fracture displacement leading to surgical intervention, 2) Identify additional clinical parameters that predict delayed fracture displacement, 3) Determine the relationship between time-from-injury-to-surgical intervention and patient outcomes, 4) Examine whether delayed surgical intervention influences the cost of treatment of DRF, 5) Determine the surgeon-based primary reason(s) for proceeding with surgical treatment.
Anticipated Results/ Impact	This prospective study aims to optimize the prediction of delayed DRF displacement using clinical, demographic, radiographic, and patient-reported outcomes (PROMs). This research will assist with achieving optimal return to work outcomes in individuals experiencing lost time at work or restrictions in work duties following DRF.
Keywords	Wrist fractures, distal radius fractures, delayed displacement, predictive model, validation, surgical decision-making, return-to-work planning