

Using patient reported outcomes and mobility monitoring to optimize hospital care for patients undergoing knee arthroplasty

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Perioperative physicians have historically not had the means to systematically understand how patients do postoperatively. Next generation electronic medical records, EMRs (ie. Connect Care in Alberta) will provide some of the tools that will make the gathering of patient centric data much easier. These tools, if used wisely, could finally enable clinicians to have a better understanding of the incidence of things like postoperative nausea, pain, sleep disturbances and general patient satisfaction. We also believe that having a better understanding of individual patient's pre and postoperative mobility would add valuable information to optimally manage postoperative pain, nausea and sleep disturbances. Optimal postoperative management of pain, nausea and sleep disturbances must take into account patient mobility.

Our current study will examine the relationship between the timed up and go test (TUG test), which is a marker of frailty, and correlate it to self-evaluation of distance walked, sensor evaluated mobility and discharge times. Using sensor derived mobility data, we are able to track a patient's progress before and after knee arthroplasty in an objective manner, which will hopefully allow us to understand the patient's postoperative recovery and thus better understand and plan discharge readiness. Collating such data will hopefully create a basic framework for future research opportunities.