

## **Post Operation Recovery – Smart Health Monitoring**

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Orthopedic surgeries such as Total Knee Replacement are increasing every year. Limited interaction with the Clinical team and paper-based discharge instructions lead the patient and their loved ones through a burdensome and anxious journey towards recovery. Guided and monitored post-operation recovery can empower the patient towards faster recovery and reinforce confidence in the patient while allowing early intervention in case of deteriorating symptoms.

We have developed a Smart Health monitoring platform (Doctodoor™) with Template Care Protocol, which is delivered to the patient on a mobile app. The Care Protocol includes: Symptom tracking Health Assessment Q&A/Patient Reported Outcomes, Vitals and Fitness data monitoring, Medication adherence, Exercise content and videos, Daily Health goals and a Nutritious/Balanced Diet plan. The Template Care protocol may be personalized, if required, to suit the specific condition(s) of the patient.

The Patient Journey is divided into two parts: Pre-operative and Post-operative.

Pre-operative starts from few weeks before the surgery date. Pre-habilitation is started for Quadriceps muscle strengthening and upper body exercises allowing the patient to be better prepared for post-operation rehabilitation program [1]. The Care protocol also provides appropriate guidance related to common surgery pre-op precautions like stopping the blood thinners and many other items [2].

Post-operative Care Protocol presents the patient with Symptom tracking & Health assessment questions, Post-operative exercise routines, Vital data measurement, Diet Plan, Medication reminders and Health & Fitness goals. The patient connects the app to 3<sup>rd</sup> party wearable or medical devices, and health & fitness database of the phone like Apple HealthKit or Google Fit. Vital measurements, Medication adherence, Health Goals and Responses from the patients are linked with alerts. KOOS score [3] will be used as patient reported outcome.

The Clinician is also provided with a mobile app to monitor the patients on the go, and Patient summary dashboard is linked to the Electronic Health record of the patient in the Hospital Information System software (Hygehos®). This allows the Clinician to review the patient condition, make necessary changes in the Care protocol or intervene in case of serious diversion from recovery or worsening symptoms.

Program outcomes will be measured in terms of technology usage, patient satisfaction, reduction of anxiety, recovery period, caregiver staff's time commitment, savings in terms of visits to Emergency or Hospital, indirect savings from reduced community support, non-clinical services and impact on professional work.

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### References:

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