

FREEDOM QRS:

Post-Op Patient Recovery Program

The balance between health and cost management efforts are greatly influenced by the advancements of various surgical techniques, decreased hospital inpatient length of stay (LOS), and current shifting of primary total knee and hip arthroplasty (TKA & THA) to "same day" ambulatory surgery centers (ASCs).¹⁻² In addition to the immediate peri-operative episode, managing patient participatory compliance in post-operative recovery and rehabilitative care is difficult due to limited provider resources and diminished reimbursements.

The Maxx QRS post-operative patient recovery program, called QRS Recovery[®], is a mobile application (app) designed to allow for continual patient engagement and monitoring of the surgeon's post-operative rehabilitation protocols for facilitating and optimizing patient recovery and return to expected activities of daily living (ADL).

- **Pre- and post-operative patient rehabilitation compliance leads to improved clinical outcomes.**
- **Delivery and monitoring of recovery and rehabilitation is difficult with decreasing resources.**
- **QRSRecovery is a mobile app, customizable to the surgeon's rehabilitation protocol.**
- **Auto-reminders, monitoring and result recording maintains surgeon/patient engagement.**
- **Addition of self-reported patient outcome measure to monitor progress in real-time while contributing valuable information to help centers negotiate bundle pricing.**

Published reports conclude that post-operative, home-base patient rehabilitation is a significant cost reduction when compared to similar in-patient programs for primary TKA and THA, and approaches a 5-fold decrease in costs versus traditional rehabilitation programs.² The delivery of post-operative TKA and THA care can be managed with an in-home program without sacrificing the quality of care or outcomes. In addition, self-administered outcome measurement tools are valid, accepted and a common tool for monitoring post-operative outcomes and satisfaction. However, patient compliance and results gathering still require the use of medical office personnel resources for one-on-one patient contact and monitoring.¹

The Maxx QRS Recovery mobile app maintains a partnership between the surgical care team and patient, allowing for on-going review of outcomes independent of physical office visits. App development for "smart" devices allows for moderately easy customization to a surgeon's preferences for;

- 1) Surgeon personalization and office branding.
- 2) Content based on rehabilitation protocols and reporting frequencies.
- 3) Real-time reporting of rehabilitation compliance and outcomes progress.
- 4) Out of range notifications for identification and avoidance of adverse event markers.

The use of the Maxx QRS Recovery mobile app allows for reductions in the episodes of delivery of care, patient monitoring, patient loss to follow-up and related costs, while enhancing the overall quality of the surgeon / patient post-operative engagement.

REFERENCES

- 1) Culliton, et al: Effect of an e-Learning Tool on Expectations and Satisfaction Following Total Knee Arthroplasty: A Randomized Controlled Trial. *J Arthrop*, 33:2153-2158, 2018.
- 2) Mahomed, et al: Inpatient Compared with Home-Based Rehabilitation Following Primary Unilateral Total Hip or Knee Replacement: A Randomized Controlled Trial. *J Bone Joint Surg*, 90:1673-1680, 2008.