

# Evaluation of an Enhanced Recovery Program for patients undergoing Total Knee Arthroplasty at Joondalup Health Campus

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## Introduction

The Enhanced Recovery Program (ERP) was introduced at Joondalup Health Campus (JHC) in 2015, for Total Knee Arthroplasty patients. This multimodal, evidence based program was implemented in a bid to reduce patient length of stay, without compromising patient care and outcomes. Physiotherapy intervention is an integral component of this pathway, and consists of standing patients on Day 0, and delivering bi-daily therapy to Day 5 inclusive. There is growing demand to care for this expanding patient cohort with incidence predicted to increase by 276% by 2030, at a cost of \$5.32 billion to the Australian health care system. It is therefore essential that the service we provide continues to align with best evidence, and resources are directed to the most clinically impactful pursuits.

## Aim

This clinical audit has two main aims:

- i). To compare our current service to the contemporary evidence.
- ii). To examine the impact of compliance with the prescribed physiotherapy intervention on length of hospital stay.

## Methods

A retrospective documentation audit of 100 of the 320 Total Knee Arthroplasty patients admitted to JHC between January-December 2020 was conducted to retrieve the data for this review. The patients were de-identified, and randomly selected using a number generator. Excluded patients included bilateral, unicompartmental and revision knee replacements. The primary outcome measure used was hospital length of stay, from surgery commencement to discharge time.

## Results

100 patients were selected and reviewed, with a mean age of 69 years old, 57% of whom were under the public contract. The mean length of stay was 4.2 days. Overall compliance with physiotherapy intervention is detailed below.



		Day 0 stand	
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Bi-daily PT	Compliant	3.31 days (19%)	3.83 days (51%)
	Non-Compliant	4.85 days (11%)	5.63 days (19%)

Patients who achieved “gold standard” physiotherapy intervention, that is, compliant with both Day 0 stand and bi-daily intervention had the shortest length of stay (3.31 days). As detailed in the table above, deviation from the prescribed physiotherapy intervention was associated with a longer length of stay.

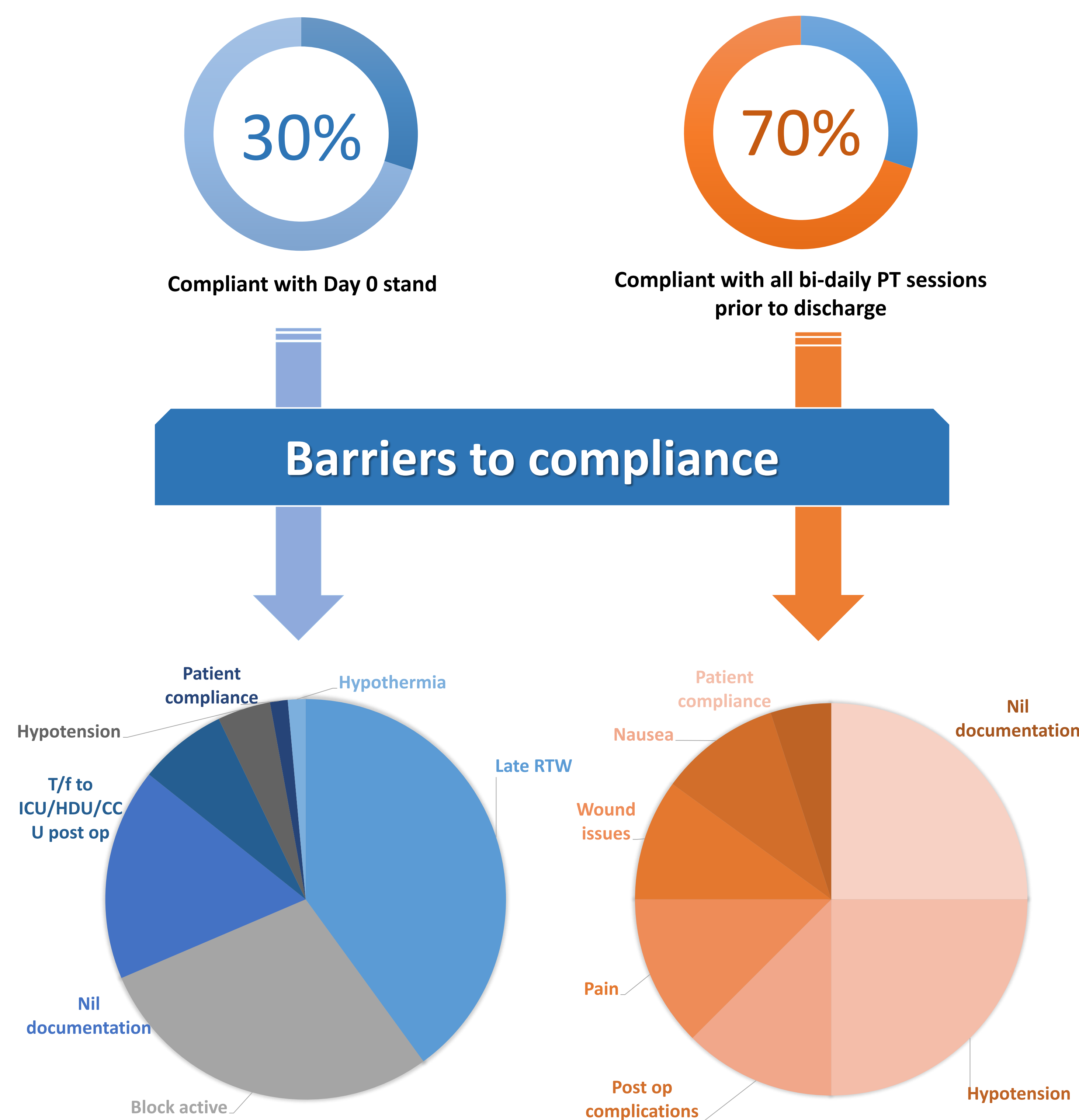
## Conclusion

Increasing compliance with physiotherapy intervention in Total Knee Arthroplasty patients is predicted to have a significant impact on length of stay. It is estimated that with an increase of 50% compliance, 274 bed days per annum would be saved, equating to approximately \$380, 296 p.a. It is also expected that this benefit is transferrable across similar ERP cohorts including Total Hip Arthroplasty, and thus the impact is manifold beyond what is described within this audit.

## Key Recommendations

Given the expected growth in this patient cohort, it is essential that we continue to adjust our service based on best evidence to ensure efficient resource allocation. The following recommendations have been made to facilitate this:

- 1). **Extended hours of service and an additional 0.2 FTE of Physiotherapy** on the orthopaedic wards to facilitate more Day 0 stands.
- 2). **Reduction of bi-daily PT intervention to Day 3 inclusive**, to allow for reallocation of resources across the orthopaedic service.
- 3). **Ongoing education** to Physiotherapy department to promote proactive management of barriers to therapy and foster clinical skills related to safe and effective mobilisation.
- 4). **Streamline rehabilitation referral process** to reduce length of stay on acute ward.



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References: 2. Ackerman IN et al. The projected burden of primary total knee and hip replacement for osteoarthritis in Australia to the year 2030. *BMC Musculoskeletal Disorders*. 2019; 20 (1): 90