

# Does delayed physiotherapy following Total Knee Replacement increase post-operative stiffness? A new angle on knee flexion.

## Background

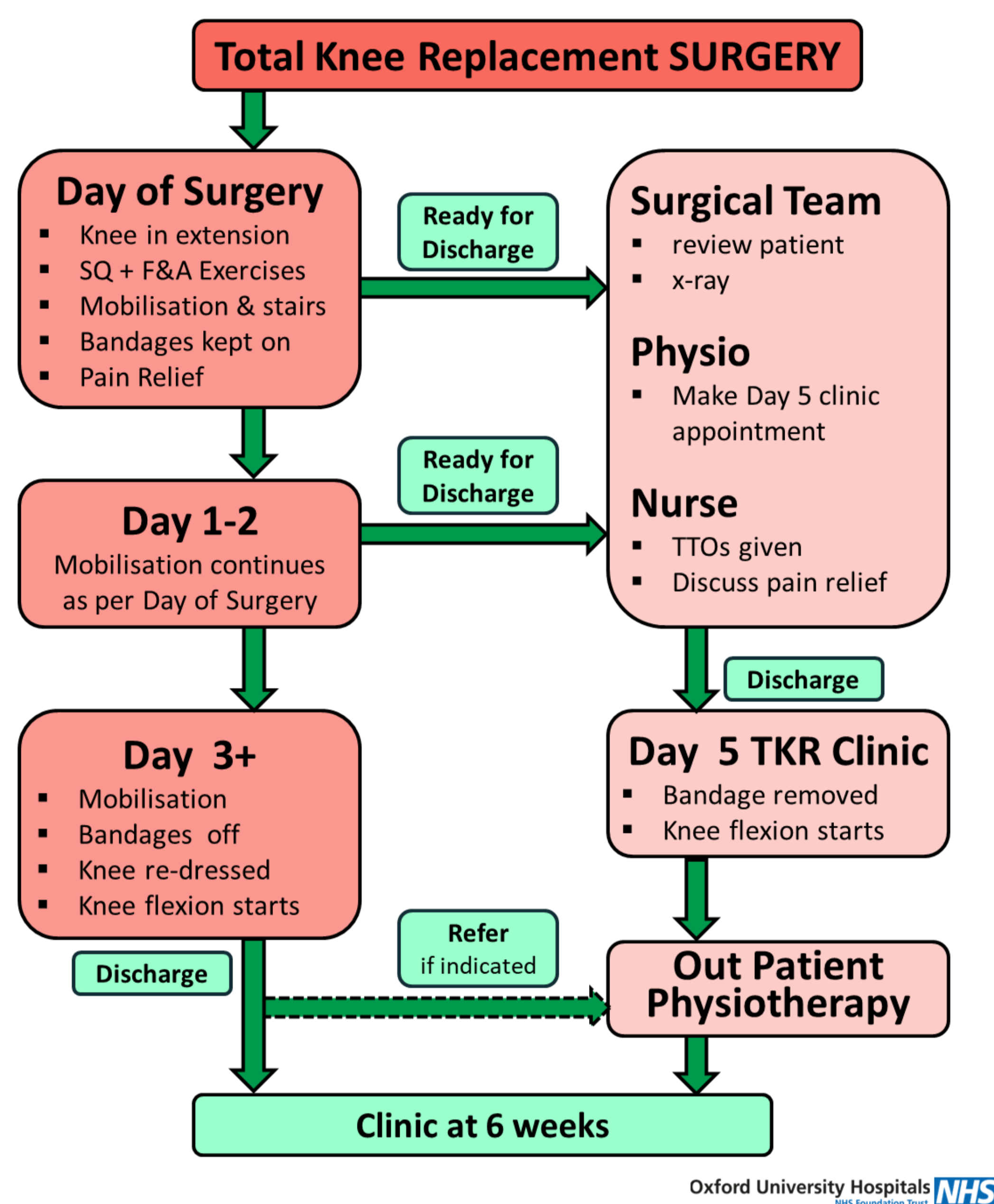
- The NHS continues to adopt ways to safely reduce length of stay (LOS) following surgery
- 88,000 Total Knee Replacements (TKR) were performed in 2018 (National Joint Registry) with a median age of 70 years
- 80% of TKRs have an American Society of Anesthesiologists (ASA) grade of 1 or 2 so should be able to mobilise early

## Study Purpose

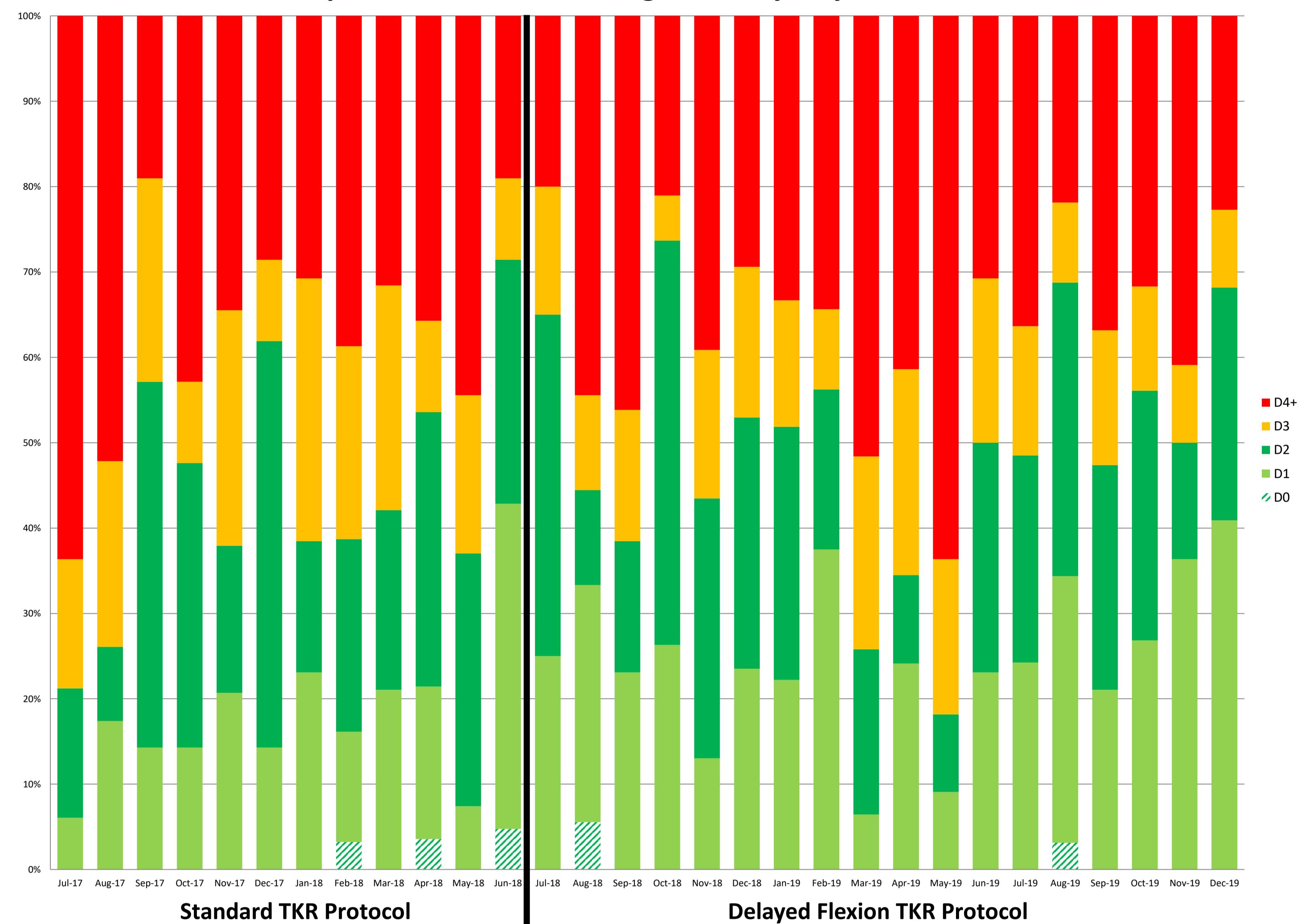
- Safely reduce LOS following TKR
- To assess the impact of the introduction of an innovative pathway allowing early mobilisation and a timely discharge
- Compare the new TKR pathway to standard care in terms of day of discharge and post-operative range of movement
- Monitor readmission rates and adverse events

## Methods

- By applying the Plan-Do-Study-Act model our new accelerated Unicompartamental Knee Replacement pathway was standard practice by July 2017<sup>1</sup>
- July 2018 the new accelerated TKR pathway was introduced<sup>2</sup>, based on similar principles to our UKR pathway - regular analgesia, early mobilisation and delayed knee flexion until Day 5 (for those discharged by Day 2)
- All TKRs followed the same pathway and all those discharged by Day 2 returned on Day 5 for the removal of dressings, commence knee flexion, gait re-education, advice and onward physiotherapy referral
- Patients requiring a longer admission transferred on Day 3 to standard management



Nuffield Orthopaedic Centre: TKR Length of Stay July 2017 – December 2019



## Results

### Standard TKR Protocol

- July 2017 – June 2018
- 42% (122) TKRs discharged by Day 2
- Flexion at 6 weeks 98° (SD 15), range 40-130, IQR 20
- Readmissions N = 10 (8%)
  - MUAs = 3 (2.4%)
  - Debridement and Implant Retention = 4
  - Revision TKR following a fall = 1
  - Bleed + aspiration = 1
  - DVT = 1

### Delayed Flexion TKR Protocol

- July 2018 – December 2019
- 53% (224) TKRs discharged by Day 2
- Flexion at 6 weeks 99° (SD 13), range 50-135, IQR 19
- Readmissions: N = 11 (5%)
  - MUAs = 4 (1.7%)
  - Debridement and Implant Retention = 3
  - Cellulitis = 1
  - Haemarthrosis = 1
  - DVT = 1
  - Infective COPD (later diagnosed as MND) = 1

## Conclusions

- Delaying knee flexion until Day 5 had no effect on knee flexion at 6 weeks and facilitated early mobilisation and a timely discharge
- An unselected cohort is this pathway's strength as screening was not required and all patients had the opportunity for early discharge

## Implications

- The shift in emphasis and culture in this unit to early mobilisation and discharge has had positive effects on LOS following other procedures such as total hip replacements
- The new TKR pathway has been shown to be safe and effective and is now routine practice in this unit

## References:

- Jenkins C, Jackson W, Bottomley N, Price A, Murray D, Barker K. Introduction of an innovative day surgery pathway for unicompartamental knee replacement: no need for early knee flexion. *Physiotherapy* 2019;105:46-52
- Jenkins C, Jackson W, Bottomley N, Price A, Murray D, Barker K. Delayed knee flexion is a safe and effective pathway for Total Knee Replacement. *Physiotherapy* 2020;108:45