Changing Culture and Improving Practice in Orthopaedics

“Time to Move”

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Changing Culture

- Understanding what our culture was
  - Waiting for physiotherapy to mobilise patient
  - Orthopaedic patients spending more time in bed
  - Reduced power for frontline staff
  - Length of stay – supported (not moving)
  - Empty corridors
Focus – Reduce Waste

• 1. Restricted weight bearing patients
  – Fragility fractures / Ankle / Periprosthetic Fractures

• 2. Elective surgery
  – Total Hip Arthroplasty
  – Total Knee Arthroplasty
Engage Stakeholders

- Orthopaedic Surgeons / Registrar / Intern
- Orthogeriatrician
- Rehabilitation
- Anaesthetist
- Nursing
- Physiotherapy
- Occupational therapist
- Social Worker
- Patients / Consumers
Throwing the Old Practise Out

- Current practise compared to Best practise
- Compare to peers
- Review current projects in other LHD / National / International
- Compile Care bundles to meet patient needs and expectations
RECONDITIONING PROGRAM
Reconditioning Program

Before Implementation

- Limit subacute beds
- No rehab goals
- Patients deconditioning
- ‘Waiting your time’ in an acute ward
- Patient satisfaction low
  - Bored / Felt isolated
- Poor Documentation – RWB for how long?

Post Implementation

- Limit subacute beds
- Rehab goals – expectation to meet
- Reconditioned – Daily exercise / Functional goals
- 40% compared to 5% going home
- Monitored FIM score – From 55 to 83
- Improved Satisfaction 40-90%
Discharge destination – Median LoS 14 days

- Home 25%  Av.7d
- Home with services 50% - Av. 16d
- Rehabilitation 15% - Private 7 days PU 14d
- TCU 10% (Patients were taking 1 wk. to meet admission criteria, one assist)
Improved Communication with Subacute care

● Success of the Program led to
  – Rehabilitation facilities accepting patients
  – Identification rehab goals
  – Monitoring pts reaching goals
Adverse events

- 9% to 0.5%
- Reduction in VTE
- Reduction in HAP
- Reduction in Pressure Injuries
Enhancing Rapid Recovery After Joint Arthroplasty

A New Model of Service Delivery
Background

- A recent national study involving Concord indicated that its arthroplasty service outcomes were sub-optimal (Naylor, 2015)
- 300 joint arthroplasties a year
- Increased length of Stay compared to other facilities – 5.7 days
- High referral rates to inpatient rehabilitation - 21%
- Few patients were mobilised on the day of surgery 0%
- Fast track arthroplasty protocols
Primary aim

– to evaluate the implementation of an ERAS program on acute-care length of stay following primary, unilateral total knee or hip arthroplasty (TKA, THA).

Secondary aims

– to reduce the rate of adverse events
– To increase patient satisfaction with the acute-care experience
– To understand staff experience of ERAS & change of practice to identify individual components of ERAS associated with shorter LOS.
Primary Hypothesis

That an ERAS program for arthroplasty patients will reduce LOS by approximately half compared to that observed with the current pathway.
Methodology

- The proposed study is an experimental sequential change of practice study using historical controls.

- A pre-practice change audit of current practices and study outcomes will be undertaken over a 3-4 month period.

- New Model of Service Delivery (MoSD) introduced over a 1-month period.

- MoSD evaluated over a 3-4 month period.
Method

- New Model of Service Delivery (MoSD) was introduced (multi-disciplinary approach)
- Patients undergoing THA and TKA were eligible to participate in the prospective arm of the study
- Exclusion criteria
  - Bilateral joint surgery / Revision
  - Significant Cardiac or Renal Disease
  - Chronic pain were recruited modified analgesia pathway
- Data collected prospectively on patients in an ERAS program from February 2017 – May 2017 were compared to a retrospective cohort of patients managed in a traditional joint replacement protocol (August 2016 – November 2016)
Development of New MoSD

- **MDT Team**
  - Anaesthetic / Orthopaedic Surgeons/ Physio / OT / Nurses
  - Orthogeriatric / Patient feedback

- Literature review – Available literature and review on ERAS and Fast Track programs

- Staff knowledge of mobilisation & rehabilitation targets for Joint Arthroplasty
New MoSD

- Pre-op physiotherapy assessment – in the Preadmission
- Reduced opioid analgesia – Standard Pain Protocol / Intraop
- Mobilised within 24 hours – 80% within 4 hrs / Sitting out of bed for 6 hours compared to 3
- Minimum daily walking increased from once to three times daily. Dressed
- Data collection techniques: patient-completed Oxford Hip and Knee Score
- Follow up phone call
Ward Management

**Day 0**
- Sit out of bed (Mobility Chart)
- Assess and manage pain
- ICE / Cryotherapy

**Day 1**
- Sit out of bed for breakfast
- Shower/ Sponge
- 2 walks
- Dress
- ICE

**Day 2**
- Sit out of bed for all meals
- 3 walks
- Bed Mobility
- Dress independently

**Day 3**
- Discharge
- Patient education
Preliminary Findings

- Length of Stay has reduced from 5.8 to 3.2 days (Continue to Improve)
- Adverse events has reduced
- Referral to rehabilitation has reduced from 21% to 8%
<table>
<thead>
<tr>
<th></th>
<th>Pre-Implementation</th>
<th>Post-Implementation</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Size, n=152</td>
<td>71</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Age, mean</td>
<td>70</td>
<td>66</td>
<td>0.047</td>
</tr>
<tr>
<td>Female, %</td>
<td>54%</td>
<td>49%</td>
<td>0.61</td>
</tr>
<tr>
<td>Body mass index, mean</td>
<td>32</td>
<td>33</td>
<td>0.82</td>
</tr>
<tr>
<td>ASA, Median</td>
<td>2</td>
<td>2</td>
<td>0.34</td>
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<tr>
<td>Oxford Score, mean</td>
<td>23</td>
<td>23</td>
<td>0.86</td>
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## Compliance with new MoSD

<table>
<thead>
<tr>
<th></th>
<th>Pre-implementation</th>
<th>Post-implementation</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td><strong>Mobilisation commenced Day 0</strong></td>
<td>0%</td>
<td>56.8%</td>
<td>0.28</td>
</tr>
<tr>
<td><strong>Urinary indwelling catheter out Day 1,</strong></td>
<td>1.3%</td>
<td>95.9%</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td><strong>Hours to mobilise, mean (sd)</strong></td>
<td>22.6 (7.4)</td>
<td>7.3 (5.7)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td><strong>Hours sat out of bed Day 1, mean (sd)</strong></td>
<td>2.3 (1.5)</td>
<td>4.8 (1.1)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td></td>
<td>Pre-implementation</td>
<td>Post-implementation</td>
<td>P-value</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------------------</td>
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</tr>
<tr>
<td><strong>Length of stay, days, mean (sd)</strong></td>
<td>5.8 (2.2)</td>
<td>3.2 (1.4)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td><strong>Proportion mobilized day 0</strong></td>
<td>0%</td>
<td>56.8%</td>
<td>0.28</td>
</tr>
<tr>
<td><strong>Discharge directly home, %</strong></td>
<td>78.9%</td>
<td>91.4%</td>
<td>0.029</td>
</tr>
<tr>
<td><strong>Composite complication, %</strong></td>
<td>12.7%</td>
<td>3.7%</td>
<td>0.041</td>
</tr>
<tr>
<td><strong>Oxford Knee Score (6 weeks), mean (sd)</strong></td>
<td>33 (3)</td>
<td>33 (4)</td>
<td>0.54</td>
</tr>
<tr>
<td><strong>Oxford Hip Score, mean (sd)</strong></td>
<td>34 (4)</td>
<td>36 (5)</td>
<td>0.26</td>
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## Patient Satisfaction

<table>
<thead>
<tr>
<th>Patient Satisfaction</th>
<th>Pre-implementation, %</th>
<th>Post-implementation, %</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Agree / Strongly Agree</td>
<td>Other</td>
</tr>
<tr>
<td>1. I felt prepared for my operation</td>
<td>95</td>
<td>5</td>
</tr>
<tr>
<td>2. Staff included me in discharge planning</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>3. Staff supported me</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>4. Information about my progress in the ward was adequate and understandable</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>5. Staff prepared me for my discharge</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>6. The management of my pain was included in the plan</td>
<td>93</td>
<td>7</td>
</tr>
<tr>
<td>7. I felt emotionally supported by staff</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>8. My family/friends were able to be involved in my care</td>
<td>91</td>
<td>9</td>
</tr>
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</table>
Pain Score Pre and Post and Mobility

Mobility and Pain

- Mobility
- Mobility1
- Pain
- Pain1

Day 0
Day 1
Day 2
Maintenance Change

- Role Modelling
- Subtle changes – Sit out of bed for breakfast
- Move away from a culture of ‘Wait’ to a culture of ‘Move’
- Empower staff
Current Issues continued

- Length of Stay
  - Av. 5.4 days TKR (not competitive) 3.5 days
  - Av. 5.1 days THR (close to state average) 3.5 days

- Rehabilitation
  - More an expectation than a needs basis

- Patient Satisfaction
  - Adhoc

- Discharge Information
  - Written
  - Often handed to the patient and not explained D7 phone call
## Pain Score Pre and Post and Mobility

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
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<tbody>
<tr>
<td><strong>D0 Distance</strong></td>
<td></td>
</tr>
<tr>
<td>0 = 71</td>
<td>0</td>
</tr>
<tr>
<td>1 = 67</td>
<td>2m</td>
</tr>
<tr>
<td><strong>D0 Pain 1</strong></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1.1</td>
</tr>
<tr>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>D0 Pain 2</strong></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1.9</td>
</tr>
<tr>
<td>1</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>D0 Pain 3</strong></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1.9</td>
</tr>
<tr>
<td>1</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>D1 Distance</td>
</tr>
<tr>
<td>------------------</td>
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</tr>
<tr>
<td></td>
<td>0 = 71</td>
</tr>
<tr>
<td></td>
<td>1 = 67</td>
</tr>
<tr>
<td>D1 Pain 1</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
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<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>D1 Pain 2</td>
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<tr>
<td>0</td>
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<tr>
<td>1</td>
<td></td>
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<tr>
<td>D1 Pain 3</td>
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<tr>
<td>0</td>
<td></td>
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<tr>
<td>1</td>
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<tr>
<td></td>
<td>Mean</td>
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<td>-------------------</td>
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</tr>
<tr>
<td>D2 Distance</td>
<td>45</td>
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<td>81m</td>
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<tr>
<td>D2 Pain 1</td>
<td>3.3</td>
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<td>2.8</td>
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<tr>
<td>D2 Pain 2</td>
<td>4.6</td>
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<td></td>
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<td>D2 Pain 3</td>
<td>3.9</td>
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<tr>
<td></td>
<td>2.9</td>
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Acknowledgements

- Tim Sinclair
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- Dr Nichola Boyle – Orthogeriatrician
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- Priya Nathan – Physiotherapist
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- Dev – Social Worker
- Theresa – Occupational Therapist
- Nursing staff on Ward 6 North – led by Natalie Shiel, Melinda Pestana
- Orthopaedic surgeons / Registrars and Interns
- Elizabeth Bryan – Performance unit SLHD
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