Outcomes of an accelerated discharge pathway after spinal fusion

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The Royal Children’s Hospital
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**Background**

- **Scoliosis** = Lateral curvature and rotation of the spine
- **Adolescent Idiopathic Scoliosis**
  - most common type of scoliosis
  - affects children 10 – 18 years
  - has no identifiable cause
- **Posterior Spinal Fusion** = surgery to stop curve progression and reduce the curve to some degree
Background

- Fletcher et al. developed accelerated discharge pathway following posterior spinal fusion in patients with adolescent idiopathic scoliosis (AIS)

- Results =
  - Length of stay 48% shorter in pathway group
  - Decrease hospital cost by 33%
  - No difference in wound or medical complications

(Fletcher et al. 2014)
### Background

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<tr>
<th>RCH practice</th>
<th>Fletcher et al. Accelerated Discharge Pathway</th>
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<td>Mobilise with Physiotherapist</td>
<td>Sit over edge of bed Day 1 Step transfers to chair Day 2 Walking Day 3 Seen x2 daily</td>
<td>Walking Day 1 morning Seen x 2 daily</td>
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Planning Phase
Multidisciplinary Team

- Meet with each team involved in care

Objectives

- No increase in complications
- No increase in readmission
- No compromise to patient/family satisfaction
- Reduce length of stay
- Reduce hospital costs
Preparation Phase

1. Patient Criteria for Pathway
   • Age 10 and older
   • Uncomplicated Posterior Spinal Fusion for AIS
   • No significant co-morbidities

2. Post Operative Orders
   • Standardised post operative orders
     • Mobilising as tolerated, no brace, can sit up in bed
Preparation Phase

3. Resources Developed

• Pathway formulated
  • for staff

• Pre admission clinic handout
  • for family/patient

• Daily goal sheet
  • for family/patient
## Day 1 after scoliosis surgery

### RCH staff
- Nurse to check your vital signs such as breathing, heart rate and temperature every 4 hours.
- Nurse to check your movement and sensation every 4 hours.
- You will be given fluids through a line into your arm.
- Your bladder (suprapubic catheter) will be removed in the evening.

### Patient and family
- **Pain management**
  - Pain Team review.
  - Stop use of morphine (PCA).
  - Nurse will give you oral pain medication.

### Activity
- **Physiotherapy** review in the morning and afternoon. They will help you:
  - Sit out of bed for a short while in the morning and afternoon.
  - Walk outside your room.

### Nutrition/Diet
- Nurse to give sips of fluids/fruit softener.
- Drink clear fluids.
- Eat small amounts of liquids and solids.
- Chew sugarless gum.

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## Day 2 after scoliosis surgery

### RCH staff
- Nurse to stop monitoring your vital signs such as breathing, heart rate and temperature.
- Nurse to check your movement and sensation when you are asleep and on oral medication.
- Nurse to stop giving you food through the nasoenteric tube when you are down to 3/4 of your fluids.
- Speak in small words (reduces swallowing) in the afternoon.

### Patient and family
- **Pain management**
  - Pain Team review.
  - Nursing staff to give oral pain medication.
  - Medication may be altered if necessary for pain management.

### Activity
- **Physiotherapy** review in the morning and afternoon. They will help you:
  - Walk 10-15 minutes in the morning.
  - Walk outside your room.

### Nutrition/Diet
- Continue to have broth/soup/easy entrees.

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If you have any questions about the above please ask your nurse.

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If you have any questions about the above please ask your nurse.
Implementation

1. Education and Training
• Surgeon identified if patient planned for pathway
• Surgeon and Scoliosis Coordinator educated patient/family on pathway

2. Preadmission Review
• Surgeon identified if patient planned for pathway
• Surgeon and Scoliosis Coordinator educated patient/family on pathway

3. Ward Management
• Daily goal sheet in the patient’s room
Outcomes

Six Month Review

Retrospective Audit

• 2013
  • 17 patients

• 2014
  • 15 patients

Prospective Audit

• Feb – July 2016 (6 months)
  • 19 patients

• No difference in cohorts at time of surgery
  • Age, gender, pre surgery curve angle, medical history, number vertebrae fused, pedicle screws used
Changes in Post Surgical Care after Spinal Fusion

- Patient controlled analgesia removed
- Urinary tube removed
- Eating solid food
- Sitting out of bed
- Walking
Hospital Length of Stay

<table>
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<th>Year</th>
<th>Days in hospital</th>
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<tr>
<td>2013</td>
<td>6.1</td>
</tr>
<tr>
<td>2014</td>
<td>6.5</td>
</tr>
<tr>
<td>2016</td>
<td>3.4 (February – July 2016)</td>
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Number of Physiotherapy Sessions

- 2013: 7.6 sessions
- 2014: 8.5 sessions
- 2016: 5.5 sessions

February – July 2016
Cost Saving per Patient

- Ward Nursing Cost
- Allied Health Cost
- Ward Orthopaedic Medical Cost
## Complication and Readmission Rate

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- **2013**: n = 17
- **2014**: n = 15
- **2016**: n = 19
Patient/Family Satisfaction Survey

- Global satisfaction rating = 9.2/10
- Communication with parent = 9.3/10
- Communication with child = 9.1/10
- Attention to safety & comfort = 8.5/10
Summary

Introduction of an Accelerated Discharge Pathway for AIS

• Reduced length of stay and hospital costs
• No compromise in patient safety
• No compromise in patient satisfaction
Reference:

Thank you