Developing a co-located shared care trauma rehabilitation model for the Australian Healthcare System.

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Overview

- Current trauma trends
- Current practice and its limitations

Research findings
- Potential benefits

- New integrative service model

Australian application
- Potential barriers
Trauma Trends

Significant male domination

Peak age range = 17-54 years

- Bimodal peak in the over 75+

Road trauma, falls and assaults (mechanism)

- Head injuries = 44% of all injuries
- Multisystem injury
- Burns

Approximately 22% of all trauma patients will need formal rehabilitation

Australian Trauma Quality Improvement Program, 2015.
Major Trauma in NSW, 2015.
Rehabilitation in Australia

Six options – variable according to facility/location

- In reach
- Sub acute inpatient
- Ambulatory care: Day hospital
- Ambulatory Care: Out patient
- Ambulatory Care: Home based (TACP or community PT/OT/Speech)
- Outreach
The path to rehabilitation

Traumatic event

Out of hospital management

Death

Critical Care management

Survival

Medical / Surgical Admission

Critical Care

WARD
Rehab referral

Stable
- Transfer to inpatient rehab
- Ward therapy
- In Reach
- Await bed availability

Unstable
- Not currently appropriate for rehab
- Remain with ward based therapy

Critical Care

Ward
Current barriers to introducing a fast-tracked rehabilitation model

- Medical instability
  - Presence of a trache, haemodynamic compromise and/or ongoing surgical intervention required

- Length of stay $\rightarrow$ > 3 weeks
  - Including ICU admissions

- Complications / “Secondary insults”
  - Pressure areas, delirium, contractures, pneumonia and VTE

- Focus of rehabilitation
  - Primary versus tertiary involvement
  - Waiting times

What does the literature suggest we do?

- We intervene earlier!
- Hyperacute | Fast-track | Continuous chain | Early rehabilitation
- Three reoccurring themes emerged
  - Functional improvements
  - Financial
  - Facilitation of patient flow
What is it?

- Dedicated beds in a co-located space

- Rehabilitation equivalent therapy on an acute care ward

- Shared care philosophy
  - Surgeon + Rehabilitation consultant
  - Physician + Rehabilitation consultant

- Early facilitation of referrals, discharge planning and equipment prescription
What was found?

- **Functional**
  - Changes in motor and cognitive functioning scores (FIM & FAM)
  - Long term changes in GOSE scores (5 year)

- **Financial**
  - Reduction in care hours, resulting in reduced costs
    - Decreased disability rate scale scores (maintained at 5 years)
  - Higher acute care costs

- **Patient flow**
  - Decreased acute LOS (-17 days)
  - Decreased rehab LOS (-29 days)
    - = 35.5 bed day difference

What is the value add to an Australian health care setting?

- Improve patient outcomes
- Enhancement coexisting services
- Paradigm shift
  - Innovative integrated practice
- Improvements for patient flow
Patient journey: First 48 hours

1. Triggering event
2. Out of hospital care
3. Trauma call
   Initial ED/ Critical care management

- Injuries incompatible with life
- Intensive Care Unit
- Ward
- No admission / Discharged home
Patient journey: Hour 48 – 72

- Brain injury
- Spinal Injury
- General Rehab
- Local hospital transfer

Intensive Care Unit

Ward

FastTrack CNC/Reg Review

Team huddle

Rehab consultant review
Step down from ICU

Shared care
(+/- Service delivery code change)

Colocation to Fast Track Neuro / Ortho

MDT rehab goals

Transfer to specialist rehabilitation service

Handover : Cessation of input

Discharge home

+/- Handover to out patient services
Potential barriers

- Systemic change
  - Rehabilitation is an acute intervention not solely a sub acute adjunct
  - Rethinking how we treat complex patients
  - Designing systems that fit the patient

- Cost
  - Acute care costs were initially higher
  - Reduced long term costs
    - Turner Stokes et al = £462
    - Cooney and Carroll €387
    - Singh et al = £568/week (600K across the life time)
    - Andelic et al = $5,940 less

- Staffing
  - Additional staff costs
  - Training and education
Where to now?

- Economic analysis of acute health care costs
- Analysis of implications on
  - Patient flow
  - Secondary insults/complications
- Identifying functional benefits and translation into the community
Conclusion

- Integrated Fast track rehabilitation represents a change in current practice
  - Designing services that suit the patient’s needs

- This model of care can have positive systemic implications
  - Patient care
  - All clinicians
  - Economic

- Moving rehabilitation into a primary service model to further facilitate patient improvement
Thank you

Questions?


Wu, J., Faux, S. G., Harris, I., & Poulos, C. J. (2016). Integration of trauma and rehabilitation services is the answer to more cost-effective care. ANZ J Surg, 86(11), 900-904. doi: 10.1111/ans.13389