Project Title

Delivering Integrated Care for Hip Fracture Bundled Patients from Acute to Community Hospitals and Post-discharge Community Services

Project Lead and Members

- Dr Ivan Chua
- Dr Ramason Rani

Organisation(s) Involved

Tan Tock Seng Hospital; National Healthcare Group; Renci Community Hospital; Ang Mo Kio-Thye Hua Kwan Hospital

Aims

To put in place a seamless and integrated care model where processes are optimised and care is right-sited across the care continuum.

Background

The journey of hip fracture patients to regain mobility or “re-enablement” is a long one which spans across institutions. Care coordination amongst the care providers with a mind to optimise the use of acute and community hospital resources is essential for a sustainable care delivery model especially in the longer run. This represented a collective opportunity for a multiagency cross-functional improvement team to come together.

Methods

- Integrated hip fracture carepath with discharge criteria from acute to community hospitals
- Increased frequency of clinical management meetings to discuss discharge readiness

- Cohorted ward for hip fracture cases at Renci Community Hospital to facilitate protocolised care delivery
- Weekend discharges to community hospital to save acute hospital bed days
- Use of bundled care savings to support patients who are medically fit for discharge to return home
- Develop integrated patient education materials for patients
- Empower patients and next-of-kins in rehab journey via an app

Results

The interventions helped to:

- Reduce length of stay and cost of care delivery whilst maintaining quality & outcome
- Deliver seamless and coordinated care
- Improve productivity
- Standardise good care practices

Comparing Nov-Dec 2016 (pre-implementation) with Jul-Sep 2018 (post-implementation), with no compromise to patient safety and outcome indicators, the team achieved a reduction in average length of stay in all 3 hospitals:

- TTSH: Reduction by 12%
- AMKH: Reduction by 16%
- RCH: Reduction by 18%

The reduction in length of stay improved throughput, allowing more patients to be served. It also brought down the cost of care delivery beyond the bundled amount. Bundled savings were channeled to further improve care delivery and support patients who are medically fit for discharge in the post-discharge phase.

The delivery of patient-centred care across care settings is made possible through the application of an integrated carepath. Standardised care elements and discharge criteria developed based on best practices allowed patients to be treated and

discharged based on a set of standardised care protocols, which improved efficiency and reduced variability.

Additional Information

The compelling, collective vision that was centred around the patient helped the project team, which was made up of staff from four different institutions and professional groups, stay focused and committed throughout the project.

Support for the ground staff during the initial stages of the rollout of the revised workflow was important. Keeping communication lines open and allowing a feedback channel where staff can surface problems and take ownership to work with other stakeholders to solve the problems faced together was a critical success factor.

Project Category

Care Redesign, Productivity

Keywords

Care Redesign, Productivity, Clinical Improvement, Process Improvement, Quality Improvement, , Care Continuity, Transitional Care, Care Coordination, Patient-Centred Care, Holistic Care, Integrated Care, Post-Operative Care, Discharge Planning, Post Discharge Care, Continuum of Care, Right Sitting, Rehabilitation, Hip Fracture, Multi-Disciplinary Team, Multi-Agency Collaboration, Support Staff Upskilling, Common Standard of Care, Common Functional Improvement Goal, Lean Management Methodology, Suppliers Input Process Output Customer, Go & See, Current Sate Mapping, Future State Mapping, Acute Hospital, Reduce Length of Stay, Low Clinical U-turn, Low Readmission Rate, Cost Saving, Community Hospital, Bundled Care, Kaizen, Value Stream Mapping

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Delivering Integrated Care for Hip Fracture Bundled Patients from Acute to Community Hospitals and Post-discharge Community Services, through Value Stream Mapping

Tan Tock Seng Hospital (TTSH), National Healthcare Group (NHG),
Ang Mo Kio – Thye Hua Kwan Hospital (AMKH), Ren Ci Community Hospital (RCCH)

Tan Tock Seng Hospital

National Healthcare Group
Adding years of healthy life

Objective: To put in place a seamless and integrated care model for hip fractured bundled patients, where processes are optimised and care is right-sited across the care continuum

1. Patient Journey for Hip Fracture

Acute Hospital | **Residential ILTC Services** | **Community**

Ren Ci 仁慈

ANG MO KIO - THYE HUA KWAN HOSPITAL 太和观医院

COMMUNITY HOSPITAL

HOME

DAY REHABILITATION CENTRE

Wholistic care of elderly patients with hip fractures require prompt diagnosis, early surgery, early mobilization, rehabilitation, falls prevention measures and osteoporosis treatment.

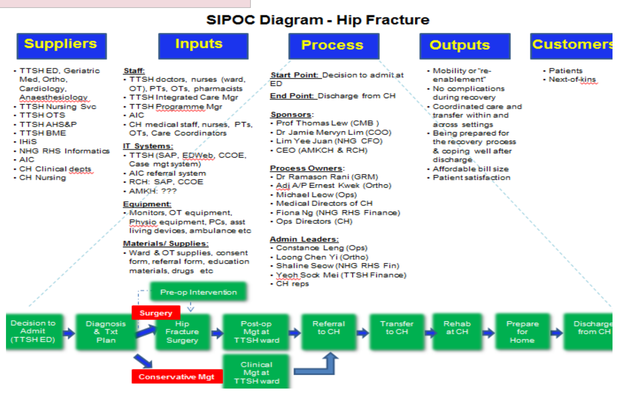
After early surgery, patients recovering from hip fracture require effective post-operative care and rehabilitation to regain pre-fracture mobility and function. The end-to-end care delivery involves the a multidisciplinary team spanning across acute and community hospitals, and post-discharge community rehabilitation services. Often this care is fragmented.

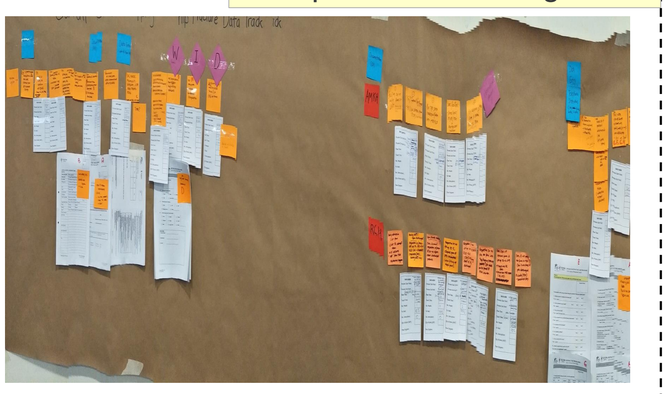
2. How Did We Do It?

MyCare's Lean Management methodology was used. Upon establishing the reasons for action, the team used SIPOC (a tool to identify the Suppliers, Input, Process, Output and Customer of a process) to identify the project scope, targets and stakeholders to be involved. Next, "Go and See" and Current State Mapping was conducted in Apr 2017 for the stakeholders to walkthrough and map out the entire hip fracture bundled care process. Gap Analysis was then conducted to understand the root causes of key issues. Future State Mapping was conducted from 12-13 Jun 2017 for the stakeholders to come together to co-create their future state using lean principles, and finally, co-create an implementation plan. This was followed by 4 outbrief sessions to track the progress, troubleshoot the problems and align the objectives of improvements in various aspects.

The improvements include establishing common standards of care in the management of elderly hip fracture patients in AH and CH, skills improvement of support staff involved in care, redistribution of work to improve efficiency and flow, and common goals for functional improvement in rehabilitation and discharge from CH.

Pre-work by Clinicians, Operations and Finance from 4 institutions and Kaizen Office → Go & See, current state mapping and gap analysis conducted → Future state mapping, which integrates care from hospital admission to discharge from CHs, with care-continuity post CH discharge





Feb – Mar 2017: - Engaged Kaizen, - Admin Meeting, - RIE kick off meeting

Apr – Jun 2017: - Go & See, - Current state mapping, - Gap analysis, - Future state mapping

Sept 2017: Outbrief 1

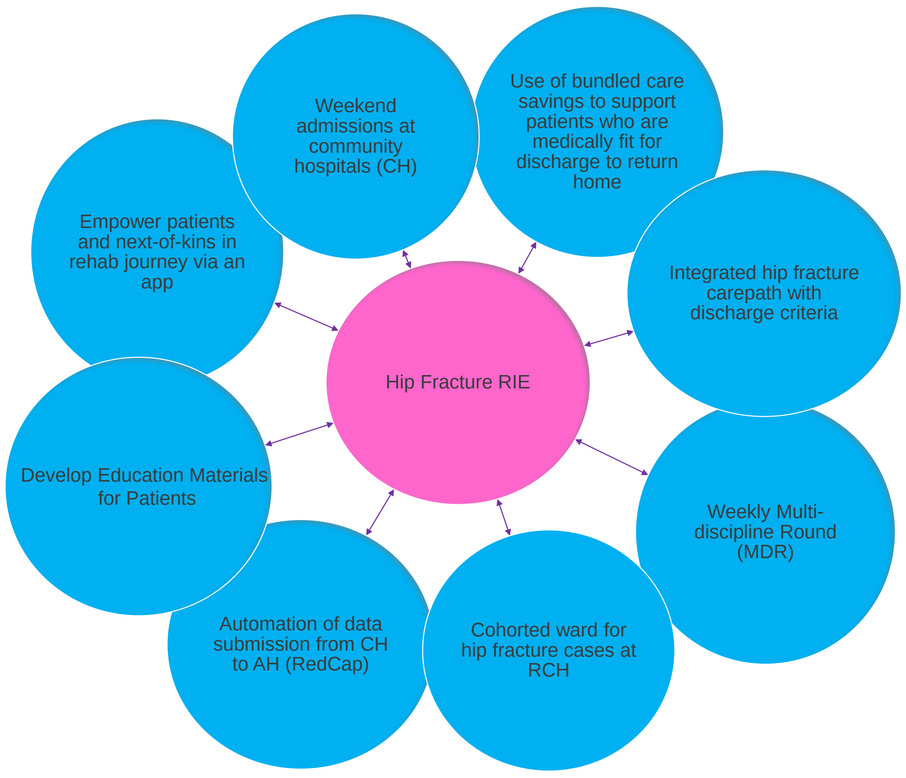
Nov 2017: Outbrief 2

Apr 2018: Outbrief 3

Jul 2018: Outbrief 4

- Continue tracking and sharing of clinical outcome indicators on a quarterly basis
- Quarterly update of financial savings pool
- Possible uses of savings pool for Quality improvement projects
- Consider **i**nterim **c**aregiver **s**cheme (ICS) to facilitate earlier discharge

3. What Did We Implement?

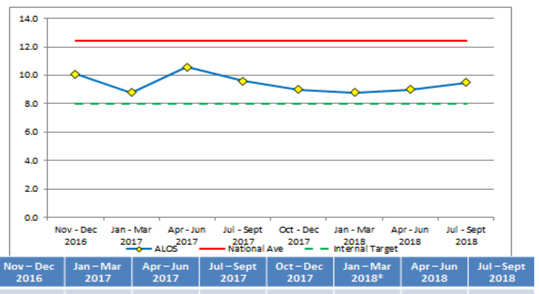


4. The Results

Over a 1-year period, the team saw significant improvements in both TTSH and CH LOS, CH u-turn rates and other clinical outcomes.

Average Length Of Stay – TTSH (SURGICAL MGT)

- National ALOS before bundled programme is 12.4 days
- HSDP ALOS: 10.7 days
- Internal ALOS target: 8 days
- The ALOS from mid Nov 16 – Sept 18 is 9.4 days



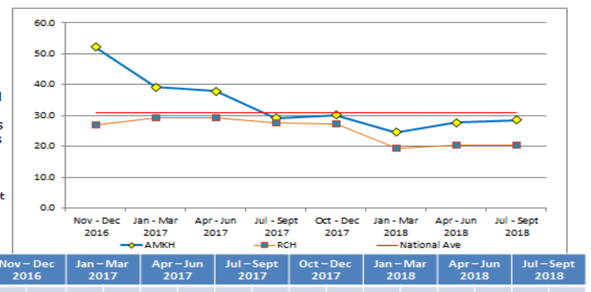
Hip Fractures Cases:	Nov – Dec 2016	Jan – Mar 2017	Apr – Jun 2017	Jul – Sept 2017	Oct – Dec 2017	Jan – Mar 2018*	Apr – Jun 2018	Jul – Sept 2018
No. of cases (Total number of single hip # (- NOF, IT and subtrochanteric #) aged >=60 yrs old, who are admitted to Ortho dept and surgically operated)	74	166	93	118	111	111	111	114
No. of surgical days (Total number of days spent in acute hospital by single hip fracture patients)	748.6	1456.8	983.4	1132.5	1003.8	981.3	999.6	1083.2
ALOS (Days)	10.1	8.8	10.6	9.6	9.0	8.8	9.0	9.5

Average Length Of Stay – CHs (SURGICAL MGT)

- National ALOS before bundled programme is 31 days
- The ALOS for AMKH and RCH from mid Nov 16 – Sept 18 is 32.4 and 25.3 days respectively**

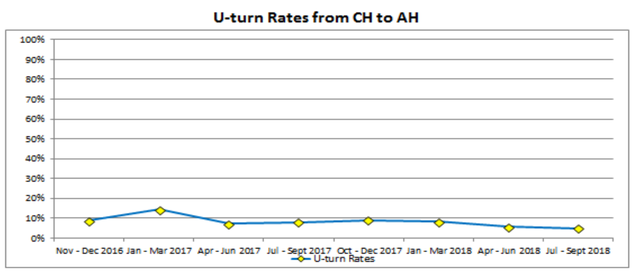
* based on no. of data forms retrieved back fr CHs, thus not representative of no. of patients transferred to CHs

* inclusive of u-turns



Hip Fractures Cases:	Nov – Dec 2016		Jan – Mar 2017		Apr – Jun 2017		Jul – Sept 2017		Oct – Dec 2017		Jan – Mar 2018		Apr – Jun 2018		Jul – Sept 2018	
	AMK	RCH	AMK	RCH	AMK	RCH	AMK	RCH	AMK	RCH	AMK	RCH	AMK	RCH	AMK	RCH
No. of cases (Total number of single hip # (- NOF, IT and subtrochanteric #) aged >=60 yrs old, who are admitted to Ortho dept and surgically operated)	21	37	70	61	39	36	58	47	46	46	32	56	47	43	30	34
No. of days in CH (Total number of days spent in CH by single hip # patients)	1094	999.4	273 6.2	177 8.7	147 3	104 6.5	169 0.1	129 3.2	142 0.2	125 5.4	783.4	109 2.3	129 7.8	883.4	854.2	697.5
ALOS (Days)	52.1	27.0	39.1	29.2	37.8	29.1	29.1	27.5	30.1	27.3	24.5	19.5	27.6	20.5	28.5	20.5

U-turn Rates from CH to AH



Hip Fractures Cases:	Nov – Dec 2016	Jan – Mar 2017	Apr – Jun 2017	Jul – Sept 2017	Oct – Dec 2017	Jan – Mar 2018	Apr – Jun 2018	Jul – Sept 2018
No. of CH cases (Total number of single hip # (- NOF, IT and subtrochanteric #) aged >=60 yrs old, who are admitted to Ortho dept and surgically operated; and admitted to partner CHs)	57	123	69	99	89	85	85	78
No. of u-turns from CH to AH (Total number of single hip # patients whose discharge destinations from CH was A&E or acute hospital)	5	18	5	8	8	7	5	4
%	8.8%	14.6%	7.2%	8.1%	9.0%	8.2%	5.9%	5.1%

- Average Length of Stay (ALOS) in TTSH has reduced from 10.7 days to 9.4 days

- ALOS in RCH has reduced by 5.7 days from 31 days to 25.3 days

- ALOS in AMK has reduced by 6.2 days from 38.6 days to 32.4 days

- Readmission rates from CH to TTSH was 8%, mainly due to non-orthopaedic related causes

Conclusion

The Integrated Hip Fracture Bundled Care Program in Singapore has shown early promising results through improved care processes in AH and CH. This has resulted in shorter length of stay in both AH and CH, with low readmission rates. This will translate to costs savings to the hip fracture patients and the institutions.