

Project Title

Integrated Hip Fracture Unit: Better, Smoother, Faster and Safer Care

Organisation(s) Involved

Khoo Teck Puat Hospital, Yishun Health

Project Category

Care Redesign, Process Improvement, Clinical Improvement

Keywords

Care Redesign, Process Improvement, Clinical Improvement, Quality Improvement, Quality Improvement Methodology, Hip Fracture, Eldercare, Safe Care, Patient-Centred Care, Multi-Disciplinary Team Timely Surgery, Pre-operative Optimization, Post-Operative Standard Care, Clinical Pathway, Rehabilitation, Enhancing Functional Recover, Early Mobilization, Timely Discharge, Care Continuity, Low Mortality Rate, Low Medical Complications, Reduce Length of Stay, Timely Ward Admission, Integrated Care, Khoo Teck Puat Hospital, Integrated Hip Fracture Unit, Enhanced Recovery After Surgery Protocol, Medical Optimization, Kaizen, Plan Do Study Act, SIGN and NICE guidelines, Patient Satisfaction, Staff Satisfaction, Reduce Healthcare Cost

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Background

- Elderly patients who sustained hip fractures have complex surgical, medical, and rehabilitation needs.
- A lack of coordination between different disciplines and a standardised approach to care, resulted in care fragmentation and inefficiency.
- By redesigning the service model, The Hip Fracture Unit (HFU), an Integrated Transdisciplinary Practice Unit, was formed to provide a patient centred hip fracture care.

Methodology

- With the help of SIGN and NICE guidelines and literature, the HFU developed a clinical pathway to guide management based on internationally accepted standards of care.
- The HFU employs Enhanced Recovery After Surgery (ERAS) protocols with 3 main principles and strives to deliver highest standards of care:
 - Medical optimisation which starts in Accident and Emergency department and is delivered throughout hospitalisation
 - Surgery within 48 hours once patient is medically stable
 - Enhancing functional recovery with early mobilization and continued rehabilitation and timely discharge to appropriate care location
- Kaizens with their continuous improvement strategy and PDSA cycles were used for monitoring and improvement

Early surgery	Medical optimisation	Early discharge
<ul style="list-style-type: none"> A&E standards Consent taking within 24 hours 	<ul style="list-style-type: none"> Pain control Venous thromboembolism (VTE) prophylaxis Nutrition support Safe swallowing Osteoporosis assessment Early identification & management of postop complications 	<ul style="list-style-type: none"> Early mobilisation Patient and family education Early discharge planning

Results

From Jan 2015 – April 2017

- 794 patients admitted into HFU
- 652 patients (82%) had surgical intervention

	2015	2016	2017 (Jan-April)	Total
No. of surgical cases	264	279	109	652
No. of non-surgical cases	34	81	27	142
Total	298	360	136	794

The quality measures used in this project can be categorized into system measurements and patient measurements.

System measurements	2015	2016	2017 (Jan – Apr)
Admission to ward within 4 hours from ED (All)	19.5%	16.9%	33.8%
Admission to ward within 4 hours from ED (Surgical)	16.7%	17.9%	36.7%
Surgery within 48 hours	48.1%	44.4%	45.0%
30 Days mortality (Surgical)	1.5%	2.2%	1.9%
ALOS (Surgical)	15.2	13.7	10.6

- HFU managed to achieve a low 30-day mortality since 2015.
- ALOS has been steadily decreasing over the years.
- Target of admission to ward within 4 hours is difficult to achieve due to bed constraints – team assesses & optimizes patient in emergency department instead.
- Operative delays were mostly due to patients' unstable medical condition.

Preoperative optimisation, as well as the delivery of 17 post-operative standards of care by highly trained professionals, allowed us to achieve low medical complications as compared to international data.

Patient measurements	2015	2016	2017 (Jan – Apr)
Urinary tract infection	16.2%	16.9%	10.6%
Pressure Ulcer	0.8%	0.0%	0.0%
Delirium During Stay	7.9%	13.4%	4.4%
Deep vein thrombosis	3.0%	0.7%	0.0%
Fever	26.7%	44.4%	38.9%
Wound Infection	2.3%	1.8%	2.7%
Myocardial infarction	3.4%	2.1%	3.5%
Hosp acquired infection	1.1%	1.1%	0.9%
Foot drop	1.5%	1.8%	0.9%

Impact

The integrated care approach facilitated planning of early surgery, reduced incidences of medical complications, and early discharge resulting in:

- Better patient and family satisfaction
- Improved staff morale and communication
- Decreased healthcare costs

Conclusion

- The success of our project is largely due to multi-disciplinary teamwork with good communication as well as the implementation of systematic protocols.
- The HFU holds monthly multidisciplinary meetings to discuss and re-evaluate practices and outcomes for improvement.