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Hip Bundle Collaboration

BACKGROUND

Hip fractures are counted annually as a catastrophic event requiring surgical intervention in an acute hospital followed by rehabilitation in a community hospital. Ensuring continuity of care between the two institutions is vital for a good patient outcome. Acknowledging this in the context of the current Hip Bundle Collaboration between SGH and BVH, this QI project seeks to study how the transfer of patient care can be made as seamless as possible. The coverage of SGH-BVH Hip Bundle Collaboration is limited to patients above 60 years old with solitary hip fracture, namely, neck of femur, intertrochanteric or sub trochanteric fracture.

PROJECT AIMS

1. To reduce the monthly median length of stay in BVH for hip fracture patients transferred from SGH from 37 days to 20 days within a year.
2. To reduce unnecessary readmissions associated with hip fractures.
3. To increase the Modified Barthel Index (MBI) score for hip fracture patients in BVH upon discharge.

ANALYSIS

The run chart below shows the monthly median length of stay in BVH for Hip Fracture patients to be 37 days in 2016.

Baseline Data for Monthly Length of Stay in BVH for Hip Fractures in 2016

Usual reasons for prolonged hospitalisation include patients with complex medical conditions and poor social support. There are others, non-patient-related, which have been grouped under “Process” and “Staff” in the Fish-bone diagram below.

Fishbone Diagram

There are no less than six non-patient factors that can be manipulated for to bring down the lengthy of stay, but not all can be targeted at once due to limited resources. The team uses Pareto charting to prioritize them. It turns out that 80% of the long stayer problem can be attributed to just these four root causes:
1. No early assessment
2. Delay in equipment purchase
3. No follow-through from acute hospital to rehab hospital
4. No workflow

SOLUTIONS

The Tree Diagram below provides a convenient snapshot of how each of the four Pareto root causes have been addressed to reduce in the length of stay in the target patient population.

Intervention 1: Early referral from SGH to BVH
Mar 17-Oct 17: Hip fracture bundle patients will be fast tracked to BVH by an Orthopedic Advanced Practice Nurse (APN) and BVHHV Fast Track Team.

Intervention 2: Initiate early targeted assessment and goals setting by Multidisciplinary team (MDT)
Mar 17-Oct 17: Patients will receive a targeted assessment guided by a common assessment form developed by the BVH MDT. The common assessment form is also used regularly to guide the progress of goals setting.

Intervention 3: Multidisciplinary Round
Mar 17-Oct 17: Implement a MDT hip round in BVH. Team will discuss any active medical conditions, weight bearing status, patients’ process in rehabilitation, wound care and discharge plans. Through weekly discussions, we can detect early complications, achieving optimal rehabilitation goals and plan for equipment purchase and start discharge process early.

Intervention 4: Hip fracture liaison service
Mar 17-Oct 17: APN from SGH will escalate emerging issues to primary orthopedic team. The APN will also arrange out patient scans or early orthopedic review to prevent unnecessary readmissions to SGH. For patients who U-turn back to SGH, there is close handover between the 2 teams to ensure continuity of care. We also work with SGH team to tailor the appropriateness of the outpatient follow-up to meet the needs of the patients e.g. timing of SOC visits and investigation needed.

PROJECT’S IMPACT

The length of stay in the target patient population has been reduced below the pre-intervention median of 37 days to 20 days. The downward shift is noticeable since Feb 17 following the interventions.

U-turns to SGH have not also increased post-intervention

Not only length of stay reduced, but the Modified Barthel Index (MBI) score, which measures patient’s physical independence, has also improved post-intervention

SUSTAINABILITY AND SPREAD

The interventions detailed here could be quite easily extended to the Orthopedic patient population from SGH transiting to BVH.