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Reducing Fluid Overload hospitalizations and readmissions through postdischarge Transitional Care Programmes

Authors: Cynthia Lim Ciwei¹, Chin De Zhi², Huang Zhihua¹,³, Tay Wei Yi⁴, Lourdes Ducusin Galang⁵, Leong Ee Won³,⁵, Liu Weihua⁴, Ng Li Choo¹,³, Rachel Marie Towle⁴, Haslinda Bte Barman⁴, Sia Wan Jin², Serene Xin Xiaosi⁶, Low Lian Leng⁴, Kang Mei Ling⁵, Tan Chieh Suai¹

¹Dept of Renal Medicine, Singapore General Hospital (SGH), ²Office of Value Based Healthcare, SGH, ³Specialty Nursing, SGH, ⁴Population Health and Integrated Care Office, SGH, ⁵Dept of Internal Medicine, SGH, ⁶Process Transformation and Improvement, SGH

Background

According to the SingHealth Diabetes Registry data, fluid overload accounts for the top 2 diagnosis codes for readmission of patients with diabetes at Singapore General Hospital (SGH) in 2019-2020. Value Driven Care analysis also found that the monthly average number of fluid overload hospitalizations in patients with diabetic kidney disease (DKD) had increased from 64 in 2019 to 100 in 2021.

Aim

- 1. Reduce fluid overload hospitalizations for non-dialysis dependent DKD patients in SGH from a monthly average of 100 to 85 cases (15% reduction) in 12 months.
- 2. Evaluate the impact of post-discharge transitional care programmes for these patients

Analysis of the problem

Efforts to reduce fluid overload hospitalizations were part of the National Diabetes Collaborative to reduce the number of DM-related admissions. Drivers to reduce hospitalizations were identified during the various collaborative learning sessions.

Primary driver Secondary drivers Change Ideas Risk-based predictive tool to identify patients (fluid overload) with high re-admission risk Identify high admission risk patients and develop Action plan coaching and targeted patient interventions & escalation education in APN-led clinic and Low Creatinine protocol Clinic (LCC) Reduce admission Consolidation of appropriate and adherence of and re-admission medical appointment follow-up Intensify follow-up with highfor non-dialysis risk patients dependent Early discharge planning and inpatient patient patients education by care coordinator Shift the emphasis of care for Right siting of patients to transitional home patients with renal programme (H2H) complications to the community GP engagement for early intervention

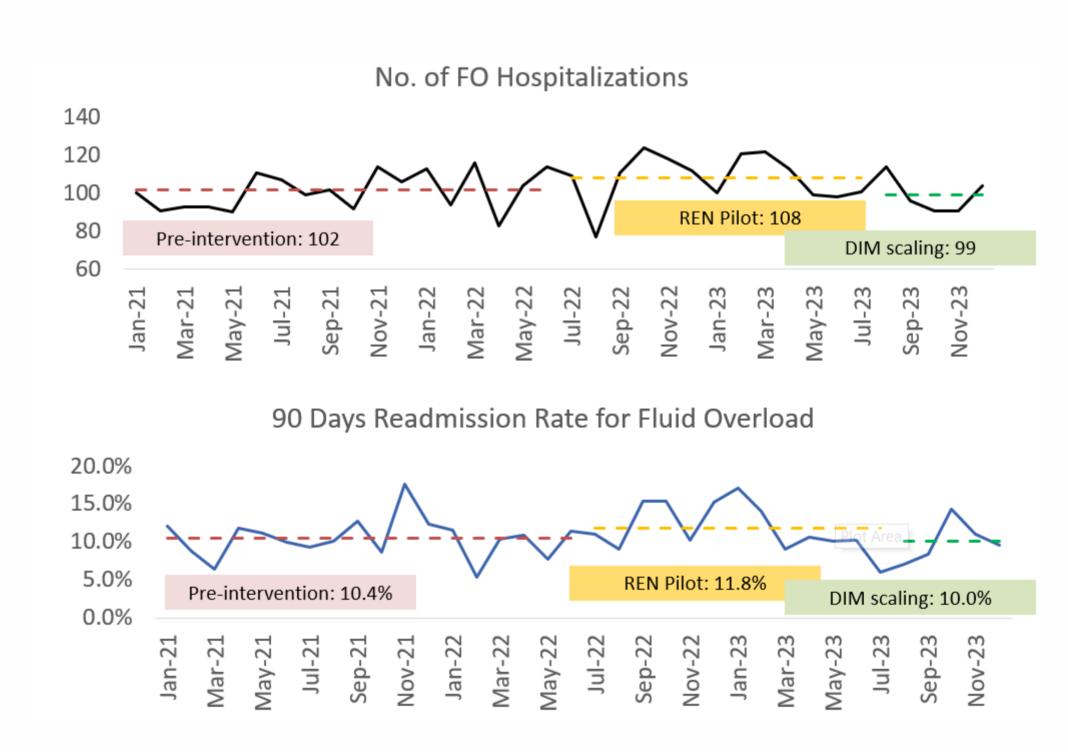
Interventions

Post-discharge transitional care programmes were piloted by Renal Medicine Department (REN) and Population Health and Integrated Care Office in July 2022 to empower patients to improve self-management and intensify follow-up of patients at high-risk of readmissions. After 12 months, the initiatives were scaled to two wards in Internal Medicine (DIM) between August and December 2023.

Overview of fluid overload patient journey Patient is admitted with Fluid Overload (Primary / Secondary Condition) in SGH ~15% DIM Specialty **REN Specialty** Not part of scope of improvement Patients condition stabilized sufficiently for discharge Tighter Follow-up required for FO Require short-Ambulant/ Not ambulant/ term intensive care at home have comorbid no comorbid eGFR ≤ 30 / REN SGH@Home Hospital to Home patient? Yes DIM APN-led Phone REN APN Fluid BP Surveillance **DIM Fluid Overload** Early Follow Up Clini REN SOC (eGFR > 15) Community based REN LCC (eGFR < 15) programmes

Results

Average monthly number of hospitalizations for fluid overload was 102 cases pre-intervention and 99 cases after scaling, while the average 90-day readmission for fluid overload was 10.4% pre-intervention and 10.0% after scaling.



Average number of referrals increased from 5 per month during the pilot to 21 per month after scaling. Among 170 patients enrolled into the programmes, 6.5% had 90-day readmission for fluid overload.

Conclusion

Transitional care programmes with enhanced follow-up and patient education may reduce readmissions for fluid overload among patients with DKD.

While the target reduction in hospitalizations was not met, a longer follow up will be required to ascertain the impact of the programmes when applied to a larger cohort of eligible patients.

