Quality Improvement Conference

Using Medicine Wisely: Reducing low-value protonpump inhibitor (PPI) prescription

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Problem Statement

- PPI use in TTSH increased at an alarming rate from 6.63 million units in year 2010 to 7.78 million units in year 2015
- Point prevalence survey of inpatients and inpatient discharge prescriptions demonstrate that > 40% of PPI are prescribed in the absence of evidence-based indications (i.e., low-value prescribing)
- Low-value PPI prescribing exposes patients to unnecessary adverse effects (e.g., *Clostridium difficile* infection, pneumonia, fractures, hypomagnesemia, and chronic kidney disease), increased pill burden and healthcare costs.

Project Aim

To reduce overall PPI utilization (used as a surrogate measure of low-value PPI prescription) by 10%, from a baseline median of 34, 004 DDD* per 1000 prescriptions filled, and sustain the reduction through at least 3 years.

*DDD: defined daily dose

Lessons Learnt

Multi-disciplinary team with involvement of staff at various levels is important to provide a comprehensive view of barriers and enablers.

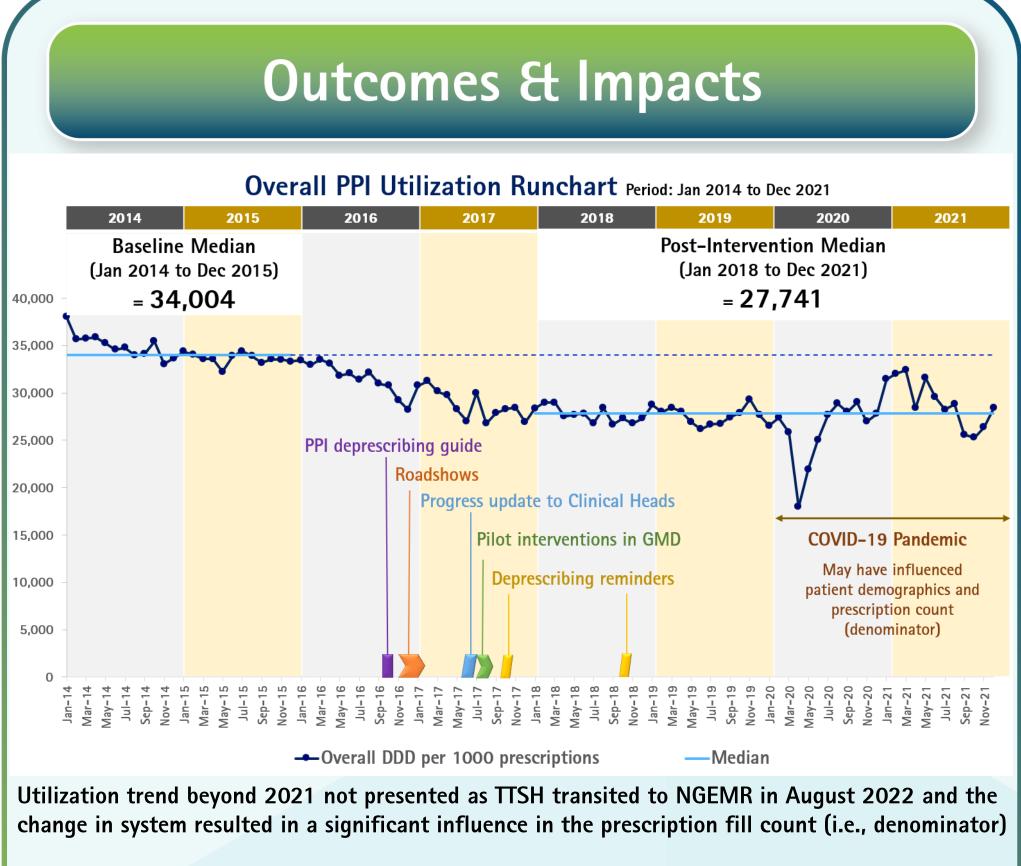
Key enablers to influence behavioral change include:

- Support from senior management
- Stakeholder engagement and buy-in
- Constant feedback to stakeholders

Interventions to reduce low-value prescribing were mainly designed to target 4 broad areas:

- (1) Creating problem awareness
- (2) Improving self-efficacy
- (3) Overcoming inertia to change
- (4) Promoting better handoff communication

Potential Solutions Shared utilization trends and examples Email dissemination of PPI of PPI deprescribing observed on the deprescribing guide hospitalground (e.g., specify end-date for short wide course PPI use, active review and Oct 2016 deprescribing by Drs and pharmacists) Multidisciplinary team formed with **Progress update to GMD** to target PPI **Clinical Heads** deprescribing Jun 2017 **April 2017** 2016 2018 2019 & after 2017 Nov 2016 to Jan Oct 2017 & Jul-Aug 2017 2017 Oct 2018 Pilot interventions in GMD **Deprescribing** Roadshows to reminders via MCQ related to PPI prescribing pharmacists and posters/ incorporated in GMD junior Dr's selected prescribing screensavers/ quiz disciplines APN engagement via journal club cue cards Case sharing of PPI-associated harms at GMD M&M rounds APN: advanced practice nurse; MCQ: multiple choice questions; M&M: morbidity & mortality



- Percent of patients receiving high-dose PPI decreased from 61.6% in 2016 to 50.6% in 2018 (based on point prevalence audits)
- Based on a year-to-year comparison of PPI use in 2014 vs 2019, the decline in PPI use effected a cost avoidance of \$84,147 per annum.