

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

Christina Tan
christina_jy_tan@ttsh.com.sg



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.

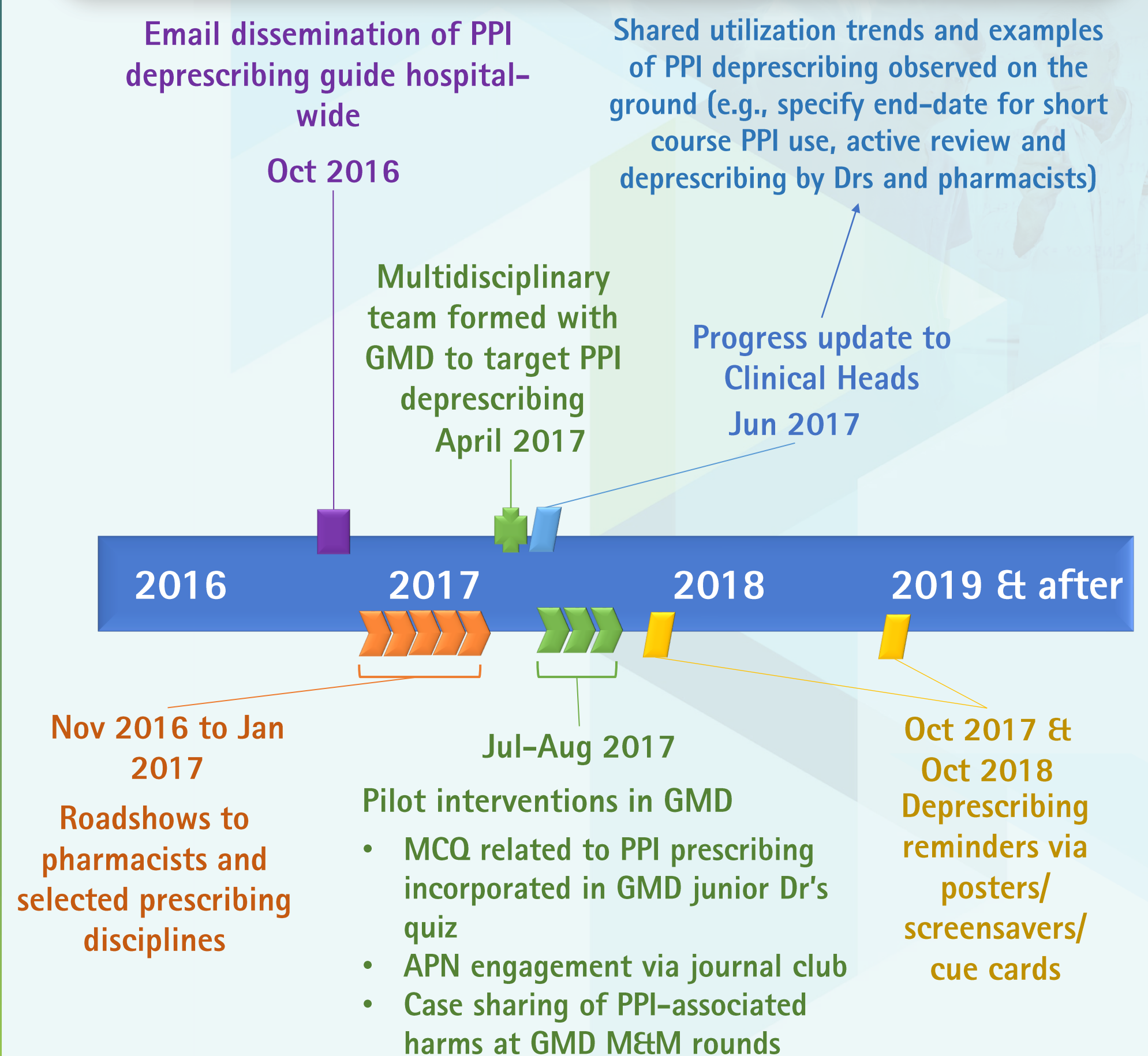
Key enablers to influence behavioral change include:

- 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:

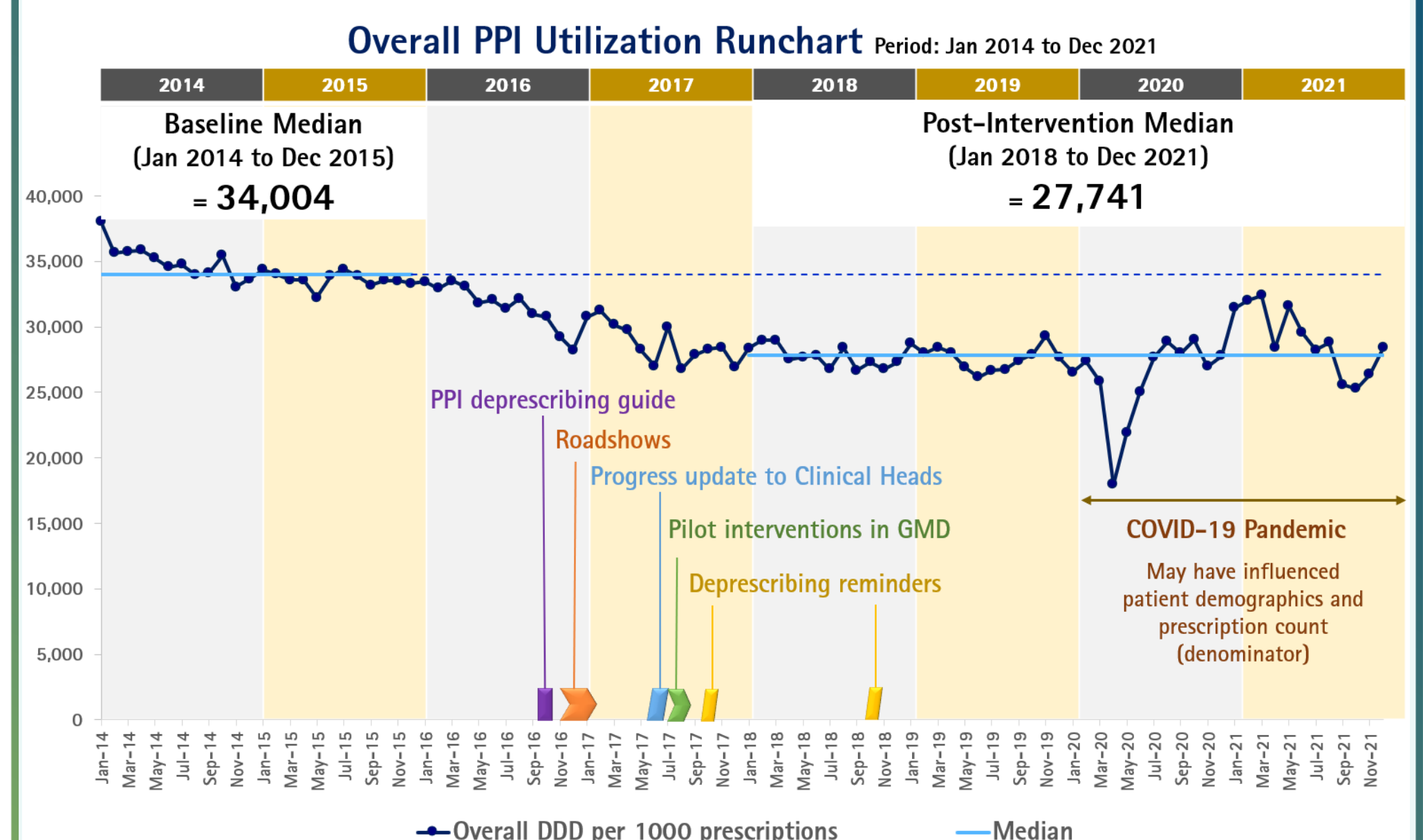
- (1) Creating problem awareness
- (2) Improving self-efficacy
- (3) Overcoming inertia to change
- (4) Promoting better handoff communication

Potential Solutions



APN: advanced practice nurse; MCQ: multiple choice questions; M&M: morbidity & mortality

Outcomes & Impacts



Utilization trend beyond 2021 not presented as TTSH transitioned to NGEMR in August 2022 and the change in system resulted in a significant influence in the prescription fill count (i.e., denominator)

- 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.**