

Project Title

Reducing rates of inappropriately indicated proton pump inhibitor (PPI) prescription

Organisation(s) Involved

Tan Tock Seng Hospital

Aims

This project aimed to reduce the rates of non-evidence-based PPI prescription

Background

There is an alarming increase in proton pump inhibitor (PPI) prescription in recent years. In a study conducted among TTSH inpatients in 2011, only 46% of patients on PPI fulfilled FDA-approved indications. Overutilization of PPIs is concerning in light of emerging associations of long-term PPI use with adverse effects such as *Clostridium difficile* diarrhea, fractures and kidney disease.

Methods

Based on data from an in-house audit, our workgroup opined that PPI overutilization was contributed by lack of awareness of the evidence-based indications of PPI and their respective treatment duration, as well as lack of awareness of potential harms. To tackle these issues, we (1) Developed a PPI deprescribing guide, in collaboration with our gastroenterologists, and presented the guide for vetting and approval by key stakeholders (e.g. medical board) before disseminating to physicians via email; (2) Conducted roadshows to the top prescribing departments of PPI to promote awareness of evidence-based indications of PPI and the potential harms with long-term use; and (3) Engaged pharmacists to identify non-evidence-based PPI prescription and proactively recommend to deprescribe.

Results

The series of interventions were implemented over the course of Oct'16 to Aug'17. Overall PPI utilization decreased by 10.6% from 7.78 to 6.96 million units per year from Year 2015 to 2017. Based on an audit of PPI prescribed on discharge from hospital, the percentage of evidence-based PPI prescription remained relatively unchanged over time despite the series of interventions. However, the percentage of PPI prescribed at recommended dose for evidence-based indication increased from 55% to 65% in the 2nd quarter of 2016 and 2018 respectively, suggesting that the overall decrease in utilization is contributed largely by dose de-escalation.

Conclusion

Our multipronged approach of engaging key stakeholders at various levels (e.g. medical board, senior and junior physicians, pharmacists) to create awareness of the issue of overutilization and the potential harms of PPIs encouraged more conscientious prescribing that contributed to a reduction in overall utilization of PPIs.

Project Category

Clinical Improvement

Keywords

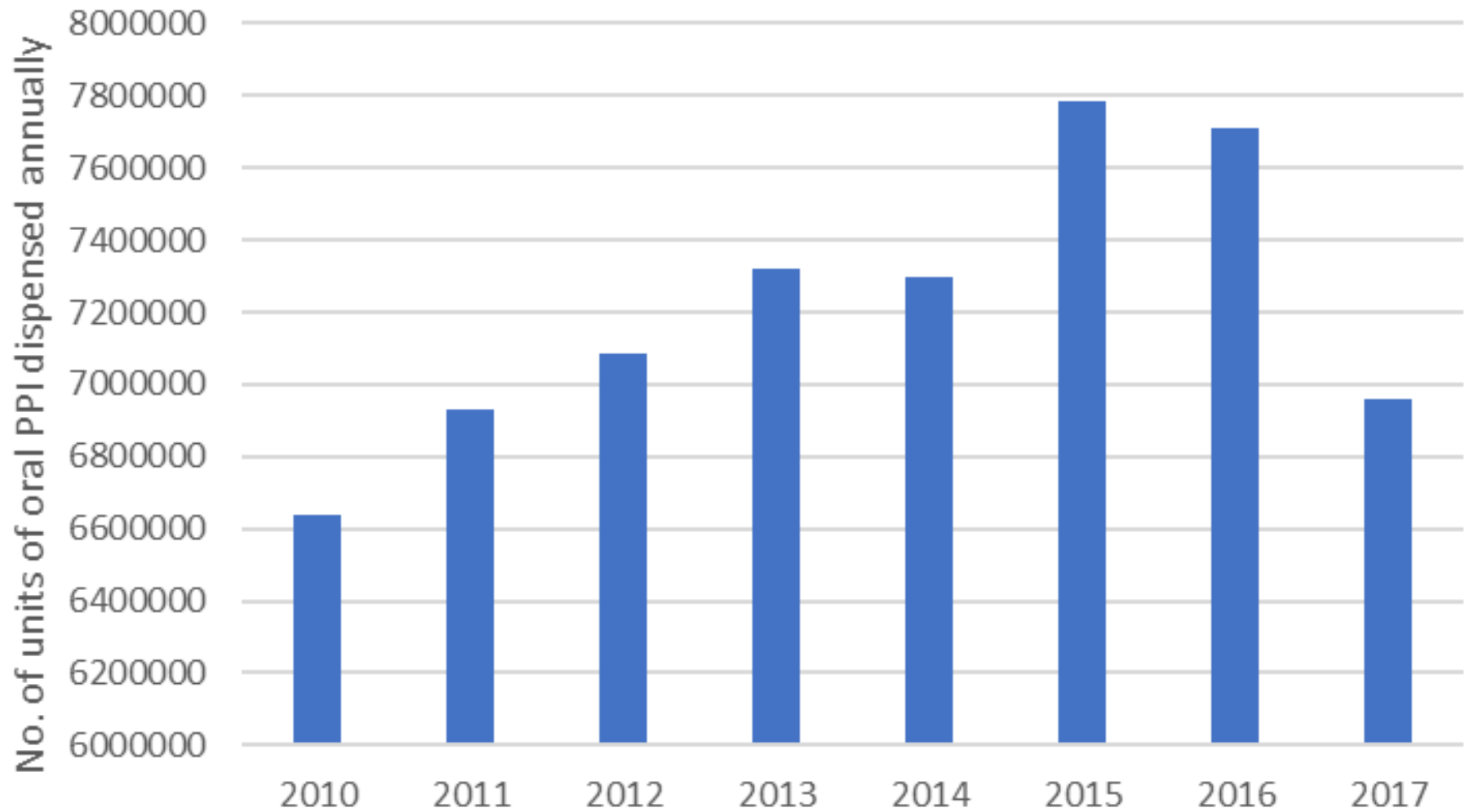
Tag Tan Tock Seng Hospital, Clinical Improvement, Care Redesign, Process Redesign, Process Improvement, Education, Safe Care, Proton-Pump Inhibitor, Deprescribing, Polypharmacy, Adverse Outcome Reduction, Public Awareness.

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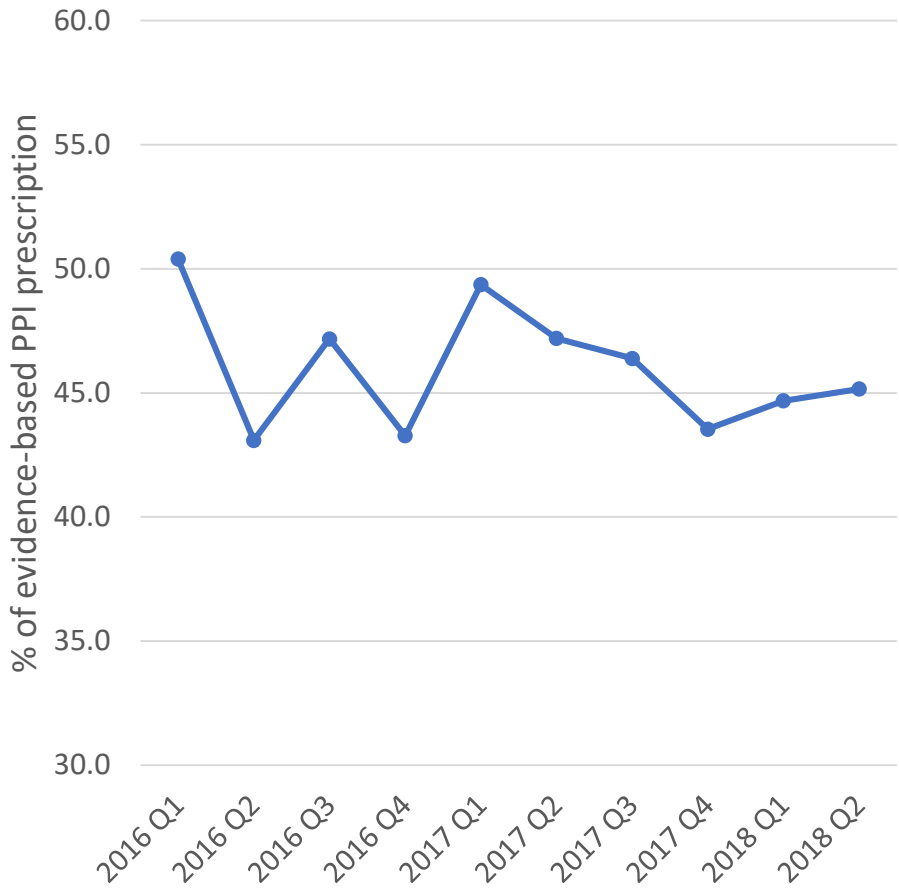
Email: christina_jy_tan @ttsh.com.sg

Quantity of oral PPI dispensed

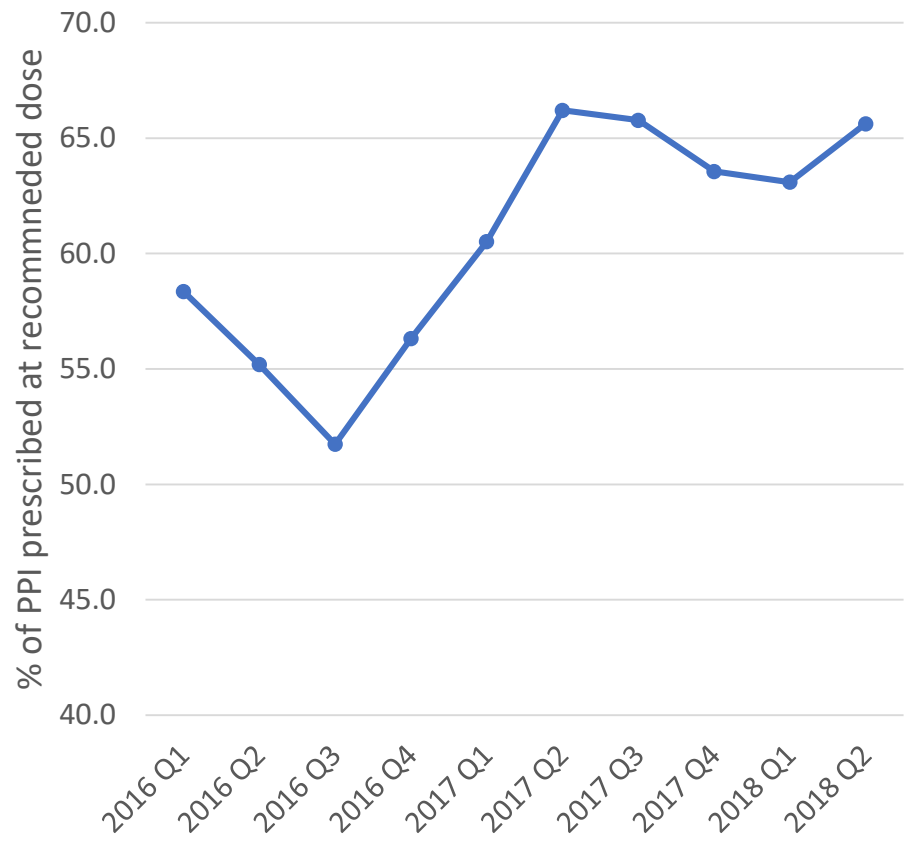


Following the series of interventions from Oct'17 to Aug'17, overall PPI utilization decreased by 10.6% from a total of 7.78 million units in Year 2015 to 6.96 million units in Year 2017.

Overall % of evidence-based PPI prescription on discharge



Overall % of PPI prescribed at recommended dose for evidence-based indication



- Despite the series of interventions, percentage of evidence-based PPI prescription remained relatively unchanged over time
- Percentage of PPI prescribed at recommended dose for evidence-based indication increased from 55% to 65% in 2nd quarter of 2016 and 2018 respectively, suggesting that the overall decrease in utilization is contributed largely by dose de-escalation.