

How Value-Driven Care (VDC) in Singapore sustains cost of care without compromising its quality?

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INTRODUCTION

Against the backdrop of an ageing population and unsustainable increase in healthcare expenditure, MOH Singapore made the provision of good quality care in a cost sustainable manner a key objective.

In 2017, Singapore embarked on its **National VDC program** to benchmark clinical outcomes and cost of care for 17 high impact conditions across all Public Healthcare Institutions (PHIs), learning from the University of Utah's Value-Driven Outcomes (VDO) initiative.¹ The unprecedented level of transparency in quality and cost data allowed providers to identify value improvement opportunities, and to subsequently design and implement interventions for further improvement. MOH collaborated closely with the 3 Public Healthcare Clusters (SingHealth, NHG and NUHS), and set up joint platforms at various levels (National, Cluster and Condition-specific) to coordinate VDC effort, discuss performances, analyse performance, and share best practices for scaling and adoption. In 2020, work started to introduce 2 new VDC conditions.

VDC CONDITIONS

1. Total Knee Replacement	2. Cataract Surgery	3. Laparoscopic Cholecystectomy	4. Hysterectomy	5. Coronary Artery Bypass Graft
6. Hernia Repair	7. Caesarean Section	8. Tonsillectomy	9. Haemorrhoidectomy	10. Total Hip Replacements
11. Acute myocardial infarction	12. Congestive heart failure	13. Ischaemic Stroke	14. Pneumonia	15. Rectal resection
16. Spinal fusion	17. Breast cancer	18. End of Life NEW	19. Diabetes Mellitus NEW	

METHOD

1) Topic Selection: High Impact based on **volume**, **total cost**, and **cost variation** across providers

2) Set up condition-specific workgroups: To determine quality indicators and cost buckets* for benchmarking

a. Comprise of clinicians and value office representatives

Defining standardised quality indicators and cost segmentation are critical to facilitate 'like-for-like' benchmarking of performance

3) Data & Visualisation: Extracted from MOH admin databases and feeds into:

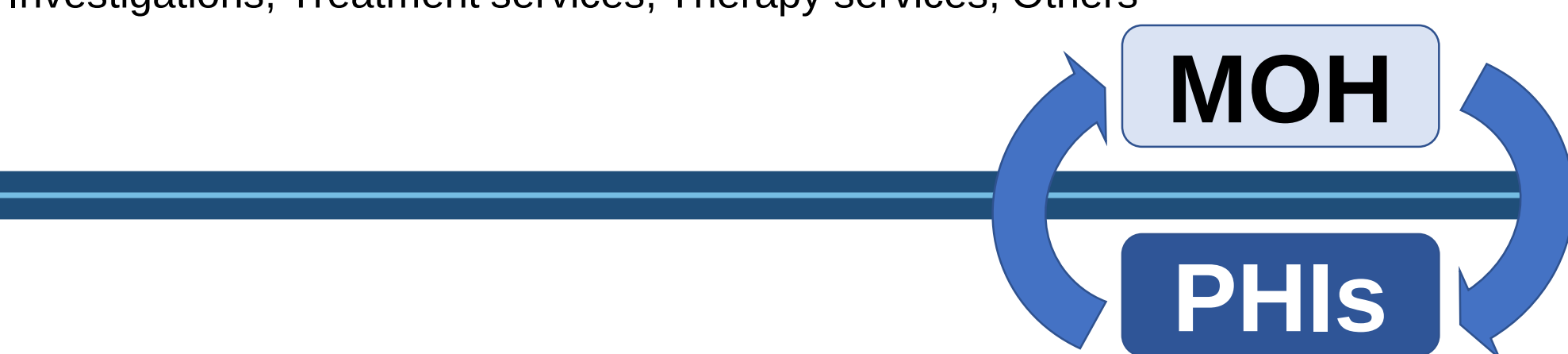
a. **National Dashboard** - cross provider comparison

b. **Institution Dashboard** - intra-provider clinician-level comparison

4) Engagement: Engage VDC workgroups annually where benchmarked performance are analysed and feedback to providers

a. Invite "Best-in-class" performers to share on their best practices for scaling and adoption

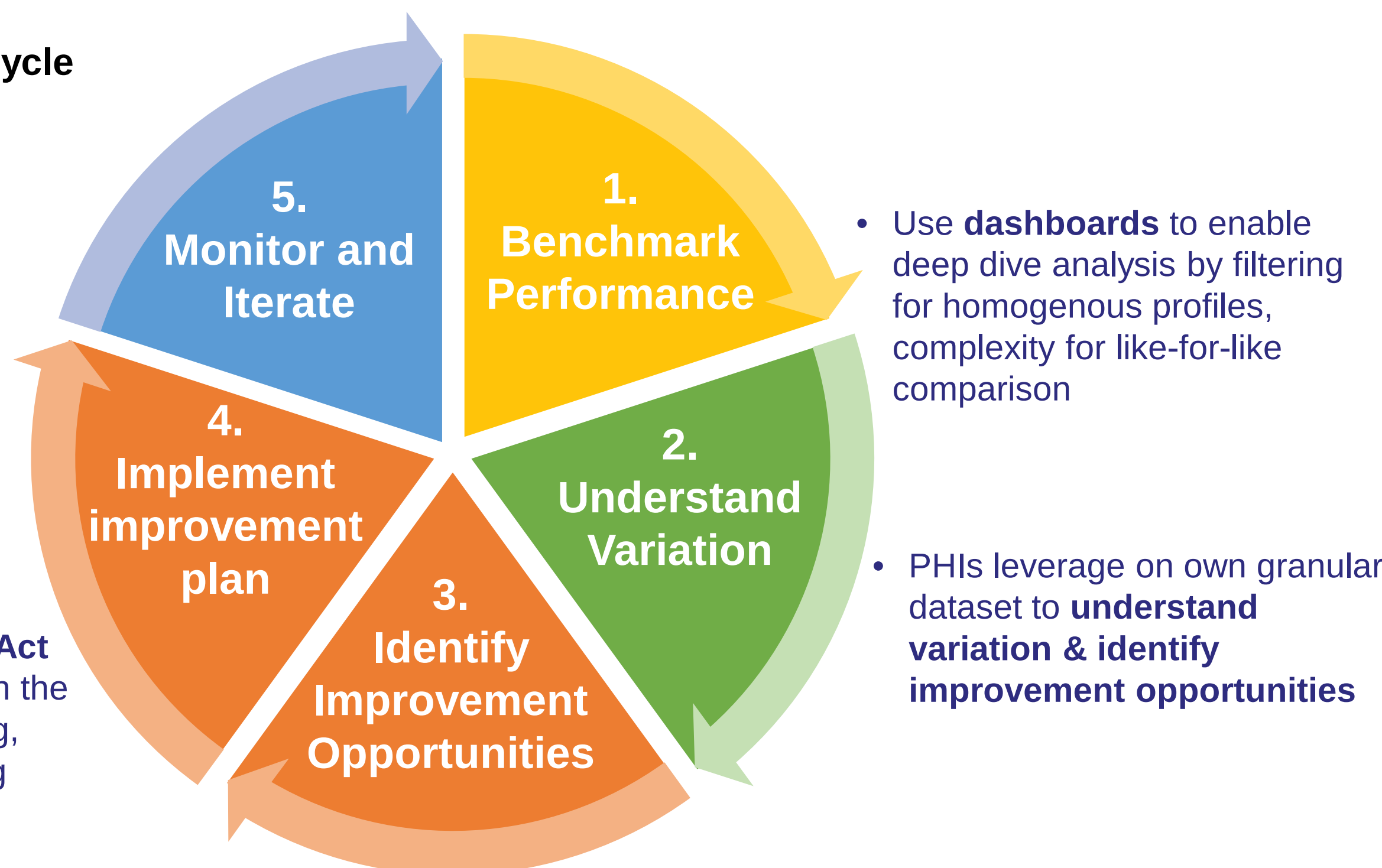
*Cost Buckets: Daily treatment fees & Doctors' fees, Room charges, Surgical Procedure Services, Implants, Drugs, Consumables, Investigations, Treatment services, Therapy services, Others



5) Driving Improvement via one-level down approach

- MOH admin data sufficient to flag areas for improvement.
- Cluster Value Offices would need to deep-dive and formulate value improvement initiatives based on their own dataset, and analysis (In partnership with individual departments/ clinicians)

Figure 1 - Improvement Cycle



RESULTS

Compared to pre-VDC period (2014-2016), implementation of VDC programme has had a **positive impact on improving clinical quality while bending the cost curve**.

Between 2017-2021, using Clinical Quality Index (CQI) (a composite index), quality improved since 2017 and was **4.4% better than projected** in 2021 if VDC was not implemented. While cost continued to increase, the increase since 2017 (1.8% - 8.1%p.a) was lower than before (2.2% - 16.9%p.a). In 2021, **average cost was 11.1% lower than projected**.²

Figure 2 - Quality Impact

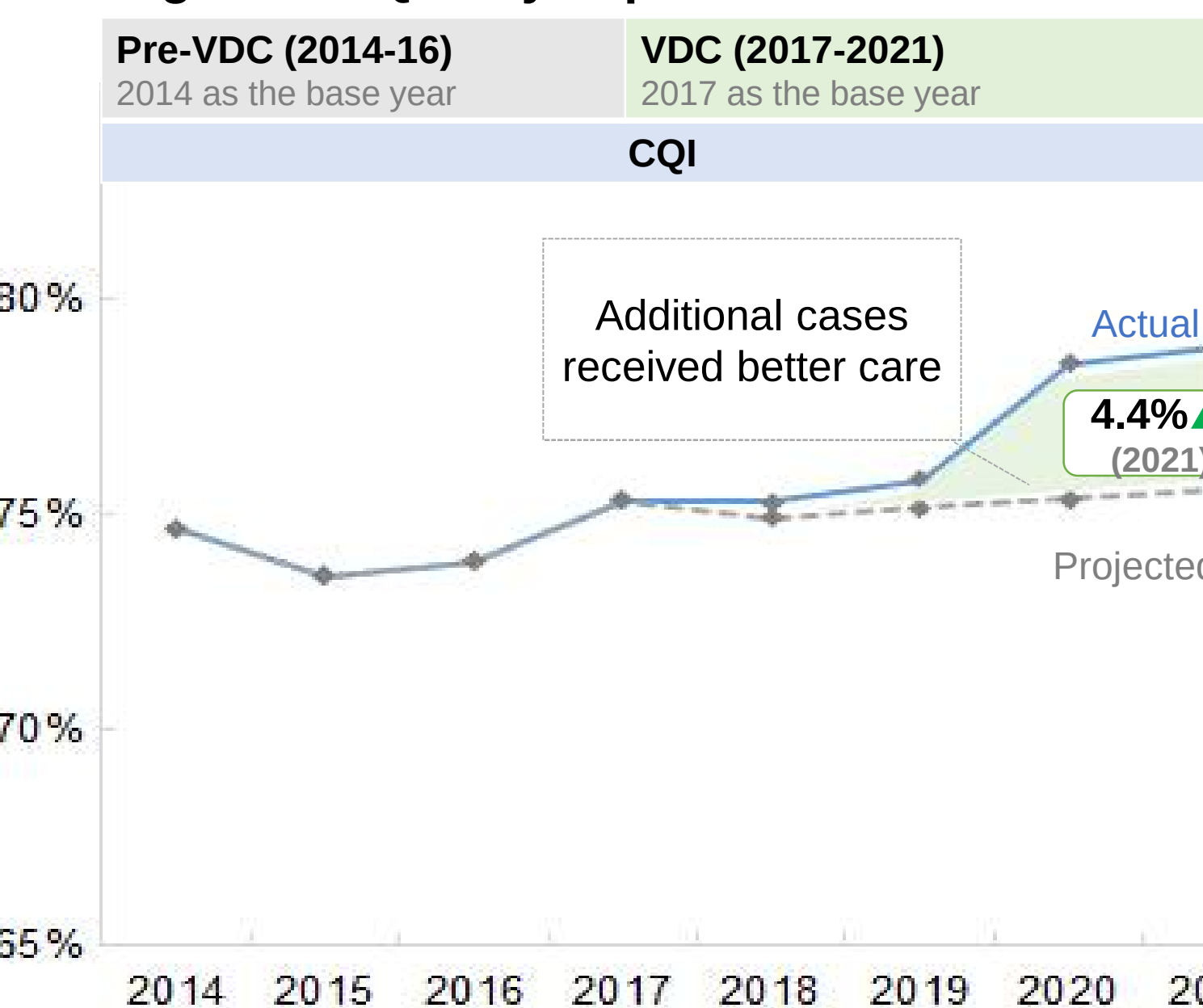


Figure 3 - Cost Impact

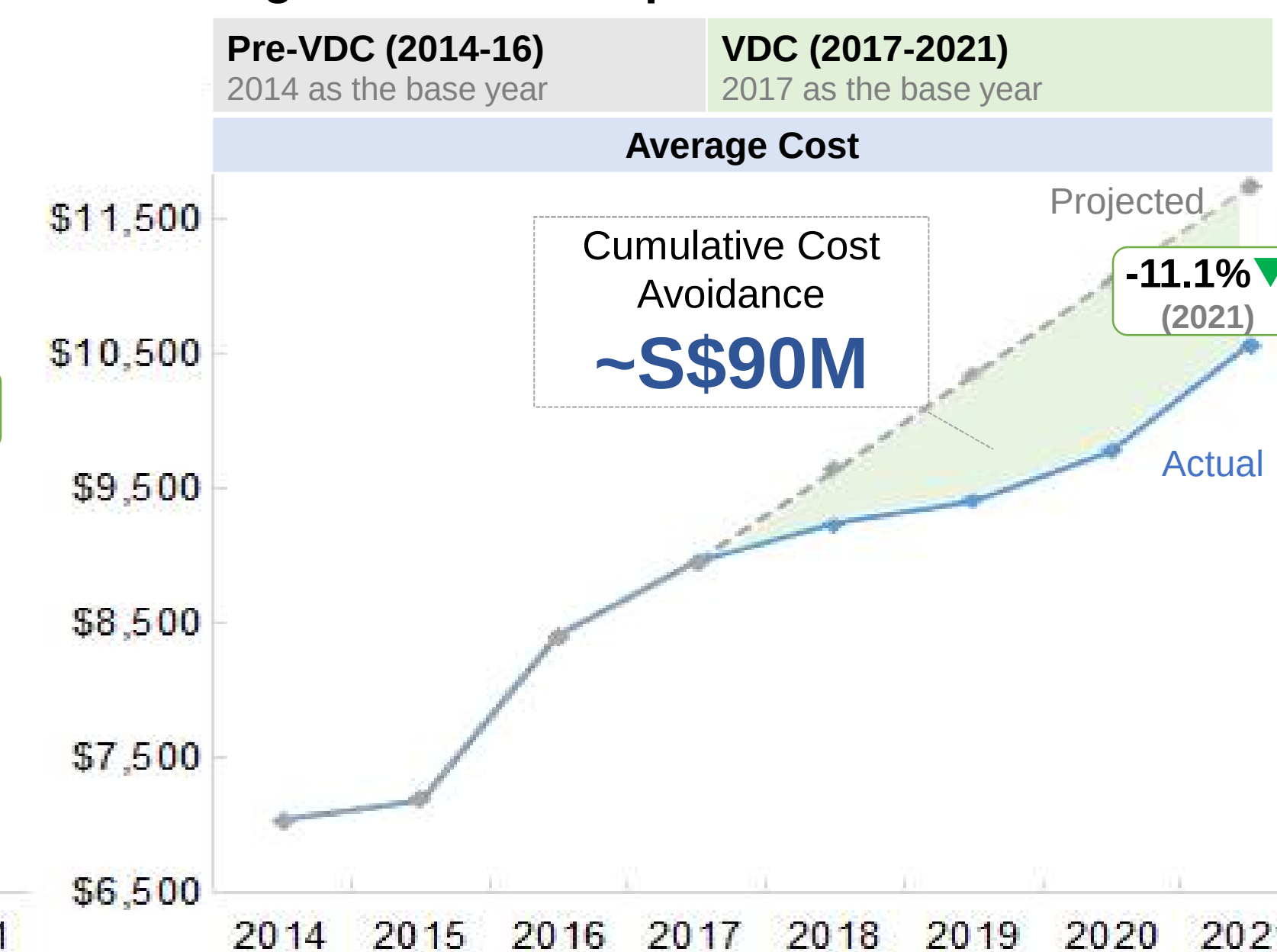
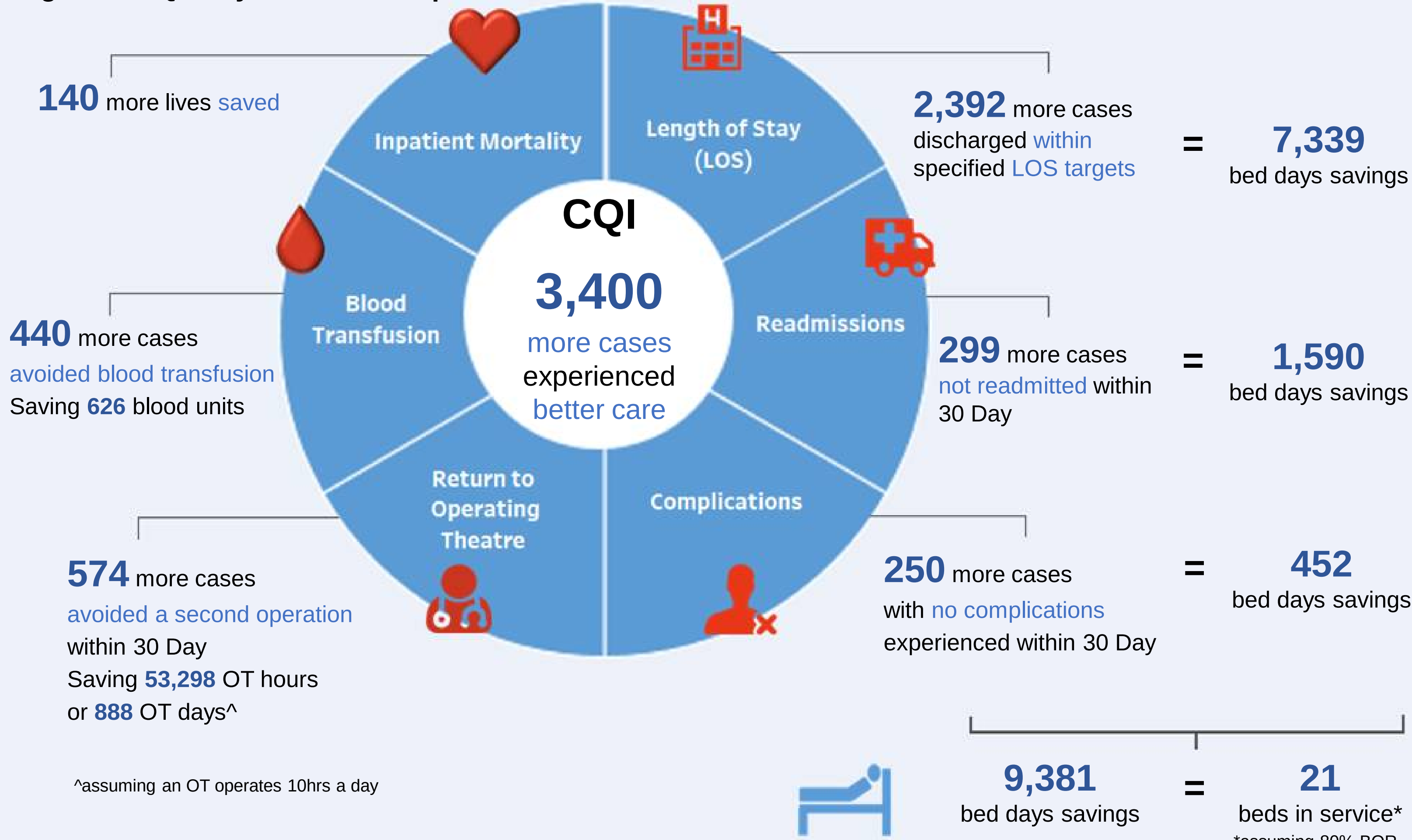


Figure 4 - Quality Indicators Impact



Note: Analysis is based on 14 conditions with the most meaningful comparisons

CONCLUSION

The introduction of VDC has been a game changer. Clinicians are more informed of their clinical outcomes and cost, and hence value, associated with the care delivered. **Greater collaboration** could be seen among public providers and clinicians, with **more patients benefiting** from better care being delivered at optimal cost.

The programme would not be a success if not for the Value Conscious Culture within the Clusters and the PHIs. **The strong leadership support** for continuous improvement is instrumental. We are also delighted that more private hospitals in Singapore are stepping up to look beyond quality to value, and we look forward to celebrating their success. We see VDC continuing to play an important role as part of Singapore's shift towards a Value-Based Healthcare model. This is even as Singapore work towards a population health strategy (i.e. Healthier SG) focusing on preventive and community care.

REFERENCES

1 University of Utah. Value Equation. University of Utah Health. <https://uofhealth.utah.edu/value/value-equation> (2022)

2 Paulus RA, Davis K, and Steele GD. Continuous innovation in health care: implications of the Geisinger experience. Health Affairs (Millwood). 2008;27(5):1235-45

3 The W. Edwards Deming Institute. PDSA Cycle. <https://deming.org/explore/pdsa/>