



Cost Avoidance Achieved Through Value-Driven Care Practices

Ivan Tan En-Howe¹, Chen Yonghui¹, Zhao Yun¹, Ang Boon Hwee¹, Rachel Lee Shiyi¹, Yeo Wen Jing¹, Zoey Lim Hui Xian¹, Tan Zi Ning¹, Chong Hui Min¹, Lim Eng Kok², Hairil Rizal Abdullah^{2,3}, Tan Shumei², Tan Xiang Feng², Grace Kim⁴, Seet Meei Jiun⁴, Chong Kok Wee⁴, Jansen Koh⁵, Debbie Wild⁵, Wong Merng Koon⁶, Benita Tan⁶, Jayanti Visvanathan³, Ang Kwok Ann³, Marianne Au Kit Har^{1,7,8}



Singapore Healthcare Management 2024

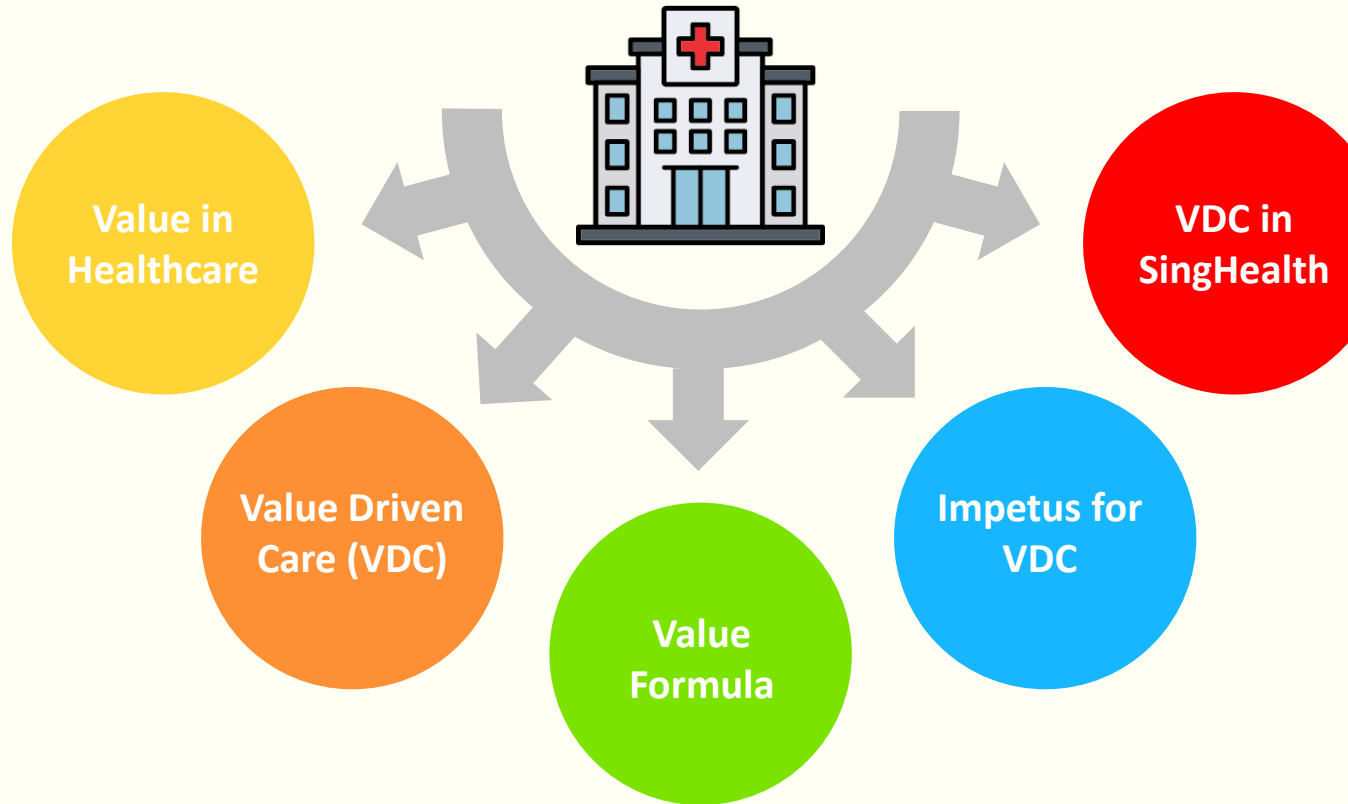
Institutions:

¹Group Finance Analytics, Singapore Health Services; ²Office of Value-Driven Care, Singapore Health Services; ³Singapore General Hospital; ⁴KK Women's and Children's Hospital; ⁵Changi General Hospital; ⁶Sengkang General Hospital; ⁷Group Finance, Singapore Health Services; ⁸Finance, Regional Health System & Strategic Finance, Singapore Health Services

BACKGROUND

Value in healthcare is the health outcomes achieved for patients relative to the cost of care. It focuses on value ensuring resources are used efficiently, leading to better patient outcomes, improved patient satisfaction, and a more sustainable healthcare system.

Value Driven Care (VDC): VDC is a framework for healthcare delivery that prioritizes value by aligning clinical decisions with patient goals, using evidence-based practices, and continuously measuring and improving outcomes. VDC involves data-driven decision-making, patient engagement, performance measurement, and continuous improvement processes.



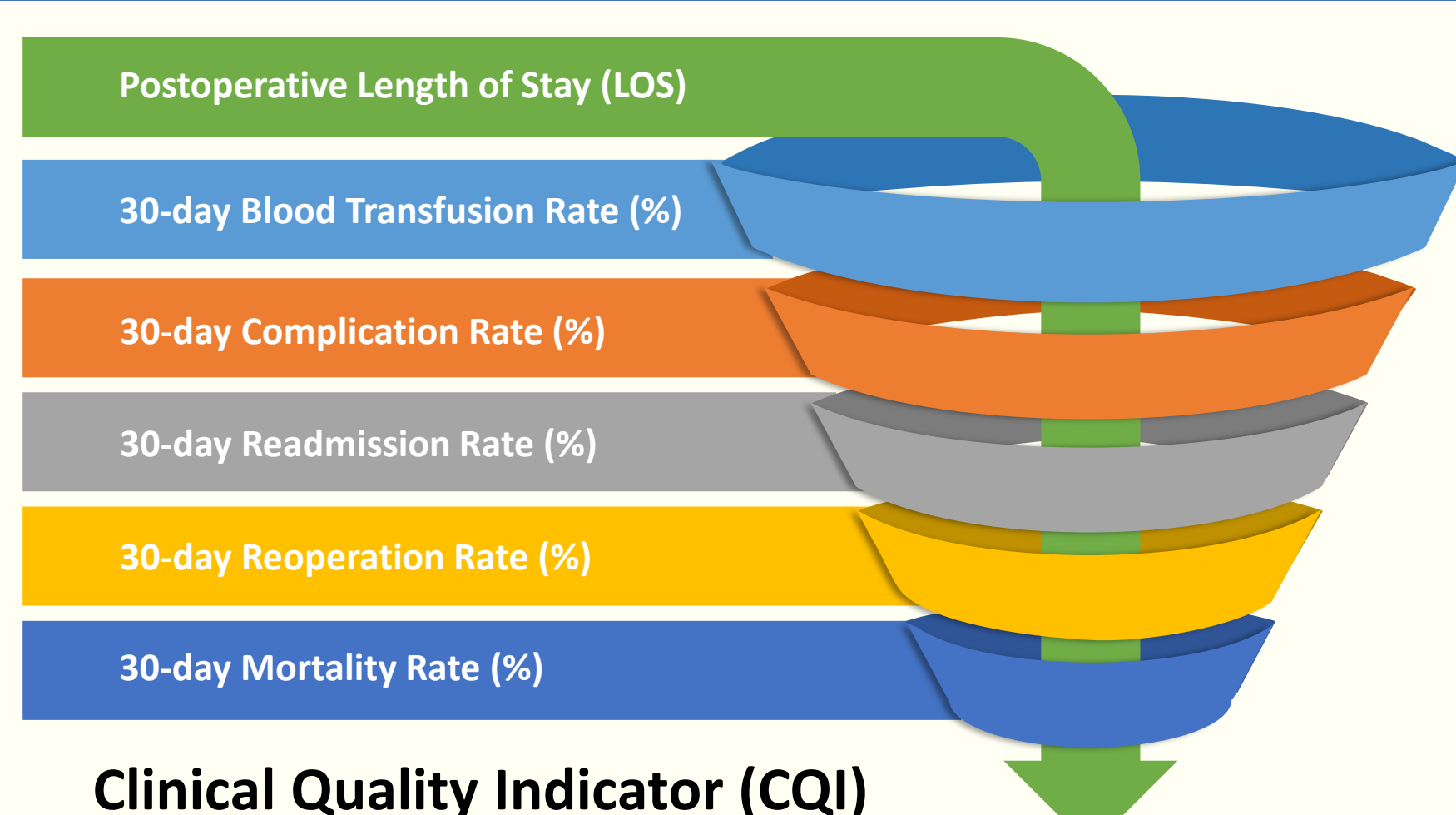
Impetus for VDC: The increasing cost of healthcare is a major concern globally. VDC offers a solution to control costs while maintaining or improving quality of care. VDC aligns with this shift towards a more patient-centered approach.

SingHealth has implemented VDC since 2018. This study analyzed 2022-2023 data for 11 Ministry of Health (MOH) conditions to identify cost-saving and quality improvement best practices.

$$\text{Value} = \frac{\text{Outcomes}}{\text{Costs}}$$

METHODOLOGY

11 MOH VDC Conditions	
1. Community Acquired Pneumonia	7. Haemorrhoidectomy
2. Colorectal Resection	8. Hysterectomy
3. Caesarean-section	9. Laparoscopic Cholecystectomy
4. Total Hip Replacement	10. Total Knee Replacement
5. Tonsillectomy	11. Spinal Fusion
6. Hernia Repair	



Step 2: Calculation of Cost Avoidance Following Implementation of VDC

I. Data Collection:

- Gather patient-level data for the 11 MOH-initiated VDC conditions across four acute hospitals within SingHealth for the years 2022 and 2023
- Ensure data includes relevant cost components (e.g., hospitalization costs, procedure costs) and clinical outcomes (e.g., readmission rates, complications, mortality, and length of stay)

II. Cost Avoidance Calculation:

- Calculate the average cost per patient for each VDC condition in both 2022 and 2023
- Determine the difference in average cost per patient between the two years (2023 cost - 2022 cost)
- Multiply the cost difference by the volume of patients treated for each condition in 2023 to obtain the total cost avoidance

$$(\text{CY2023 Mean Total Cost Per Patient (\$)} - \text{CY2022 Mean Total Cost Per Patient (\$)}) \times \text{Volume of patients in CY2023}$$

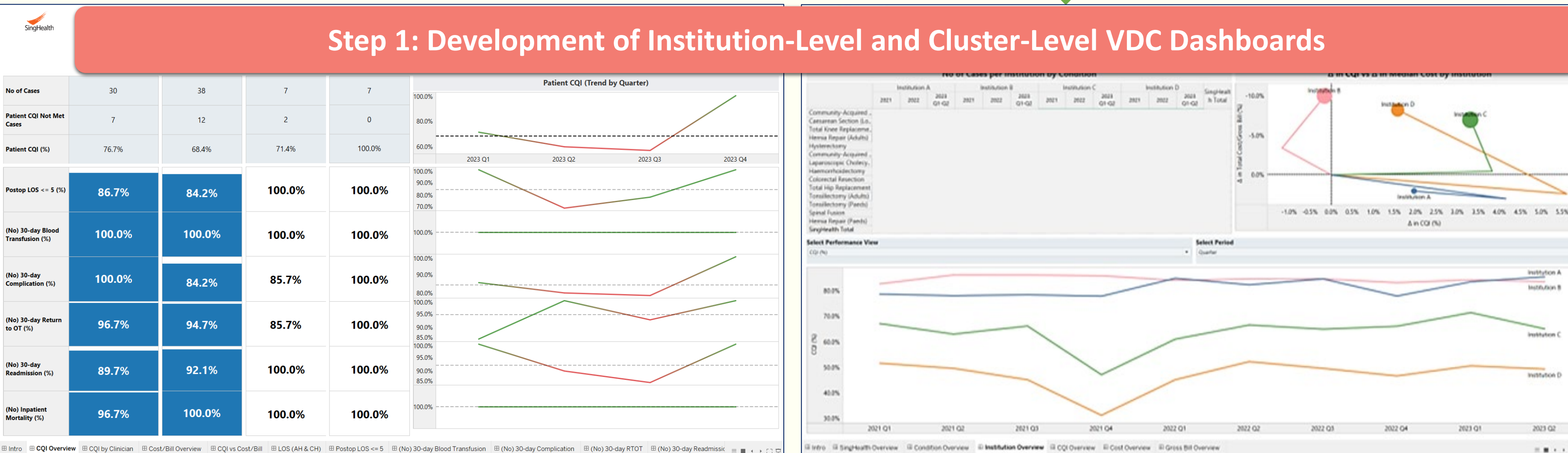
Step 3: Identify and Analyze High-Impact VDC Practices

I. Identify High-Impact Practices:

- Analyze data segmented by VDC condition, hospital, and patient factors to pinpoint areas with the most significant cost avoidance

II. Validate with Qualitative Insights:

- Gather feedback from clinicians to understand the underlying mechanisms driving cost avoidance and identify best practices for broader implementation



RESULTS

Cost Avoidance Following Implementation of VDC in SingHealth

In 2023, based on VDC efforts, we delivered better care with concurrent cost avoidance, at cluster level

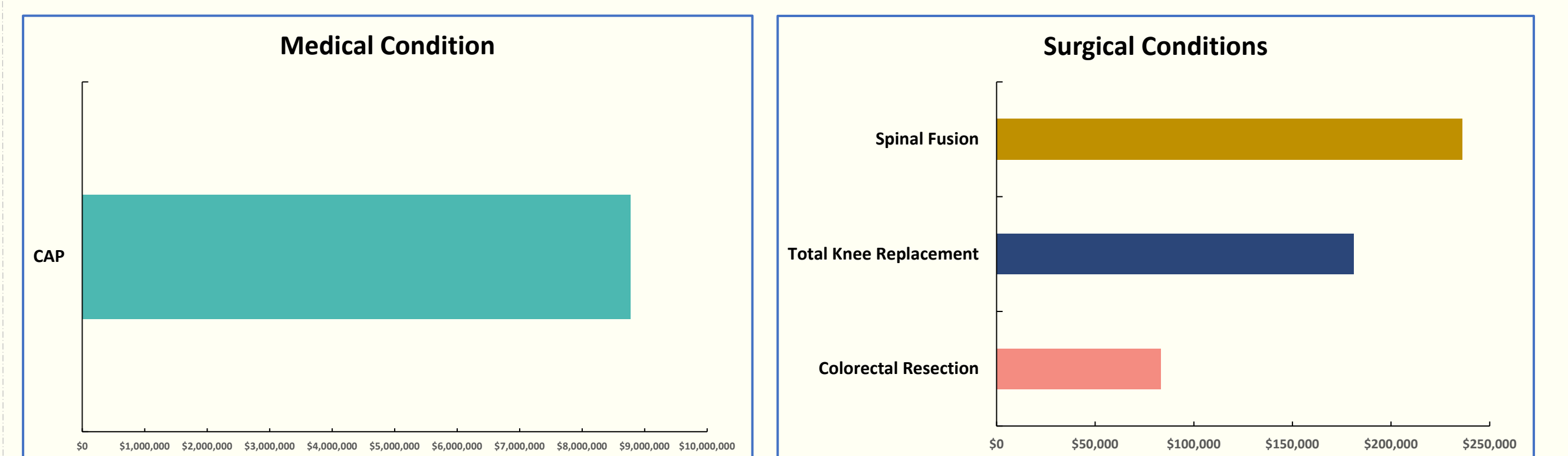
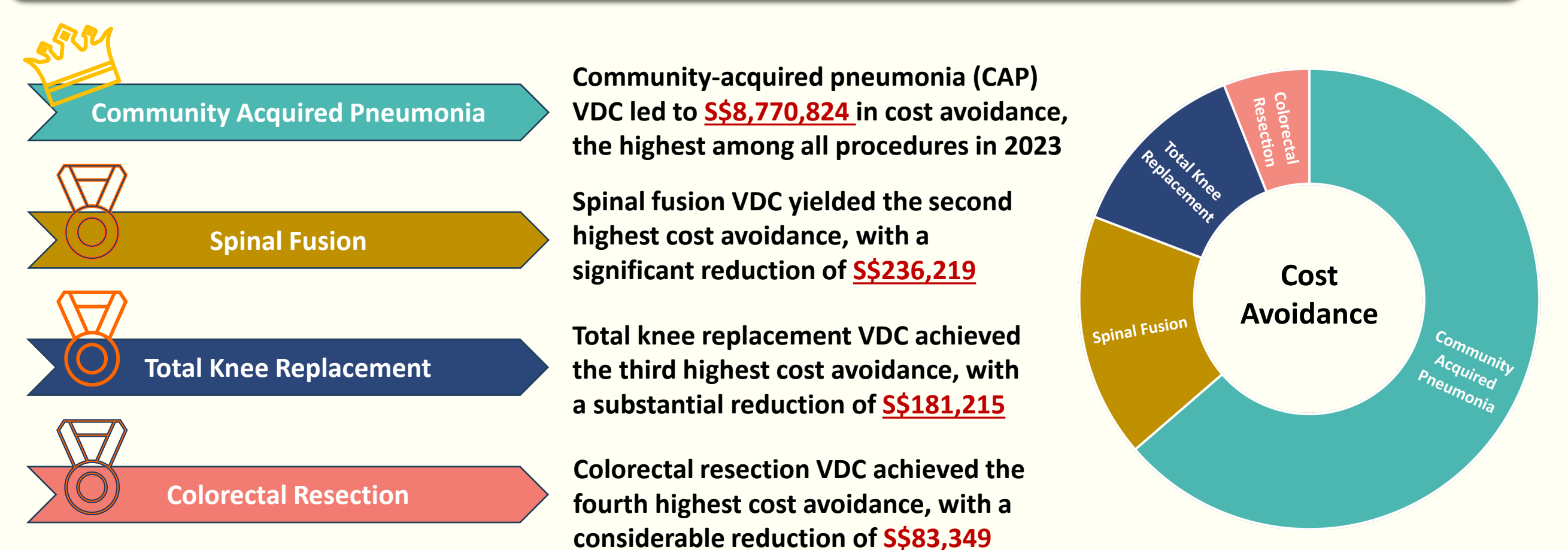
791 more cases received better care*

\$18m avoided cost*

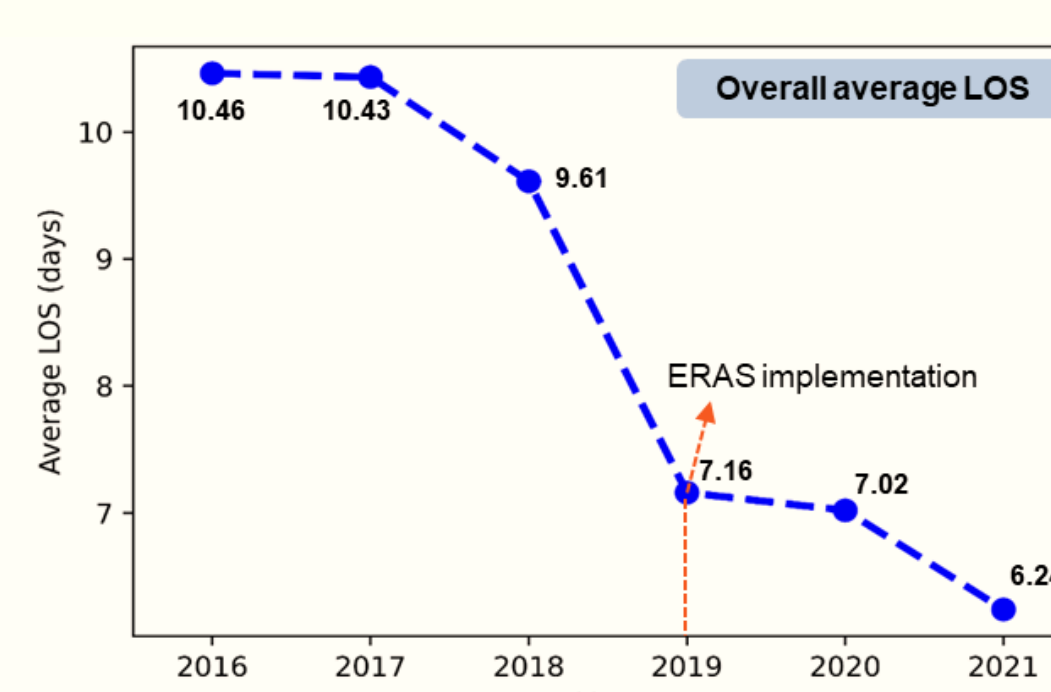
- 683 more cases had no complications
- 652 more cases discharged on time
- 263 more cases avoided death
- 130 more cases avoided re-admissions
- 125 more cases did not need blood transfusions
- 33 more cases avoided return to Operating Theatre

- Top conditions with highest 'Cost Avoidance'
- Community Acquired Pneumonia (Geriatrics / Adults, Pediatrics)
 - Spinal Fusion
 - Total Knee Replacement
 - Colorectal Resection

High-Impact VDC Conditions in SingHealth



Example: ERAS in Colorectal Surgery



- ERAS has been widely adopted and adapted for various surgical specialties, including colorectal surgery, gynecological surgery, urological surgery, and more
- For instance, implementing ERAS protocols, alongside VDC, in Singapore General Hospital (SGH) colorectal surgery department significantly reduced patients' LOS and postoperative complication rates

CONCLUSION

- Our analyses of cost avoidance and clinical outcomes showcase successful VDC implementation in SingHealth.
- By identifying and adopting best practices, streamlined care processes, and ERAS through VDC, we managed to achieve cost avoidance and optimize resource utilization.
- This poster demonstrates our commitment to high-quality, cost-effective care that benefits both patients and the healthcare system.