# **Cost Avoidance Achieved Through Value-Driven Care Practices**

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## BACKGROUND

Healthcare

> 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

VDC in SingHealth

> 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.

prioritizes value by aligning clinical decisions with patient goals, using evidencebased practices, and continuously measuring and improving outcomes. VDC involves data-driven decision-making, patient engagement, performance measurement, and continuous improvement processes.





## **METHODOLOGY**

11 MOH VDC Conditions		Postoperative Length of Stay (LOS)
1. Community Acquired Pneumonia	7. Haemorrhoidectomy	30-day Blood Transfusion Rate (%)
2. Colorectal Resection	8. Hysterectomy	30-day Complication Rate (%)
3. Caesarean-section	9. Laparoscopic Cholecystectomy	30-day Readmission Rate (%)
4. Total Hip Replacement	10. Total Knee Replacement	30-day Reoperation Rate (%)
5. Tonsillectomy	11. Spinal Fusion	30-day Mortality Rate (%)
6. Hernia Repair		Clinical Quality Indicator (CQI)

#### **Step 2: Calculation of Cost Avoidance Following Implementation of VDC**

#### . 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



### **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



SingHealth







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** High-Impact VDC Conditions in SingHealth In 2023, based on VDC efforts, we delivered better care with Community-acquired pneumonia (CAP) VDC led to <u>\$\$8,770,824</u> in cost avoidance, **Community Acquired Pneumonia** the highest among all procedures in 2023 concurrent cost avoidance, at cluster level Spinal fusion VDC yielded the second highest cost avoidance, with a **Spinal Fusion** significant reduction of <u>\$\$236,219</u> Cost more cases Avoidance avoided cost\* Total knee replacement VDC achieved received **better care\* Total Knee Replacement** the third highest cost avoidance, with a substantial reduction of <u>\$\$181,215</u> Top conditions with highest 'Cost Avoidance' **Colorectal resection VDC achieved the Colorectal Resection** 683 more cases had no complications 🄊 fourth highest cost avoidance, with a **1. Community Acquired** considerable reduction of <u>\$\$83,349</u> 652 more cases discharged on time Pneumonia (Geriatrics / Adults; Pediatrics) **Surgical Conditions Medical Condition** 263 more cases avoided death 🧶 2. Spinal Fusion **Spinal Fusion** 130 more cases avoided re-admissions 3. Total Knee **Total Knee Replacement** САР 125 more cases did not need blood transfusions 📳 Replacement



4. Colorectal Resection

\*Note: Based on difference in average cost for VDC conditions between 2022-2023 for

\*Note: Based on improvement in Clinical Quality Index (CQI) performance between 2022 and 2023 for the 11 MOH VDC conditions which are reported under SingHealth Group Balanced Scorecard. Cataract Surgery VDC was the 11 VDC conditions with available cost data via SingHealth VDC Dashboards excluded due to already high performance. Respective targeted timeframes apply for each indicator and / or (selection was based on single TOSP cases as applicable) condition

These 11 conditions accounted for approximately 22,518 episodes (Total Number of episodes in 2023).

### Main Factors Contributing to "Cost Avoidance"



SingHealth

**2. Streamlined Care Processes** Standardized care pathways (e.g., "green lanes" between AH and CH) and active review of processes that optimize the patient journey, leading to lower costs

**3. Enhanced Recovery After** Surgery (ERAS) Standardized protocols that accelerate patient recovery, reduce complications, and shorten hospital stays, resulting in cost savings





#### **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.