

# Value Driven Outcomes (VDO) framework for IHH Healthcare

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## Introduction

Globally, healthcare institutions are challenged with enhancing clinical quality and patient outcomes amidst resource constraints. Value-Based Healthcare (VBH) has emerged as a prominent focus area, with organisations like University of Utah Health, Intermountain Healthcare, and public hospitals in Singapore leading the way. Notably, no private multinational healthcare group has fully implemented VBH across their network.

IHH Healthcare which encompasses 10 geographies, more than 80 hospitals and over 15,000 beds embraced the Value Driven Outcomes (VDO) framework in Q4 2020 to optimise care affordability, drive enhancements in healthcare delivery, and enhance value for patients.

## Methods

The VDO framework, depicted in Figure 1, comprises of four stages:

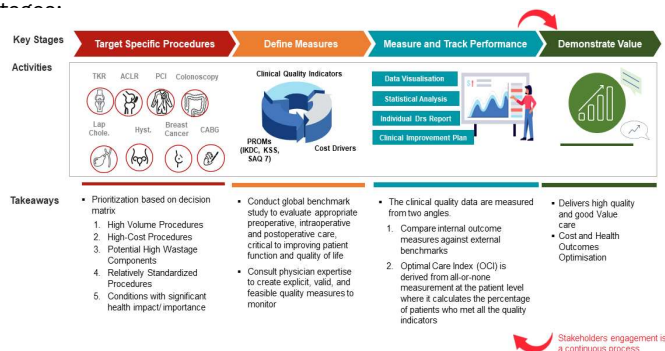


Figure 1

### (i) Identification of VDO procedures

The initial focus was on high-volume, high-cost procedures with potential for high wastage and relative standardisation, covering about 20% of IHH's inpatient admissions.

### (ii) Definition of Measures

Clinical outcome measures for each VDO procedure are based on quality indicators from specialist societies, ICHOM and medical journals, agreed upon by IHH clinicians. Technical manuals ensure consistent data collection and 'like-for-like' comparisons across geographies.

### (iii) Measurement and Tracking of Performance

Clinical quality indicators and hospital bill data are collected and aggregated to provide performance overview. Outcome measures are evaluated using the Optimal Care Index (OCI), where success requires full compliance with all measures (Figure 2). Costs are based on the hospital bill, broken down into individual cost buckets.

e.g. TKR Quality Indicators	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8
1 Prophylactic Antibiotics Received within 1 hour prior to surgical incision	MET	MET	MET	MET	MET	MET	MET	MET
2 Length of Stay (LOS) within 4 Postoperative Days (POD)	MET	MET	MET	NOT MET	MET	MET	MET	MET
3 No Blood Transfusion given during Intraoperative or Postoperative TKR	MET	MET	MET	NOT MET	MET	MET	MET	MET
4 No Complications during TKR Index Admission	MET	MET	MET	MET	MET	MET	MET	MET
5 No Readmissions for Complications within 30 days post TKR	MET	MET	MET	MET	MET	MET	NOT MET	MET
6 No Group-Wide Serious Reportable Events (SRE) Categories reported	MET	MET	MET	MET	MET	MET	MET	MET
OCI SCORE FOR EACH CASE	1	1	1	0	1	1	0	1

Example: Dr A performs 8 TKR Section cases where 6 cases met all 7 quality indicators. Overall OCI score = 75% (6 out of 8 cases)

Figure 2

### (iv) Demonstration of Value

A equation to calculate changes in value is derived to enable comparisons across countries and hospitals over time.

$$\% \Delta \text{ in value} = \left[ \frac{1 + \% \Delta \text{ in OCI}}{1 + \% \Delta \text{ in average cost/bill}} \right] - 1$$

\* 1 as the reference year

## Results

Since implementation of the VDO framework, our hospitals have shifted focus from quality to value:

- VDO procedures** - The number has doubled from four to eight across six geographies. More countries are expected to adopt new VDO procedures.
- VDO Teams** - To ensure effective implementation, a team is formed in each geography to drive initiatives, collaborate with stakeholders, identify improvement opportunities, and implement plans. So far, around 10 quality improvement projects have been completed.
- Data visualisation** - To streamline processes and improve efficiency, Group VDO introduced a Power BI dashboard for data visualisation, aiding analysis and report creation for stakeholder engagement.
- Results** - Efforts from the countries have increased the OCI index from 2021 to 2023, while costs for the first four conditions have remained stable (see Figure 3).



Figure 3

## Conclusions

VDO framework can be effectively implemented in private multinational healthcare groups with support from senior leadership and clinicians. While our emphasis on clinical quality remains, we plan to broaden our measurement scope to include patient-reported outcomes for a more comprehensive evaluation of healthcare value.



IHH Healthcare



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