Introduction
Since 2017, Singapore General Hospital (SGH) has actively embarked on Value Driven Care (VDC) to optimize patient outcomes and costs for various conditions. In 2023, the Office of Value Based Healthcare (OVBH) was formed to take on an expanded scope of value-based healthcare (VBHC) strategies and assist clinical teams in adopting and implementing best-in-class practices.

To achieve this, SGH OVBH adopted a VBHC implementation matrix from the European Institute of Innovation and Technology (EIT) Health, a knowledge and innovation community.

Methods

![VBHC implementation matrix from EIT Health](image)

The matrix considers the perspective of patients, providers and payers, and can be adapted for most healthcare institutions.

Two VDC conditions at SGH were mapped to the matrix to identify compatibility as well as potential gaps in implementation thus far:

- Elective total knee replacement (TKR)
- Ischemic stroke

Results

### Ischemic Stroke VBHC

<table>
<thead>
<tr>
<th>Condition</th>
<th>Patients admitted for Ischemic Stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Forces</td>
<td>Doctors, Nurses, Allied staff</td>
</tr>
<tr>
<td>Scorecard</td>
<td>Length of stay, Proportion of patients, PROMs I, M, IVF, DVT, Mortality</td>
</tr>
<tr>
<td>Data Platform</td>
<td>eHealth EMR, Department audit data</td>
</tr>
<tr>
<td>Benchmark</td>
<td>Public Hospitals in Singapore International studies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition</th>
<th>Elective Total Knee Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Forces</td>
<td>Surgeons, Allied Health, Community Hospitals, Patients</td>
</tr>
<tr>
<td>Scorecard</td>
<td>Length of stay, Blood transfusion, Complication, Readmission, Return to OT, Impatient Mortality, SSI, Oxford Knee</td>
</tr>
<tr>
<td>Data Platform</td>
<td>eHealth EMR, Zedoc Tableau</td>
</tr>
<tr>
<td>Benchmark</td>
<td>Public Hospitals in Singapore International studies</td>
</tr>
</tbody>
</table>

Most aspects of VBHC are in place:

- Multi-disciplinary teams are involved
- Well-defined scorecard. Patient Reported Outcome Measures (PROMs) implemented for TKR
- Comprehensive data warehouse with a pipeline for data processing and sharing
- Benchmarks available at national level, comparison of clinical outcomes with international studies have been done
- Additional resources have been allocated to support value improvement initiatives. Results of initiatives were shared in local and overseas conferences
- There is a strong learning culture and sharing of best practices with other healthcare institutions in Singapore

Areas for exploration:

- For elective TKR, to study impact of implant choice on outcomes and costs, potentially via value-based contracting
- For ischemic stroke, to consider incorporating PROMs and monitoring of longer-term outcomes
- Adoption of standard sets (e.g. ICHOM) to facilitate international benchmarking

Conclusion

The VBHC implementation matrix from EIT Health allowed SGH to recognize the good work implemented so far and at the same time identify potential improvements in implementation for the existing conditions. The matrix provides a comprehensive framework to guide and support clinical teams in implementing VBHC, and we intend to use it as a basis for review process for implementation of new VDC conditions. With prospective employment of the matrix, OVBH will monitor if there is better project implementation in terms of both comprehensiveness as well as efficiency.

Acknowledgement

We would like to thank our partners, including but not limited to, SGH Strategy Management and Analytics, SGH Process Transformation and Improvement, SingHealth Office of Value Driven Care and all involved in driving value-based healthcare at SGH.

Reference


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