Development of Bundled Payment Model for Aortic Valve Implantation

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Background

INNOVATIVE FUNDING MODELS

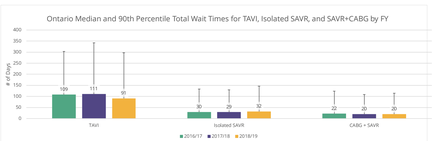
Innovative funding models are being adopted across health care sectors in order to:

- Improve patient outcomes and experience
- Enhance access to services across the care continuum
- Improve the value of health care services and dollars

WHY IS CHANGE NEEDED?

- Current reimbursement approach constrains the hospital's ability to provide Transcatheter Aortic Valve Implantation (TAVI) resulting in longer wait times (Figure 1)
- Aortic stenosis (AS) patients have a 4.3% risk of mortality and 38.8% risk of hospitalization while on the waitlist for a TAVI procedure
- Rapidly evolving evidence for TAVI indicating non-inferiority to surgical aortic valve replacement (SAVR) in intermediate and low surgical risk population will lead to further TAVI demand (Figure 2)
- Ministry of Health (MOH), CorHealth Ontario and clinician leaders conceptualized a disease-based reimbursement model for the management of patients with AS

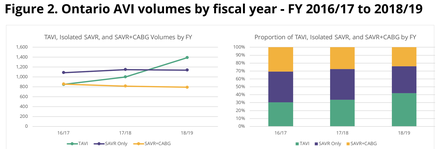
Figure 1. Ontario AVI Wait Time by Fisacal Year - FY 2016/17 to 2018/19



- Wait times for TAVI are significantly higher than those of isolated SAVR and CABG+SAVR

Note: Total Wait Time is the sum of Wait 1 (# of days between referral and acceptance) and Wait 2 (# of days between acceptance and procedure). See Appendix B for Wait 1 and Wait 2, and hospital-specific wait time data.
Data Source: CorHealth Registry, FY 2016/17 to 2018/19 - see Appendix A for draft AVI cohort definition.

Figure 2. Ontario AVI volumes by fiscal year - FY 2016/17 to 2018/19



Note: Isolated SAVR and SAVR+CABG volumes include only first time SAVR with MRDx of aortic stenosis and redo SAVR with any aortic valve disease MRDx.
Data Source: CIHI DAD, FY 2016/17 to 2018/19 - see Appendix A for draft AVI cohort definition.

Methods

- Provincial Advisory/Governance structure established to oversee the project (Figure 3)
- Provincial AVI Model of Care Change Management Forum and Local Internal Change Management Working Groups (Figure 4)
  - Brings together key stakeholders and clinical experts to define, design and inform the development of a procedure-agnostic model of care for AVI procedure
  - Facilitates mutual support (i.e. sharing strategies and lessons learned) and local change management as hospitals align themselves with the new model
  - Allows for collective identification of key system enablers that could contribute to successful and sustainable implementation of the new model (i.e. funding, performance measurement and monitoring, procurement)

Figure 3. Provincial Advisory Structure

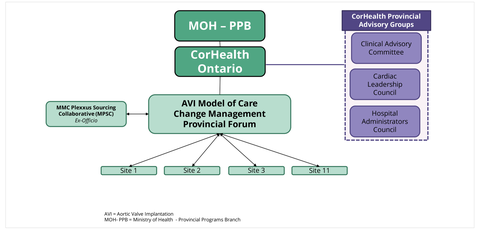
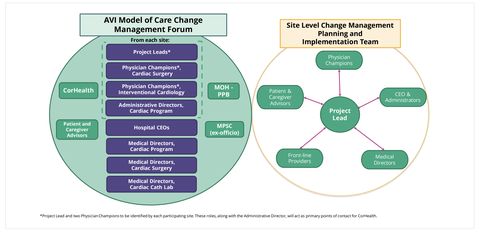


Figure 4. Parallel Processes: Provincial Forum and Internal Activities at Sites



DRAFT AVI COHORT DEFINITION

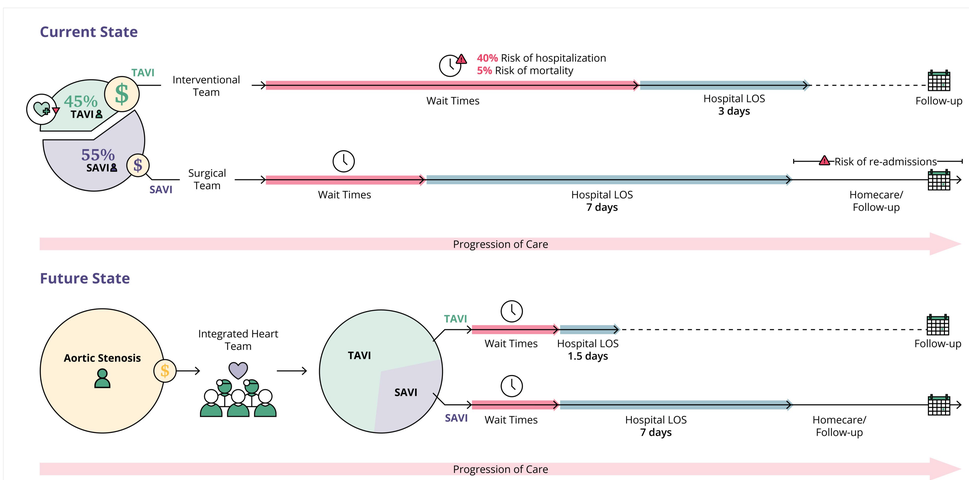
1. Select patients that had a SAVR (1HV90*)
2. Exclude non-Ontario residents
3. Exclude patients <18 years old
4. Exclude cases in facilities that are not cardiac surgery facilities (699, 736, 852 (980), 936, 942, 947, 953, 959, 961, 975, 978 (693))
5. Exclude out of hospital procedures
6. Exclude abandoned procedures
7. Exclude Vascular Aortic Aneurysm Repair QBP procedures1 (1IB*, 1IC*, 1ID*)
8. Exclude patients who had a repair or replacement of any other heart valve (1HS*, 1HT*, 1HU*, 1HV80*,1HW*)
9. Exclude first-time SAVR cases (1HV90* excluding TAVI codes, status ~ R), with or without CABG (1IJ57*), that did not have aortic stenosis MRDx (I060, I062, I080, I082, I083, I350, I352, Q230, T820)
10. Exclude SAVR-redo cases (1HV90* excluding TAVI codes, status = R), with or without CABG (1IJ57*), that did not have aortic valve disease (AVD) MRDx (I060, I061, I062, I080, I082, I083, I350, I351, I352, Q230, Q231, T820)

SAVR = Surgical Aortic Valve Replacement; TAVI = Transcatheter Aortic Valve Implantation; CABG = Coronary Artery Bypass Graft

[1]Patients who require a SAVR in addition to a procedure on the ascending aorta (1IA*) can receive TAVI as an alternate treatment. Also please note: as of April 1, 2018 1IA*, 1IB*, and 1IC* codes have been retired and replaced by 1ID* with mandatory location attributes of "AS" (ascending), "AR" (arch of aorta), and "TH" (descending & thoracoabdominal), respectively.

Results

CONCEPTUAL MODEL FOR AVI



CLINICAL BENEFITS

- Improved access to TAVI, which would reduce patient deterioration and mortality while waiting for tretment
- Align AVI treatment options with current evidence; facilitate inclusion of intermediate and low risk TAVI patients
- Enable the Interdisciplinary Heart Team to consider patients equally for TAVI and SAVR, thereby improving access to most appropriate procedure and patient role in informed decision making

SYSTEM BENEFITS

- Improved patient and caregiver experience
- Improved access to TAVI using current funding envelope
- Help to address provincial bed crisis by reducing AVI patient length of stay as more patients are shifted to TAVI
- Start shift towards more accountable disease-based funding models

Conclusion

- Evidence in AVI is rapidly evolving
- In the last decade, non-inferiority of TAVI to SAVR has been demonstrated in the high surgical risk[1,2], intermediate risk[3-5], and most recently, in the low surgical risk populations[6-8]
- Long wait times for TAVI are associated with morbidity and mortality[9,10]
- Shifting to a Model of AVI reimbursement requires partnerships with stakeholders across a variety of sectors including government, regional and system planners and interprofessional clinical teams responsible for direct patient care
- The Care Model for AVI presents a unique opportunity to improved access to a rapidly evolving TAVI technology that could reduce wait times, mortality and morbidity

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