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Ontario**

*Advancing cardiac, stroke  
and vascular care*

# **Interdisciplinary Heart Team Model**

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# Rationale & Purpose

Interdisciplinary decision making has been shown to be highly effective in various aspects of medicine (e.g., tumor boards and transplant committees) (Sanchez 2013). In terms of cardiovascular disease, the concept of an Interdisciplinary Heart Team (IHT) to enhance clinical decision making and improve patient outcomes has become a core concept for patients considered for Transcatheter Aortic Valve Implantation (TAVI) and Mitral Valve Clip therapy (Holmes 2013). The IHT concept has been given widespread attention in the wake of two trials, SYNTAX (PCI TAXUS stent versus cardiac surgery) and PARTNER (Placement of Aortic Transcatheter Valves) (Serruys 2009; Genereux 2011; Girasis 2011; Palmerini 2012; Head 2012) and continues to expand beyond valve procedures to other structural heart procedures.

The purpose of the IHT is to provide a complementary and balanced approach to patient care through shared and integrated decision making by various medical care stakeholders from various specialties.

Rationale and support for the implementation and use of a IHT stems from an understanding that bringing together the diverse professional experiences and expertise of highly skilled healthcare professionals, and measuring short- and long-term outcomes, leads to the selection of the best therapeutic recommendations; thus, offering optimal patient-centered care (Homes 2015). This team-based approach will act to diminish fragmented communication amongst specialists and remove, and/or reduce specialty bias from the decision-making process (Sanchez 2013). The implementation of an IHT is reported to be associated with several other potential benefits including, active involvement of physicians with patients and family members to inform the treatment plan, enhanced patient enrollment in protocols and research trial eligibility, enhanced learning for clinical specialists, patient-specific informed consent, and the development of a shared common understanding of ambiguous clinical terms (e.g., “in-operable”) (Sanchez 2013; Holmes, 2013; Holmes 2015). Overall, the adoption of an IHT in cardiovascular care may promote collaboration, clinical research, innovation, reduced costs, and efficient, high-quality care.

Although the concept of an IHT has become the subject of increasing interest in treating cardiovascular disease, including a recent study highlighting the benefits for managing heart failure (Gandhi 2017), a clear definition of the IHT is lacking. Acknowledging the dynamic role and utility of an IHT in the delivery of high-quality, patient-centered cardiovascular care, the ‘Interdisciplinary Heart Team Model’ document aims to outline a definition, desired goals, and means of implementing an IHT in the province of Ontario.

## Key IHT Roles & Responsibilities

The IHT is responsible for providing a forum through which all appropriate diagnostic tests and all suitable treatment options are prospectively reviewed, relative to the best available evidence-based practices and in adherence to clinical guidelines. The IHT should provide educational material appropriate to the health literacy of the patient and family and take into account the patients’ views and preferences. The team will integrate all clinical case data to reach an optimal treatment recommendation, with the physician(s) deemed most responsible being accountable for final approval. If a collective agreement cannot be reached, a defined process should be in place to adjudicate a final recommendation(s). Treating interventional cardiologists, cardiac surgeons, and/or the most responsible physician should be responsible for meeting with the patient and family to inform them of their recommended treatment options, and the relative advantages and perceived risks of each option to support the final treatment decision. Equal distribution of the cardiac surgeon and interventional cardiologist’s roles at pre-, intra-, and post-operative care and follow-up should be aimed for.

In addition to the IHT’s central role in decision making, the team will be integral to overseeing care processes to ensure the appropriate care providers are in place to support patients through the diagnostic, treatment, and recovery phases of the patient care journey. The IHT will play an integral role in terms of the performance of the procedure itself, as most procedures will entail a complex interaction of multi-specialty skills.

It is recommended that the IHT approach and function is evaluated regularly (e.g., using The Team Climate Inventory (Houston 2017)) to monitor the evolution and effectiveness of the newly formed team, and assess the impact of teamwork on the quality of care delivered (i.e., the IHT should continue to track patient outcomes as well). Efforts to continuously improve team functions should be considered as the IHT develops and evolves over time, and well established IHTs are encouraged to share their successful models for the purpose of mentorship.

Heart Team, whereby the criteria and factors outlined in the following sections are considered. Patients should be evaluated by minimum a cardiac surgeon and cardiologist with knowledge and experience in both TAVI and SAVR<sup>2</sup>, as well as appropriate subspecialties as determined by the Interdisciplinary Heart Team.

## IHT Structure & Meeting Format

The composition of the IHT will vary depending on the specific disease state and clinical situation being managed, and may also differ based on the institution.

As a general standard, each IHT should be composed of a set of core team members required to attend each IHT meeting (Figure 1), including at minimum two physicians: an interventional cardiologist and a cardiovascular surgeon, experienced in the complexity of the specific patient and their family. Additional adjunct members should be considered for inclusion, dependent on the clinical condition being managed (Figure 1); for example, a Mitral Valve Clip procedure will require physicians with extensive knowledge of valvular heart disease in their core team (See Appendix A for a detailed example of a Mitral Valve Clip IHT).

### Example Core & Adjunct IHT Member Structure\*

Core IHT Members	Core IHT Members	
• Interventional Cardiologist	• Cardiology/Heart Failure Specialists	• Neurology Specialist
• Cardiovascular Surgeon	• Intensivists	• Geriatrician
• Care/Nurse Coordinator	• Internal Medicine Specialist	• Perfusionist
• OR/Cath Lab Nurse	• Oncologist	• Vascular Lab Technicians
• Imaging Specialist(s) (i.e. echocardiographer radiologist)	• Respiriologist	• ICU/CVI/CICU Nursing and Allied Health (PT, OT, Pharmacy)
• Cardiac Anesthesiologist	• Vascular Surgeon	• Nurse Practitioner
	• Nephrology Specialist	• Social Worker, Ethicist

The IHT should be engaged through regularly scheduled meetings at least every two weeks, such that treatment recommendations are efficiently performed and patient case reviews are completed prospectively. In the case where an IHT member cannot be physically present, or in those facilities where all needed specialists are not present in-house, a teleconference or videoconferencing option should be provided. In order to maintain organization and communication, a dedicated IHT coordinator (nurse coordinator) should be established, responsible for agenda preparation, vetting appropriate patients for discussion, overall meeting facilitation, ensuring patient confidentiality is maintained, and overall administrative management and meeting functioning. An effective IHT will foster a culture of open communication and mutual respect between team members, with consistent input encouraged from all team members. Clinical treatment options will be made based on collective agreement and through consensus amongst IHT members. Lastly, The IHT should not operate in silos, but will instead interact with each division involved to varying degrees.

A written Terms of Reference detailing the IHT mandate, as well as professional membership (i.e., core and adjunct members), meeting format, mode of communication, and a process to ensure patient confidentiality should be developed in facilities adopting this model of care (see standard Terms of Reference template provided). In addition, an IHT specific data collection sheet should be used to provide the IHT with a robust set of clinical data variables depending on the clinical case being considered (e.g., a summary of the clinical presentation, comorbidities, SYNTAX and STS scores, and commentary on the patients' overall functional status). See sample data collection template provided.

## Institutional Requirements

An effective, high-functioning IHT will require strong support and commitment from its hospital program. This includes:

- Access to a dedicated meeting room and facilities that allow for adequate review of clinical diagnostic testing such as, projection equipment for imaging results assessment (i.e., ECHO, Angiogram, CT)
- A secure computer system and information technology (IT) support
- A dedicated Care/Nurse Coordinator to ensure IHT meeting continuity and administrative management

It is recognized that the implementation of an IHT may require substantial resources, and as such, a stepwise approach to implementation may be recommended for some facilities.

As the IHT model continues to evolve, with the establishment of multiple IHTs to support various specific disease process (e.g., Mitral Valve Clip Procedure, revascularization procedures), hospitals may consider the implementation of an internal governance structure to ensure heart team models are adhering to established standards and/or act as an advisory body (e.g., for resource allocation).

# References

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# Appendix A: Sample Composition of a Mitral Valve Clip Interdisciplinary Heart Team

Physicians on the Interdisciplinary Heart Team shall have extensive knowledge of valvular heart disease including the natural history of the disease, hemodynamics, appropriate diagnostics, optimal medical therapy, the application and outcome of invasive therapies, procedural, perioperative and postoperative care.

Programs providing Mitral Valve Clip procedures will have an Interdisciplinary Heart Team.

Core IHT Members will include:

- Cardiac surgeon
- Interventional Cardiologist
- Echocardiologist
- Cardiac Anaesthesia
- OR/Cath lab Nurses

Access to other Interdisciplinary team members may include:

- Cardiology/Heart Failure Specialist
- Internal Medicine
- Nephrology
- Neurology
- Perfusionists
- Diagnostic Imaging/Medical Imaging
- Imaging Techs
- Vascular Lab Technicians
- ICU/CVICU/CICU Nursing and Allied Health (PT, OT, Pharmacy, Social Work, Chaplin)
- Nurse Practitioner
- Other relevant members