CARDIAC CARE NETWORK

Development of a Regional Cardiac Program

CORE COMPETENCIES and FUNCTIONS OF A REGIONAL CARDIAC PROGRAM

December 2013

For more information:
Anne Forsey
Director, Clinical Services
Cardiac Care Network
416-512-7472
Aforsey@ccn.on.ca

Foreword

The Cardiac Care Network of Ontario (CCN) is a system support to the Ministry of Health and Long-Term Care (MOHLTC), Local Health Integration Networks (LHINs), hospitals, and care providers dedicated to improving quality, efficiency, access and equity in the delivery of the continuum of cardiac services in Ontario. Our priority is to ensure the highest quality of cardiovascular care, based on established standards and guidelines, and we actively monitor access, volumes and outcomes of advanced cardiac and vascular procedures in Ontario. In addition, CCN works collaboratively with provincial and national organizations to share ideas and resources to co-develop strategies that enhance and support the continuum of cardiovascular care, including prevention, rehabilitation and end-of-life care.

Working with key stakeholders, CCN helps to plan, coordinate, implement and evaluate cardiovascular care and is responsible for the Ontario Cardiac Registry. The information collected in the Cardiac Registry includes wait time information as well as specific clinical parameters required to evaluate key components of care and determine risk-adjusted outcomes. Through scientific evidence, expert panels and working groups, CCN uses evidence and consensus driven methods to identify best practice and strategies to effectively deliver cardiovascular services, across the continuum of care.

Guidelines for Development of a Regional Cardiac Program

To provide comprehensive cardiac care to patients, across the continuum, it is recommended that hospitals providing advanced cardiac services serve as a regional resource for other hospitals and care providers within a specific geographic area and/or LHIN boundary.

A regional cardiac program that includes a targeted focus on the adoption of best practices in all aspects of cardiac care based on published evidence and guidelines is fundamental to eliminate variation in practice and standards, and ensures patients within a designated region receive comprehensive care, independent of their cardiac disease and/or stage of disease progression. A regional cardiac care program serves as an important resource for patients, families and health care providers and promotes a “hub-and-spoke” model of care which can serve as a point for access, mentorship and education.

A well-defined regional cardiac program can also be an important recruitment and retention tool for physicians, nurses and other health human resources. Advanced cardiac services may include cardiac catheterization laboratory procedures such as diagnostic coronary angiogram (cath), percutaneous coronary interventions (PCI) and pacemaker implantation and, in some cases, advanced arrhythmia procedures (electrophysiology, ablation, device implants), cardiac surgery and other cardiac diagnostic and intervention procedures.

A critical point in planning service delivery is to determine at what point investments should be made to build services locally, and ensure patients receive services in their own region, rather than be required to travel to an established cardiac programs elsewhere. While “closer to home” is preferred by patients where possible, in some jurisdictions the appropriate critical mass of patients to sustain procedural volumes and quality outcomes may be unattainable. Hospitals with small volume cardiac procedure programs are often challenged to provide quality care with clinical outcomes and efficiency comparable to larger programs; in some cases smaller volumes are not sufficient to maintain competencies on a program and/or provider level. Smaller hospitals or health centres without the requisite critical mass of patients to support a specialty service/program benefit from accessing a regional cardiac centre for the purposes of consultation and follow up, and in some situations, patient transfer in acute or emergency clinical situations.

Variation in clinical practice has the potential to impact care with respect to dimensions of quality, efficiency and safety. In addition, it is challenging for some independent practitioners to remain clinically current, informed of best practices and new evidence on an ongoing basis. One of the key benefits of a regional cardiac services program is the availability of clinical pathways, decision-based algorithms, and pre-defined clinical order sets to ensure the standard of care is established, based on evidence and best practices, with attention to ensure such documentation is regularly reviewed and updated as required.

A regional cardiac program serves as a resource for a designated region/geography, and serves as a mentor with defined processes, resources and joint agreements in place for leadership, case consultation, emergency support and patient transfer. The mentorship arrangement ideally will include

a fully detailed plan for support, ongoing clinical interaction, a transportation/EMS strategy for emergencies, and consultation for complex cases.

A regional cardiac program requires the full support of administration, and buy-in from other partners and stakeholders (hospitals, referring physicians, and other providers) within the region. As a service provider, tools and supports need to be developed and implemented by the regional program. In some cases a "no refusal" policy may be required to ensure patient transfers are consistently accommodated at the regional program.[1] In addition, repatriation policies should be established to ensure the necessary transfer of patients between hospitals within the region.

Considerations and Benchmarks for a Regional Cardiac Program

A regional cardiac program requires the appropriate infrastructure and regional supports in order to provide a full range of clinical services to support patient care activities. It is CCN's position that a regional cardiac program requires the following considerations:

Infrastructure

1. The capacity and necessary infrastructure upon which a robust cardiology program with a focus on the continuum of care can be established;
2. Capital investments as well as a reasonable operational funding model benchmarked against similar existing programs in the province;
3. Evidence that comprehensive quality assurance program and risk management strategies are established, including cardiac program evaluation, monitoring and reporting systems to ensure best practice guidelines are followed and tracking and monitoring of adverse events;
4. A sufficient number of designated cardiac beds, other in-patient and ambulatory care resources as well as physical capacity to support all levels of cardiac care and clinic activities;
5. Existence of a service plan for cardiac diagnostics (including appropriate use criteria defined by existing standards/guidelines) and available, trained and credentialed staff to conduct testing.

[1] *In September 2013 Critical Care Services Ontario introduced Life and Limb policy, requiring hospitals to implement "no refusal" policy for certain conditions.*

Provision of a full range of in-hospital cardiac diagnostic testing must be present to service in-patient and ambulatory patient populations, including: Electrocardiogram testing (24/7 for in-patients), regular and nuclear stress testing, Holter monitoring, and echocardiography. Emergent/Urgent echocardiography must be available for in-patients on an on-call basis 24/7;

6. Rehabilitation, risk factor reduction, and other clinical programs (i.e., smoking cessation program, atrial fibrillation and heart failure clinics) should be available to in-patients and ambulatory out-patients that reside in the region and are discharged from other cardiac centres.

Clinical Services

7. Established and defined clinical activity to support comprehensive cardiac care, including chronic aspects of cardiac disease (i.e., cardiac rehabilitation, heart failure programs, atrial fibrillation clinics, hypertension clinics, diabetes education, etc.);
8. A complete understanding of the current state of cardiac services within the region, including access, wait times, referral patterns, repatriation and patient outcomes (including elective and emergency procedures) benchmarked against provincial aggregate data;
9. Evidence of necessary human resources (including multidisciplinary teams consisting of medical, nursing, physiotherapy, occupational therapy, social work and pharmacy) trained and assigned to care for cardiac patients with MD on site availability within 30 minutes 24/7;
10. Clearly defined clinical pathways must exist for the care of cardiac patients using evidence-based best practice guidelines;
11. Protocols must exist relating to the care of the critically ill patient during the stabilization and intrahospital transport period in the event a patient requires transfer to a higher level of care;
12. Dedicated cardiac in-patient ward beds where clinical teams are skilled in the management of post-Acute Coronary Syndrome, Coronary Catheterization/Percutaneous Coronary Intervention (including STEMI), and Coronary Artery Bypass Graft patients who are repatriated from centres where advanced cardiac procedures are performed;
13. Dedicated ICU/CCU beds for cardiac patients (i.e., Level 2), RNs in this unit must be trained and maintain competence in advanced arrhythmia interpretation, defibrillation, and administration of life saving cardiac drugs, with the ability to manage complex critically ill cardiac patients;

Regional Supports

14. A strong level of community/public engagement, including consultation with clinical experts and other relevant leaders in the healthcare field in support of the program. The support of the Local Health Integrated Network (LHIN) with confirmation that the regional cardiac services are aligned with the LHIN's current Integrated Health Services Plan. Evidence of repatriation agreements to ensure continuity and comprehensiveness of care for patients transferred between hospitals. This includes a well-established relationship with an advanced, full service cardiac centre with agreements in place for patient transfer and repatriation post procedure;
15. Evidence of repatriation agreements and transfers occurring on a "no refusal" basis;
16. Adoption of standardized referral tools by providers in the community and institutional settings to ensure the patient is assigned the appropriate level of care within a specified recommended wait time; and
17. Comprehensive discharge planning programs including ambulatory clinics to service patient needs upon discharge, available 5 days per week, with established protocols to expedite care and transitions to community supports, as appropriate.

CLINICAL SCOPE OF A REGIONAL CARDIAC PROGRAM

The clinical focus of a regional cardiac program is to provide cardiac care and clinical management for patients and families across the continuum of care for patients with multiple conditions, including:

- Coronary Artery Disease;
- Structural Heart Disease;
- Heart Failure;
- Arrhythmia (pacemaker implantation and follow up); and
- Cardiac Rehabilitation & Prevention.

There should be appropriate resources for diagnosis and treatment activities to the full extent of the cardiac services defined for program. This includes an appropriate number of beds for admitted in-patients, staffed according to the standards established for best practices. A clear plan needs to be in

place for the care and management of patients who deteriorate clinically, and urgently require higher levels of care. Ambulatory areas should be appropriately staffed, with the necessary physical space and equipment to accommodate patient flow. Other factors to facilitate patient flow and access to the cardiac program should be identified and implemented.

On site at the regional hospital, there needs to be a system-wide plan to ensure appropriate clinical coverage that is reasonable and achievable, including on-call and consultation schedules. A high degree of collaboration between clinical departments/divisions interacting with the cardiac program will help to ensure its success, including the following areas:

- Critical Care;
- Medical Imaging;
- Nephrology;
- Infectious Disease;
- Anaesthesia;
- Respiratory Therapy;
- Physiotherapy; and
- Dietary.

Following hospitalization, patients should be discharged with a clear plan that includes cardiac rehabilitation, secondary prevention medications, and interaction with primary care providers. When establishing a regional resource for cardiac care, discharge and transition planning is a fundamental part of the program. Individuals within the community (health care providers, families, and caregivers) require ongoing education and follow up regarding cardiovascular risk factor reduction and cardiac disease management—regional cardiac programs effectively provide leadership, support, and resources for these activities.

Stand Alone Percutaneous Coronary Intervention (SA-PCI) Programs

Hospitals often consider whether they should expand their existing cardiac services to include a Stand Alone PCI (SA-PCI) program. **Given patient complexity, it is essential that a SA-PCI program only be considered after a regional cardiac program is established.** For existing regional cardiac programs considering implementing a SA-PCI program, the following criterion outlines the requirements:

Criteria #	SA-PCI Clinical and Business Development Criteria
1	Strong rationale for the stand-alone program, including substantial evidence for population needs, an analysis of available alternatives to meet the identified needs and the level of community engagement and/or consultation with clinical experts or other relevant leaders in the healthcare field.
2	A well-established mentor relationship with an advanced, full service cardiac centre with joint agreements in place for mentorship, case consultation, emergency support, and patient transfer. The mentorship agreement must include a detailed plan for support, training, and ongoing clinical interaction, including clinical and/or administrative consultation for complex cases (including degree of consultation and number of cases per month).
3	A plan for the emergency transfer of patients that must be in place at the time the proposal is submitted.
4	An overview of patient care processes to support quality care, including what types of supports and resources are required, a process for informed consent with respect to revascularization options, a quality assurance program, and a risk management program.
5	Evidence of an existing cardiology program within the hospital with designated cardiac beds and resources to support complex cardiac cases, including current clinical care pathways.
6	Evidence of repatriation agreements to ensure continuity and comprehensiveness of care for patients transferred between hospitals.
7	Existing diagnostic cardiac catheterization lab performing a minimum of 1,500 diagnostic cardiac catheterizations annually.
8	Existing physical space with a funding and implementation plan for the development of two full service cardiac catheterization/intervention labs, including the necessary patient waiting/recovery areas.
9	Demonstrated ability to recruit a minimum of two experienced interventional cardiologists.
10	Demonstrated ability to recruit other relevant health human resources to support PCI cath lab activity, including registered nurses, X-ray technicians, and other relevant positions.
11	Developed plan for ongoing quality assurance, including program evaluation and monitoring systems to ensure ongoing quality improvement.
12	Developed plan to perform a minimum of 400 PCI procedures annually by year 3 and evidence that new PCI capacity will have sufficient patients to be sustainable long term.

Criteria #	SA-PCI Clinical and Business Development Criteria
13	Developed plan to implement primary PCI program (24/7) by year 2 of operations to support STEMI care without additional funding.
14	An overview of the potential challenges that may impact the implementation and growth of the new PCI program. Solutions to mitigate such barriers should be well defined and reflect the extent of program planning to support the defined implementation and growth strategy.
15	Full support of the Local Health Integration Networks with confirmation that the proposed PCI program is aligned with the LHIN's current Integrated Health Services Plan (IHSP).
16	Market share analysis to identify the potential impact on referral patterns and volumes at existing PCI programs in other LHINs within Ontario.
17	Evidence that existing PCI programs will be able to retain volumes sufficient to maintain the integrity of their PCI programs despite the redistribution of cases that may occur once the new PCI program is performing a minimum of 400 cases.
18	Detailed plan of any capital requirements, including renovation, expansion; equipment or information technology investments.
19	Detailed budget of one-time start-up costs, including training.
20	Detailed budget to support ongoing operational costs.
21	Proposed implementation timelines, including high level activities (milestones) and anticipated timelines in months, with the first activity starting at date 'zero' and the last activity/timeline when the proposed service is fully operational.

Quality Assurance (QA)

An ongoing QA plan is recommended; one example is what is presented by the American College of Cardiology/American Heart Association Clinical Guidelines Committee (O'Gara, P. et al. 2013). There are several patient-level indicators that can be analyzed to improve processes, and in addition, a mechanism to provide feedback to providers can be established for ongoing review and follow up to improve processes and patient outcomes.

Summary

The purpose of this document is to define the components of a regional cardiac program. It is expected that each advanced cardiac service provider in Ontario serve as a regional support to their community. As part of the CCN efforts to support leading practices and quality improvement, this document outlines criteria and benchmarks that support best practice cardiac care through a regional program.

References

CCN Stand Alone Percutaneous Coronary Intervention Services in Ontario. Proposal Development Criteria (Feb 2012).

O'Gara, P.T., Kushner, F.G., Ascheim, D.D., Casey Jr, D.E., Chung, M.K., de Lemos, J.A.,… Zhao, D.X. (2013). ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction. A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation, 127*, e362-e425.