

Rouge Valley Health System and The Scarborough Hospital Facilitated Integration Process

Due Diligence Workbook: Cardiology (DRAFT)

A Facilitated Process of the Central East LHIN

Authors: Cardiology Working Group

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1. Current State Assessment & Leading Practice Review

1.1. Overview of Services/Programs

Location of Service/Program <i>Where are the services/ programs delivered? At both hospitals? At specific sites?</i>	The Scarborough Hospital (TSH) – General & Birchmount <ul style="list-style-type: none"> • In-patient <ul style="list-style-type: none"> ○ 29 beds with 16 telemetry packs (Birchmount) ○ 22 beds with 20 telemetry packs (General) ○ Level 2 Coronary Care Unit (CCU) shared with Intensive Care Unit (ICU) <ul style="list-style-type: none"> • 6 CCU beds (Birchmount) • 8 CCU beds (General) ○ Consultative inpatient services on all floors (Both) • Out-patient <ul style="list-style-type: none"> ○ Cardiac Diagnostics (Both) ○ Single/dual pacemaker implantation ○ Pacemaker/Implantable Cardiac Defibrillator (ICD) Arrhythmia Clinic (General) ○ Cardiac Heart Function Clinic (General) ○ Urgent Cardiac Care Clinic (General) ○ Sleep Lab (General) 	Rouge Valley Health System (RVHS) <ul style="list-style-type: none"> • In-patient <ul style="list-style-type: none"> ○ 54 medicine/telemetry beds (15 telemetry packs) ○ 8 cardiac funded priority funded beds (9th level) ○ 9 beds Coronary Care Unit (CCU) Level 2 and 1 bed for Code STEMI (ST elevation Myocardial Infarction - heart attack) ○ Consultative inpatient services on all floors (includes RVAP) • Out-Patient <ul style="list-style-type: none"> ○ Cardiac diagnostics ○ Arrhythmia Services (Lab – Pacemaker and ICD implants, Transeptal, Electrophysiology (EP) studies. Follow-up clinic - Pacemaker and ICD studies, Transeptal) ○ Cath lab (Catherization, Angioplasty, Code ST) ○ Regional Cardiac Rehab
Volume of Activity <i>What is the current volume of activity? (e.g. service levels, patient volume) Are there important trends? (e.g. growth, decline)</i>	<ul style="list-style-type: none"> • In-patient occupancy 2012/13 <ul style="list-style-type: none"> ○ Birchmount – 96% ○ General – 92% • Out-patient #s – FY12/13 <ul style="list-style-type: none"> ○ Pacemakers – 422 ○ Follow Up – 2,761 visits ○ Cardiac Testing – 11,292 ○ Heart Function Clinic – 1,600 ○ Sleep – 726 	<ul style="list-style-type: none"> • In- patient occupancy <ul style="list-style-type: none"> ○ CCU – 80% ○ Cardiology/telemetry – 100% • Out-patient #s – FY12/13* <ul style="list-style-type: none"> ○ Pacemakers – 300 ○ Arrhythmia Follow Up – 3,616 visits ○ Cardiac Diagnostics Tests – 38,703 (RVC) ○ Catheterizations – 3,500 ○ Percutaneous Cardiac Intervention (PCI) – 1,400 booked ○ Code STEMI (emergencies) – 480 ○ ICD's – 160 ○ EP Studies – 274 ○ Ablation – 229 ○ Cardiac Rehab – 2,200 <p>*Increased growth in all services</p>

<p>Mode of Delivery <i>How are the services/programs delivered? (e.g. inpatient, ambulatory)</i></p>	<ul style="list-style-type: none"> • Inpatient and outpatient services include stress testing, nuclear stress testing, Echocardiogram (Echos) (2D and 3D), Cardiac Transesophageal Echo (TEE's), Holter monitoring, pacemaker implantation, Pacemaker/ Cardiac Resynchronization Therapy (CRT)/ICD follow-up • In patient only activity includes paediatric echo • Outpatient only includes loop monitoring, Urgent cardiac clinic, Heart Failure Clinic (HFC), dobutamine stress and blood pressure monitoring 	<ul style="list-style-type: none"> • Cardiac Imaging: <ul style="list-style-type: none"> ○ Inpatient and outpatient cardiac diagnostic testing ○ Services include <ul style="list-style-type: none"> ▪ Stress testing, ▪ Nuclear stress testing, ▪ Echos (3D), TEE's, contrast echo, paediatric echo ▪ Holter monitoring, event recorders ▪ Metabolic testing ○ Computed Tomography (CT) cardiac ○ Cardiac MRI planned for Nov 2013 • Regional Cardiac Catheterization and PCI service <ul style="list-style-type: none"> ○ In-patient and outpatient cardiac Cath and PCI ○ CCN based central referral and acceptance processes ○ Regional Code STEMI Services Scarborough-Durham, integration with partners including TSH, LHC, Toronto and Durham Emergency Medical Services (EMS) ○ Repatriation processes for Cath, EP, PCI ○ Regional catheterization services with participation by 15 cardiologist from across region including TSH, RVHS, LHC • Regional Arrhythmia Management service <ul style="list-style-type: none"> ○ Inpatients and outpatients ○ Regional arrhythmia central referral, booking and assessment process underway ○ New Infrastructure <ul style="list-style-type: none"> ▪ State of art EP laboratory ▪ Device Procedure Room ▪ Integration mapping , reporting, ablation CVIS ○ Device implantation and follow-up <ul style="list-style-type: none"> ▪ PPM ▪ ICD ▪ BiV ▪ ILR ○ Electrophysiology laboratory <ul style="list-style-type: none"> ▪ EPS studies ▪ Ablation ▪ Transeptal procedures ▪ Advanced ablation ○ Device follow up clinic expansion <ul style="list-style-type: none"> ▪ High risk clinic ▪ Regional referral process • Regional Cardiac Rehab, Scarborough-Durham <ul style="list-style-type: none"> ○ Regional processes and infrastructure <ul style="list-style-type: none"> ▪ Standardized criterion for entry referral and acceptance ▪ Standardized care pathways ▪ Automatic inpatient referral ○ Integration with CELIHN for CDM underway <ul style="list-style-type: none"> ▪ Stroke ▪ DM ▪ Vascular ▪ CKD
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<p>Innovations Planned and/or Underway <i>What changes are planned or in-progress to improve the service/ program?(e.g. new model of care, investment in new technology)</i></p>	<ul style="list-style-type: none"> • Standardization of order sets, clinical pathways and educational material for Congestive Heart Failure (CHF) patients to reduce conservable days • 3D echo implemented and perfecting; • Looking to certify the Echo lab @ Cardiac Care Network (CCN) to standardized reporting • Collaboration with oncology to perform 3D Echos for LV function assessment for patients undergoing chemotherapy • Adding echo contrast • Increased capacity, with increased outpatient echo & holter monitoring and reporting across both sites • Looking at Cardiovascular Magnetic Resonance (CMRI) and Coronary computed tomography angiography • Alignment of cardiac disease program with chronic disease management model • Expanding heart function clinic to include Birchmount site with standard processes • Increased capacity for pacemaker implants: exploring opportunities to increase MD capacity • 2D and 3D TEE and TEE standardization across both sites 	<ul style="list-style-type: none"> • Regional Cath and PCI Service <ul style="list-style-type: none"> ○ Infrastructure <ul style="list-style-type: none"> ▪ 3 new state of art catheterization laboratories ▪ Clarity dose reduction systems ▪ CVIS integration including reporting ▪ Digital linkage to University centers with plans for regional linkages via CVIS ▪ Replaced Expansion of recovery space to accommodate additional beds ○ PCI <ul style="list-style-type: none"> ▪ Intravascular ultrasound ▪ Optical coherence tomography ▪ Fractional flow reserve ▪ Rotoblation ▪ CTO Procedures • Cardiac imaging <ul style="list-style-type: none"> ○ Infrastructure <ul style="list-style-type: none"> ▪ Replace Echo equipment with state of art 3D echo imaging ▪ New GE Holter systems ▪ CVIS - Xcelera lagging systems ▪ CCN and ASE certification underway ○ Imaging <ul style="list-style-type: none"> ▪ Oncology collaboration to standardize LV function assessment for patients undergoing chemotherapy ▪ TEE <ul style="list-style-type: none"> ▪ expansion with dedicated facility ▪ Automated TEE cleaning stations ▪ Anaesthesia support ▪ CTA expansion ▪ Cardiac MRI implementation 2013 • Arrhythmia Management Services <ul style="list-style-type: none"> ○ Procedures Transeptal ○ Complex Ablations • Cardiac Rehabilitation services <ul style="list-style-type: none"> ○ Infrastructure <ul style="list-style-type: none"> ▪ New sites in Lindsay, Cobourg, Ajax, Pickering, Whitby ▪ Regional Steering committee ▪ Regional HR planning <ul style="list-style-type: none"> ▪ Integration with CELIHN CDM via health links, Stroke, DM, Vascular initiative ▪ Integration of London CVIS with Philips CVIS ○ Services and Capacity <ul style="list-style-type: none"> ▪ Expansion to close regional gap to volume of 5000 patients annually ▪ CHF transition care process and regional research collaboration ▪ Increase metabolic testing capacity • Cardiac Information system (CVIS Philips) including <ul style="list-style-type: none"> ○ Tracemaster enterprise wide ○ Cath laboratory ○ Imaging services ○ Arrhythmia Management
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Key Metrics <i>Identify and describe the key metrics that capture the quality and performance of the services/programs.</i>	TSH top 5 <ol style="list-style-type: none"> 1) Patient satisfaction (by program) <ul style="list-style-type: none"> o NCR Picker 2) Conservable days 3) Performance Against Budget 4) Outpatient volumes/revenue 5) CHF 30 Day readmits 	RVHS top 5 <ol style="list-style-type: none"> 1) HSMR 2) AMI 30-day readmission 3) Satisfaction (patient, Staff, Physician) 4) Cardiovascular prevention metrics 5) RMWT recommended mean wait time (RMWT) performance for all services
Other Information <i>Provide additional service/program information (if required)</i>		

1.2. Patient Profile

Patient Value Statement <i>Identify the purpose of the service/program area and the value-added benefit that it offers from the perspective of the patient.</i>	<ul style="list-style-type: none"> • High quality care delivered with compassion <ul style="list-style-type: none"> o Timely Improve quality of care o Reduce readmission o Increase health promotion o To health care providers and institutions across CELHIN. o Patient and their support systems o Access within acceptable RMT o Central referral and booking for regional procedures • Access to tests and procedures • System navigation processes • Seamless communication of care and testing results • Seamless transition between hospital and community support to • Respect for patients and colleagues • Cultural sensitivity 															
Patient Characteristics <i>Describe the key patient characteristics; consider factors such as demographics, geography, complexity, etc.</i>	<ul style="list-style-type: none"> • Wide Geographic Base <ul style="list-style-type: none"> o Victoria Park East to Bowmanville-Cobourg • On average SES lower than provincial average <ul style="list-style-type: none"> o TSH 20% and RVHS 17% - 1 person household o TSH 18.7% low income (Ontario 11%) • Elderly populations larger in older communities of Scarborough • 1st generation to Canada settling in Canada; English as a second language (ESL) is an important component especially among South Asian and Asian • Changing Community-Hospital care relationships <ul style="list-style-type: none"> o Smaller population of elderly and /or patients with multiple morbidity account for majority of admissions and complexity of care o Large outpatient chronic disease services exist i.e. TSH regional nephrology program has a large population of patients with complex patient with co-morbidities o Large numbers of primary care teams and specialists provide bulk of community care in cardiac, diabetes. Shifting rapidly away from hospital focus o Growing importance of primary care networks as the care managers across system • Very large emergency department volumes at TSH, RVHS, LHC 	<table border="1"> <thead> <tr> <th colspan="2">Multicultural makeup in Scarborough</th> </tr> </thead> <tbody> <tr> <td>South Asian</td> <td>22.0</td> </tr> <tr> <td>Chinese</td> <td>19.5</td> </tr> <tr> <td>Black</td> <td>10.3</td> </tr> <tr> <td>Filipino</td> <td>6.5</td> </tr> <tr> <td>Other groups</td> <td>9.0</td> </tr> <tr> <td>Total</td> <td>67.4</td> </tr> </tbody> </table>	Multicultural makeup in Scarborough		South Asian	22.0	Chinese	19.5	Black	10.3	Filipino	6.5	Other groups	9.0	Total	67.4
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Population Need <i>Describe the key factors driving population need; consider factors such as social determinants of health, incidence/prevalence rates, demand (e.g. wait lists, people travelling outside CE LHIN for service/program), etc.</i>	<ul style="list-style-type: none"> • Total population: approximately 600,000 • Significant population growth in Scarborough and Durham <ul style="list-style-type: none"> ○ 2012 - 14% of CELHIN population is >65 years old, 13.7% for the Scarborough cluster ○ Projected growth for 2016 is 16% and by 2021 18% ○ 35.4% projected inpatient volume growth by 2022 • Family Physician support substantial <ul style="list-style-type: none"> ○ At RVHS, 98% of patients coming through the Emergency Department identify that they have a primary care provider • Disease burden High: The burden of risk factors for vascular disease is greater in Scarborough-Durham than mean levels for the province and nationally
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1.3. SWOT Analysis ^{**}each bullet indicated as already integrated if checked

	Integrated	RVHS	TSH
Strengths			
• Regional cardiac center for CELIHN	✓	✓	
• Robust CELHIN CSP (Clinical Services Plan)	✓	✓	✓
• Support of CELIHN for regional cardiac role	✓	✓	
• CELHIN, CCN relationship and participation in planning	✓	✓	✓
• Advanced cardiac services for region in Cath/PCI, EP, Rehabilitation	✓	✓	
• Integration of regional cardiac care services across centers in LHIN	✓	✓	✓
• Regional service access in Cath, EP, Rehabilitation	✓	✓	✓
• Centralized referral and booking for regional services EP, Cath, PCI, and Cardiovascular SP	✓	✓	✓
• Quality of core cardiac care services at each site and regionally	✓	✓	✓
• Dedicated CCU and cardiac wards		✓	✓
• Core Cardiac services for inpatients	✓	✓	✓
• Cardiac care protocols		✓	✓
• CCN association and data	✓	✓	✓
• Access to care with exemplary wait times	✓	✓	✓
• Cardiac care outcomes (Cath, PCI, Rehab) at or exceed peers	✓	✓	✓
• Cardiac Imaging technology		✓	✓
• Regional cardiac catheterization services with participation by TSH and LHC	✓	✓	✓
• Cardiac PCI technology and procedures access	✓	✓	
• Regional Arrhythmia mgt including advance procedures	✓	✓	
• Regional CELHIN Cardiovascular Rehabilitation and secondary prevention	✓	✓	
• Coronary CT angiography		✓	
• Cath-CVIS imaging linkage to SMH, (soon other hospitals)		✓	✓
• CVIS		✓	
• Repatriation processes for patients	✓	✓	✓
• Regional Cardiac Care Committee structures (Program, Cath/PCI, Rehabilitation, Arrhythmia)	✓	✓	✓
• Regional participation in quality and committee functions	✓	✓	✓
• Cost per case		✓	✓
• Respect for colleagues and community		✓	✓
• Cultural Sensitivity		✓	✓
• Human Resources in cardiology		✓	✓
• Human Resources in Rehab	✓	✓	
• Staff education (CPL, etc)		✓	✓
• Regional Cardiac Care rounds via OTN for CELHIN (8 sites)	✓	✓	✓
• Academic Centre mandatory 1 month rotation with downtown hospitals			✓
• Heart Function Clinic			✓
• Heart Failure hospital transitional program	✓	✓	
Weaknesses			
• Cardiac Facilities <ul style="list-style-type: none"> ○ Sub-optimal space / limited space ○ Lack of privacy ○ Long distances to navigate to clinic ○ Operational dollars are spent to maintain facilities in working condition 			✓
• Physician (external/non cardiology program) site oriented beyond the cardiology program <ul style="list-style-type: none"> ○ Lack of MD communication between both sites 			✓

	Integrated	RVHS	TSH
• Capacity challenges			✓
• Physicians engagement in committees, system planning		✓	✓
• Data management			✓
• RVC Emergency Department			
• Incomplete integration / competing priorities within individual hospitals		✓	✓
• Increased bureaucracy			
Opportunities			
• Improve data management		✓	✓
• Regional IT strategy including Extend CVIS LHIN wide		✓	✓
• Recruitment		✓	✓
• Increase funding to keep patients @ home		✓	✓
• Fully integrate/complete integration to provide seamless care		✓	✓
Threats			
• Scarborough focus for regional center weakens role in CELIHN		✓	✓
• Failure to provide adequate cardiac core services at each site		✓	✓
• Failure to support increasing demands of large emergency services		✓	✓
• Declining role of cardiologists in hospital beyond acute and procedural roles		✓	✓
• Competition for diagnostic services <ul style="list-style-type: none"> ◦ Academic downtown hospitals, strip malls etc are approaching patients 		✓	✓
• Changing funding environment		✓	✓
• Low political attention / support will lower / mute our growth		✓	✓
• Aging population (if no \$ available to support the treatment of the population)		✓	✓
• Increasing public expectations		✓	✓
• Reduced role of hospitals beyond procedural and acute role			

1.4. Environmental Scan

<p>Political <i>Factors that include provincial strategies and/or programs, LHIN priorities/directions and other government trends</i></p>	<ul style="list-style-type: none"> • Perceived weak political support on the provincial level • This is a center cannot be ignored (only regional cardiac center in Scarborough and West Durham; only centre in CELHIN providing EP services) • Require a unified voice that portrays a positive experience of our program • Consider having dedicated political outreach to regional MPP's
<p>Economical <i>Factors that include fiscal realities, funding models and other economic trends</i></p>	<ul style="list-style-type: none"> • Quality-based funding (in-patients) & appropriate-based funding (diagnostics) <ul style="list-style-type: none"> ◦ New funding mechanisms provided by Ministry needs to be considered • Budget for new capital purchases has been decreasing over time <ul style="list-style-type: none"> ◦ Rouge Cardiology Program has maintained high investment in capital as it has been viewed as a priority – the financial support has been stronger; <ul style="list-style-type: none"> • Strength of this <i>may</i> diminish if you go into a merger (because it will have to compete with other funding priorities) = simultaneous opportunity & threat • Less availability of public donations due to area of operation, <ul style="list-style-type: none"> ◦ Lower economic area resulting in lower personal donations & in lower business donations; we do not have the same corporate support for investment in infrastructure • Competition for outpatient/in-hospital diagnostics; “strip-mall” clinics provide quicker services, closer to home despite lower quality of reports • Patients leaving Central East (CE) LHIN for procedures that can take place in the region • Volumes driven by budget rather than vice-versa • 4 aged physical plants; maintenance is more expensive than newer organizations

<p>Social Factors that include demographics, socio-cultural trends, social determinants of health and other social/community trends</p>	<ul style="list-style-type: none"> • Population in region is sicker, older, with more co-morbidity • Lower socioeconomic status than West-end & downtown regions • The affordability of hospital services becomes an issue in low socioeconomic areas; this can suppress volumes <ul style="list-style-type: none"> ◦ E.g., parking expenses, lost salary from taking day off from job, etc. • Brand Awareness; is it important at all?
<p>Technological Factors that include information management and information technology trends, globalization, innovations in patient care and other technical trends</p>	<ul style="list-style-type: none"> • Clarity – low radiation dose • Develop an integrated data management system so that patient information and needs follow the patient, and is easily accessible from health professionals on any site; this is not happening properly right now; <ul style="list-style-type: none"> ◦ There needs to be better capacity to transfer / transmitting information in real-time; access to information and timeliness in transfer / rapid transfer of info is important – impacts economic issues • Equal access (patient oriented) to high tech non invasive imaging; so that it is not site or physician dependant – all physicians can get appropriate test for appropriate patients; impacts Economic factors <ul style="list-style-type: none"> ◦ This is getting better • Standardization of performance reporting; new guidelines • Customer expectation of seamless and quick turn-around time and one-stop shopping for tests and procedures • Evolution into an integrated program (institutional oriented) <ul style="list-style-type: none"> ◦ Economy of scale (advantage of bulk purchasing) ◦ Technology acquisitions
<p>Legal Factors that include relevant legislation and other legal trends</p>	<ul style="list-style-type: none"> • Certification & credentialing for all operators • Credential for Cardiac Labs – Cath – EP – Echo <ul style="list-style-type: none"> ◦ Need to make sure we get the highest certification • ISO international standards organization for standard of care delivery; if we get certified here it gives us a level of recognized excellence in high quality care • Consideration for Accreditation standards across a merged organization
<p>Environmental Factors that include attitudes towards “green” or ecological products/resources, corporate social responsibility trends and other environmental trends</p>	<ul style="list-style-type: none"> • Reduction of biological wastes; need a stricter process • Paperless system needed • Public transit accessible (subways for Scarborough) • Seasonal changes in heart services i.e. CHF increases in winter months

1.5. Leading Practices

The Leading Practice Summary provided by KPMG is included for reference in the Appendix of the Workbook. The Summary is a high-level review of leading practice themes and is intended to be a conversation-starter for the purpose of assisting in the due diligence process in order to determine what benefits a merger of the two hospital corporations will provide to the Scarborough community. The Leading Practice Summary is only one source to obtain ideas and insights related to leading practices. The Working Group is also encouraged to draw on their own knowledge, experiences and sources to complete the following section.

<p>Additional Leading Practices for Consideration <i>Identify any additional leading practices based on the Working Groups knowledge, experience and sources.</i></p>	<ol style="list-style-type: none"> 1. LHIN Clinical Services Plan (CSP) 2. Cardiology Strategic Plan 3. Regional Cardiovascular Program 4. Cardiac Care Network 5. Cardiology-nephrology 6. Integration of patient self-management, care delivery model 		<p style="text-align: center;">Integrated</p> <ol style="list-style-type: none"> 1. Integrated Advanced Arrhythmia Clinic 2. Integrated Advanced Cardiac Imaging
<p>Leading Practices Already Implemented <i>Based on the Leading Practice Summary and the additional leading practices listed above, identify those that are already in place at RVHS and/or TSH.</i></p>	<p style="text-align: center;">TSH</p> <ol style="list-style-type: none"> 1. Heart Function Clinic 2. Urgent Cardiac Care Clinic 3. Universal care pathways/protocols 	<p style="text-align: center;">RVHS</p> <ol style="list-style-type: none"> 1. Transitional Care Model 2. Urgent Cardiac Care Clinic 3. Universal care pathways/protocols 4. CTA MRI Radiology partnership 5. Integration of information technology, CVIS 	<p style="text-align: center;">Integrated</p> <ol style="list-style-type: none"> 1. Code STEMI 2. Cardiovascular Rehab 3. Access to Cath PCI 4. Regional Education Rounds linked through OTN 5. Regional Morbidity Rounds
<p>Benefits of a Potential Merger <i>Identify the leading practices that could be adopted and/or enhanced through a potential merger of the two hospitals?</i></p>	<ul style="list-style-type: none"> • <i>None Identified. All benefits are achievable with integration and not necessarily dependent on a merger.</i> 		

Opportunity Assessment

1.6. Overview of Opportunities

This section should provide an overview of the portfolio of potential opportunities identified by the Working Group. Opportunities should be numbered for ease of reference to Detailed Opportunity Assessment section.

Reference	Opportunity
1	<p>Fully integrate services that enable the provision of seamless care delivery across the cardiovascular care continuum leading to:</p> <ol style="list-style-type: none"> 1. An ability to move forward with a Central Booking process & Consistent Referral Management 2. Improved/wider/increasing regional access to services that include: <ul style="list-style-type: none"> • CT/ MR • Vascular surgery • Interventional radiology • Nephrology 3. Regional Integration of data management (i.e. CVIS / IT/PaceArt/Meditech)
2	<p>Increase critical mass within the cardiovascular program that may lead to:</p> <ul style="list-style-type: none"> • Larger pool of experts / human resources • Increased political influence • Private investment and increased new volume • Increased purchasing power
3	<p>Better position to upgrade/renew facilities in order to support and meet existing high level cardiovascular care standards</p>
4	<p>Establish set of priorities and standard of care based on cardiovascular best practices and clinical guidelines</p>

1.7. Opportunity Assessment

For each of the opportunities identified in Section 2.1, complete the table on the following page. Facilitation Tip: Prior to assessing the potential opportunities, work together as a Working Group brainstorming the possibilities. Encourage Working Group members to consider different ideas and different types of integration scenarios (e.g. consolidation, outsourcing).

Opportunity 1: Fully integrate services that enable the provision of seamless care delivery across the cardiovascular care continuum

Overview:

Description	<p>TSH & RVHS currently hold services both common and specific to each organization. As a merged organization, these services automatically become formal components of the overall cardiac program. This will further establish seamless care delivery and access across the continuum of cardiac and vascular care, specifically by:</p> <ol style="list-style-type: none"> A. Enabling the ability to move forward with a Central Booking process & Consistent Referral Management B. Improving, expanding and increasing regional access to services such as: <ul style="list-style-type: none"> • CT/ MR • Vascular surgery • Interventional radiology • Nephrology C. Regional Integration of data management (CVIS / IT/PaceArt/ Meditech)
Anticipated Alignment to	All guiding principles are aligned to the opportunity.

Guiding Principles <i>Shade the relevant guiding principle(s)</i>	
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Potential Benefits and Risks:

Potential Benefits <i>Identify the most significant potential benefits. Where relevant, consider the following perspectives when identifying benefits: Patient, Community, Organization, Clinicians & Staff.</i>	
Patient	<ul style="list-style-type: none"> • 'One stop shop'; full continuum of service to better address needs throughout their cardio-vascular disease progression • Increased patient satisfaction • Timely access to service
Community	<ul style="list-style-type: none"> • Comprehensive cardiac program • Better management of population health (Surveillance, Intervention/Care, Maintenance of care, Management, Wellness sustainability) • Fundraising for program development • Addressing of increased incidence of Heart Disease within the population • Better access to local expertise
Organization	<ul style="list-style-type: none"> • Increased profile and reputation • More ease in recruitment and retention • No competition within region • Better alignment with organization programs • Strengthen appeal for recruiting experts • Potential to lower cost-per-case
Clinicians & Staff	<ul style="list-style-type: none"> • Increased satisfaction • Increased opportunities to develop other aspects of care i.e. skill, knowledge, positions/roles • Collaboration of specialities • Removed barriers to consultation

Potential Risks <i>Identify the key risks that must be considered (e.g. high impact and high probability). For each risk identified, provide a proposed risk mitigation strategy.</i>	
Risk	Mitigation Strategy
<ul style="list-style-type: none"> • Program becomes more "Scarborough Centric" and dilutes accessibility to Durham patients who may, as a Region, lobby for their own Regional Cardiac Program. • Model of care to support larger program may not be desired by practitioners and may increase turnover of staff and MDs and decreased collegiality. 	<ul style="list-style-type: none"> • Incorporate as part of Referral and Intake management, more rigorous risk stratification and triage at intake; therefore, no matter where the patient is referred from, equal access to services is established. • Engage care practitioners in development of model of care to enable possible integration of elements desired from them and ensure practice and process are followed through structured programs (i.e. performance reviews).

Benefit Realization:

Estimated Timeline <i>Shade the estimated timeline (choose only one)</i>	<ul style="list-style-type: none"> • Short-term (up to 1 year)
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Key Metrics to Measure Benefits	<ul style="list-style-type: none"> • Physician/Staff satisfaction, Cardiac related Organizational Length of Stay (LOS), Conservable Days, Admissions to ER and Hospital, Volumes, Wait times, Report turnaround time
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Feasibility Assessment:

Key Metrics to	<ul style="list-style-type: none"> •
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Estimate High-Level Financial Impact	
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Required Investments – Operating and Capital (if applicable) <i>Identify the key financial investments (e.g. one-time costs) required to realize the benefits.</i>	•
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Analysis	•
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Anticipated Financial Impact <i>Indicate the order or magnitude financial impact (stated in the \$100,000). Is this opportunity a financial investment or savings?</i>	•
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Opportunity 2: Increase critical mass within the cardiovascular program that may lead to:

- Larger pool of experts / human resources
- Political influence
- Private investment and increased new volume
- Increased purchasing power

Overview:

Description	Merging cardiac services into one program would combine patient volumes, all staff including MDs, and services bringing about increased critical mass.
Anticipated Alignment to Guiding Principles <i>Shade the relevant guiding principle(s)</i>	<ul style="list-style-type: none"> • All guiding principles are aligned to this opportunity

Potential Benefits and Risks:

Potential Benefits <i>Identify the most significant potential benefits. Where relevant, consider the following perspectives when identifying benefits: Patient, Community, Organization, Clinicians & Staff.</i>	
Patient	<ul style="list-style-type: none"> • Effective one-stop shopping • Increase services available to address patient needs • High quality care “close to home” • Improved patient satisfaction
Community	<ul style="list-style-type: none"> • Site independent excellence in cardiac care • Leverage program to acquire community needs and wants • Comprehensive & seamless care continuum • No competition between institutions for their support
Organization	<ul style="list-style-type: none"> • Increased influence • Increased lobby power for dollars

	<ul style="list-style-type: none"> • Management efficiency to reduce cost per case • Reduce Length Of Stay (LOS) • Improve repatriation
Clinicians & Staff	<ul style="list-style-type: none"> • Enhanced ability to increase market share • Job security • Equal opportunity to continued education / improvement programs • Access to contemporary equipment • Improved engagement and participation of all clinicians • Improve morale & satisfaction (or may lead to being a risk**)

Potential Risks	
<i>Identify the key risks that must be considered (e.g. high impact and high probability). For each risk identified, provide a proposed risk mitigation strategy.</i>	
Risk	Mitigation Strategy
<ul style="list-style-type: none"> • Larger pool of staff = increased difficulty to manage cross sites • Decreased collegiality among Physicians, sharing of resources, space, and volumes. 	<ul style="list-style-type: none"> • Ensure appropriate staff to manager ratios • Engage care practitioners in development of schedules, and resource allocation, • Performance reviews

Benefit Realization:

Estimated Timeline <i>Shade the estimated timeline (choose only one)</i>	<ul style="list-style-type: none"> • Short-term (up to 1 year)
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Key Metrics to Measure Benefits	<ul style="list-style-type: none"> • Patient satisfaction • Volumes • Foundation fundraising • Volunteers (could be “required investments”) • Cost per case • Length Of Stay (LOS) • Staff & Clinician satisfaction and retention • Recruitment
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Feasibility Assessment:

Key Metrics to Estimate High-Level Financial Impact	<ul style="list-style-type: none"> •
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Required Investments – Operating and Capital (if applicable) <i>Identify the key financial investments (e.g. one-time costs) required to realize the benefits.</i>	<ul style="list-style-type: none"> •
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Analysis	<ul style="list-style-type: none"> •
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Anticipated Financial Impact <i>Indicate the order or magnitude financial impact (stated in the</i>	<ul style="list-style-type: none"> •
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\$100,000).
Is this opportunity a financial investment or savings?

Opportunity 3: Better position to upgrade/renew facilities in order to support and meet existing high level cardiovascular care standards

Overview:

Description	Upgrading existing infrastructure/buildings/structure at all 4 sites
Anticipated Alignment to Guiding Principles <i>Shade the relevant guiding principle(s)</i>	All guiding principles are aligned to the opportunity.

Potential Benefits and Risks:

Potential Benefits <i>Identify the most significant potential benefits. Where relevant, consider the following perspectives when identifying benefits: Patient, Community, Organization, Clinicians & Staff.</i>	
Patient	<ul style="list-style-type: none"> Enhanced experience
Community	<ul style="list-style-type: none"> Community morale increased Maintaining/upgrading existing sites will maintain high accessibility
Organization	<ul style="list-style-type: none"> Clear project with clear benefits to your own community; while maintaining specific needs, will likely lead to an increase in foundation/donation support
Clinicians & Staff	<ul style="list-style-type: none"> Increased staff satisfaction Higher likelihood of hiring and recruiting with new facilities

Potential Risks <i>Identify the key risks that must be considered (e.g. high impact and high probability). For each risk identified, provide a proposed risk mitigation strategy.</i>	
Risk	Mitigation Strategy
<ul style="list-style-type: none"> Competing priorities for funding; upgrading one part will halt funding for another 	<ul style="list-style-type: none"> Increased fundraising/private support Regional branding

Benefit Realization:

Estimated Timeline <i>Shade the estimated timeline (choose only one)</i>	<ul style="list-style-type: none"> Long-term (3-5 years)
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Key Metrics to Measure Benefits	<ul style="list-style-type: none"> Patient and staff satisfaction survey's / interviews Volumes Staff & Clinician satisfaction and retention Recruitment
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Feasibility Assessment:

Key Metrics to Estimate High-Level Financial Impact	<ul style="list-style-type: none">
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Required Investments – Operating and Capital (if applicable) <i>Identify the key financial investments (e.g. one-time costs) required to realize the benefits.</i>	<ul style="list-style-type: none"> •
--	---

Analysis	<ul style="list-style-type: none"> •
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Anticipated Financial Impact <i>Indicate the order or magnitude financial impact (stated in the \$100,000). Is this opportunity a financial investment or savings?</i>	<ul style="list-style-type: none"> •
	<ul style="list-style-type: none"> •

Opportunity 4: Established set of priorities and standard of care based on cardiovascular best practices and clinical guidelines

Overview:

Description	<ul style="list-style-type: none"> • Seamless & continuous care delivery • Access to technology is equal • Reduce wait times
Anticipated Alignment to Guiding Principles <i>Shade the relevant guiding principle(s)</i>	<ul style="list-style-type: none"> • All Guiding Principles are relevant and are aligned to this Opportunity

Potential Benefits and Risks:

Potential Benefits <i>Identify the most significant potential benefits. Where relevant, consider the following perspectives when identifying benefits: Patient, Community, Organization, Clinicians & Staff.</i>	
Patient	<ul style="list-style-type: none"> • Effective one-stop shopping • High quality care close to the patient • Improved patient satisfaction
Community	<ul style="list-style-type: none"> • Site independent excellence in cardiac care • Comprehensive & seamless care continuum • No competition between institutions for their support
Organization	<ul style="list-style-type: none"> • Management efficiency to reduce cost per case • Reduce Length Of Stay (LOS) • • Improve repatriation
Clinicians & Staff	<ul style="list-style-type: none"> • Improve morale & satisfaction • Equal opportunity to continued education / improvement programs • Access to contemporary equipment • Improved engagement and participation of all clinicians

Potential Risks <i>Identify the key risks that must be considered (e.g. high impact and high probability). For each risk identified, provide a proposed risk mitigation strategy.</i>	
Risk	Mitigation Strategy
Patients <ul style="list-style-type: none"> • Too many people involved – feel detached 	<ul style="list-style-type: none"> • Cardiac MRP – in & out patient • Staff navigator for patient/family
Community <ul style="list-style-type: none"> • Too large for small community groups to engage 	<ul style="list-style-type: none"> • Small areas for focus to engage
Organization <ul style="list-style-type: none"> • Staff turnover • Upfront costs 	<ul style="list-style-type: none"> • Value higher level functions • Reimbursement from CELHIN / MOH
Clinicians & Staff <ul style="list-style-type: none"> • Union/seniority issue & staff satisfaction • Lack of flexibility • Lack of skill/education • Engagement of clinicians • Sub specializing → creating silos 	<ul style="list-style-type: none"> • Introduce HR/Union/medical staff society • Standard/accepted definitions of practices • Roles competency vs. seniority in bumping process • Education • Integrate current practice into best practice • Engage them early to buy in • Equal opportunity per education • High level CPL/CRL • Leadership engagement • Gen cardiology organization / patient only(?) structure • Combined education

Benefit Realization:

Estimated Timeline <i>Shade the estimated timeline (choose only one)</i>	<ul style="list-style-type: none"> • Short-term (up to 1 year)
--	---

Key Metrics to Measure Benefits	<ul style="list-style-type: none"> • Patient satisfaction • Volumes • Foundation fundraising • Volunteers (could be “required investments”) • Cost per case • Length Of Stay (LOS) • Staff & Clinician satisfaction and retention • Recruitment
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Feasibility Assessment:

Key Metrics to Estimate High-Level Financial Impact	<ul style="list-style-type: none"> •
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Required Investments – Operating and Capital (if applicable) <i>Identify the key financial investments (e.g. one-time costs) required to realize the benefits.</i>	<ul style="list-style-type: none"> •
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Analysis	•
Anticipated Financial Impact <i>Indicate the order or magnitude financial impact (stated in the \$100,000). Is this opportunity a financial investment or savings?</i>	•

1.8. Stakeholder Engagement Information

*This section should summarize the input considered from stakeholder engagement activities. Content in this section should be drawn from the Working Group's **Stakeholder Engagement Summary**. (Refer to the Guiding Framework for expectations).*

Note: This section will be completed before final submission of the Workbook. Working Groups are to use the Stakeholder Engagement Summary as a tool to document and consider stakeholder input/feedback collected during the due diligence process.

2. Recommended Integration Opportunities

2.1. Alignment to Guiding Principles

For each of the recommended opportunities, complete the table on the following page. Specifically, for each of the recommended integration opportunities, Working Groups must clearly articulate a rationale that describes the degree to which the integration opportunity supports each of the Guiding Principles. In building this rationale, the Working Groups will use the most relevant measures/indicators based on the service/program.

Recommendation 1: [Insert Recommendation Statement]

Description:

Body text Body text Body text Body text Body text Body text Body text Body text Body text Body text Body text Body text Body text Body text Body text Body text Body text Body text Body text

Alignment to Guiding Principles:

	COLLABORATION <i>We believe that collaboration will lead us to better solutions.</i>	ACCESSIBILITY <i>We believe in providing accessible patient care to our community.</i>	SUSTAINABILITY <i>We believe that we must find new solutions to sustain our health care system.</i>	EXCELLENCE <i>We believe that we must never waver from our responsibilities to provide quality patient care and to be accountable to our stakeholders.</i>
Rationale	•	•	•	•
Measures/ Indicators	•	•	•	•

3. Workbook Sign-Off

Identify the individuals that were involved in the completion of the Workbook.

Organization - Program	Team Member:
	Signature Print Name Date
	Signature Print Name Date
	Signature Print Name Date
	Signature Print Name Date
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Organization - Program	Team Member:
	Signature Print Name Date
	Signature Print Name Date
	Signature Print Name Date
	Signature Print Name Date
	Signature Print Name Date

Appendix: Leading Practice Summary (KPMG)

The purpose of this section is to highlight and identify high-level leading practices themes for the purpose of assisting in the due diligence review. The themes that have been identified in this document are from several sources and are meant to provide Working Group members with a broad view of the themes related to leading practices for **Cardiology**. These sources include KPMG's own experience, global thought leadership and external sources (where identified).

The below tables summarizes leading practices themes for Cardiology.

Leading Practice Themes	
Systematizing Inpatient Referral to Cardiac Rehabilitation¹	<ul style="list-style-type: none"> The Canadian Heart Health Strategy and Action Plan released in February 2009, describes a continuum of comprehensive care for cardiovascular disease patients in Canada. Cardiac rehabilitation (CR) is identified as a core component of such care, serving as a critical vehicle for the implementation of cardiovascular disease (CVD) prevention strategies and the reduction of CVD risk. CR is a comprehensive, outpatient, chronic-disease management program designed to enhance and maintain cardiovascular health through the delivery of individualized, but integrated inter professional care. Peer-reviewed scientific evidence, including randomized controlled trials (RCTs), rigorous systematic reviews and meta-analyses have consistently established that the delivery of CR, following initial treatment of a cardiac condition, further reduces mortality by approximately 25%. Despite the proven benefits of CR, only an average of 34% of eligible patients are referred, and 20% ultimately enroll. This runs counter to evidence-based clinical practice guidelines which recommend CR as the standard of care in the management of CVD. Based on the evidence, it is strongly suggested that to increase CR enrollment, a combination of systematic and liaison referral strategies be implemented for all inpatient units serving patient groups that have been shown to benefit from CR. Indeed, CR enrollment rates above 70% can be reached. If these referral strategies could be implemented on a broader scale, this could potentially translate into significant public health benefits.

¹ http://www.ccn.on.ca/ccn_public/UploadFiles/files/CACR-CCS_Position_Statement_EN.pdf

Leading Practice Themes	
Developing a Comprehensive Regional Cardiology Program in Niagara²	<ul style="list-style-type: none"> • A Cardiac Rapid Assessment Clinic was established in June 2012. Cardiologists see approximately 6 to 8 patients in this clinic each day. The focus of this clinic is to prevent hospital admission, shorten length of admissions for patients who are admitted, reduce wait times, and improve overall quality of life for patients with chronic heart conditions. The opening of the new St. Catharines site brings significant service changes and enhancements to patients, including the introduction of a state-of-the-art regional Heart Investigation Unit. • Among services provided in the Heart Investigation Unit is cardiac catheterization, a new service in Niagara which includes procedures to diagnose and assess the severity of cardiac disease and evaluate the suitability of a patient for angioplasty, surgery, and other therapy or interventions. The Unit occupies dedicated space within the organization; however, Cardiac patients receive care throughout the hospital. • The Heart Investigation Unit is integrated with Hamilton Health Sciences. The two organizations have committed to a vision of one regional and integrated program delivered at two sites. Specialist physicians will provide cardiac catheterization services in both Hamilton and Niagara, with plans for a lead physician based in Niagara. • The Heart Function Clinic helps outpatients from across Niagara who are diagnosed with congestive heart failure, by closely monitoring their condition and managing their symptoms. The goal is to improve quality of life. A multi-disciplinary team of healthcare practitioners works together to provide care to patients in a variety of areas, including; assessment, monitoring and treatment; pharmacological management; patient and caregiver education in such areas as medication, exercise, smoking cessation, and dietary education. • Patients who have recently experienced some kind of cardiac event like a heart attack, angioplasty, are awaiting heart surgery or have angina, congestive heart failure or cardiomyopathy can access the Cardiac Health and Rehabilitation program through a physician referral. This regional program offers a variety of cardiovascular rehabilitation and risk reduction services such as; supervised exercise programs, nutrition counseling, stress management, smoking cessation and health teaching in both group and individual forum.
CHES – Comprehensive Health Enhancement Support System³	<ul style="list-style-type: none"> • The Comprehensive Health Enhancement Support System (CHES), developed by the University of Wisconsin, provides information and interactive coaching tools, and enables patients and carers to communicate with their clinical team, as well as with other patients and their own social support networks. CHES has been used by people with cancer and heart disease (including heart patients in the United Kingdom), and is being adapted and trialled to support other groups such as older people and people with alcohol dependence.
Comprehensive Preventive Cardiology⁴	<ul style="list-style-type: none"> • The Preventive Cardiology program at the University of Wisconsin encompasses the following services: preventive cardiology clinics, which include lipid, hypertension, nutrition and risk reduction clinics; inpatient and outpatient cardiac rehabilitation; pulmonary rehabilitation, risk factor and vascular screening programs, exercise stress testing, exercise prescription and counseling, smoking cessation, stress management and several other clinical, research and educational programs. The highly skilled Preventive Cardiology team includes six physicians, three nurses, over ten clinical exercise physiologists, four dietitians, a psychologist and clinical support staff. Each year, this team of experts assists thousands of patients per year. • Cardiac, pulmonary, and vascular rehabilitation are comprehensive programs that include rehabilitation, exercise, monitoring, risk factor assessment and management, education and counseling. • Programs use a case management approach to focus efforts on helping patients reach their clinical and functional goals. Behavior change strategies are emphasized. The programs work closely with each patient's doctors, to help ensure the best outcomes and their long-term health. The programs offer support in clinical management, diagnostic testing, and efforts to maximize the patient's physical, psychological and spiritual health. The inpatient program assists hospitalized

² <http://www.niagarahealth.on.ca/en/cardiac-services>

³ Center for Health Enhancement Systems Studies, 2012.

⁴ <http://www2.medicine.wisc.edu/home/cardiology/prevention2>

Leading Practice Themes	
	<p>patients recovering from heart or vascular disease; the outpatient program focuses on optimizing health and reducing risk. Preventive Cardiology staff assists patients in maintaining and continuing long-term recovery. The staff also provides clinical nutrition intervention and exercise prescription. Psychological evaluation is a standard component of the patient assessment. A psychologist and counselor offer individualized and group programs to enhance health outcomes and screen for significant anxiety or depression. A comprehensive stress management program recently became affiliated with the UW Mind-Body Institute.</p> <ul style="list-style-type: none"> The Program offers comprehensive evaluations for families with histories of premature cardiovascular disease and stroke and is closely affiliated with the University of Wisconsin Health and Fitness Center, which offers many programs and classes to assist those who wish to improve their health and fitness.
The Best of Clinical Pathway Redesign⁵	<p>Focusing on Prevention and Best Practice</p> <ul style="list-style-type: none"> NHS Improvement has been involved in a national programme to reduce the number of strokes caused by AF. The work aligns to the national QIPP agenda through improving the quality of care, preventing the risk of stroke, and increasing productivity via reducing the costs associated with stroke. The programme has a number of aims including achieving greater use of a risk management tool called Guidance on Risk Assessment for Stroke Prevention in Atrial Fibrillation (GRASP-AF) in primary care to help reduce the number of preventable strokes (the tool was originally developed in the West Yorkshire Cardiac Network). GRASP-AF identifies all patients on the existing GP AF register and performs a risk assessment using CHADS2 to identify whether they are on the correct treatment and support the use of anticoagulant drugs such as warfarin. Ultimately the programme was initiated to reduce overall stroke mortality. <p>Driving up quality and productivity in cardiac surgery</p> <ul style="list-style-type: none"> Eight NHS Trusts, supported by their local cardiac networks, participated in a national project as demonstration sites from 2008 to 2010 testing out new approaches to care and improvement to frontline patient services. The work with the project sites addressed key efficiency measures seen as constraining the management of smooth patient flows, including pre-admission provision, referral management services, scheduling and discharge and postoperative care management. Lessons drawn from this work suggest that quality improvement to cardiac surgery services requires smarter working, a data driven approach to understanding processes, the enhancement of staff roles and a shared overview of the patients' experience across referring providers and the tertiary centre. An example of a new pathway for cardiac surgery that was developed featured: <ul style="list-style-type: none"> Pre-assessment of all elective cardiac surgery patients A theatre scheduling policy which included improving notice to patients of their date for surgery Regular monitoring of theatre cancellations to reduce non-clinical cancellations Implementation of the use of electronic referrals for non-elective cases Implementation of admission on the day as normal practice Recruiting two additional staff – a pre-assessment nurse and a cardiothoracic nurse practitioner (While these new posts required funding, the project overall was cost neutral due to the savings gained by each workstream) The improvements have seen an overall boost to productivity – theatre scheduling, increased pre-assessment and admission on the day, and reduced cancellations and length of stay have all contributed towards the increase

⁵ NHS Improvement, "The best of clinical pathway redesign, Practical examples delivering benefits to patients"; 2011