

Rouge Valley Health System and The Scarborough Hospital Facilitated Integration Process

Due Diligence Workbook: Diagnostic Imaging (DRAFT)

A Facilitated Process of the Central East LHIN

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1. Current State Assessment & Leading Practice Review

1.1. Overview of Services/Programs

Use the following table to document the high-level profile of the services/programs within the area of focus, including key quality and performance metrics.

<p>Location of Service/Program <i>Where are the services/ programs delivered? At both hospitals? At specific sites?</i></p>	<p>TSH</p> <ul style="list-style-type: none"> • Comprehensive range of services at both sites including X-ray, mammography, interventional radiology (IR) (non-cardiac/neuro), Computed Tomography (CT), ultrasound, nuclear medicine, bone mineral densitometry (BMD), Magnetic Resonance Imaging (MRI), support ERCP and cystography • Campus specific booking for DI located at each campus <p>Site specific services:</p> <ul style="list-style-type: none"> • Birchmount – Iodine thyroid ablation therapy (i 131), SPECT CT • General - Ontario Breast Screening Program (OBSP) screening and assessment, stereotactic breast biopsies, vascular interventional radiology <p>RVHS</p> <ul style="list-style-type: none"> • Comprehensive range of services at both sites including X-ray, mammography, CT, ultrasound, nuclear medicine, BMD, MRI, non-vascular IR, stereotactic breast biopsies, OBSP screening, high risk MRI screening and assessment, MRI guided breast biopsies, support ERCP and cystography • Centralized booking for DI located at the Centenary site (RVC) • Centenary site (RVC) - Iodine thyroid ablation therapy (i 131), occasional vascular intervention, cardiac cathlab • Ajax-Pickering site (RVAP) - cardiac CT
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Volume of Activity
What is the current volume of activity? (e.g. service levels, patient volume) Are there important trends? (e.g. growth, decline)

Examinations Performed by Modality (2012/13)

Modality	RVHS	TSH
General Radiology (X-ray)	108,530	101,381
Mammography	14,011	10,914
Interventional Radiology	525	4,750
Computed Tomography	29,013	33,019
Diagnostic Ultrasound	37,636	28,457
Nuclear Medicine	10,205	11,079
Magnetic Resonance Imaging	13,696	14,645

Site Specific Volume Date and Workload – All Patients (2012/13)

Modalities	RVHS							
	RVC				RVAP			
	Exam Count	Service Recipient Workload	Non SR Workload	Total Workload	Exam Count	Service Recipient Workload	Non SR Workload	Total Workload
General Radiology (X-ray)	57,654	706,587	232,462	939,049	47,889	598,690	269,129	867,819
Mammography	6,813	153,764	17,114	170,878	7,198	158,605	15,094	173,699
Interventional Radiology	390	24,836	14,531	39,367	135	10,404	658	11,062
Computed Tomography	16,860	406,057	93,995	500,052	12,153	298,851	59,083	357,934
Diagnostic Ultrasound	21,093	783,835	25,607	809,442	16,543	610,795	42,371	653,166
Nuclear Medicine	3,813	144,435	29,199	173,634	3,609	109,539	17,619	127,158
Magnetic Resonance Imaging	8,496	351,775	30,960	382,735	5,200	210,385	18,974	229,359
TOTAL	115,119	2,571,289	443,868	3,015,157	92,727	1,997,269	422,928	2,420,197
Patient Type	Exam Count	Service Recipient Workload	Non SR Workload	Total Workload	Exam Count	Service Recipient Workload	Non SR Workload	Total Workload
Inpatient	21,980	562,242	-	-	18,643	462,373	-	-
Outpatient	65,595	1,637,770	-	-	42,000	1,096,371	-	-
Emergency	27,544	371,277	-	-	32,084	438,525	-	-

**Does not include Additional Service Recipient Workload*

	TSH							
	Birchmount				General			
Modalities	Exam Count	Service Recipient Workload	Non SR Workload	Total Workload	Exam Count	Service Recipient workload	Non SR Workload	Total Workload
General Radiology (X-ray)	39,830	370,040	109,512	479,552	61,551	585,063	177,482	762,545
Mammography	1,830	38,820	10,180	49,000	9,084	166,163	64,233	230,396
Interventional Radiology	640	33,749	273	34,022	4,110	213,963	2,199	216,162
Computed Tomography	14,297	289,729	53,952	343,681	18,722	388,589	41,146	429,735
Diagnostic Ultrasound	12,363	410,095	56,418	466,513	16,094	543,770	70,286	614,056
Nuclear Medicine	4,637	228,097	65,402	293,499	6,442	254,390	95,636	350,026
Magnetic Resonance Imaging	6,412	299,565	38,103	337,668	8,233	378,465	48,698	427,163
TOTAL	80,009	1,670,095	333,840	2,003,935	124,236	2,530,403	499,680	3,030,083
Patient Type	Exam Count	Service Recipient Workload	Non SR Workload	Total Workload	Exam Count	Service Recipient Workload	Non SR Workload	Total Workload
Inpatient	16,057	310,606	-	-	23,191	470,824	-	-
Outpatient	33,841	976,943	-	-	61,097	1,550,980	-	-
Emergency	30,111	382,546	-	-	39,948	508,599	-	-

**Does not include Additional Service Recipient Workload*

TSH – Trends (5 year)

- Decline in nuclear medicine volumes
- Decrease in BMD due to changes in OHIP rules
- Decline in Mammography at the Birchmount
- Wait time funding has enhanced volumes in CT and MRI
- Increased demand for Ultrasound, CT, MRI, IR
- Demand for after-hours IR increasing
- New technology and procedures available
- Increased utilization after hours and on weekends

	<p>RVHS</p> <ul style="list-style-type: none"> • Decrease in BMD due to changes in OHIP rules • Wait time funding has enhanced volumes in CT and MRI • Increased demand for Ultrasound, CT, MRI, IR • New technology and procedures available • Increased utilization after hours and on weekends
<p>Mode of Delivery <i>How are the services/programs delivered? (e.g. inpatient, ambulatory)</i></p>	<p>TSH & RVHS</p> <ul style="list-style-type: none"> • Services provided for outpatients, inpatients and emergency patients • Referrals received from hospital and community based physicians and other health service providers • OBSP patients can be self-referred • Cross campus integration of staff

<p>Innovations Planned and/or Underway</p> <p><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>	<p>TSH</p> <ul style="list-style-type: none"> • CT innovations – colonography and cardiac CT, perfusion (TBD) • Breast Diagnostic Unit • Improved access to service/appointments in ultrasound and mammography as part of the OBSP implementation • Changed staffing model in ultrasound which has resulted in increased volumes (added Technical Assistant at Birchmount) • Latest technology implemented (CT, interventional radiology, MRI, digital mammography, mobile vascular C-arms) <p>RVHS</p> <ul style="list-style-type: none"> • Emergency Department Information System (EDIS) coming in February 2014 • Improved access to service/appointments in ultrasound and mammography as part of the OBSP implementation • Centralized patient registration via kiosks <p>RVC</p> <ul style="list-style-type: none"> • 4 new Ultrasounds, • New DR room • Digital Mammography with Tomosynthesis • CT, MRI (2014) <p>RVAP</p> <ul style="list-style-type: none"> • CT colonography, Cardiac MRI
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<p>Key Metrics <i>Identify and describe the key metrics that capture the quality and performance of the services/programs.</i></p>	<ul style="list-style-type: none"> • Wait times • Accreditation Canada standards • Examination turnaround times • Productivity/efficiency/CE LHIN Benchmarking • Financial accountability – balanced budget, sick time and overtime • Patient satisfaction, Staff & MD satisfaction/engagement • Incident Reporting
<p>Other Information <i>Provide additional service/program information (if required)</i></p>	<p>TSH</p> <ul style="list-style-type: none"> • Teaching affiliations – University of Toronto, Michener Institute • Radiologist Fellows in IR • Member of Hospital Diagnostic Imaging Repository System (HDIRS) • Connected with Emergency Neuro Image Transfer System (ENITS) <p>RVHS</p> <ul style="list-style-type: none"> • Teaching affiliations – Michener Institute, Northern Alberta Institute of Technology (NAIT) • Member of HDIRS • Member of ENITS

1.2. Patient Profile

Use the following table to document the high-level patient profile related to the services/programs.

<p>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></p>	<p>To provide the best experience and accurate, timely information to improve outcomes through excellent service delivered with compassion and respect.</p>																																																																												
<p>Patient Characteristics <i>Describe the key patient characteristics; consider factors such as demographics, geography, complexity, etc.</i></p>	<ul style="list-style-type: none"> • Diagnostic Imaging Services are provided to and in support of the same patient populations as the broader hospital programs and services • Differences/specialized/regional services e.g. Cardiology at RVHS and Nephrology, Regional Vascular Surgery at TSH <p>Examinations Performed by Modality – Patients < 18 yrs (2012/13)</p> <table border="1" data-bbox="625 957 1464 1755"> <thead> <tr> <th rowspan="2">Modality</th> <th colspan="3">RVHS</th> <th colspan="3">TSH</th> </tr> <tr> <th>RVC</th> <th>RVAP</th> <th>Total</th> <th>Bir</th> <th>Gen</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>General Radiology (X-ray)</td> <td>9,892</td> <td>7,930</td> <td>17,822</td> <td>3,945</td> <td>5,236</td> <td>9,181</td> </tr> <tr> <td>Mammography</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Interventional Radiology</td> <td>5</td> <td>0</td> <td>5</td> <td>4</td> <td>18</td> <td>22</td> </tr> <tr> <td>Computed Tomography</td> <td>359</td> <td>351</td> <td>710</td> <td>143</td> <td>195</td> <td>338</td> </tr> <tr> <td>Diagnostic Ultrasound</td> <td>2,270</td> <td>1,238</td> <td>3,508</td> <td>1,371</td> <td>1,090</td> <td>2,461</td> </tr> <tr> <td>Nuclear Medicine</td> <td>39</td> <td>34</td> <td>73</td> <td>15</td> <td>16</td> <td>31</td> </tr> <tr> <td>Magnetic Resonance Imaging</td> <td>688</td> <td>459</td> <td>1,147</td> <td>172</td> <td>394</td> <td>566</td> </tr> <tr> <td>TOTAL</td> <td>13,253</td> <td>10,012</td> <td>23,265</td> <td>5,650</td> <td>6,949</td> <td>12,599</td> </tr> <tr> <td>% of total examinations</td> <td>11.5%</td> <td>10.8%</td> <td>11.4%</td> <td>7.1%</td> <td>5.6%</td> <td>6.2%</td> </tr> </tbody> </table>	Modality	RVHS			TSH			RVC	RVAP	Total	Bir	Gen	Total	General Radiology (X-ray)	9,892	7,930	17,822	3,945	5,236	9,181	Mammography	0	0	0	0	0	0	Interventional Radiology	5	0	5	4	18	22	Computed Tomography	359	351	710	143	195	338	Diagnostic Ultrasound	2,270	1,238	3,508	1,371	1,090	2,461	Nuclear Medicine	39	34	73	15	16	31	Magnetic Resonance Imaging	688	459	1,147	172	394	566	TOTAL	13,253	10,012	23,265	5,650	6,949	12,599	% of total examinations	11.5%	10.8%	11.4%	7.1%	5.6%	6.2%
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<p>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></p>	<ul style="list-style-type: none"> • Socio economic factors that impact patient health and care needs: <ul style="list-style-type: none"> • Higher unemployment rate in Scarborough • Higher low-income rate in Scarborough • Higher percentage of single parent families in Scarborough compared to Ontario • Diverse population with variation by local site catchment area • Cultural sensitivity required to respect patient specific needs in providing care • Population in Ajax (Durham) growing rapidly
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1.3. SWOT Analysis

This section should summarize the SWOT analysis using the following table. For each Strength, Weakness, Opportunity and Threat identified, indicate the organization(s) to which it applies by placing an X in the appropriate box.

	RVHS	TSH
Strengths		
• Running same Radiology Information System (RIS) and Picture Archiving and Communication System (PACS) platforms across both organizations, same vendor, different versions	X	X
• IT Hardware/Servers (refresh)	X	
• IT Platforms PACS	X	X
• Quality Assurance program	X	X - CT
• Staff retention – Technologists	X	X
• Staff excellence, expertise and commitment to patient care	X	X
• Improved staff engagement scores (NRC Picker)	X	X
• High level vascular service		X
• Radiologist skill mix/expertise	X	X
• Technology – scope and state of the art	X	X
• Standardization of practice protocols across all sites of organization	X	
• Affiliation with University of Toronto		X
• Strong level of inter-disciplinary co-operation	X	X

	RVHS	TSH
• Compliance with Accreditation Canada standards	X	X
• Affiliation with OBSP	X	X
• Wait time performance (CT & MRI)	X	X
• Deployment of LEAN methodology for process improvement	X	X
• Affiliation with Michener Institute	X	X
• Peer Review Program (Radiologists)	X	X - Breast
<u>Weaknesses</u>		
• Physical limitation of infrastructure – limited space	X - RVC	X
• PACS workstations at end of life		X
• Ability to acquire/replace diagnostic imaging capital equipment to remain current with technological advances in a timely manner	X	X
• Equipment life cycle and budget planning		X
• Nurse retention	X	
• Porter response time	X	X
• Aged IT infrastructure (Local Area Network) that impacts data flow		X
• Fragmented department (location of services) requires patients to move between various modalities (ie mammography and ultrasound), resulting in a lack of patient privacy, inconvenience and a decrease in efficiency	X - RVC	X - Gen
• Aging infrastructure		X - Gen
• Interventional Radiology program (angiography) low volumes, leading to recruitment and retention issues for Technologist and the ability to maintain appropriate skill sets	X	
• Incomplete call coverage – MRI and interventional radiology (IR)	X	X
• Two separate radiology groups		X
• Standardization of processes across sites		X
• Insufficient IR capacity to meet demands		X
• Insufficient ultrasound capacity to meet demands	X	X
• Insufficient resources to address the patient acuity and resultant patient care needs ie IV hydration in CT	X	X
• Failure to secure approvals and capital grants for the redevelopment of the DI department (referred to as the Concourse)		X
• Lack of Computerized Physician Order Entry or other mechanisms to ensure a complete clinical history is provided with referrals	X	X
• Cardiac CT & MRI are not readily accessible within the Scarborough	X	X

	RVHS	TSH
cluster		
<ul style="list-style-type: none"> Wait times for Cardiac CT at RVAP 	x	
Opportunities		
<ul style="list-style-type: none"> Robust electronic referral system, both within hospital and community based providers 	x	x
<ul style="list-style-type: none"> Enhance support to the Foundation to position DI services for fundraising opportunities 	x	x
<ul style="list-style-type: none"> Implement advances in DI technology/techniques 	x	x
<ul style="list-style-type: none"> Partnerships with community based imaging service providers 	x	x
<ul style="list-style-type: none"> Enhanced branding using social media 	x	x
<ul style="list-style-type: none"> Multi-vendor service contracts 	x	
<ul style="list-style-type: none"> Assist other hospital clinical services to maximize funding opportunities eg Emergency department Pay-For-Results 	x	x
<ul style="list-style-type: none"> Patient navigator to enhance patient experience 	x	x
<ul style="list-style-type: none"> Build OBSP screening and Breast Diagnostic Assessment Unit volumes and repatriate volumes back to Scarborough 	x	x
<ul style="list-style-type: none"> Work with Maternal Fetal Newborn program to enhance/expand the provision of ultrasound services to meet their needs 	x	x
Threats		
<ul style="list-style-type: none"> Uncertain political environment in Ontario (minority government) 	x	x
<ul style="list-style-type: none"> Hospital funding not keeping pace with growth, age and acuity 	x	x
<ul style="list-style-type: none"> Two separate radiology groups 		x
<ul style="list-style-type: none"> Inflationary costs not funded by the Province 	x	x
<ul style="list-style-type: none"> Competition from other imaging providers (private clinics and other hospitals) and the negative impact on revenue streams 	x	x

1.4. Environmental Scan

This section should contain a summary of key external factors (i.e. influences/trends) that should be considered in the due diligence process. At minimum, Working Groups should consider using a PESTLE framework for identifying external factors – Political, Economical, Social, Technological, Legal, Environmental. Note: Complete only for the sections of the framework that are relevant to your Working Group area of focus. For each of the sections that are relevant, focus on the key 2-3 external factors that are most important to consider.

<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"> • MOHLTC Action Plan for Health Care references moving services from hospitals to community based providers, which may negatively impact hospital revenues. • Reliance on wait time funding to ensure services can be maintained at current levels (CT and MRI) • Cancer Care Ontario (CCO) – ability to accommodate policy changes for care delivery egs., high-risk breast screening, discontinuance of computed radiography for mammography • Need for improved political support for hospital infrastructure and redevelopment in Scarborough. • MOHLTC pressures to examine Physician compensation • The Public Sector including hospitals is subject to changes in government policy and party in power
<p>Economical <i>Factors that include fiscal realities, funding models and other economic trends</i></p>	<ul style="list-style-type: none"> • New hospital funding methodology that is shifting towards patient based funding -- Quality Based Procedures (QBP) will fund hospitals based on actual activities achieved or performed. This introduces a competitive model for patient volumes between hospitals. • Hospital funding is also tied to population demographics and organizational efficiencies (Health Based Allocation Methodology – HBAM). Hospitals that are inefficient are penalized with lower funding. • Ability to fund equipment replacement and renewal. • Increasing costs for equipment service contracts due to technology advances/complexities of equipment. • Socio-economic factors for the Scarborough community may be a limitation for fundraising opportunities. • OHIP funding changes i.e. claw backs/reductions • Reliance on wait time funding to ensure services can be maintained at current levels (CT and MRI) • Provincial collective bargaining and increases in labour costs not funded by the province.

<p><u>Social</u> <i>Factors that include demographics, socio-cultural trends, social determinants of health and other social/community trends</i></p>	<ul style="list-style-type: none"> • Costs relating to ensuring culturally diverse needs are respected when delivering services. eg. Diversity training • Inadequate access to primary care physicians results in higher hospital utilization particularly for some disadvantaged populations. • Consumers are more informed and empowered and have greater demands for imaging services. • Reputational issues relating to recent media coverage on hospital activities (TSH) • Aging population – high acuity, chronic disease
<p><u>Technological</u> <i>Factors that include information management and information technology trends, globalization, innovations in patient care and other technical trends</i></p>	<ul style="list-style-type: none"> • More expensive equipment egs. IR, CT, MRI equipment, supply costs • Increasing costs of cross sectional imaging • Data storage costs for archiving electronic images • Requirement by tertiary centres to complete imaging prior to patient transfers. • Improved patient safety through technology advances (lower patient radiation dose)
<p><u>Legal</u> <i>Factors that include relevant legislation and other legal trends</i></p>	<ul style="list-style-type: none"> • Healing Arts Radiation Protection (HARP) Act currently being reviewed. Impact unknown at this time. • Hospital Services Accountability Agreement (H-SAA) requirement to balance budget and meet performance metrics including volumes and wait times. • Requirements of the Occupational Health & Safety Act
<p><u>Environmental</u> <i>Factors that include attitudes towards “green” or ecological products/resources, corporate social responsibility trends and other environmental trends</i></p>	<ul style="list-style-type: none"> • Paperless & filmless • Focus on decreased radiation – more public awareness

1.5. Leading Practices

Current compliance with Leading Practices as provided by KPMG in Appendix.

Leading Practice	RVHS	TSH
Increased used of Speech Recognition Reporting	Compliant: 100% of DI reports are currently produced using speech recognition reporting	Compliant: 100% of DI reports are currently produced using speech recognition reporting
Using Lean Techniques to Increase Capacity, Improve Wait Times and Raise Patient Satisfaction	Compliant: LEAN methodology widely utilized in DI to analyze and drive improvement strategies	Compliant: LEAN methodology widely utilized in DI to analyze and drive improvement strategies
Using the Cloud Advanced Methods of Sharing Diagnostic Images	Compliant: Member of Hospital Diagnostic Imaging Repository Services (HDIRS). All DI images are archived in HDIRS and are accessible to 28 other hospitals and independent health facilities	Compliant: Member of Hospital Diagnostic Imaging Repository Services (HDIRS). All DI images are archived in HDIRS and are accessible to 28 other hospitals and independent health facilities

2. Opportunity Assessment

2.1. 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	Standardized clinical and administrative practices
2	Share Health Human Resources (HHR) and Expertise (MD & Staff) across hospital sites
3	Reduced wait time (improved access to care)
4	Standardization of IT/PACS (equipment, software and support)
5	Increased “purchasing power”, service contracts
6	Expand on existing Academic Affiliations

Additional opportunities that may be applicable to many services and programs across the organizations. Detailed assessment of these potential opportunities is beyond the scope of the Diagnostic Imaging Working Group.

7	Ability to influence external funding agencies for growth and investment, in terms of both capital renewal (equipment and physical facilities) and to ensure appropriate funding is in place to support the complexity of the clinical programs being supported. One large organization would provide a unified voice for Scarborough
8	Reduced administrative costs to be achieved through organizational realignment and elimination of duplicate leadership positions
9	Increased donor base for Foundation through the establishment of a single “hospital brand” for Scarborough
10	Opportunity to increase critical mass for specialized programs
11	Responsiveness/Adaptability to extend. funding changes
12	Increased patient choice

2.2. 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: Standardized Clinical and Administrative Practices

Overview:

Description	A merged organization would facilitate the standardization of clinical and administrative practices, consistent with best practice guidelines, for hospital provided DI services across Scarborough.
Anticipated Alignment to Guiding Principles <i>Shade the relevant guiding principle(s)</i>	<ul style="list-style-type: none"> • Collaboration • Accessibility • Sustainability • Excellence

Potential Benefits and Risks:

Potential Benefits

Identify the most significant potential benefits. Where relevant, consider the following perspectives when identifying benefits: Patient, Community, Organization, Clinicians & Staff.

Potential Benefits	Patient	Community	Organization	Clinicians & Staff
• Consistent quality of care	x	x	x	x
• Minimize risk to patient (safety)	x		x	x
• Establishment of consistent expectations amongst referring MDs		x	x	
• Increased flexibility of providers			x	x
• Ensure reliable outcomes via standardization	x		x	x
• Maximize access to services (i.e. scheduling)	x		x	x

Potential Benefits	Patient	Community	Organization	Clinicians & Staff
<ul style="list-style-type: none"> Facilitate staff to practice to full scope 	x		x	x

Potential Risks	
<i>Identify the <u>key risks</u> 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"> Standardize to lowest common denominator 	<ul style="list-style-type: none"> Follow best practice
<ul style="list-style-type: none"> Miscommunication/variability in implementation across large multi-site organization 	<ul style="list-style-type: none"> Implement standard work practices consistent with LEAN methodology; communication; education of staff and stakeholders; ensure accountability
<ul style="list-style-type: none"> Patient preferences may not align with standardized process outcome (i.e. scheduling to first available) 	<ul style="list-style-type: none"> Referring physician/patient education – single brand – marketing Retain some flexibility to address patient need
<ul style="list-style-type: none"> Lack of technology/funding to implement/ensure adoption by stakeholders (i.e. referring MDs) 	<ul style="list-style-type: none"> Corporate priority
<ul style="list-style-type: none"> Readiness of staff to potentially expand scope of current practice 	<ul style="list-style-type: none"> Education and training Hiring practices

Benefit Realization:

<p>Estimated Timeline</p> <p><i>Shade the estimated timeline (choose only one)</i></p>	<ul style="list-style-type: none"> Short-term (up to 1 year) Medium-term (1-2 years) Long-term (3-5 years)
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<p>Key Metrics to Measure Benefits</p>	<ul style="list-style-type: none"> Stakeholder satisfaction – patients, referring MDs, clinical programs, DI Wait times Turnaround times from referral to report delivered Incident reports/adverse events
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Feasibility Assessment:

Key Metrics to 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: Share Health Human Resources (HHR) and Expertise (MD and staff) across Hospital sites

Overview:

Description	A merged organization would result in a significantly larger pool of Diagnostic Imaging health human resource professionals (MDs, MRTs, Sonographers, RNs). The depth of support staff including medical imaging information technology specialists and clerical staff would also be augmented. An increased pool of HHR professionals, particularly those in high demand and short supply, would increase scheduling flexibility and potentially provide for a more comprehensive on-call service in those areas which currently either do not have an on-call service or those which are not formalized.
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<p>Anticipated Alignment to Guiding Principles</p> <p><i>Shade the relevant guiding principle(s)</i></p>	<ul style="list-style-type: none"> • Collaboration • Accessibility • Sustainability • Excellence
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Potential Benefits and Risks:

Potential Benefits
Identify the most significant potential benefits. Where relevant, consider the following perspectives when identifying benefits: Patient, Community, Organization, Clinicians & Staff.

Potential Benefits	Patient	Community	Organization	Clinicians & Staff
<ul style="list-style-type: none"> • Flexibility to align HHRs with demands and centers of excellence for highly specialized services, eg Vascular Interventional Radiology 	x	x	x	x
<ul style="list-style-type: none"> • During periods of staff shortage due to recruitment, long-term illness and vacation, HHRs could be deployed to ensure appropriate levels of service can be maintained and the impact to the patient is minimized 	x	x	x	x
<ul style="list-style-type: none"> • Large pool of Radiologists to provide clinical coverage. Would assist with on-call responsibilities and scheduling. Leveraging the existing Picture Archiving & Communication System (PACS), Radiologists would have the ability to consult across the larger pool of colleagues to leverage the expertise of all members, eg. those with sub-specialization or to consult on challenging cases. This broad connectivity would permit worklists (the case load that requires reporting) to be balanced across a large group. 	x	x	x	x
<ul style="list-style-type: none"> • Regional on-call services could be provided in a co-ordinated and cost effective manner to address those DI services which do not currently have a formalized, properly funded on-call system in place, eg. MRI, vascular interventional radiology. Historically, the demand for on-call services in these modalities has been low, but recent experience shows that demand is increasing and regional coverage would offer a more cost effective solution than independent organizations duplicating services. The frequency that staff and radiologists would be on-call may decrease. 	x	x	x	x
<ul style="list-style-type: none"> • Opportunities for staff development and advancement would increase in a merged organization. 				x

Potential Benefits	Patient	Community	Organization	Clinicians & Staff
<ul style="list-style-type: none"> A merged organization would result in exposure to a broader caseload mix and exposure to challenging clinical presentations, ensuring that staff maintain competence and allow them to work to their full-scope of practice. 	x			x
<ul style="list-style-type: none"> Shared HHR will facilitate the standardization of hospital-based clinical care across Scarborough, ensuring all residents receive the same quality of care. 	x	x	x	x

Potential Risks <i>Identify the <u>key risks</u> 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"> Most staff within each DI department are unionized employees, who belong to different local bargaining units. Resolution of new employment agreements could take time and include provisions that may delay or limit the ability to share HHR immediately, which would result in delays in achieving the potential benefits. 	<ul style="list-style-type: none"> Would require a labour transition plan
<ul style="list-style-type: none"> Lack of standardization in clinical/clinician's practices could lead to poor outcomes if staff were being shared between sites 	<ul style="list-style-type: none"> Development of standard practices Investment in education and training of staff
<ul style="list-style-type: none"> Increases the challenge of managerial oversight and accountability 	<ul style="list-style-type: none"> Strong communication, practices, policies and procedures Cooperation between clinicians and administration
<ul style="list-style-type: none"> Lack of cooperation between the two existing Radiologist groups to develop a shared working model for a merged organization 	<ul style="list-style-type: none"> Rotate Radiologists through sites (resource allocation) Ensure open communication and dialogue between the groups Approach discussions from the patient's perspective A merger may act as an external imperative to facilitate co-operation Stronger administrative

	<p>support</p> <ul style="list-style-type: none"> • Create an incentive to drive for the result • Define the vision and strategy to reach the end goal • Negotiation vs. facilitation vs. direction
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Benefit Realization:

<p>Estimated Timeline</p> <p><i>Shade the estimated timeline (choose only one)</i></p>	<ul style="list-style-type: none"> • Short-term (up to 1 year) • Medium-term (1-2 years) • Long-term (3-5 years)
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<p>Key Metrics to Measure Benefits</p>	<ul style="list-style-type: none"> • Staff and MD satisfaction • Improved patient outcomes, eg. Reduced wait time, standardization of practice • Number of service interruptions due to HHR limitations • Decreased OT and sick time; Staff interchanges – for staff based on labour discussion (Medium); for physicians based on dependencies (Medium)
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Feasibility Assessment:

<p>Key Metrics to Estimate High-Level Financial Impact</p>	<ul style="list-style-type: none"> •
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<p>Required Investments – Operating and Capital (if applicable)</p> <p><i>Identify the key financial investments (e.g. one-time costs) required to realize the benefits.</i></p>	<ul style="list-style-type: none"> •
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<p>Analysis</p>	<ul style="list-style-type: none"> •
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<p>Anticipated Financial Impact</p> <p><i>Indicate the order or magnitude financial impact (stated in the \$100,000).</i></p> <p><i>Is this opportunity a financial investment or savings?</i></p>	<ul style="list-style-type: none"> •
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Opportunity 3: Reduced wait time to improve access to care

Overview:

<p>Description</p>	<p>A merged organization would provide the opportunity to level the demands for service across multiple sites, ensuring similar wait times are experienced for all patients of Scarborough. The system would ensure the patient’s right to select where they would prefer to receive treatment in the event that the shortest wait time occurred at a site that was difficult to get to.</p> <p>“Load levelling” of the demand could be achieved through a centralized intake and scheduling system.</p> <p>Critical mass in selected modalities could be achieved and centers of excellence developed to ensure resources are used most effectively. Examples where this could be used include:</p> <ul style="list-style-type: none"> ○ Cardiac CT ○ Vascular IR ○ Non-vascular IR ○ Breast Imaging <p>Incremental funding and outpatient revenues would benefit from economies of scale and other productivity/efficiency improvements which would improve throughput and wait times.</p>
<p>Anticipated Alignment to Guiding Principles</p> <p><i>Shade the relevant guiding principle(s)</i></p>	<ul style="list-style-type: none"> • Collaboration • Accessibility • Sustainability • Excellence

Potential Benefits and Risks:

Potential Benefits

Identify the *most significant potential benefits*. Where relevant, consider the following perspectives when identifying benefits: Patient, Community, Organization, Clinicians & Staff.

Potential Benefits	Patient	Community	Organization	Clinicians & Staff
<ul style="list-style-type: none"> Reduce and standardize patient wait times across Scarborough 	x	x	x	x
<ul style="list-style-type: none"> Increase patient satisfaction 	x	x		x
<ul style="list-style-type: none"> Decrease in wait time for general work will allow more funding for wait time, OBSP, High Risk Breast MRI 			x	
<ul style="list-style-type: none"> Increase referring physician satisfaction 		x	x	x
<ul style="list-style-type: none"> Increase referral base and potential to increase revenues 			x	x
<ul style="list-style-type: none"> Increase (more) specialized, expanded service 	x	x	x	x
<ul style="list-style-type: none"> A new merged organization would be the highest volume provider in the LHIN and would be well positioned as the provider of choice for Wait Time and LHIN funding 		x	x	

Potential Risks

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.

Risk	Mitigation Strategy
<ul style="list-style-type: none"> Existing processes are old and in large part manual paper-based systems 	<ul style="list-style-type: none"> Investment in an electronic referral system which is easy to use and ensures that all mandatory clinical information is easily provided
<ul style="list-style-type: none"> Critical mass for highly specialized test may not be accessible to all patients. (e.g. highly specialized test may be consolidated to 1 site due to highly specialized equipment/staff) 	<ul style="list-style-type: none"> Having appropriate support/transport coordination (patient navigator, nurse)

<ul style="list-style-type: none"> • Patients who require specialized management will require specific streaming 	<ul style="list-style-type: none"> • Patient centered care stream/flexibility
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Benefit Realization:

<p>Estimated Timeline</p> <p><i>Shade the estimated timeline (choose only one)</i></p>	<ul style="list-style-type: none"> • Short-term (up to 1 year) • Medium-term (1-2 years) • Long-term (3-5 years)
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<p>Key Metrics to Measure Benefits</p>	<ul style="list-style-type: none"> • Wait time (MRI, CT, OBSP, High Risk Breast MRI) • Workload, improve productivity • Incremental Wait Time funding • Outpatient revenue • Patient satisfaction • Physician satisfaction
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Feasibility Assessment:

<p>Key Metrics to Estimate High-Level Financial Impact</p>	<ul style="list-style-type: none"> •
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<p>Required Investments – Operating and Capital (if applicable)</p> <p><i>Identify the key financial investments (e.g. one-time costs) required to realize the benefits.</i></p>	<ul style="list-style-type: none"> •
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<p>Analysis</p>	<ul style="list-style-type: none"> •
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<p>Anticipated Financial Impact</p>	<ul style="list-style-type: none"> •
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<p><i>Indicate the order or magnitude financial impact (stated in the \$100,000).</i></p> <p><i>Is this opportunity a financial investment or savings?</i></p>	
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Opportunity 4: Standardization of PACS and Information Technology

Overview:

Description	A merged organization would provide the new opportunity to review and standardize the PACS and IT infrastructure across the department to ensure seamless access to images, consultation and to provide the foundation for the implementation of new, system-wide standard software applications such as “Critical Test Result Monitoring”. New systems would enable the department to take advantage of the latest in PACS and IT technology.
Anticipated Alignment to Guiding Principles <i>Shade the relevant guiding principle(s)</i>	<ul style="list-style-type: none"> • Collaboration • Accessibility • Sustainability • Excellence

Potential Benefits and Risks:

Potential Benefits
Identify the most significant potential benefits. Where relevant, consider the following perspectives when identifying benefits: Patient, Community, Organization, Clinicians & Staff.

Potential Benefits	Patient	Community	Organization	Clinicians & Staff
<ul style="list-style-type: none"> • A common platform, utilizing the same version of software would enable greater interoperability between all sites. 	x		x	x
<ul style="list-style-type: none"> • Opportunity to share infrastructure and potentially reduce costs, eg. Servers, Storage Area Networks (SAN) and create a true disaster recovery/business continuance model. 	x		x	x
<ul style="list-style-type: none"> • Ability to leverage internal system expertise across a larger institution, resulting in a standardized, innovative approach to image management. 			x	x

Potential Benefits	Patient	Community	Organization	Clinicians & Staff
<ul style="list-style-type: none"> Improve efficiencies, ensure a high level of quality and safety is maintained and/or improved. The system should ensure ease of use for end users. 	x		x	x

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"> Continue to use existing systems in the current way 	<ul style="list-style-type: none"> Survey what is available in terms of leading practice Project Leader(s) must understand the needs and ensure new systems address shortcomings of the existing equipment and establish an infrastructure to build upon into the future
<ul style="list-style-type: none"> Incompatibility with corporate IT 	<ul style="list-style-type: none"> Collaborate with IT and ensure they are part of the planning team
<ul style="list-style-type: none"> Selecting the wrong system(s) moving forward 	<ul style="list-style-type: none"> Establish appropriate need and selection criteria Ensure 'Subject Matter Experts' are involved on the planning team Ensure appropriate resources are made available to enable success

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) <li style="background-color: #e0e0e0;">Medium-term (1-2 years) Long-term (3-5 years)
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Key Metrics to Measure Benefits	<ul style="list-style-type: none"> • System response time • Critical test result management • System integration and efficiency gains/cost saving
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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 \$100,000).</i> <i>Is this opportunity a financial investment or savings?</i>	<ul style="list-style-type: none"> •
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Opportunity 5 : Increased Purchasing Power

Overview:

Description	<p>Diagnostic imaging equipment requires a significant capital investment to acquire and maintain. With rapid technological advancements occurring it is difficult to remain current with state-of-the-art equipment. A merged organization would provide the opportunity to plan on a regional basis and avoid unnecessary duplication of equipment in highly specialized areas. In those instances where similar equipment is</p>
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	required at multiple sites, the purchasing power of a larger organization would be beneficial.
Anticipated Alignment to Guiding Principles <i>Shade the relevant guiding principle(s)</i>	<ul style="list-style-type: none"> • Collaboration • Accessibility • Sustainability • Excellence

Potential Benefits and Risks:

Potential Benefits
Identify the most significant potential benefits. Where relevant, consider the following perspectives when identifying benefits: Patient, Community, Organization, Clinicians & Staff.

Potential Benefits	Patient	Community	Organization	Clinicians & Staff
• Strategic planning and siting of expensive, specialized equipment			x	
• Strength in negotiating position due to volume of goods and services to be negotiated			x	
• Opportunity to establish partnerships with vendors to meet strategic needs	x	x	x	x

Potential Risks
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.

Risk	Mitigation Strategy
• Ability to minimize the overall capital expenditure while still ensuring the appropriate service levels are maintained locally (ie at each site) to support the programs	• Strategically plan programs with a view of maximizing investments on DI capital equipment
• Patient services provided using specialized services may require patients to attend a site further from home	• Facilitate transportation
• Inability to attain agreement on equipment type, options and/or supplies	• Establish criteria to guide processes to ensure all minimum requirements are met

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) • Medium-term (1-2 years) • Long-term (3-5 years)
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Key Metrics to Measure Benefits	<ul style="list-style-type: none"> • Financial performance • Patient satisfaction • Percent standardization
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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).</i> <i>Is this opportunity a financial investment or savings?</i>	<ul style="list-style-type: none"> •
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Opportunity 6: Expand on existing Academic Affiliations

Overview:

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<p>Description</p>	<p>Both organizations currently have affiliations with academic institutions to provide clinical placement for students.</p> <p>RVHS hosts technologist students in General X-ray, Ultrasound and MRI through affiliations with The Michener Institute and the Northern Alberta Institute of Technology.</p> <p>TSH hosts technologist students in General X-ray and MRI through affiliation with The Michener Institute. In addition, TSH supports clinical electives for medical students at the University of Toronto (U of T), for diagnostic radiology and family medicine residents at the U of T, diagnostic radiology residents at McMaster University, and interventional radiology fellows from the U of T – Sunnybrook Health Sciences Center campus.</p> <p>An opportunity to expand these affiliations would exist in a merged organization.</p>
<p>Anticipated Alignment to Guiding Principles</p> <p><i>Shade the relevant guiding principle(s)</i></p>	<ul style="list-style-type: none"> ● Collaboration ● Accessibility ● Sustainability ● Excellence

Potential Benefits and Risks:

Potential Benefits
Identify the most significant potential benefits. Where relevant, consider the following perspectives when identifying benefits: Patient, Community, Organization, Clinicians & Staff.

Potential Benefits	Patient	Community	Organization	Clinicians & Staff
<ul style="list-style-type: none"> ● Increase the profile of the organization 		x	x	x
<ul style="list-style-type: none"> ● Allows the hospital to assess potential future candidates for employment and/or appointment in terms of skill and “fit” with the organization’s culture, improving the success of recruitment 			x	x
<ul style="list-style-type: none"> ● In an academic setting, all staff/physicians are challenge to meet the state-of-the-art imaging standards as provided at the academic setting and therefore must ensure that they are well versed in current practice standards and advancements 		x	x	x

Potential Benefits	Patient	Community	Organization	Clinicians & Staff
<ul style="list-style-type: none"> • Could encourage expanded research endeavors at community level diagnostic imaging with a larger population base to access as a result of a merged hospital community 		x	x	x
<ul style="list-style-type: none"> • Provide a wider experience of community diagnostic imaging practises to trainees who can implement these lessons and skills in their future endeavors 	x	x	x	x
<ul style="list-style-type: none"> • Assists with completion of work 			x	x

Potential Risks <i>Identify the <u>key risks</u> 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"> • Not all staff are comfortable working with students 	<ul style="list-style-type: none"> • Ensure appropriate orientation, education
<ul style="list-style-type: none"> • Impact on efficiency 	<ul style="list-style-type: none"> • Ensure adequate resources are in place to properly support the students and that this support does not detract from completing work in a timely manner
<ul style="list-style-type: none"> • Increased cost to maintain clinical instructors 	<ul style="list-style-type: none"> • Accept as a requirement of assisting in the development of future HHR and ensure funding is made available.

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) • Medium-term (1-2 years) • Long-term (3-5 years)
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Key Metrics to Measure Benefits	<ul style="list-style-type: none"> • Number of student placements • Student satisfaction
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	<ul style="list-style-type: none"> • Impact on organizational efficiency
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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 \$100,000).</i> <i>Is this opportunity a financial investment or savings?</i>	<ul style="list-style-type: none"> •
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2.3. 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.

3. Recommended Integration Opportunities

3.1. 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	•	•	•	•

4. 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
	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
	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 **Diagnostic Imaging**. These sources include KPMG's own experience, global thought leadership and external sources (where identified).

The below tables summarizes leading practices themes for Diagnostic Imaging.

Leading Practice Themes	
<p>Increased used of Speech Recognition Reporting</p>	<ul style="list-style-type: none"> The use of Speech Recognition Reporting (SRR) among radiologists has been a growing trend due to time savings achieved from using the software. SRR significantly reduces the time between examination and report finalization as the radiologists voice notes are directly converted to text once the software has been trained to recognize the radiologist's voice. The SRR software can be combined with systems such as PACS, allowing for the radiologist's report to be uploaded into the hospital's system immediately. Patient care may also be improved as a result of receiving reports in a timelier manner.¹
<p>Using Lean Techniques to Increase Capacity, Improve Wait Times and Raise Patient Satisfaction</p>	<ul style="list-style-type: none"> Using Lean Six Sigma and change management tools, a clinic in Chicago was able to pinpoint the waste in their scheduling process, and implement changes. For instance, administering contrast solution earlier so that the patient is prepared for the exam on time, using MRI IV start room to prep CT patients, and expanding tech availability with a chart, requisition and file room improvements. By implementing these simple improvements, the clinic observed an increase in CT capacity by six exams per day, they achieve better predictability in the process, increased satisfaction from their patients, and potential financial savings of close to \$400K annually.² In a second example, a medical centre in Alabama was able to reduce the cycle time from patient out to next patient in to less than 15 minutes by optimizing their capacity and labour utilization, improving their service level agreements, rotating CT technicians in X-Ray, and using radiology technicians in CT to help transport.³ Using Lean methodology workflow analysis, Health PEI improved CT wait times from 22 weeks to three weeks or less, and MRI wait times from 33 weeks to eight weeks for cases prioritized as routine, elective, or non-urgent. The team worked to improve scheduling practices, issues regarding equipment, human resources and radiologist staffing. Improvements such as implementing scheduling templates, standardizing the process for prioritizing requests and

¹ PACS, SRR and the future of radiology, Kim; Farley 2013

² <http://www.isixsigma.com/new-to-six-sigma/dmaic/applying-six-sigma-improve-diagnostic-imaging/>

³ <http://www.isixsigma.com/new-to-six-sigma/dmaic/applying-six-sigma-improve-diagnostic-imaging/>

	<p>adjustments to the length of time required for an exam and the preparation of the room were all contributing factors to the improvements achieved.⁴</p>
<p>Using the Cloud Advanced Methods of Sharing Diagnostic Images⁵</p>	<ul style="list-style-type: none"> • Using Cloud based sharing is similar to PACS, however the cloud platform ‘hovers’ over the PACS system thus allowing the hospital to receive outside images, and to share images with other providers. Cloud based sharing is cost effective as it doesn’t require a lot of hardware, and thus also saves space in the PACS system because the image can be read within the cloud sharing platform rather than stored. • The Cloud system can be used between hospitals or clinics, and thus allows for better and more frequent collaboration with physicians or specialists at other sites. • Using the Cloud can decrease the time it takes for patients to receive diagnosis as the physician can access the results of the study in a simple, timely fashion. • Physicians reported that providing the best care was enhanced by being able to view the scans prior to a patient’s arrival. Early access through the cloud to imaging studies can give physicians a head start in treating patients with urgent needs.

⁴ PEI Wait time report <<source to be updated>>

⁵ <http://www.diagnosticimaging.com/taking-medical-image-sharing-cloud>