

**CARDIAC CARE NETWORK**



# **CCCN**

## **ONTARIO**

**ANNUAL REPORT**  
**2014-15**



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# CARDIAC CARE NETWORK

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

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

# MESSAGE FROM

## DR. KEVIN SMITH, CCN BOARD CHAIR AND KORI KINGSBURY, CHIEF EXECUTIVE OFFICER

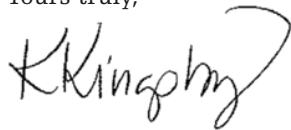
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The Cardiac Care Network of Ontario (CCN) is pleased to submit the Annual Report 2014/15. CCN continues to focus its efforts on building a strong and sustainable cardiovascular care system for the people of Ontario. Over the past year, CCN has made significant strides in key areas, supporting Ontario's Health System Funding Reform – Quality Based Procedures and capacity planning to ensure access to key services across the province. Fundamental to our work has been the ability to collaborate with other system partners to collectively support system-wide improvements with quality, value and the patient experience as key priorities.

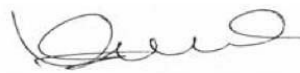
Highlights of our work over the past year include the completion of the **Aortic Valve Disease and Coronary Artery Disease Quality Based Procedures**. Through this initiative, we worked extensively with key stakeholders across the sector with system leaders, including clinicians, administrators, policy makers and decision support staff to define the clinical handbooks, quality framework and proposed funding methodologies. We were also pleased to complete the **Evaluation of Transcatheter Aortic Valve Intervention (TAVI) Programs in Ontario (2007 – 2013)**; this report details the outcomes of TAVI procedures in Ontario since the procedure first became available in 2007. We have also worked with echocardiography providers across Ontario as part of **CCN's Echocardiography Quality Improvement Program** to ensure echocardiography facilities deliver quality service across the province. We continue to work in key areas to support enhanced coordination of care, across the continuum, particularly as it pertains to patients with Heart Failure and Acute Coronary Syndromes including **ST – Elevation Myocardial Infarction** to make sure patients receive the right services at the right time in the right setting.

CCN is focused on evidence and ensuring that the patient experience and perspective is reflected in the work we do. Together we share your vision for a superior system of integrated cardiovascular care for the people of Ontario. On behalf of CCN, we would like to express our profound appreciation for the many hours contributed by health care professionals, administrators, and system leaders who volunteer their time to participate on CCN initiatives.

Yours truly,



Kori Kingsbury  
Chief Executive Officer



Dr. Kevin Smith  
CCN Board Chair

# PRIVACY STATEMENT

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The Cardiac Care Network maintains the registry of advanced adult cardiac services for the province of Ontario. This information is used to plan, monitor, manage and improve the quality and efficiency of cardiac services and also ensure equitable access to these services. CCN in respect of its registry of cardiac services is a prescribed person within the meaning of the subsection 39(1)(c) of the Personal Health Information Protection Act 2004. The Act permits health information custodians to disclose personal health information, without consent, to a prescribed person who compiles or maintains a registry of personal health information for purposes of facilitating or improving the provision of health care. CCN continues to have in place policies and procedures that ensure the protection of the privacy of individuals whose personal health information it receives and CCN continues to maintain the confidentiality of the information to meet the requirements of the Act. The Office of the Information and Privacy Commissioner of Ontario recently performed its 3-year review of CCN's privacy and security policies. CCN's review was successful and its privacy status as a prescribed person was extended from October 31, 2015 to October 31, 2017.

# BOARD OF DIRECTORS

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## BOARD CHAIR

Kevin SMITH, D. Phil, ICD.D.

## DIRECTORS

Patti COCHRANE, RN, BScN, MHSc, CHE

Eric COHEN, MD, FRCP(c)

Anne CORBETT, BA, LLB

Peter LIU, MD, FRCP(c)

Paul Oh, MD, MSc, FRCP(c), FACP

Ben PETERSEN, CPA, CGA

Andrew PIPE, CM, MD, LLD(Hon), DSc (Hon)

Don SHILTON, BSc, RRT, MBA

Christopher SIMPSON, MD, FRCP(c), FACC, FHRS

Stuart J SMITH, MD, FRCP(c)

Joshua TEPPER, MD, MPH, MBA

# FINANCIAL SUMMARY

## CARDIAC CARE NETWORK FISCAL YEAR ENDING MARCH 31, 2015

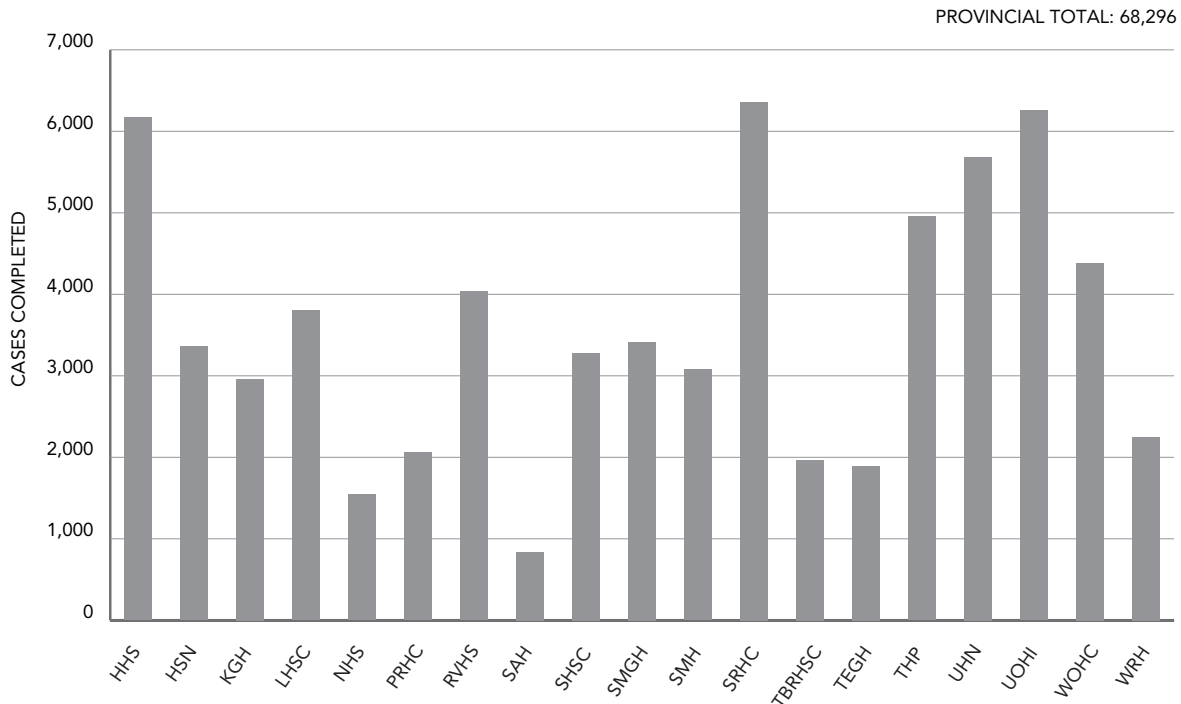
	OPERATING FUND	SPECIAL PURPOSE FUND	TOTAL
<b>STATEMENT OF FINANCIAL POSITION</b>			
TOTAL ASSETS	\$2,966,257	\$150,694	\$3,116,951
LIABILITIES & DEFERRED AMOUNTS	\$936,688	\$150,694	\$1,087,382
FUND BALANCES - END OF YEAR	\$2,029,569	-	\$2,029,569
TOTAL LIABILITIES & FUND BALANCES	\$2,966,257	\$150,694	\$3,116,951

<b>STATEMENT OF OPERATIONS AND FUND BALANCES</b>			
REVENUE	\$5,539,985	\$359,961	\$5,899,946
EXPENSES	\$5,207,459	\$359,961	\$5,567,420
EXCESS REVENUE	\$332,526	-	\$332,526
FUND BALANCES - BEGINNING OF YEAR	\$1,703,043	-	\$1,703,043
Actuarial loss - employee future benefits	- \$6,000	-	- \$6,000
FUND BALANCES - END OF YEAR	\$2,029,569	-	\$2,029,569

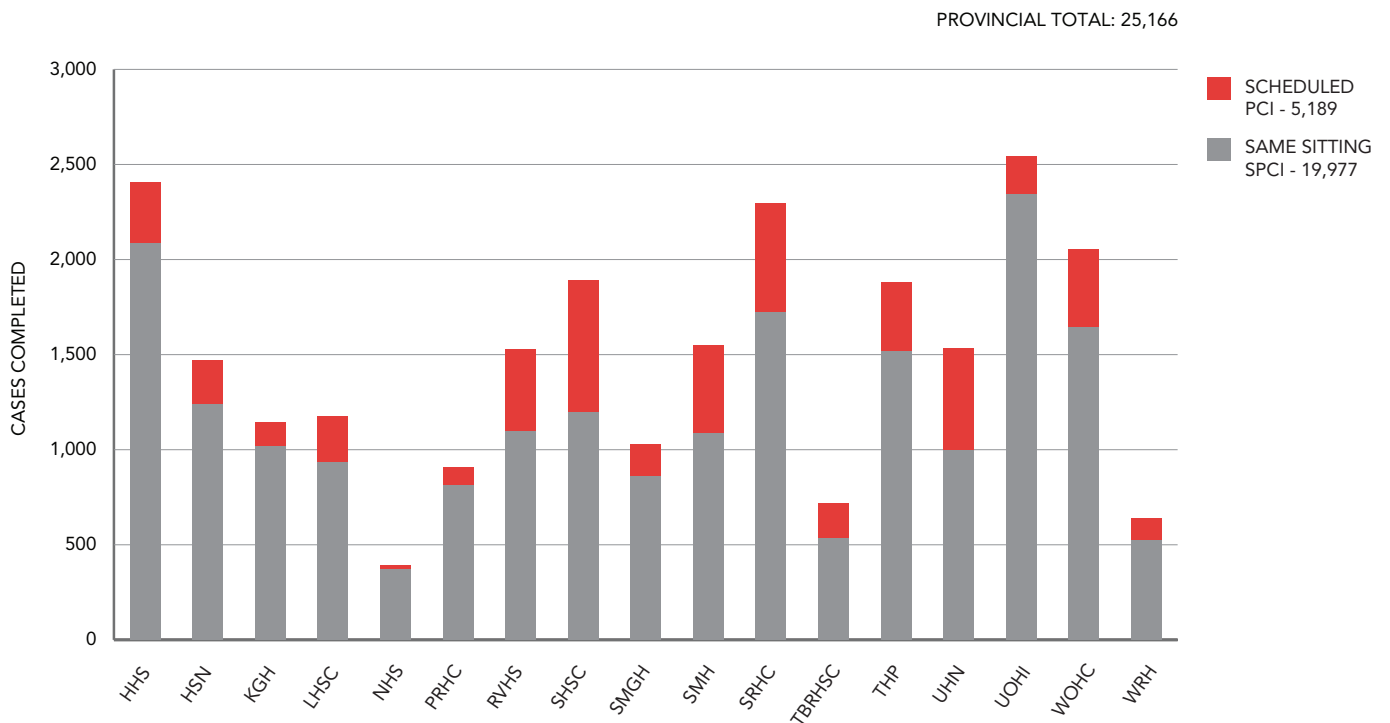


# CARDIAC PROCEDURE VOLUMES BY HOSPITAL

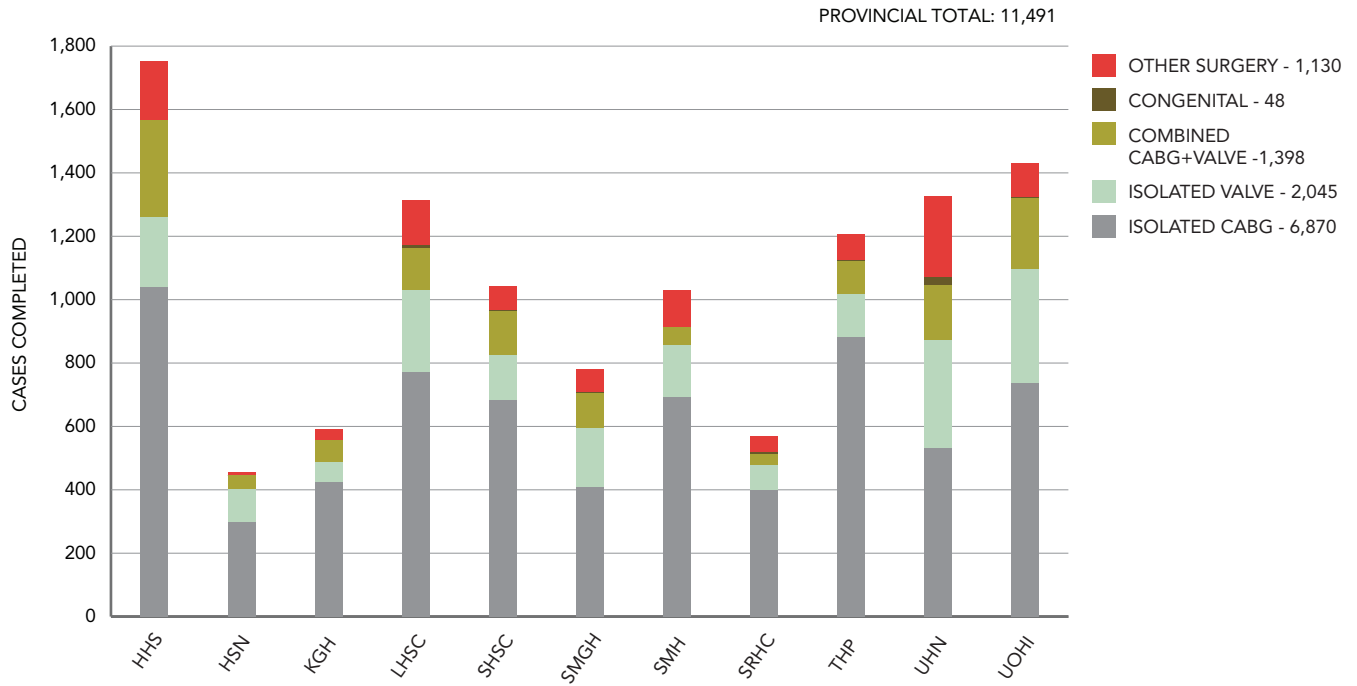
## DIAGNOSTIC CARDIAC CATHETERIZATION



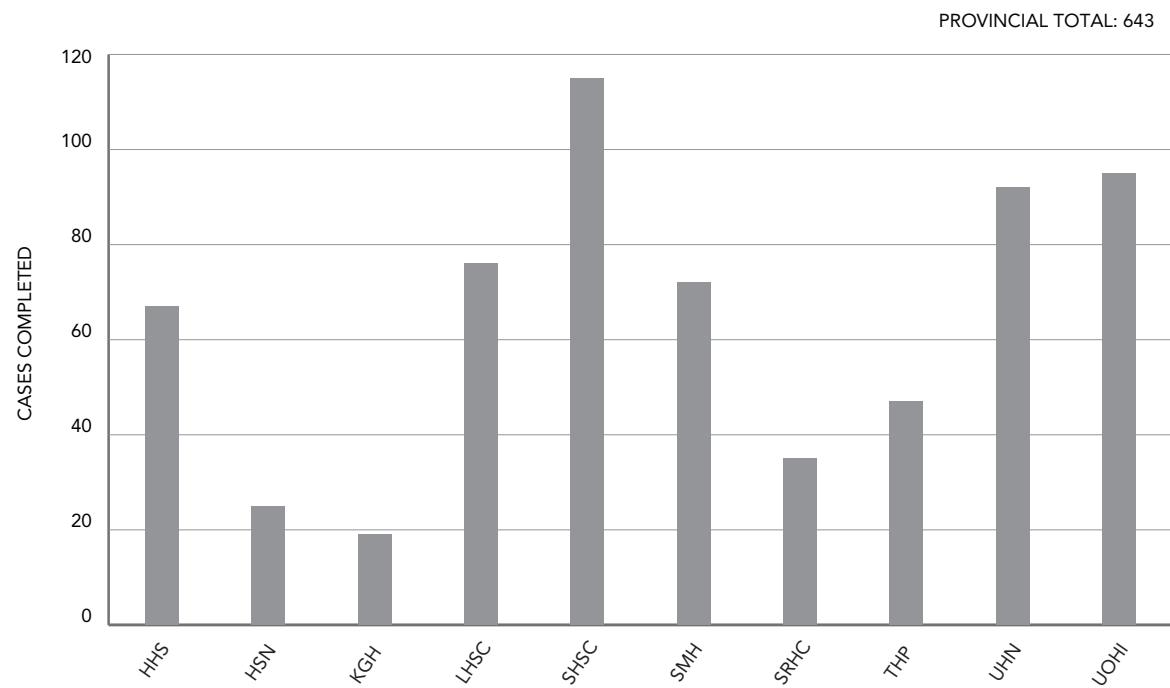
## PERCUTANEOUS CORONARY INTERVENTION (PCI)



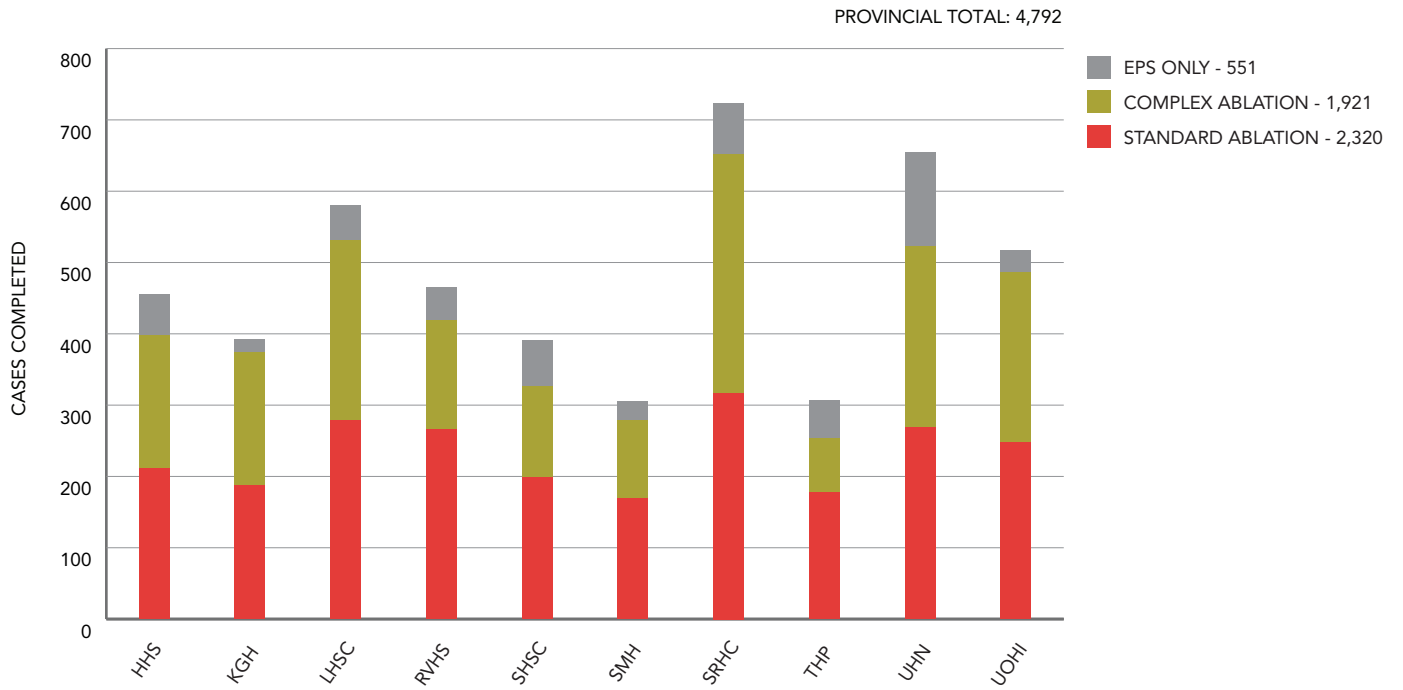
## CARDIAC SURGERY



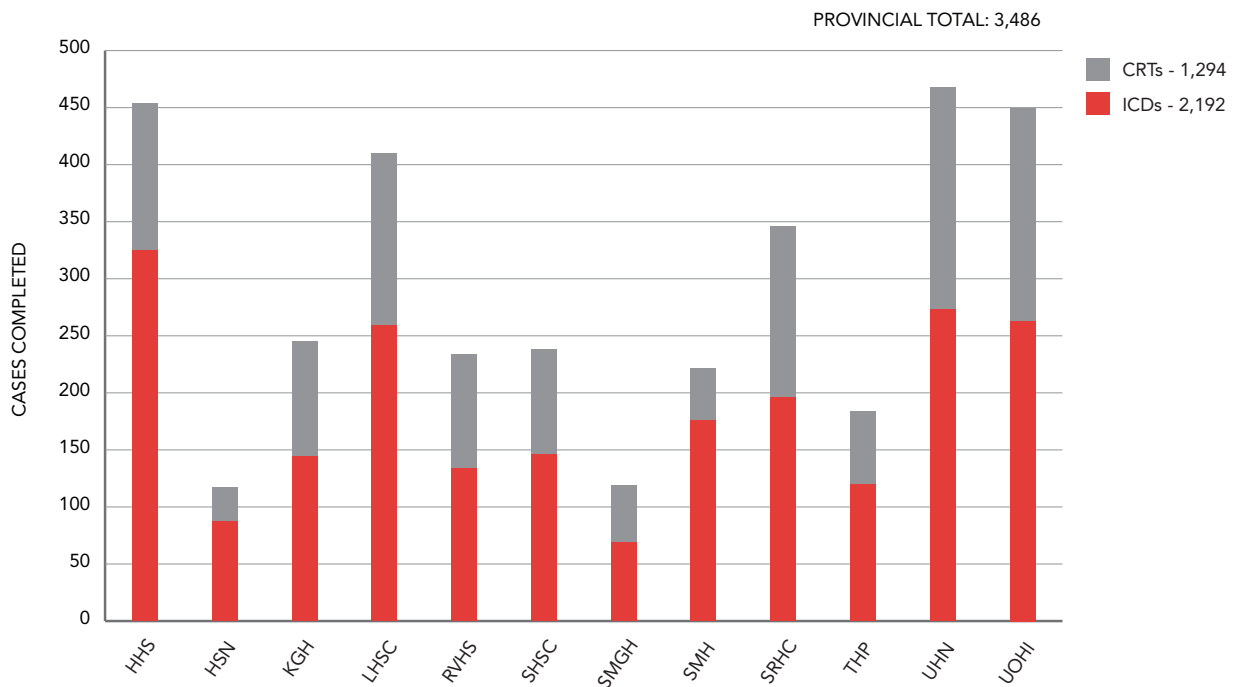
## TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI)



### ELECTROPHYSIOLOGY STUDIES (EPS) AND ABLATIONS



### CARDIAC DEVICES IMPLANT PROCEDURES



# PATIENT CHARACTERISTICS

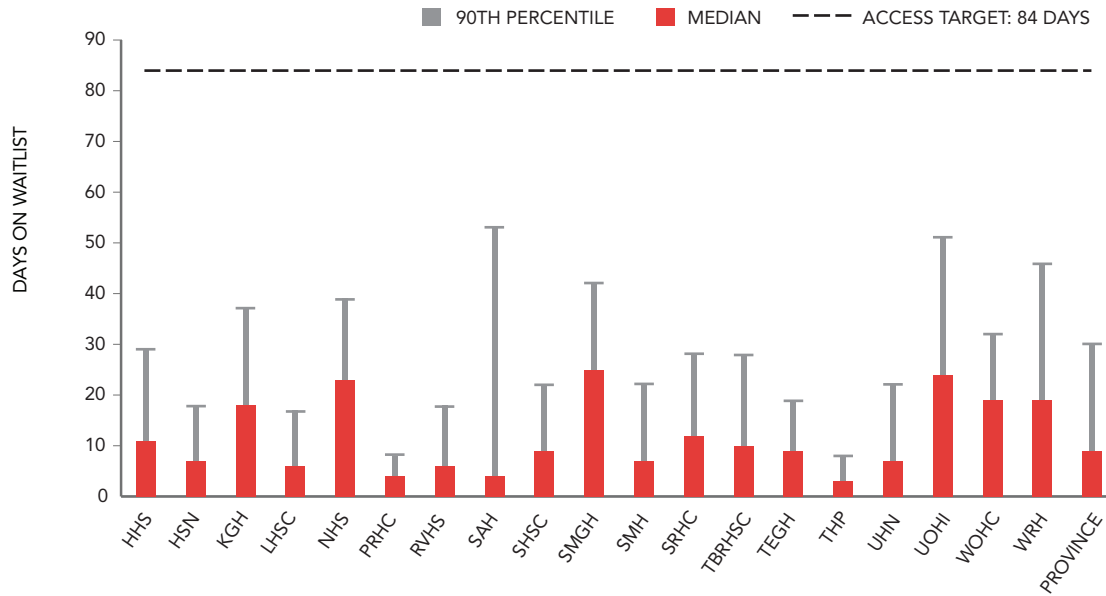
VARIABLES	CARDIAC PROCEDURES								
	CATHETERIZATION			PCI			SURGERY		
	PROVINCE	FEMALE	MALE	PROVINCE	FEMALE	MALE	PROVINCE	FEMALE	MALE
<b>AGE</b>									
Average Age (mean)	65	66.9	64	65.2	69	63.8	65.9	67	65.5
AGE COHORT (n)	68,215	23,478	44,732	25,169	7,059	18,108	11,461	2,980	8,481
a) 20 - 44 (%)	5.1	4.2	5.6	4.1	2.2	4.9	4.3	5.8	3.8
b) 45 - 64 (%)	41.8	36	44.9	43.8	32.6	48.2	37.2	30.3	39.6
c) 65 - 74 (%)	29.2	30.2	28.7	27.9	30.2	26.9	33.9	33.2	34.1
d) 75+ (%)	23.9	29.7	20.8	24.2	34.9	20.1	24.6	30.7	22.5
<b>CLINICAL BASELINE CHARACTERISTICS</b>									
<b>a) Hypertension</b>									
i) Yes (%)	64.2	67.1	62.6	64.1	71.4	61.3	68.5	69.3	68.2
ii) No (%)	33.4	30.7	34.9	34.2	27.1	37	29.9	29.3	30.2
iii) Unknown (%)	2.4	2.2	2.5	1.7	1.6	1.7	1.6	1.4	1.6
<b>b) Diabetes Mellitus</b>									
i) Yes (%)	29.3	29.2	29.3	29.2	32.4	28	33	32.9	33.1
ii) No (%)	68.5	68.8	68.4	69.4	66.3	70.6	66.1	66.1	66.1
iii) Unknown (%)	2.2	1.9	2.3	1.4	1.3	1.4	0.9	1	0.9
<b>c) Smoking Status</b>									
i) Current (< 1 month of referral date) (%)	19.5	15.8	21.4	24.1	20.5	25.4	18.6	15.7	19.7
ii) Former (> 1 month of referral date) (%)	27.2	20.6	30.6	26.4	20	28.9	31.2	21.6	34.5
iii) No history (%)	45.2	55.8	39.6	41.5	50.8	37.8	46.8	58.8	42.5
iv) Unknown (%)	8.2	7.8	8.4	8.1	8.6	7.9	3.4	3.8	3.3
<b>d) Hyperlipidemia</b>									
i) Yes (%)	61.7	59.5	62.9	61.3	61.7	61.1	63.7	59.1	65.4
ii) No (%)	35.4	37.7	34.2	36.6	36.1	36.8	34.2	39	32.5
iii) Unknown (%)	2.8	2.8	2.9	2.1	2.2	2.1	2.1	1.8	2.2
<b>e) CCS/ACS Class: Stable Angina: ACS</b>									
i) Stable Angina (CCS Class 0 to 4) (%)	57.7	59.2	56.9	40.6	39.6	40.9	63.8	65.2	63.4
ii) Acute Coronary Syndrome (ACS) (%)	40	38.7	40.8	59.1	60.2	58.7	33.1	30.3	34
iii) Unknown (%)	2.3	2.1	2.3	0.3	0.3	0.4	3.1	4.5	2.6
<b>f) Cerebral Vascular Disease (CVD)</b>									
i) Yes (%)	6.4	6.8	6.2	6	7.2	5.5	8.7	9.6	8.3
ii) No (%)	86.8	86.4	87	88.1	86.6	88.7	89.7	88.6	90.1
iii) Unknown (%)	6.8	6.8	6.8	5.9	6.2	5.8	1.6	1.8	1.6
<b>g) Peripheral Vascular Disease (PVD)</b>									
i) Yes (%)	5.9	5.3	6.3	6.2	6.7	6	8.7	8.1	8.9
ii) No (%)	90	90.7	89.6	90.6	89.9	90.8	88	88.8	87.8
iii) Unknown (%)	4.1	4	4.1	3.3	3.4	3.2	3.2	3.1	3.3
<b>h) Congestive Heart Failure (CHF)</b>									
i) Yes (%)	9.5	10.1	9.2	6.3	7.9	5.7	14.8	20.2	12.9
ii) No (%)	86.5	86	86.7	90.6	88.9	91.2	84	78.4	85.9
iii) Unknown (%)	4	3.9	4	3.1	3.2	3.1	1.2	1.4	1.2
<b>i) Myocardial Infarction (MI) &gt; 30 days from referral date</b>									
i) Yes (%)	21.1	16.8	23.4	24.2	21.8	25.1	15.8	12.5	17
ii) No (%)	77.6	82	75.2	75.6	78	74.6	82.7	86.1	81.4
iii) Unknown (%)	1.3	1.2	1.4	0.2	0.2	0.2	1.5	1.4	1.5
<b>j) Previous revascularization (%)</b>									
i) Previous PCI (Yes:No:Unknown) (%)	18 : 79 : 3	15 : 83 : 3	20 : 77 : 3	24 : 73 : 3	21 : 76 : 3	25 : 72 : 3	10 : 82 : 8	8 : 84 : 8	11 : 81 : 8
ii) Previous CABG (Yes:No:Unknown) (%)	10 : 88 : 3	6 : 92 : 3	12 : 86 : 2	11 : 87 : 3	8 : 90 : 3	12 : 85 : 2	2 : 97 : 1	1 : 98 : 1	2 : 97 : 1

The above table represents the clinical characteristics of patients (>20 years) who received one or more cardiac care services within Ontario for the fiscal year 2014/15. The average age of patients were relatively similar for those who received catheterization, PCI and surgery services although there were slight differences depending on gender. The provincial mean for all three procedures was approximately 65-66 years. There was a large gender difference observed in the number of procedures that were delivered, with males receiving the majority of the procedures. The highest number of procedures were performed on the 45 - 64 age cohort for all three cardiac procedures. Of the comorbid conditions listed above, hypertension was the most prevalent clinical factor indicated for all performed cardiac care procedures.

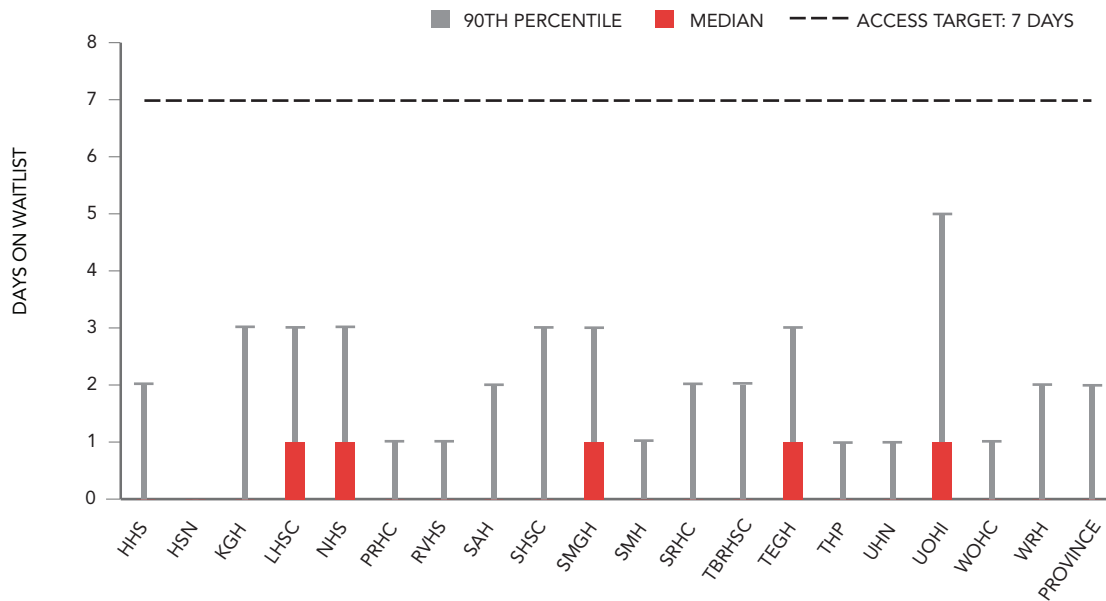
Note: Percentages may not add up to 100% due to rounding.

# CARDIAC WAIT TIMES

## CARDIAC CATHETERIZATION: ELECTIVE

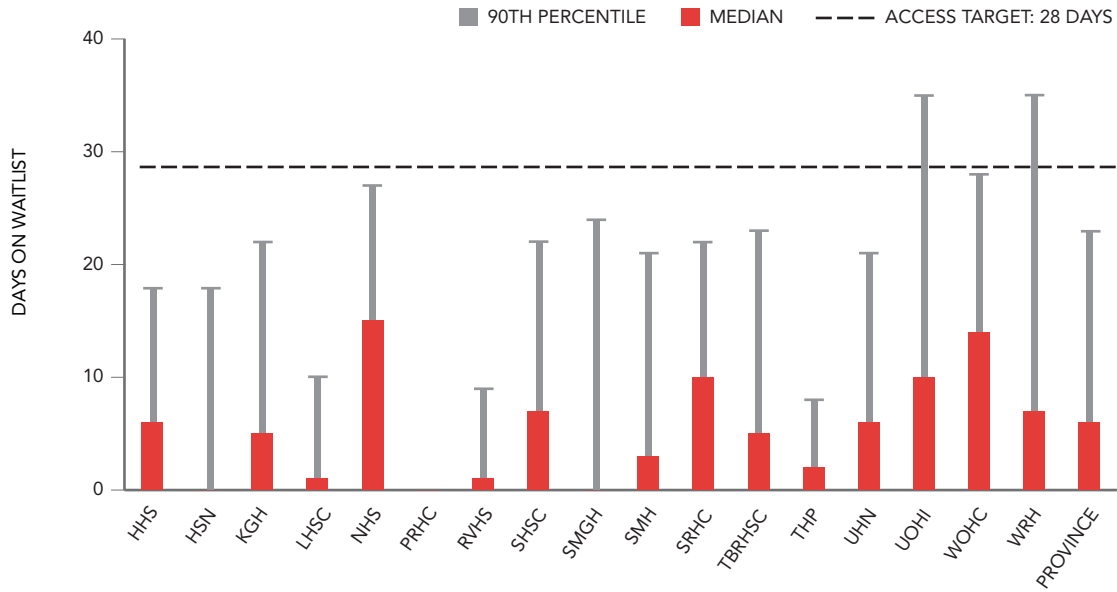


## CARDIAC CATHETERIZATION: URGENT

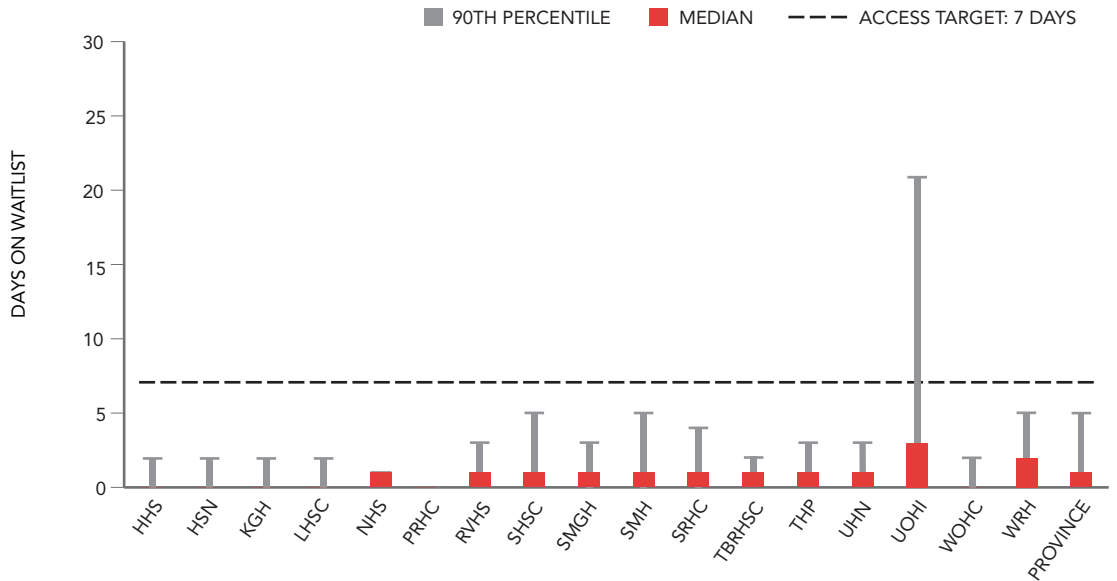


\*\*\*HSN's median and 90th percentile wait times were 0 days.

PERCUTANEOUS CORONARY INTERVENTION (PCI): ELECTIVE

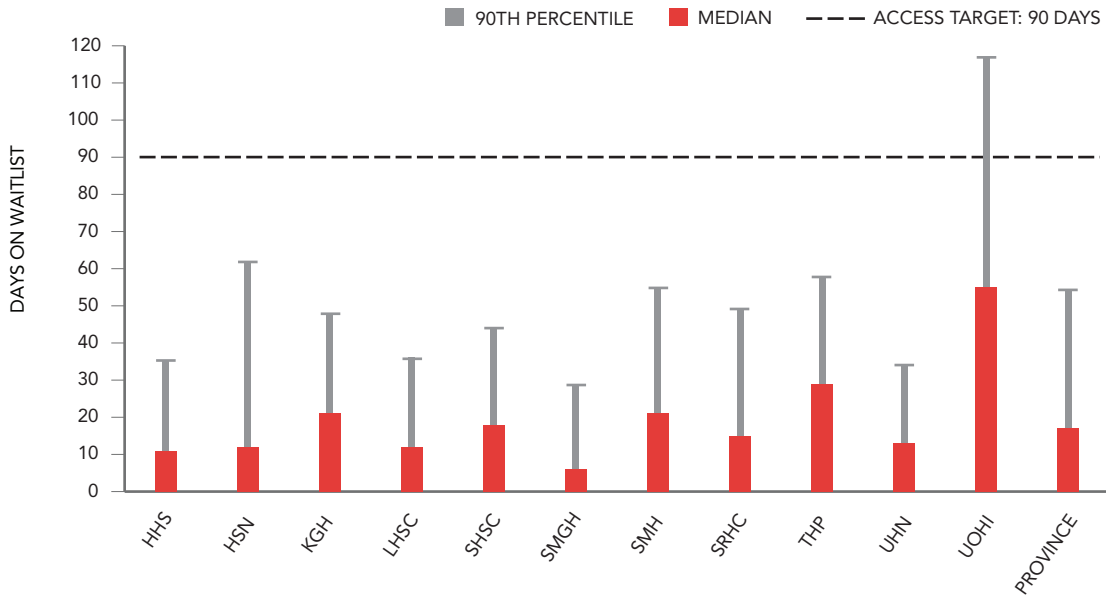


PERCUTANEOUS CORONARY INTERVENTION (PCI): URGENT

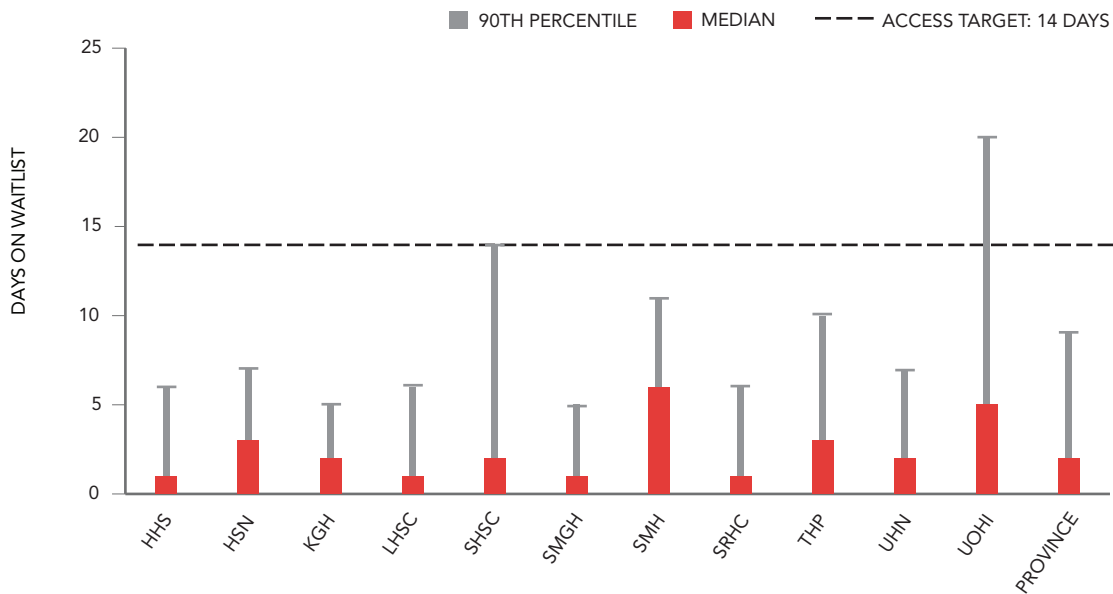


\*\*\*PRHC's median and 90th percentile wait times were 0 days.

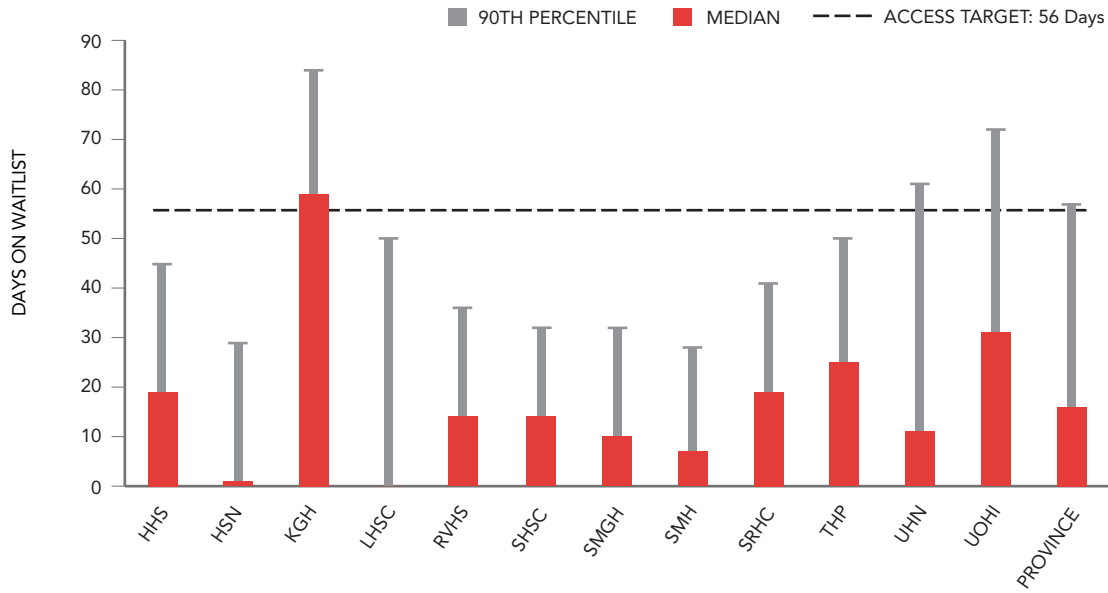
**CORONARY ARTERY BYPASS SURGERY: ELECTIVE**



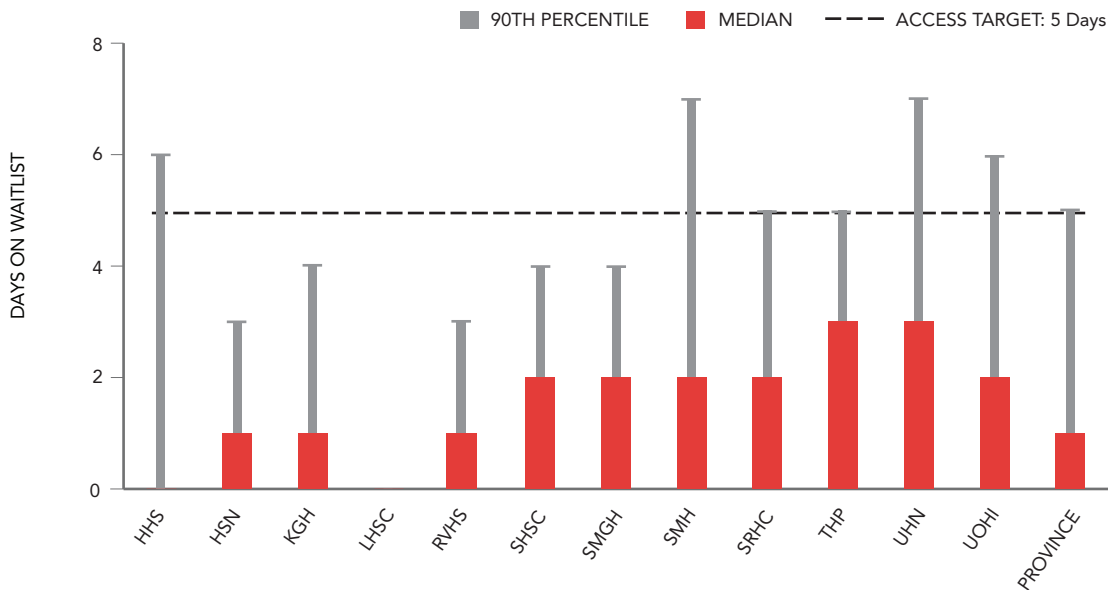
**CORONARY ARTERY BYPASS SURGERY: URGENT**



**IMPLANTABLE CARDIOVERTER DEFIBRILLATOR (ICD) & CARDIAC RESYNCHRONIZATION THERAPY (CRT): ELECTIVE**



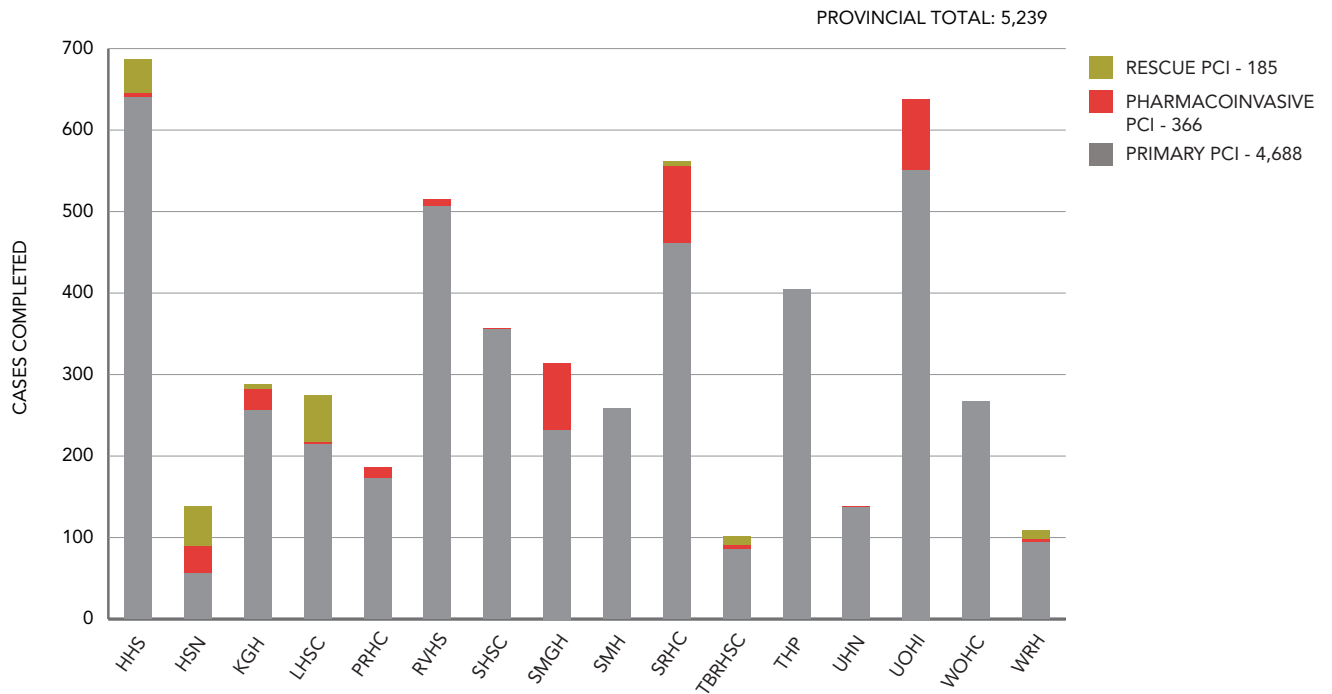
**IMPLANTABLE CARDIOVERTER DEFIBRILLATOR (ICD) & CARDIAC RESYNCHRONIZATION THERAPY (CRT): URGENT**



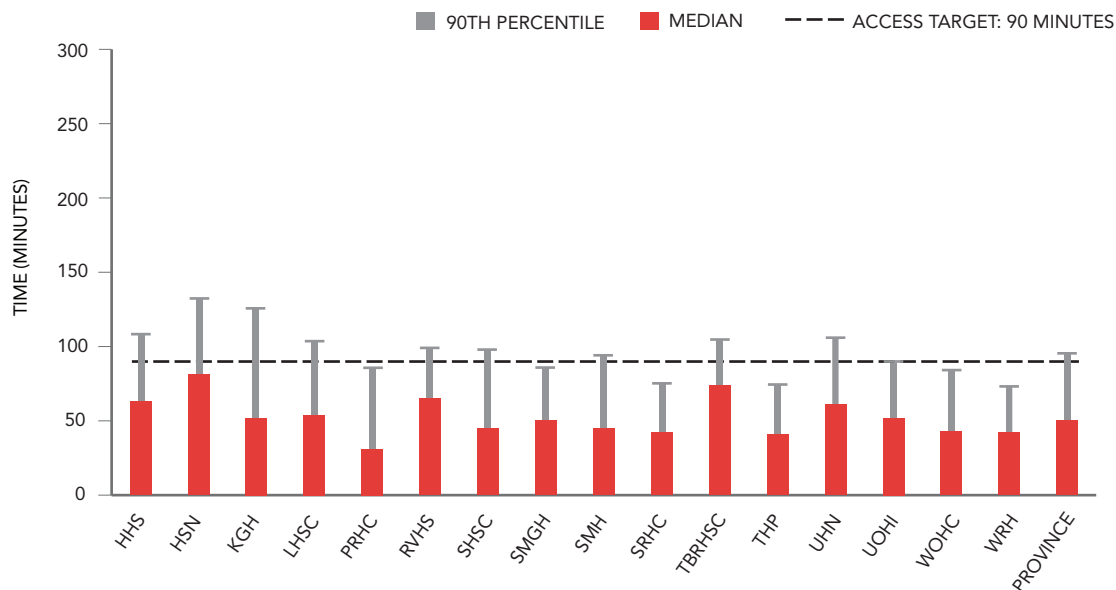


# TREATMENT OF ST ELEVATION MYOCARDIAL INFARCTION (STEMI) BY HOSPITAL

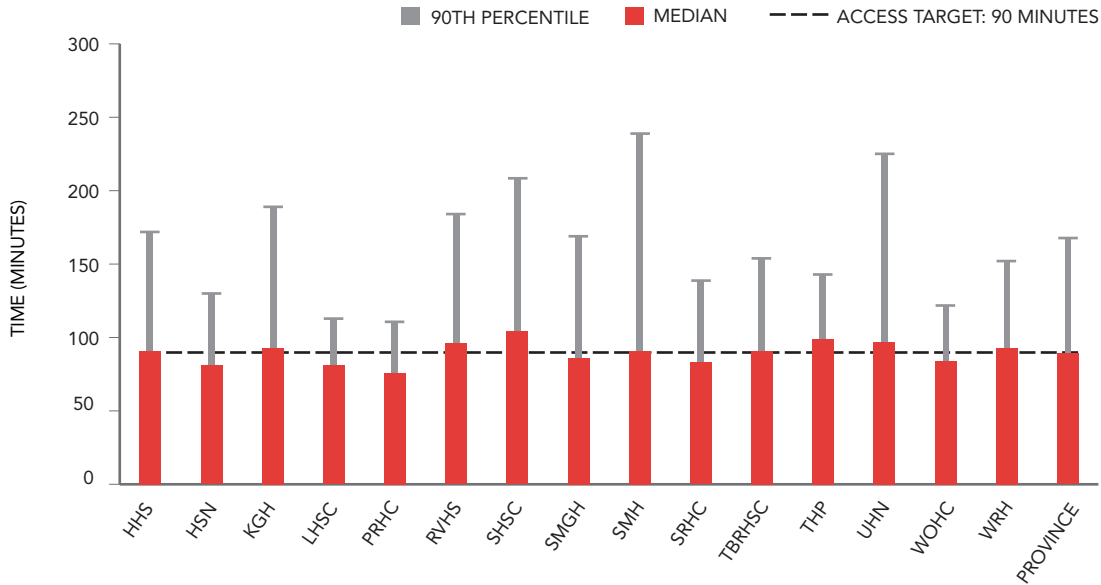
## PRIMARY PCI (PPCI), PHARMACOINVASIVE PCI & RESCUE PCI VOLUMES



## DOOR TO BALLOON TIMES: AMBULANCE TRANSFERS TO PCI CENTRE

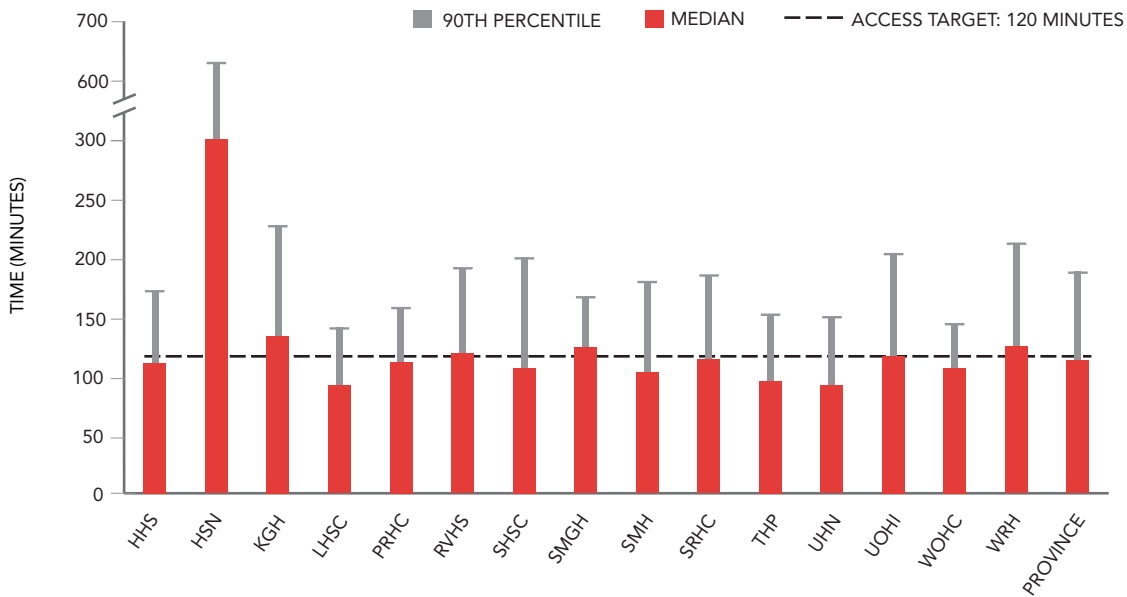


**DOOR TO BALLOON TIMES: WALK-INS TO PCI CENTRE**



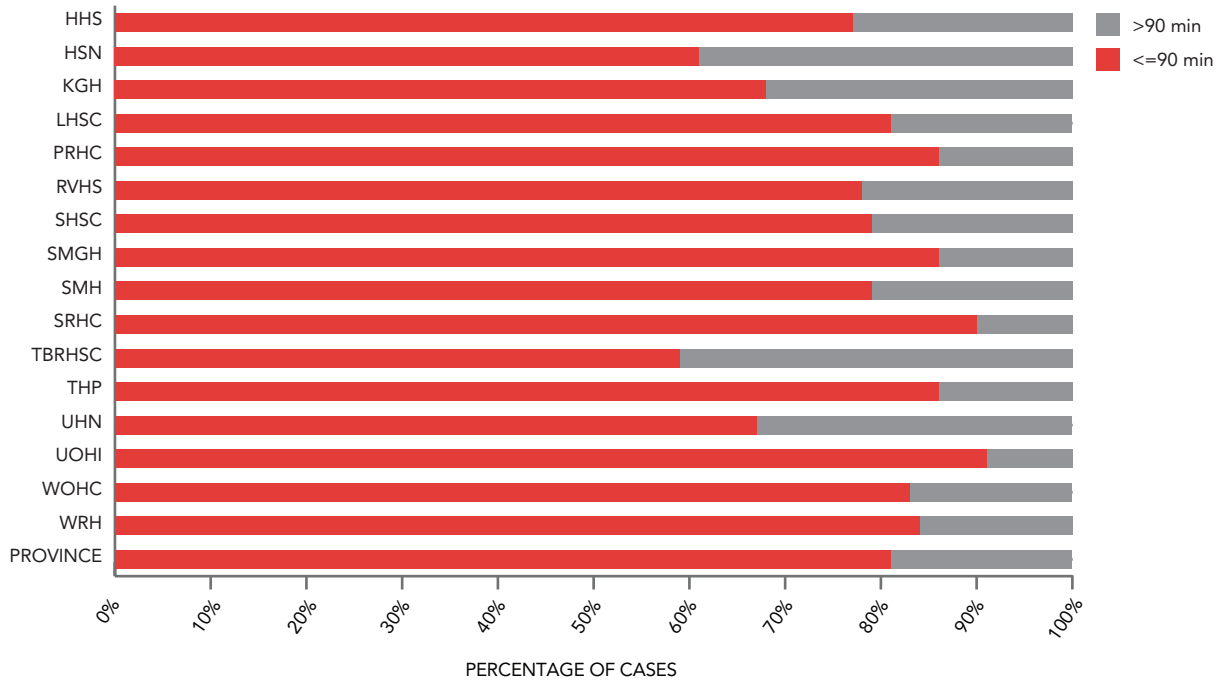
\*\*\*UOHI was excluded from this graph as they received no STEMI walk-ins during the 2014/15 fiscal year.

**DOOR TO BALLOON TIMES: TRANSFERS FROM NON-PCI CENTRES**

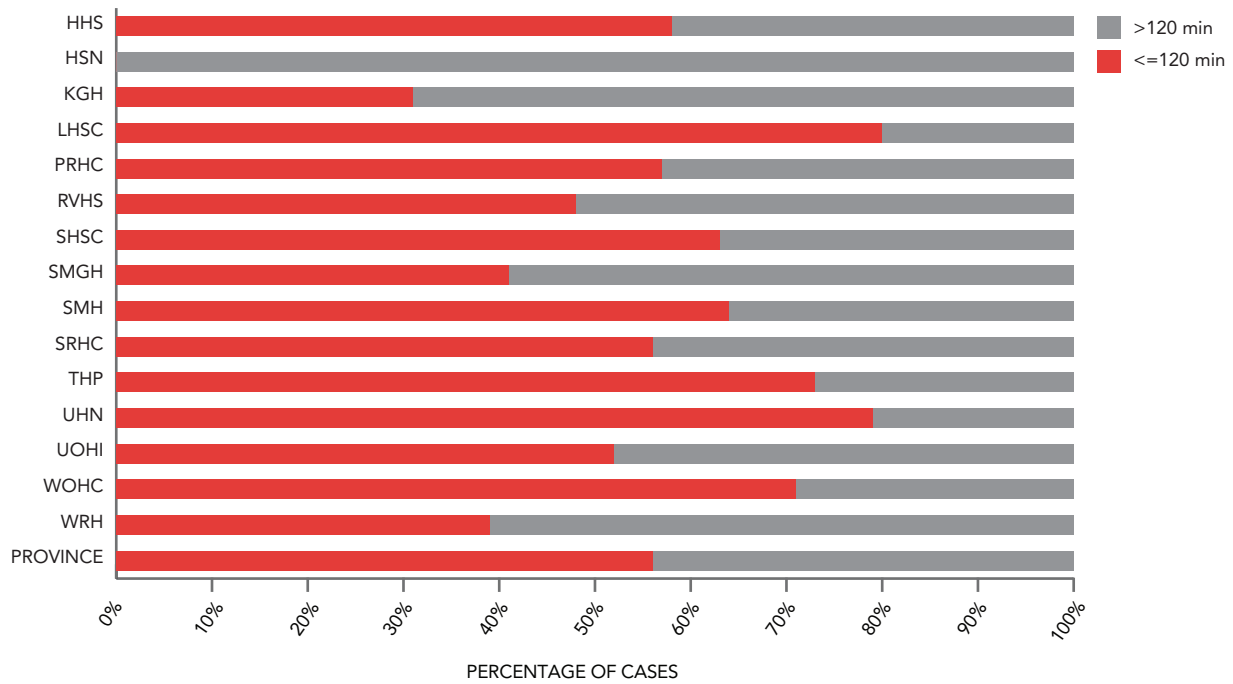


\*\*\*TBRHSC was excluded from this graph as they received no STEMI transfers from non-PCI centres during the 2014/15 fiscal year.

PERCENTAGE OF PRIMARY PCIs PRESENTING DIRECTLY TO A PCI CENTRE  
ACHIEVING 90 MINUTE BENCHMARK

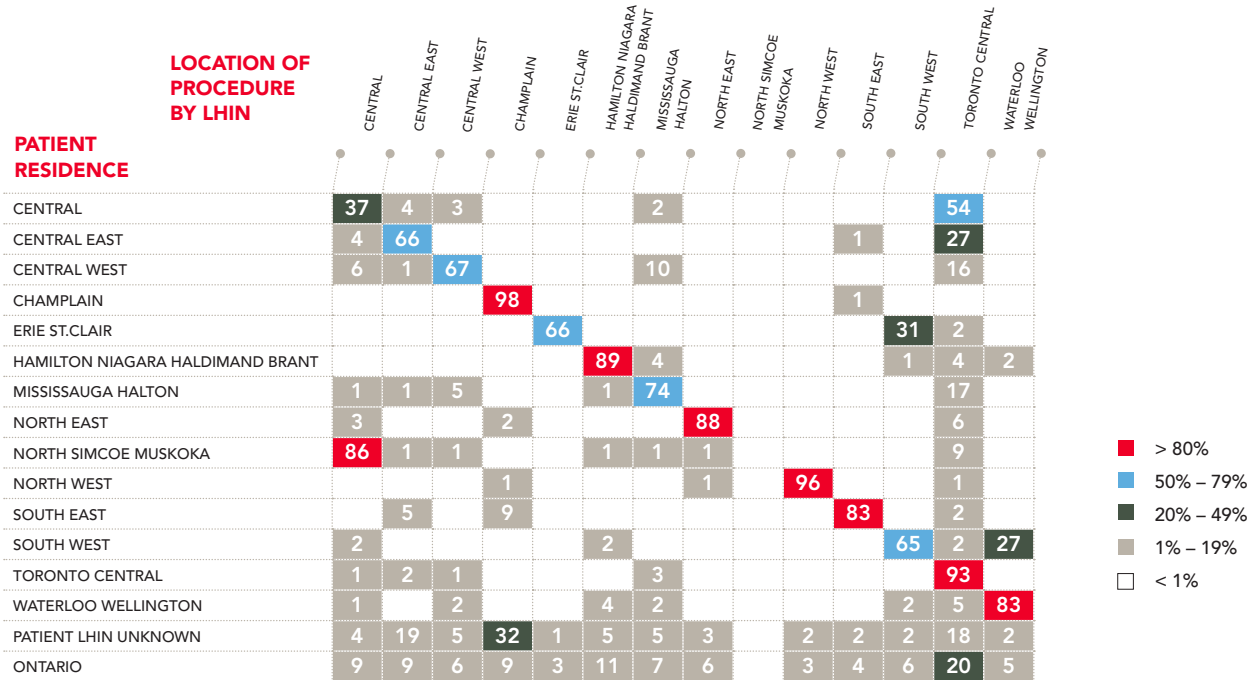


PERCENTAGE OF PRIMARY PCIs TRANSFERRED FROM A NON-PCI CENTRE  
ACHIEVING 120 MIN BENCHMARK



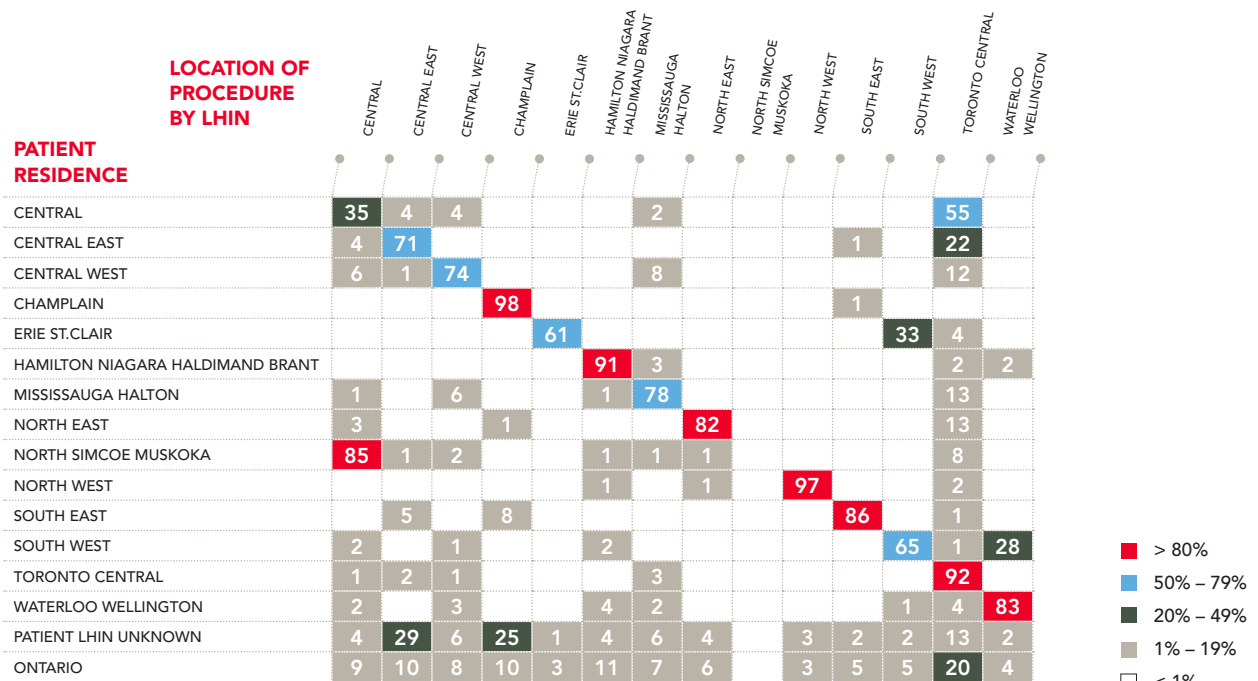
# MARKET SHARE ANALYSIS BY LHIN

## DISTRIBUTION OF DIAGNOSTIC CARDIAC CATHETERIZATION PROCEDURES BY PATIENT LHIN



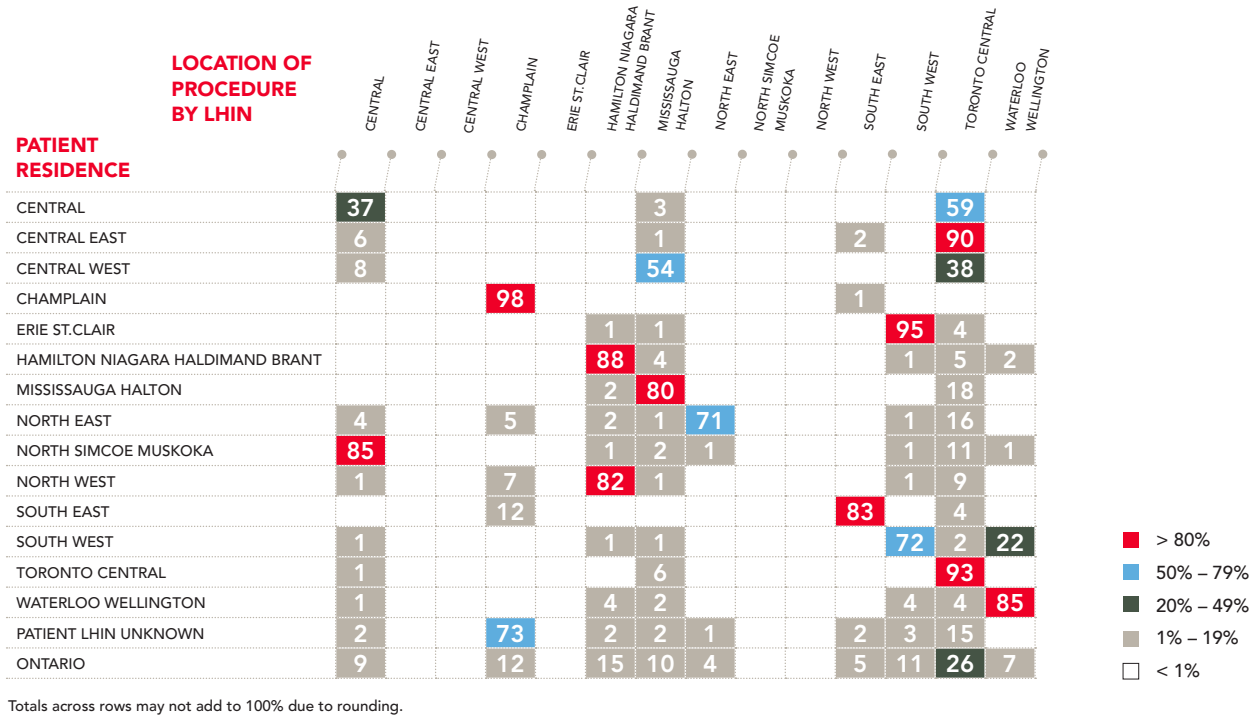
Totals across rows may not add to 100% due to rounding.

## DISTRIBUTION OF PERCUTANEOUS CORONARY INTERVENTION (PCI) PROCEDURES BY PATIENT LHIN

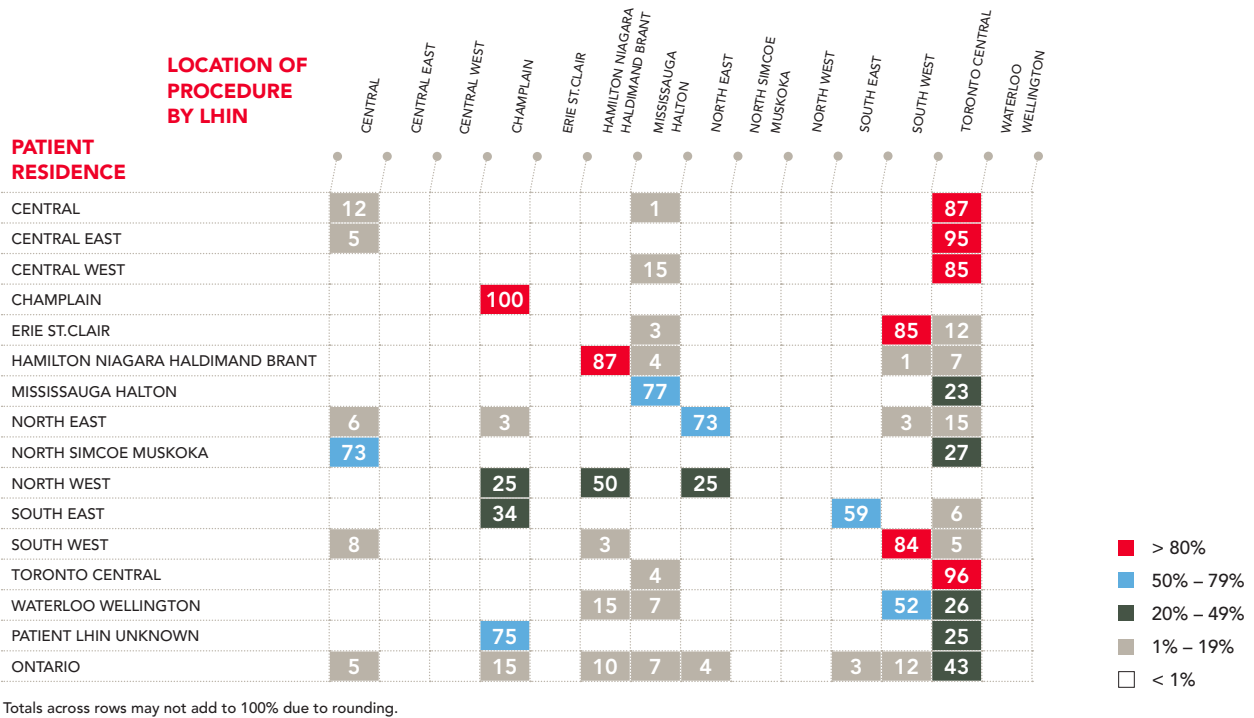


Totals across rows may not add to 100% due to rounding.

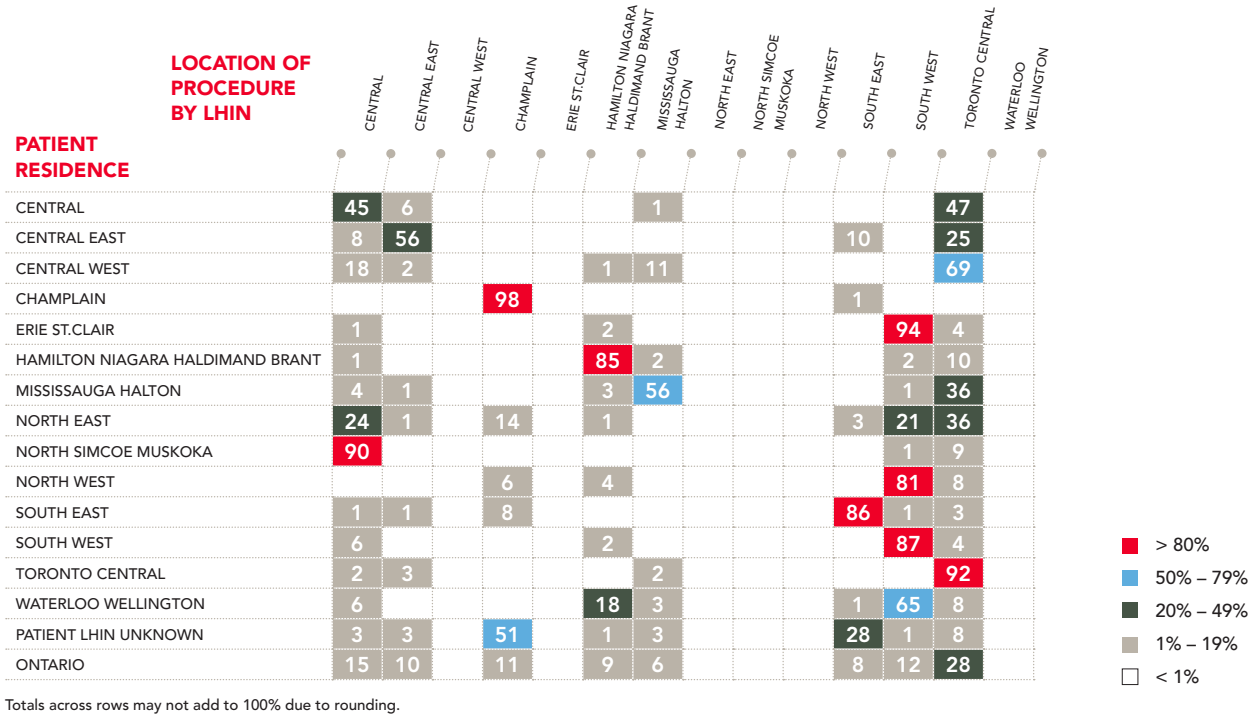
## DISTRIBUTION OF CARDIAC SURGERY PROCEDURES BY PATIENT LHIN



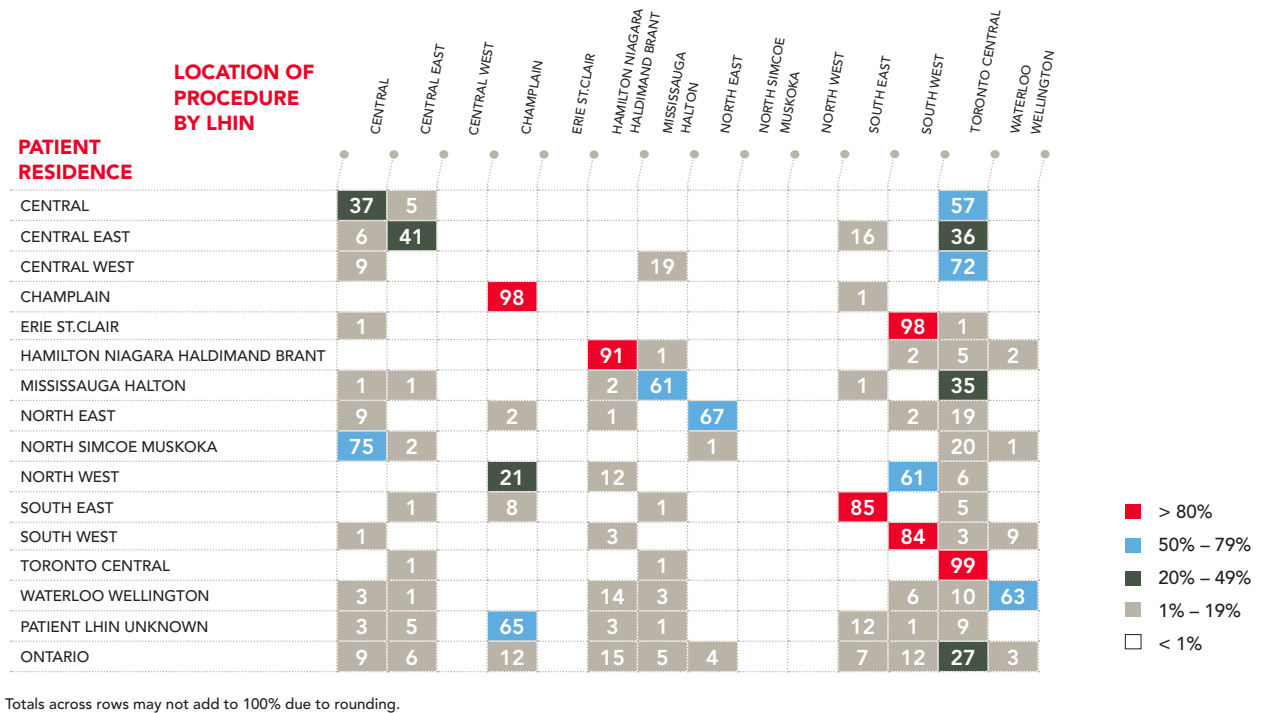
## DISTRIBUTION OF TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI) PROCEDURES BY PATIENT LHIN



## DISTRIBUTION OF ELECTROPHYSIOLOGY STUDY (EPS) AND ABLATION PRODEDURES BY PATIENT LHIN



## DISTRIBUTION OF CARDIAC DEVICE IMPLANT PROCEDURES BY PATIENT LHIN





## CARDIAC CARE NETWORK



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