CARDIAC CARE NETWORK

REGIONAL CARDIAC CARE COORDINATOR

Reference Guide

2017

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1. Introduction

The Cardiac Care Network of Ontario (CCN) has a solid history of advising the Ministry of Health and Long-Term Care (MOHLTC), Local Health Integration Networks (LHINs), hospitals and care providers to improve the quality, efficiency, accessibility and equity of cardiac services for patients across Ontario. Currently, CCN's mandate has expanded to include the management of vascular and more recently stroke services for patients and providers in Ontario.

CCN has played an integral role in enhancing health system improvements in Ontario through the use of a more proactive, comprehensive and transparent approach to the planning, funding, performance management, and ongoing quality improvement of cardiac and vascular systems of care in Ontario. In partnership with the MOHLTC, and other stakeholders, CCN's growing mandate will include emphasis on improved system design, capacity planning, funding policy, and performance management.

Working with key stakeholders, CCN helps to plan, coordinate, implement, and evaluate cardiovascular care and is responsible for the Ontario Cardiac and Vascular Registries (the CCN Registries or 'Registry'). The data collected in the Cardiac Registry includes wait times information as well as specific clinical parameters required to evaluate key components of care and determine risk-adjusted outcomes. Information contained in the Registry is used in combination with published scientific evidence, and input from expert panels and working groups, to identify best practices and strategies to effectively deliver cardiovascular services across the province.

In order to support best practices related to the Registry, users are referred to the *CCN Registries Data Entry Reference Manual and Data Standards* document. In addition, this document provides specific information to support the role of the Regional Cardiac Care Coordinator (RCCC) in access management and to serve as a reference for the development of individual hospital's RCCC role profile.

2. Background

The RCCC role was originally created by CCN to assist in waitlist management of cardiac surgical patients. The role has been expanded over the years to include triage of all advanced cardiac procedures, facilitating collection of clinical data, assisting in wait list management and monitoring data quality. The oversight for this role has also been transferred from CCN to individual hospitals. CCN recognizes that the responsibilities for monitoring patient access to cardiac procedures, as well as maintaining Registry data quality, may fall to another member of the healthcare team that may not be a RCCC. Regardless of title, this document is designed to address the key activities as they relate to monitoring access to care and ensuring data quality.

The RCCC plays a vital role in ensuring that key objectives outlined in the MOHLTC Patients First: Action Plan for Health Care[1], are met for patients undergoing advanced cardiac procedures:

> ***Access*:** Improve access – facilitate timely access to the right care at the right time, closer to home.
> ***Inform:*** Support patients – using a transparent approach, providing the education and information needed to make the right decisions about their health. Inform the patient of the expected wait time, and of the right to have the referral transferred to another cardiac centre with a shorter wait time.
> ***Connect:*** Connect services – assisting the patient and family to a seamless transition into the community following a cardiac procedure or surgery including cardiac rehabilitation.
> ***Protect:*** Protect our universal public health care system – decisions are made based on value and quality, to maintain the system for future generations.

3. Key Activities of the RCCC

In view of the RCCC's role in monitoring cardiac access, CCN collaborates with the RCCC at each advanced cardiac centre on patient referral processes and data management. In fulfilling this role, RCCCs have a key responsibility in providing care that is patient and family centric and based on the principles of the MOHLTC's Patients First strategy.[1] Patient centric care includes collaborating with the patient and his/her family as well as sharing all available information in order to empower them to make informed choices.[2]

a. Access: Improve Access

Through triage and management of the patient referral, the RCCC ensures patient's timely access to a cardiac procedure at the right advanced cardiac centre. This process involves all activities including: Onlisting a referral, patient triage based on clinical presentation, wait list management, and offlisting the procedure within 48 hours of its completion.

Referral Onlisting
The referral process begins when a physician completes a referral and sends it to an advanced cardiac centre for consideration. The RCCC processes the referral, and creates the wait list entry (i.e., Onlist the referral) in the Cardiac Registry **within 24 hours** (see **Figure 1** in Appendix for Referral Triage and Management).

When 'Onlisting' a patient referral it is imperative that the demographic and clinical profile of the patient are accurate and complete. The referral includes an appropriate indication (i.e., primary reason for referral) for the procedure. For instance, the primary reason for referral for a coronary angiogram would be either 'coronary artery disease' (CAD) or 'other'. If CAD is chosen, the type of

[1] Ministry of Health and Long Term Care (MOHLTC). (February 2015). Patients First: Action Plan for Health Care.
[2] RNAO International Affairs and Best Practice Guidelines: Transforming Nursing through Knowledge, May 2015

CAD is entered as stable angina, STEMI, NSTEMI, unstable angina or rule-out CAD. Unless the indication for coronary angiogram is 'Other' (e.g., biopsy, right heart cath, research), in consultation with the referring or procedural physician, all patients referred with no known CAD shall be assigned a 'rule-out' CAD referral reason.

If a referral is received outside of triage office hours, the referral is to be entered on the next business day. It is essential that all patient clinical information including comorbidities and cardiac diagnostic test results are entered into the Cardiac Registry.

At the time of referral, while it may not be feasible to obtain all the clinical information, the RCCC should collect, as much as possible, the required elements to calculate the urgency rating score (URS) in order to triage patients appropriately (see **Table 1** in Appendix). If all fields required in calculating the scores are not available, unassigned priority must be checked on the general referral tab in the Registry and the user must indicate the reasons for not entering this information. CCN monitors the number of unassigned priority cases in order to ensure the majority of patients have an assigned priority and an associated wait time.

For the management of transcatheter aortic valve implantation (TAVI) referrals, refer to **Figure 2** in Appendix.

Referral Triage

Triaging each patient referral is facilitated by using several factors: the referring physician's estimation of urgency, the calculated URS based on specific priority drivers identified in **Table 1**, the generated priority and the associated recommended maximum wait time (RMWT).

CCN has developed algorithms that generate both an URS and a RMWT using a specific set of clinical information (designated with † in the Registry; see also **Table 2** in Appendix) for each procedure. The RMWT is the maximum number of days the patient should be waiting to have their procedure, and the URS indicates how urgently the procedure needs to be done (i.e., Priority 1 = Urgent). The following procedures have system-generated wait time calculations:

- Coronary angiogram;
- PCI;
- CABG;
- Surgical valve procedures; and
- Implantable cardioverter-defibrillator (ICD) implantation.

Any changes to patient's clinical condition must be documented in the Registry as a clinical status change followed by reassessing the priority level. The updated wait time and priority are then communicated to the procedural physician and the patient who are also informed of a new booking date, if indicated.

Waitlist Management

It is important that cardiac patients receive their required care in a timely fashion. Activities related to waitlist management include the following:

- Monitors the waitlist to ensure that the patient receives timely care according to their RMWT (see **Table 2** in Appendix);
- Identifies and follows-up on patients approaching or exceeding RMWT (refer to **Figure 3** in Appendix);
- Addresses and documents any changes to the patient's condition (clinical status change) in the Cardiac Registry and re-assesses priority;
- Notifies the healthcare team of any changes in the patient's clinical condition or symptoms including the referring and procedural physicians; and
- Provides updated patient wait lists to procedural physicians (e.g. cardiologists/cardiac surgeons) and hospital administrators as needed.

As part of the RCCC's role in managing wait time, the RCCC monitors the flow of cardiac procedures including any service disruptions (i.e., cancellations and delays) that affect the management of patient wait times for procedures. Therefore, it is important that information regarding any disruptions to service delivery is communicated to CCN and hospital administration. Furthermore, procedural delays or cancellations are communicated to the physician, and the patient. The patient should also be provided with the rationale for the delay or cancellation, and informed of the new procedure date. Details of any communication made can be documented in the 'Notes' section of the CCN Cardiac Registry.

During service disruptions or management of long wait lists (see **Figure 3** in Appendix), the RCCC in collaboration and consultation with the patient, primary care provider, and procedural physician will facilitate transfer of urgent cases to available advanced cardiac centre as needed. It is recommended that the RCCC communicate with their hospital administrator when patient transfer to other facilities becomes necessary. To help manage patients requiring urgent care, CCN may be consulted in finding the most appropriate cardiac centre.

Referral Offlisting

Following the completion of a procedure, the patient's record should be closed in the Registry (i.e., offlisted) **within 48 hours**. During this timeframe, the procedure-related details are required to be entered. For outpatient procedures, since the discharge or transfer date is often the same as the procedure date, records in the Registry are generally completed at this time. Additionally, information such as complications and referrals to other services (e.g., cardiac rehabilitation) must be documented in the Registry. If a patient discharge does not occur on the same day as the procedure

(i.e., inpatient), post procedural and discharge information should be entered into the Registry **within 5 days** following discharge.

b. Inform: Support Patients & Families

The RCCC is the principal contact and resource for the patient and family. In this aspect of the role, the RCCC:

- Ensures that the patient is contacted (by phone, email, postal mail, or in person), taking into consideration the patient's preferred method of communication, to provide information before and/or after they are accepted for their procedure.
- Ensures that patient and family are provided with education regarding the procedure and risk factor modification while awaiting cardiac procedure. Patient education material and videos are available in CCN website at http://www.ccn.on.ca/ccn_public/FormsPatientPortal/PatientEducationResources.aspx
- Informs the patient on how long they can expect to wait for the procedure (see **Table 2** for RMWT). Discuss options for earlier treatment at another hospital to ensure the procedure is completed within the RMWT or at a time that is convenient to the patient (refer to **Figure 1** for Referral Triage and Management and **Figure 3** for Management of Patients Exceeding RMWT in Appendix).

Once a booking date has been made, the RCCC ensures that the following information is communicated to the patient:

- Type of procedure;
- Date of procedure;
- Name of physician;
- Preparation for procedure (i.e., admission clinic, diagnostic or laboratory tests); and
- What to expect during and after the procedure.

The RCCC should maintain ongoing communication with the patient and/or his or her family while waiting for the procedure to ensure that questions are answered and concerns resolved prior to the patient's admission to hospital for procedure.

c. Connect: Facilitating Transfers & Transition of Care

The RCCC may need to facilitate a patient transfer to another healthcare facility due to clinical complexity, or if the patient requests the procedure to be done at another centre with a shorter wait time. If this is required, the RCCC will ensure that all clinical information in the Registry is up to date prior to sending the re-referral to another centre. This would include Registry documentation of any

applicable diagnostic tests that were completed prior to patient transfer e.g., cardiac catheterization. Communication with the receiving centre is required prior to sending the re-referral.

In the event that the patient requires urgent or emergent treatment, and partner hospitals are unable to accommodate the patient, CCN may be contacted for assistance in finding the most appropriate hospitals with the shortest wait time.

The RCCC plays an integral role in connecting the patient with healthcare service providers within their own institution by coordinating any additional pre-procedural diagnostic testing (e.g., TAVI workup, surgical preoperative testing). The RCCC also facilitates transitions of care back to the community, for example, follow-up appointments with the procedural physician, information regarding in-home nursing care, and referrals to a cardiac rehabilitation and/or smoking cessation programs, as indicated.

d. Protect: Protect our Universal Public Health Care System

As the Registry data is used to support important decision-making related to cardiac services at the local and provincial level, the RCCC plays an important role in ensuring the validity of data entered into the Registry. This can be accomplished in a number of ways:

- Following best practice related to data entry requirements;
- Participating in data verification and validation processes;
- Analyzing data for completeness and accuracy; and
- Disseminating information at the local level.

The RCCC ensures the accuracy of data through frequent periodic reviews of missing data reports and reconciliation of data. In addition, ongoing monitoring of data through the use of CCN–CRS (or the 'Universe') will identify gaps and issues for data quality improvements. Furthermore, through active involvement in CCN-led activities to promote and sustain quality cardiac services, the RCCCs help to enhance sustainability of services within the hospital and across the province.

CCN recognizes that changes to the RCCC's role may occur at individual hospitals. To maintain an active and efficient management of cardiac access, CCN requires notification of changes to the responsibilities of the RCCC as it relates to the Registry. The RCCC fulfilling additional responsibilities related to the Registry (whether temporary or permanent), will receive training and education from the CCN team. Moreover, in order to protect the integrity of data in the Registry, changes to the RCCC role that do not require Registry access will result in suspension or termination of access to the Registry and CCN-CRS.

4. Appendix

Figure 1: Referral Triage and Management

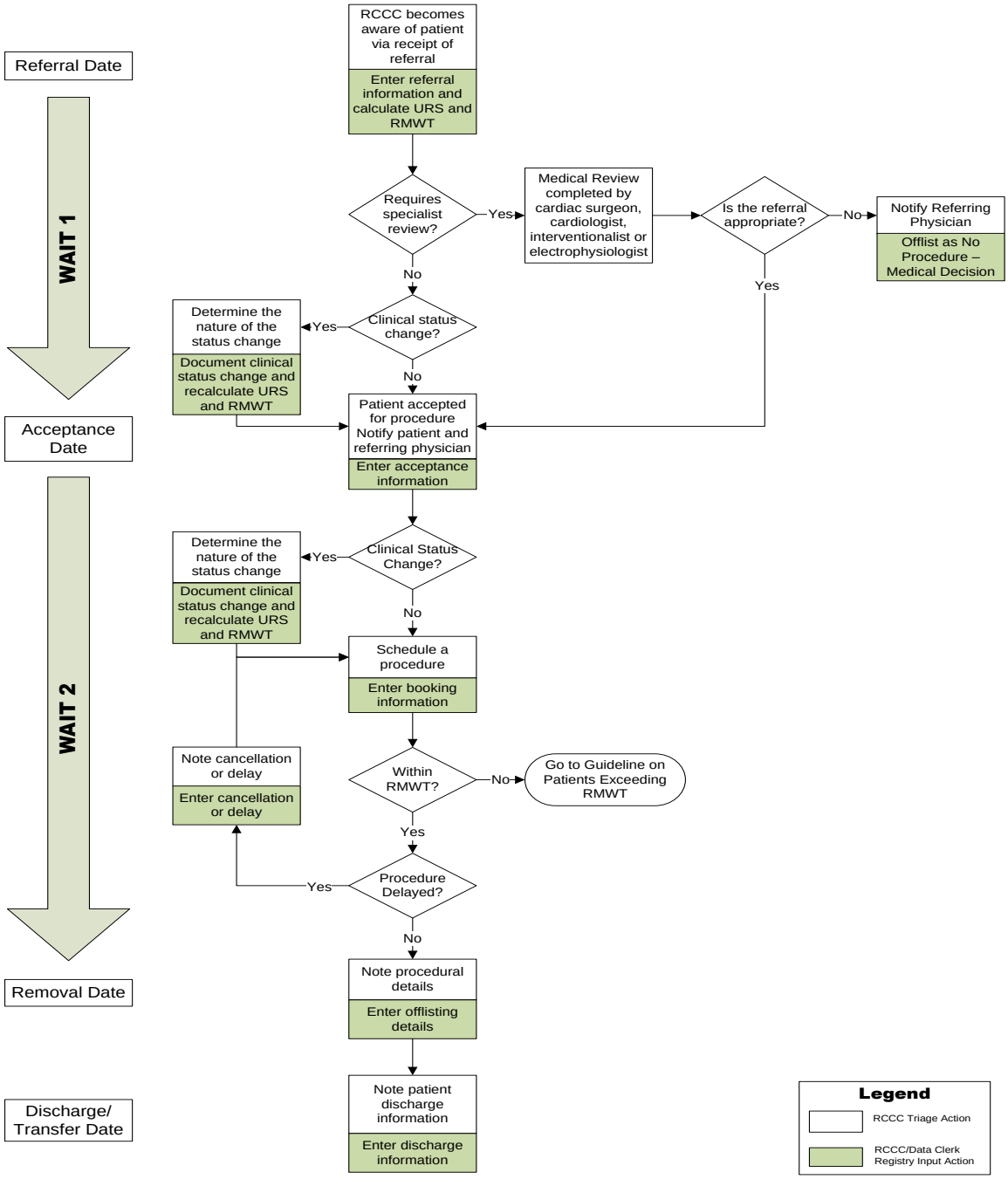
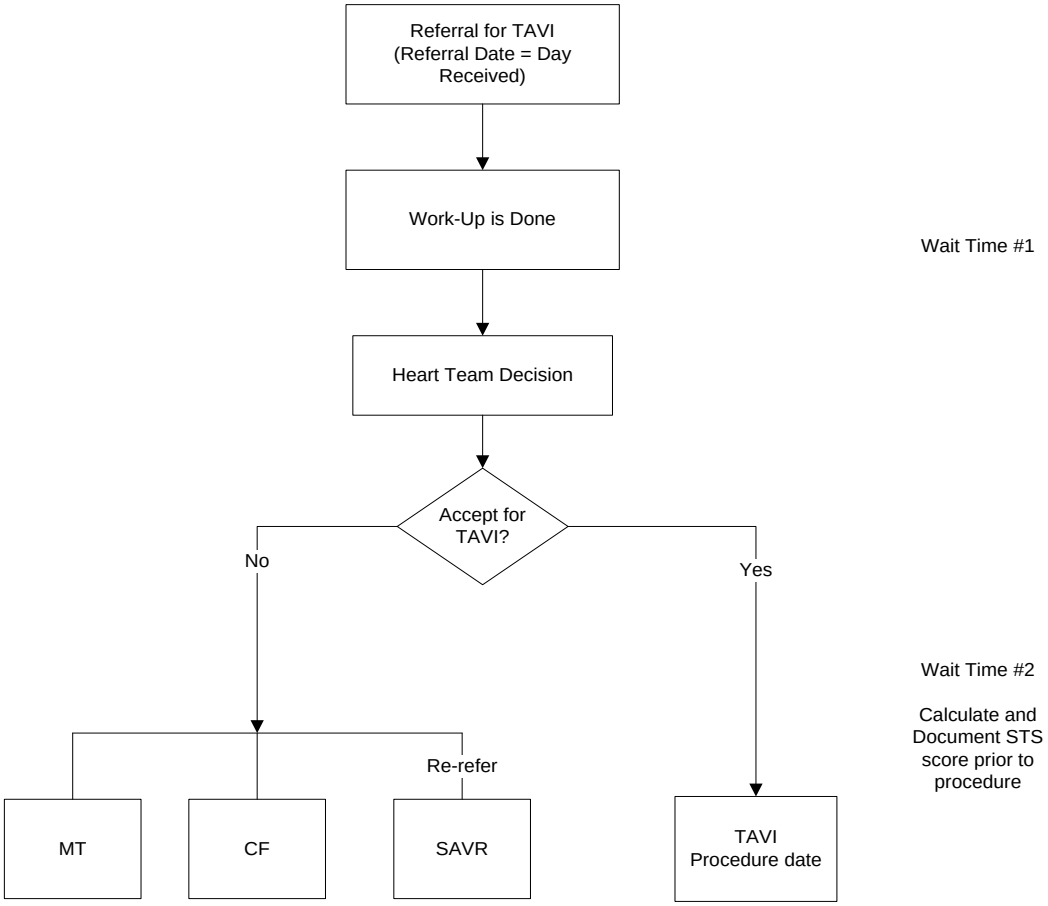


Figure 2: TAVI Management

CCN Algorithm for TAVI Referral Triage & Management



Wait Time #1 = From Referral Date to Acceptance Date (Date of Decision by Heart Team)
Wait Time #2 = Acceptance Date to Procedure Date

MT = medical therapy
CF = clinical follow-up or for possible reconsideration
SAVR = surgical aortic valve replacement
TAVI = transcatheter aortic valve implantation

Figure 3: Managing Patient Exceeding RMWT

CCN Algorithm for Managing Patients Exceeding RMWT

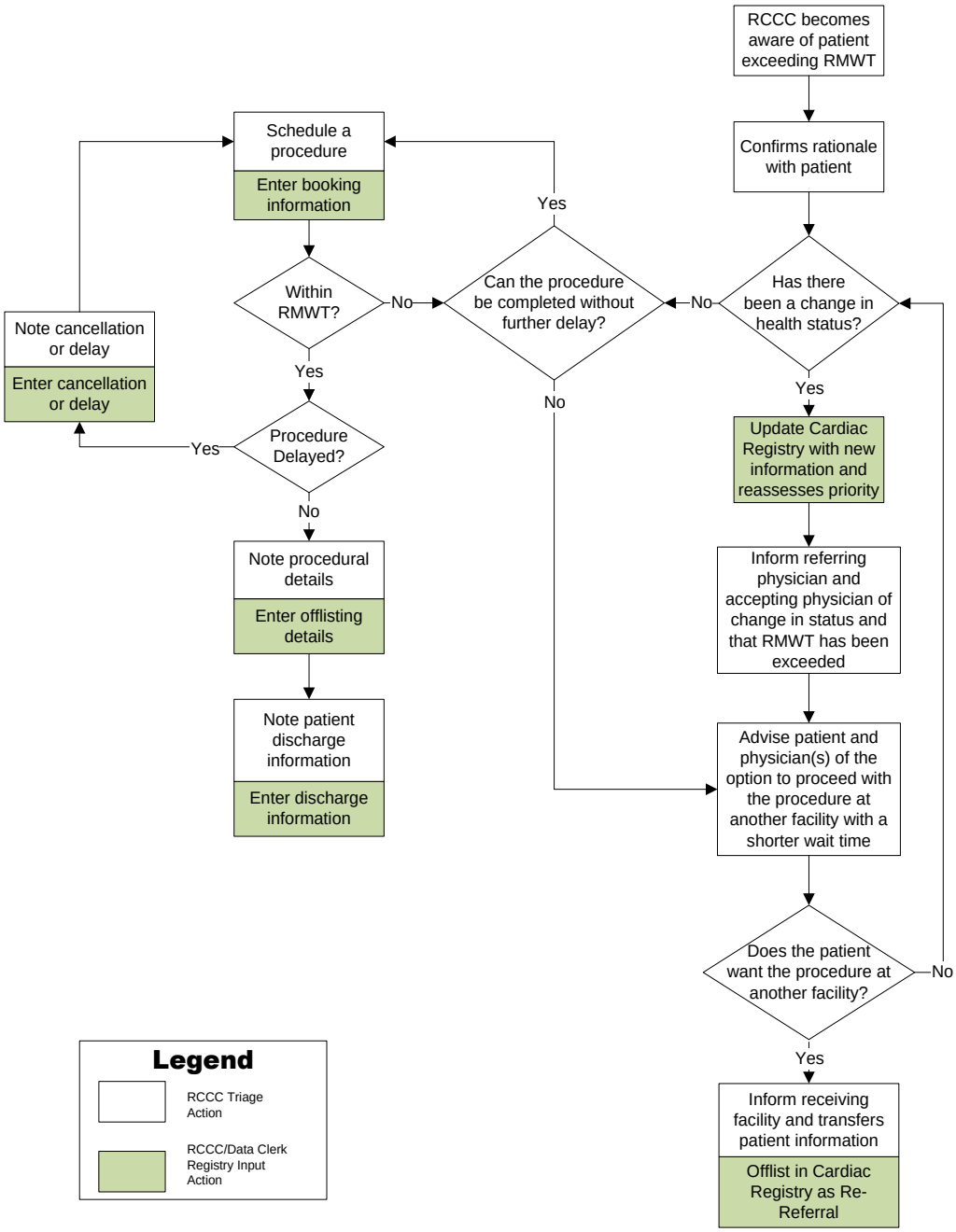


Table 1: Fields Required to Assess Priority

Coronary Angiogram	
Primary Reason	Ischemic Changes at Rest
History of MI	Ischemic Change Type
Recent MI	Exercise ECG Done
CCS/ACS Class	Exercise ECG Risk
If High Risk	Functional Imaging Done
	Functional Imaging Risk

PCI	
ACS/CCS Class	
3 Vessel Disease with Proximal Left Anterior Descending (LAD)	Unprotected Left Main (LM)
Survival Dependent Vessel	Vein Graft Lesion

CABG	
Recent MI	COPD
CCS/ACS Class	Previous CABG Procedure
Exercise ECG Done	History of CHF
Exercise ECG Risk	LM
Functional Imaging Done	Proximal LAD
Functional Imaging Risk	Mid-Distal LAD
Left Ventricle (LV) Method	Circumflex
LV Function	Right Coronary Artery (RCA)
Dialysis	LAD Graft
Diabetes	Circumflex Graft
CVD	RCA Graft

Valve AS	
Patient Wait Location	Medically Unstable
NYHA	LVEF
Previous CABG	LM
Aortic Valve Area	Proximal LAD
Aortic Mean Gradient	Mid-Distal LAD
Aortic Peak Instant Gradient	Circumflex
Syncope	RCA

Valve MR	
Patient Wait Location	LVESD
NYHA	LM
Previous CABG	Proximal LAD
Pulmonary Artery Pressure	Mid-Distal LAD
Medically Unstable	Circumflex
LVEF	RCA

Valve AR	
Patient Wait Location	LVEDD
NYHA	LM
Previous CABG	Proximal LAD
Medically Unstable	Mid-Distal LAD
LVEF	Circumflex
LVESD	RCA

Table 2: RMWT Mappings

The WTIS has built-in algorithms for several cardiac procedures. These algorithms calculate the RMWT, URS, Access Target, and Priority values that are used to indicate how urgently the patient should be seen by the procedural physician.

See below for the mapping of RMWT to Access Target and Priority levels:

Cath Lab – Diagnostic – Coronary Angiogram

RMWT (days)	Priority
≥0 and ≤2	1
>2 and ≤7	2
>7 and ≤28	3
>28	4

Cath Lab – Intervention - PCI

RMWT (days)	Priority
≥0 and ≤2	1
>2 and ≤7	2
>7 and ≤14	3
>14 and <28	4

Surgical – CABG

RMWT (days)	Priority
≥0 and ≤2	1
>2 and ≤14	2
>14 and ≤42	3
>42	4

Surgery – Valve – Aortic Stenosis

RMWT (days)	Priority

≥0 and ≤7	1
>7 and ≤14	2
>14 and ≤30	3
>30	4

Surgery – Valve - Mitral Regurgitation

RMWT (days)	Priority
≥0 and ≤7	1
>7 and ≤14	2
>14 and ≤42	3
>42	4

Surgery – Valve – Aortic Regurgitation

RMWT (days)	Priority
≥0 and ≤7	1
>7 and ≤14	2
>14	3

Electrophysiology- Implant – ICD or CRT

RMWT (days)	Priority
5	1
56	2