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The Early Cardiac Access Clinic (ECAC): A Model to Enhance Utilization of Cardiac Rehabilitation Services

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Cardiac rehabilitation (CR) has been proven to be an effective means for secondary prevention.¹ Research indicates that wait time has a negative effect on enrolment, such that for every one day increment in wait time, patients are 1% less likely to enrol in a CR program.² This makes sense given that many patients who are discharged from the hospital are often unsure of their future, anxious and require that their questions are answered in a timely manner. It is incumbent upon CR programs to address these patients at their most teachable moments. Data suggests that CR programs in Canada are falling short of the recommended wait times listed by Dafoe et al in 2006.³ Data from the Canadian Cardiac Rehabilitation Registry (CCRR) demonstrates that the average wait time in calendar days from event to CR program start is 65 days, which is over twice as long as the recommended 30 day limit.

In 2008, the Cardiac Wellness Institute of Calgary (CWIC) in collaboration with Alberta Health Services (AHS) embarked on a pilot project that focused on reducing wait times for ST-elevation myocardial infarction (STEMI)

patients.⁴ The objectives of this study were to help facilitate early discharge and transition of patients into community care, provide a communication bridge between the patient's general practitioner and cardiologist, minimize preventable emergency room visits and re-hospitalization, improve cardiac medication compliance, and facilitate early exercise programming and coordinate coronary artery disease (CAD) management care. STEMI patients were seen for an initial assessment within 4-14 days of hospital discharge. Following this initial assessment they could then choose to enter the CR program if they wanted. This pilot project not only demonstrated a 2-fold increase in referrals to CR, but it also resulted in a 3-fold increase in the number of post-STEMI patients who choose to participate in CR.⁴ In addition to this, the pilot found that the percentage of patients who completed the CR program was significantly higher in the early access group as compared to the control group.⁴ In addition to this, the subjects of this pilot were able to achieve significantly greater improvements in their

functional capacity when compared to the historical control.⁴

Based on the success and findings from our pilot, moderate and high risk STEMI patients were included into the early access program using a modified pathway. Building on the experience with the STEMI population the model was also used to refer and enter all acute coronary syndrome (ACS) patients into the program starting in November 2010. At present approximately 65-70% of patients are referred to the program from the early access pathway from the acute care facilities. The pathway continues to yield a higher rate of attendance compared to our traditional process. Based on our experience we believe there are three important pillars required to develop, implement and maintain an early access pathway. Below is a summary of the strategies we employed to build a foundation of support for the early access clinic.

Pillar #1: Hospital Buy-in and Nurse Liaison (or nurse navigator)

Having support from all levels of the healthcare team is essential. This support starts with all staff in the acute care facility, transitioning to rehabilitation and extending into the community. At the hospital patients are surrounded by a group of professionals whose opinions they trust. If these professionals (i.e., cardiologists, nurses, etc.) are informed about CR, and believe in the benefit of attending, they are more likely to talk to patients about the importance of attending and doing so quickly. Many of the common questions/concerns such as helping patients get back to their normal routines, facilitating return to work (RTW), decreasing stress and anxiety, helping with smoking cessation and answering questions regarding exercise routines and medications can be done in the rehabilitation setting. Having buy-in from the clinicians (MDs, nurse practitioners and residents) is especially important as we know that when a patient's clinician advocates for CR, they are more likely to attend. Getting the clinicians to buy-in can be a challenging task. It is important that you are able to explain to them not only how the patient will benefit from early access, but also the downstream benefit for them. Early access clinics can provide comfort to their cardiologists knowing that their patients will be seen quickly, assessed and triaged back to them should it be required. In turn this could

extend the timeline required for the cardiologist to see the patient in their office taking some of the pressure off of an oversubscribed resource. Further, in our local experience we found that we were able to triage the high risk patients back to the primary cardiologist with limited wait times. The recommendations from the physician at the early access clinic assessment is used to help guide the family doctors who are expected to manage the care of the patient who had a recent cardiac event such as medication titration or navigating any complications such as heart failure. Communication to the primary care providers, patient and their support system are important factors to consider ensuring the goals of the model are achieved.

Having a dedicated nurse (RN) liaison (or nurse navigator) can be a tremendous asset in helping facilitate the transition of the patient from hospital discharge to the CR setting. If possible, the RN liaison should be an additional resource versus increasing the workload of the already busy unit staff. Some of the roles and benefits that the RN liaison can have are:

- Assess patients in hospital and determine eligibility for early access clinic
- Support patient discharge teaching and set up the discharge clinic appointments
- Communicate the discharge plans and clinic follow up plans with healthcare professionals in the acute care and community setting including CR
- Facilitate the CR referral by booking the intake appointment and sending all pertinent patient information to the CR program
- Act as a liaison between the cardiologists and CR staff to facilitate patient triage post discharge.

Getting hospital buy-in is challenging and having a dedicated RN liaison is not always a feasible option. Some strategies CWIC employed to get buy-in from the hospital was providing ongoing education highlighting the dual benefit to the patient and to the acute care healthcare team of the early access clinic and the referral process to the doctors, administrators, nurses and unit clerks. Streamlining the referral process to facilitate efficient completion by acute care staff was also crucial. Finally, ensuring that your clinic can communicate with all the patient's doctors in a timely manner is key. This ensures that that the

doctors can feel comfortable knowing that their patient is being seen, and followed up with appropriately.

If your program is setting up an early access pathway some questions to consider are:

- 1. What ways can you promote your program within the acute care settings you recruit patients from?**
- 2. Who can champion your program within the acute care setting for your program?**

Pillar #2: Appointment for and Early Cardiovascular Exam and Intake Assessment

Having a timely appointment for a cardiovascular (CV) exam and intake assessment appointment at in the CR setting within 4-10 days post event is another important pillar of the model. At CWIC, this initial assessment appointment is not considered part of our CR program, but marketed as an opportunity for the patient to be assessed soon after discharge to manage any ongoing issues, provide patient teaching and communicate a care plan back to the primary-care providers. Locally we found that about 25% of patients did not have a family doctor and some were unsure who their cardiologist was. As such, the clinic staff were able to assist with linking them to the appropriate care providers in the community. During the initial assessment the physicians and rehabilitation staff discuss the opportunity that exists to start the CR program. Even for the small majority who choose not to proceed with CR they are at least provided with the supporting lifestyle educational materials and provided an individualized exercise prescription from the exercise stress test done in conjunction with the initial assessment. Following the initial assessment, if the patient is not attending CR the file is closed and primary care providers are informed of the plan.

“Locally we found that about 25% of patients did not have a family doctor and some were unsure who their cardiologist was.”

Once a patient is referred to the CR program, the referral coordinator determines the type of initial appointment the patient requires based

on a screening checklist that was developed in conjunction with the acute care physicians. The two streams are the non-low risk patients (ECAC patients) and the low risk patients (EDC patients). Depending on the stream, there are two types of initial appointments:

- ECAC: CV exam and intake assessment with a cardiologist at CR in order to determine treatment plan, and define timeline for the symptom limited maximal exercise stress test (EST)
- EDC: CV exam and intake assessment with a CR physician, EST and clearance to start exercise.

There are three main purposes of the initial assessment. First is to determine the clinical stability of the patient (i.e., rest heart rate and blood pressure, presence of heart failure, check to ensure procedure sites have healed) and optimize medical management if required. Second, the physician is able to provide education to the patient about their medical history (i.e., what happened), and current health status in turn alleviating some of the fears of the patient and their support person. This is also a good opportunity for the doctor to provide an assessment of patient's early post cardiac needs such as RTW, financial issues, anxiety and depression. In addition medication questions can be addressed and adjusted based on the current needs of the patient and to ensure that the medications that were prescribed are being adhered to. This is especially important for the STEMI patients and their antiplatelet medications. Finally, this initial assessment gives the doctor the opportunity to promote and encourage the participation in the CR program. The third purpose of the initial assessment appointment is to establish if the patient is ready to begin a structured exercise program. Currently the CACR recommends that all patients have a symptom limited maximal EST before starting in a CR program.⁴ This allows the doctor to evaluate the efficacy of the medications with exercise, ensure that the patient does not get angina or arrhythmias with exercise and it allows for the creation of a target heart rate based on the patient's minimum and maximum heart rates.

Key questions for your program:

- 1. What aspects of the initial assessment appointment are feasible for your clinic?**
- 2. How can your clinic organize the initial**

appointment for the patient based on your resources?

- 3. Are exercise tests feasible for your clinic? If not, what are your options?**

Pillar #3: Engaging the Consumers of the Model

Given the number of consumers of the model and their associated agendas it is helpful to provide ongoing education and support to engage those impacted by the expedited pathway. At CWIC we determined that the consumers of our model were the hospital staff, the patients, and staff in the CR clinic.

The first step in reducing wait times for patients is making sure that patients are referred to your program in a timely manner. Getting the acute care staff committed to sending their patients to CR is the first step. We had success providing education about the model and its benefits through a series of lunch and learn in-services at the hospital to get the acute care staff interested in and knowledgeable about how to access the pathway. If you have the opportunity invite the cardiologists, RNs, unit staff and administrators to your clinic so that they can see firsthand the great work that is done, and how the patients benefit. In addition, we simplified the referral processes so that it is easier for the hospital staff to complete.

We found that engaging the patient while in hospital was key. As mentioned earlier, this can be done with RN liaison as in our pilot, but if this is not possible perhaps the unit staff can distribute educational materials to the patients before discharge. Once we lost the nurse liaison we developed an informational video about CR providing some direction, context and inspiration through the stories of former patients. Further, once we no longer had the nurse liaison to meet individually with each patient after the initial assessment with the doctor at CWIC we developed a series of informational handouts for the patients to take home to reinforce information provided by the doctor and answer some of the common questions patients have at this point of their recovery. Our staff are still available to meet one on one if a patient requires or requests, but the creation of these resources allowed us to see more patients quicker, without overtaxing CR staff. Finally, it was important that the CWIC

staff were educated and engaged in the model. It was important that frequent multi-disciplinary meetings were held to ensure that all involved staff understood the new model and associated processes and resources thereby providing a consistent efficient service. Some staff, in particular the administrative staff, were required to expand their roles such as doing the majority of the 12 lead ECGs which required training and new protocols. All staff needed to be educated on the answers to frequently asked questions they may encounter and provide answers or, as appropriate, referral pathways to ensure staff were comfortable fielding the patient inquiries. In order to ensure that all patients received the same level of service and that all appointments were booked appropriately, we developed a series of checklists to direct the staff in managing patient flow. We also created scripts for the staff to use when booking appointments or explaining the purpose of documents that they might have been unfamiliar with. The staff noticed that they had more success booking patients when the scripts were used and felt more at ease while dealing with the patient. Part of educating and engaging the staff revolved around not only preparing them for their increased responsibilities, but also convincing them that the extra or new work was key to the patient experience. Explaining to the staff the benefit of early access went a long way, but it was actually seeing how the patient benefited that helped get the staff on board.

Key questions for your program:

- 1. If decreasing wait times and creating an early access clinic is something that your clinic can/wants to do, who do you need to engage to make it happen?**
- 2. What can be done to engage your key consumers?**

Limited resources and local support and barriers can make creating an early access clinic challenging. Given the benefits of the model, we encourage all programs to identify what local factors will facilitate early access to your CR program and look for champions to tackle the barriers you face.

CWIC has created a pdf tool kit that contains many of the documents and patient resources that we use to help facilitate the early access clinic. This tool kit is available on the CACR website

https://cacr.encryptedsecure2.com/members/members_only/en/tools-resources.cfm.

This is available to current CACR members only. Click on “Early Cardiac Access Clinic Resource Toolkit” to access. Feel free to use these documents for your clinic as you see fit.

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Cardiac Rehabilitation’s Memory Toolkit

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Cognitive impairment in the cardiac patient is common, but often overlooked during the course of cardiac rehabilitation (CR). Subtle changes in executive function such as the ability to plan, organize, and focus attention can have a significant impact on patient outcomes. This patient population has a higher risk of depression, lower quality of life, less functional capacity improvement (METs) and an overall reduced participation in CR as they struggle to learn new information, change old behaviour patterns, and attempt to return to household and work duties.¹⁻³

It is not surprising that the same vascular changes that impact cardiac function can also impact brain function. Suboptimal brain perfusion can occur via atherosclerosis, low left ventricular ejection fraction, arrhythmia and related occlusive thrombi, untreated obstructed sleep apnea, chronic kidney failure, endothelial damage from diabetes, hypertension, tobacco and marijuana use. This can lead to damage in the hippocampus (cognitive processing and routing center in the brain) which is very sensitive to ischemic insult and makes new learning difficult.⁴

Other risk factors for cognitive impairment include advancing age, less formal education (less cognitive reserve), and depression. Cardiac surgery and the potential complications have been linked with increased incidence of cognitive decline post-operatively (53% at discharge, 36%

at 6 weeks, 24% at 6 months),⁵ but by 5-6 years post surgery, no differences are seen between the surgical versus non surgical patients.^{6,7} Cardiac patients have many risk factors for pre-existing cognitive changes before coronary artery bypass surgery with at least 46% demonstrating silent pre-operative brain infarcts on MRI,⁸ suggesting that the underlying disease process versus surgery is the true culprit in the long run.

A variety of medications (with emphasis on anticholinergics in the elderly) may lead to changes in cognition.⁹ Statins have also been linked (mostly anecdotal reports) to complaints of poor memory,¹⁰ though the evidence is inconsistent. Since most patients are on complicated medication regimes it appears, at first glance, that cognitive challenges are almost inevitable and concerns should be addressed by a pharmacist or physician to ensure optimal medication management.

Memories are stored (encoded) in various locations in the brain, along with the sensory and emotions experienced at that time. By creating vivid details (repeating the grocery list aloud in an unusual voice) a larger “file” will be stored in the brain’s “file cabinet” and will more likely be recalled. When trying to remember a name, the stress of not remembering it actually decreases the efficiency of the neurons trying to connect with that memory file. Instead, think around the name. Asking “where did you last see that