

OUTPATIENT HEART FAILURE DIAGNOSIS ALGORITHM

Heart Failure Suspected

Clinical Assessment

History

- Duration of symptoms.
- SOB/orthopnea/PND
- Fatigue/weakness
- Dependent edema
- Weight gain
- Abdominal distension
- Exercise intolerance
- Cough
- Cool extremities
- Chest pain
- Palpitations
- Syncope

Physical

- Mental status
- Heart rate
- Heart rhythm
- Blood pressure
- SpO2
- Weight
- Heart sounds
- Murmurs?
- Elevated JVP?
- Crackles?
- Pitting edema?
- Abdominal distension?

Red Flags

- SOB at rest
- Hypoxia
- Signs of PE or MI
- Prolonged chest pain.
- Fainting
- Confusion

Emergency Treatment

Advise patient to attend the nearest Emergency Department for assessment. Please follow-up within one week of discharge to reassess suitability for pathway.

Please note:
Diagnosis and management can occur simultaneously in patients who are symptomatic with a high suspicion for HF. See management algorithm (click [here](#) to go to management algorithm).

Appropriate for Pathway

Patient does not have any red flags. Please order the following testing concurrently.

Echocardiogram/ECG

Please click [here](#) for a list of local providers where patients can be referred for standard Transthoracic Echocardiograms and ECGs. Ask for LV systolic/diastolic function + valvular disease assessment.

Chest X-Ray

Please click [here](#) for a list of local providers where patients can be referred for chest X-rays.

NT-pro BNP

Effective March 07, 2022, LifeLabs will test **NT-proBNP** (not BNP) at no cost to the patient. NTproBNP ≥ 125 is suggestive of HF.

Other Labs

- CBC (\pm ferritin)
- Electrolytes, urea, creatinine
- Mg, Ca, Phos.
- TSH (free T4 if abnormal)
- Hemoglobin A1C, glucose.
- Lipid panel
- ALT, ALP, bilirubin, INR

Heart Failure Diagnostic Criteria

- Clinical syndrome compatible with heart failure. **AND:**
- 1) NT-proBNP >125 pg/ml **OR:**
- 2) Evidence of systolic or diastolic dysfunction on echocardiogram.

Heart Failure
Diagnosed?

No

Consider Alternative Causes

- Consider alternative causes of the patients symptoms.
- If diagnostic uncertainty consider referral to General Internal Medicine for assessment.

Yes

Initiate treatment if patient symptomatic while secondary investigations underway. Click [here](#) for management algorithm

Secondary Investigations

Ischemia

If able to exercise --> (exercise stress Echo or stress MIBI). If unable to exercise --> dobutamine Echo or Persantine MIBI. Click [here](#) for list of local ischemia testing providers.

- If positive for ischemia refer to Cardiology.
- If equivocal or unclear report then eConsult.

Click [here](#) for instructions for Cardiology referral.
Click [here](#) for instructions on e-Consult referral.

Arrhythmia

If palpitations or syncope on Hx, new Afib or frequent PVCs on ECG --> order 72 hour Holter monitor. Click [here](#) for list of local Holter Monitor providers.

- If new Afib diagnosed start anticoagulation and a beta blocker (i.e. bisoprolol) for rate control.
- If PVC burden $\geq 10\%$ refer to cardiology.
- If other results with unclear significance consider Electrophysiology e-consult

Family History

If there is ≥ 1 first-degree relative (sibling, parents or children) with non-ischemic cardiomyopathy or sudden cardiac death then send referral directly to Medical Genetics at KHSC.

- Click [here](#) for instructions for KHSC Medical Genetics referral.

Hormonal/Metabolic

Check TSH and ferritin (iron studies if ferritin elevated). If evidence of hypo/hyperthyroidism treat accordingly \pm Endocrinology referral. If T-Sat $\geq 60\%$ for men, $\geq 50\%$ for women refer to Hematology for workup of hemochromatosis.

- Click [here](#) for instructions for Endocrinology referral.
- Click [here](#) for instructions for Hematology referral.

Toxins/Addictions

If patient drinking more than six alcoholic drinks a day for 5 to 10 years or uses cocaine or methamphetamine consider addictions referral.

- Click [here](#) for instructions for Addictions Medicine referral.

Cause Identified or Above Causes Ruled Out

Proceed to Heart Failure Management Algorithm

Need Help? 1) Send a HF E-consult ([link](#)); you will receive an answer from HF specialist within 6-24 hours (the specialist will also help you determine if the patient should be seen for in-person evaluation)
2) If you have questions about heart failure guidelines-directed medical therapy optimization and adjustments and need to discuss it over the phone, Call 613-544-3400 extension #2569 or #3352 Monday-Friday 9 am to noon time to speak to a HF nurse practitioner

OUTPATIENT HEART FAILURE MANAGEMENT ALGORITHM

Patient FAQs ([link](#))

Heart Failure Diagnosed/Clinically suspected

Assess Suitability to Remain on Pathway

Alarm Features

- Worsening dyspnea (*despite diuretic escalation*).
- Edema + Weight gain (2kg in 2 days or 2.5kg in 1 week).
- Symptomatic low BP (SBP less than 90 mmHg).
- Persistent postural lightheadedness (*despite decreasing diuretics*).
- Unexplained tachycardia/increased HR *above baseline*

Patient requires in-person visit + blood work within 1-2 week.

If patient is elderly or frail, consider home and community care

[Click here](#) for community resources

Assess Patient

- Confirm diagnosis ([see Dx pathway](#))
- Presence of red flags?
- Degree of shortness of breath ([NYHA Class](#))
- Volume overload symptoms (PND, orthopnea, abdominal and/or leg swelling)
- Hypovolemia symptoms (orthostatic dizziness, excess thirst, concentrated urine, low BP, decreased weight)
- Change in symptoms (better/worse?)
- BP and HR (sitting and standing), weight, O2 sat
- JVP, crackles, ascites, peripheral edema.
- Serum creatinine/eGFR, sodium, potassium.
- NT-proBNP
- Echocardiogram

Red Flags

- SOB at rest
- Hypoxic
- Signs of PE or MI
- Prolonged chest pain
- Fainting
- Confusion

Call EMS

Diuretics

Diuretics to Improve Congestion (*only if patient is volume overloaded*)

- I.e. Furosemide (Lasix) - Suggested starting dose for Lasix-naïve patients is **20mg daily for eGFR >60**, **40mg daily for eGFR 30-60** and **60mg daily for eGFR <30**.
- Titrate to minimum effective dose to maintain euolemia.

Evidence Based Standard Pharmacotherapy

Initiate standard therapies as soon as possible. Titrate every 2-4 weeks to target or maximally tolerated dose of each medication by 3 - 6 months from initial assessment.

Consider referral to cardiac rehab for both preserved and reduced ejection fraction ([link](#))

Heart Failure with Reduced Ejection Fraction (LVEF ≤ 40% and Symptoms)

Step #1 - Start Entresto (or ACEi/ARB) ([Details](#))

~4 Weeks
Start Entresto 24/26mg BID (if eGFR ≥30) and titrate up every 2 weeks if tolerated (monitor BP, Cr/K+) to target 97/103mg BID.

Step #2 - Start Beta Blocker ([Details](#))

~6 Weeks
Start Bisoprolol 2.5mg daily and titrate up every two weeks if tolerated (monitor BP and HR) to target 10mg daily.

Step #3 - Start MRA (ie Spironolactone) ([Details](#))

~4 weeks
Start Spironolactone 12.5mg daily (if eGFR ≥30) and titrate up in 4 weeks if tolerated (monitor BP, Cr and K+) to target 25mg daily.

Step #4 - Start SGLT2 Inhibitor ([Details](#))

~2 weeks
Start Empagliflozin 10mg daily or Dapagliflozin 10mg daily (if eGFR ≥20).

Note: It is better to be on small doses of each class of these medications than a full dose of one class only.

Heart Failure with Preserved Ejection Fraction (LVEF > 40% and Symptoms)

Step #1 - Start SGLT2 Inhibitor ([Details](#))

Start Empagliflozin 10mg daily or Dapagliflozin 10mg daily (if eGFR ≥20).

Step #2 - Lifestyle and comorbidity management

(i.e. OSA, DM, HTN, obesity, anemia.)

Consider the following medications as first-line to control BP:

- MRA (i.e. Spironolactone)
- ARB (i.e. Candesartan)
- Beta-Blocker (i.e. Bisoprolol) if EF 40-49%.

Step #3 - Diuretics for Symptoms

Titrate diuretics to lowest dose effective to maintain euolemia.

Reassess

Patient on Target or Maximally Tolerated Doses of Standard Therapy

- Repeat echo in 3 months after reaching target or maximally tolerated doses.

Follow-Up

Arrange Follow-Up

- Follow-up minimum of 3 months for diuretic assessment and screening for alarm features/red flags.
- Repeat echocardiogram every 1-3 years or if change in clinical status.

Referral Indications

Indications for Referral and Appropriate Referral Destination

Community Cardiology

- HF with new or worsening chest pain concerning for ischemia.
- HF with persistent NYHA class III/IV (advanced symptoms) despite optimal medical therapy (consider e-consult for second line treatments).
- HF with persistent HR <50 or systolic BP <90 with symptoms.
- Persistent congestive symptoms despite high diuretic dose (≥Lasix 160 mg daily).

[Click here](#) for Community Cardiology referral instructions.

Heart Function Clinic

- ≥2 hospitalizations for decompensated heart failure in the past year.
- Moderate-to-severe or severe valvular heart disease for discussion of valve intervention/optimized medical management.
- Patients with LVEF less than 35% after ≥3 months of optimal medical therapy to consider implantable cardioverter defibrillator (ICD) and/or cardiac resynchronization therapy (CRT).
- HF with worsening kidney disease (baseline eGFR<30 or increase in creatinine by ≥30% with diuresis or medical therapy).

[Click here](#) for Heart Function Clinic referral instructions.

Need Help? 1) Send a HF E-consult ([link](#)); you will receive an answer from HF specialist within 6-24 hours (the specialist will also help you determine if the patient should be seen for in-person evaluation)

2) If you have questions about heart failure guidelines-directed medical therapy optimization and adjustments and need to discuss it over the phone, Call 613-544-3400 extension #2569 or #3352 Monday-Friday 9 am to noon time to speak to a HF nurse practitioner

List of Providers Offering Transthoracic ECHOCARDIOGRAMS and ECGs

KINGSTON

Kingston Health Sciences Centre

[Requisition Link](#)



 **For Healthcare Providers**
Kingstonhsc

Kingston Heart Clinic

[Requisition Link](#)



Apex Heart Centre

[Requisition Link](#)



BELLEVILLE

Belleville General Hospital

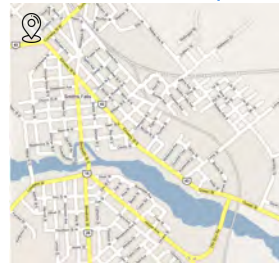
[Requisition Link](#)



PERTH AND SMITH FALLS

Perth and Smith Falls

[Requisition Link](#)



BROCKVILLE

Brockville General Hospital

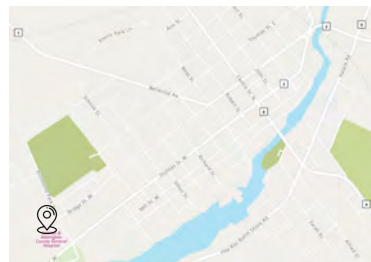
[Requisition Link](#)



NAPANEE

Napanee General Hospital

[Requisition Link](#)



OTHER OPTIONS

Life Labs ECG Requisition: [Requisition Link](#).

GENERAL CARDIOLOGY REFERRALS

Kingston Health Sciences Centre (Kingston): Fax **613-544-9560**

Apex Heart Centre (Kingston): [Referral Link](#).

Kingston Heart Centre (Kingston): [Referral Link](#).

Kingston Cardiology Associates (Kingston): [Referral Link](#).

Belleville Cardiology Services Group: [Referral Link](#).

List of Providers Offering Transthoracic CHEST X-RAYS

KINGSTON

Kingston Health Sciences Centre

[Requisition Link](#)



+ Imaging referral forms
Kingstonhsc

Kingston Imaging Services

[Requisition Link](#)

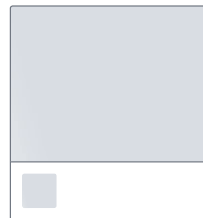


Kingston Imaging Services (KIS): X-Ray & Ultrasound Services
Kingston Imaging Services (KIS):
X-Ray & Ultrasound Services

BELLEVILLE

Belleville General Hospital

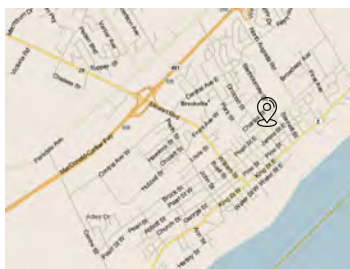
[Requisition Link](#)



BROCKVILLE

Brockville General Hospital

[Requisition Link](#)

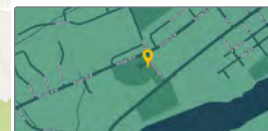
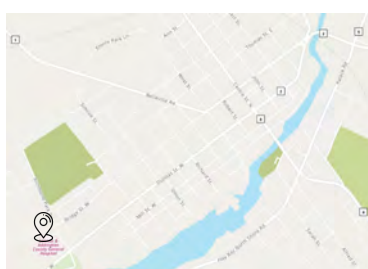


Patient Referral Forms and Requisitions
Brockvillegeneralthospital

NAPANEE

Napanee General Hospital

[Requisition Link](#)



LACGH Patient Requisition Forms
Napanee

List of Providers Offering **Stress/Dobutamine Echocardiograms**

Kingston Health Sciences Centre: [Requisition Link](#)

Apex Heart Centre: [Requisition Link](#)

Kingston Heart Clinic: [Requisition Link](#)

Belleville General Hospital: [Requisition Link](#)

If patient not expected to be able to achieve 85% of maximum predicted heart rate on a treadmill then consider ordering [dobutamine](#) stress echocardiogram

If patient has [left bundle branch block](#) on ECG please order [persantine MIBI](#) (see below)

List of Providers Offering **Stress/Persantine MIBI**

Kingston Health Sciences Centre: [Requisition Link](#)

Kingston Heart Clinic: [Requisition Link](#)

If patient not expected to be able to achieve 85% of maximum predicted heart rate on a treadmill then consider ordering [persantine](#) MIBI.

If patient has patient has [asthma](#) please order exercise or dobutmine stress echocardiogram.

List of Providers Offering **Holter Monitors**

Home Cardiographics: [Requisition Link](#)

Apex Heart Centre: [Requisition Link](#)

Kingston Heart Clinic: [Requisition Link](#)

Belleville General Hospital: [Requisition Link](#)

Source: [CCS/CHFS 2021 Heart Failure Guidelines Update](#)

ARNI/ACEi/ARB	Angiotensin Receptor-Neprilysin Inhibitor (ARNi)			More Information
	Medication Name	Starting Dose	Titration	Target Dose
	1. Sacubitril / Valsartan (Entresto)	24mg / 26mg PO BID *49mg / 51mg PO BID	q2 weeks	97mg / 103mg PO BID
	<p>** Start 49mg / 51mg PO BID if patient previously on moderate-high dose of ACEi/ARB (i.e. >10mg/day of Enalapril or >160mg/day of Valsartan.</p> <ul style="list-style-type: none"> Concomitant use of ACEi is contraindicated. Allow 36-hour washout period when switching from ACEi to ARNI. No washout period is necessary when switching from ARB. Note recommended in patients with prior history of ACEi induced angioedema. For renal dosing consult appropriate drug reference manual. It is recommended to check renal function/electrolytes after starting. 			
Beta Blocker	Angiotensin-Converting Enzyme Inhibitors (ACEi)			More Information
	Medication Name	Starting Dose	Titration	Target Dose
	1. Perindopril 2. Ramipril 3. Enalapril 4. Lisinopril 5. Trandolapril	2 - 4mg PO daily 1.25 - 2.5mg PO <u>BID</u> 1.25 - 2.5mg PO <u>BID</u> 2.5 - 5mg PO daily 1 - 2mg PO daily	q1 - 2 weeks q2 weeks q1 - 2 weeks q1 - 2 weeks q1 - 2 weeks	4 - 8 mg PO daily 5mg PO <u>BID</u> 10 - 20mg PO <u>BID</u> 20 - 35mg PO daily 4mg PO daily
	Angiotensin Receptor Blockers (ARBs)			More Information
	Medication Name	Starting Dose	Titration	Target Dose
MRA	1. Candesartan 2. Valsartan	4 - 8mg PO daily 40mg PO <u>BID</u>	q1 - 2 weeks q1 - 2 weeks	32mg PO daily 160mg PO <u>BID</u>
	Beta Blockers			More Information
	Medication Name	Starting Dose	Titration	Target Dose
	1. Bisoprolol 2. Carvedilol 3. Metoprolol (<u>CR/XL</u>)	1.25mg PO daily 3.125mg PO <u>BID</u> 12.5 - 25mg PO daily	q1 - 2 weeks q1 - 2 weeks q1 - 2 weeks	10mg PO daily 25 - 50mg PO BID 200mg PO daily
SGLT2i	Mineralocorticoid Receptor Antagonists (MRAs)			More Information
	Medication Name	Starting Dose	Titration	Target Dose
	1. Spironolactone 2. Eplerenone	12.5mg PO daily 25mg PO daily	2 - 4 weeks 4 weeks	25 - 50mg PO daily 50mg PO daily
	Sodium-Glucose Transport Protein 2 Inhibitors (SGLT2i)			More Information
	Medication Name	Starting Dose	Titration	Target Dose
	1. Dapagliflozin 2. Empagliflozin	10mg PO daily 10mg PO daily	N/A q4 - 12 weeks	10mg PO daily 10 - 25mg PO daily

*It is recommended that renal function and electrolytes be monitored after starting all medications except beta-blockers.

**Please see drug reference manual for appropriate monitoring and renal dosage of medications.

Patient Frequently Asked Questions/Conversation Guide

What is heart failure?

Heart failure (also known as congestive heart failure) is a common condition. Despite its name, heart failure does not mean that your heart will fail and suddenly stop working. Rather, heart failure means the heart is either weak or too stiff to provide enough blood to the rest of the body. The heart pumping (squeezing) function is measured by what we call "ejection fraction". Basically, the ejection fraction is the percentage of blood that the heart pumps in every beat. Normal ejection fraction is between 55-60% (NOT 100%). Your body depends on the heart's pumping action to deliver oxygen- and nutrition to the rest of the body. When the cells are nourished properly, the body can function normally. With heart failure, the weakened heart can't supply the cells with enough blood. This results in fatigue and shortness of breath and some people have coughing. Everyday activities such as walking, climbing the stairs, or carrying groceries can become very difficult. Heart failure is also sometimes called congestive heart failure because fluid can start to build up in various parts of the body.

Some patients can have heart failure even if their ejection fraction is normal. This is caused by heart stiffness and inability to relax properly. As you can imagine, if you try to inflate air into a stiff balloon, it will not accommodate all the air you try to inflate. In the body, if the heart is stiff, it cannot accommodate the blood that it receives from the lungs, legs, and rest of the body. The blood will then move backwards into the lungs, filling them with water which causes shortness of breath. It can also back into the legs, causing leg swelling. Sometimes, can back into the belly, causing bloating, belly distention, loss of appetite, and in some situations nausea. Some patients complain of shortness of breath at night, because when they lie flat the gravity brings more blood to the heart from the legs and rest of the body which causes accumulation of lung water.

Common Symptoms of heart failure

- Weakness
- Difficulty walking or doing everyday activities
- Shortness of breath
- Dizziness
- Sleepiness or trouble thinking
- Coughing
- Trouble lying flat
- Weight gain
- Swelling in the abdomen or stomach sickness
- Leg and ankle swelling
- Waking at night short of breath

Causes of Heart Failure

- High blood pressure
- Blood clots or plaque in the arteries of the heart (previous heart attacks)
- Valve problems
- Genetic conditions
- Virus infection of the heart
- Alcohol and some types of toxic medications
- Exposure to some cancer medications (chemotherapy) and radiation

It often takes years for heart failure to develop. Heart failure is a serious condition, but has available treatments. **Many people with heart failure can lead a full, enjoyable life when the condition is managed with medications and healthy lifestyle changes.** It's very important to understand and follow the treatment plan developed by your health care team. When you make healthy changes, you can feel a lot better and enjoy life much more!

Patient Frequently Asked Questions/Conversation Guide

What is the prognosis of my condition? What are the chances that I would die of heart failure??

Heart failure is *not a death sentence*! With medications and lifestyle modification, many patients can live a long life. The prognosis (chance of survival) varies substantially based on many factors including the degree of heart weakness, the burden of symptoms, kidney function, anemia, ability to take heart medications etc. Even with the knowledge of all of the above factors, accurate prediction of survival is difficult/at times impossible. Rather than becoming preoccupied with predictions, many patients find solace in the fact that there are many things **THEY can** do to improve their condition and lead fulfilling lives. See the next question.

Is there anything I can do to improve my condition?

There are many things you can do to help improve your condition. These include regular moderate physical activity (like walking – brisk walking 4-5 times a week), eating a heart healthy diet that is low in salt, reducing stress and anxieties, quitting smoking and decreasing alcohol consumption. Many patients can benefit from formal exercise “cardiac rehab” programs. Remembering to take your annual flu shot, COVID boosters when indicated and pneumonia shots are also important. Finally, it is crucial to take your medications as prescribed to prevent progression of the disease.

Below is a list of practices recommended for patients with heart failure:

- Taking your medication as prescribed.
- If you smoke, quit. And avoid second-hand smoke. For free resources, visit the Smoking Treatment for Ontario Patients
- Walking 4-5 times a week.
- Avoid alcohol if you have been told that your heart failure is caused by excess alcohol use. Otherwise, limit your alcohol intake.
- Controlling your blood glucose and blood pressure.
- Choosing less salty foods. Follow a heart healthy diet.
- Measuring and recording your blood pressure, heart rate and weight daily (not essential for all patients, do it if advised by your doctor)
- Getting a yearly flu vaccine.
- Getting a pneumonia vaccine (pneumovax) every 10 years
- Get good sleep and rest.
- Manage stress
- Join cardiac rehabilitation if possible.

Can I have sex?

It is normal for patients with heart failure (and their partners) to feel anxious about resuming sexual activity. Sexual activity is not dangerous to your heart. In general, if you can walk up two flights of stairs or walk briskly, you can resume your regular sexual activity. The following tips may be helpful:

- Engage in sex when you are well-rested and relaxed.
- Avoid sex after eating a big meal or drinking alcohol.
- Have sex in a comfortable room that is not too hot or too cold.
- Choose less stressful positions and techniques.

Can I drink a glass of wine?

For most patients with stable heart failure, drinking 1 glass of wine every once in a while, (few days a month for example) should be okay as long as you keep track of the total fluids that you drink trying not to exceed 2 liters per day. In some cases, heavy alcohol use is the cause of heart failure therefore your health care team may advise you to abstain from alcohol completely. Also, if you are having worsening symptoms of heart failure (shortness of breath with minimal exertion and increasing leg swelling), then it is best to avoid alcohol until your symptoms improve.

Patient Frequently Asked Questions/Conversation Guide

Will I be on medications for the rest of my life? I feel fine, why does my doctor keep adding more medications for my heart?

Heart failure patients will need multiple medications. Some medications are intended to relieve shortness of breath/swelling and some are used to strengthen the heart. Even after heart function recovery, most patients will need these medications for the rest of their lives to keep their heart strong. Do not be discouraged, however! After adequate treatment of heart failure, most patients feel much better, have more energy, become less short of breath and are able to enjoy their lives. Taking medications become part of their routine and does not interfere with their activities. Also, once the body adopts to taking these medications, the side effects which may have been felt in the beginning often disappear. Some heart failure patients work in heavy manual jobs like construction, farming, and athletics and are not limited by their disease (as long as it is well controlled with medications and receive clearance from their doctors).

Remember, your health care team has carefully chosen the types of medications and dosages you need based upon your present condition. It is important to recognize that not all patients with heart failure take the same medications.

The goal of heart failure treatment is to help you live longer, and enjoy better quality of life. These medications can lessen tiredness (fatigue), shortness of breath and swelling. It can also help improve your energy level so you can be physically active. Of course, each medication has some potential side effects, also. Your doctor will counsel you about them before starting each treatment.

Here are some examples of medication classes that may be prescribed for you:

Angiotensin Converting Enzyme (ACE) Inhibitors (e.g. perindopril, ramipril, enalapril, etc): widens blood vessels, lowers blood pressure, and decreases the heart's workload.

Angiotensin Receptor Blockers (ARB) e.g. valsartan, candesartan, irbesartan, etc: widens blood vessels, lowers blood pressure, and decreases the heart's workload.

Angiotensin-Receptor Neprilysin Inhibitor (ARNI) e.g. sacubitril/valsartan (Entresto): widens the blood vessels, reduces blood pressure, reduces sodium (salt) retention, and decreases the heart's workload.

Beta-Blockers e.g. metoprolol, carvedilol, or bisoprolol: lowers blood pressure, slows heart rate and reduces the heart's workload.

Funny channel blocker e.g. ivabradine (Lancora): lowers the heart rate down which can improve the heart pumping function.

Diuretic e.g. furosemide (Lasix), metolazone, or acetazolamide: helps your body get rid of excess water and sodium.

Mineralocorticoid receptor antagonists (MRA) e.g. spironolactone or eplerenone: a type of diuretic that helps eliminate extra salt and fluid while keeping potassium. It can improve the heart function and reduce scarring (known as fibrosis)

SGLT2 inhibitor e.g. empagliflozin and dapagliflozin: a diabetes medication that can be used to treat heart failure. It causes us to eliminate excess sugar and sodium in the urine. Also, has other functions including fighting inflammation in the body.

Nitrate with hydralazine: two medications that work together to widen blood vessels, lower blood pressure and reduced the heart's workload.

Digoxin: helps your heart pump with more force and can slow the heart down.

Patient Frequently Asked Questions/Conversation Guide

I am on way too many medications! How can I keep track?

It is normal to be overwhelmed by the number of pills you will be taking for your heart. Over time, this will be much more manageable. Below are a few tips to help you, and your caregivers, navigate this lifestyle change.

When you receive a prescription from the doctor, make sure you know:

- Why is it being prescribed?
- When and how should it be taken?
- How long will you need to take it?
- What side effects should you expect to have?
- What should you do about the side effects?

When you pick up your medication, ask your pharmacist to:

- Explain the best way to take the medication
- Describe what is written on the label
- Provide written information about the medication

Try to use the same pharmacy for all of your prescriptions. It is important for your pharmacist to have a complete list of your medications. Your pharmacist can then evaluate whether your medications can be safely taken together.

Carry your medication list with you and bring it to all visits with your doctors. Make sure the list includes:

- All of your medications, as well as any vitamins, supplements and herbs you are taking (include the dosage you are taking, not just the name of the medication)
- Your allergies, immunizations and pharmacy phone number

Tips to help you remember to take your medications:

- Take your medications at the same time each day.
- Associate your medications with daily activities, like: Brushing your teeth, meal times, or bedtime
- Use a pill organizer (dosette or blister pack) with different compartments for different times of the day. Keep a one-day supply of your medications in your handbag or at the office.
- If you feel that you take too many pills, ask your doctor or pharmacist if you can stop some non-essential ones (e.g. vitamin pills, calcium, Coenzyme Q, glucosamine etc)
- Put a note on your calendar as a reminder to pick up your prescription refills.
- Make sure you have enough medication to last until your next prescription refill. Never allow yourself to run out!

Do not store your medications in hot or humid areas, such as the bathroom or glove compartment of your car. Heat and humidity could damage your drugs.

Take the medications as they are prescribed by your doctor and follow the directions for your prescriptions carefully. If you have concerns, discuss them openly and honestly with your doctor. If you experience troublesome side effects, you may be able to take a different kind of medication.

When taking certain medications, your doctor may request blood tests to check the functioning of your kidneys and the levels of sodium and potassium in your blood.

Patient Frequently Asked Questions/Conversation Guide

How much activity is too much, will I harm my heart if I go up and down the stairs?

Having heart failure does not mean restricting activity. In fact, exercise is essential to help strengthen the heart. It helps increase energy levels and makes the whole body healthier. Studies show that moderate exercise helps decrease the risk for needing hospitalization for worsening heart failure.

Benefits of exercise

- Exercise is an important part of controlling your heart failure. Regular physical activity helps you:
- Feel less tired
- Feel less short of breath
- Sleep better
- Manage glucose levels
- Have more energy to do what you love doing
- Control stress and anxiety, and feel happier
- Have less difficulty with daily activities
- Feel more confident and in control

How to Get Started with Walking

Exercise should be fun, easy to do and become part of your everyday life. Walking is one of the best exercises for improving your health. Begin with short periods of walking at a slow pace. Gradually increase the length of time before increasing your speed. Below are suggested options:

Option 1

DURATION OF WALK

Week 1-2 5-10 minutes

Week 3-4 10-15 minutes

Week 5-6 15-20 minutes

Week 7-8 20-30 minutes

Option 2

If you are unable to walk five minutes without stopping, you would benefit from interval training. Alternate two to five minutes of walking with two to five minutes of rest. Repeat this pattern as many times as you are able to. Gradually decrease the amount of time you rest between intervals.

Exercise Guidelines (use when beginning to exercise, once you are more comfortable, you can progress to a more intense level):

- Light conversation should be possible while exercising.
- Start/finish with a warm-up/cool-down (e.g., slower walking, seated or standing exercises).
- Walk on level ground and avoid hills.
- Wait at least one hour after a meal before exercising.
- Exercise at a time of day when you feel rested— for many people it is the morning rather than afternoon/evening.
- Avoid extreme heat or cold. Consider walking indoors in a mall, using a treadmill (with no incline) or riding a stationary bicycle (with little or no tension).
- Count the liquids you drink during exercise as part of your daily fluid amount.
- Avoid heavy lifting or pushing.
- You should reach your resting heart rate within 10 minutes of completing exercise. If not, reduce the time or intensity of exercise next time.

Patient Frequently Asked Questions/Conversation Guide

How much activity is too much, will I harm my heart if I go up and down the stairs?

When to Stop an Activity

- Always listen to your body. Stop the activity if you feel:
- Short of breath while carrying on a conversation
- Weak or dizzy
- Sick to your stomach (nauseated)
- Your heart is pounding or racing
- Any discomfort
- Stop and rest. Sit in a comfortable chair. If these symptoms persist, call 911.

Tips for Staying Active

- Include a variety of activities that you enjoy.
- Any amount of activity is better than none at all.
- Stick with it until it becomes a habit.
- Wear comfortable clothing and shoes.
- Invite a friend to join you for a walk.
- Schedule exercise into your day.
- Set reasonable goals for yourself.
- Keep an exercise journal to track your progress.

How to Balance Activity and Rest

If you are tired the day after an activity, you have probably tried to do too much. The following strategies can help you save up energy for activities you plan to do in the next day or week:

Prioritize: Consider which tasks can be done by someone else or removed from your schedule. Learn to recognize your personal limits.

Plan: Space out activities. Alternate easy activities with ones that are more demanding. Carry out activities that require the most energy at the time of day when you are at your best. Some people find they can do more if they rest for an hour during the day. This can be napping or simply quiet time (listening to music or reading). Consider it catch-up time for your heart.

Pace: Break down hard jobs into smaller tasks and take regular breaks. Learn to anticipate fatigue so that you can rest before you are tired.

Position: If you sit to perform a task, you will use 25% less energy than if you stand. Avoid unnecessary bending or overhead reaching.

PRACTICAL TIPS (if you feel quite short of breath during your daily activities)

- Organize your time so that you take fewer trips up and down stairs.
- Double the recipe when you cook, and freeze some for another day.
- Use lightweight pots and pans for cooking.
- Consider equipment such as a shower chair, reacher and long-handled shoehorn.
- Get extra rest the day before a celebration.
- Get extra rest during times of emotional stress or illness.
- Use a weekly schedule.

Patient Frequently Asked Questions/Conversation Guide

My doctor started me on blood pressure medication, but my blood pressure is normal. Why was this done?

Many of the medications used to treat Heart Failure can also be used to treat high-blood pressure, however you do not need to have high blood pressure to benefit from these medications. The effectiveness of these medications to treat Heart Failure (with or without high blood pressure) has been demonstrated in large clinical trials.

My doctor started me on a diabetes medication (e.g. Jardiance or Forxiga), but I do not have diabetes, why was this done? And will this cause my blood sugar to be very low?

Jardiance and Forxiga are part of a key class of medications used to treat Heart Failure. In the past, they were used to treat diabetes, but new studies showed them to also treat heart failure, improve quality of life and survival in patients with heart failure. You do not need to have diabetes for this medication to be effective. Also, it is extremely rare for these medications to cause hypoglycemia (low blood sugar) in patients without diabetes.

They tell me I have blockages in my arteries causing heart failure, but I never had a heart attack. How is that possible?

Coronary artery disease is a common cause of Heart Failure. Coronary artery disease is caused by a build-up of cholesterol in the walls of the heart arteries over time. When this cholesterol build-up causes a clot to form in the artery it is called a Heart Attack. Some patients with coronary artery disease never experience a Heart Attack (or have silent heart attacks without pain). If the coronary artery disease is severe enough that it blocks blood flow down the arteries, this can cause the heart muscle to weaken over time, leading to Heart Failure.

What diet should I be on? What are strategies I can use in the kitchen to cook with low salt and still enjoy a flavourful meal? Can I ever have pizza?

The most important part of diet management is to avoid excess salt (sodium). Even foods that do not taste salty are often very high in sodium, and it is important to read the label of all foods you buy to make sure they are not high in sodium. It is recommended that you try to limit your sodium to <2,000mg/day to avoid water build up in your body. If you need help adjusting your diet then you can ask to be referred to cardiac rehabilitation program because it includes dietician support. Pizza is often very high in salt when ordered from restaurants or bought ready-made and frozen from grocery stores. Home-made pizza can be made with less salt and is often flavourful. Many patients report that using herbs and spices could often makes for a tasteful meal that is low in salt. Remember, most highly processed foods are very high in sodium and it is important to read the label carefully as they may not taste particular salty, yet still be very high in sodium.

What about driving, am I allowed to drive?

Private driving is okay for most people with heart failure. If you are unable to carry out any physical activity without heart failure symptoms, or have shortness of breath at rest, you should not drive. In small number of heart failure patients depending on other conditions they have (e.g. having a heart attack, or receiving a shock from defibrillators (the pacemakers which can provide shocks), their doctors may advise them not to drive for a certain period of time.

Patient Frequently Asked Questions/Conversation Guide

When do I need to see a cardiologist?

Your family doctor can manage your Heart Failure and will refer you to a Cardiologist if your symptoms are changing or they are otherwise concerned. If you are admitted to hospital with Heart Failure, then you may be booked to see a Cardiologist for review after discharge. In many cases, you can be safely managed by your family doctor with the guidance from cardiologists. Kingston Health Sciences Centre has provided a comprehensive protocol for your family physicians to use as a guide in managing heart failure. They also have available telephone numbers for family doctors to reach the specialists and discuss more complicated cases. Of course, the option of referral to cardiology is always available for patients who need it.

OUTPATIENT

HEART FAILURE MANAGEMENT ALGORITHM

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FACT SHEET

Title: HEART FAILURE MANAGEMENT INCENTIVE

Date: April 2008

Eligible Patient Enrolment Models (PEMs):

- ☒ Family Health Networks (FHNs)
- ☒ Family Health Groups (FHGs)
- ☒ Comprehensive Care Models (CCMs)
- ☒ Group Health Centre (GHC)
- ☒ St. Joseph's Health Centre (SJHC)
- ☒ Family Health Organizations (FHOs)
- ☒ Rural and Northern Physician Group Agreement (RNPGE)
- ☒ South Eastern Ontario Academic Medical Organization (SEAMO)
- ☒ Community Health Center (CHC)
- ☒ Community Sponsored Agreement Blended Salary Model (BSMs)

Appendix E, Section 3.2 of the Memorandum of Agreement (MOA) between the Ministry of Health and Long-Term Care and the Ontario Medical Association (OMA) includes provisions for a New Chronic Disease Management Incentive effective January 1st, 2008. Information and guidelines on how to submit for the Heart Failure Management Incentive are provided below.

- The Heart Failure (HF) Management Incentive fee code Q050A is a one hundred twenty five dollar (\$125) annual payment available to physicians in the Patient Enrolment Models (PEMs) listed above for coordinating, and documenting all required elements of care for enrolled heart failure patients. This requires completion of a flow sheet to be maintained in the patient's record that includes the required elements of heart failure management consistent with the Canadian Cardiovascular Society Recommendations on Heart Failure 2006 and 2007.
- A physician is eligible to submit for the Heart Failure Management Incentive annually for an enrolled heart failure patient once all the required elements of the patient's heart failure care are documented and complete. This may be achieved after a minimum of two patient visits.
- Physicians may choose to use the attached Heart Failure Patient Care Flow Sheet or one similar to track a patient's care. All the required elements must be recorded. It is intended that the flow sheet be completed over the course of the year to support a planned care approach for heart failure management.

The flow sheet must track the following:

- Comprehensive physical examination
- Laboratory monitoring of Na⁺, K⁺, serum creatinine and eGFR
- Patient education for modifiable risk factor reduction and self-management
- Pharmacologic management for appropriate use of first-line, symptom relief and preventive medications

Physicians will be required to coordinate care and ensure that all elements are documented in the flow sheet. Other interdisciplinary providers may assist in providing some elements of care and completing and maintaining the integrity of the flow sheet.

- To claim the Heart Failure Management Incentive, a physician may submit a Q050A fee code for an enrolled heart failure patient once per 365 day period. The Q050A may be submitted separately or in combination with other fee schedule codes once all required elements are completed.
- The Heart Failure Management Incentive (Q050A) is payable for patients enrolled with the billing physician. **Note:** In models that have group enrolment, a physician is eligible to submit and receive payment for the Q050A for patients affiliated to him/her by virtue of the physician's acknowledgement on the *Patient Enrolment and Consent to Release Personal Health Information* (E/C) form.

For more information, please contact your local Ministry office or your Ministry site team contact at 1-866-766-0266.

Need Help? 1) Send a HF E-consult ([link](#)); you will receive an answer from HF specialist within 6-24 hours (the specialist will also help you determine if the patient should be seen for in-person evaluation)

2) If you have questions about heart failure guidelines-directed medical therapy optimization and adjustments and need to discuss it over the phone, Call 613-544-3400 extension #2569 or #3352 Monday-Friday 9 am to noon time to speak to a HF nurse practitioner

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Example of Heart Failure Management Flowsheet



British Columbia
Medical Association

HEART FAILURE PATIENT CARE FLOW SHEET

This Flow Sheet is based on the Heart failure Guideline
Web site: <http://www.healthservices.gov.bc.ca/cdm/index.html>

NAME OF PATIENT	BIRTHDATE
COMORBID CONDITIONS	PHN
	DATE OF DIAGNOSIS
CRITERIA FOR DIAGNOSIS (EJECTION FRACTION BY ECHOCARDIOGRAM RECOMMENDED – SEE GUIDELINE)	

		DATE (YY/MM/DD)						
PHYSIOLOGY	REVIEW EACH VISIT	GOALS	INITIAL REVIEW (BASELINE)					
	Blood Pressure							
	Weight (diary)							
	NYHA class							
	Sodium intake							
	Fluid intake							
	Activity Level							
	MEDICATIONS/EFFECTS +/-	Target dose	ACE-inhibitor					
		B-blocker						
		ARB						
Other								
LABORATORY	On-going	Na						
		K						
		Creatinine						
EDUCATION REMINDERS	<input type="checkbox"/> Explain what heart failure is and what causes it				<input type="checkbox"/> Side effects and adverse effects			
	<input type="checkbox"/> Set goals with patient				<input type="checkbox"/> Prognosis			
CLINICAL EVALUATION	<input type="checkbox"/> How to recognize and deal with symptoms				<input type="checkbox"/> Pneumococcal Vaccination			
	<input type="checkbox"/> Self-weighing				<input type="checkbox"/> Avoid excessive alcohol			
	<input type="checkbox"/> Rationale of treatments and importance of adherence				<input type="checkbox"/> Stop smoking			
	<input type="checkbox"/> Flu Vaccination (annual) Date:				Refer to patient resource sheet and Guideline			
	VISIT 1							
VISIT 2								
VISIT 3								
VISIT 4								
NOTES								



Heart Function Clinic Referral

Referral forms cannot be processed if incomplete or missing information

If you have a management question, please fax a written consultation to us at 613-544-4152.

Referring provider	Designation	Signature	Fax	Date (yyyy/mm/dd)
Name of patient: _____ Date of birth (yyyy/mm/dd): _____				
Address: _____				
Health card: _____ Telephone number (home): _____ (cell): _____				
Type of heart failure (check all that apply): <input type="checkbox"/> HF reduced ejection fraction (EF less than 40 percent) <input type="checkbox"/> Ischemic <input type="checkbox"/> non-ischemic <input type="checkbox"/> unknown <input type="checkbox"/> HF preserved EF (EF greater than 50 percent) <input type="checkbox"/> HF mid-range EF (EF 41 to 50 percent) <input type="checkbox"/> Hypertrophic cardiomyopathy		We require the following information (check all that apply): <input type="checkbox"/> Assessment of left ventricular function (within last 3 months) by either echocardiogram/angiogram/MIBI, cardiac MRI, or MUGA <input type="checkbox"/> Lab investigations (less than 1 month) including NT pro-BNP, electrolytes, creatinine, and CBC <input type="checkbox"/> ECG within 3 months <input type="checkbox"/> Discharge summary/emergency record attached (if patient seen outside KHSC) or most recent clinic letter <input type="checkbox"/> Current summary of medical history and list of medications (if not recently discharged from hospital)		
Reasons for referral accepted by heart function clinic (check all that apply): <input type="checkbox"/> Volume management and/or diuretic adjustment (diuretic adjustment already attempted) <input type="checkbox"/> Work-up for new diagnosis of HF <input type="checkbox"/> Initiation/optimization of medical therapy <input type="checkbox"/> Recent (within 6 months) HF hospitalization or emergency department visit for HF <input type="checkbox"/> Evaluation for patients with severe HF for consideration of heart transplantation or mechanical support devices <input type="checkbox"/> Management for established or suspected cardiomyopathies (example: hypertrophic cardiomyopathy, amyloidosis, non-compaction, arrhythmogenic right ventricular dysplasia, and cardiac sarcoidosis) <p style="text-align: center;">**If your patient does not fit any of the above indications, consider referring to an internist or general cardiologist**</p>				
Abbreviations				
HF = Heart Failure		MRI = Magnetic Resonance Imaging		
EF = Ejection Fraction		MIBI = Myocardial Perfusion Imaging		
ECG = Electrocardiogram		MUGA = Multigated Acquisition Scan		
BNP = Brain Natriuretic Peptide		KHSC = Kingston Health Science Centre		
NT = N-Terminal		CBC = Complete Blood Count		



Referral Form

UNIT-2, 725 ARLINGTON PARK PLACE
KINGSTON, ON, K7M 7E4
PHONE: 613-547-5458
FAX: 613-547-6406
CONTACT@APEXHEARTCENTRE.COM

Physician/NP Name: _____

Office Address: _____

Tel: _____

Fax: _____

MOH Billing #: _____

Copy Report to: _____

Signature: _____

Date (DD/MM/YY): _____

PATIENT INFORMATION

Name: _____

Address: _____

Tel: (H) _____

(C) _____

Date of Birth: _____ ☐ M ☐ F

Health Card: _____ VN: _____

OR AFFIX STICKER

☐ Urgent

☐ Semi-Urgent

☐ Elective

Reason for Referral:

Cardiology Consultation:

☐ First available

☐ Dr. Margaret Cases, MD, FRCPC
Cardiology & Echocardiography

☐ Dr. Tina Zhu, MD, FRCPCP
Cardiology & Echocardiography

Cardiac Testing:

☐ 12-lead ECG

☐ Resting ECHO

☐ Holter: ☐ 24-48hrs ☐ 72hrs
☐ 7-days ☐ 14-days

☐ 24hrs Ambulatory BP monitor
(\$50 surcharge – not covered under OHIP)

Stress Testing:

☐ Consult if ischemia positive

☐ Treadmill exercise stress test

☐ Treadmill stress ECHO

☐ Bike stress ECHO

☐ Dobutamine stress ECHO

Subspecialty Clinic Referral:

☐ Post-Revascularization Clinic

Date of cardiac event (DD/MM/YYYY): _____

Post-revasc Echo done? ☐ Y ☐ N. LVEF: _____ %

☐ Heart Failure Clinic

Date of last Echo (MM/YYYY): _____ LVEF: _____ %.

Recent hospitalization? ☐ Y ☐ N

Date of discharge (DD/MM/YYYY): _____

Please attach past medical history, updated medications list, recent discharge summary, and any relevant testing results with consultation requests.