Practice 360º EMR HF Clinical Education and Practice Support

https://survey.alchemer-ca.com/s3/50299196/Pre-CME-Survey-Practice-360-Integrated-Heart-Failure-Guidelines-2025

Thanks for your interest in the Practice 360: Heart Failure Toolset, a collaborative initiative of eDOCSNL, the NLHS Cardiovascular institute and the Canadian Cardiovascular Society with change management support from Novagen consulting.

Land Acknowledgement

We acknowledge that the lands on which we gather, play, work and live are located in the traditional territories of diverse Indigenous groups, and acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu and Inuit of the province of Newfoundland and Labrador.

We strive for respectful relationships with all the peoples of this province as we search for collective healing and true reconciliation and honor this beautiful land together.

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Certification

This one-credit-per-hour Group-Learning program meets the certification criteria of the College of Family Physicians of Canada for up to 2 Mainpro+® credits.

Presentation and support documents will be made available, following the conclusion of this session. Information on how to access materials will be emailed to all attendees at that time.

Housekeeping

- Please ensure your first and last name are displayed for attendance purposes.
  - If you are attending with other colleagues, please also list their names.
- Please also keep your mics muted and cameras off during the presentation.
- You are welcome to ask questions through the chat feature; your question will be relayed to the speaker.
- Poll Everywhere used for interactive component of presentation

  Audience can respond at PollEv.com/fredmelindy788, as long as the activity is active.

  Audience texts FREDMELINDY788 to 37607 to join the session, then they text a response

Faculty/Presenter Disclosure: Dr. Fred Melindy

		For-profit or not-for-profit organizations(s)	Description of relationship(s)
Any direct financial relationships including receipt of honoraria	Dr. Fred Melindy	Diabetes Canada	Paid honoraria to speak on Practice 360 Project at jurisdictional events
Membership on advisory boards or speakers' bureaus	Dr. Fred Melindy	n/a	n/a

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Speaker Disclosure: Dr. Dave Harnett

		For-profit or not-for-profit organizations(s)	Description of relationship(s)
Any direct financial relationships including receipt of honoraria	Dr. David Harnett	Novartis CPD Network Association Boehringer Ingelheim	Speaker – Heart Failure Presentation
Membership on advisory boards or speakers' bureaus	Dr. David Harnett	Bayer	Advisory Board Member (Vericiguat in heart failure)

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Practice 360° Scientific Planning Committee

- Dr. Bruce Sussex
- Dr. Dave Harnett
- Mr. Rodolfo Pike NP
- Dr. Nicole Stockley

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We would like to recognize the scientific planning group for eDOCSNL on this project, including the following clinicians, who provided guidance on and content for the clinical aspects of this CME

Practice 360° Physician Education Team

- Dr. Dianne Keating-Power
- Dr. Anita Pushpanathan
- Dr. Heather Cuddy

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We would also like to acknowledge the clinical advisory group for eDOCSNL on this project, including the following physicians, who provided guidance on the and helped refine the content of the tools for the project

Agenda

- Learning Objectives
- Practice 360° Project Overview
- Why is this important to me and my practice?
- CCS/CHFS Heart Failure Guidelines implementation in NL
- Demo of Practice 360^{o} Heart Failure EMR tools
- Hands on use of Practice 360 Heart Failure Visit Template
- Reflection and Q&A
- Next Steps

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What do you like most about winter in Newfoundland and Labrador?
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Learning Objectives

- At the conclusion of this activity, participants will be able to:
  - Understand the principles and recommendations of the CCS/CHFS heart failure guidelines, including the importance of early diagnosis and treatment
  - Understand tests to diagnose heart failure
  - Learn when and how to refer for specialist care in NL
  - Discuss the role of primary care in the care of patients with heart failure in Newfoundland and Labrador
  - Use the Practice 360^{o} EMR template and clinical decision support tools for heart failure patient care during visits
  - Use the EMR and clinical decision support tools so your patients receive guidelines-informed/directed care whenever possible

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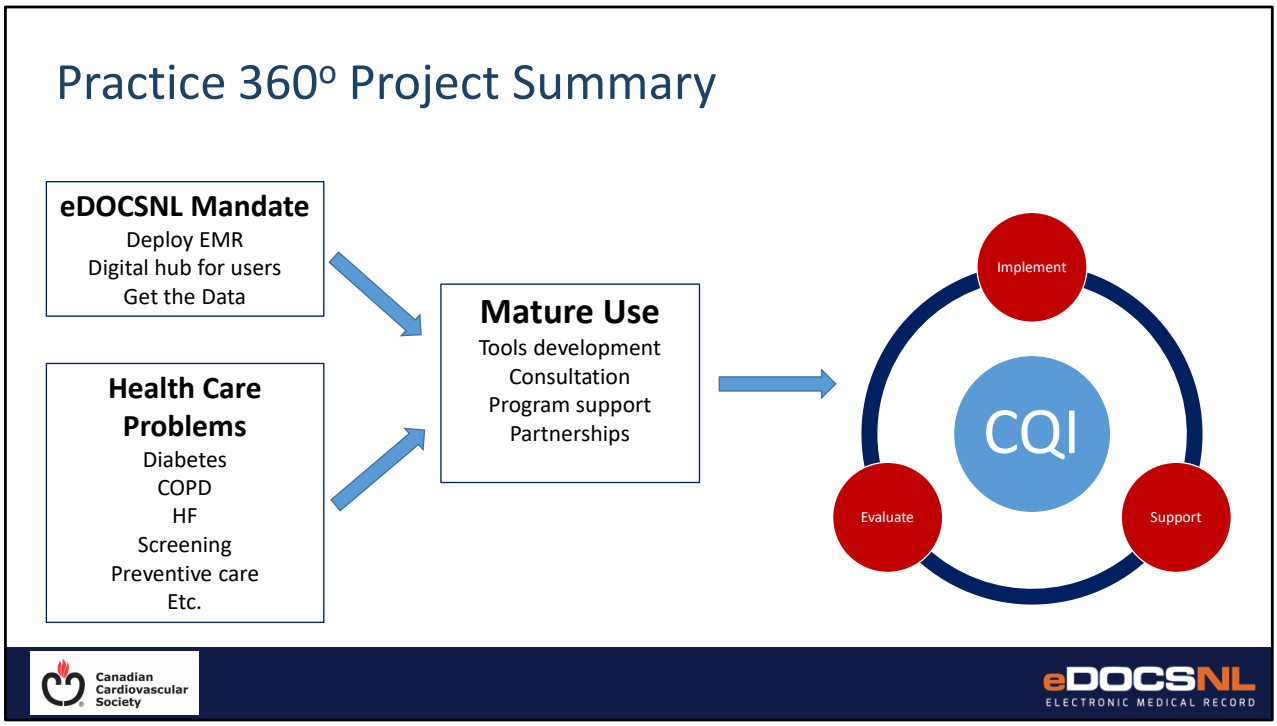
What is the purpose of the Practice 360° model?



The main goals of the EMR program are to deploy the EMR to as many clinicians in appropriate settings as possible, make the EMR a digital hub for accessing health information for the user community and to generate data that will help inform clinical practice, system level planning and reflection on the efficacy of clinical guidelines in practice.

The health care landscape is rife with opportunity for technology to enhance chronic disease management, through mature use of the intelligent features of the EMR.

The practice 360 approach has been to develop and deploy tools in consultation with clinicians, partner with guidelines based organizations and provide robust support processes to enable clinicians to use the EMR for care.

The iterative approach to tools development in response to user feedback and formal evaluation exercises makes Practice 360 an effective tool for Continuous Quality Improvement.

Practice 360 Objectives

1. To improve patient care and outcomes for heart failure
2. To facilitate implementation and adoption of HF guidelines into clinical care
3. To adopt best practices through seamless integration and prompting at point of care.
4. To evaluate impact of guidelines-directed tools in EMR and efficacy of guidelines in clinical practice
5. To create methodologies and toolsets to replicate to other provinces and EMRs

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Why use the Practice 360º Heart Failure Tools?

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To support adoption and adherence to guidelines for patient care

EMR tools developed to guide HF care and increase efficiency

Integrates with your existing documentation so you can leverage EMR features while maintaining your current workflow

One stop shop for documentation: collects and summarizes clinical information and required tasks succinctly

Reminders, alerts and prepopulated clinical data provide at-a-glance patient summary to support clinical decision making

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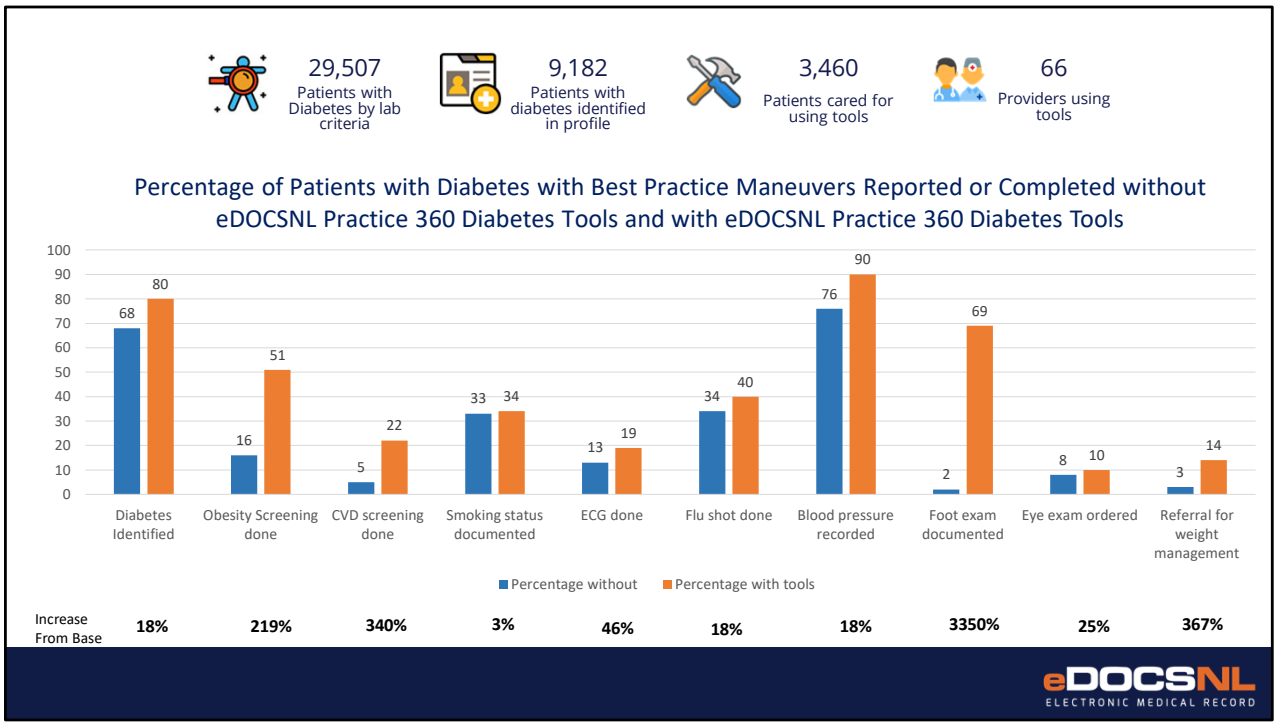
The eDOCSNL HF toolset is a result of a partnership between eDOCSNL, the NLHS cardiovascular institute and the Canadian Cardiovascular Society and supports guideline-driven care in a way that aligns with the provincial vision.

The tools represent a single point of access for everything you should need to carry out care and monitoring of your patients with HF and the intelligent features of the software provide an at-a-glance summary of your patients.

Having listened to clinician feedback we have developed a version of the tools that integrates with your existing documentation so that you can leverage the intelligent EMR functionality without disrupting your normal clinical workflow.

Clinical decision making driven by the regular use of the tools, as you will see shortly, will enable best-practice care and we are confident will improve outcomes for your patients with HF.



We know this approach works. What you see here are some results from an evaluation of our diabetes tools.

What you can see here is that, following implementation of the tools, all guidelines-based maneuvers were performed with more frequency across the nearly 3500 patients who were cared for with regular use of the tools.

What you don't see here are some of the more preliminary health outcomes measurements where we are beginning to see the A1C's of the study group improving compared to control, health system utilization decreasing and guidelines-based medical therapies being initiated at a higher and statistically significant rate.

We know that when clinicians use the tools, they change how they approach their patient care and we are observing that patients are benefitting from the result.


What are the obstacles to implementing full guidelines based treatment plans in your practice?
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NLHS Cardiology Services CME Presentation

BNP Testing and NL-Specific Considerations in the Delivery of Heart Failure Care

- Dr. David Harnett

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Background

Heart and Stroke 2022: How Canada is failing people with heart failure

- 750,000 Canadians living with heart failure
- 1 in 3 Canadians touched by heart failure
- Annual cost of 2.8 billion Canadian dollars
- Heart Failure prevalence in Canada/NL - 3.7/4.51 PER 100,000

H&S 2022
Huitema et al. 2020 CJC

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Background

Scope of the problem

- Once heart failure becomes “advanced”, 1 year survival is 60-80%
- 1 year mortality after 1st HF admission ranges between 20-30%
- 70% will be readmitted or die in the 12 months after HF admission
- Up to 75% of community-dwelling adults with heart failure die in hospital.

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8 Apr;5(2):271-278
013 adapted from Ross 2006
m Heart Assoc 2020; 9 (5

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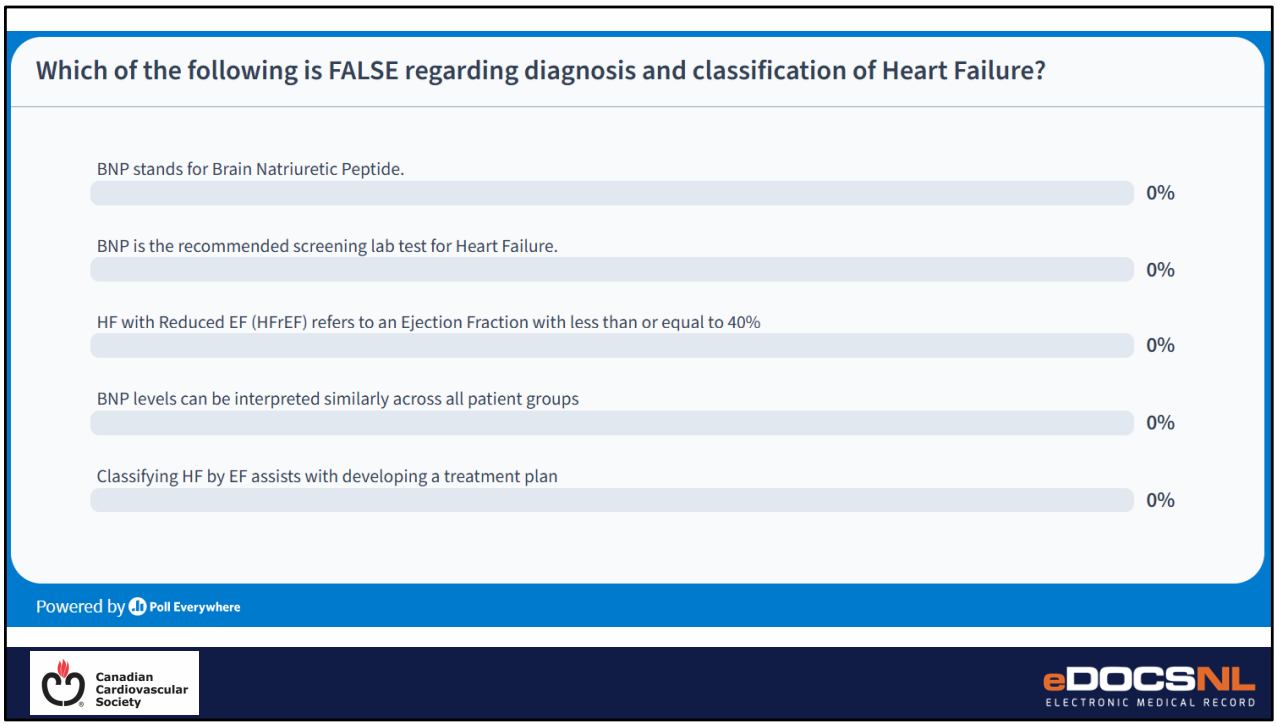
Which of the following is FALSE regarding diagnosis and classification of Heart Failure?
BNP stands for Brain Natriuretic Peptide.
0%
BNP is the recommended screening lab test for Heart Failure.
0%
HF with Reduced EF (HFrEF) refers to an Ejection Fraction with less than or equal to 40%
0%
BNP levels can be interpreted similarly across all patient groups
0%
Classifying HF by EF assists with developing a treatment plan
0%
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Diagnosis and Classification

Definition

- Universal definition of heart failure (HF)
  - Clinical syndrome with current or prior symptoms or signs consistent with a structural and/or functional cardiac abnormality (i.e. systolic and/or diastolic dysfunction, moderate/severe LVH, moderate severe valvular dysfunction) corroborated by at least one of:
    - ↑ BNP
    - Objective evidence of pulmonary or systemic congestion
  - In other words, the inability of the heart to maintain organ perfusion without the requirement of **↑ filling pressures**.

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Bozkurt B *et al. J Card Fail* 2021.

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Diagnosis and Classification

Left heart disease:
LV systolic and/or diastolic dysfunction

↓

↑ Left atrial pressure

↓ * Clinical findings of left-sided HF

↑ Pulmonary pressures

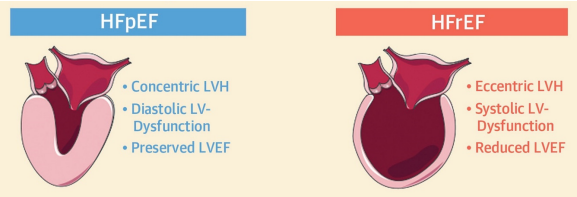
↓

RV dysfunction

↓

↑ Right atrial pressure

* Clinical findings of right-sided HF



**** Both result in ↑ filling pressures (LV end diastolic pressure)***

Adapted from: Messerli FH *et al*. *JACC Heart Fail* 2017.

Diagnosis and Classification

B-type natriuretic peptides

- Secreted primarily from cardiac myocytes.
- Primary stimulus for BNP pro-peptide release is ↑ wall stress leading to myocyte stretch with modification by local factors (neurohormonal activation, ischemia).
- Pro-peptide cleaved into two major molecules that are released into circulation and can be measured:
  - Brain natriuretic peptide (BNP, bioactive molecule)
  - N-terminal proBNP (NT-proBNP, inactive marker molecule)

• * ↑ BNP levels = ↑ filling pressures

Troughton R *et al. European Heart Journal* 2014.

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Diagnosis and Classification

Clinical uses of BNP

1. ***Initial diagnosis or exclusion of HF.***
2. Distinguish whether an increase in symptoms is related to worsening HF or deterioration of another condition (i.e. chronic obstructive pulmonary disease).
3. Prognostication in patients with known HF.
4. To guide titration of medical therapy in patients with HF (controversial).

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Brunner-La Rocca HP and Sanders-van Wijk S. *Cardiac Failure Review* 2019.

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Clinical Guidelines for Heart Failure in Newfoundland and Labrador

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PRACTICE 360 SMART TOOLS FOR CARE

Patient presents with Dyspnea
Clinical assessment performed and risk factors considered.
THINK HF: Can HF be absolutely ruled out?

Y → Workup for non-HF cause of dyspnea

N → Order BNP

BNP > 50 pg/mL?

N → HF unlikely, look for other causes of dyspnea

Y → Referral to IM or Cardiology vs direct referral to HF clinic (if direct referral criteria met)

Workup: BW, EKG, CXR, Echo

Start SGLT2 and MRA until LVEF confirmed. Consider ACEi/ARB
LVEF < 40?

N → LVEF ≥ 40 < 49 - HFmEF
LVEF ≥ 50 - HFpEF

Y → **HFrEF:** Rx remainder of Quadruple therapy and refer to VOC for GDMT

Direct Referral to Heart Function Clinic if:

BNP > 50 pg/mL **and one of**:
- HF hospitalization in last 12 months
- >/= 2 ER visits for HF in last 6 months
- Documented LVEF </= 40%

OR:

HF symptoms and BNP> 500
AND absence of severe comorbidities or poor functional status limiting benefit of clinic

Notes:

BNP - Brain Natriuretic Peptide
GDMT - Guideline directed medical therapy
HF - Heart Failure
HFrEF - Heart failure reduced ejection fraction
HFmEF - Heart failure mildly reduced ejection fraction
HFpEF - Heart failure preserved ejection fraction
LVEF - Left Ventricular Ejection Fraction
PCP - Primary Care Provider
VOC - Virtual Optimization Clinic

HF Risk Factors:

Hypertension
Ischemic Heart Disease
Valvular heart disease
Diabetes mellitus
Heavy alcohol or substance use
Chemotherapy or radiation therapy
Family history of cardiomyopathy
Smoking
Hyperlipidemia
Sleep apnea

Notes regarding BNP:

Natriuretic Peptide levels are ~ 3 times higher in patients with Atrial Fibrillation.

In ambulatory settings in patients with Atrial Fibrilliation:

BNP < 105 pg/mL - HF unlikely
BNP 105 - 240 pg/mL - HF possible but consider other diagnosis
BNP > 240 pg/mL - HF likely

Diagnosis and Classification

Three important caveats

1. BNP levels can be falsely elevated in patients on sacubitril/valsartan (Entresto), so the preferred test in these patients is NT-proBNP.

2. Natriuretic peptide levels are ~3 times higher in patients in **atrial fibrillation**. For patients in atrial fibrillation in the ambulatory care setting:
   - BNP < 105 pg/mL = HF unlikely
   - BNP 105-240 pg/mL = HF possible but consider other diagnoses
   - BNP > 240 pg/mL = HF likely

3. Natriuretic peptide levels can be falsely low in patients with obesity limiting the negative predictive value in these patients.

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Pieske B et al. Eur Heart J 2019.

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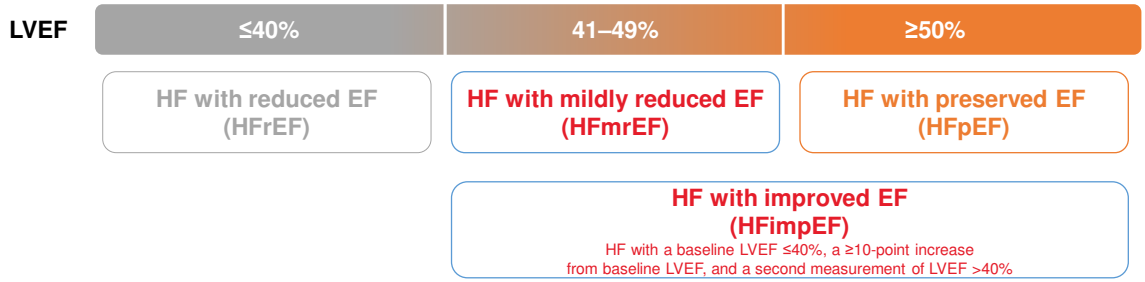
Diagnosis and Classification

The new universal definition of heart failure classifies the different phenotypes according to LVEF



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EF, ejection fraction; HF, heart failure; LVEF, left ventricular ejection fraction. Bozkurt B *et al. Eur J Heart Fail.* 2021;23:352.

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Which of the following is FALSE regarding HF treatment?

Treatment of HF differs depending on EF

0%

Quadruple therapy is critical to successful treatment for HFrEF

0%

Initiating medical therapy for the treatment HF patients with unknown EF is still recommended

0%

The correct approach to Quadruple therapy in HFrEF is to initiate one medication at a time and titrate each to maximum dose

0%

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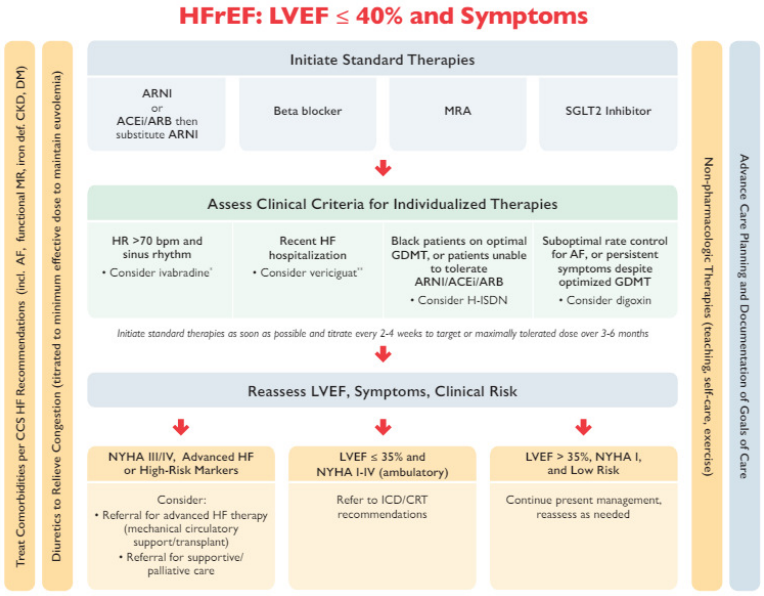

HFrEF Treatment

↓ mortality

↓ HF hospitalizations

↓ symptoms

↓ cardiac remodeling

SIMPLIFIED TREATMENT ALGORITHM FOR HFrEF

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https://ccs.ca/wp-content/uploads/2023/03/CCS_HF_Info_EN_v4.pdf

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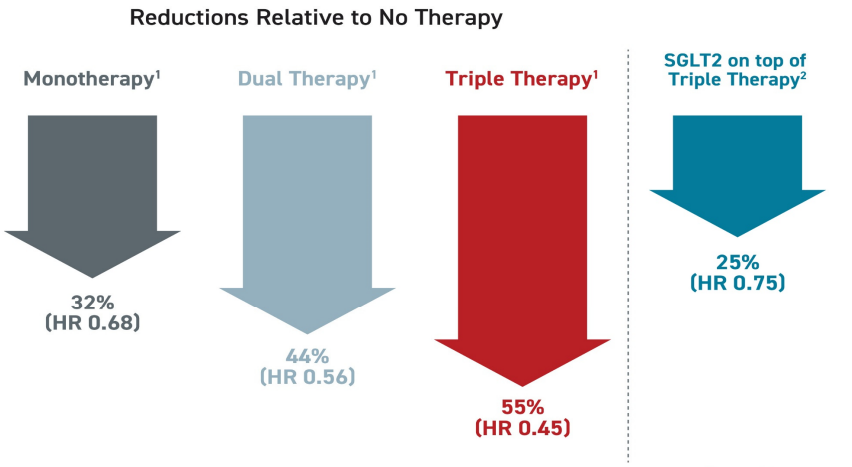
HFrEF Treatment

Initiation/Titration of Medical Therapy

- All four classes of therapies should be used in patients with HFrEF: 1. BB, 2. MRA, 3. ARNI (or ACEi/ARB), 4. SGLT2i.
- "Initiate first, then titrate: Initiation of all 4 Foundational Therapies should be attempted before dose titration."[2]

1. 2021 CCS/CHFS Heart Failure Guidelines Update
2. Miller RJ, Howlett JG, Fine NM. *Canadian Journal of Cardiology* 2021.

Cumulative Benefit of GDMT: Death and HFrEF Rehospitalization



Adapted from [1]Wirtz HS et al. *J Am Heart Assoc.* 2020;9:e015042; [2]Zannad F et al. *Lancet* 2020;396:819-829.

The Medical Xchange

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CAN-HF Registry

- Registry study evaluating the care of 943 patients admitted with acute heart failure in Canada between 2017-2020.

- Real-world data demonstrating care gaps:
  - HFrEF patients on discharge: RAAS inhibitors (63%), BB (80%), MRA (40%)
  - Patient education documented (31%)
  - Specialist follow-up (50%)
  - Referral to cardiac rehab (2%)

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Poon S *et al. CJC Open* 2022.

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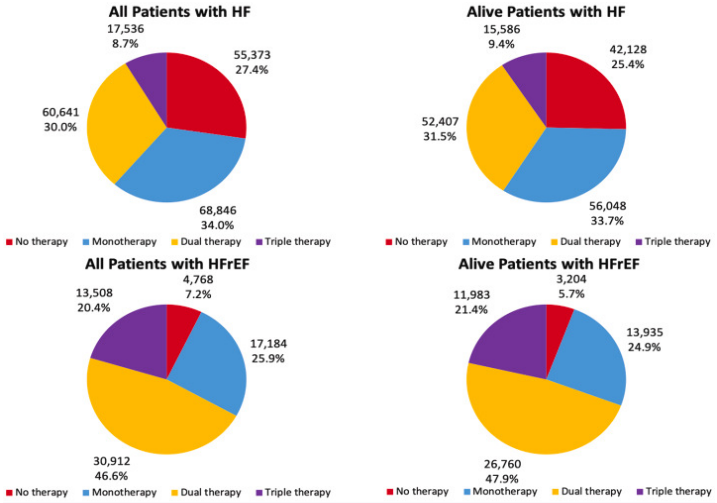
Pharmacotherapy achieved by patients with heart failure (HF) and those with HF with reduced ejection fraction (HFrEF) by 6 months post index discharged by patients with heart failure (HF) and those with HF with reduced ejection fraction (HFrEF) by 6 months post index discharge.



- Only 1/5 receive triple therapy at any dose
- Early initiation of optimal GDMT proven to increase adherence and improve mortality
- Suboptimal initiation of HF therapies after HF diagnosis (7.2% received no therapies
- Only 13.2% received optimal GDMT

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Wahid, M et al., *CJC open*, *4*(12), 1015–1023. https://doi.org/10.1016/j.cjco.2022.08.003

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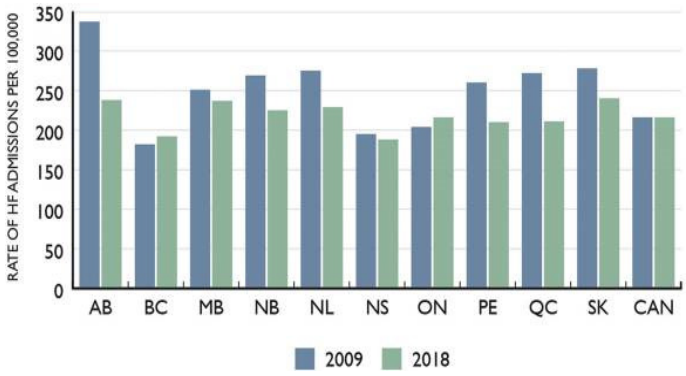

Age-standardized annual rate of heart failure (HF) admissions per 100,000 population in 2009/2010 and 2018/2019, by province.

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Poon et al., 2022 CJC

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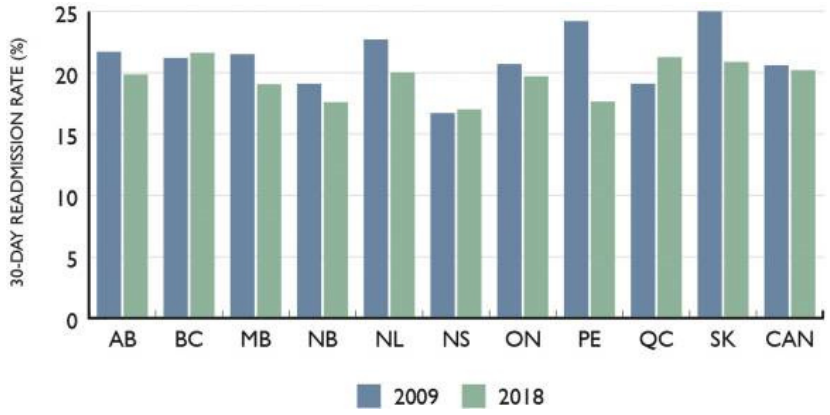

Crude rate of 30-day readmission for patients with heart failure in 2009/2010 and 2018/2019.

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Poon et al., 2022 CJC

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HFmEF and HFpEF Treatment

Heart failure with midrange (41-49%) or preserved EF (≥50%)

- Diuretics to control congestion
- SGLT2 inhibitor (EMPEROR-Preserved, DELIVER)
- MRA

- Treat hypertension; ARBs favoured particularly in HFmEF (weak evidence)
- Role of Beta blocker?

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2022 AHA/ACC/HFSA Heart Failure Guidelines.

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Heart failure with Unknown EF

- Clinical diagnosis of heart failure (i.e. suggestive symptoms + BNP > 50)
- Patient education on diagnosis and self-management strategies
- Start MRA + SGLT2i if no contra-indications
- Start ARB if hypertension present
- Start beta-blocker if there is a specific indication (i.e. angina, atrial fibrillation)
- Loop diuretic (furosemide) if volume overloaded. Will likely need to ↓ dose or discontinue as above agents are introduced and up-titrated
- Await echocardiogram to define further treatment decisions (EF ≤ 40% vs. > 40%)

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Current heart failure management in NL

- Approximately 14, 000 people living with heart failure in NL
- Two heart failure clinics in NL
  - St. John's- 710 current patients in database
    - Offers virtual optimization clinic
  - Corner Brook – 200
- Remainder of heart failure managed by primary care and specialist care

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Clinical Guidelines for Heart Failure in Newfoundland and Labrador

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Valvular heart disease
Diabetes mellitus
Heavy alcohol or substance use
Chemotherapy or radiation therapy
Family history of cardiomyopathy
Smoking
Hyperlipidemia
Sleep apnea

Notes regarding BNP:

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BNP < 105 pg/mL - HF unlikely
BNP 105 - 240 pg/mL - HF possible but consider other diagnosis
BNP > 240 pg/mL - HF likely

Self-care in heart failure

1. Daily weights – call HCP if > 4-5 lbs in 2-3 days or develop plan for prn lasix
2. Sodium reduction- <2000 mg daily
3. Take medications as directed- Talk to HCP prior to stopping meds
4. Daily symptom checker – dyspnea, fatigue, edema – same/better/worse
5. Exercise regularly- minimum 150 minutes week
6. Limit/refrain from alcohol
7. Smoking cessation
8. Vaccinations- Pneumonia/influenza/Covid

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* Other References noted on slides

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Case Study #1

- HPI
  - 63 year old presents with 2 month history of progressive dyspnea, orthopnea, PND, cough-whitish sputum and intermittent peripheral edema. Denies chest pain, Palpitations. Previously active. CXR- Previous sternotomy. MVR. Was previously seen in ER and CXR was ordered. Right lower lobe opacity demonstrated. ?Pneumonia –correlate clinically. Treated with antibiotics. No improvement. Treated with another round of antibiotics.

- History
  - MR with MV repair 2012
  - HTN –candesartan stopped lightheaded
  - Dyslipidemia
  - COVID 3 months prior

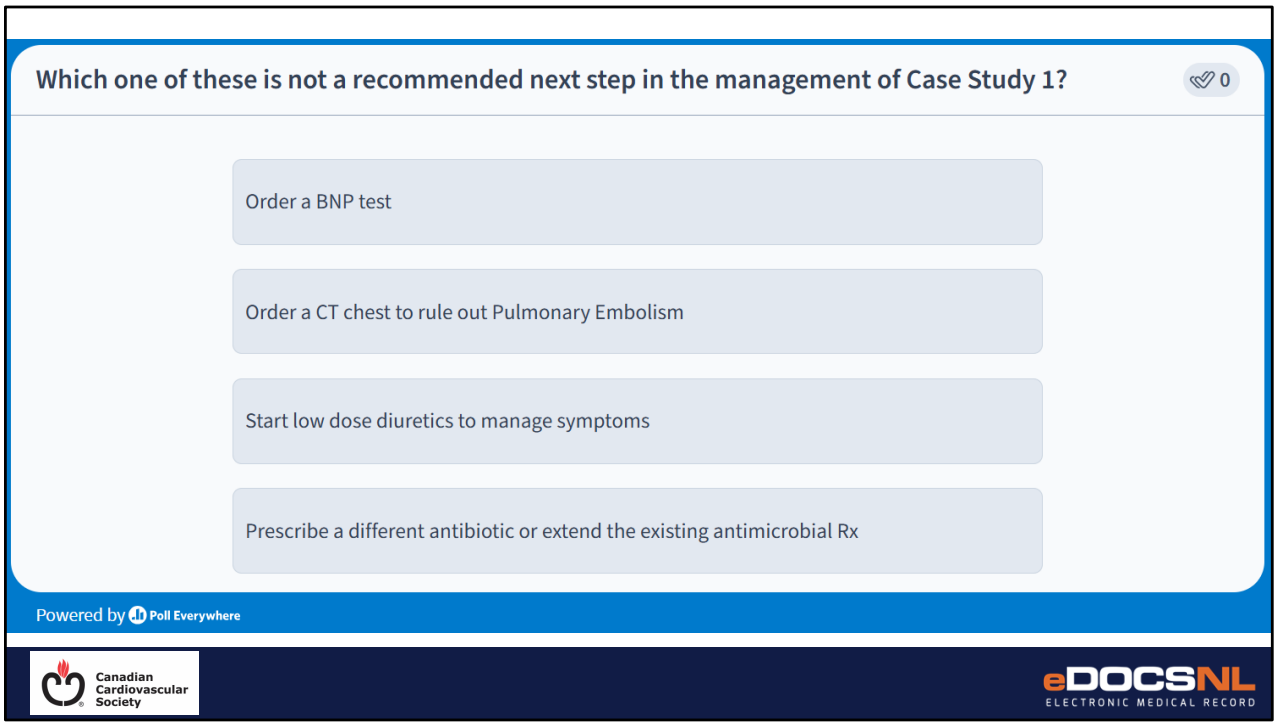
- Medications
  - Rosuvastatin 5 mg daily
  - Antibiotics Zithromax 500 mg po od X 1/52 and Moxifloxacin 400 mg po od X 14/7
  - ASA 81 mg daily

Case Study

- Physical examination
  - Height 168 cm. Weight 105.8 kg. BMI; 37.9. SBP 126/88. RR 18. RLL crepitations. JVP 8 cm ASA. Edema above ankle bilaterally. Heart sounds normal S1, Split S2. No S3/S4 or murmurs. Spo2 94%.

- Investigations: ECG: Sinus rhythm 99 LBBB (QRS 181 msec). Labs: serum K 4.3 mmol/L. Serum creatinine 89umol/L. GFR 80. Hgb 137 g/L. LDL 3.83. TSH normal.

- What to do next?


Which one of these is not a recommended next step in the management of Case Study 1?
0
Order a BNP test
Order a CT chest to rule out Pulmonary Embolism
Start low dose diuretics to manage symptoms
Prescribe a different antibiotic or extend the existing antimicrobial Rx
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Case Study #2

- 77F with longstanding dyspnea significantly worsened over the last 1 year, now having symptoms during acts of daily living presently NYHA class II.
- Sedentary lifestyle.
- Mild chronic swelling to ankles, not recently changed. No orthopnea or PND. No chest pain. No palpitations. Cardiovascular ROS otherwise negative.
- Previously attempted a sleep study 3 years ago and was unable to complete it.
- PMHx: HTN, T2DM, obesity (BMI 41), stage 3 CKD (eGFR 40-45), lifelong non-smoker, asthma
- Medications: Candesartan 32 mg daily, Amlodipine 7.5 mg daily, Allopurinol 200 mg daily, Ventolin p.r.n.

Case Study

- Physical Examination: Height 150 cm, Weight 92.2 kg, blood pressure 140/90 mmHg, heart rate 77 bpm. JVP difficult to see. Normal heart sounds without added heart sounds or murmurs. Her chest was clear. There was 2+ edema bilaterally to the knees
- Investigations: 12-lead ECG sinus rhythm 77 bpm with a left anterior fascicular block. Most recent blood work: K 4.4, Cr 111, eGFR 42, Hgb 142, LDL 2.6, A1c 6.4%, TSH normal, albumin 35. PFTs last year were normal. CXR performed recently showed no significant findings.

- BNP is ordered and returns result of 400. What to do next?


Which one of these is not a recommended next step in the management of Case Study 2?
Order echocardiogram or MUGA to assess Ejection Fraction
0%
Start low dose diuretics for for symptom management
0%
Start a SGLT2-i
0%
Consider referral to IM/Cardiology for further workup
0%
Start a beta blocker
0%
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Break

Introduction to the HF EMR Tools

- Two pathways to accommodate differences in workflow
- Focus on Clinical Decision Support
- Efficiency measures throughout templates and care plan
- Support the NLHS Cardiovascular institute in transforming HF care in NL

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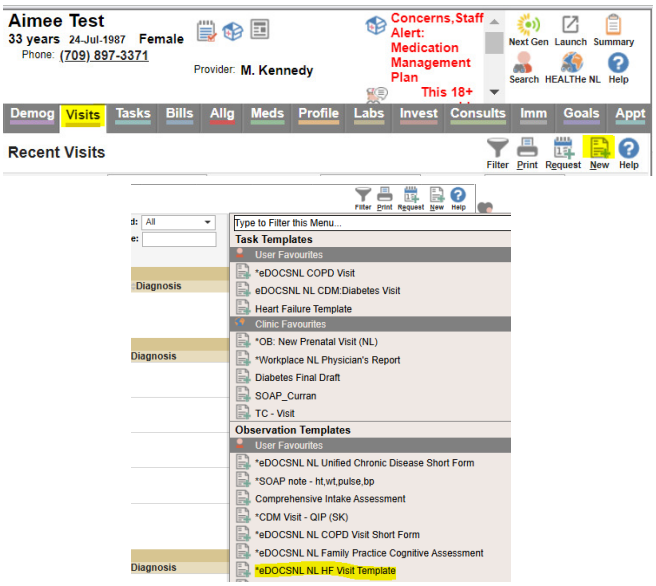
The HF tools consist of visit templates with embedded clinical decision support tools and a Care plan.

Having listened to clinician feedback from an earlier pilot we have implemented two versions of the template – one which is most useful in a dedicated and planned HF visit and another that is made to slide in to your current documentation practices and features some screening and pre-diagnosis clinical decision support functionality. We will explore the features of the tools first and then look at how they can be used in documenting and managing the clinical cases.

This presentation will have a series of screen shots related to a Heart Failure visit in the Primary Health Care setting. We will highlight some of the features added to this documentation toolset that will trigger additional prompts and recommendations to aid in management of Heart Failure. All of the screenshots are from Test systems so may not look exactly like your EMR. We also discover new things about these tools daily and are continuously making improvements. As you work with the tools and even as you see them presented tonight, some small things may change and fixes occur as we get a better understanding of evolving clinician needs.

HF Visit Template – Long Form

The visit template can be accessed as you would any other documentation template in your system and can be built into an appointment type to launch automatically if desired.



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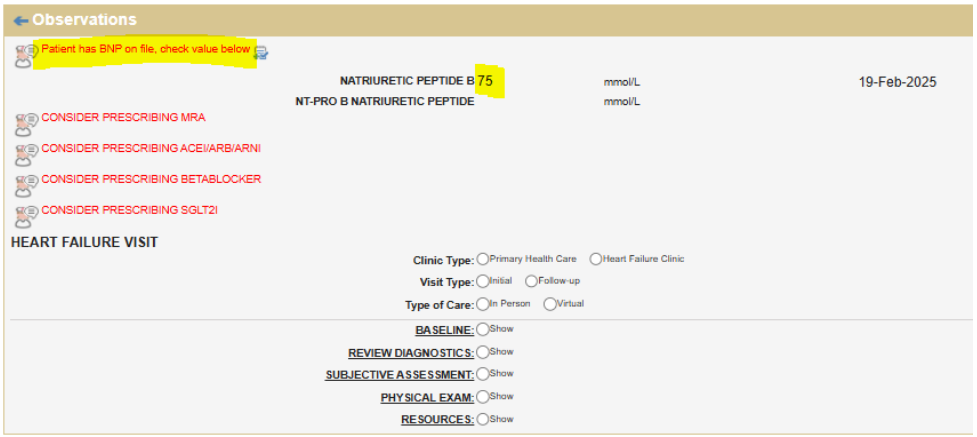
The long form visit template can be accessed in the same way as any other documentation template you would use for visits in your EMR.

The template can be accessed by clicking with the right button of your mouse the “New” Icon when you are in the “Visit” tab in the patient’s chart and selecting the “***eDOCSNL HF Visit Template***” template you see highlighted here.

The template will only appear in this list when it has been favorited, please reach out to us if you are having trouble doing this, supporting documentation will also be posted to edocsnl.ca.

Template Overview



- BNP Trigger indicates BNP present on this patient's record in the EMR.

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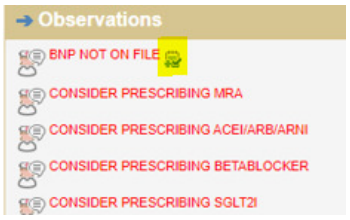
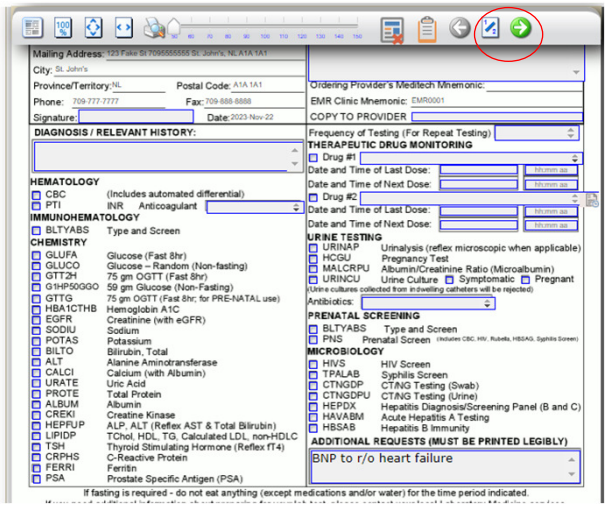
As you can see from the screen shot, the same visit template can used across the spectrum of care for Heart Failure. Selecting the Clinic type will change the documentation set so it is tailored to your type of practice. For today's presentation we will focus on the Primary Health Care setting. You may also notice the BNP trigger in RED at the top of the page, which brings this particularly relevant piece of information into view immediately on loading the template.

You will notice that the body of the template uses a 'show' feature. This design was used to minimize the visual clutter and allow the provider the flexibility to open sections as and when needed.

Triggers - BNP





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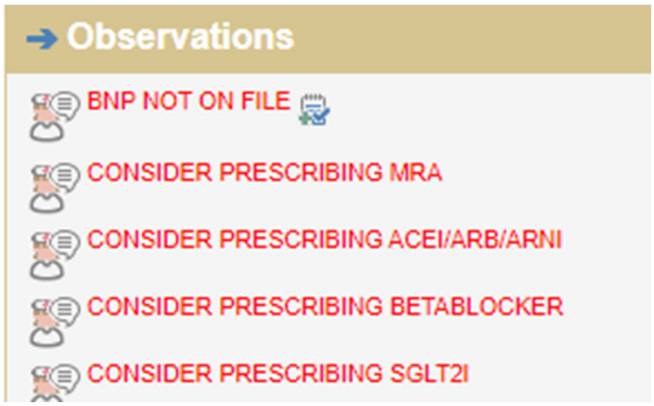
Throughout the visit template you will notice a variety of triggers that fire based upon a combination of previous documentation, results and medication orders.

When you load the template for the first time, you may notice that a BNP NOT ON FILE trigger populated at the top of the template. This trigger is set to fire when a BNP result it not populated in this EMR. It is possible a clinician external to your EMR has ordered a BNP so you may want to check HealtheNL for completeness.

If you can confirm that your patient does not have a BNP completed you have the option to order by selecting the task icon next to the trigger. Selecting this task will open a pre-populated lab requisition and Special Auth form for BNP testing. Remember to select page 2 for the S/A form. This task can be printed and completed as per your normal process.

Triggers-Consider Prescribing…



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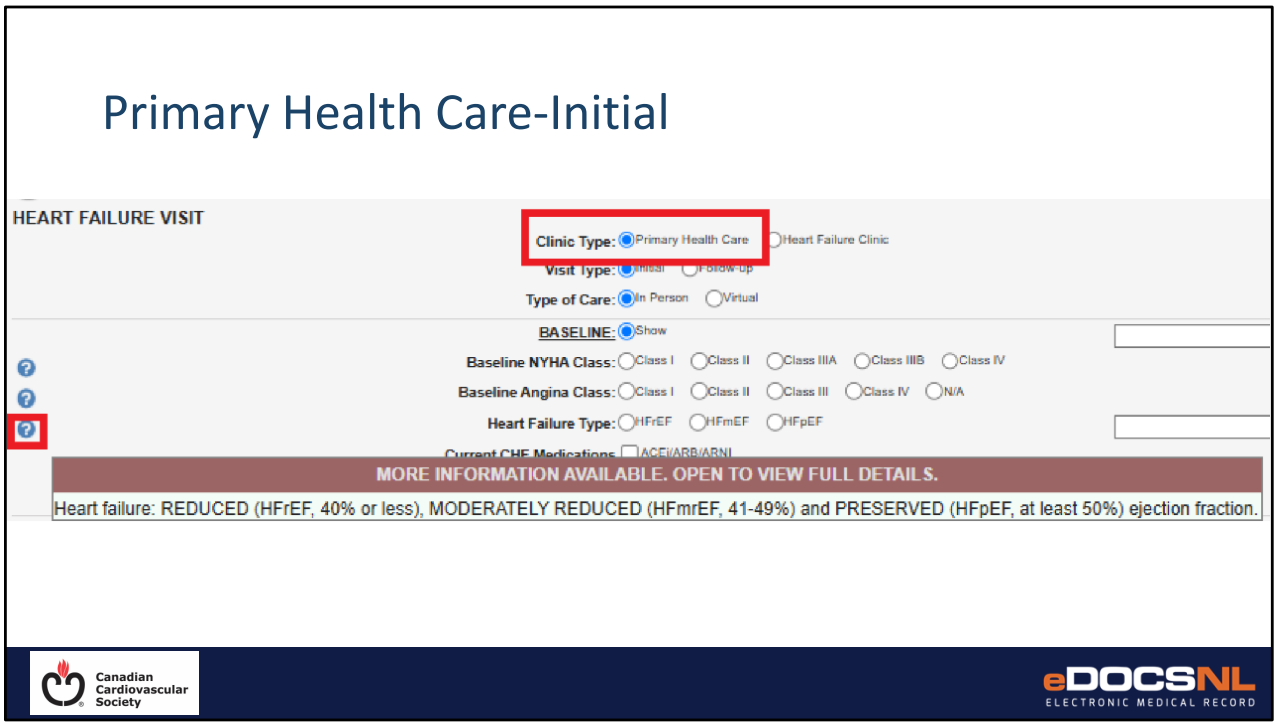
In addition to BNP, on subsequent visits you may notice triggers related to medication management.

Based on the Heart Failure Type you selected for your patient during the initial visit, 1 to 4 medication triggers may fire. If you selected HFrEF as the Heart Failure Type on your initial visit and your patient does not have an active prescription for MRA, ACEI, Beta Blocker or SGLT2, the EMR will display all 4 triggers as recommended for management for this heart failure type. If your prescribe during this visit, the triggers will be removed on a subsequent visit.

The same functionality is true for HFmEF and HFpEF. If you selected HFmEF as the Heart Failure Type on your initial visit the triggers will look for an active SGLT2 prescription. For HFpEF it will look for an active SGLT2 and MRA prescription.

Primary Health Care-Initial



Select a Primary Health Care visit by selecting the radio button next to the clinic type. Follow through selecting the radio buttons to change the display of the documentation toolset.

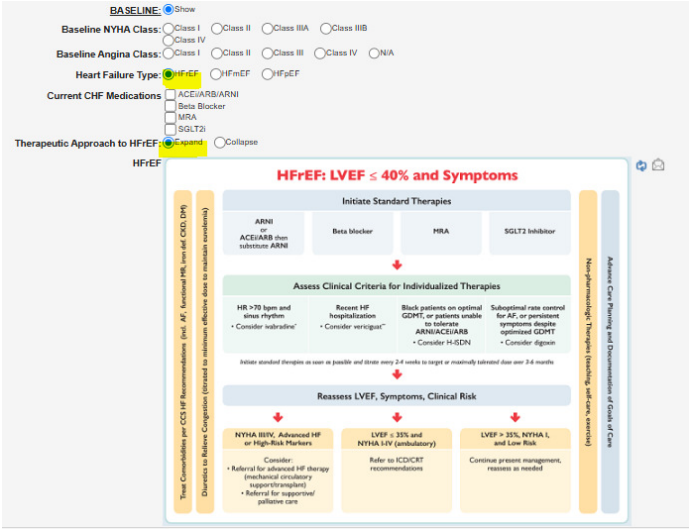
As you work with the tools, you'll notice that selecting a 'follow-up' visit type may trigger additional clinical decision support tools or documentation.

To begin your documentation for an initial visit, you will be prompted to enter the baseline details for your patient. You will notice later that this baseline section will flow through in subsequent visit.

The baseline section provides an opportunity to highlight your patients NYHA Class, Angina Class, Heart Failure Type and Current HF Medications.

If you are unsure of the definitions or specific criteria for each of these section we have included some helpful visuals to help in the classification process. By hovering over the question mark located next to the class and type you will be provided with a snap shot of additional information. In the example shown, you can see that by hovering over the question mark next to Heart Failure Type it clearly defines that HFrEF is classified as an ejection fraction of 40% or less.

Baseline- Heart Failure Type



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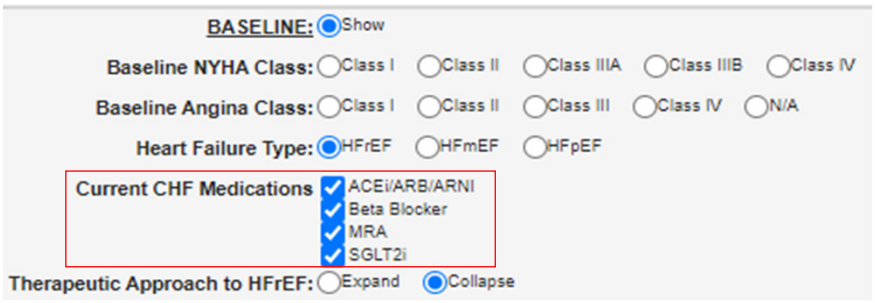
You will notice that when a specific Heart Failure Type has been selected, additional resources or line items may appear. As an example, when you select a Heart Failure Type of HFrEF, an line item appears for the 'Therapeutic Approach to HFrEF'. If you Expand this line, an infographic is made visible which provides you with overview of therapies that can be considered for management. After your review, if required, you can then collapse the infographic and continue with your baseline documentation.

The same functionality of an infographic is available for HFpEF that will provide Recommendations/Tips for management. The Heart Failure guidelines do not contain graphical content corresponding to HFmEF management so this is not present in the template.

Baseline-Current CHF Medications



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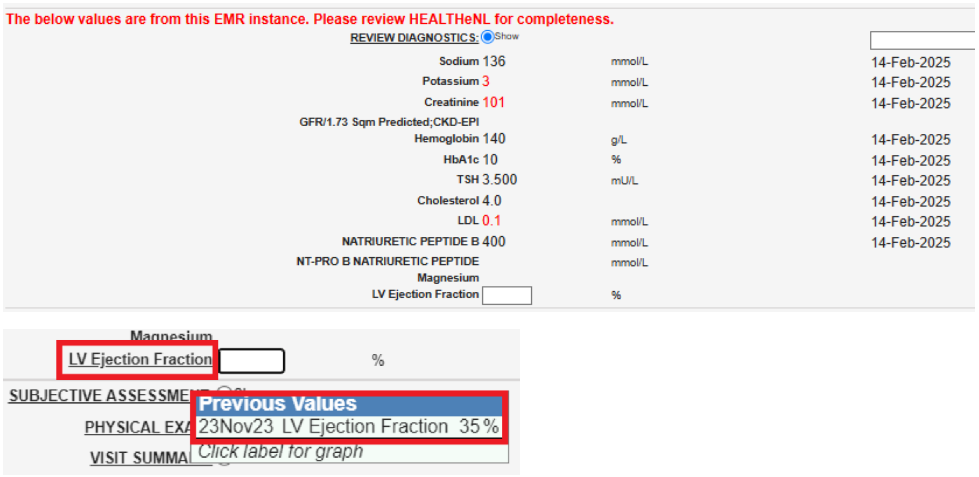
It is important to highlight the Baseline HF Medications here, as one of the key take aways for management of Heart Failure is appropriate medical management according to Heart Failure type. As you saw earlier, medication management relative to the Heart Failure Type selected will trigger a variety of clinical decision supports. Just because these checkboxes appear it does not mean that you HAVE to check them. They are there as much for a reminder as they are for documentation purposes.

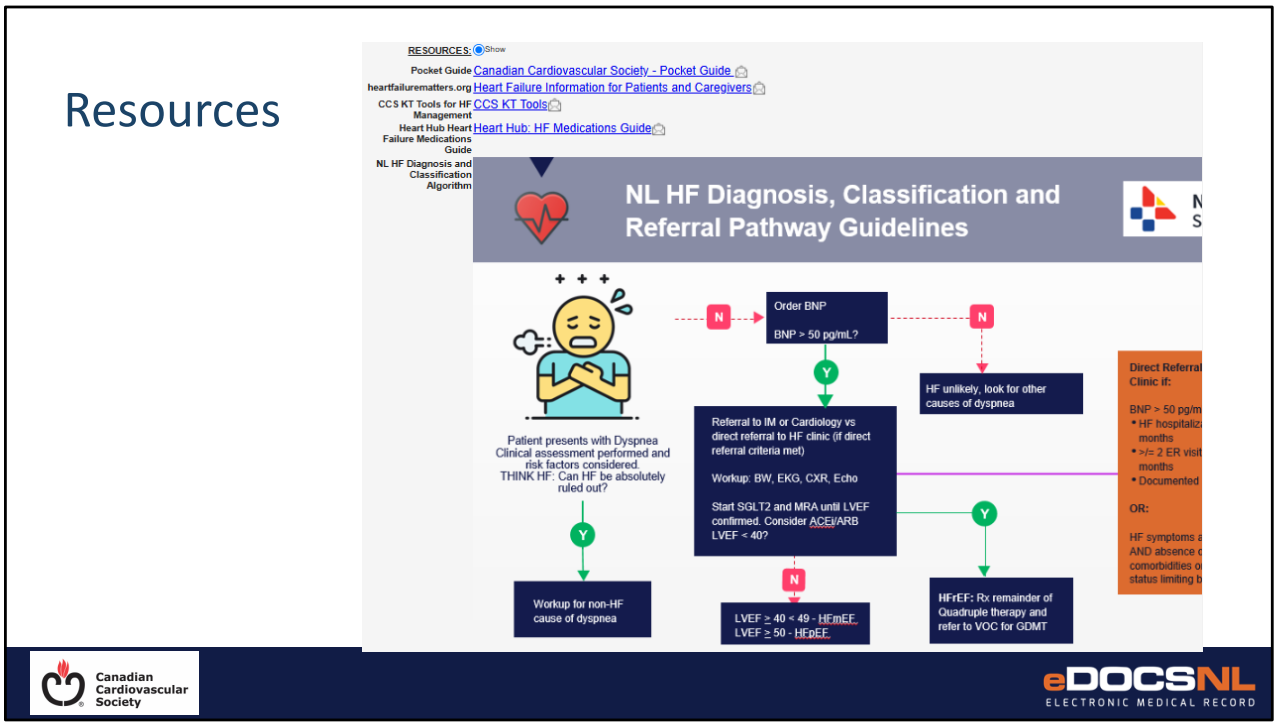
Review Diagnostics



The ‘Review Diagnostics’ section is high-level overview of patient lab tests. You will notice that the most recent lab value is recorded in this section and the date is indicated to the Right hand side. Abnormal values are highlighted in red.

As highlighted in the header of the ‘Review Diagnostics’ section it is important to remember that the information pulled into this section is specific to the lab values found in your EMR. It is always recommended that you review HEALTHeNL for completeness.

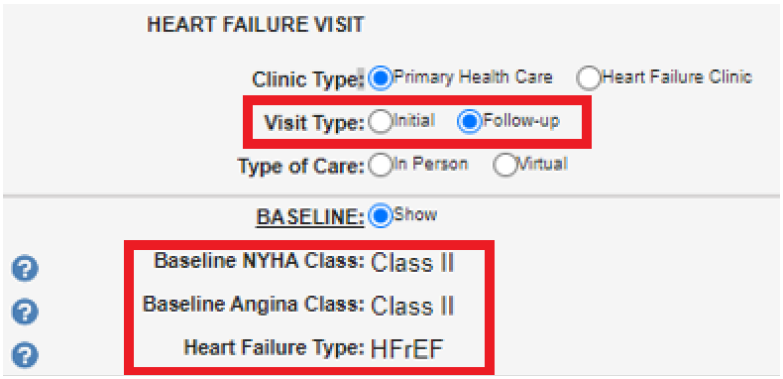
You may notice that the ‘LV Ejection Fraction’ is not an automatically populated. This value is provided in the form of a dictated report and therefore can not appear as an auto-populated result. It is encouraged that you enter the ejection fraction in this box for future reference. By populating this field, you can quickly review previous ejection fraction percentages in subsequent visits by hovering over the field name



The ‘Resources’ section provides a library of tools for the patient and provider. By clicking the hyperlink you will be directed to the resource web page.

This section will continue to grow and includes the Canadian Cardiovascular Society guidelines, resources and Knowledge Translation (KT) tools, as well as the NL HF Diagnosis, Classification and Referral Pathway quick reference

Primary Health Care - Follow Up



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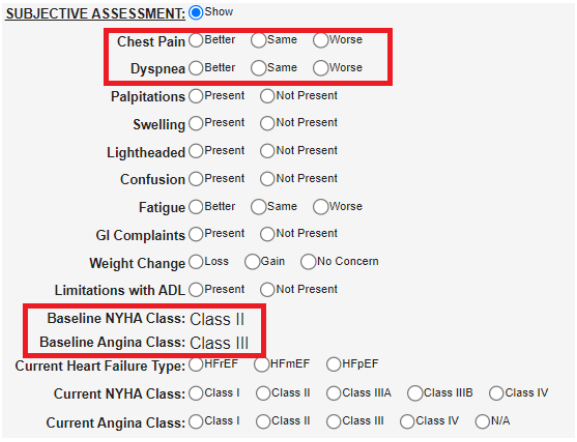
The functionality discussed for the initial visit, is carried throughout the template. Selecting a Follow-Up visit will change what appears on the template from the initial visit series.

The 'Baseline' section now provides a review of the baseline that was previously documented.

You will notice that the question mark icons are still available for your reference. Hover to discover!

Subjective Assessment (Follow-up selected)



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There are no changes to the 'Review Diagnostics' section between the Initial and Follow-up visit types.

You will notice a slight change to the 'Subjective Assessment' section, though. In the follow-up visit the question set refers to the same symptom inquiry but using "Better, Same, Worse" to allow the patient an opportunity to indicate any improvement, worsening or no change of a given symptom.

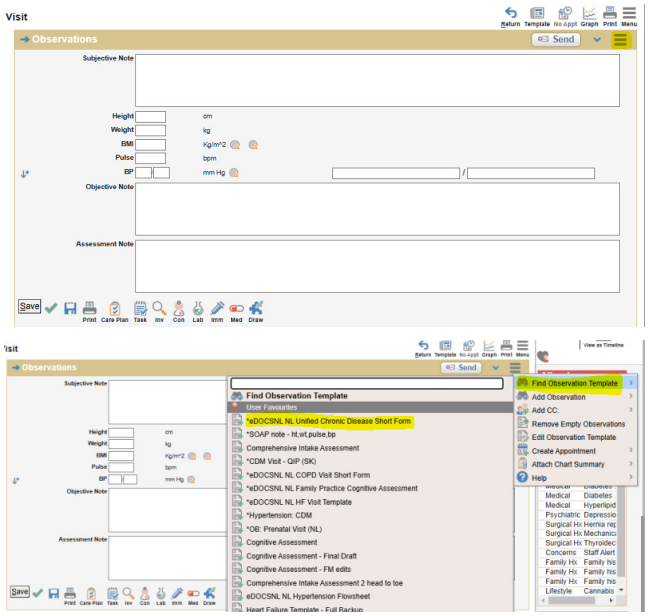
The Baseline NYHA and Angina Class are also pulled over this section for quick reference and if there are any changes to your patients Class or Heart Failure Type during this visit there is opportunity to update in this section.

There are no changes in the other sections of the document.

Unified Chronic Disease Short Form

The visit template can be accessed as you would any other documentation template in your system but is designed to be pulled into your existing documentation template. e.g., SOAP note.

Right click the menu icon when in the SOAP note and pull in the Unified Chronic Disease Short Form, which then is added to the bottom of your existing note



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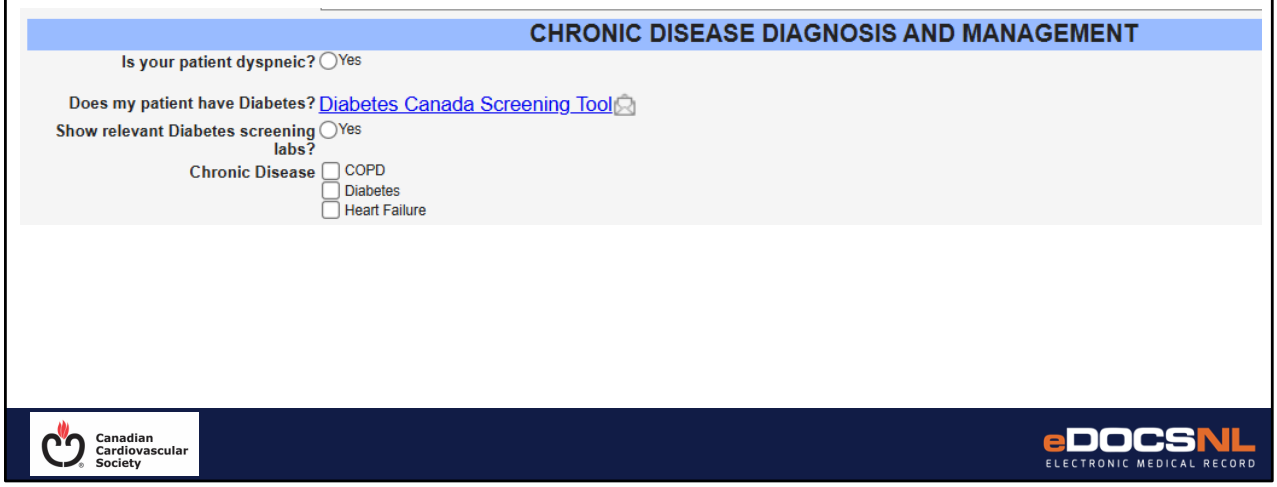
Based on feedback from the clinician community on the long form version of the tool, we developed a short form version of the template that focused on CDS features, was able to be added to a user's existing preferred documentation and had relevance for the pre-diagnosis phase of management.

We also took the opportunity to combine this short form with other existing short form templates to result in a unified chronic disease short from template. This visit template can be accessed on its own in the same way as any other documentation template you would use for visits in your EMR, by clicking with the right button of your mouse the "New" Icon when you are in the "Visit" tab in the patient's chart and selecting the "***eDOCSNL Unified Chronic Disease Short Form***" template you see highlighted here.

However, the template was intended to be drawn into your existing documentation, so that your original documentation and visit workflow can be maintained. Starting in your regular documentation template, you would pull the Short Form into the original template by right clicking the menu icon and selecting the favorited form.

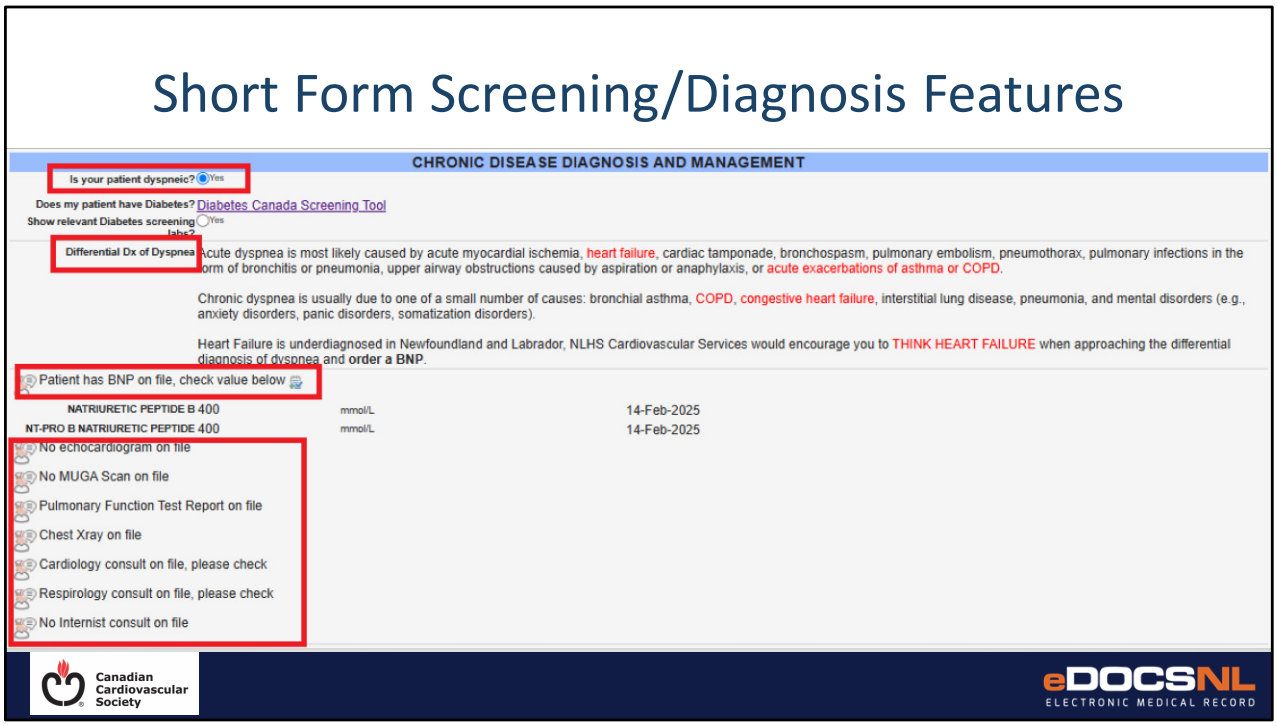
Short Form Screening/Diagnosis Features



When the form is pulled in the first thing you will see is a screening or pre-diagnosis section followed by the ability to select the appropriate short form for the condition you are managing in this visit. Multiple conditions can be selected if required.

The question most relevant to Heart Failure identification is on top: “Is your patient dyspneic?” As we covered earlier, one of the areas of focus for the cardiovascular institute is screening of dyspneic patients with BNP testing.

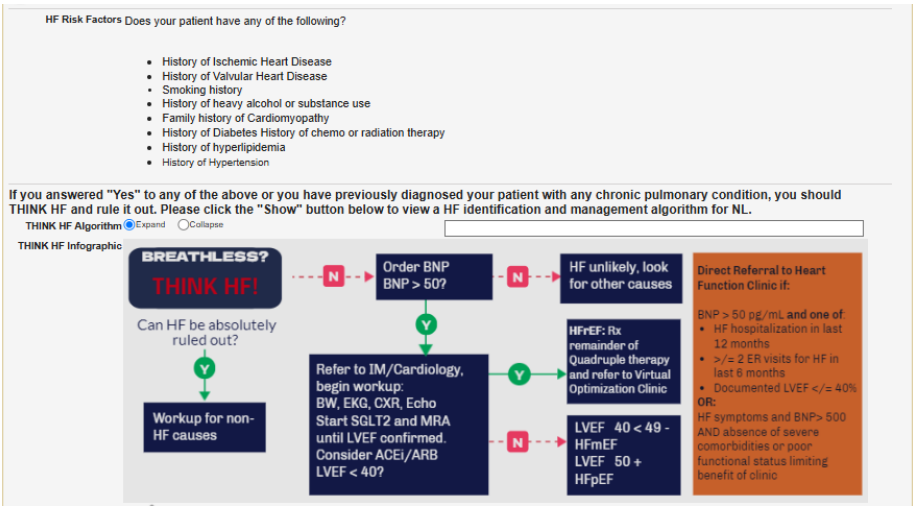
Short Form Screening/Diagnosis Features



When “yes” is selected as the response to this question, guidance will be provided on the differential diagnosis of dyspnea with an emphasis on heart failure identification.

Existing BNP values are highlighted or opportunity provided to order one if no value exists in the record and alerts are provided as to whether more information exists in the EMR patient record that may help identify a cause for dyspnea.

Short Form Screening/Diagnosis Features



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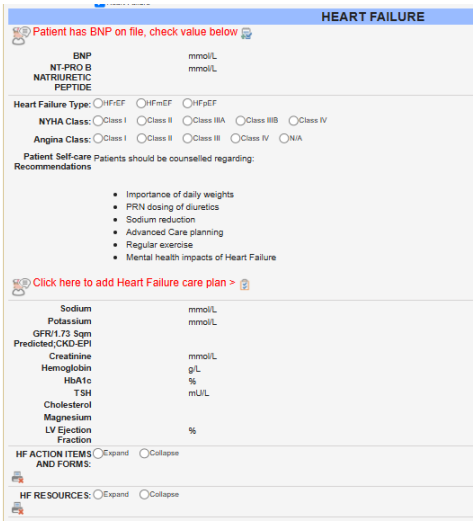
The Screening template is organized around the theme of “Think Heart Failure”. It will alert you to the presence of a BNP result, cardiology or internal medicine consult, or echocardiogram report on your patient’s record in the EMR.

Considering the HF risk factors in the presence of dyspnea, you may open the “THINK HF” graphic to view the latest provincial direction for testing and referring HF patients. You may order a BNP if you suspect HF on this basis with the task attached to the BNP trigger at the top of the template.

Short Form Contents

- Focuses on Clinical Decision Support (CDS) features with minimal documentation, only what is required to enable other CDS functionality.
- Highlights recommendations for medical management and patient self-care
- All lab values relevant to HF present in your EMR pre-populated and collected in one place
- One stop shop for alerts, action items and form relevant to your patient's care
- All provider and patient resources collected in one place, including access to the official CCS KT Tools



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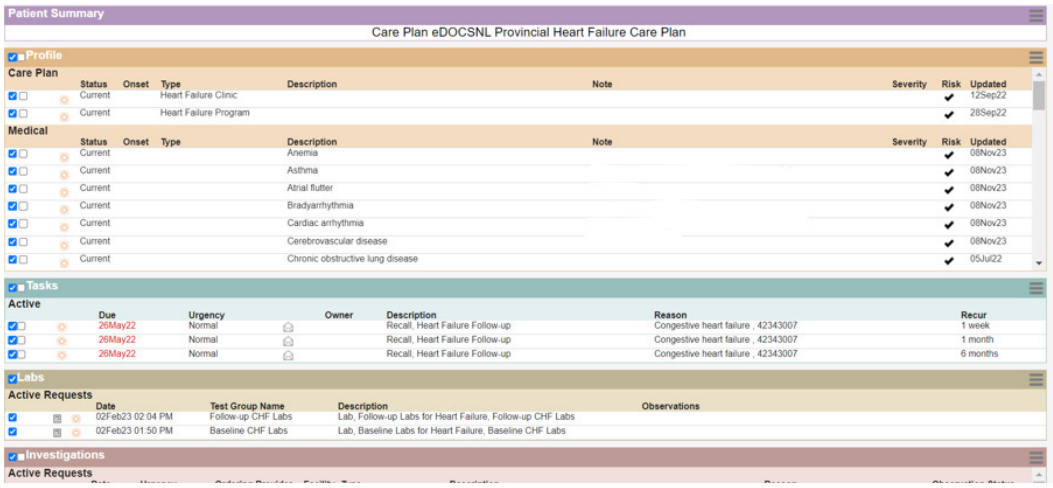
The HF short form template (and the others) are intended to provide access to all the features users have reported they like on short visits where chronic disease mgmt. may not be related to the presenting complaint, including automatically populated labs, triggers and alerts, embedded requisitions, and a resource library. In this way the template becomes an at a glance summary and a one stop shop for information and tasking while requiring only the documentation that is required to be both clinically valuable and enable other clinical decision support functionality.

All the latest guidance from CCS and their knowledge translation tools are directly referenced through the resource library.

The eDOCSNL Heart Failure Care Plan



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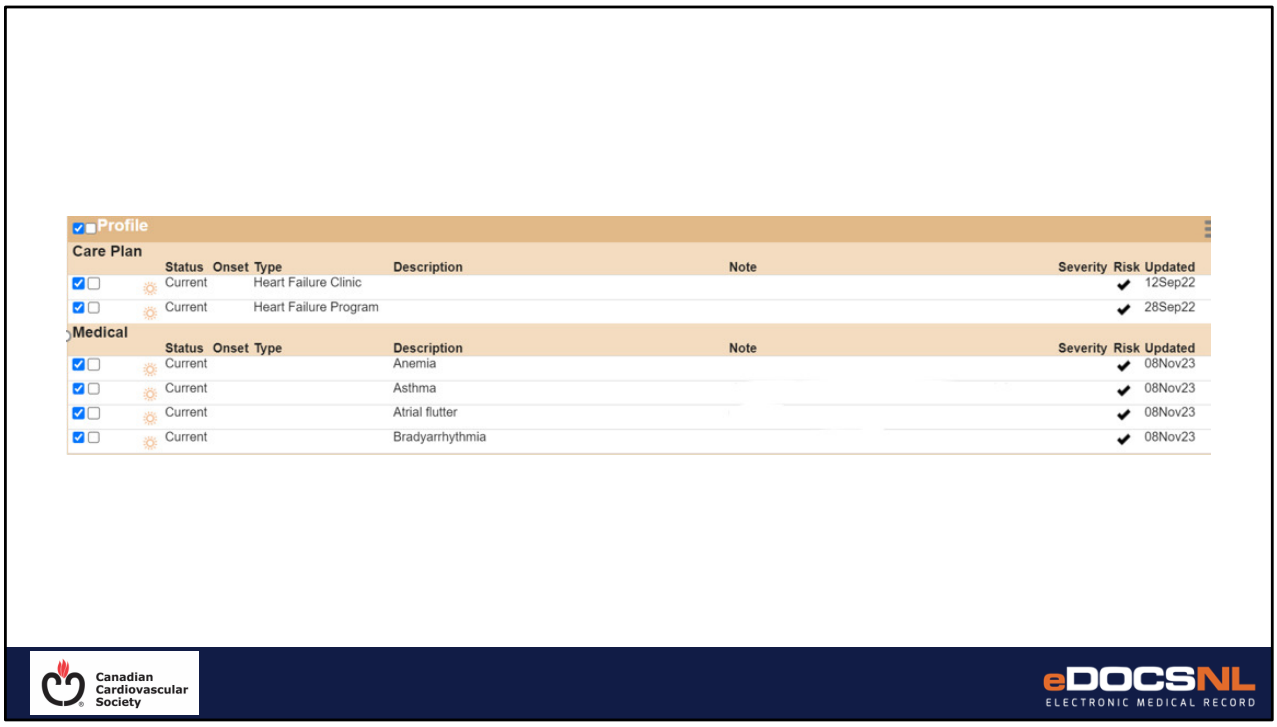
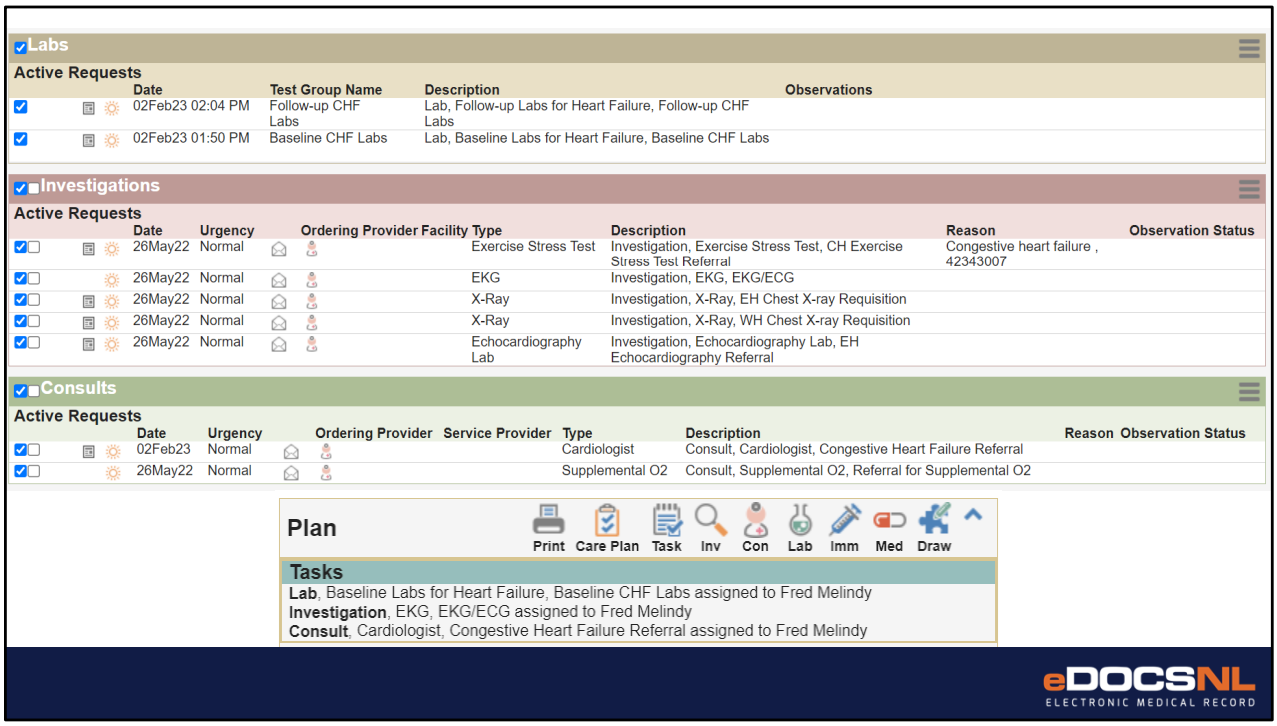
A care plan is a way to add multiple documentation items or perform multiple tasks simultaneously. This is an efficiency measure that prevents providers from having to navigate to multiple places in a chart to perform tasks one by one. It also enables you to set up relevant tasks that support the CCS Heart Failure guidelines principles and care pathways in the province of Newfoundland and Labrador.

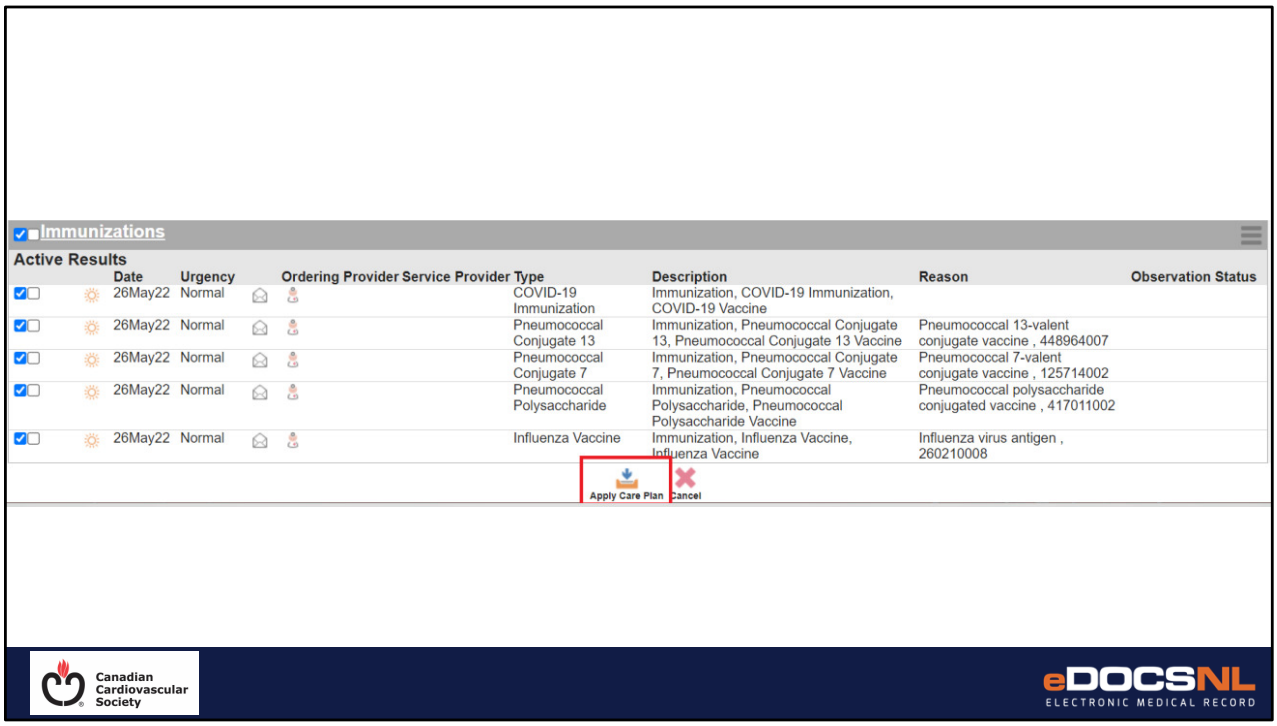


Profile Items relevant to HF care and documentation can be added easily from the care plan by simply clicking the check box for those that apply to your patient, these are all added to the patient's profile section together when the care plan is executed.



Labs, investigations and consults relevant to heart failure care can be selected and initiated quickly and easily from the care plan as well. This prevents the tedious and cumbersome process of individually finding and ordering from individual requisitions elsewhere in the chart and should help save you some time. It should be noted that executing the task from the care plan merely creates the task – each task will still have to be opened and carried through to completion. For example, the lab orders will still need to be opened, the correct lab test selection verified and printed and provided to the patient.

The tasks initiated through the care plan will all appear for individual action in the “Tasks” section under the “Plan” box on the left side of the patient visit in Med Access. Other tasks in the care plan may be executed in a similar way.



Documentation for Immunizations relevant to HF care can also be initiated from the Care plan in the same fashion. Documentation of immunizations given can be done in this manner, regardless of who actually performed the immunization.

When all relevant orders and/or documentation have been selected, the care plan is executed by clicking “Apply Care Plan” at the bottom. All selected actions will be applied in bulk when this is clicked.

Case Study #1

- HPI
  - 63 year old presents with 2 month history of progressive dyspnea, orthopnea, PND, cough-whitish sputum and intermittent peripheral edema. Denies chest pain, Palpitations. Previously active. CXR- Previous sternotomy. MVR. Was previously seen in ER and CXR was ordered. Right lower lobe opacity demonstrated. ?Pneumonia –correlate clinically. Treated with antibiotics. No improvement. Treated with another round of antibiotics.

- History
  - MR with MV repair 2012
  - HTN –candesartan stopped lightheaded
  - Dyslipidemia
  - COVID 3 months prior

- Medications
  - Rosuvastatin 5 mg daily
  - Antibiotics Zithromax 500 mg po od X 1/52 and Moxifloxacin 400 mg po od X 14/7
  - ASA 81 mg daily

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Case Study #1

- Physical examination
  - Height 168 cm. Weight 105.8 kg. BMI; 37.5. SBP 126/88. RR 18. RLL crepitations. JVP 8 cm ASA. Edema above ankle bilaterally. Heart sounds normal S1, Split S2. No S3/S4 or murmurs. Spo2 94%.

- Investigations: ECG: Sinus rhythm 99 LBBB (QRS 181 msec). Labs: serum K 4.3 mmol/L. Serum creatinine 89umol/L. GFR 80. Hgb 137 g/L. LDL 3.83. TSH normal.

- What to do next?

Using the Practice 360 Tools

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Live demonstration of Unified Chronic Disease Short Form

Case Study #2

- 77F with longstanding dyspnea significantly worsened over the last 1 year, now having symptoms during acts of daily living presently NYHA class II.
- Sedentary lifestyle.
- Mild chronic swelling to ankles, not recently changed. No orthopnea or PND. No chest pain. No palpitations. Cardiovascular ROS otherwise negative.
- Previously attempted a sleep study 3 years ago and was unable to complete it.
- PMHx: HTN, T2DM, obesity (BMI 41), stage 3 CKD (eGFR 40-45), lifelong non-smoker, asthma
- Medications: Candesartan 32 mg daily, Amlodipine 7.5 mg daily, Allopurinol 200 mg daily, Ventolin p.r.n.

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Case Study #2

- Physical Examination: Height 150 cm, Weight 92.2 kg, blood pressure 140/90 mmHg, heart rate 77 bpm. JVP difficult to see. Normal heart sounds without added heart sounds or murmurs. Her chest was clear. There was 2+ edema bilaterally to the knees
- Investigations: 12-lead ECG sinus rhythm 77 bpm with a left anterior fascicular block. Most recent blood work: K 4.4, Cr 111, eGFR 42, Hgb 142, LDL 2.6, A1c 6.4%, TSH normal, albumin 35. PFTs last year were normal. CXR performed recently showed no significant findings.

- BNP is ordered and returns result of 400. What to do next?

Using the Practice 360 Tools

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Live demonstration of Long Form HF Visit Template

Why use the Practice 360º Heart Failure Tools?

Canadian Cardiovascular Society

To support adoption and adherence guidelines for patient care

EMR tools developed to guide HF care and increase efficiency

Integrates with your existing documentation so you can leverage EMR features while maintaining your current workflow

One stop shop for documentation: collects and summarizes clinical information and required tasks succinctly

Reminders, alerts and prepopulated clinical data provide at-a-glance patient summary to support clinical decision making

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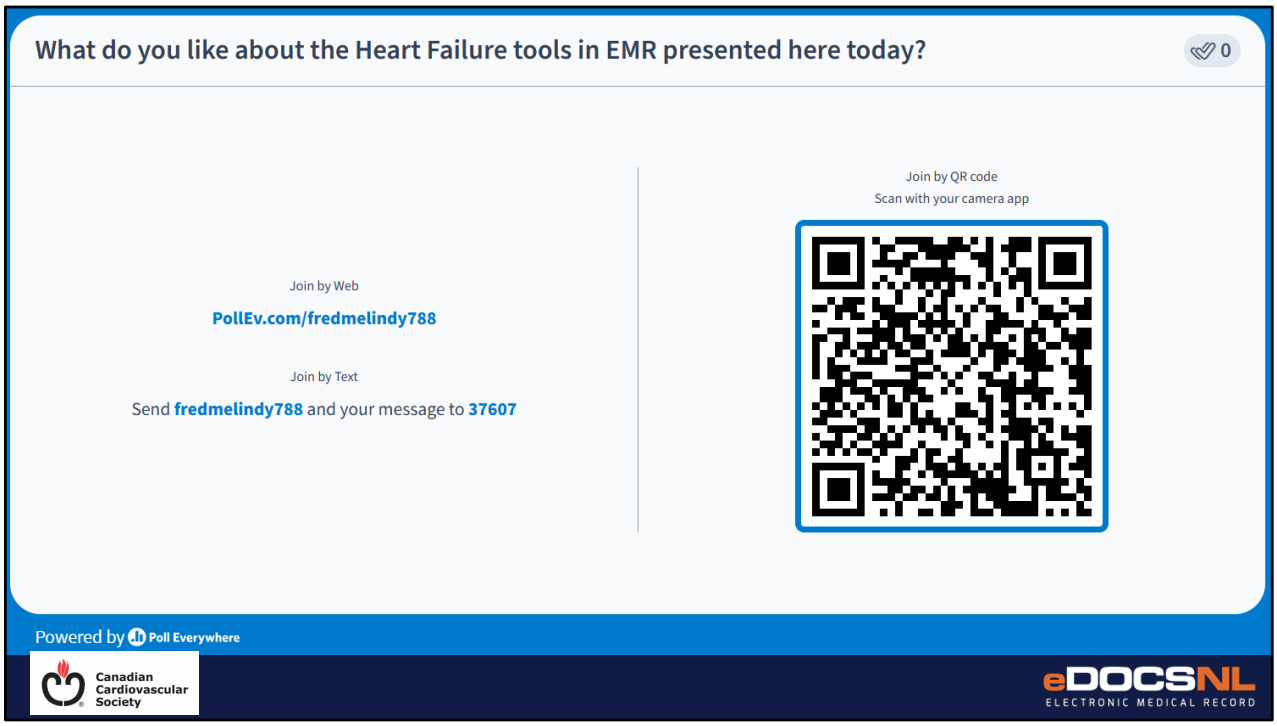
The EMR tools presented support adoption and adherence to guidelines in the NL HF care context. We attempted to put as much focus into efficiency and clinical decisions support in these tools as possible and made a documentation pathway that integrates with existing workflow, the lack of which was a frequent complaint that we heard from clinicians about the long form templates. That being said the long form version is well suited to a planned encounter devoted to heart failure care and this suits some clinicians and some care settings well, so both tools are available for you.

We have attempted as much as possible to make these tools a one stop shop for HF care so as to minimize the amount of searching through a chart for the necessary information and requisitions, within the limitations of what the software can do. We will continuously refine these tools as we receive feedback and, working together, we can make these tools indispensable to HF care.


What do you like about the Heart Failure tools in EMR presented here today?
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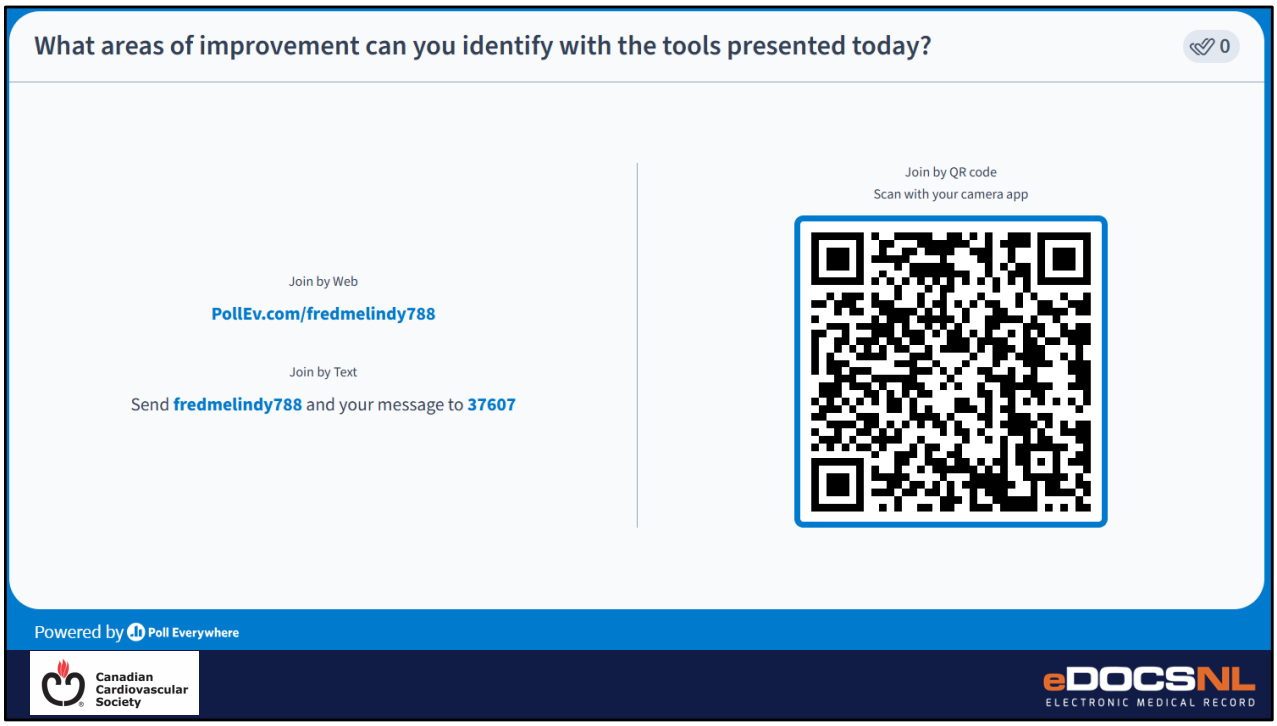
What areas of improvement can you identify with the tools presented today?
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Q & A

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Next Steps

- CME materials and supporting documentation posted to edocsnl.ca
- eDOCSNL staff visits available
- Coordinate care with Heart Failure Clinic and other services as they appear
- The Med Dialog tool – communicate with your colleagues about the care of your Heart Failure patients
- Please have a look at the latest CCS Guidelines and KT tools at https://ccs.ca/guidelines/
- Post CME survey: https://survey.alchemer-ca.com/s3/50297311/HF-CME-POST-Survey2025

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This presentation with additional details will be posted to edocsnl.ca following the conclusion of all planned CME sessions

There is additional documentation posted there to assist with review and self-learning

When you feel the care of the patient is more appropriate for a Heart function clinic visit, use the evolving tools in the template and care plan to refer your patient. This can be best done using the Med Dialog eReferral feature to share charts digitally across EMRs, please reach out to us to learn more. The cost for this tool is covered by the program and it is a great facilitator for collaborative care.

eDOCSNL staff will follow up with all providers registered for the CME, inform your practice partners and colleagues that we are also available to serve their needs – we want all EMR clinicians using EMR to be familiar with Practice 360 tools. Some of you have agreed to be a new pilot group for the tools and provide us with feedback after a period of use – we are grateful for this and welcome anyone else who is interested. You can be compensated for your learning time and for the evaluation at the end of the pilot period. Please contact us following the CME if you'd like to be part of this.

Thank you for your interest in the Practice 360: Heart Failure Toolset, a collaborative initiative of eDOCSNL, NLHS and the Canadian Cardiovascular Society with Change Management support from Novagen consulting

For more detail and to discover more Practice 360 EMR tools please review the resources found on the eDOCSNL website at eDOCSNL.ca under the Practice 360 tab.