# Table of contents

Table of contents ................................................................. 2  
Contact ............................................................................. 4  
Heart Failure Order Set Bundle Implementation Toolkit .................. 5  
Background: ..................................................................... 6  
Continuum of Care: .............................................................. 7  
Heart Failure Order Set Bundle: Components................................. 9  
Heart Failure Admission Orders: .............................................. 10  
Heart Failure Admission Orders: Page 2 .................................... 11  
Transition to Community Care .................................................. 12  
Support Resources: A Closer Look ........................................... 13  
LACE Index Scoring: ............................................................. 13  
LACE Index Scoring (continued): .............................................. 14  
Risk Stratification Algorithm: ............................................... 15  
Risk Stratification Algorithm (Heart Failure): ........................... 16  
Admission to Discharge Checklist: ......................................... 17  
Discharge Management Plan: ............................................... 18  
Patient Education Resource Package ....................................... 21  
Patient Education Resource Package ....................................... 22  
Integrated Model of Care ....................................................... 23  
Community Care .................................................................. 23
# Heart Failure Provincial Order Set Bundle Implementation

- Primary Care Integration ........................................................................................................ 24
- Primary Health Care Leadership Engagement ........................................................................ 24
- Approach to Implementation .................................................................................................. 25
- Objective of Local Improvement Team ................................................................................... 25
- Local Implementation Team: Functions and Responsibilities .................................................. 26
- Evidence Documents ............................................................................................................. 27
- Data Analysis ......................................................................................................................... 27
- Evaluation ............................................................................................................................... 29
- Anticipated Outcomes ............................................................................................................ 30
- Clinical Pathway Support Unit: Provincial Team .................................................................... 31
- Contact Information ............................................................................................................... 31
- Heart Failure Order Set Bundle Implementation Toolkit Appendixes .................................... 32
  - Appendix 1: Diuretic Dosing .............................................................................................. 32
  - Appendix 2: Dosing and Restrictions ................................................................................ 33
  - Appendix 4: Heart Failure Order Set Evidence Document ................................................. 35
  - Appendix 5: Heart Failure Menu of Metrics ...................................................................... 36
  - Appendix 6: Data Capture Process ................................................................................... 37
  - Appendix 7: Data Dictionary ............................................................................................. 38
This toolkit has been prepared by the Clinical Pathway Support Unit (CPSU)

This work is sponsored by the Cardiovascular Health and Stroke Strategic Clinical Network™ and the Respiratory Health Strategic Clinical Network™

Contact

For more information, please contact: HFPathway@ahs.ca
Heart Failure Order Set Bundle Implementation Toolkit

This package is a comprehensive toolkit designed to help you implement the Heart Failure Acute Admission Orders, along with supporting resources, into your acute care facility.

Grounded on evidence based clinical pathway care for heart failure patients, the objective of this order set bundle is to improve care across the continuum from hospital admission through discharge into the community and primary care settings.
Background:

Patients with heart failure and chronic obstructive pulmonary disease (COPD) account for the highest hospital admission rates of all chronic diseases in Alberta. Individuals with these conditions experience long hospital stays, readmissions to hospital and frequent emergency room visits.

A provincial initiative is underway aimed at implementing and evaluating evidence based clinical pathways for heart failure and COPD. The objective is to improve care across the continuum from hospital admission through discharge into the community and primary care settings.

Supported by the Cardiovascular Health and Stroke Strategic Clinical Network™ (SCN), Respiratory Health SCN™, and the COPD and heart failure provincial working groups, this initiative seeks to coordinate efforts within acute, community and primary care to enhance management and timely follow-up.

Red Deer Regional Health Centre, the proof of concept site, started this approach in February of 2017. Opportunity now exists for other sites to participate in implementation of the heart failure and COPD order set bundles.

A coordinated, purposeful approach to implementation is recommended which includes collaboration between multidisciplinary front line staff, patients, families, physicians, primary care, management and community care. Efforts to engage all stakeholders will serve to promote successful implementation and sustainability of this evidence based care.

This toolkit will focus on the heart failure component of this initiative.
Continuum of Care:

Clinical pathways are tools used to guide evidence-based health care. Their implementation reduces the variability in clinical practice and can improve outcomes\(^1\).

Individuals with heart failure, like all of us, may require access to health care at any point throughout life. Clinical pathways seek to address the broad range of care which may be required throughout a patient’s journey.

The continuum of care covers the delivery of health care over a broad period of time which may refer to care provided from prevention to end of life. Addressing the complete continuum of care would be an overwhelming and complex mission to start. Given this, the provincial heart failure clinical pathway team has chosen to focus efforts on the time period from acute hospital admission through discharge into the community and primary care setting (out to approximately 2 weeks post discharge). The Heart Failure Order Set Bundle addresses this time period as indicated on the graphic below.

Sites, communities and zones are encouraged to build additional linkages, relationships and supports further out into community and primary care. As these components of the pathway continue to be developed, heart failure patients will be able to experience enhanced care.

Heart Failure Provincial Order Set Bundle

Implementation

Alberta Health Services

Last revised: April 2019

Scope of Heart Failure & COPD Pathways: Order Set Bundles

Order Set:
- Admission Orders
- Acute Exacerbation of COPD Supplementary Admission Orders
- Transition to Community Care

Support Resources
- Admission to Discharge Checklist
- Discharge Management Plan
- Patient Education Resource Package
Heart Failure Order Set Bundle: Components

The heart failure order set bundle includes 5 components.

First, the ‘Heart Failure Admission Orders’ form is 1 page. The admitting physician is required to review, completed and sign this form.

A supplementary ‘Transition to Community Care’ page is next which identifies pre populated recommendations. A health care provider may sign this page.

All other components are support resources for health care providers and patients.

Brief Description:

<table>
<thead>
<tr>
<th>Components</th>
<th>Description</th>
<th>Completed By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission Orders</td>
<td>Evidence based acute admission order set recommendations</td>
<td>Physician</td>
</tr>
<tr>
<td>Transition to Community Care</td>
<td>Recommended consultations, patient education, discharge plan, and follow-up</td>
<td>Pre-Populated</td>
</tr>
<tr>
<td>LACE Index Scoring Worksheet</td>
<td>Tool to identify risk of readmission to hospital within 30 days of discharge</td>
<td>Health Care Provider(s)</td>
</tr>
<tr>
<td>Risk Stratification Worksheet</td>
<td>Algorithm to identify the recommended time period until follow-up with Heart Function Specialist/Clinic and with Primary Care Clinic based on patient risk.</td>
<td>Health Care Provider(s)</td>
</tr>
<tr>
<td>Admission to Discharge Checklist</td>
<td>Tool to assist staff identify and record completion of activities related to heart failure (HF) patient care</td>
<td>Health Care Provider(s)</td>
</tr>
<tr>
<td>Discharge Management Plan</td>
<td>- Resource to review with HF patient prior to hospital discharge. Identifies key messages, resources and follow up information. Personal assessment to be completed by patient. - Provide copy to patient upon discharge</td>
<td>Health Care Provider and Patient</td>
</tr>
</tbody>
</table>
Heart Failure Admission Orders:

To be reviewed, completed and signed by the admitting physician. Information regarding diuretic dosing is indicated on reverse side (see Appendix 1).

<table>
<thead>
<tr>
<th>Date (yyyy-mm-dd)</th>
<th>Time (h:mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **To be added to General Admission Orders**
  - Notify Primary Care Provider and Heart Failure Clinic (HFC), if HFC present, on next business day.
  - Daily morning weights (invoiced or chart before 9:00 a.m.).
  - Oxygen delivered as required to keep SpO2 greater than or equal to 92%.
  - 2000 mL fluid restriction OR 2000 mL Other (specify).
  - 2000 mg sodium intake OR ________________ mg Other (specify).
  - Ambulate - Early Mobilization (alone within 4 hours).

- **Lab/Tests - Specific to Heart Failure**
  - Electrocardiogram.
  - Chest X-Ray:
  - Posterior Anterior and Lateral or Portable.
  - Transthoracic Echocardiogram as soon as possible if not performed within the past 12 months.
  - Creatinine, electrolytes, urea daily x __ days.
  - BNP or NT-proBNP on admission (if not already completed in emergency department).

- **Heart Failure Specific Medications**
  - Medication review and optimization of evidence-based therapies is a critical component of heart failure patient discharge planning.
  - Avoid "non-dihydropyridine" calcium channel blockers, nonsteroidal anti-inflammatory drugs and COX II inhibitors if possible.

- **Refer to Best Possible Medication History (BPMH) before initiating below medications**

**Diuretics** (Refer to Table 1 & 2: Acute Heart Failure Diuretic Dosing, Recommendations & Practical Tips)

Choose ONE

- Furosemide mg PO daily
- Furosemide mg IV twice daily x days. Reassess daily.
- AND/or metildigoxin mg PO daily.

**Refer to Table 3: Modified CCS 2017 Evidence Based Heart Failure Drugs for initiation considerations.**

- Can patient tolerate an Angiotensin Converting Enzyme Inhibitor (ACEI)?
  - Yes (Angiotensin Converting Enzyme Inhibitor (ACEI))
    - Choose ONE
      - Ramipril 2.5 mg PO twice daily.
      - OR ramipril mg PO twice daily.
      - OR perindopril 2 mg PO once daily.
      - OR perindopril mg PO once daily.
    - No (Angiotensin Receptor Blocker (ARB))
      - Choose ONE
        - Carvedilol 1.25 mg PO once daily.
        - OR carvedilol mg PO once daily.
        - OR valsartan 10 mg PO twice daily.
        - OR valsartan mg PO twice daily.

**Beta Blockers**

Choose ONE

- Bisoprolol 1.25 mg PO once daily.
- OR bisoprolol mg PO once daily.
- OR carvedilol 3.125 mg PO twice daily.
- OR carvedilol mg PO twice daily.

- **Prescriber Name**: __________________
- **Prescriber Signature**: __________________
- **Prescriber Designation**: __________________

(2027) (Rev2018-01)  White - Chart  Canary - Pharmacy  Page 1 of 2
Heart Failure Admission Orders: Page 2

To be reviewed, completed and signed by the admitting physician. Information regarding drug dosing, eplerenone restrictions and sacubitril-valsartan (ENTRESTO) restrictions is indicated on reverse side (see Appendix 2).
Transition to Community Care

This order set bundle is based on best practice recommended care. Sites are encouraged to implement all items to the best of their ability. In cases where the suggested health care provider is not available, or the recommended skill set is not present within your facility, sites are asked to adapt care in an effort to provide the closest possible service.

Checked indicate these items are recommended for every patient.

Staff are encouraged to prepare for transition early during hospitalization.

Consult the most appropriate and available health care provider at your site.

Patient education resource packages are available for order or online.

Support resources are available within the order set bundle.
Support Resources: A Closer Look

This section will review the following support resources which will assist sites with implementation of the ‘Heart Failure Admission Orders’ and the accompanying ‘Heart Failure Pathway: Transition to Community Care’:

- LACE Index Scoring Worksheet
- Risk Stratification Worksheet
- Admission to Discharge Checklist
- Discharge Management Plan

LACE Index Scoring:

The LACE Index Score identifies the risk of a patient to be readmitted to hospital within 30 days of discharge. A score (number) is calculated prior to hospital discharge using the criteria in Table 1 (Appendix 3). For additional information, refer to the Heart Failure Order Set Evidence Document (Appendix 4).

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
<th>Possible Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of Stay</td>
<td>The number of days the patient was in hospital, including both the day of admission and the day of discharge.</td>
<td>0-7</td>
</tr>
<tr>
<td>Acuity of Admission</td>
<td>Was the patient admitted to hospital via the Emergency Department</td>
<td>0-3</td>
</tr>
<tr>
<td>Comorbidities</td>
<td>Points given for various comorbid conditions</td>
<td>1-5</td>
</tr>
<tr>
<td>Emergency Department (ED) Visits</td>
<td>How many times has the patient visited the ED in the six months prior to admission (not including the ED visit immediately preceding the current admission)</td>
<td>1-4</td>
</tr>
</tbody>
</table>

Calculations are completed. Risk level is identified according to the chart below.

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>Low Risk</th>
<th>Medium Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>0-6</td>
<td>7-10</td>
<td>11-19</td>
</tr>
</tbody>
</table>
LACE Index Scoring (continued):

Items within the LACE Index Score may be measured during hospital stay in preparation for hospital discharge. The level of risk (high, medium, low) is used in the Risk Stratification Algorithm to assist in determining the recommended time for patients to be seen in follow-up with the Heart Function Clinic (HFC) or Specialist if a HFC is not available in your area.
Risk Stratification Algorithm:

A decision making tool which assists health care providers to identify the recommended time period until follow-up within the Heart Function Clinic (HFC), or with a heart function specialist in sites where a HFC does not exist, and with the Primary Care Clinic.

Recommendations are based on the LACE Index Score and a brain natriuretic peptide (BNP), or a N-terminal prohormone of brain natriuretic peptide (NT-proBNP), blood test obtained within 48 hour prior to hospital discharge.

- **BNP and NT-proBNP** are substances that are produced in the heart and released when the heart is stretched and working hard to pump blood. In general, the level of these substances goes up when heart failure develops or gets worse, and it goes down when the condition is stable. They are primarily used to help detect, diagnose, and evaluate the severity of heart failure.
Risk Stratification Algorithm (Heart Failure):

The Risk Stratification Worksheet is a reference tool where the LACE Index Score and the discharge BNP or NT-proBNP can be recorded and used to determine recommended follow-up. Risk stratification is completed on discharge, or near discharge, once date of discharge is determined and the required blood test results are received.

- Record the LACE Index Score calculated on the LACE Index Scoring Worksheet.
- Follow algorithm according to LACE score and blood test.
- Record the most recent BNP or NT-proBNP result. This should have been obtained within 48 hours.
- Some sites may test for BNP while others can test for NT-proBNP. Refer to the appropriate result.
- Record recommended follow-up on Discharge Management Plan.
Admission to Discharge Checklist:

This checklist is a tool to assist health care providers identify and record completion of activities related to the heart failure patient’s care.

Each item included in the ‘Transition to Community Care’ form is recorded on the checklist. Care providers are encouraged to use this form as a resource for communication among staff, confirmation of activity completion, and record of unique circumstances.

Please check the appropriate ‘Yes’ or ‘No’ column when an item is addressed. If the activity is not completed, provide additional comments beside the item or in the comments section.

This form, and the Discharge Management Plan form (described below), can be used for data collection. Clear rational and comments will assist to clarify item completion. Sites participating in the provincial implementation of this program will be asked to send a copy of these 2 forms to central office for data analysis.
Discharge Management Plan:
The final page included in the Heart Failure Order Set Bundle is the Discharge Management Plan (DMP). This resource is to be reviewed with the patient and/or care provider upon hospital discharge. Key messages, resources and follow up information is identified as a reminder to the patient and adequate understanding should be assessed. Patient education handouts are referenced to ensure all resources are taken with the patient upon discharge.

A ‘Personal Assessment Checklist’ section is included for the patient to complete. Please ensure opportunity is provided for this activity. If items are missed, or incomplete, review with the patient and/or care giver to ensure adequate understanding prior to discharge.

Recommended follow-up appointments should be indicated in the Follow-up section. Follow-up is determined by completion of the Risk Stratification Worksheet. Try to confirm appointments are booked prior to hospital discharge. If unable, ensure patient and/or care giver are able to arrange independently.

A copy of this form is to be given to the patient for reference and for communication with other health care providers. Encourage the patient to take this plan to the next health care visit.
# Heart Failure Provincial Order Set Bundle Implementation

## Admission to Discharge Checklist:

### Complete any time during hospital stay

- **Heart Failure Education**
    - a. Heart Failure Management Guide
    - b. Nutrition and Lifestyle Choices to Manage HF
    - c. Daily Weight Monitoring
    - d. Weight Chart
    - e. Signs and Symptoms
    - f. Benefits of Low Salt (Sodium) Diet
    - g. Tobacco use, assess and provide tobacco cessation support resources.
    - h. Heart Failure Medicines
  - 2. Sodium/Fluid Intake
    - □ Dietitian
    - □ Other, specify
  - 3. Ambulate - Early Mobilization (done within 48 hours)

### Review each resource with patient. Check and initial when complete.

- **Prior to Discharge**
  - 4. Nutrition Screen
  - 5. Frailty screen
  - 6. Cognitive screen
  - 7. Transition/Discharge services assessment
  - 8. Review and optimize heart failure medication
  - 9. Chest X-Ray
  - 10. Echocardiogram within the past 12 months

### Be sure to record EF %

- **At Discharge**
  - 11. Complete discharge medication reconciliation
  - 12. Obtain BNP or NT-proBNP within 48 hours prior to discharge (required for #11)
  - 13. Complete ‘LACE Index Scoring Worksheet’ (Form 2104) & ‘Risk Stratification Worksheet’ (Form 2105)
  - 14. Complete, review and provide patient with ‘Discharge Management Plan’ (Form 2104) – Reinforce Daily Weight and “Red, yellow, green Action Plan” (ensure adequate patient understanding)
  - 15. Notify Heart Function Clinic or Specialist of patient discharge
  - 16. Arrange follow-up with Heart Function Clinic or Specialist within recommended timelines as per Risk Stratification Worksheet
  - 17. Notify Primary Care Provider of patient discharge
  - 18. Arrange follow-up with Primary Care Provider within 2 weeks (14 days) of discharge
  - 19. Provide Primary Care Provider & Heart Function Clinic/Specialist with Discharge Summary & Discharge Management Plan (including designated supportive living & home care where appropriate)

### Additional Comments

- 2. Add discharge weight to Discharge Summary and on Discharge Management Plan

*Last revised: April 2019*
## Discharge Management Plan

**Heart Failure Discharge Management Plan**

### Bring this Management Plan with you to your next visit

<table>
<thead>
<tr>
<th>Nutrition</th>
<th>Activity</th>
<th>Medications</th>
<th>Treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A salt restricted diet of 2000 mg daily is strongly encouraged</td>
<td>Regular physical activity is part of the recommended treatment for Heart Failure (HF)</td>
<td>Prescription</td>
<td>Discharge medication list faxed to community pharmacy</td>
</tr>
<tr>
<td>(1 teaspoonful = 2500 mg)</td>
<td></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Dietitian referral</td>
<td>Yes</td>
<td>Yes</td>
<td>Phone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Indicate

- LACE score by checking low, medium or high risk
- Recommend time to follow-up
- Book follow-up appointments when possible
- Ensure patient has opportunity to complete self-assessment
- Review following
- Indicate

---

### Handouts are included in the patient education resource package

- Benefits of Low Salt Diet
- HF Management Guidelines
- HF Medicines
- Daily Weight Monitoring
- Weight Chart
- Signs and Symptoms
- Chronic HF Action Plan (green/yellow/red)
- Nutrition and Lifestyle Choices to Manage Heart Failure

### Personal Assessment Checklist – Patient to complete

Please review the statements below and check the appropriate box beside each item. Please ask staff for help if you answered NO to any item.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My heart failure medicines were explained to me</td>
<td></td>
</tr>
<tr>
<td>2. I was given written information about how to manage my condition after I go home</td>
<td></td>
</tr>
<tr>
<td>3. I was offered help and information about quitting smoking/tobacco use</td>
<td>N/A</td>
</tr>
<tr>
<td>4. I am aware I need to see the Heart Function Specialist, or Clinic, after discharge</td>
<td></td>
</tr>
<tr>
<td>5. I understand the instructions given to me</td>
<td></td>
</tr>
<tr>
<td>6. All my questions have been answered to my satisfaction</td>
<td></td>
</tr>
</tbody>
</table>

### Follow-up

<table>
<thead>
<tr>
<th>Primary Care Provider (within 2 weeks of discharge)</th>
<th>Heart Failure Clinic/Specialist within:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(within 2 weeks of discharge)</td>
<td>Heart Failure Clinic/Specialist within:</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2 weeks</td>
<td>4 weeks</td>
</tr>
</tbody>
</table>

### Confirm patient understanding

Provide copy of form to patient

---

**Affix patient label within this box**
Patient Education Resource Package

A Heart Failure Patient Education Resource Package is available to support patient education efforts.

Included are 9 recommended patient education resources:

1. Benefits of Low Salt (Sodium) Diet
2. Daily Weight Monitoring
3. Heart Failure Management Guide
4. Heart Failure Medicines
5. Heart Failure On-line Patient Resources
6. Nutrition and Lifestyle Choices to Manage Heart Failure
7. Signs and Symptoms of Heart Failure
8. Sodium Foods Pictorial
9. Weight Chart

To Order:

Heart Failure Patient Education Resource Package (Item #104871):

Contact Data Group at https://dol.datacm.com/

- Items may also be ordered separately. See next page for ordering information.

Tobacco cessation resources should be ordered and available on site when required for patient education.

- AlbertaQuits brochure (Tobacco009)
- Flip Into Action booklet (Tobacco007)

Contact AlbertaQuits.ca

To Download: Access resources on-line at Primary Health Care Resources- AHS
Patient Education Resource Package

Order from Data Group at:  [https://dol.datacm.com/](https://dol.datacm.com/)

<table>
<thead>
<tr>
<th>FORM / ITEM # (Order #)</th>
<th>Title / Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>104871</td>
<td>Heart Failure Patient Education Resource Package <em>(with colour resources where required)</em></td>
</tr>
<tr>
<td></td>
<td><em>Individual Items</em></td>
</tr>
<tr>
<td></td>
<td>C-2264 Benefits of Low Salt (Sodium) Diet</td>
</tr>
<tr>
<td></td>
<td>C-2263 Daily Weight Monitoring</td>
</tr>
<tr>
<td></td>
<td>C-1887 Heart Failure Management Guide</td>
</tr>
<tr>
<td></td>
<td>HF-001 Heart Failure Medicines</td>
</tr>
<tr>
<td></td>
<td>HF-002 Heart Failure On-line Patient Resources</td>
</tr>
<tr>
<td></td>
<td>404103 Nutrition and Lifestyle Choices to Manage Heart Failure</td>
</tr>
<tr>
<td></td>
<td>FC-2265 Signs and Symptoms of Heart Failure</td>
</tr>
<tr>
<td></td>
<td>607808 Sodium Foods Pictorial</td>
</tr>
<tr>
<td></td>
<td>HF-003 Weight Chart</td>
</tr>
</tbody>
</table>
Heart Failure Provincial Order Set Bundle Implementation

Integrated Model of Care

The heart failure clinical pathway seeks to facilitate the implementation of evidence based heart failure care from hospital admission through to discharge and transition into community and primary care. The order set bundle is unable to address the entire continuum of care so focuses up to 2 weeks from hospital discharge.

Additional community programs, supports and primary care services continue to provide heart failure care in an effort to support heart failure patients within their communities. Shared care plans, communication strategies, and collaboration between health care providers should continue in an effort to prevent readmission to the hospital or emergency department.

Integrating acute, community and primary care services through the collaboration of healthcare providers, patients, families and managers will support heart failure patients on the road to sustained health.

Community Care

Many support services for heart failure patients may be available within your community. Health care providers are often unaware of these supports or don’t have processes in place to easily access this care for their patients.

Sites are encouraged to compile a comprehensive list of available community support services including Alberta Health Services (AHS) programs (chronic disease management, cardiac rehab, tobacco reduction, heart function clinics, public health, social services, mental health, etc.), primary care network (PCN) programs, non-profit / non health affiliated programs, community agencies, and other organizations which may address the many social determinants of health.

Communication pathways and referral processes should be put in place to streamline access and support within programs.
Primary Care Integration

This clinical pathway initiative stimulates conversations among acute, primary and community healthcare providers to promote integration across transitions of care for all chronic disease patients. It provides an opportunity for collaborative work and can lay the groundwork for further assimilation with the management of other chronic diseases.

Local primary care networks (PCNs) are a key partner in supporting the care of heart failure patients. Promoting awareness, engagement and collaboration with primary care stakeholders is essential to the successful implementation of the heart failure order set bundle. This can be sought through email notifications, educational sessions, and presentations at regularly scheduled meetings. For example, medical meetings/rounds (primary care, internal medicine, general medicine, hospitalists, etc.) and manager/leadership meetings.

Primary Health Care Leadership Engagement

Primary Health Care (PHC) may have varying levels of interest and involvement throughout the proposed work on implementation of the acute order set, transition to community care and discharge management initiatives.

It’s recommended that formal communication with local, zone and provincial PHC programs be initiated at the start of site consideration to implement the order set bundle.
Heart Failure Provincial Order Set Bundle Implementation

Approach to Implementation

To support this initiative, it’s recommended a Local Improvement Team (LIT) be established. A site executive sponsor, local leads, primary care partners and key stakeholders should be involved.

It’s recommended both the heart failure and COPD order set bundles be implemented together given the similarities and efficiencies (see Heart Failure and COPD Order Set Bundle Implementation Toolkit).

Objective of Local Improvement Team

To successfully implement evidence based heart failure best practice within the identified site(s), surrounding community and primary care settings, by utilizing order set bundles, available local resources and provincial clinical pathway team support.

The LIT will work to identify areas of potential need and will inform the provincial clinical pathway team if additional support is required.
Heart Failure Provincial Order Set Bundle Implementation

Local Implementation Team: Functions and Responsibilities

<table>
<thead>
<tr>
<th>Suggested Local Implementation Team Members</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Sponsor</td>
<td>Unit clerk – Medicine or Emergency Department</td>
</tr>
<tr>
<td>Lead (heart failure) (Heart Function Clinic Lead - nurse)</td>
<td>Emergency Department Clinical Educator / Pharmacist</td>
</tr>
<tr>
<td>Frontline nurse Medicine/Cardiac Unit</td>
<td>Clinical Inpatient Educator – Medicine/Cardiac</td>
</tr>
<tr>
<td>Inpatient Manager - Medicine</td>
<td>ED Manager</td>
</tr>
<tr>
<td>Inpatient Manager - Cardiac</td>
<td>Rehab representation – OT Clinical Lead / PT Clinical Lead</td>
</tr>
<tr>
<td>HF Clinic representation - Heart Function Clinic nurse</td>
<td>Pharmacy Manager - Inpatient</td>
</tr>
<tr>
<td>HF physician* (HF Clinic Director)</td>
<td>Transitional Care representative</td>
</tr>
<tr>
<td>Hospitalist*</td>
<td>Discharge Inpatient Planning representative</td>
</tr>
<tr>
<td>COPD physician*</td>
<td>Inpatient Dietitian</td>
</tr>
<tr>
<td>Family Medicine / Primary Care physician*</td>
<td>PCN representative</td>
</tr>
</tbody>
</table>

- Champion heart failure order set bundle implementation and advocate for positive change
- Facilitate and promote local physician and staff engagement in the quality improvement work around HF patient care improvements
- Engage all staff members in implementation of the HF order set bundles
- Promote HF best practice guidelines based on the acute care order sets
- Identify opportunities for patient and family engagement
- Develop action plans to address specific care gaps identified within the order sets
- Participate in teleconferences with provincial project team as needed
- Hold regular improvement team meetings as needed to discuss changes, improvements and activities relating to improvement goals/opportunities
- Provide representatives to participate in Innovation Learning Collaborative sessions if applicable

* Representatives need only attend LIT meetings on an 'as need' basis
Evidence Documents

The Heart Failure Admission Order set is grounded upon evidence based recommendations.

A document describing this evidence, including references, is available to provide additional information.

Data Analysis

The average and median length of stay (LOS) data for larger facilities within Alberta are identified below. This reflects 2016/17 information where heart failure was the primary diagnosis. See how your facility was doing.

<table>
<thead>
<tr>
<th>Site</th>
<th>HF Dx</th>
<th>Average LoS</th>
<th>Median LoS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foothills Medical Centre</td>
<td>649</td>
<td>10.7</td>
<td>8</td>
</tr>
<tr>
<td>Royal Alexandra Hospital</td>
<td>583</td>
<td>10.2</td>
<td>7</td>
</tr>
<tr>
<td>Rockyview General Hospital</td>
<td>579</td>
<td>11.2</td>
<td>8</td>
</tr>
<tr>
<td>University Of Alberta Hospital</td>
<td>566</td>
<td>11.2</td>
<td>6</td>
</tr>
<tr>
<td>Peter Lougheed Centre</td>
<td>483</td>
<td>11.7</td>
<td>8</td>
</tr>
<tr>
<td>South Health Campus</td>
<td>299</td>
<td>8.7</td>
<td>6</td>
</tr>
<tr>
<td>Red Deer Regional Hospital Centre</td>
<td>273</td>
<td>10.2</td>
<td>7</td>
</tr>
<tr>
<td>Grey Nuns Community Hospital</td>
<td>265</td>
<td>8.4</td>
<td>6</td>
</tr>
<tr>
<td>Sturgeon Community Hospital</td>
<td>265</td>
<td>7.1</td>
<td>5</td>
</tr>
<tr>
<td>Misericordia Community Hospital</td>
<td>240</td>
<td>10.6</td>
<td>7</td>
</tr>
<tr>
<td>Medicine Hat Regional Hospital</td>
<td>204</td>
<td>10.2</td>
<td>7</td>
</tr>
<tr>
<td>Chinook Regional Hospital</td>
<td>195</td>
<td>10.4</td>
<td>8</td>
</tr>
<tr>
<td>Queen Elizabeth II Hospital</td>
<td>103</td>
<td>8.6</td>
<td>6</td>
</tr>
<tr>
<td>Wetaskiwin Hospital and Care Centre</td>
<td>95</td>
<td>10.7</td>
<td>6</td>
</tr>
<tr>
<td>St. Mary’s Hospital</td>
<td>74</td>
<td>10.0</td>
<td>6</td>
</tr>
<tr>
<td>Westview Health Centre-Stony Plain</td>
<td>65</td>
<td>7.8</td>
<td>5</td>
</tr>
<tr>
<td>Leduc Community Hospital</td>
<td>54</td>
<td>11.8</td>
<td>7</td>
</tr>
<tr>
<td>Westlock Healthcare Centre</td>
<td>50</td>
<td>12.2</td>
<td>7</td>
</tr>
<tr>
<td>Fort Saskatchewan Community Hospital</td>
<td>48</td>
<td>12.3</td>
<td>7</td>
</tr>
<tr>
<td>Northern Lights Regional Health Centre</td>
<td>47</td>
<td>6.7</td>
<td>4</td>
</tr>
<tr>
<td>Lacombe Hospital and Care Centre</td>
<td>34</td>
<td>9.0</td>
<td>6.5</td>
</tr>
<tr>
<td>Bonnyville Healthcare Centre</td>
<td>31</td>
<td>7.9</td>
<td>5</td>
</tr>
</tbody>
</table>
Data Analysis (cont.)

The 7 and 30 Day hospital readmission rates for discharged heart failure patients is provided below. Data tracks those patients with heart failure as the primary diagnosis. This information is tracked over a 4 year period (2013-2017).

<table>
<thead>
<tr>
<th>Zone</th>
<th>Fiscal Year</th>
<th>HF Hospital Discharges</th>
<th>7-Day Readmits</th>
<th>7-Day Readm (%)</th>
<th>30-Day Readmits</th>
<th>30-Day Readm (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>2013/14</td>
<td>541</td>
<td>45</td>
<td>8%</td>
<td>119</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>2014/15</td>
<td>557</td>
<td>40</td>
<td>7%</td>
<td>122</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>2015/16</td>
<td>536</td>
<td>53</td>
<td>10%</td>
<td>131</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>2016/17</td>
<td>552</td>
<td>59</td>
<td>11%</td>
<td>132</td>
<td>24%</td>
</tr>
<tr>
<td>Calgary</td>
<td>2013/14</td>
<td>2031</td>
<td>214</td>
<td>11%</td>
<td>504</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>2014/15</td>
<td>2201</td>
<td>227</td>
<td>10%</td>
<td>563</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>2015/16</td>
<td>2174</td>
<td>205</td>
<td>9%</td>
<td>503</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>2016/17</td>
<td>2182</td>
<td>185</td>
<td>8%</td>
<td>519</td>
<td>24%</td>
</tr>
<tr>
<td>Central</td>
<td>2013/14</td>
<td>796</td>
<td>105</td>
<td>13%</td>
<td>230</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>2014/15</td>
<td>902</td>
<td>116</td>
<td>13%</td>
<td>243</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>2015/16</td>
<td>881</td>
<td>118</td>
<td>13%</td>
<td>256</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>2016/17</td>
<td>947</td>
<td>132</td>
<td>14%</td>
<td>270</td>
<td>29%</td>
</tr>
<tr>
<td>Edmonton</td>
<td>2013/14</td>
<td>1852</td>
<td>248</td>
<td>13%</td>
<td>523</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>2014/15</td>
<td>1925</td>
<td>204</td>
<td>11%</td>
<td>498</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>2015/16</td>
<td>1992</td>
<td>209</td>
<td>10%</td>
<td>522</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>2016/17</td>
<td>2099</td>
<td>241</td>
<td>11%</td>
<td>566</td>
<td>27%</td>
</tr>
<tr>
<td>North</td>
<td>2013/14</td>
<td>556</td>
<td>67</td>
<td>12%</td>
<td>153</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>2014/15</td>
<td>637</td>
<td>70</td>
<td>11%</td>
<td>180</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>2015/16</td>
<td>659</td>
<td>69</td>
<td>10%</td>
<td>182</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>2016/17</td>
<td>648</td>
<td>76</td>
<td>12%</td>
<td>172</td>
<td>27%</td>
</tr>
</tbody>
</table>

Provincial data will continue to be captured by the Heart Failure (HF) Dashboard. This dashboard provides users with information regarding Inpatient (IP) admissions and readmissions with Heart Failure to healthcare facilities across Alberta.
Heart Failure Provincial Order Set Bundle Implementation

Healthcare providers and decision makers can use this data to identify the healthcare resource utilization for Heart Failure in order to facilitate better services and to optimize resource utilization.

It is anticipated implementation of the evidence based heart failure order set bundle will have a positive impact on reducing hospital length of stay and readmission rates.

Evaluation

Throughout implementation, it’s important to evaluate processes, successes and challenges. Sites are encouraged to gather data regarding specific items of care and work together with the Local Improvement Team (LIT) to improve measures.

The HF Menu of Metrics (Appendix 5) identifies those items sites are encouraged to track. Initially the key items are:

- **Order Set Bundle use**
  - Complete order set bundle use or separate use of the transition to community bundle alone

- **Patients who were given the HF education package with instruction**
  - Activities: Daily weights, HF Action Plan (green, yellow, red)

Once the order set bundle is being used within your site, the LIT will be able to track specific items, identify problem areas, and focus efforts to improve care where needed.

Data can be captured from the following support resources:

- Admission to Discharge Checklist (ADC)
- Discharge Management Plan (DMP)

Sites participating in the coordinated provincial implementation of heart failure clinical pathway care are asked to send the ADC and DMP to central office for data capture and analysis. Please refer to Appendix 6 which describes this process.

A **Data Dictionary** is available to assist in the evaluation process. (Appendix 7)
Anticipated Outcomes

Many positive outcomes are anticipated following implementation of the evidence based items included in this order set bundle. As a result, patients may experience an enhanced quality of life and health care facilities may report reduced healthcare costs.

The following outcomes are anticipated:

- **Patient Experience**
- **Consistency of care**
- **Coordinated care from hospital into the community and primary care**
- **Access to specialist and primary care in a timely manner**

**IMPROVED**

- **REDUCED**
  - Length of hospital stays (10% decrease)
  - Readmission rate to hospital and emergency departments
  - Cost of care (duplication of visits, testing and hospital services)**
Clinical Pathway Support Unit: Provincial Team

Alberta Health Services (AHS) strongly supports the heart failure and COPD clinical pathway work due to the positive impact it could have on patient outcomes, quality of life, reduced hospital stay, reduced readmissions and resulting financial savings.

Provincial support resources have been made available to assist zones and sites with order set bundle implementation and clinical pathway care.

A provincial Clinical Pathway Support Unit (CPSU) including project managers and consulting specialists in clinical practice, knowledge translation, primary care and data analysis are accessible for zone support.

Contact Information

For additional information or support regarding heart failure clinical pathway care or order set bundle implementation, contact the Clinical Pathway Support Unit (CPSU) at: HFPathway@ahs.ca
Heart Failure Order Set Bundle Implementation Toolkit

Appendixes

Appendix 1: Diuretic Dosing

<table>
<thead>
<tr>
<th>Table 1: Acute Heart Failure (AHF) – Diuretic Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>eGFR*</td>
</tr>
<tr>
<td>Greater than or equal to 60 mL/min/1.73 m2</td>
</tr>
<tr>
<td>Established HF or chronic oral diuretic therapy</td>
</tr>
<tr>
<td>Less than 60 mL/min/1.73 m2</td>
</tr>
<tr>
<td>Established HF or chronic oral diuretic therapy</td>
</tr>
</tbody>
</table>

*eGFR is calculated from the Cockcroft-Gault, CKD-EPI, or Modification of Diet in Renal Disease formula.

*IV continuous furosemide at doses of 5 to 20 mg per hour is also an option.

<table>
<thead>
<tr>
<th>Table 2: Recommendations &amp; Practical Tips for Diuretic Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendations</td>
</tr>
<tr>
<td>*IV diuretics be given as first-line therapy for patient with pulmonary or peripheral congestion.</td>
</tr>
<tr>
<td>*For patients requiring IV diuretic therapy, furosemide may be dosed intermittently (eg, twice daily) or as a continuous infusion</td>
</tr>
</tbody>
</table>

Practical Tips |
| *When acute congestion is cleared, the lowest dose that is compatible with stable signs and symptoms should be used. |
| *Target 0.5 to 1 kg of weight loss per 24-hour period while a patient with volume overload is actively diuresing. Patients who are losing less than 0.5 kg per day despite at least 40 mg of IV furosemide will need a reassessment of fluid status and might be diuretic resistant. |
| *When transitioned from IV to oral diuretic therapy, the stability of symptoms, weight, and hemodynamics should be observed for approximately 24 hours before hospital discharge. |
| *To transition a patient to oral diuretics, be aware that the oral version of furosemide has approximately 50% bioavailability compared with IV furosemide. |
| *Add another type of diuretic with different site of action (thiazides, spironolactone). |

2017 Comprehensive Update of the Canadian Cardiovascular Society Guidelines for the Management of Heart Failure
## Appendix 2: Dosing and Restrictions

### Table 3: Modified CCS 2017 Evidence Based Heart Failure Drugs/Dosage for Patients with Systolic LV Dysfunction

<table>
<thead>
<tr>
<th>Drug</th>
<th>Start Dose (orally)</th>
<th>Target Dose (orally)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACE inhibitors (ACEI)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>enalapril</td>
<td>1.25 to 2.5 mg BID</td>
<td>10 mg BID / 20 mg BID</td>
</tr>
<tr>
<td>in NYHA class IV</td>
<td></td>
<td>in NYHA class IV</td>
</tr>
<tr>
<td>lisinopril</td>
<td>2.5 to 5 mg Daily</td>
<td>20 to 35 mg Daily</td>
</tr>
<tr>
<td>ramipril</td>
<td>1.25 to 2.5 mg BID</td>
<td>5 mg BID</td>
</tr>
<tr>
<td>perindopril</td>
<td>2 to 4 mg Daily</td>
<td>4 to 8 mg Daily</td>
</tr>
<tr>
<td>trandolapril</td>
<td>1 to 2 mg Daily</td>
<td>4 mg Daily</td>
</tr>
<tr>
<td><strong>Angiotensin receptor Blocker (ARB)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>candesartan</td>
<td>4 to 8 mg Daily</td>
<td>32 mg Daily</td>
</tr>
<tr>
<td>valsartan</td>
<td>40 mg BID</td>
<td>160 mg BID</td>
</tr>
<tr>
<td><strong>Beta-blockers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bisoproLol</td>
<td>1.25 mg Daily</td>
<td>10 mg Daily</td>
</tr>
<tr>
<td>carvedilol</td>
<td>3.125 mg BID</td>
<td>25 mg BID / 50 mg BID</td>
</tr>
<tr>
<td>(greater than 85 kg)</td>
<td></td>
<td>(greater than 85 kg)</td>
</tr>
<tr>
<td><strong>Mineralocorticoid receptor antagonists (MRA)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>spironolactone</td>
<td>12.5 mg Daily</td>
<td>50 mg Daily</td>
</tr>
<tr>
<td>eplerenone</td>
<td>25 mg Daily</td>
<td>50 mg Daily</td>
</tr>
<tr>
<td><strong>Angiotensin receptor-neprilysin inhibitor (ARNI)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sacubitril/valsartan</td>
<td>24/26 mg daily</td>
<td>97/103 mg BID</td>
</tr>
<tr>
<td><strong>Vasodilators</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hydralazine</td>
<td>37.5 mg TID</td>
<td>75 to 100 mg TID to QID</td>
</tr>
</tbody>
</table>

*Eplerenone restrictions:
- patients on eplerenone prior to admission; or
- patients with New York Heart Association (NYHA) Class II chronic heart failure (HF) with left ventricular systolic dysfunction (LVSD) with ejection fraction (EF) equal to or less than 35% and who are intolerant to spironolactone (e.g., gynecomastia, loss of libido, menstrual irregularities).

**Sacubitril-valsartan (ENTRESTO) restrictions.**

Only use sacubitril-valsartan (ENTRESTO) for:
1. Heart failure patients on Entresto prior to admission; or
2. For the treatment of heart failure in patients with the following criteria:
   a. reduced left ventricular ejection fraction [less than 40%]; and
   b. New York Heart Association class II or III heart failure symptoms despite at least 4 weeks of treatment with:
      - a stable dose of an ACE inhibitor or an ARB; and
      - in combination with a beta-blocker and other recommended therapies, including an aldosterone antagonist [if tolerable]; and
   c. who have plasma BNP greater than or equal to 150 pg/mL or NT-proBNP greater than or equal to 600 pg/mL, or if the patient has been hospitalized for heart failure within the past 12 months and has plasma BNP greater than or equal to 100 pg/mL or NT-proBNP greater than or equal to 400 pg/mL levels; and
   d. all new starts must be ordered by a specialist in Cardiology or Internal Medicine as per Alberta Blue Cross requirements.

*Source: AHS Formulary, 2016*

Please refer to Heart Failure guidelines at [www.ccs.ca](http://www.ccs.ca) for further information.
Appendix 3: LACE Index Scoring – Comorbidities – Table 1

<table>
<thead>
<tr>
<th>Condition</th>
<th>Definition and/or notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of myocardial infarction</td>
<td>Any previous definite or probable myocardial infarction</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>Any previous stroke or transient ischemic attack (TIA)</td>
</tr>
<tr>
<td>Peripheral vascular disease</td>
<td>Intermittent claudication, previous surgery or stenting, gangrene or acute ischemia, untreated abdominal or thoracic aortic aneurysm</td>
</tr>
<tr>
<td>Diabetes without complications</td>
<td>No retinopathy, nephropathy or neuropathy</td>
</tr>
<tr>
<td>Congestive heart failure (CHF)</td>
<td>Any patient with symptomatic CHF whose symptoms have responded to appropriate medications</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease (COPD)</td>
<td>Documented COPD</td>
</tr>
<tr>
<td>Mild liver disease</td>
<td>Cirrhosis but no portal hypertension (for example, no varices, no ascites) OR no chronic hepatitis</td>
</tr>
<tr>
<td>Cancer</td>
<td>Solid tumors must have been treated within the last 5 years; includes chronic lymphocytic leukemia (CLL) and polycythemia vera (PV)</td>
</tr>
<tr>
<td>Dementia</td>
<td>Any documented evidence of cognitive deficit</td>
</tr>
<tr>
<td>Connective tissue disease</td>
<td>Systemic lupus erythematosus (SLE), polymyositis, mixed connective tissue disease, moderate to severe rheumatoid arthritis, and polymyalgia rheumatica</td>
</tr>
<tr>
<td>HIV Infection</td>
<td>AIDS-defining opportunistic infection or CD4 less than 200</td>
</tr>
<tr>
<td>Moderate to severe liver disease</td>
<td>Cirrhosis with portal hypertension (for example, ascites or variceal bleeding)</td>
</tr>
<tr>
<td>Metastatic cancer</td>
<td>Any metastatic cancer</td>
</tr>
</tbody>
</table>
Appendix 4: Heart Failure Order Set Evidence Document

To obtain a copy of the Heart Failure Order Set Evidence Document, please send a request to hfpathway@ahs.ca
Appendix 5: Heart Failure Menu of Metrics

To obtain a copy of the Heart Failure Menu of Metrics, please send a request to hfpathway@ahs.ca
Appendix 6: Data Capture Process

HF DATA COLLECTION TIMELINE

1. ED, Registration, ER Doc
2. Standardized Heart Failure Admission Order Set
   General Admission Orders, HF Specific Lab Tests, Medications
3. Admission to Discharge Checklist
   Patient Education, Frailty and Cognitive Screening, Transition/Discharge Services, Pharmacy to Review Medications, Chest X-ray, Echocardiogram, BNP/NT pro-BNP, LACE and Risk Strat Worksheet, Notify PCP of Patient Discharge
4. Discharge Management Plan
   Dietitian Referral, Daily Weights, Monitor Signs and Symptoms of HF, Patient Personal Assessment Checklist
5. LOS
6. Readmission Rates
7. Coordinated Care

DATA COVER PAGE

Chimok Regional Hospital Data Submission

Send data to: sopdpathway@ahs.ca
From (Unit): ______________
Number of Pages (excluding cover): __________

Please include the following documents in a single scan for each discharged patient:

1. Pathway:
   - COPD
   - Heart Failure
2. Discharge date of patient (DD-MM-YYYY): ______________
3. Uptake Information:
   - Was the total orders and bundle used for this data submission?
     Includes: Pathway (HF or COPD) Admission orders + Transition page + Admission to Discharge Checklist + Discharge Management Plan
   - Was the partial bundles used for this data submission?
     NO Pathway (HF or COPD) Admission orders used
     Only Transition to Community Care pages used: Transition page and/or Admission to Discharge Checklist + Discharge Management Plan
4. Checklist of necessary data to include:
   - Completed Data Cover Page (this sheet)
   - Patient Demographics (e.g., Inpatient Registration)
   - Physician Orders (optional)
   - Admission to Discharge Checklist (ADC)
   - Discharge Management Plan (DMP)

If you have any questions, please contact Chantal Atwood:
chantal.atwood@ahs.ca or sopdpathway@ahs.ca
Appendix 7: Data Dictionary

To obtain a copy of the Data Dictionaries, please send a request to hfpathway@ahs.ca

1) Project Data Dictionary
2) Innovation Learning Collaborative Data Dictionary