Pathway Pearls

LACE Index Scoring

What's been done before?
What can we do now?

2018Jun5

Alberta Health Services
Strategic Clinical Networks

Learning Objectives

- Review practice recommendations
- Describe the LACE Index Scoring tool
- Discuss the logistics of completing the LACE Index Scoring tool
- Share Site challenges and solutions to LACE Score completion
- Identify 2 Pathway Pearls to assist implementation

Outline

- Recommendations
- Primary Care: How LACE Guides Access
  Kacey Keyko, RN, BScN, MN Clinical Educator
- Acute Care: Implementing LACE at the Grey Nuns Hospital
  Lisa Jensen, RD, MBA
- Review of LACE Tool
- Heart Failure Algorithm Review
- Group Discussion
- Wrap Up

2017 Comprehensive Update of the CCS Guidelines for the Management of Heart Failure

Necessary features of successful health system integration

Access to care:

- Standardized risk stratification criteria to ensure timely referral and access to appropriate care (p. 1383).

Performance of the LACE index to predict 30-day hospital readmissions in patients with chronic obstructive pulmonary disease, 2017

The use of a prediction model to quantify a patient's risk of readmission may assist in directing interventions to patients who will benefit most

Presentation

Primary Care: How LACE Guides Access

Kacey Keyko, RN, BScN, MN

Clinical Educator

Edmonton Southside Primary Care Network

Primary Care (ESPCN): Transitions of Care Project

Key goal: Reduce readmission rates

- Kaiser Permanente – bundle of interventions
  - Risk stratification
  - Standardized discharge summary
  - Medication reconciliation
  - Post-discharge phone call
  - Timely f/u with primary care physician
  - Transition phone number on discharge instructions
  - Palliative care consult, if indicated
  - Complex case conference

(Tuso et al., 2013)

Primary Care (ESPCN): Transitions of Care Project

Interventions Based on LACE Risk Stratification

	Low (0-6)	Medium (7-10)	High (11+)
Risk Stratification (LACE)	✓	✓	✓
Medication Reconciliation		✓	✓
Post-hospital visit w/ physician		≤ 14 days	≤ 7 days
Phone call interview w/ RN at clinic ≤ 72 hrs after discharge			✓
Complex-case conference			✓

Why the LACE tool?

- Four variables independently associated with **death** or **readmission** within 30 days of hospital discharge (van Walraven et al., 2010).
  - Length of Stay (L)
  - Acuity of Admission (A)
  - Comorbidities (C): Charlson Comorbidity Index Score
  - Emergency Department Visits (E)
- Each component of the score is readily and reliably determined (van Walraven et al., 2010)

How has LACE helped us?

- Identification of patients
- Patient satisfaction
- Coordination of care
- Likely continued improvements with greater system integration

Using the LACE tool

1. Length of Stay (L)

- Includes **day of admission** and **day of discharge**

Length of Stay (days)	Score (L)
1	1
2	2
3	3
4-6	4
7-13	5
≥ 14	7

Using the LACE tool

2. Acuity of Admission (A)

- Was the patient admitted to hospital via ER?
- **Yes = 3**
- **No = 0**

Using the LACE tool

3. Comorbidities (C)

<table>
<tr><th>Co-morbidity</th><th>Score (C)</th><td rowspan="16">If the total score is 0 – 3, enter the actual score into C.

If the score is ≥ 4, enter “5” into C.</td></tr>
<tr><td>Previous myocardial infarction</td><td>+1</td></tr>
<tr><td>Cerebrovascular disease</td><td>+1</td></tr>
<tr><td>Peripheral vascular disease</td><td>+1</td></tr>
<tr><td>Diabetes without complications</td><td>+1</td></tr>
<tr><td>Congestive heart failure</td><td>+2</td></tr>
<tr><td>Diabetes with end organ damage</td><td>+2</td></tr>
<tr><td>Chronic pulmonary disease</td><td>+2</td></tr>
<tr><td>Mild liver or renal disease</td><td>+2</td></tr>
<tr><td>Any tumor (including lymphoma or leukemia)</td><td>+2</td></tr>
<tr><td>Dementia</td><td>+3</td></tr>
<tr><td>Connective tissue disease</td><td>+3</td></tr>
<tr><td>AIDS</td><td>+4</td></tr>
<tr><td>Moderate or severe liver or renal disease</td><td>+4</td></tr>
<tr><td>Metastatic solid tumor</td><td>+6</td></tr>
<tr><td>Total (C)</td><td></td></tr>
</table>

Using the LACE tool

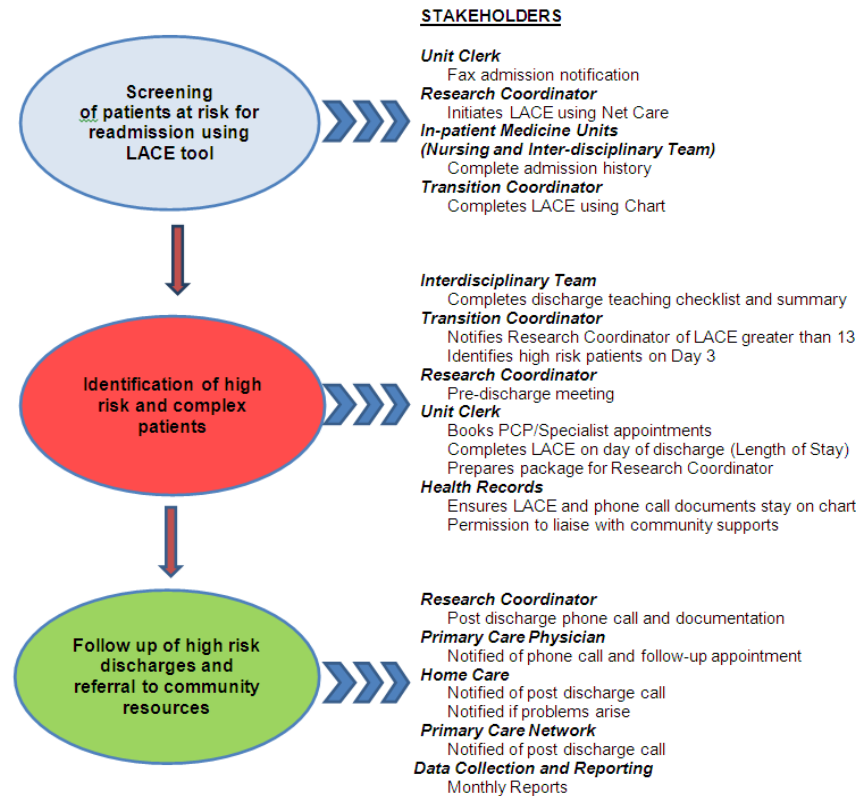
4. Emergency Department Visits (E)
   - **Up to** 4 additional points (max = 4 points) for each ED visit in the last 6 months
   - **NOT** including the ED visit immediately preceding the current admission

Presentation

Acute Care LACE Trial: GNH experience

Lisa Jensen, RD, MBA
Corporate Director, Integrated Access
Acute Care Services

Transitions in Care Pilot Project - Early Identification and Support for Complex Patients



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Final Results:
Outcomes – average acute care length of stay

WITH PROJECT INTERVENTIONS:
(n= 433, high LACE score patients who were included in the project)

12.7 days

WITHOUT PPROJECT INTERVENTIONS:
(n= 231, high LACE score patients who received no project interventions)

16.6 days

Average acute care length of stay

Resources

Affix patient label within this box

LACE Index Scoring Worksheet (Appendix 1)
Complete at Discharge

Step 1 – Length of Stay ____ days *(including day of admission & discharge)*

Length of stay *(days)*	Score *(circle as appropriate)*
1	1
2	2
3	3
4 – 6	4
7 – 13	5
14 or more	7

L

Step 2 – Acuity of Admission
Was the patient admitted to hospital via the emergency department

	Score *(circle as appropriate)*
Yes	3
No (other)	0

A

Step 3 – Comorbidities

Condition *(Description on reverse)*	Score *(Circle all that are ap*
History of myocardial infarction	+1
Cerebrovascular disease	+1
Peripheral vascular disease	+1

Total	Score
1	1
	2

Appendix 1

Condition	Definition and/or notes
History of myocardial infarction	Any previous definite or probable myocardial infarction
Cerebrovascular disease	Any previous stroke or transient ischemic attack (TIA)
Peripheral vascular disease	Intermittent claudication, previous surgery or stenting, gangrene or acute ischemia, untreated abdominal or thoracic aortic aneurysm
Diabetes without complications	No retinopathy, nephropathy or neuropathy
Congestive heart failure (CHF)	Any patient with symptomatic CHF whose symptoms have responded to appropriate medications
Chronic obstructive pulmonary disease (COPD)	Documented COPD
Mild liver disease	Cirrhosis but no portal hypertension (for example, no varices, no ascites) OR no chronic hepatitis
Cancer	Solid tumors must have been treated within the last 5 years; includes chronic lymphocytic leukemia (CLL)

Heart Failure Risk Stratification

Risk Stratification Worksheet
(Appendix 1 Continued)

LACE Score
Discharge BNP or NT-proBNP (within 48 hours prior to discharge)

Risk Stratification

Hospital Discharge
Heart Failure Patient
Assess for LACE Score

Low Risk
(0 - 6)

Medium Risk
(7 - 10)

High Risk
(11 - 19)

Phone Follow-up
Heart Function Specialist/Clinic
Within 72 hours

Any of the following:
- BNP 300 pg/mL or Less
- NTBNP 1000 pg/mL or Less
- A 30% decrease in BNP from admission

BNP Greater than
300 pg/mL
Or
NTBNP Greater than
1000 pg/mL

Any of the following:
- BNP 300 pg/mL or Less
- NTBNP 1000 pg/mL or Less
- A 30% decrease in BNP from admission

BNP Greater than
300 pg/mL
Or
NTBNP Greater than
1000 pg/mL

Follow-Up Visit
Heart Function
Specialist/Clinic
Within 12 weeks

Follow-Up Visit
Heart Function
Specialist/Clinic
Within 2 weeks

Follow-Up Visit
Heart Function
Specialist/Clinic
Within 7 days

Follow-Up Visit in Primary Care Clinic
Within 2 weeks

LACE Documentation

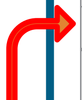
Admission to Discharge Checklist

Heart Failure Admission to Discharge Checklist

Please complete the following activities related to Heart Failure (HF) patient care. Check the appropriate column as each item is addressed for the patient and/or caregiver(s). Provide additional comments if item is incomplete and when necessary.

Admission Date *(yyyy-Mon-dd)* Time *(hh:mm)*

Activity	Completed			Initial
Patient Education	Yes	No	N/A	
1. Provide 'Patient Education Resource Package' – Review with patient/caregiver				
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 ☐ Provider ☐ Dietitian ☐ Other, *specify* ___				
Prior to Discharge ***Review results and ensure appropriate follow-up***				
4. Frailty screen				
5. Cognitive screen				
6. Transition/Discharge services assessment				
7. Review and optimize heart failure medication				
8. Chest X-Ray				
9. Echocardiogram within the past 12 months Ejection Fraction ___ %				
At Discharge				
10. Complete discharge medication reconciliation				
11. Obtain BNP or NT-proBNP within 48 hours prior to discharge *(required for #12)*				
12. Complete 'LACE Index Scoring Worksheet' & 'Risk Stratification Worksheet' *(see Appendix 1 on Admission Orders)*				
13. Complete, review and provide 'Discharge Management Plan' – Reinforce "Red, yellow, green Action Plan" located on the back *(ensure adequate patient understanding)*				
14. Notify Heart Function Clinic or Specialist of patient discharge				
15. Arrange follow-up with Heart Function Clinic or Specialist within recommended timelines as per Risk Stratification Worksheet				
16. Notify Primary Care Provider of patient discharge				
17. Arrange follow-up with Primary Care Provider within 2 weeks *(14 days)* of discharge				
18. Provide Primary Care Provider and Heart Function Clinic/Specialist with				



Activity				
7. Review and optimize heart failure medication				
8. Chest X-Ray				
9. Echocardiogram within the past 12 months Ejection Fraction ___ %				
At Discharge				
10. Complete discharge medication reconciliation				
11. Obtain BNP or NT-proBNP within 48 hours prior to discharge *(required for #12)*				
12. Complete 'LACE Index Scoring Worksheet' & 'Risk Stratification Worksheet' *(see Appendix 1 on Admission Orders)*				
13. Complete, review and provide 'Discharge Management Plan' – Reinforce "Red, yellow, green Action Plan" located on the back *(ensure adequate patient understanding)*				
14. Notify Heart Function Clinic or Specialist of patient discharge				
15. Arrange follow-up with Heart Function Clinic or Specialist within recommended timelines as per Risk Stratification Worksheet				
16. Notify Primary Care Provider of patient discharge				
17. Arrange follow-up with Primary Care Provider within 2 weeks *(14 days)* of discharge				
18. Provide Primary Care Provider and Heart Function Clinic/Specialist with Discharge Summary & Discharge Management Plan				

LACE Documentation

Discharge Management Plan

COPD

You may be contacted after you've been discharged to see how you're doing

Comments ______

Follow-up	Location	Phone number	Date *(yyyy-Mon-dd)*	Time *(hh:mm)*
Primary Care Provider *(within 2 weeks of discharge)*				
Pulmonary Rehabilitation ☐ Yes ☐ Refused ☐ N/A				
Local Health Unit for influenza and pneumococcal vaccines				

☐ Reviewed above content with patient/family/significant other

Health Care Provider *(Last Name, First Name)*	Designation	Initial
Signature	Date *(yyyy-Mon-dd)*	

Lace Score *(Check)* Risk of readmission to hospital within 30 days
☐ Low Risk ☐ Medium Risk ☐ High Risk

21045 (2017-11) **White** - Patient **Canary** - Chart

Heart Failure

5. I understand the instructions given to me		
6. All my questions have been answered to my satisfaction		

Follow-up	Location	Phone number	Date *(yyyy-Mon-dd)*	Time *(hh:mm)*
Primary Care Provider *(within 2 weeks of discharge)*				
Heart Function Clinic/Specialist phone contact within 72 hours ☐ No ☐ Yes ☐ N/A				
Heart Function Clinic/Specialist within: ☐ 7 days ☐ 2 weeks ☐ 12 weeks				
Local Health Unit for influenza and pneumococcal vaccines				

☐ Reviewed above content with patient/family/significant other

Health Care Provider *(Last Name, First Name)*	Designation	Initial
Signature	Date *(yyyy-Mon-dd)*	

Participants are encouraged to participate in session talks.

If you would like to email your question, please send to:

hfpathway@ahs.ca