

Evidence *in* Context

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Reducing Acute Care Length of Stay
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Health research – synthesized and contextualized for use in Newfoundland & Labrador

Reducing Acute Care Length of Stay *in* Newfoundland & Labrador

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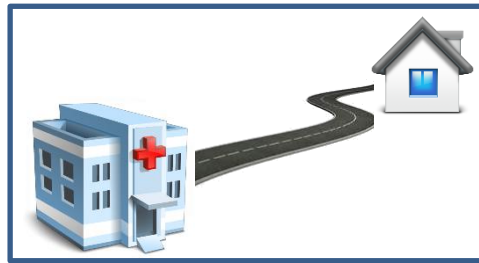
Acute care admissions in Newfoundland and Labrador are similar to those in the rest of Canada, with a majority of patients having an Average Length of Stay (ALOS) of less than one week. However, Newfoundland and Labrador patients tend to have an ALOS approximately one day longer than their counterparts elsewhere in the country. Our Health System Partners asked CHRSP to examine the evidence for strategies that can reduce acute care length of stay while maintaining quality of care, reducing readmission rates, and minimizing healthcare costs.

For this study, CHRSP assembled a team headed by Subject Expert Dr. Christine Soong, Hospitalist Director at the Mount Sinai Hospital in Toronto. Our Health System Leader was Dr. Susan Gillam, CEO of Western Health. The Project Team also included decision makers from all four Regional Health Authorities and the provincial Department of Health and Community Services, as well as clinicians and academic researchers.

The Project Team searched the literature for policies, programs and practices that expedite recovery time and the discharge process in acute care (without increasing readmission rates or costs). To avoid duplication with ongoing work in the province, this project did not

include studies about community-based supports, pharmaceutical reconciliation, or any interventions requiring new infrastructure.

The Project Team mainly used research evidence from systematic reviews, as well as primary research studies that were published too recently to have been included in those reviews. We developed and implemented a CHRSP 'Evidence Rating System' (ERS) to



assist in critically appraising eligible articles, extracting relevant data, and assessing the strength of the body of evidence. We used the CHRSP ERS to synthesize the research findings in order to estimate the effectiveness of specific interventions to achieve

individual outcomes for defined populations. CHRSP set a relatively conservative threshold of Moderate, Strong or Very Strong for the strength of a body of evidence in order to draw conclusions with confidence and inform decision makers.

This document provides a brief summary of the interventions studied in this CHRSP research synthesis, outlines relevant local contextual considerations, and concludes with the implications of the synthesis findings for the province's health system decision makers.

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The Research Question:

"What does the available research-based evidence tell us about what models/strategies/practices are best suited for the timely and effective discharge of patients admitted to hospitals in NL?"

Disclaimer: This document is an executive summary of a larger report that contains fully-referenced material. We have omitted references from this summary for the sake of brevity, but readers who wish to review the fully-referenced report are encouraged to do so at <http://www.nlcahr.mun.ca/CHRSP/> together with an online companion document describing the methodology, data extraction and detailed synthesis results.

Read the full report here: <http://www.nlcahr.mun.ca/CHRSP/>

Summary of the Research Evidence

Our search identified 55 systematic reviews studying 32 interventions to reduce average length of stay (ALOS) among diverse groups of acute care patients. We also synthesized the evidence for two secondary outcomes: readmission and cost. The strength of the body of evidence was highly variable, ranging from very strong to very weak. The bodies of evidence for the interventions studied in this report are summarized in Table 1.

Care Pathways are a type of structured, multidisciplinary care plan and were the most frequently studied type of intervention in the literature. Individualized Discharge Planning for the elderly, Early-Supported Discharge for stroke patients and hospitalist-based interventions had moderate to strong evidence. Other interventions that had weak or very weak bodies of evidence in terms of reducing ALOS included: active mobilization, acute geriatric care, case management, emergency department short stay units, exercise, interdisciplinary rounds and physiotherapy. It should be noted that interventions that were not shown to effectively reduce ALOS often proved to be effective at improving a range of other outcomes (i.e., they had other types of value that can support their implementation).

Key Findings from the Synthesis

The volume of evidence for the effectiveness of Care Pathways to reduce Length of Stay is exceptional. However, pooling evidence for multiple different types of patient population sub-groups masks important variations in that effectiveness. In other words, the validity of the measure of effectiveness is reduced by generalizing across sub-groups. A meaningful synthesis requires examination of the evidence at the level of individual types of patients, as well as an analysis of why differences exist between different patient sub-groups. Our report addressed this issue by identifying the findings for specific patient groups. The key findings from our synthesis of the evidence are summarized on the following page.

Table 1: The Body of Evidence for interventions to reduce acute care length of stay for different types of patient sub-groups.

Evidence for Care Pathways	
Strength of Evidence	Type of Acute Care Patients
Very Strong Body of Evidence (Effective)	- All studied types - Abdominal Surgery - Gastrointestinal surgery
Strong Body of Evidence (Effective)	Colorectal surgery
Moderate Body of Evidence (Effective)	- Gynaecological surgery - Pancreatic surgery
Weak Body of Evidence (Undetermined)	- Gastrectomy - Liver surgery - Lung surgery - Thyroidectomy - Chronic Heart Failure - Chronic Obstructive Pulmonary Disease - Heart failure - Pediatric asthma
Evidence for Other Interventions	
Strength of Evidence	Intervention (Acute Care Patient Sub-Group)
Strong Body of Evidence (Effective)	Individualized Discharge Planning (Elderly)
Moderate Body of Evidence (Effective)	- Early Supported Discharge (Stroke) - Hospitalist-based Interventions (Mixed)
Moderate Body of Evidence (Not Effective)	- In-patient Geriatric Consultation Teams (Elderly) - Multi-Disciplinary Rehabilitation (Hip Fracture) - Nutritional Therapy (Mixed) - Stroke Unit Care (Stroke)
Moderate Body of Evidence (Against)	Nursing-Led Units (Mixed)
Weak Body of Evidence (Undetermined)	- Active Mobilization (Mechanically Ventilated) - Acute Care for Elders (Elderly) - Case Management (Heart Failure) - Emergency Department Short Stay Unit (Mixed) - Exercise (Mixed) - Interdisciplinary Rounds (Mixed) - Physiotherapy (ICU)

Summary of Key Synthesis Findings

1. A strong body of evidence shows that Care Pathways are consistently effective at reducing average length of stay (ALOS) for acute care patients who have undergone colorectal surgery. Furthermore, Care Pathways are shown to decrease costs for the healthcare system with no effect on readmission rates. The implementation of Care Pathways for colorectal surgery indicates that several common elements appear to be critical for their effectiveness.
2. A moderate body of evidence indicates that Care Pathways are effective at reducing ALOS among patients undergoing gynaecological surgery and pancreatic surgery, without affecting readmission rates.
3. Care Pathways may also be effective for liver and stomach surgery as they are for gastrointestinal surgery in general, but the current body of evidence is insufficient to draw any conclusive findings.
4. Care Pathways may also be effective for lung and thyroid surgery and for acute care patients with chronic heart failure (and some other chronic disease conditions), but the current body of evidence is insufficient to draw any conclusive findings.
5. A strong body of evidence indicates that Discharge Planning is effective at reducing ALOS and readmission rates for older acute care patients. The key elements of Discharge Planning are developing an individualized plan for discharge on or before admission and enforcing it.
6. A moderate body of evidence shows that Early Supported Discharge for stroke patients significantly reduces ALOS and suggests it may do so without changing readmission rates or increasing costs for the hospital/health care system.
7. A moderate body of evidence indicates that hospitalist models of care can be expected to reduce ALOS without increasing readmission rates or costs.
8. Nursing-Led Units are not effective for reducing hospital ALOS in the context of the parameters studied in this report.

Reducing Acute Care Length of Stay: The Newfoundland & Labrador Context

Our researchers interviewed health system officials, clinicians and other stakeholders to identify the contextual factors of Newfoundland & Labrador that may have an impact on the effectiveness, feasibility or acceptability of the studied interventions. The results of these interviews are included in the full report. Some key contextual factors are summarized below:

- Physician compliance is a key factor for the successful implementation of any type of structured care plans. The rate of successful uptake for Care Pathways in NL hospitals is expected to vary among physicians and across facilities. As a result, CPs may be less effective here than reported in the literature, where uptake has been close to 100%.
- Change management challenges were experienced when Patient Order Sets were implemented in NL hospitals. Accordingly, it is anticipated that similar challenges may arise when introducing approaches highlighted in this report: Care Pathways, Early Supported Discharge, and Discharge Planning. Effective change management strategies will be crucial for the successful implementation of the evidence-based interventions outlined in this study.
- Definitions of “hospitalist” vary across the NL health system and may not be consistent with definitions used in the research literature; the roles and responsibilities of hospitalists may need to be redefined to capitalize on improvements in reducing ALOS.
- Acute care settings in NL with specialist shortages may derive particular benefit from the decision support offered in Care Pathways and Early Supported Discharge.
- In many NL hospitals, discharges often occur late in the day and are difficult on weekends. Scheduling challenges will have to be addressed to implement effective discharge programs that release patients throughout the day and over a full week.
- Given the current climate of fiscal restraint, it may be timely to adopt structured acute care planning strategies (e.g., Care Pathways and Discharge Planning) with relatively low implementation costs and the capacity to reduce ALOS and lower costs.

Contextualized Synthesis: Reducing Acute Care Length of Stay

Implications for Decision Makers

In Newfoundland & Labrador, patients have slightly longer average lengths of stay (ALOS) in acute care units than those in other Canadian provinces. This indicates that efficiencies could be realized within acute care settings in this province. An extensive body of research has investigated a range of interventions that have impacts on length of stay, rates of readmission, and cost-effectiveness. When considering the findings from this body of evidence in the context of Newfoundland & Labrador, the following “Implications for Decision Makers” should be borne in mind:

- Care Pathways (CP) for colorectal surgery patients have a very strong body of research evidence demonstrating their ability to reduce acute care length of stay by several days without increasing rates of readmission or decreasing cost-effectiveness. Gynecological surgery and pancreatic surgeries have moderate bodies of evidence supporting them. It is reasonable to expect future research to further support Care Pathways, especially for conditions with high diagnostic accuracy and standardized treatments.
- Discharge Planning (DP) practices have a strong body of evidence indicating modest reductions in average acute care length of stay. These approaches involve evidence-based, structured plans of care.
- The principal contextual factor for CP and DP in NL is the need for *effective change management*. The ability of health system administrators in Newfoundland & Labrador to manage change among physicians is expected to be critical to the effectiveness of any proposed interventions.
- Moderate bodies of evidence show that the use of hospitalists can be effective at reducing acute care ALOS. Hospitalists offer an alternative approach to structured care plans (see above), and take advantage of positions that already exist throughout the province. However, the roles and responsibilities of hospitalists in NL may need to be carefully and consistently redefined in order to capitalize on improvements in ALOS.
- Early Supported Discharge for stroke patients may significantly reduce acute care LOS by several days. However, this intervention also requires significant community supports and therefore involves both the discharge process and improvements in recovery settings. The primary objective of the healthcare system, in the context of this project, was to improve acute care efficiency; Early Supported Discharge may not achieve this objective in a more global context.

A range of other interventions currently lack sufficient evidence for assessment of their effectiveness in decreasing average acute care length of stay. These include: Care Pathways for other surgeries and chronic diseases, active mobilization, acute geriatric care, case management, emergency department short stay units, exercise, interdisciplinary rounds and additional physiotherapy. Further research will be needed.



For the complete CHRSP report, including details on the evidence reviewed by the project team, and for more information about the CHRSP process, please visit the NLCAHR website: <http://www.nlcahr.mun.ca/CHRSP/>