Integrated Funding Models Central Evaluation

Authors

Kevin Walker
Gayathri Embuldeniya
Ruth E Hall
Maritt Kirst
Walter P Wodchis

March 2019

HEALTH SYSTEM PERFORMANCE RESEARCH NETWORK (HSPRN)

Publication Information

The opinions, results and conclusions included in this report are those of the authors and are independent from the funding sources. Parts of this material are based on data and/or information compiled and provided by the Canadian Institute for Health Information (CIHI). No endorsement by CIHI, ICES or the Ontario Ministry of Health and Long-Term Care (MOHLTC) is intended or should be inferred.

Health System Performance Research Network

The Health System Performance Research Network (HSPRN) is a multi-university and multi-institutional network of researchers who work closely with policy and provider decision-makers to find ways to better manage the health system. HSPRN is affiliated with the Institute of Health Policy, Management and Evaluation (IHPME) at the University of Toronto and consists of scientists, visiting scholars, post-doctoral fellows, graduate students, and research associates. HSPRN is recognized for its commitment to performance measurement and quality improvement efforts to improve the health and experiences of patients in Ontario. The network has expertise in many areas of health system performance measurement, including clinical quality, financial management, and patient safety and satisfaction. Academic disciplines represented include health economics, epidemiology, finance, health informatics, health services research, nursing, organizational management, and statistics.

Contact Information

Institute of Health Policy, Management and Evaluation
University of Toronto
155 College Street, Suite 425
Toronto, ON M5T 3M6

Email: hsprn@utoronto.ca

How to Cite this Publication

Walker K, Embuldeniya G, Hall RE, Kirst M, Wodchis WP. Integrated Funding Models Central Evaluation. HSPRN; 2019.

This document is available at www.hsprn.ca

Authors Affiliations

Kevin Walker, MSc - HSPRN, University of Toronto
Gayathri Embuldeniya, PhD - HSPRN, University of Toronto
Ruth E Hall, PhD - HSPRN, University of Toronto; and ICES
Maritt Kirst, PhD – HSPRN, University of Toronto; and Wilfred Laurier University
Walter P Wodchis, PhD – HSPRN, University of Toronto; Institute for Better Health, Trillium Health Partners; and ICES

Acknowledgements

The authors wish to acknowledge contributions of the following individuals and organizations:

Content Support

IFM Implementation Evaluation Committee:

- Health Quality Ontario Liaison and Program Development Branch, MOHLTC
- Health Quality Ontario
- St Joseph's Healthcare Hamilton

HSPRN research staff (Fatah Awil, Amanda Everall, Jennifer Gutberg, Sydney Jopling, Nusrat Nessa, Sara Shearkhani, Kayla Song)

All interview participants and survey respondents

Technical Support

HNHB ICC 2.0, C NYC ICC, SW CC2H, CW H2H, TC/C OCOT, and MH PPATH IFM teams and their partners for collecting and providing IFM Common Indicator and project specific data.

ICES Data Quality and Information Management Team for processing the project specific datasets.

Financial Support

This research was supported by a grant from the Ontario MOHLTC to the HSPRN (fund #06034), and by ICES, which is also funded by an annual grant from the MOHLTC. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

About this Report

This compendium of reports comprises deliverables for each component of the Integrated Funding Model (IFM) Central Evaluation. A list of reports is provided below under the heading *Compendium of Reports*. You may access the reports by clicking on the link provided. A brief summary of this multi-method evaluation is also detailed herein.

Table of Contents

Summary of the IFM Central Evaluation

Introduction

In early 2015, the Ministry of Health and Long-Term Care (MOHLTC) issued a call for Expressions of Interest (EOI) from the health system (including hospitals, Community Care Access Centres (CCAC)/Local Health Integration Networks (LHIN), direct service home care providers, physicians and others) to participate in an Integrated Funding Model (IFM) initiative. The goal of the IFM initiative was to test innovative approaches to integrate care and funding over a patient's episode of care beginning in acute care and including home/community care post-discharge. Specifically, the MOHLTC hoped the initiative would:

- Promote patient-centred care across the care continuum;
- Improve the quality and reduce unwanted or unwarranted variation of patient care pathways;
- Improve efficiency;
- Inform policy;
- Improve quality outcomes for patients (e.g., keeping people at home, reducing emergency department visits, hospital readmissions and length of stay in hospitals);
- Improve patient, caregiver and provider experience; and
- Improve efficiency and value for money.

Out of fifty proposals, six pilot projects were ultimately selected by the MOHLTC (see Table 1). Projects varied on patient population, care pathway, project scale and bundle period. Additional details on each project may be found in Appendix A.

Table 1. IFM Pilot Project Summaries

Pilot Project	Patient Population	Index Event	Number of Acute Care Facilities*	Bundle Period
HNHB ICC 2.0	COPD & CHF	Inpatient Hospitalization	9	60 days
C NYC ICC	COPD & CHF	Inpatient Hospitalization	1	60 days
SW CC2H	COPD & CHF	Inpatient Hospitalization	1	60 days
CW H2H	UTI & Cellulitis	Inpatient Hospitalization or ED Visit	2	60 days
TC/C OCOT	Stroke	Inpatient Hospitalization	2	104 days
MH PPATH	Cardiac Surgery	Inpatient Hospitalization	1	30 days

Note: HNHB ICC 2.0=Hamilton Niagara Haldimand Brant LHIN Integrated Comprehensive Care 2.0; C NYC ICC=Central LHIN North York Central Integrated Care Collaborative; SW CC2H=South West LHIN Connecting Care to Home; CW H2H=Central West LHIN Hospital to Home; TC/C OCOT=Toronto Central/Central LHIN One Client, One Team; MH PPATH=Mississauga Halton LHIN Putting Patients at the Heart; COPD=Chronic Obstructive Pulmonary Disease; CHF=Congestive Heart Failure; UTI=Urinary Tract Infection; *Hospital corporations, not unique sites.

The Health System Performance Research Network (HSPRN) was engaged to conduct a central evaluation of the six IFM initiatives. The objectives of the evaluation were to:

- Measure patient health outcomes;
- Measure utilization of health care resources and care costs across care settings;
- Measure patient and provider experience;
- Identify success factors and potential barriers to IFM implementation; and
- Inform policy and potential provincial spread.

A mixed methods approach, examining both quantitative and qualitative evidence of the effectiveness of IFM projects, was selected and was composed of four components:

1) Implementation Evaluation;
2) Patient and Caregiver Experience;
3) Ongoing Monitoring and Reporting of Common Indicators; and
4) Comparative Effectiveness Analysis at ICES.

Reports and slide decks pertaining to each component are included in this compendium. Methods and key findings from the evaluation are summarized below.

Key Findings

Implementation Evaluation - Stakeholder Interviews

At the outset of the IFM initiative, we undertook interviews with key stakeholders across all six IFM projects, and with LHIN and MOHLTC representatives, to assess early approaches, barriers and facilitators to implementation. To capture perspectives across the hospital to community and home care service continuum, a broad range of key stakeholders, such as senior decision makers, managers, integrated care coordinators, and clinical champions, were included from a range of partner organizations. Some of the important early drivers of success were:

1) Leveraging existing partnerships between organizations and building trust to facilitate collaboration;
2) Strong leadership with a belief in the model;
3) Program cohesiveness at operational and implementation levels; and
4) Engaging clinicians across professions, organizations and sectors.

The early barriers identified in the interviews included:

1) Challenges with information sharing and management across organizations;
2) Financial pressures and lack of resources, particularly affecting smaller partners; and
3) Competing organizational priorities and different organizational cultures.

Follow-up interviews completed with key stakeholders from the three COPD and CHF projects at the end of the evaluation period also revealed concerns regarding patient enrolment, primary care engagement and differences across partner organizations. The following list summarizes measures suggested by key stakeholder representatives across the three COPD/CHF projects to encourage IFM sustainability for medical conditions such as COPD/CHF.

1) Wrap care around patient by:
    a. Addressing patient complexity (e.g. comorbidities and social complexity)
    b. Linking patient to wider health and social resources
    c. Focusing on system-wide sustainability rather than cost-savings
    d. Increasing bundle length
    e. Moving point of intake upstream (i.e. Primary care self-management education);
2) Resolve contradictions between IFM objectives aimed at reducing hospital visits and volume-based QBP funding;
3) Ensure physician compensation reflects their involvement and role on the patient's integrated care team;
4) Develop standardized templates for data collection and finance;
5) Meaningful evaluation (e.g., reasons for returning to Emergency Department); and
6) Account for differences across clinical conditions & local program contexts when spreading/ scaling models.

Patient and Caregiver Experience

In general, responses to the patient and caregiver experience surveys were positive (see Appendix A and B for the surveys). There were, however, some meaningful differences between caregivers and patients, as well as between IFM pilot projects, which are described below.

The global rating of **hospital experience** was nearly 10% lower for caregivers than patients (77.1% vs 86.7%, respectively, rated their hospital experience as >=7/10). Patients reported having a much greater sense of involvement in decision making while in hospital than caregivers, 86.7% positive vs 56.8%, respectively, and were more likely to report receiving sufficient information about their condition/treatment before discharge (87.3% vs 72.1% positive for patients and caregivers, respectfully).

The overall ratings of **hospital experience** also varied across IFM projects; for both patients and caregivers, Mississauga Halton LHIN Putting Patients at the Heart (MH PPATH) patients undergoing cardiac procedures, had the highest ratings (94.1% patients and 87.5% caregivers) and Central West LHIN Hospital to Home (H2H), cellulitis and UTI patients had the lowest (76.8% patients and 60% caregivers). This may reflect very well defined, consistent pathways and approximately 50% of surgeries being elective in the MH PPATH project, while CW H2H included a large number of patients enrolled in the emergency department.

Patient ratings of the **care transition**, while positive, weren't as high as those reported in a sample of US inpatients (52%, on average, selected "strongly agree" across the three Care Transitions Measure (CTM-3) questions in the US vs 43% of IFM patients).[1] Many caregivers didn't feel prepared to help care for the patient when they returned home; 35.8% reported receiving no information or partial information about their role in the patient's care upon discharge and 40.9% weren't asked by hospital staff if they were able or willing to help. This is concerning when more than half of caregivers surveyed reported spending at least 10 hours a week, on average, caring for the patient.

There was less of a difference between patient and caregiver's global rating of overall **post-acute**

[1] http://www.hcahpsonline.org. Centers for Medicare & Medicaid Services, Baltimore, MD. Accessed 19/01/2017.

experience; 87.9% and 83.2%, respectively, rated the post-acute experience positively. However, there was wide variation in the global rating of the post-acute experience across IFM programs. The Connecting Care to Home (CC2H), a COPD & CHF program from the South West LHIN, had the highest proportion of patients and caregivers rating the post-acute experience positively, 94.9% of patients and 92.3% of caregivers, while stroke patients and caregivers from Toronto Central LHIN and Central LHIN One Client One Team (OCOT) rated the overall post-acute experience the lowest, 73.4% and 70.0%, respectively.

Extensive interviews with IFM COPD and CHF patients, revealed they valued the knowledge and self-management skills they acquired, that they liked receiving individually tailored material resources, and having access to a 24-hour telehealth number. Patients appreciated the connectivity of patient information within the program, so that they didn't have to repeat themselves with each new provider. They also reported on the importance of getting along with their home care providers, and appreciated the genuine care their providers displayed.

However, most patients did not have a comprehensive understanding of the IFM program; where it began and ended, its objectives, and what could be expected of healthcare services and professionals involved. Some patients didn't feel they could question whether they were receiving the appropriate services. This, along with programs not being tailored to patient's knowledge and disease progression, led to some needs being unmet, while others felt overwhelmed by the number of visits and array of visitors.

Baseline (2014) and Quarterly (2015-2018) Monitoring and Reporting of IFM Common Indicators

Four of the six IFMs showed index LOS reduced by more than 20% relative to the baseline period (2014), (H2H, CC2H, PPATH and Integrated Comprehensive Care (ICC) 2.0 from Hamilton Niagara Haldimand and Brant LHIN). Over the full pilot period (October 2015-July 2018), four projects (ICC 2.0, PPATH, CC2H and NYC ICC) saw a 19% and 37% relative reduction in readmissions and three projects (CC2H, ICC 2.0 and PPATH) saw over a 20% relative reduction in ED visits. In the final fiscal year (FY 2018/19) of H2H, NYC ICC and OCOT's pilot projects, however, ED visits increased over baseline. Similarly, readmissions in the final fiscal year (2018/19) of H2H and OCOT's pilot projects were above the baseline period, suggesting sustainability issues.

Comparative Effectiveness (CE) Analysis

For the main outcome measures examined, IFM facilities, as a whole, saw significant improvement after the start of the intervention.

- Mean index hospitalization length of stay decreased by 1.26 days, from 7.22 to 5.96 days
- Mean total number of days in hospital (30-days) decreased by 1.14 days, from 5.9 to 4.75 days
- ED visit or death rate within 30 days of discharge decreased by 6%, from 33% to 27%
- Readmission or death rate within 30 days of discharge decreased by 6%, from 25% to 19%
- Mean total costs within 30-days decreased by $2,110, from $13,444 to $11,334, and within 90-days decreased by $3,035, from $18,169 to $15,134

Compared with similar patients from non-IFM facilities, patients admitted to IFM participating facilities had greater reductions over time in all of the main outcome measures.

- The reduction in mean index hospitalization length of stay was 0.68 days greater, -1.26 days for IFM facilities vs -0.57 days for non-IFM facilities
- The reduction in mean total number of days in hospital (30-days) was 0.75 days greater, -1.14 days for IFM facilities vs -0.39 days for non-IFM facilities
- The reduction in ED visit or death rate within 30 days of discharge was 6% greater, -6% for IFM facilities vs 0% for non-IFM facilities
- The reduction readmission or death rate within 30 days of discharge was 6% greater, -6% for IFM facilities vs 0% for non-IFM facilities
- The reduction in mean total costs within 30-days were $1,297 greater, -$2,110 for IFM facilities vs -$814 for non-IFM facilities, and within 90-days the reduction was $1,719 greater, -$3,035 for IFM facilities vs -$1,316

Most IFM pilot projects showed some modest success, reducing at least one of the measured outcomes (e.g. LOS, readmissions and ED visits) over time. However, the overall comparative effectiveness results were largely due to the two projects (MH PPATH cardiac surgery and HNHB ICC 2.0 COPD/CHF) with the largest number of patients.

If these two projects were spread across the province, the estimated impacts could be substantial.

- If the cardiac surgery bundle (MH PPATH) was spread to all 9,293 cardiac surgery patients in the province of Ontario meeting the MH PPATH enrolment criteria, estimated annual savings of 4,740 hospital days and $18.6M could be achieved.[2]
- If the HNHB COPD/CHF bundled care model (ICC 2.0) was spread provincially to all 18,585 patients in Ontario meeting the ICC 2.0 enrolment criteria at a similar penetration rate (~40%), estimated annual savings of 13,502 hospital days and $24.1M dollars could be achieved. [3]

Methods

Implementation Evaluation - Stakeholder Interviews

The objective of the implementation evaluation component was to identify factors related to intervention success or failure through qualitative interviews designed to explore program context (i.e. characteristics of the organizational setting in which a program operates) and the processes involved in program implementation.

Two rounds of semi-structured interviews with key stakeholders were completed.

---

[2] Estimated using 30-day savings in mean total cost ($1,997) and days in hospital (0.51 days), and the total number of patients meeting the enrolment criteria (see Comparative Effectiveness Report.pdf for details) in Ontario in FY 2017/18 (n=9,293).

[3] Estimated using 60-day savings in mean total cost ($3,264) and days in hospital (1.83 days), the total number of patients meeting the enrolment criteria (see Comparative Effectiveness Report.pdf for details) in Ontario in FY 2017/18 (n=18,585), and a penetration rate of 39.7%.

a) Interviews with Key Stakeholders Round #1

The first round of interviews was conducted approximately 1-year after the MOHLTC's call for Expressions of Interest and the start of the IFM initiative (February - June 2016) and included 48 key stakeholders. Six individuals were selected from each IFM program. Interviewees included: senior decision makers; managers; integrated care coordinators; and clinical champions, from both acute care and partner community organizations. We also interviewed representatives from the MOHLTC, and the Local Health Integration Networks associated with the IFM pilots.

b) Interviews with Key Stakeholders (COPD & CHF) Round #2

A second round of interviews was conducted with 18 key stakeholders from the three projects focused on Chronic Obstructive Pulmonary Disease (COPD) and Congestive Heart Failure (CHF). These interviews were completed between January and March 2018. The objective of the second round of interviews was to understand if any implementation barriers remained and what was required for the long term sustainability of integrated care for COPD and CHF patients. Additionally, interviews with COPD and CHF patients were completed and described in 2.c) below.

Patient and Caregiver Experience

a) Patient Experience and Patient Reported Outcome Survey

The patient experience survey was based on questions selected from a number of other surveys, including the *Canadian Patient Experiences Survey*, the *Commonwealth Fund International Health Policy Survey of Older Adults* and the *Care Transitions Measure,* among others and included questions related to the patient's experience during the index hospitalization; with their transition from acute care; and with their post-acute care during the bundle period (See Appendix A). Additional sections asked about the patient's health status, costs and background information. Respondents were able to share any additional comments about their experience, either at the end or, for telephone surveys, throughout the survey.

The patient experience survey was conducted from July 2016 through July 2018. Surveys were completed either by mail, telephone or online. Patients were randomly selected, and our target was 10 patients per month per IFM program. The projects received monthly results of their own patients' surveys and the MOHLTC received quarterly summaries. Over 900 patient surveys were returned across all six projects.

b) Caregiver Experience Survey Report

A caregiver experience survey was developed based on questions selected from a number of caregiver surveys including the *Zarit Burden Interview*, *Mental Health Carer's Survey*, *Family/Friend Caregiver Survey*, *General Social Survey,* among others. The survey was mailed out along with the patient experience survey on a monthly basis starting in November 2017. Telephone and electronic versions of the survey were also available. The survey included questions on the caregiver's health status; their caregiving experience; burden and time spent caring for the patient and any costs incurred. We received 159 responses to this survey. See Appendix B for the survey. Respondents were able to share any additional comments about their experience, either at the end or, for telephone surveys, throughout the survey.

c) Interviews with COPD & CHF Patients

In order to delve deeper into patients' experience with integrated care, semi-structured interviews were conducted with 20 patients who had enrolled in the three COPD and CHF IFM projects between November 2017 to March 2018 and had completed the patient experience survey. Interviews took place between August and December 2018. Interviews were designed to obtain an in-depth understanding of participants' overall health and social context, the program services and resources participants received, and participants' met and unmet needs during the program and when transitioning out of it. Additionally, interviews were conducted with key stakeholders from the three COPD and CHF IFM projects as described above in 1.b).

Baseline (2014) and Quarterly (2015-2018) Monitoring and Reporting of IFM Common Indicators

The HSPRN designed a reporting template that each IFM was asked to complete. The reporting template included patient enrolment, intervention fidelity (expressed as the percentage of total eligible patients admitted that were enrolled in the IFM program) and health service use. This information fed into the IFM Common Indicators, a set of aggregate measures that each project reported to the HSPRN on a quarterly basis. Metrics included: volume, length of stay (LOS), readmissions and ED visits. This information was used by the Implementation Evaluation Committee (MOHLTC, Health Quality Ontario, HSPRN, St. Joseph's Healthcare Hamilton) to monitor each project's progress over time. Some projects used their own reporting systems rather than the reporting template, but the requirements were otherwise the same.

Comparative Effectiveness (CE) Analysis

The goal of the CE component of this report is to provide evidence of effectiveness, benefits/tradeoffs of IFM to support providers and the MOHLTC's decision-making around integrated care and funding. Specifically, we applied a Differences-in-Differences (DiD) analysis to determine whether changes in (pre- and post-IFM) length-of-stay, re-hospitalization, ED visits and costs observed in the IFM projects were greater than those experienced by other similar patients cared for at facilities without IFM projects (ie. Non-IFM facilities) over the same pre- and post-intervention time periods (2011-2014 and 2015-2018, respectively). The compendium of reports includes the final comparative effectiveness analysis report completed in 2019. Preliminary reports were also produced and provided to IFM project teams and the MOHLTC in November 2017 and May 2018.

Conclusions

Ontario is advancing innovative payment models through bundled care. Overall, the IFM pilot initiative should be considered a success based on the goals established by the MOHLTC (shorter LOS, reduced ED visits and readmissions, lower average total costs and positive patient and caregiver experience). There were, however, differences across the six IFM pilot projects that have implications for how the MOHLTC should move forward with bundled care for different patient populations.

Much of the overall success of the IFM pilot initiative may be attributable to the two largest projects, HNHB ICC 2.0 and MH PPATH. We estimate that if both initiatives were rolled out provincially with the same uptake and success, an estimated annual savings of $42.7M could be realized.

The MH PPATH cardiac surgery project lent itself well to an acute-to-post-acute bundle. The pathway for cardiac surgery was well-defined and generally consistent across patients, was time-limited, and almost all cardiac surgery patients were enrolled in the project. This degree of uptake allows integration to become a part of regular care and ensures program sustainability. Similar acute-to-post-acute bundles should be considered for other surgical procedures.

HNHB ICC 2.0, a LHIN-wide COPD and CHF bundled care project, demonstrated considerable success for all indicators, but only ~40% of eligible patients were enrolled in the IFM program. Key stakeholders reported patients were reluctant or unable to enrol in the COPD and CHF IFM programs because of an unwillingness to give up established relationships with their Personal Support Workers (PSWs), as well as concern about being waitlisted for Home and Community Care services once the bundle period ended. Strategies stakeholders were considering to combat these issues included: 1) being flexible in what services were provided within the bundle; and 2) allowing patients to remain with their current Home and Community Care providers.

Patients, generally, reported positive experiences with the bundled care projects. During more in-depth interviews, COPD and CHF patients suggested that programs need to be more responsive to individual patient needs. Patients with chronic conditions, such as COPD and CHF, may be hospitalized at different points in their disease progression and as a result, while some may need a lot of support and resources, others may need very little. We also know most COPD and CHF patients have at least one other chronic condition,[4] and, therefore, care plans and providers need to consider this likely scenario to prevent duplication of services and to avoid giving patients conflicting advice. Caregivers may also require additional supports and information to be able to help care for their loved ones at home. These issues need to be considered before spreading an acute-to-post-acute bundled care initiative to all COPD and CHF patients or other chronic conditions province-wide.

Recommendations

Go fast for surgery: The government should immediately move to implement a defined post-acute bundled care approach for surgical procedures. The cardiac surgery project was able to proceed at scale; by the end of the project ~95% of all cardiac surgery patients at Trillium Health Partners were enrolled in the PPATH IFM pilot project. Outcomes within a 30-day bundle period were, positive and significant with substantial reduction in average total patient cost.

Go slow with medical conditions: The limited penetration rate among medical IFM pilot projects suggests the same approach may not be suitable for all medical patients and moving the start of the bundle upstream (i.e. primary care setting vs following an acute exacerbation requiring a hospitalization) and extending past 60-days post-acute should be considered for chronic conditions.

[4] AJ Koné Pefoyo, SE Bronskill, A Gruneir, A Calzavara, K Thavorn, Y Petrosyan, CJ Maxwell, YQ Bai and WP Wodchis. The increasing burden and complexity of multimorbidity. BMC Public Health (2015) 15:415.

Compendium of Reports

1. Implementation Evaluation

a) Interviews with Key Stakeholders Round #1: Integrated Funding Models - Identifying Early Challenges and Drivers of Success. Slide deck prepared for the MOHLTC (April 2016).

1. a. i) Slide Deck on Interviews with Key Stakeholders Round 1

Integrated Funding Models Qualitative Results –Preliminary Findings. Slide deck prepared for the in-person Community of Practice (April 2016).

1. a. ii) Slide Deck for CoP on Interviews with Key Stakeholders Round 1

The Generation of Integration: The Early Experience of Implementing Bundled Care in Ontario, Canada. Manuscript for *The Milbank Quarterly* (November 2018).

1. a. iii) Manuscript on Interviews with Key Stakeholders Round 1

b) Interviews with Key Stakeholders (COPD & CHF) Round #2: COPD/CHF Integrated Funding Models Qualitative Results. Slide deck and Report prepared for the MOHLTC (November 2018).

1. b. i) Slide Deck on Interviews with Key Stakeholders (COPD & CHF) Round 2

1. b. ii) Report on Interviews with Key Stakeholders (COPD & CHF) Round 2

2. Patient and Caregiver Experience

a) Patient Experience Survey Report: Report prepared for the MOHLTC (November 2018).

2. a) Patient Experience Report

b) Caregiver Experience Survey Report: Report prepared for the MOHLTC (November 2018).

2. b) Caregiver Experience Survey Report

c) Interviews with COPD & CHF Patients: Understanding Bundled Care: COPD and CHF Patient Perspectives. Report prepared for the MOHTLC (February 2019).

2. c) Interviews with COPD & CHF Patients

3. Baseline (2014) and Quarterly (2015-2018) Monitoring and Reporting of IFM Common Indicators

3. Common Indicators

4. Comparative Effectiveness Analysis:

Evaluation of Six Integrated Funding Model Pilot Projects – A Differences-in-Differences Analysis. Report prepared for the MOHTLC (February 2019).

4. Comparative Effectiveness Report

Appendices

Appendix A - Program Application Descriptions

Hamilton Niagara Haldimand Brant LHIN Integrated Comprehensive Care 2.0 (HNHB ICC 2.0)

Target Patient Population

COPD and CHF patients discharged home from acute care with support and residing within the HNHB LHIN boundaries.

Participating Organizations

HNHB LHIN (and formerly CCAC)
St. Joseph's Homecare
Brantford Community Health System
Haldimand War Memorial Hospital
Hamilton Health Sciences
Joseph Brant Hospital
Norfolk General Hospital
Niagara Health System
St. Joseph's Healthcare Hamilton
West Haldimand General Hospital

Bundle Period

60-days after discharge from acute care

Bundle Funding Approach

Hospital carve out (equivalent to 1-day LOS) and homecare carve out (based on historic homecare use) to create total bundle contribution with gain and risk sharing (e.g. if volumes were higher/lower, costs more or less than expected).

Key Features

Integrated comprehensive care coordinator
Standardized integrated care paths (hospital and homecare)
Integrated care record
Clinical expertise and rapid access to specialists and primary care providers
Homecare provided by a lead homecare agency
24/7 telephone line
Use of technology (e.g. virtual team rounds)

Central LHIN - North York Central Integrated Care Collaborative (NYC ICC)

Target Patient Population

Mid- to late-stage COPD and CHF patients discharged home from acute care and residing within Central, Central East and Toronto Central LHINs.

Participating Organizations

North York General Hospital
Central LHIN (formerly CCAC)
Saint Elizabeth Home Health Care (SE)
North York ProResp Inc.
Circle of Care
West Park Healthcare Centre
North York Family Health Team

Bundle Period

60-days after discharge from acute care

Bundle Funding Approach

Moving dollars upfront

Key Features

Care coordination (dedicated care coordinator)
Consistent providers (SE providing homecare, ProResp providing respiratory therapy)
Team rounds
Information access
24/7 telephone helpline
Remote consults

South West LHIN - Connecting Care to Home

Target Patient Population

COPD and CHF patients with moderate levels of care needs who were admitted to hospital.

Participating Organizations

London Health Sciences Centre (LHSC)
South West LHIN (formerly CCAC)
St. Joseph's Health Care London
Thames Valley Family Health Team

Bundle Period

60-days after discharge from acute care

Bundle Funding Approach

Proposed retrospective reconciliation with gain and risk sharing agreements

Key Features

Hospital in the home approach (LHSC patient navigator, CCAC care coordinator, in home supportive care and telehome monitoring by a Registered Nurse in a graduated *eshift/eclinic model*)

Central West - Hospital to Home (H2H)

Target Patient Population

UTI and cellulitis patients who were 18 years of age or older and required short term, non-specialty/complex in-home nursing service (e.g. IV; wound care; drain care; injections; etc.).

Participating Organizations

Central West LHIN (formerly CCAC)
William Osler Health System (WOHS)
Headwaters Health Care Centre
Ontario Telemedicine Network

Bundle Period

60-days after discharge from acute care

Bundle Funding Approach

An MOU was established between the participating organizations establishing the joint responsibility for financing and budgeting of the program.

Key Features

Short term, non-specialty/complex nursing interventions (e.g. IV antibiotics, wound care, drain care, injections)
Homecare nurses employed directly by the H2H organizations (CW LHIN, WOHS, Headwaters Health Centre)
Access to electronic medical records both inside and outside the hospital
1 contact number

Toronto Central and Central - One Client, One Team (OCOT)

Target Patient Population

Stroke patients, defined using the QBP stroke criteria, who were discharged home with and without support or to inpatient rehabilitation.

Participating Organizations

North York General Hospital
Sunnybrook Health Sciences Centre (including St. John's Rehab)
Providence Healthcare
Toronto Central LHIN (formerly CCAC)
Central LHIN (formerly CCAC)

Bundle Period

104-days after discharge from acute care

Bundle Funding Approach

Funding envelope established based on carve-out from acute care, rehabilitation and homecare, and gain and risk sharing principles developed in case of funding surplus, shortfall and redistribution. Annual retrospective reconciliation and cash settlement. In addition to an expected minimum financial risk, each organization contributed to an innovation fund for various initiatives (e.g. PDSA cycles/pilots; creating business cases).

Key Features

Warm clinical hand-overs using Essential Professional Conversations for complex patients
One single provider agency with a consistent community stroke team (pilot); Exploring the development of sustainable options for one-community team
My Guide for Stroke Recovery
Early Supported Discharge

Mississauga Halton LHIN - Putting Patients at the Heart (PPATH)

Target Patient Population

Adult cardiac surgery patients, including but not exclusive to patients undergoing coronary artery bypass grafts (CABG), valve replacements and aortic repairs, both elective and urgent/emergent, who reside within the Central West and Mississauga Halton LHINs and who are discharged home

Participating Organizations

Trillium Health Partners (THP)

Saint Elizabeth Healthcare

Bundle Period

30-days after discharge from acute care

Bundle Funding Approach

A bundled rate was established (revisited semi-annually) setting out the amount the hospital paid to the service provider for each of the three post-acute pathways (low, medium and high intensities). A set budget was determined using the estimated volume of patients in each pathway, and gain and risk sharing principles developed should costs exceed or fall below the set budget.

Key Features

Integrated care coordinators, employed by THP, who started working with patients pre-op

Nursing, physiotherapy, occupational therapy and personal support worker visits based on discharge "Pathway" intensity assigned to the patient

Virtual care including phone consultations, virtual rounds and Tele-monitoring

24/7 call centre

Appendix B - Patient Experience Survey

Appendix C - Caregiver Experience Survey

Appendix D - Glossary of Terms and List of Abbreviations

Alternate Level of Care (ALC)

Canadian Institute for Health Information Discharge Abstract Database (CIHI DAD): Dataset with inpatient records.

Central LHIN North York Central Integrated Care Collaborative (C NYC ICC): IFM pilot project focused on COPD/CHF

Central West LHIN Hospital to Home (CW H2H): IFM pilot project focused on UTI/Cellulitis

Chronic Obstructive Pulmonary Disease (COPD)

Collapsed Adjusted Clinical Groups (CADGs): A measure of patient multi-morbidity from the Johns Hopkins ACG® System Ver 10.

Community Care Access Centre (CCAC): There were 14 CCACs in Ontario (geographically aligned with the 14 LHINs). CCACs were, formerly, responsible for procurement of all home and community services from local private service providers on behalf of LHINs in Ontario. Allowances were given to some IFM projects to contract directly with a local private service provider or to act themselves as a home care service provider. In 2017, CCACs were incorporated into the LHINs.

Comparative Effectiveness (CE)

Congestive Heart Failure (CHF)

Continuing Care Reporting System (CCRS): This database contains information on individuals receiving care in continuing care facilities and long-term care homes.

Coronary Artery Bypass Grafting (CABG)

Difference-in Differences (DiD): A statistical technique comparing the change over time (pre and post an intervention) in an exposed group to the same change over time in an unexposed comparison group.

Emergency Department (ED)

Endovascular Thrombectomy (EVT)

Expressions of Interest (EOI)

Generalized Estimating Equation (GEE): A statistical method for parameter estimation when data are correlated (e.g. longitudinal, matched).

Home Care Database (HCD): This database contains records of home care services.

Health-Based Allocation Model (HBAM): Hospital funding allocation based on population characteristics.

Hamilton Niagara Haldimand Brant LHIN Integrated Comprehensive Care 2.0 (HNHB ICC 2.0): IFM pilot project focused on COPD/CHF

Health System Performance Research Network (HSPRN)

ICES Key Number (IKN): Encrypted OHIP number used to link health administrative databases at ICES.

Integrated Funding Model (IFM): An initiative testing six innovative approaches integrating care and funding over a patient's episode of care beginning in acute care and including home/community care for between 30- and 104-days post-discharge.

Length of Stay (LOS)

Local Health Integration Network (LHIN): There are 14 LHINs in Ontario. Each LHIN is responsible for planning, integrating and funding local health services, including hospitals, home care, long-term care, community health centres and mental health and addictions services.

Ministry of Health and Long-Term Care (MOHLTC)

Mississauga Halton LHIN Putting Patients at the Heart (MH PPATH): IFM pilot project focused on cardiac surgery

Rate Ratio (RR): The ratio of the incidence rate in an exposed group divided by the incidence rate in an unexposed comparison group.

National Ambulatory Care Reporting System: This database that contains records of all hospital and community-based ambulatory care (e.g. emergency department visits).

National Rehabilitation Reporting System (NRS): This database contains records on inpatient rehabilitation stays.

Ontario Case Costing Initiative (OCCI): This database contains acute inpatient, day surgery, ambulatory care, inpatient mental health, inpatient rehabilitation and complex continuing care costs.

Ontario Drug Benefit (ODB): This database contains information on publicly funded prescription medications.

Ontario Health Insurance Plan (OHIP): In Ontario, residents are identified through their OHIP number. Physician billings are recorded in the OHIP database.

Quality Based Procedures (QBPs): Volume-based hospital funding envelope for specific groups of patient services. Each QBP has a clinical handbook with best practices to standardize care.

Registered Persons Database (RPDB): This database contains information on all persons with an OHIP number.

Rurality Index of Ontario (RIO): A measure of rurality based on the patient's postal code.

Same Day Surgery (SDS): This database contains information on same-day surgeries and procedures.

South West LHIN Connecting Care to Home (SW CC2H): IFM pilot project focused on COPD/CHF

Special Project Field (SPF) 615: A CIHI DAD data field used to identify IFM index events and acute care readmissions.

Thrombolysis (tPA)

Toronto Central/Central LHIN One Client, One Team (TC/C OCOT): IFM pilot project focused on stroke patients

Urinary Tract Infection (UTI)