Evaluation of Six Integrated Funding Model Pilot Projects – A Difference-in-Differences Analysis

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Key Messages

- Ontario is advancing innovative payment models through bundled care. The government should immediately move to implement post-acute bundled care approach for surgical procedures. The limited penetration rate among non-surgical IFM pilot projects suggests the same approach may not be suitable for all non-surgical patients and requires further consideration.

- 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 by reducing at least one of the measured outcomes (LOS, readmissions and ED visits) over time.

- However, the overall comparative effectiveness results were largely due to the two projects with the largest number of patients.

- 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.[1]
- 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.[2]

[1] 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 Appendix 1 for details) in Ontario in FY 2017/18 (n=9,293).

[2] 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 Appendix 1 for details) in Ontario in FY 2017/18 (n=18,585), and a penetration rate of 39.7%.

Executive Summary

In 2015, the Ministry of Health and Long-Term Care (MOHLTC) issued a call for Expressions of Interest (EOI) from the health system (including hospitals, CCACs/LHINs, 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 beginning in acute care and including home/community care post-discharge. Out of fifty proposals, six were ultimately selected by the MOHLTC. The Health System Performance Research Network (HSPRN) was engaged to evaluate the outcomes of the six IFM pilot projects. Outcomes of interest included:

- Mean index length of stay (LOS) (total days, acute days);
- ALC rate;
- Total days in hospital (index + readmission) in 30, 60 and 90-days post-acute discharge;
- Mean number of readmissions in 30, 60 and 90-days post-acute discharge;
- 30, 60 and 90-day readmission rate;
- 30, 60 and 90-day readmission or death rate;
- Mean number of emergency department (ED) visits in 30, 60 and 90-days post-acute discharge;
- 30, 60 and 90-day ED visit rate;
- 30, 60 and 90-day ED visit or death rate; and
- 30, 60 and 90-day mean total costs.

IFM pilot projects began enrolling patients between October 2015 and February 2016 and entered patients meeting their enrolment criteria (Appendix 1) into a project registry and/or identified them using the CIHI DAD special project field 615. Patients from comparator facilities that met the same enrolment criteria as the IFM patients were identified and matched to IFM patients. The change in patient outcomes at each IFM site after the IFM implementation compared to the period prior to IFM implementation

was calculated and compared to the change in non-IFM facilities using a Difference-in-Differences (DID) analysis.

There was wide variation in the number of patients enrolled into the six IFM pilot projects, from as few as ~200 patients in the Central LHIN North York Central Integrated Care Collaborative (C NYC ICC) to over 2,500 from Hamilton Niagara Haldimand Brant LHIN Integrated Comprehensive Care 2.0 (HNHB ICC 2.0). All projects identified an acute hospitalization as the index event (one project also allowed the index event to be an ED visit) with four pilots specifying the bundled care period to be 60 days post-discharge, one 30-days post-discharge and one 104 days post-discharge.

Compared to non-IFM facilities, including data from all participating sites, IFM facilities had significantly greater reductions in LOS, total days, 30-day readmission or death rate and 30-day ED visit or death rate, as well as total costs. Specifically, there were statistically significant reductions in:

- Overall, index LOS decreased by 1.3 days (17% relative reduction over time) for patients from IFM hospitals compared to 0.57 days (8% relative reduction over time) for similar patients admitted to non-IFM hospitals.
    - There were significant decreases in index LOS across four of six pilot projects, however, the relative change in index LOS in the IFM group compared to the comparator group was only statistically significant ($p \leq 0.05$) for HNHB ICC 2.0 and Central West LHIN Hospital to Home (CW H2H).
- Overall, both 30-day ED visit or death rate and readmission or death rate decreased by 6% (absolute) for patients from IFM hospitals compared to no change for patients from non-IFM hospitals.
    - Notably, comparative differences were only observed for Mississauga Halton LHIN's Putting Patients at The Heart (MH PPATH) and HNHB ICC 2.0.
- Overall, savings in mean total costs (at 30-days post-acute discharge) were $1,297 more for patients from IFM hospitals compared to patients from non-IFM hospitals.

It is important to note, our overall results are largely driven by the two largest IFM pilot projects; HNHB ICC 2.0 (n = 2,516) and MH PPATH (n = 1,925), which focused on chronic obstructive pulmonary disease (COPD)/congestive heart failure (CHF) and cardiac surgery, respectively. The more limited success of the IFM pilot projects in other contexts and with other patient populations limits the generalizability of the findings. Nevertheless, on the whole, the outcomes the MOHLTC considered to be measures of success; shorter LOS, reduced readmissions, reduced ED visits and reduced average total costs were observed. The IFM initiative (bundling acute and post-acute care) was associated with greater (albeit modest) declines in LOS, readmissions and ED visits but substantial savings compared to facilities with similar patients that did not participate in the IFM pilot project.

Recommendations:

Move ahead and ‘go fast’ with surgical post-acute bundles. The cardiac surgery project was able to proceed at scale; nearly all patients undergoing cardiac surgery at Trillium Health Partners were enrolled in the MH PPATH pilot project and results within the 30-day bundle period were, positive and significant including substantial reductions in the average per patient total cost.

Further consideration and adjustment of the model to further integrate with existing home care and primary care is required before spreading medical bundles province-wide. Although HNHB ICC 2.0 was LHIN-wide and demonstrated considerable success, its penetration rate was less than 40% and the two other COPD and CHF projects achieved less than 12% coverage of their entire COPD/CHF population. Understanding the barriers to larger scale implementation of the COPD/CHF pilots is necessary to ensure an appropriate bundled care model is implemented for chronic medical conditions (see the report detailing results from interviews with key stakeholders from the three COPD and CHF IFM projects).

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A. Context

In 2015, the MOHLTC issued a call for EOIs from the health system (including hospitals, CCACs/LHINs, direct service home care providers, physicians and others) to participate in an IFM initiative. The goal of this 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.

The MOHLTC's stated goals for the IFM projects were to:

- 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.

Bundling care and payments across the continuum of settings should align incentives and focus clinicians' efforts on improving quality all while controlling costs. There is, however, a paucity of rigorous evaluations of fully implemented integrated funding models. A recent review of 58 studies of bundled payment programs found these initiatives were associated with lower costs, but inconsistent, and generally small, effects on measures of quality (e.g. mortality, functional improvement) (Hussey, et al., 2012). The authors deemed the strength of evidence from these studies to be low, particularly with respect to the influence of contextual and design factors on bundled payment effects. Some factors that have been shown to enable successful implementation are robust IT systems (Delisle, 2012), clear quality goals (Delbanco,

2014), strong physician engagement (Rastogi et al., 2009; Struijs & Baan, 2011), and being inclusive of all related providers (Jacobs et al., 2015).

In Ontario, the MOHLTC has only implemented funding reform within the acute-hospital setting through Health-Based Allocation Model (HBAM) and Quality Based Procedures (QBPs), which are for a limited number of conditions. There was also a demonstration project in one health care organization (St Joseph's Healthcare Hamilton) that bundled payments for acute and post-acute services in Ontario prior to the IFM initiative being launched.

Following a series of readiness assessments, the MOHLTC selected six out of 50 IFM project submissions (see table 1). All six included multiple organizations (acute and post-acute). Three out of the six (HNHB ICC 2.0, C NYC ICC and SW CC2H) were focused on COPD and CHF and had a 60-day bundle period. CW H2H focused on cellulitis and urinary tract infections in a 60-day bundle period. Toronto Central and Central LHIN's One Client, One Team (TC/C OCOT) focused on stroke care and had a 104-day bundle period. MH PPATH focused on cardiac surgery patients and had a 30-day bundle period.

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.

B. Objectives

In consultation with the MOHLTC, Health System Quality and Funding Division researchers from the HSPRN at the University of Toronto conducted a central evaluation of the six IFM projects. 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.

This report provides results from the comparative effectiveness evaluation of IFM patients' health service utilization using ICES-held administrative data.

C. Methods

C.1 Data Sources

i. IFM Registries
ii. CIHI DAD special project 615
iii. Health administrative datasets used in this work include: DAD, NACRS, OHIP, RPDB, NRS, CCRS, HCD, ODB and OCCI

C.2 IFM Enrollees

IFM pilot projects started enrolling patients between October 2015 and February 2016. Each IFM project team was responsible for transferring a reporting template directly to ICES on a quarterly basis starting in the fall of 2016. Each reporting template included a registry of IFM enrolments, which included among other variables, each patient's health card number and date of enrollment. Each reporting template also included information on the index event (admission and discharge dates), readmissions, ED visits and post-acute care (homecare, outpatient rehabilitation and inpatient rehabilitation, as specified by the care pathways). A total of 5,832 patients were entered

into the IFM registries. Figure 1 illustrates the IFM cohort creation process. Once de-identified, registry data were linked to health administrative data (DAD and NACRS) at the individual level using unique, encoded identifiers (ICES Key Number (IKN)). Linkage between registry of enrollees to administrative databases was 94.6% (N = 5,517).

Five of the six IFM projects used CIHI DAD Special Project Field 615 (SPF 615) in addition to the registry to identify the index admission and any readmissions. Only CW H2H did not use SPF 615. We supplemented the registry data with index events identified in SPF 615. There were 5,865 index events based on SPF 615.

The SPF 615 records were linked with the project registries and one record per index event was retained (n=6,938). If a patient had multiple index records within the expected bundle period (30, 60 or 104 days), the later record was considered a readmission rather than a new index event.

Enrolment records not meeting the administrative database enrolment criteria, with an index event total LOS > 30 days and missing any matching variables data (e.g. age, sex, etc.) were removed. This left 6,005 IFM enrollees for matching.

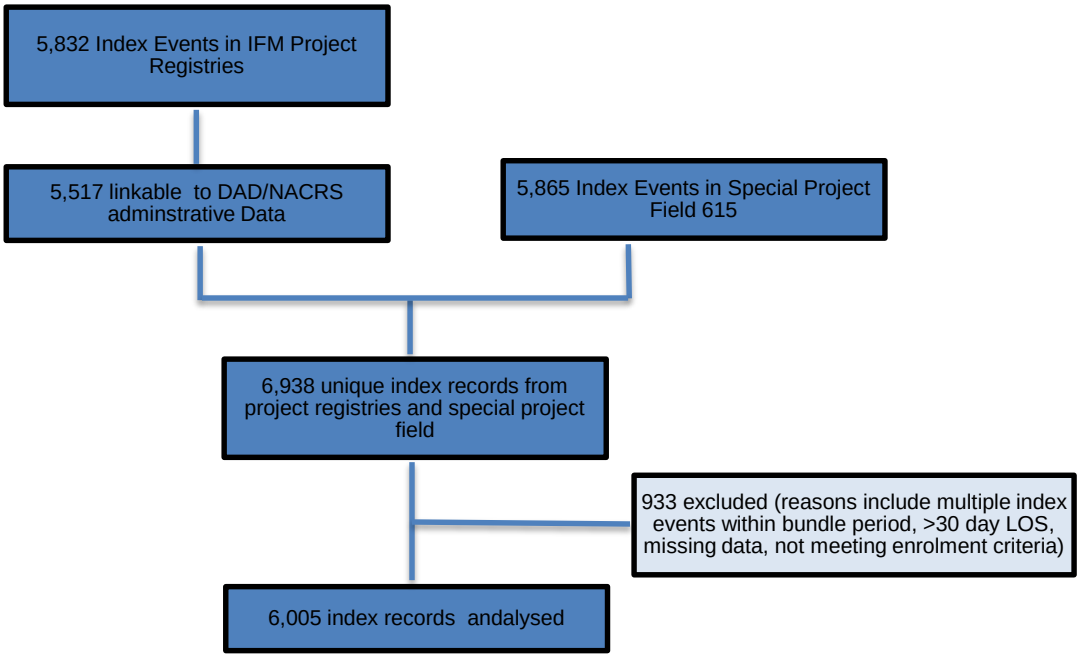


Figure 1. IFM Cohort creation schematic

Table 2 provides the IFM project specific registry and SPF615 enrollment volumes as well as final cohort sizes used for matching.

Table 2. Number of patients enrolled between October 2015 and March 2018, by data source

Data Source	HNHB ICC 2.0	C NYC ICC	SW CC2H	CW H2H	TC/C OCOT	MH PPATH
Registry Only	1-5	51	1-5	735	181	100
Special Project Field 615 Only	1,163-1,167	13	1-5	0	98	143
Both	1842	141	263-267	0	370	1,827
Total	**3010**	**205**	**269**	**735**	**649**	**2,070**
Excluded	494	34	31	93	136	145
Enrollees Used for Matching	**2,516**	**171**	**238**	**642**	**513**	**1,925**

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

C.3 Comparator Pool for Matching

For each IFM project, we identified three cohorts of hospital admissions (and ED visits for CW H2H) meeting the same enrolment criteria as the IFM enrollees, as best these criteria could be identified in administrative data. Enrolment criteria varied by IFM project and may be found in Appendix 1. The three cohorts were 1) historic admissions (or ED visits for CW H2H) to the same facilities as the IFM project from October 2011-September 2014 (except for TC/C OCOT which was from October 2012-September 2014); 2) admissions to comparator facilities (identified as peers by the IFM facilities) during the same time period as the IFM project (October 2015-March 2018); and 3) historic admissions to these comparator facilities. Table 3 reports the number of patients in the comparator groups available for matching by time period and by project.

Table 3. Number of Potential Comparators Meeting IFM Enrolment Criteria Used for Matching, by IFM Project

	HNHB ICC 2.0	C NYC ICC	SW CC2H	CW H2H	TC/C OCOT	MH PPATH
Historic IFM Facilities	3,889	1,754	2,614	14,975	1,179	2,584
Concurrent Comparator Facilities	5,099	4,759	6,835	34,053	4,640	10,990
Historic Comparator Facilities	4,170	5,394	10,661	46,110	4,108	15,290

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

We also identified the number of concurrent patients from the IFM hospitals who met the criteria but who were not enrolled in IFM. This information may be found in table 4. Overall, penetration was highest in MH PPATH at 92.1%, followed by HNHB ICC 2.0 and TC/C OCOT both at approximately 40%. The other three pilot projects had much lower rates (below 12%).

Table 4. Number of IFM Enrollees and Non-Enrolled Eligible Patients from IFM Facilities, by IFM Project

	HNHB ICC 2.0	C NYC ICC	SW CC2H	CW H2H	TC/C OCOT	MH PPATH
Enrollees Used for Matching	2,516	171	238	642	513	1,925
Non-Enrolled Eligible Patients from IFM Facilities	3,821	1,403	1,788	14,345	745	165
Total eligible patients from IFM Facilities	6,337	1,574	2,026	14,987	1,258	2,090
% of patients enrolled	**39.7%**	**10.9%**	**11.7%**	**4.3%**	**40.8%**	**92.1%**

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

C.4 Baseline Covariates

Baseline covariates (age, sex, comorbidities, income quintile and rural residence status) were captured based on the index admission for IFM enrollees and non-IFM patients. The 2008 Rurality Index of Ontario (RIO) was used to define rural residence based on the patient's postal code. A variety of variables, such as travel time to various health care providers and healthcare workforce, are used determine RIO, which is on a scale of 0 (urban) and 100 (rural). And neighbourhood-level income quintile was assigned to each patient based their postal code. Patient multi-morbidity was measured using Collapsed Adjusted Clinical Groups (CADGs) from the Johns Hopkins ACG® System Ver 10 using a 2-year look back from the index admission and included the index admission. Multi-morbidity has been shown to relate to health service utilization and outcomes (Starfield & Kinder, 2011). The CADGs are based on diagnostic codes found in DAD, NACRS and OHIP records. CADGs have 12 categories and include: acute minor, acute major, likely to recur, asthma, chronic medical unstable, chronic medical stable, chronic specialty stable, eye/ dental, chronic specialty unstable, psychosocial, preventive/ administrative, and pregnancy. The number of ED visits and hospital admissions in the 365 days prior to the index event were also included as baseline covariates.

C.5 Propensity Model Specification and Matching Criteria

We matched IFM enrollees with historic patients from the IFM facilities and then with concurrent patients from comparator facilities. The matched concurrent comparator facility patients were then matched with historic patients from these same facilities. We excluded all index events longer than 30 days in the matching process. Individuals were matched 1:1 using the nearest-neighbour greedy algorithm on five criteria with equal weighting: 1) on the basis of the logit of their propensity score with a caliper set at 0.2 times the standard deviation; 2) age in days ± 365 days, except NYC ICC which was age in days ± 730 days, and HNHB ICC 2.0 and TC/C OCOT which were age in days ± 1825; 3) sex; and 5) Index admission or ED visit. For SW CC2H, condition (COPD or CHF) was included as a hard matching characteristic. Wider age intervals were

employed for some projects to improve the matching rate (e.g. if there were relatively few individuals historically to match to IFM enrollees).

The propensity score was based on a regression of IFM enrolment on socio-demographic variables (age, income quintile, RIO), comorbidity (CADGs 1-12) with all two-way interactions between CADGs, prior ED visits and hospital admissions, and project specific variables as required. The project specific variables included condition (COPD or CHF) for HNHB ICC 2.0 and NYC ICC; Thrombolysis (tPA), discharge destination (inpatient rehab or home) and intervention (Endovascular thrombectomy (EVT)) for TC/C OCOT; and urgent/elective admission category and procedure (Valve, CABG, CABG/Valve, Other Cardiac) for MH PPATH. When matching current with historic, an institution identifier was also included in the propensity score. Final model specifications were guided by the resulting number of enrollee-comparator pairs that matched and overall balance between groups and was an iterative process.

Covariate balance between selected enrollees and selected comparators was assessed using standard differences, with a standard difference less than 0.10 indicating balance, and variance ratios, with values closer to 1.0 indicating balance. Chi-square, one-way ANOVA or Cochran-Armitage trend test, as appropriate, were also used to compare matched groups. We also assessed potential bias by comparing standard differences for the baseline covariates between enrollees selected vs not selected by the matching algorithm (i.e. comparing enrollees that were assigned a comparator match to those where no match was available).

C.6 Outcome Measures

There were ten primary outcomes evaluated at the project level. We report on six in the body of this report. See appendices 9-14 for the additional outcomes. Outcomes completed prior to June 31, 2018 are included in this report. Most outcomes only include patients who were alive for the full follow-up period (30, 60 or 90 days), unless otherwise specified (e.g. readmission or death rate). Not all datasets used for costing were up to date at the time of analysis. Only those patients with sufficient follow-up time in all datasets were included at each time point. As a result, the sample size may vary between outcome.

1. **Mean LOS of the Index Event** includes total days and acute days.
2. **ALC Rate** counts the number of individuals with at least one ALC day during the index event.
3. **Mean Total Days in Hospital** combines the LOS of the Index Event and LOS of any readmissions 0-30, 0-60 and 0-90 days post index event discharge.
4. **Mean Number of Readmissions** 0-30, 0-60 and 0-90 days post index event discharge.
5. **Readmission Rate** 0-30, 0-60 and 0-90 days post index event discharge. This indicator counts the number of individuals with at least one readmission episode during the indicated time-frame.
6. **Readmission or Death Rate** 0-30, 0-60 and 0-90 days post index event discharge. This indicator counts the number of individuals with at least one readmission episode or who died during the indicated time-frame.
7. **Mean Number of Emergency Department Visits** 0-30, 0-60 and 0-90 days post index event discharge. This indicator includes all unscheduled visits to an Ontario emergency department (NACRS). All acuity levels were considered, and patients were limited to one visit per day.
8. **Emergency Department Visit Rate** 0-30, 0-60 and 0-90 days post index event discharge. This indicator counts the number of individuals with at least one ED visit during the indicated time-frame. This indicator includes all unscheduled visits to an Ontario emergency department (NACRS). All acuity levels were considered, and patients were limited to one visit per day.
9. **ED Visit or Death Rate** 0-30, 0-60 and 0-90 days post index event discharge. This indicator counts the number of individuals with at least one ED visit or who died during the indicated time-frame. This indicator includes all unscheduled visits to an Ontario emergency department (NACRS). All acuity levels were considered, and patients were limited to one visit per day.
10. **Mean Total Costs** including index event and 0-30, 0-60 and 0-90 days post index event discharge. Costs for acute care (DAD), ambulatory care (NACRS), same day surgery (SDS), physician billings (OHIP; primary and specialty care), home care

(HCD and project reported data), complex continuing care (CCRS), long-term care (CCRS-LTC), Ontario drug benefit (ODB) and inpatient rehab (NRS; TC/C – OCOT only) were included. We supplemented homecare data provided in the reporting templates with homecare data held at ICES, but did not include outpatient rehabilitation costs as this was not available for the comparators. Not all databases were up-to-date at the time of reporting. As a result, the mean total costs were limited to patients with sufficient follow-up time for each time point in all datasets. Patients who died during the follow-up period were included. For more information about the costing methodology used, please see: http://www.hsprn.ca/uploads/files/Guidelines_on_PersonLevel_Costing_May_2013.pdf. To better account for savings resulting from reduced LOS, for each CMG, we determined the marginal cost per day using OCCI data and applied this rate to the difference between actual and expected LOS. This value was subtracted from the acute cost for each person determined using the RIW*CPWC formula described in the cited methodology. All costs are presented in 2016 values. Prices prior to 2016 were inflated using the healthcare specific consumer price index. Prices from 2016 were used to cost all services used from 2016-2018, as these prices were not readily available for all services in more recent years.

C.7 Statistical Analyses: Difference-in-Differences Estimation

A comparative effectiveness evaluation using a DID approach with generalized estimating equations (GEE) was performed for each outcome. LOS of the Index Event, total number of days in hospital, number of readmissions and ED visits and total costs were modelled with a negative binomial distribution and log link. Output from these models can be interpreted as rates, with rate ratios (RR) used to compare differences. ALC, readmission and ED visit rates were modelled with a binomial distribution and identity link. Output from these models provide absolute differences. For each outcome, models included binary variables for enrolment status (enrollee or comparator), time period (pre- or post-index) and an interaction term between these variables, the DID estimator. To account for clustering of individuals due to matching, we created a variable identifying the matched groups and included it in the repeated statement. If any of the

individuals within the matched group did not have sufficient follow-up time (e.g. they died during the follow-up period), the matched group was excluded from the analysis for that time period. We specified an unstructured correlation structure for all analyses. A 5% level of significance was used for all analyses.

D. Findings

D.1 Propensity Matching

After the three rounds of matching a total of 4,977 out of 6,005 IFM enrollees were matched to historical IFM comparators and non-IFM comparators (pre- and post-pilot time frames) resulting in an 82.9% matching rate overall (range 77.3%-95.6%). Appendices 2-8 show the baseline characteristics of matched enrollees compared to comparators for all projects combined and for each project separately. Standard differences and variance ratios for each variable are shown. For all projects combined, balance between matched groups was very good for all common covariates (standard differences<=0.1). For the two largest IFM projects (HNHB ICC 2.0, and MH PPATH), all covariates included in the propensity model were balanced between groups (standard differences <=0.1). The next largest IFM projects (TC/C OCOT and CW H2H) were also fairly well balanced between groups, with 1 and 2 covariates across all three groups of matches having standard differences just above 0.1, respectively. The two smallest IFM projects (SW CC2H and C NYC ICC) had several covariates not as well balanced across comparator groups (see Appendix 4 and 5).

D.2 Difference-in-Differences Estimation

Table 5 illustrates the pre- and post-pilot results for all 6 pilot projects combined (see appendix 9 for results of additional outcomes). We observed statistically significant improvements in nearly all outcomes over time for patients from the IFM pilot project facilities. Mean index total LOS decreased by 1.3 days (17% relative decrease). There were also statistically significant reductions in readmission or death rate and ED visit or death rate at all three time points. At 30-days post-discharge, both the absolute ED visit or death rate and readmission or death rate were 6% lower for the post-period relative to the pre-period for patients from IFM facilities. Ultimately, total number of days in

hospital during the bundle period and mean total costs decreased significantly for patients from IFM hospitals; for 90-days post-discharge, the mean number of days in hospital had decreased by 1.25 days and mean total costs had decreased by $3,035.

Relative to patients from non-IFM facilities, patients from IFM hospitals had significantly greater decreases in index LOS; IFM hospitals reduced their mean index total LOS by 0.7 days more than did the non-IFM comparator hospitals. IFM hospitals also saw greater reductions, by up to 6%, in readmission or death rate than non-IFM hospitals at all three time points. While reductions in ED visit or death rate were at least 4% greater for IFM hospitals as compared to non-IFM hospitals at 30, 60 and 90-days post-discharge. At 90-days post-discharge, IFM pilot projects reduced the mean total days spent in hospital by nearly 1 day more than did the non-IFM comparators. This contributed to greater cost savings for IFM pilot projects; 90-day mean total costs for patients from IFM hospitals were reduced by $1,719 more than for patients from non-IFM comparators.

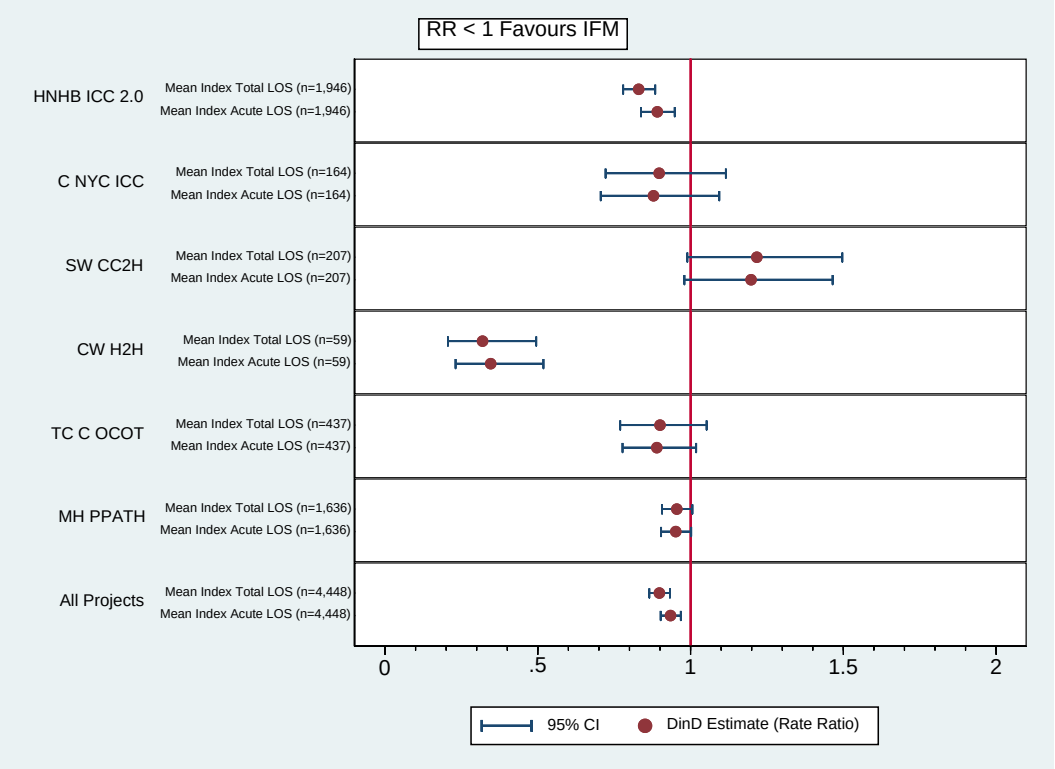
Table 5. DID Model Estimates for All Projects Combined

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Oct 2015-March 2018)	Relative Difference (post / pre)	Absolute Difference (post - pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Total LOS (days)	(n=4448)	IFM	7.22	5.96	0.83	-1.26	<.0001	0.9	-0.68	<.0001
		non-IFM	7.14	6.56	0.92	-0.57	<.0001			
Readmission or Death Rate	30-days (n=4976)	IFM	0.25	0.19	0.76	-0.06	<.0001	0.77	-0.06	<.0001
		non-IFM	0.23	0.23	1	0	0.87			
	60-days (n=4976)	IFM	0.31	0.25	0.8	-0.06	<.0001	0.82	-0.05	<.0001
		non-IFM	0.29	0.29	0.98	-0.01	0.39			
	90-days (n=4976)	IFM	0.34	0.28	0.82	-0.06	<.0001	0.85	-0.05	<.0001
		non-IFM	0.33	0.32	0.97	-0.01	0.25			
ED Visit or Death Rate	30-days (n=4976)	IFM	0.33	0.27	0.82	-0.06	<.0001	0.81	-0.06	<.0001
		non-IFM	0.33	0.33	1.01	0	0.83			
	60-days (n=4976)	IFM	0.41	0.36	0.87	-0.05	<.0001	0.88	-0.05	0.0001
		non-IFM	0.41	0.41	0.99	0	0.81			
	90-days (n=4976)	IFM	0.45	0.41	0.91	-0.04	<.0001	0.91	-0.04	0.002
		non-IFM	0.45	0.45	1	0	0.97			
Mean Total Days in Hospital	30-days (n=4527)	IFM	5.9	4.75	0.81	-1.14	<.0001	0.87	-0.75	<.0001
		non-IFM	5.72	5.33	0.93	-0.39	<.0001			
	60-days (n=4219)	IFM	6.59	5.32	0.81	-1.27	<.0001	0.87	-0.82	<.0001
		non-IFM	6.46	6.01	0.93	-0.45	0.001			
	90-days (n=3949)	IFM	7.1	5.85	0.82	-1.25	<.0001	0.87	-0.89	<.0001
		non-IFM	6.98	6.62	0.95	-0.36	0.04			
Mean Total Cost	30-days (n=3765)	IFM	$ 13,444	$ 11,334	0.84	-$ 2,110	<.0001	0.9	-$ 1,297	0.0001
		non-IFM	$ 12,883	$ 12,069	0.94	-$ 813	0.0007			
	60-days (n=3486)	IFM	$ 16,068	$ 13,412	0.83	-$ 2,656	<.0001	0.89	-$ 1,673	0.0003
		non-IFM	$ 15,607	$ 14,625	0.94	-$ 982	0.004			
	90-days (n=3230)	IFM	$ 18,169	$ 15,134	0.83	-$ 3,035	<.0001	0.9	-$ 1,719	0.002
		non-IFM	$ 17,934	$ 16,618	0.93	-$ 1,316	0.002			

D.2.i Mean Length of Stay of the Index Event

Figure 2 shows rate ratios (difference-in-differences (DID)) and their 95% confidence intervals for index event total LOS and acute LOS. Rate ratios (RR) less than 1 favour the IFM facilities (i.e. greater decrease in mean LOS in IFM facilities over time compared to non-IFM facilities). Overall, the relative reduction over time in index total LOS was 10% greater in IFM facilities as compared to non-IFM facilities (p<0.0001) and amounted to a 0.68 day, on average, larger decrease in index LOS for patients from IFM facilities (see table 5).

Figure 2. DID Estimates for Index LOS by IFM Project (Rate Ratio)

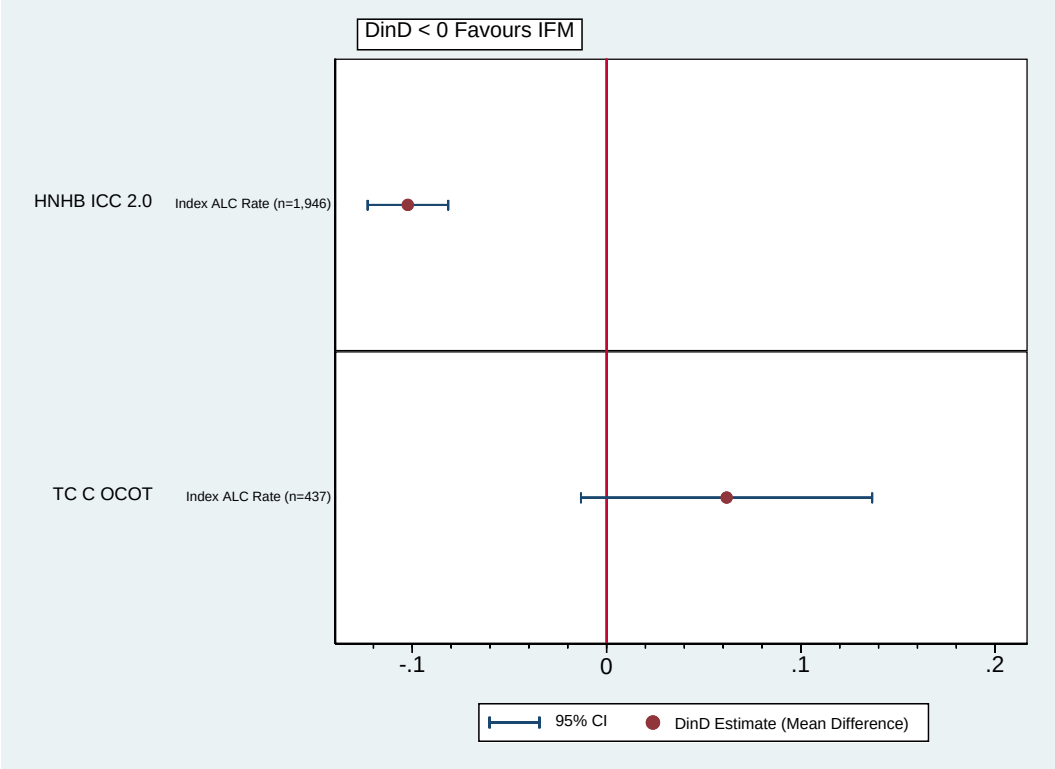


Note, in CW H2H, only index hospitalizations were included in this outcome.

D.2.ii ALC Rate

Figure 2 shows mean absolute differences (DID) and their 95% confidence intervals for proportion of patients with at least one ALC day during the index event for each IFM project (note: only HNHB ICC 2.0 and TC/C OCOT had sufficient numbers of patients with ALC days for this analysis). Values less than 0 favour the IFM facilities (i.e. a larger decrease in the proportion of IFM patients with ALC days over time compared to non-IFM patients). HNHB ICC 2.0 was the only project with a statistically significant reduction in ALC rate relative to non-IFM comparators.

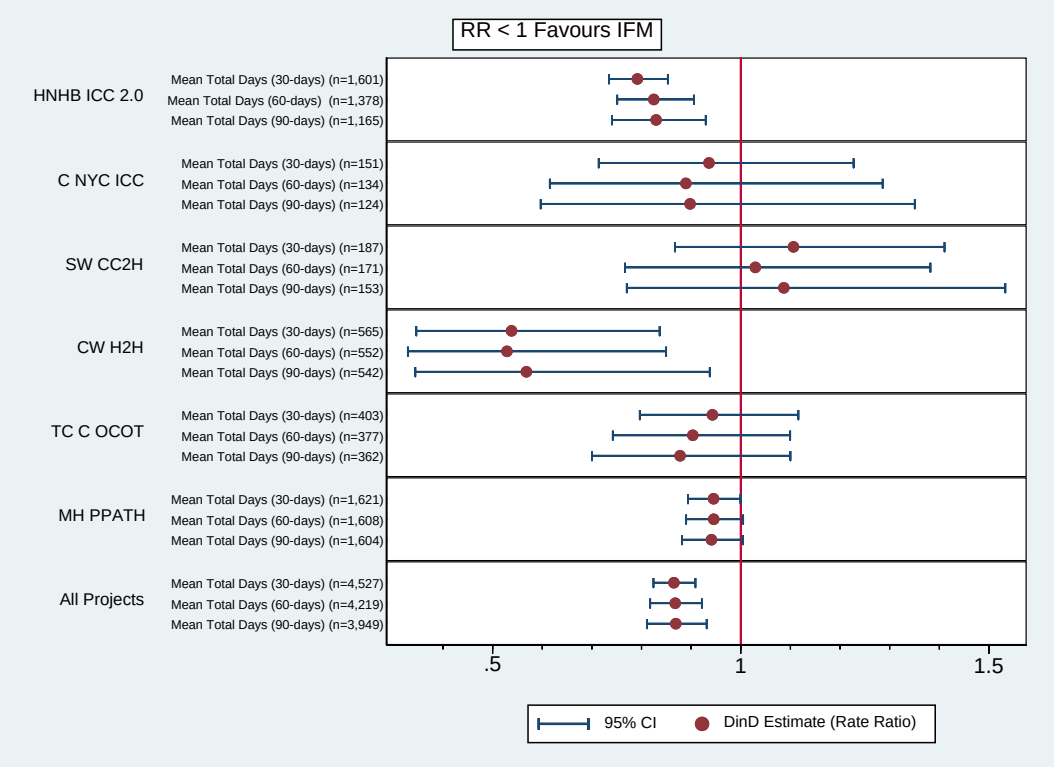
Figure 3. DID Estimates for ALC Rate by IFM Project (Absolute Difference)



D.2.iii Mean Total Days in Hospital (Index + Readmissions)

Figure 4 shows rate ratios (DID) and their 95% confidence intervals for the mean total days in hospital at 30, 60 and 90-days for each IFM project. Rate Ratios less than 1 favour the IFM facilities (i.e. greater reductions over time in the mean total number of days in hospital for IFM patients compared to patients in non-IFM facilities). Overall, the relative reduction in mean total number of days in hospital for patients admitted to IFM hospitals was 13% greater compared to the relative reduction for patients admitted to non-IFM facilities at 30, 60 and 90 days from discharge ($p<0.0001$). HNHB ICC 2.0 and CW H2H had statistically significantly greater decreases in total hospital days for all three time points. MH PPATH only had a significantly greater decrease in total hospital days up to 30 days from discharge from a cardiac surgery procedure ($p \leq 0.05$).

Figure 4. DID Estimates for Total Days (Index + Readmission) by IFM Project (Rate Ratio)

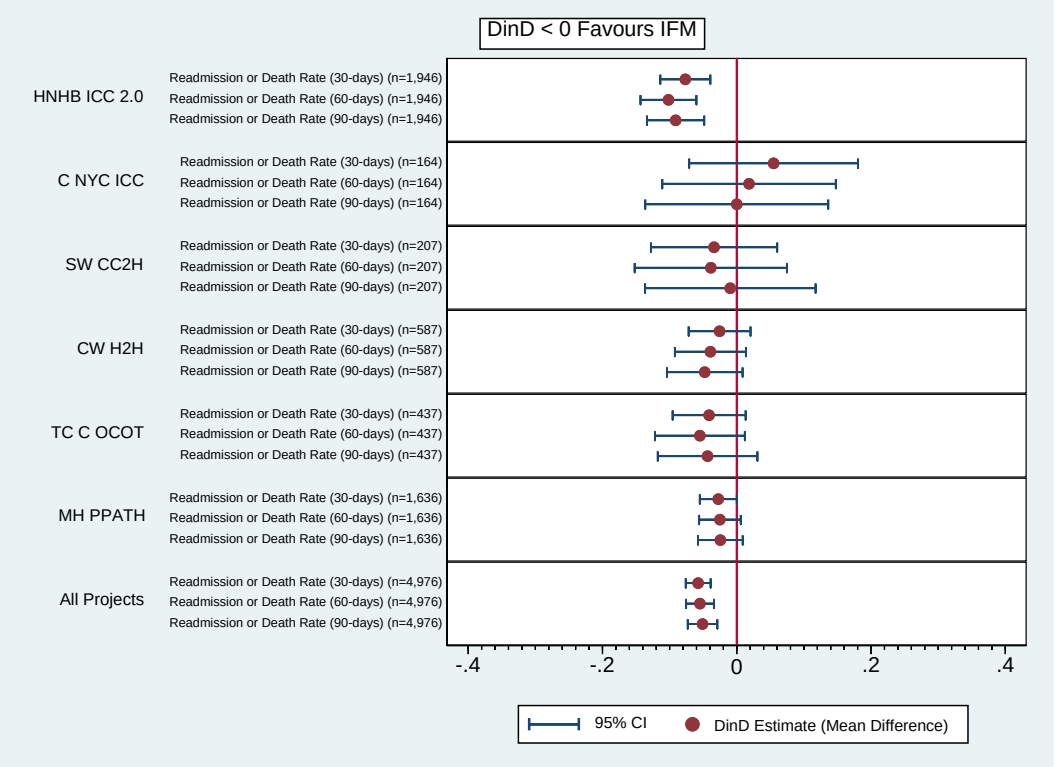


Note, in CW H2H, patients enrolled during a hospitalization or ED visit are both included in this outcome.

D.2.iv Readmission or Death Rate

Figure 5 shows mean absolute differences (DID) and their 95% confidence intervals for the readmission or death rate at 30, 60 and 90-days for each IFM project. Overall, the absolute decrease in readmission or death rate was at least 5% ($p < 0.0001$) greater for IFM participants as compared to the comparators at 30, 60 and 90-days post-discharge. Similar findings were observed for the mean number of readmissions and readmission rate outcomes (see appendix 9). HNHB ICC 2.0 observed a statistically significantly greater decreases in 30, 60 and 90-day readmission or death rates following a CHF or COPD hospitalization compared to similar patients admitted to non-IFM facilities ($p < 0.0001$). In the MH PPATH pilot project, a statistically significantly greater decline in readmission or death rate was only observed at 30-days following a cardiac procedure compared to similar patients admitted to non-IFM hospitals ($p \leq 0.05$).

Figure 5. DID Estimates for Readmission or Death Rate by IFM Project (Absolute Difference)

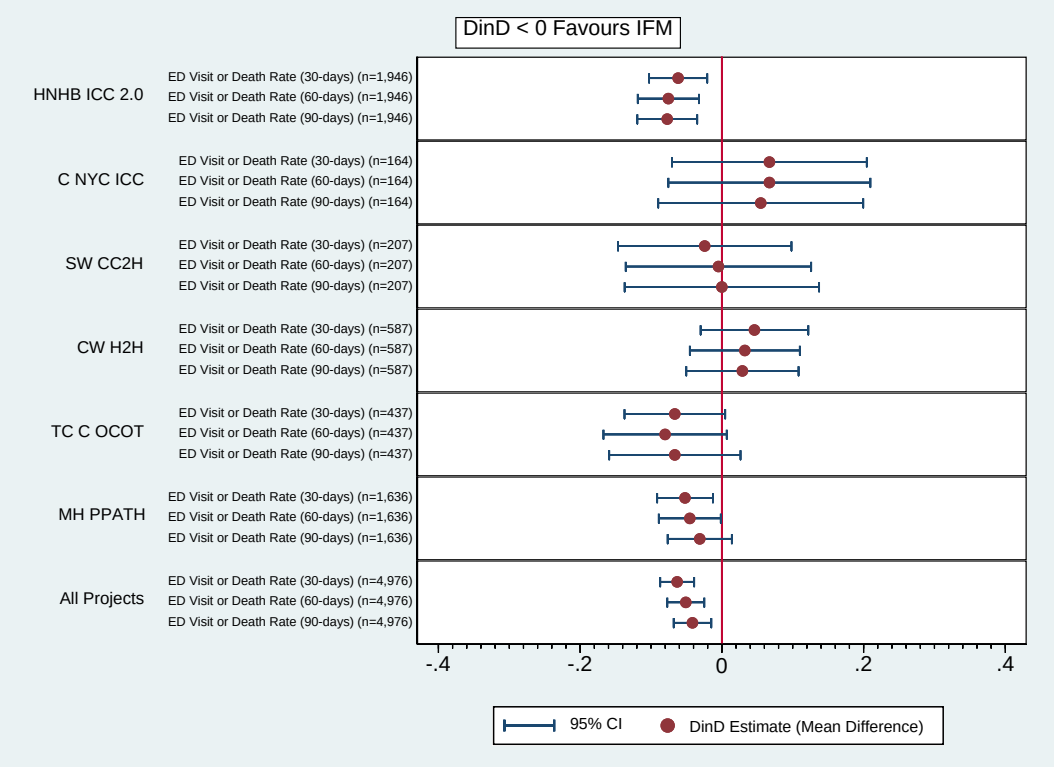


Note, in CW H2H, patients enrolled during a hospitalization or ED visit were both included in this outcome.

D.2.v ED Visit or Death Rate

Figure 6 shows mean absolute differences (DID) and their 95% confidence intervals for the ED visit (at least one ED visit) or death rate at 30, 60 and 90-days for each IFM project. Overall, the absolute decrease in the proportion of patients with at least one ED visit or death was at least 4% greater for IFM participants as compared to the comparators at 30, 60 and 90-days post-discharge ($p < 0.01$). Similar findings were observed for the mean number of ED visits and ED visit rate outcomes (see appendix 9). This was driven by the HNHB ICC 2.0 and MH PPATH pilot projects.

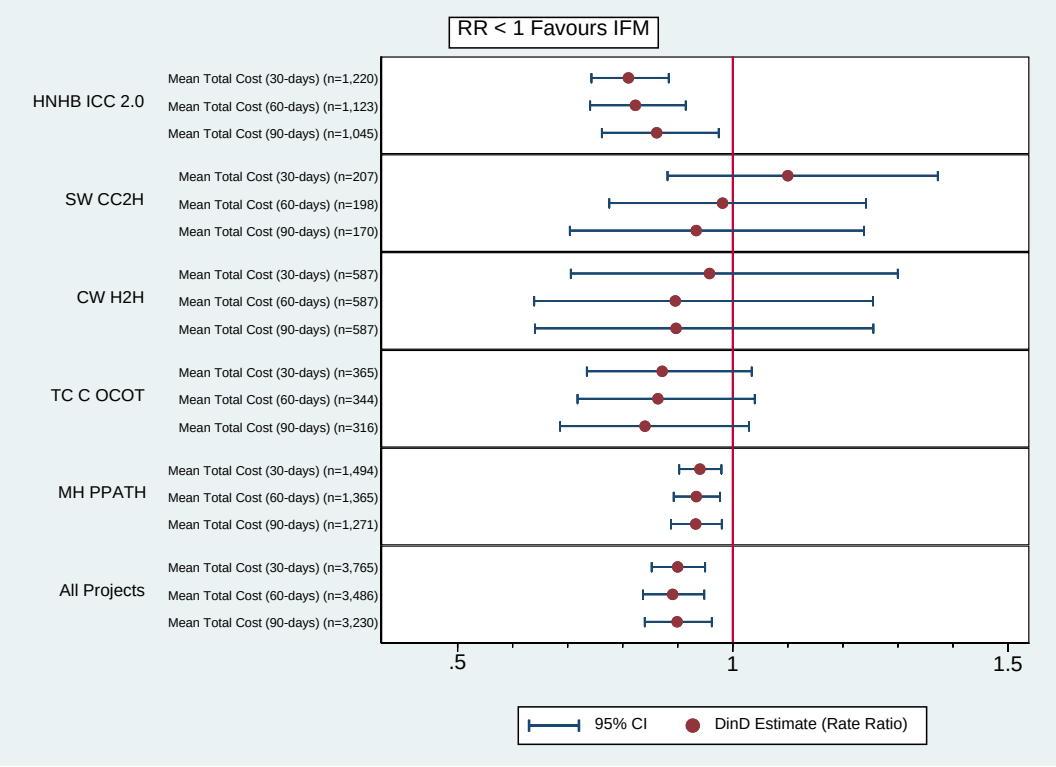
Figure 6. DID Estimates for ED Visit or Death Rate by IFM Project (Absolute Difference)



D.2.xi Mean Total Costs

Figure 7 shows rate ratios (DID) and their 95% confidence intervals for total costs at 30, 60 and 90-days for each IFM project. A ratio of mean total cost difference of less than 1 favours the IFM facilities (i.e. total costs decreased by a greater amount in IFM facilities over time). Overall, the relative reduction in mean total costs was 10% greater for IFM participants as compared to non-IFM participants at 30, 60 and 90-days post-discharge ($p < 0.01$). Only HNHB ICC 2.0 and MH PPATH pilot projects had statistically significant relative average total cost reductions.

Figure 7. DID Estimates for Total Costs by IFM Project (Relative Difference)



Note: There were insufficient costing data for C NYC ICC to report on this pilot project separately, but C NYC ICC patients have been included in the overall costs.

E. Project Specific Difference-in-Differences Results

E.1 HNHB ICC 2.0 – COPD/CHF

Enrollees were identified from Special Project Field 615 and the project registry (n=3,010). A substantial portion of the identified enrolments were excluded (n=494), for not meeting administrative data enrollment criteria (see Appendix 1). Of the 2,516 IFM enrollees, we were able to match 1,946 (77%) to similar patients in the comparator groups (historical IFM, historical non-IFM and concurrent non-IFM) (see Appendix 3). Attempts at hard matching on condition (COPD or CHF), resulted in substantial reduction in the number of matches and we, instead, included condition in the propensity score.

Table 6 shows the outcomes for HNHB ICC 2.0 (see Appendix 10 for additional outcomes). Mean index total LOS decreased significantly over time for patients from IFM hospitals; it was 25% lower in the post period relative to the pre period for patients from IFM hospitals ($p<0.0001$). The proportion of patients with ALC days, ED visits or death and readmissions or death at 30, 60 and 90-days was significantly lower, in the post period relative to the pre period for patients from HNHB ICC 2.0 hospitals.

Relative to changes over time for patients from non-IFM comparator facilities, patients from IFM facilities had significantly greater decreases in mean index total LOS and ALC rate. HNHB ICC 2.0 hospitals reduced mean index total LOS by 1.3 days more than comparators over the same time period ($p<0.0001$). DID estimates were also statistically significant and in favour of IFM for 30, 60 and 90-day total days in hospital (index+readmission). HNHB ICC 2.0 also had statistically significantly greater reductions in readmission or death rate at all three time points relative to comparators, as well as for ED visit or death rate. For the 60-day bundle period, total cost reduction over time was $3,264 greater for HNHB ICC 2.0 relative to non-IFM comparators.

Table 6. DID Outcome Model Estimates for HNHB ICC 2.0

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Oct 2015-Present)	Relative Difference (post / pre)	Absolute Difference (post - pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Total LOS (days)	(n=1946)	IFM	8.41	6.27	0.75	-2.14	<.0001	0.83	-1.32	<.0001
		non-IFM	8.02	7.19	0.9	-0.82	<.0001			
Index ALC Rate	(n=1946)	IFM	0.12	0.01	0.11	-0.1	<.0001	0.77	-0.1	<.0001
		non-IFM	0.06	0.06	0.97	0	0.83			
Readmission or Death Rate	30-days (n=1946)	IFM	0.28	0.19	0.7	-0.08	<.0001	0.72	-0.08	<.0001
		non-IFM	0.26	0.25	0.97	-0.01	0.56			
	60-days (n=1946)	IFM	0.39	0.28	0.73	-0.11	<.0001	0.74	-0.1	<.0001
		non-IFM	0.37	0.37	0.99	0	0.79			
	90-days (n=1946)	IFM	0.47	0.36	0.77	-0.11	<.0001	0.8	-0.09	<.0001
		non-IFM	0.46	0.44	0.97	-0.02	0.32			
ED Visit or Death Rate	30-days (n=1946)	IFM	0.35	0.28	0.8	-0.07	<.0001	0.82	-0.06	0.003
		non-IFM	0.36	0.35	0.98	-0.01	0.62			
	60-days (n=1946)	IFM	0.48	0.4	0.82	-0.09	<.0001	0.84	-0.08	0.0006
		non-IFM	0.5	0.49	0.98	-0.01	0.54			
	90-days (n=1946)	IFM	0.58	0.48	0.84	-0.09	<.0001	0.86	-0.08	0.0003
		non-IFM	0.58	0.57	0.97	-0.01	0.34			
Mean Total Days in Hospital	30-days (n=1601)	IFM	10.4	7.4	0.71	-2.99	<.0001	0.79	-2.02	<.0001
		non-IFM	9.74	8.76	0.9	-0.98	0.0001			
	60-days (n=1378)	IFM	11.82	8.48	0.72	-3.34	<.0001	0.82	-1.83	<.0001
		non-IFM	11.6	10.09	0.87	-1.51	<.0001			
	90-days (n=1165)	IFM	13.25	9.5	0.72	-3.75	<.0001	0.83	-1.97	0.001
		non-IFM	13.13	11.35	0.86	-1.78	0.0005			
Mean Total Cost	30-days (n=1220)	IFM	$ 16,165	$ 11,573	0.72	-$ 4,592	<.0001	0.81	-$ 2,804	<.0001
		non-IFM	$ 15,345	$ 13,556	0.88	-$ 1,789	<.0001			
	60-days (n=1123)	IFM	$ 20,745	$ 14,882	0.72	-$ 5,863	<.0001	0.82	-$ 3,264	0.0003
		non-IFM	$ 20,231	$ 17,632	0.87	-$ 2,599	0.0004			
	90-days (n=1045)	IFM	$ 25,085	$ 18,132	0.72	-$ 6,953	<.0001	0.86	-$ 2,897	0.02
		non-IFM	$ 25,156	$ 21,100	0.84	-$ 4,057	0.0001			

E.2 C NYC ICC – COPD/CHF

For this project, we identified enrolments from both the project registry and Special Project Field 615 (n=205). Thirty-four enrollees were excluded for not meeting administrative data enrollment criteria (see Appendix 1). The project targeted individuals suitable for self-care and without cognitive impairment, criteria that could not be identified using DAD administrative databases. We were able to match 164 of 171 enrollees to similar patients in the comparator groups (historical IFM, historical non-IFM and concurrent non-IFM) (see Appendix 3). A number of standard differences were above 0.1, particularly when matching concurrent and historic patients from comparator facilities, indicating potential imbalance on these covariates, however, p-values from either chi-square, one-way ANOVA or Cochran-Armitage trend test, as appropriate, were >0.05 for all but one covariate (Appendix 4). We included condition (COPD or CHF) in the propensity score.

Table 7 shows the outcomes for C NYC ICC (see Appendix 11 for additional outcomes). Many of the outcomes experienced small, but not statistically significant, reductions over time. There were insufficient cost data to report on this outcome reliably.

Relative to changes over time for patients from non-IFM facilities, there were no statistically significant differences for patients from the IFM facility.

Table 7. DID Outcome Model Estimates for C NYC ICC

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Jan 2016-March 2018)	Relative Difference (post / pre)	Absolute Difference (post - pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Total LOS (days)	(n=164)	IFM	5.37	4.77	0.89	-0.59	0.13	0.9	-0.54	0.33
		non-IFM	5.9	5.85	0.99	-0.05	0.92			
Readmission or Death Rate	30-days (n=164)	IFM	0.23	0.2	0.86	-0.03	0.5	1.33	0.05	0.39
		non-IFM	0.24	0.16	0.65	-0.09	0.05			
	60-days (n=164)	IFM	0.31	0.25	0.8	-0.06	0.22	1.05	0.02	0.78
		non-IFM	0.34	0.26	0.76	-0.08	0.1			
	90-days (n=164)	IFM	0.36	0.3	0.85	-0.05	0.3	0.99	0	1
		non-IFM	0.38	0.33	0.86	-0.05	0.28			
ED Visit or Death Rate	30-days (n=164)	IFM	0.26	0.29	1.12	0.03	0.53	1.27	0.07	0.34
		non-IFM	0.3	0.27	0.88	-0.04	0.41			
	60-days (n=164)	IFM	0.35	0.38	1.07	0.02	0.64	1.19	0.07	0.36
		non-IFM	0.41	0.37	0.9	-0.04	0.37			
	90-days (n=164)	IFM	0.43	0.44	1.01	0.01	0.91	1.12	0.05	0.46
		non-IFM	0.51	0.46	0.9	-0.05	0.34			
Mean Total Days in Hospital	30-days (n=151)	IFM	7.06	6	0.85	-1.06	0.09	0.94	-0.38	0.63
		non-IFM	7.42	6.74	0.91	-0.68	0.31			
	60-days (n=134)	IFM	8.24	6.73	0.82	-1.51	0.15	0.89	-0.82	0.53
		non-IFM	8.43	7.74	0.92	-0.69	0.46			
	90-days (n=124)	IFM	8.53	7.15	0.84	-1.38	0.28	0.9	-0.75	0.61
		non-IFM	9.49	8.86	0.93	-0.63	0.57			

E.3 SW CC2H – COPD/CHF

For this project, we identified enrolments from both the project registry and Special Project Field 615 (n=269). We were not able to identify comparator patients with moderate COPD as defined by the project's risk stratification algorithm (Appendix 1) because some of these criteria are not recorded in the available administrative databases. We were able to match 207 of 238 enrolments. Balance between groups was reasonable (Appendix 5).

Table 8 shows the outcomes for SW CC2H (see Appendix 12 for additional outcomes). Mean index total LOS for IFM patients decreased slightly, but this was not statistically significant. Readmission or death rate and ED visits or death were statistically significantly lower in the post relative to the pre period for patients from IFM hospitals, at 30, 60 and 90-days.

Relative to changes over time for comparator facilities, IFM facilities had no statistically significant improvements for any outcome. The sample size for this project was small and findings should be interpreted with caution.

Table 8. DID Outcome Model Estimates for SW CC2H

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Oct 2015-March 2018)	Relative Difference (post / pre)	Absolute Difference (post - pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Total LOS (days)	(n=207)	IFM	5.27	5.16	0.98	-0.10	0.77	1.22	1.07	0.06
		non-IFM	6.05	4.87	0.81	-1.17	0.004			
Readmission or Death Rate	30-days (n=207)	IFM	0.21	0.13	0.6	-0.08	0.02	0.81	-0.03	0.48
		non-IFM	0.19	0.14	0.75	-0.05	0.18			
	60-days (n=207)	IFM	0.34	0.22	0.65	-0.12	0.006	0.92	-0.04	0.5
		non-IFM	0.28	0.2	0.71	-0.08	0.05			
	90-days (n=207)	IFM	0.41	0.29	0.71	-0.12	0.01	0.99	-0.01	0.88
		non-IFM	0.39	0.28	0.72	-0.11	0.02			
ED Visit or Death Rate	30-days (n=207)	IFM	0.32	0.18	0.58	-0.14	0.001	0.89	-0.02	0.7
		non-IFM	0.31	0.20	0.65	-0.11	0.009			
	60-days (n=207)	IFM	0.45	0.31	0.68	-0.14	0.002	1.00	0	0.94
		non-IFM	0.44	0.30	0.68	-0.14	0.003			
	90-days (n=207)	IFM	0.54	0.42	0.78	-0.12	0.02	1.01	0	1
		non-IFM	0.52	0.40	0.78	-0.12	0.02			
Mean Total Days in Hospital	30-days (n=187)	IFM	6.03	5.52	0.91	-0.51	0.25	1.11	0.73	0.42
		non-IFM	7.2	5.96	0.83	-1.25	0.04			
	60-days (n=171)	IFM	7.32	6.14	0.84	-1.18	0.06	1.03	0.29	0.85
		non-IFM	7.95	6.48	0.81	-1.47	0.08			
	90-days (n=153)	IFM	7.74	7.03	0.91	-0.71	0.39	1.09	0.83	0.64
		non-IFM	9.38	7.84	0.84	-1.54	0.21			
Mean Total Cost	30-days (n=207)	IFM	$ 10,243	$ 11,458	1.12	$ 1,215	0.13	1.1	$ 1,022	0.4
		non-IFM	$ 11,328	$ 11,521	1.02	$ 194	0.85			
	60-days (n=198)	IFM	$ 13,875	$ 13,771	0.99	-$ 103	0.93	0.98	-$ 265	0.88
		non-IFM	$ 14,341	$ 14,503	1.01	$ 161	0.91			
	90-days (n=170)	IFM	$ 17,005	$ 15,309	0.9	-$ 1,696	0.27	0.93	-$ 1,037	0.63
		non-IFM	$ 18,425	$ 17,766	0.96	-$ 659	0.76			

E.4 CW H2H – UTI/Cellulitis

For this project, we identified enrolments from the project registry (n=735). Patients were admitted after either an ED visit (NACRS) or inpatient stay (DAD) for UTI/Cellulitis. A substantial portion of patients from the project registry did not have a diagnosis code for UTI or Cellulitis. For those that didn't, we linked with the homecare database (HCD) to see if they had a UTI or Cellulitis diagnosis recorded in this database subsequent to the index event. Despite this, a substantial portion of the project registry was excluded (n=93). We also used DAD, NACRS and HCD to identify comparators with a UTI or cellulitis diagnosis. For HCD, the diagnosis had to be effective within 60-days after a hospitalization or ED visit. We were not able to identify all of the enrolment criteria in the administrative data, particularly IV antibiotics (Appendix 1). We were able to match 587 of 642 enrolments. Index hospitalization or ED visit was used as a hard matching variable; only 59 (10.1%) matched IFM patients had an index hospitalization, the rest were enrolled through the ED. Balance between groups was fairly good (Appendix 6).

Table 9 shows the outcomes for CW H2H (see Appendix 13 for outcomes). Mean index total LOS decreased by a significant amount for index inpatient cases (n=59) from IFM hospitals. The statistically significant reductions in total days in hospital at 30, 60 and 90-days was driven by the index LOS of inpatient UTI/cellulitis patients. There was no significant change in readmission or death rate, but, worryingly, ED visit or death rate increased over time for patients from IFM hospitals.

The decline over time in mean index total LOS for inpatients from IFM facilities was statistically significantly greater than that for inpatients from comparator facilities. As was the decline in mean total hospital days over the bundle period (30, 60 and 90-days).

Table 9. DID Model Estimates for CW H2H

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Nov 2015-March 2018)	Relative Difference (post / pre)	Absolute Difference (post - pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Total LOS (days)	(n=59)	IFM	10.66	3.17	0.3	-7.49	<.0001	0.32	-6.8	<.0001
		non-IFM	10.14	9.44	0.93	-0.69	0.56			
Readmission or Death Rate	30-days (n=587)	IFM	0.11	0.09	0.79	-0.02	0.16	0.77	-0.03	0.28
		non-IFM	0.09	0.10	1.02	0.00	0.92			
	60-days (n=587)	IFM	0.15	0.12	0.79	-0.03	0.09	0.75	-0.04	0.15
		non-IFM	0.13	0.14	1.05	0.01	0.73			
	90-days (n=587)	IFM	0.18	0.14	0.83	-0.03	0.14	0.74	-0.05	0.1
		non-IFM	0.15	0.17	1.11	0.02	0.4			
ED Visit or Death Rate	30-days (n=587)	IFM	0.36	0.42	1.17	0.06	0.03	1.12	0.05	0.24
		non-IFM	0.35	0.37	1.04	0.02	0.59			
	60-days (n=587)	IFM	0.42	0.47	1.13	0.05	0.06	1.07	0.03	0.41
		non-IFM	0.4	0.42	1.06	0.02	0.43			
	90-days (n=587)	IFM	0.45	0.51	1.13	0.06	0.05	1.06	0.03	0.47
		non-IFM	0.44	0.47	1.07	0.03	0.31			
Mean Total Days in Hospital	30-days (n=565)	IFM	1.47	0.73	0.5	-0.74	<.0001	0.54	-0.63	0.006
		non-IFM	1.39	1.28	0.92	-0.11	0.55			
	60-days (n=552)	IFM	1.81	0.93	0.51	-0.89	0.0002	0.53	-0.83	0.008
		non-IFM	1.7	1.64	0.97	-0.06	0.84			
	90-days (n=542)	IFM	1.99	1.17	0.59	-0.81	0.009	0.57	-0.89	0.03
		non-IFM	1.82	1.9	1.04	0.07	0.82			
Mean Total Cost	30-days (n=587)	IFM	$ 4,826	$ 4,418	0.92	-$ 408	0.38	0.96	-$ 210	0.78
		non-IFM	$ 4,483	$ 4,285	0.96	-$ 198	0.66			
	60-days (n=587)	IFM	$ 6,445	$ 5,728	0.89	-$ 718	0.31	0.9	-$ 669	0.52
		non-IFM	$ 6,318	$ 6,269	0.99	-$ 49	0.95			
	90-days (n=587)	IFM	$ 7,711	$ 6,925	0.9	-$ 786	0.39	0.9	-$ 796	0.53
		non-IFM	$ 7,815	$ 7,826	1.00	$ 11	0.99			

E.5 TC/C OCOT – Stroke

For this project, we identified enrolments from both the project registry and Special Project Field 615 (n=649). A substantial portion of the identified enrolments were excluded (n=136), for not meeting administrative data enrollment criteria (see Appendix 1). We were able to match 437 of 513 enrolments. Balance between groups was fairly good (see Appendix 7). We included tPA, discharge destination (inpatient rehab or home) and intervention (EVT) in the propensity score.

Table 10 shows the outcomes for TC/C OCOT (see Appendix 14 for additional outcomes). Mean index total LOS decreased for patients from IFM hospitals ($p<0.001$), but the proportion with ALC increased significantly. Mean total days in hospital and mean total costs were also significantly lower in the post period as compared to the pre period. Readmission or death rate and ED visit or death rate decreased over time for patients from the IFM hospitals, but did not achieve statistical significance.

Relative to changes over time for patients from comparator facilities, nearly all outcomes improved (decreased) but did not achieve statistical significance ($p >0.05$).

Table 10. DID Model Estimates for TC/C OCOT

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Nov 2015-March 2018)	Relative Difference (post / pre)	Absolute Difference (post - pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Total LOS (days)	(n=437)	IFM	6.17	4.98	0.81	-1.19	0.0003	0.9	-0.5	0.19
		non-IFM	6.68	5.99	0.9	-0.69	0.06			
Index ALC Rate	(n=437)	IFM	0.23	0.31	1.35	0.08	0.007	0.84	0.06	0.11
		non-IFM	0.12	0.14	1.16	0.02	0.42			
Readmission or Death Rate	30-days (n=437)	IFM	0.12	0.1	0.85	-0.02	0.4	0.67	-0.04	0.14
		non-IFM	0.09	0.11	1.26	0.02	0.24			
	60-days (n=437)	IFM	0.17	0.13	0.75	-0.04	0.08	0.69	-0.05	0.11
		non-IFM	0.14	0.15	1.08	0.01	0.62			
	90-days (n=437)	IFM	0.21	0.17	0.8	-0.04	0.13	0.79	-0.04	0.25
		non-IFM	0.18	0.18	1.01	0	0.93			
ED Visit or Death Rate	30-days (n=437)	IFM	0.19	0.17	0.9	-0.02	0.49	0.67	-0.07	0.07
		non-IFM	0.14	0.19	1.34	0.05	0.05			
	60-days (n=437)	IFM	0.28	0.24	0.87	-0.04	0.23	0.73	-0.08	0.07
		non-IFM	0.23	0.27	1.19	0.04	0.13			
	90-days (n=437)	IFM	0.34	0.29	0.87	-0.04	0.18	0.81	-0.07	0.16
		non-IFM	0.3	0.32	1.08	0.02	0.45			
Mean Total Days in Hospital	30-days (n=403)	IFM	6.49	5.49	0.85	-1.00	0.008	0.94	-0.27	0.49
		non-IFM	7.07	6.34	0.90	-0.73	0.07			
	60-days (n=377)	IFM	6.99	5.72	0.82	-1.27	0.005	0.9	-0.58	0.31
		non-IFM	7.32	6.62	0.91	-0.69	0.17			
	90-days (n=362)	IFM	7.26	6.09	0.84	-1.17	0.03	0.88	-0.85	0.26
		non-IFM	7.14	6.83	0.96	-0.31	0.56			
Mean Total Cost	30-days (n=365)	IFM	$ 17,725	$ 12,886	0.73	-$ 4,839	<.0001	0.87	-$ 1,762	0.12
		non-IFM	$ 18,520	$ 15,444	0.83	-$ 3,077	0.005			
	60-days (n=344)	IFM	$ 21,547	$ 15,232	0.71	-$ 6,315	<.0001	0.86	-$ 2,272	0.12
		non-IFM	$ 22,235	$ 18,192	0.82	-$ 4,043	0.005			
	90-days (n=316)	IFM	$ 24,261	$ 17,046	0.7	-$ 7,215	<.0001	0.84	-$ 3,219	0.09
		non-IFM	$ 24,357	$ 20,361	0.84	-$ 3,996	0.02			

E.6 MH PPATH – Cardiac Surgery

For this project, we identified enrolments from both the project registry and Special Project Field 615 (n=2,070). A portion of the identified enrolments were excluded (n=145), for not meeting administrative data enrollment criteria (see Appendix 1). We were able to match 1,636 of 1,925 enrolments and the balance between groups was very good (see Appendix 8). We included admission category (urgent or elective) and surgery type (valve, CABG/valve, CABG, other cardiac) in the propensity score.

Table 11 shows the outcomes for MH PPATH (see Appendix 15 for additional outcomes). Mean index total LOS decreased significantly over time for patients from the IFM facility, as did post-operative LOS. For patients from the IFM facility, 30-day readmission or death rate and ED visit or death rate was significantly lower in the post relative to the pre-period, but there was no difference at 60 or 90-days ($p > 0.05$) .

Relative to changes over time for non-IFM facilities, the IFM facilities had significantly larger decreases in post-operative LOS, lower 30- and 60-day ED visits or death rates and lower readmission or death rate within 30-days. Patients from the IFM hospital had a $1,997 greater reduction in mean total costs (30-day) and $2,391 at 90-days relative to those from the non-IFM facilities.

Table 11. DID Model Estimates for MH PPATH

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Feb 2016-March 2018)	Relative Difference (post / pre)	Absolute Difference (post - pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Total LOS (days)	(n=1636)	IFM	8.7	8.21	0.94	-0.49	0.003	0.96	-0.39	0.08
		non-IFM	8.41	8.32	0.99	-0.10	0.53			
Mean Post-Operative LOS (days)	(n=1636)	IFM	6.97	6.21	0.89	-0.76	<.0001	0.89	-0.79	<.0001
		non-IFM	6.67	6.7	1.00	0.03	0.84			
Readmission or Death Rate	30-days (n=1636)	IFM	0.10	0.08	0.78	-0.02	0.03	0.73	-0.03	0.05
		non-IFM	0.09	0.09	1.08	0.01	0.5			
	60-days (n=1636)	IFM	0.12	0.11	0.87	-0.02	0.14	0.81	-0.03	0.11
		non-IFM	0.11	0.12	1.08	0.01	0.45			
	90-days (n=1636)	IFM	0.14	0.13	0.88	-0.02	0.15	0.83	-0.02	0.15
		non-IFM	0.13	0.14	1.05	0.01	0.55			
ED Visit or Death Rate	30-days (n=1636)	IFM	0.23	0.19	0.82	-0.04	0.003	0.78	-0.05	0.01
		non-IFM	0.23	0.24	1.05	0.01	0.48			
	60-days (n=1636)	IFM	0.29	0.26	0.90	-0.03	0.07	0.85	-0.05	0.04
		non-IFM	0.29	0.30	1.06	0.02	0.3			
	90-days (n=1636)	IFM	0.32	0.31	0.97	-0.01	0.6	0.91	-0.03	0.18
		non-IFM	0.32	0.34	1.07	0.02	0.17			
Mean Total Days in Hospital	30-days (n=1621)	IFM	9.24	8.68	0.94	-0.56	0.002	0.95	-0.51	0.05
		non-IFM	8.84	8.78	0.99	-0.05	0.76			
	60-days (n=1608)	IFM	9.42	8.94	0.95	-0.47	0.02	0.95	-0.51	0.07
		non-IFM	9.02	9.06	1.00	0.04	0.83			
	90-days (n=1604)	IFM	9.57	9.13	0.95	-0.44	0.05	0.94	-0.57	0.07
		non-IFM	9.18	9.31	1.01	0.13	0.55			
Mean Total Cost	30-days (n=1494)	IFM	$ 33,426	$ 31,228	0.93	-$ 2,198	<.0001	0.94	-$ 1,997	0.003
		non-IFM	$ 31,283	$ 31,082	0.99	-$ 200	0.68			
	60-days (n=1365)	IFM	$ 34,597	$ 32,447	0.94	-$ 2,150	<.0001	0.93	-$ 2,293	0.003
		non-IFM	$ 32,485	$ 32,627	1.00	$ 142	0.8			
	90-days (n=1271)	IFM	$ 35,495	$ 33,320	0.94	-$ 2,175	0.0001	0.93	-$ 2,391	0.006
		non-IFM	$ 33,563	$ 33,779	1.01	$ 216	0.74			

F. Conclusions

Overall, the IFM facilities demonstrated improvements in all outcomes measured compared to the non-IFM facilities. This was however, driven by the results of the two largest IFM initiatives (HNHB ICC 2.0 and MH PPATH). Results for SW CC2H and C NYC ICC initiatives should be interpreted with caution given the poor balance between the IFM and non-IFM patients on some covariates.

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Appendices

Appendix 1. Enrolment Criteria

*Criteria in red were not available in administrative data and not included in the eligibility algorithms.

***Project #1 – HNHB**:*
Inclusion Criteria:

COPD

dx10code = (J41* J42* J43* J44* excluding J43.0 J43.1 J43.2) AND
dxtype = (M)
WHERE (age>=35 AND MCC_PART^=I AND dischdisp=04)

CHF

(dx10code = (I50* I40* I41* I42* I43* I25.5) AND dxtype = (M))
OR
(dx10code = (I50*) AND dxtype = (1 2 W X Y)
AND dx10code=(I11 I13) AND dxtype=(M))
WHERE (age>=20 AND MCC_PART^=I AND dischdisp=04)

Exclusion Criteria:

Residing outside of HNHB LHIN
Residing in Long Term Care
Palliative care + discussion with patient/family and palliative care team deeming it not appropriate to transfer patient to ICC program for 60 days (palliative care is not an exclusion criterion alone, needs to be clinically discussed)

Project #2 – NYC ICC:
CHF
Inclusion Criteria:

CHF

(dx10code = (I50* I40* I41* I42* I43* I25.5) AND dxtype = (M))
OR
(dx10code = (I50*) AND dxtype = (1 2 W X Y) AND dx10code=(I11 I13)
AND dxtype=(M))
WHERE (age>=20 AND MCC_PART^=I AND (dischdisp=04 OR
dischdisp=05))

Live within the C LHIN or, as of June 2016, within TC or CE LHIN
Most Responsible Unit 6W (patients admitted to 6W)

Exclusion Criteria:

Cognitive impairment without caregiver support at home to assist with chronic disease self-management
Palliative prognosis of < 3 months

COPD
Inclusion criteria:

COPD

dx10code = (J41* J42* J43* J44* excluding J43.0 J43.1 J43.2) AND dxtype = (M)
WHERE (age>=35 AND MCC_PART^=I AND (dischdisp=04 OR dischdisp=05))

Live within the C LHIN or, as of June 2016, within TC or CE LHIN

Non – ICU cases (criteria removed as of July 2016)

IFM Project #3 – CC2H:

Inclusion Criteria:

Integrated Funding Model Risk Stratification score of 21 or less

Dx with moderate COPD

dx10code = (J41* J42* J43* J44* excluding J43.0 J43.1 J43.2) AND dxtype = (M)
WHERE (age>=35 AND MCC_PART^=I AND (dischdisp^=01 02 03 06 07))

Dx with CHF (Added March 2017)

dx10code = (I50* I40* I41* I42* I43* I255) AND dxtype = (M)
OR
(dx10code = (I50*) AND dxtype = (1 2 W X Y) AND dx10code=(I11 I13) AND dxtype=(M))
WHERE (age>=20 AND MCC_PART^=I AND (dischdisp^=01 02 03 06 07))

Have a primary care physician

Reside in London-Middlesex

Exclusion Criteria:

FEV1>65% predicted and an MMRC 0-1

Palliative

Integrated Funding Model Risk Stratification:

Variable	Points			
	0	**1**	**2**	**3**
MMRC at time of potential discharge	0-1	2	3	4
FEV1 (% predicted)	>65	50-64	36-49	<35
BMI	>21	<21		
Number of previous exacerbations in past 12 months	0	1	2	≥ 3
Is admission due to a reason other than COPD alone	no			yes
Did patient require invasive or non-invasive ventilation during admission	no	Required non-invasive ventilation for < 12 hours	Required non-invasive ventilation for > 12 hours	Required invasive ventilation

Is patient on long-term oral steroid &/or antibiotics	no		Yes to one	Yes to both
Number of other significant comorbidities	0	1-2	3	≥ 4
Activity Level & Independence	Good	Moderate	Low	Very Low
Cognitive deficits	None	Mild	Moderate	Severe
Ability to self-manage	Excellent/Good	Moderate	Low	Very Low
Social determinants of health (They include income and social status; social support networks; education; employment/working conditions; social environments; physical environments; personal health practices and coping skills)	Excellent/Good	Moderate	Low	Very Low
Anxiety	None	Mild	Moderate	Severe
Depression	None	Mild	Moderate	Severe

May add: Smoking/home O2/family supports

The Modified Medical Research Council (MMRC) Dyspnoea Scale

Grade of dyspnoea	Description
0	Not troubled by breathlessness except on strenuous exercise
1	Shortness of breath when hurrying on the level *or* walking up a slight hill
2	Walks slower than people of the same age on the level because of breathlessness *or* has to stop for breath when walking at own pace on the level
3	Stops for breath after walking about 100 m *or* after a few minutes on the level
4	Too breathless to leave the house *or* breathless when dressing or undressing

IFM Project #4 – H2H

Inclusion Criteria

Admitted to receive short term nursing service (less than 60 days) – IV Antibiotics
Dischdisp=04 or visdisp=01, 15, 07
18 years of age or older
Referral source from Brampton Civic Hospital (BCH), Etobicoke General Hospital (EGH), Headwaters
Hospital admission or ED visit for cellulitis (L03.x) or UTI (N39.0)

Exclusion Criteria

Intravenous drug use (care provided in clinic settings)
Active CCAC patient receiving third party nursing
Treatment address is outside of Central West LHIN boundaries

Requires specialty nurses services (e.g. Peritoneal Dialysis)

IFM Project #5 – OCOT

Inclusion Criteria

- Acute care admission for stroke (TIA, Ischemic, Hemorrhagic) based on:
  - QBP criteria – (MRDx G45 except G45.4, I61, I63 except I63.6, I64, OR H34.1) AND MCC_partition^=I
  - OR
  - EVT incode=(1.JE.57.GQ-GX 1.JW.57.GP-GX 1.JX.57.GP-GX) [added August 2nd, 2016]
- Aged ≥ 18 years
- Discharged from acute care to home with or without support (dischdisp=04 OR dischdisp=05) OR discharged to inpatient rehab (added August 2nd, 2016; dischdisp=02 AND instttyp=2 OR instttyp=7)

Exclusion Criteria

- Strokes coded as post-admit complications (type 2 diagnosis)

IFM Project #6 – PPATH

Inclusion Criteria

- Cardiac Surgery patients admitted to THP: incode = '1IJ76' '1HV80' '1HV90LA' '1HV90WJ' '1HJ' '1HP' '1HS' '1HT' '1HU' '1LZ37LAGB'
- Surgery by a cardiac surgeon (inserv=00031, 00038, 00041, 00048
- Discharged home with or without support (dischdisp=04 OR dischdisp=05)
- Reside in MH or CW LHIN

Exclusion Criteria

- Incode = '1HV90GPXXL' '1HV90GRXXL' '1HV90STXXL'
- Patients who require post-op cardiac rehab
- Patients who require post-op Long-term care

Appendix 2. Baseline Characteristics of Matched Enrollees and Comparators for All Projects Combined

All Projects Combined (n=4,977)	IFM & Historic from Same Facilities				IFM & Concurrent Comparator Facilities				Concurrent & Historic Comparator Facilities			
Variable	Enrollee Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio	Enrollee Mean(SD)/%	Concurrent Mean(SD)/%	Standard Difference	Variance Ratio	Concurrent Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio
Age	70.69 ± 12.60	70.68 ± 12.58	0	1	70.69 ± 12.60	70.67 ± 12.59	0	1	70.67 ± 12.59	70.66 ± 12.60	0	1
Sex (Male)	2,976 (59.8%)	2,976 (59.8%)	0	1	2,976 (59.8%)	2,976 (59.8%)	0	1	2,976 (59.8%)	2,976 (59.8%)	0	1
Propensity	0.77 ± 1.07	0.78 ± 1.07	0.01	1.01	1.52 ± 1.22	1.56 ± 1.21	0.03	1.02	1.58 ± 1.34	1.62 ± 1.34	0.03	1
Rurality (RIO 2008)	3.03 ± 5.83	3.12 ± 6.24	0.02	0.87	3.03 ± 5.83	3.11 ± 6.10	0.01	0.91	3.11 ± 6.10	3.11 ± 6.09	0	1
CADG1 - Acute Minor	4,347 (87.3%)	4,379 (88.0%)	0.02	0.96	4,347 (87.3%)	4,362 (87.6%)	0.01	0.98	4,362 (87.6%)	4,363 (87.7%)	0	1
CADG2 - Acute Major	4,587 (92.2%)	4,582 (92.1%)	0	1.01	4,587 (92.2%)	4,621 (92.8%)	0.03	0.92	4,621 (92.8%)	4,615 (92.7%)	0	1.02
CADG3 - Likely To Recur	3,546 (71.2%)	3,536 (71.0%)	0	1	3,546 (71.2%)	3,519 (70.7%)	0.01	1.01	3,519 (70.7%)	3,551 (71.3%)	0.01	0.99
CADG4 - Asthma	561 (11.3%)	600 (12.1%)	0.02	1.06	561 (11.3%)	583 (11.7%)	0.01	1.03	583 (11.7%)	581 (11.7%)	0	1
CADG5 - Chronic Medical Unstable	4,368 (87.8%)	4,339 (87.2%)	0.02	1.04	4,368 (87.8%)	4,428 (89.0%)	0.04	0.91	4,428 (89.0%)	4,435 (89.1%)	0	0.99
CADG6 - Chronic Medical Stable	4,282 (86.0%)	4,311 (86.6%)	0.02	0.96	4,282 (86.0%)	4,314 (86.7%)	0.02	0.96	4,314 (86.7%)	4,302 (86.4%)	0.01	1.02
CADG7 - Chronic Specialty Stable	355 (7.1%)	349 (7.0%)	0	0.98	355 (7.1%)	390 (7.8%)	0.03	1.09	390 (7.8%)	408 (8.2%)	0.01	1.04
CADG8 - Eye/Dental	904 (18.2%)	962 (19.3%)	0.03	1.05	904 (18.2%)	899 (18.1%)	0	1	899 (18.1%)	920 (18.5%)	0.01	1.02
CADG9 - Chronic Specialty Unstable	1,056 (21.2%)	1,045 (21.0%)	0.01	0.99	1,056 (21.2%)	1,060 (21.3%)	0	1	1,060 (21.3%)	1,017 (20.4%)	0.02	0.97
CADG10 - Psychosocial	1,935 (38.9%)	1,891 (38.0%)	0.02	0.99	1,935 (38.9%)	1,905 (38.3%)	0.01	0.99	1,905 (38.3%)	1,933 (38.8%)	0.01	1.01
CADG11 - Preventive/ Administrative	2,074 (41.7%)	2,130 (42.8%)	0.02	1.01	2,074 (41.7%)	2,101 (42.2%)	0.01	1	2,101 (42.2%)	2,171 (43.6%)	0.03	1.01
CADG12 - Pregnancy	17 (0.3%)	14 (0.3%)	0.01	0.82	17 (0.3%)	11 (0.2%)	0.02	0.65	11 (0.2%)	11 (0.2%)	0	1
Income Quintile (0-20)	1,126 (22.6%)	1,121 (22.5%)	0	1	1,126 (22.6%)	1,158 (23.3%)	0.02	1.02	1,158 (23.3%)	1,149 (23.1%)	0	0.99
Income Quintile (20-40)	1,069 (21.5%)	1,052 (21.1%)	0.01	0.99	1,069 (21.5%)	1,111 (22.3%)	0.02	1.03	1,111 (22.3%)	1,128 (22.7%)	0.01	1.01
Income Quintile (40-60)	1,046 (21.0%)	1,066 (21.4%)	0.01	1.01	1,046 (21.0%)	1,026 (20.6%)	0.01	0.99	1,026 (20.6%)	1,006 (20.2%)	0.01	0.99
Income Quintile (60-80)	952 (19.1%)	944 (19.0%)	0	0.99	952 (19.1%)	918 (18.4%)	0.02	0.97	918 (18.4%)	942 (18.9%)	0.01	1.02
Income Quintile (80-100)	784 (15.8%)	794 (16.0%)	0.01	1.01	784 (15.8%)	764 (15.4%)	0.01	0.98	764 (15.4%)	752 (15.1%)	0.01	0.99
Number of hospital admissions 1-year prior	0.62 ± 1.18	0.63 ± 1.14	0.01	1.09	0 (0.0%)	*1 - 5	0.03	.	0.67 ± 1.17	0.67 ± 1.19	0	0.97
Number of ED visits 1-year prior	1.58 ± 2.26	1.55 ± 2.30	0.02	0.97	0 (0.0%)	356 (7.2%)	0.39	.	1.65 ± 2.18	1.64 ± 2.24	0	0.95

Appendix 3. Baseline Characteristics of Matched Enrollees and Comparators for HNHB ICC 2.0

HNHB ICC 2.0 (n=1,946)	IFM & Historic from Same Facilities				IFM & Concurrent Comparator Facilities				Concurrent & Historic Comparator Facilities			
Variable	Enrollee Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio	Enrollee Mean(SD)/%	Concurrent Mean(SD)/%	Standard Difference	Variance Ratio	Concurrent Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio
Age	76.49 ± 10.44	76.45 ± 10.46	0	1	76.49 ± 10.44	76.46 ± 10.42	0	0	76.46 ± 10.42	76.45 ± 10.46	0	0
Sex (Male)	925 (47.5%)	925 (47.5%)	0	1	925 (47.5%)	925 (47.5%)	0	0	925 (47.5%)	925 (47.5%)	0	0
Propensity	0.32 ± 0.64	0.35 ± 0.63	0.04	1.05	0.70 ± 0.58	0.71 ± 0.57	0.03	0.03	0.48 ± 0.63	0.50 ± 0.62	0.03	0.03
Rurality (RIO 2008)	4.86 ± 7.04	4.81 ± 7.06	0.01	0.99	4.86 ± 7.04	4.89 ± 7.80	0	0	4.89 ± 7.80	4.88 ± 7.95	0	0
CADG1 - Acute Minor	1,808 (92.9%)	1,828 (93.9%)	0.04	0.86	1,808 (92.9%)	1,832 (94.1%)	0.05	0.05	1,832 (94.1%)	1,832 (94.1%)	0	0
CADG2 - Acute Major	1,813 (93.2%)	1,819 (93.5%)	0.01	0.96	1,813 (93.2%)	1,838 (94.5%)	0.05	0.05	1,838 (94.5%)	1,832 (94.1%)	0.01	0.01
CADG3 - Likely To Recur	1,458 (74.9%)	1,486 (76.4%)	0.03	0.96	1,458 (74.9%)	1,477 (75.9%)	0.02	0.02	1,477 (75.9%)	1,489 (76.5%)	0.01	0.01
CADG4 - Asthma	297 (15.3%)	336 (17.3%)	0.05	1.1	297 (15.3%)	324 (16.6%)	0.04	0.04	324 (16.6%)	323 (16.6%)	0	0
CADG5 - Chronic Medical Unstable	1,862 (95.7%)	1,860 (95.6%)	0.01	1.02	1,862 (95.7%)	1,874 (96.3%)	0.03	0.03	1,874 (96.3%)	1,876 (96.4%)	0.01	0.01
CADG6 - Chronic Medical Stable	1,734 (89.1%)	1,741 (89.5%)	0.01	0.97	1,734 (89.1%)	1,744 (89.6%)	0.02	0.02	1,744 (89.6%)	1,742 (89.5%)	0	0
CADG7 - Chronic Specialty Stable	136 (7.0%)	147 (7.6%)	0.02	1.07	136 (7.0%)	141 (7.2%)	0.01	0.01	141 (7.2%)	144 (7.4%)	0.01	0.01
CADG8 - Eye/Dental	389 (20.0%)	429 (22.0%)	0.05	1.07	389 (20.0%)	421 (21.6%)	0.04	0.04	421 (21.6%)	439 (22.6%)	0.02	0.02
CADG9 - Chronic Specialty Unstable	453 (23.3%)	448 (23.0%)	0.01	0.99	453 (23.3%)	468 (24.0%)	0.02	0.02	468 (24.0%)	459 (23.6%)	0.01	0.01
CADG10 - Psychosocial	895 (46.0%)	874 (44.9%)	0.02	1	895 (46.0%)	900 (46.2%)	0.01	0.01	900 (46.2%)	919 (47.2%)	0.02	0.02
CADG11 - Preventive/ Administrative	1,017 (52.3%)	1,057 (54.3%)	0.04	0.99	1,017 (52.3%)	1,059 (54.4%)	0.04	0.04	1,059 (54.4%)	1,069 (54.9%)	0.01	0.01
CADG12 - Pregnancy	*1 - 5	*1 - 5	0.04	2.5	*1 - 5	*1 - 5	0.02	0.02	*1 - 5	*1 - 5	0.02	0.02
Income Quintile (0-20)	635 (32.6%)	627 (32.2%)	0.01	0.99	635 (32.6%)	633 (32.5%)	0	0	633 (32.5%)	639 (32.8%)	0.01	0.01
Income Quintile (20-40)	435 (22.4%)	441 (22.7%)	0.01	1.01	435 (22.4%)	440 (22.6%)	0.01	0.01	440 (22.6%)	440 (22.6%)	0	0
Income Quintile (40-60)	362 (18.6%)	354 (18.2%)	0.01	0.98	362 (18.6%)	346 (17.8%)	0.02	0.02	346 (17.8%)	344 (17.7%)	0	0
Income Quintile (60-80)	287 (14.7%)	281 (14.4%)	0.01	0.98	287 (14.7%)	291 (15.0%)	0.01	0.01	291 (15.0%)	293 (15.1%)	0	0
Income Quintile (80-100)	227 (11.7%)	243 (12.5%)	0.03	1.06	227 (11.7%)	236 (12.1%)	0.01	0.01	236 (12.1%)	230 (11.8%)	0.01	0.01
Condition (COPD)	977 (50.2%)	978 (50.3%)	0	1	977 (50.2%)	987 (50.7%)	0.01	0.01	987 (50.7%)	1,016 (52.2%)	0.03	0.03
Condition (CHF)	969 (49.8%)	968 (49.7%)	0	1	969 (49.8%)	959 (49.3%)	0.01	0.01	959 (49.3%)	930 (47.8%)	0.03	0.03
Number of hospital admissions 1-year prior	1.10 ± 1.55	1.12 ± 1.44	0.01	1.17	1.10 ± 1.55	1.19 ± 1.52	0.06	0.06	1.19 ± 1.52	1.20 ± 1.55	0.01	0.01
Number of ED visits 1-year prior	2.37 ± 2.85	2.39 ± 2.85	0	1	2.37 ± 2.85	2.55 ± 2.69	0.06	0.06	2.55 ± 2.69	2.55 ± 2.75	0	0

Appendix 4. Baseline Characteristics of Matched Enrollees and Comparators for C NYC ICC

NYC ICC (n=164)	IFM & Historic from Same Facilities				IFM & Concurrent Comparator Facilities				Concurrent & Historic Comparator Facilities			
Variable	Enrollee Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio	Enrollee Mean(SD)/%	Concurrent Mean(SD)/%	Standard Difference	Variance Ratio	Concurrent Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio
Age	77.09 ± 11.47	77.12 ± 11.34	0	1.02	77.09 ± 11.47	77.04 ± 11.63	0	0.97	77.04 ± 11.63	76.99 ± 11.56	0	1.01
Sex (Male)	69 (42.1%)	69 (42.1%)	0	1	69 (42.1%)	69 (42.1%)	0	1	69 (42.1%)	69 (42.1%)	0	1
Propensity	1.98 ± 0.79	2.00 ± 0.80	0.03	0.97	2.85 ± 0.91	2.91 ± 0.86	0.06	1.12	2.86 ± 0.95	2.92 ± 0.93	0.07	1.06
Rurality (RIO 2008)	0.51 ± 1.45	0.49 ± 1.48	0.02	0.96	0.51 ± 1.45	0.55 ± 1.73	0.02	0.7	0.55 ± 1.73	0.68 ± 1.72	0.08	1.01
CADG1 - Acute Minor	156 (95.1%)	153 (93.3%)	0.08	1.35	156 (95.1%)	159 (97.0%)	0.09	0.64	159 (97.0%)	159 (97.0%)	0	1
CADG2 - Acute Major	152 (92.7%)	149 (90.9%)	0.07	1.23	152 (92.7%)	156 (95.1%)	0.1	0.68	156 (95.1%)	154 (93.9%)	0.05	1.23
CADG3 - Likely To Recur	120 (73.2%)	116 (70.7%)	0.05	1.05	120 (73.2%)	124 (75.6%)	0.06	0.94	124 (75.6%)	133 (81.1%)	0.13	0.83
CADG4 - Asthma	51 (31.1%)	51 (31.1%)	0	1	51 (31.1%)	51 (31.1%)	0	1	51 (31.1%)	54 (32.9%)	0.04	1.03
CADG5 - Chronic Medical Unstable	150 (91.5%)	152 (92.7%)	0.05	0.87	150 (91.5%)	153 (93.3%)	0.07	0.8	153 (93.3%)	148 (90.2%)	0.11	1.41
CADG6 - Chronic Medical Stable	150 (91.5%)	148 (90.2%)	0.04	1.13	150 (91.5%)	154 (93.9%)	0.09	0.73	154 (93.9%)	153 (93.3%)	0.02	1.09
CADG7 - Chronic Specialty Stable	19 (11.6%)	22 (13.4%)	0.06	1.13	19 (11.6%)	31 (18.9%)	0.2	1.5	31 (18.9%)	38 (23.2%)	0.1	1.16
CADG8 - Eye/Dental	46 (28.0%)	44 (26.8%)	0.03	0.97	46 (28.0%)	46 (28.0%)	0	1	46 (28.0%)	40 (24.4%)	0.08	0.91
CADG9 - Chronic Specialty Unstable	49 (29.9%)	43 (26.2%)	0.08	0.92	49 (29.9%)	58 (35.4%)	0.12	1.09	58 (35.4%)	57 (34.8%)	0.01	0.99
CADG10 - Psychosocial	73 (44.5%)	74 (45.1%)	0.01	1	73 (44.5%)	76 (46.3%)	0.04	1.01	76 (46.3%)	75 (45.7%)	0.01	1
CADG11 - Preventive/ Administrative	85 (51.8%)	81 (49.4%)	0.05	1	85 (51.8%)	89 (54.3%)	0.05	0.99	89 (54.3%)	95 (57.9%)	0.07	0.98
CADG12 - Pregnancy	.	.	.	.	.	.	.	.	.	.	.	.
Income Quintile (0-20)	37 (22.6%)	32 (19.5%)	0.07	0.9	37 (22.6%)	40 (24.4%)	0.04	1.06	40 (24.4%)	42 (25.6%)	0.03	1.03
Income Quintile (20-40)	37 (22.6%)	44 (26.8%)	0.1	1.12	37 (22.6%)	35 (21.3%)	0.03	0.96	35 (21.3%)	37 (22.6%)	0.03	1.04
Income Quintile (40-60)	26 (15.9%)	25 (15.2%)	0.02	0.97	26 (15.9%)	27 (16.5%)	0.02	1.03	27 (16.5%)	22 (13.4%)	0.09	0.84
Income Quintile (60-80)	32 (19.5%)	35 (21.3%)	0.05	1.07	32 (19.5%)	30 (18.3%)	0.03	0.95	30 (18.3%)	36 (22.0%)	0.09	1.15
Income Quintile (80-100)	32 (19.5%)	28 (17.1%)	0.06	0.9	32 (19.5%)	32 (19.5%)	0	1	32 (19.5%)	27 (16.5%)	0.08	0.88
Condition (COPD)	92 (56.1%)	86 (52.4%)	0.07	1.01	92 (56.1%)	78 (47.6%)	0.17	1.01	78 (47.6%)	57 (34.8%)	0.26	0.91
Condition (CHF)	72 (43.9%)	78 (47.6%)	0.07	1.01	72 (43.9%)	86 (52.4%)	0.17	1.01	86 (52.4%)	107 (65.2%)	0.26	0.91
Number of hospital admissions 1-year prior	0.74 ± 1.16	0.59 ± 1.13	0.13	1.05	0.74 ± 1.16	0.75 ± 1.10	0.01	1.12	0.75 ± 1.10	0.70 ± 0.99	0.05	1.24
Number of ED visits 1-year prior	1.65 ± 1.95	1.40 ± 1.76	0.13	1.22	1.65 ± 1.95	1.66 ± 1.77	0.01	1.2	1.66 ± 1.77	1.68 ± 2.13	0.01	0.69

Appendix 5. Baseline Characteristics of Matched Enrollees and Comparators for SW CC2H

SW CC2H (n=207)	IFM & Historic from Same Facilities				IFM & Concurrent Comparator Facilities				Concurrent & Historic Comparator Facilities			
Variable	Enrollee Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio	Enrollee Mean(SD)/%	Concurrent Mean(SD)/%	Standard Difference	Variance Ratio	Concurrent Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio
Age	72.94 ± 8.99	72.99 ± 8.98	0.01	1	72.94 ± 8.99	72.94 ± 9.01	0	1	72.94 ± 9.01	72.95 ± 8.97	0	1.01
Sex (Male)	94 (45.4%)	94 (45.4%)	0	1	94 (45.4%)	94 (45.4%)	0	1	94 (45.4%)	94 (45.4%)	0	1
Propensity	2.25 ± 0.48	2.27 ± 0.48	0.02	1.01	3.15 ± 0.67	3.17 ± 0.66	0.03	1.03	3.43 ± 0.75	3.52 ± 0.71	0.12	1.1
Rurality (RIO 2008)	2.00 ± 7.83	2.64 ± 8.67	0.08	0.82	2.00 ± 7.83	1.99 ± 8.28	0	0.89	1.99 ± 8.28	1.57 ± 6.96	0.05	1.42
CADG1 - Acute Minor	188 (90.8%)	196 (94.7%)	0.15	0.6	188 (90.8%)	190 (91.8%)	0.03	0.9	190 (91.8%)	194 (93.7%)	0.07	0.78
CADG2 - Acute Major	189 (91.3%)	193 (93.2%)	0.07	0.79	189 (91.3%)	189 (91.3%)	0	1	189 (91.3%)	190 (91.8%)	0.02	0.95
CADG3 - Likely To Recur	151 (72.9%)	158 (76.3%)	0.08	0.92	151 (72.9%)	150 (72.5%)	0.01	1.01	150 (72.5%)	143 (69.1%)	0.07	1.07
CADG4 - Asthma	33 (15.9%)	43 (20.8%)	0.13	1.23	33 (15.9%)	33 (15.9%)	0	1	33 (15.9%)	42 (20.3%)	0.11	1.21
CADG5 - Chronic Medical Unstable	196 (94.7%)	199 (96.1%)	0.07	0.74	196 (94.7%)	196 (94.7%)	0	1	196 (94.7%)	198 (95.7%)	0.05	0.83
CADG6 - Chronic Medical Stable	183 (88.4%)	187 (90.3%)	0.06	0.85	183 (88.4%)	186 (89.9%)	0.05	0.89	186 (89.9%)	187 (90.3%)	0.02	0.96
CADG7 - Chronic Specialty Stable	8 (3.9%)	10 (4.8%)	0.05	1.24	8 (3.9%)	10 (4.8%)	0.05	1.24	10 (4.8%)	8 (3.9%)	0.05	0.81
CADG8 - Eye/Dental	28 (13.5%)	30 (14.5%)	0.03	1.06	28 (13.5%)	31 (15.0%)	0.04	1.09	31 (15.0%)	32 (15.5%)	0.01	1.03
CADG9 - Chronic Specialty Unstable	29 (14.0%)	27 (13.0%)	0.03	0.94	29 (14.0%)	30 (14.5%)	0.01	1.03	30 (14.5%)	26 (12.6%)	0.06	0.89
CADG10 - Psychosocial	96 (46.4%)	98 (47.3%)	0.02	1	96 (46.4%)	99 (47.8%)	0.03	1	99 (47.8%)	99 (47.8%)	0	1
CADG11 - Preventive/ Administrative	84 (40.6%)	86 (41.5%)	0.02	1.01	84 (40.6%)	85 (41.1%)	0.01	1	85 (41.1%)	79 (38.2%)	0.06	0.98
CADG12 - Pregnancy	.	.	.	.	.	.	.	.	.	.	.	.
Income Quintile (0-20)	69 (33.3%)	71 (34.3%)	0.02	1.01	69 (33.3%)	77 (37.2%)	0.08	1.05	77 (37.2%)	59 (28.5%)	0.19	0.87
Income Quintile (20-40)	59 (28.5%)	59 (28.5%)	0	1	59 (28.5%)	49 (23.7%)	0.11	0.89	49 (23.7%)	43 (20.8%)	0.07	0.91
Income Quintile (40-60)	24 (11.6%)	22 (10.6%)	0.03	0.93	24 (11.6%)	28 (13.5%)	0.06	1.14	28 (13.5%)	32 (15.5%)	0.05	1.12
Income Quintile (60-80)	31 (15.0%)	35 (16.9%)	0.05	1.1	31 (15.0%)	30 (14.5%)	0.01	0.97	30 (14.5%)	44 (21.3%)	0.18	1.35
Income Quintile (80-100)	24 (11.6%)	20 (9.7%)	0.06	0.85	24 (11.6%)	23 (11.1%)	0.02	0.96	23 (11.1%)	29 (14.0%)	0.09	1.22
Condition (COPD)	151 (72.9%)	151 (72.9%)	0	1	151 (72.9%)	151 (72.9%)	0	1	151 (72.9%)	151 (72.9%)	0	1
Condition (CHF)	56 (27.1%)	56 (27.1%)	0	1	56 (27.1%)	56 (27.1%)	0	1	56 (27.1%)	56 (27.1%)	0	1
Number of hospital admissions 1-year prior	0.69 ± 1.08	0.80 ± 1.05	0.1	1.06	0.69 ± 1.08	0.66 ± 0.98	0.03	1.22	0.66 ± 0.98	0.57 ± 0.89	0.09	1.22
Number of ED visits 1-year prior	1.82 ± 2.21	1.96 ± 2.39	0.06	0.85	1.82 ± 2.21	1.81 ± 2.35	0	0.88	1.81 ± 2.35	1.53 ± 1.81	0.13	1.69

Appendix 6. Baseline Characteristics of Matched Enrollees and Comparators for CW H2H

H2H (n=587)	IFM & Historic from Same Facilities				IFM & Concurrent Comparator Facilities				Concurrent & Historic Comparator Facilities			
Variable	Enrollee Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio	Enrollee Mean(SD)/%	Concurrent Mean(SD)/%	Standard Difference	Variance Ratio	Concurrent Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio
Age	61.60 ± 16.21	61.61 ± 16.21	0	1	61.60 ± 16.21	61.60 ± 16.22	0	1	61.60 ± 16.22	61.60 ± 16.21	0	1
Sex (Male)	326 (55.5%)	326 (55.5%)	0	1	326 (55.5%)	326 (55.5%)	0	1	326 (55.5%)	326 (55.5%)	0	1
Propensity	2.85 ± 0.67	2.87 ± 0.68	0.03	0.99	3.62 ± 0.86	3.64 ± 0.86	0.03	1.02	3.90 ± 5.45	3.84 ± 5.11	0.01	1.14
Rurality (RIO 2008)	3.42 ± 6.76	3.63 ± 7.29	0.03	0.86	3.42 ± 6.76	3.90 ± 5.45	0.08	1.54	3.88 ± 0.85	3.90 ± 0.83	0.03	1.04
CADG1 - Acute Minor	514 (87.6%)	509 (86.7%)	0.03	1.06	514 (87.6%)	523 (89.1%)	0.05	0.89	523 (89.1%)	517 (88.1%)	0.03	1.08
CADG2 - Acute Major	534 (91.0%)	520 (88.6%)	0.08	1.23	534 (91.0%)	530 (90.3%)	0.02	1.07	530 (90.3%)	526 (89.6%)	0.02	1.06
CADG3 - Likely To Recur	447 (76.1%)	424 (72.2%)	0.09	1.1	447 (76.1%)	433 (73.8%)	0.06	1.07	433 (73.8%)	435 (74.1%)	0.01	0.99
CADG4 - Asthma	63 (10.7%)	54 (9.2%)	0.05	0.87	63 (10.7%)	60 (10.2%)	0.02	0.96	60 (10.2%)	61 (10.4%)	0.01	1.01
CADG5 - Chronic Medical Unstable	312 (53.2%)	290 (49.4%)	0.08	1	312 (53.2%)	320 (54.5%)	0.03	1	320 (54.5%)	333 (56.7%)	0.04	0.99
CADG6 - Chronic Medical Stable	450 (76.7%)	456 (77.7%)	0.02	0.97	450 (76.7%)	468 (79.7%)	0.07	0.9	468 (79.7%)	471 (80.2%)	0.01	0.98
CADG7 - Chronic Specialty Stable	53 (9.0%)	36 (6.1%)	0.11	0.7	53 (9.0%)	66 (11.2%)	0.07	1.21	66 (11.2%)	73 (12.4%)	0.04	1.09
CADG8 - Eye/Dental	97 (16.5%)	111 (18.9%)	0.06	1.11	97 (16.5%)	94 (16.0%)	0.01	0.98	94 (16.0%)	99 (16.9%)	0.02	1.04
CADG9 - Chronic Specialty Unstable	114 (19.4%)	125 (21.3%)	0.05	1.07	114 (19.4%)	119 (20.3%)	0.02	1.03	119 (20.3%)	115 (19.6%)	0.02	0.97
CADG10 - Psychosocial	204 (34.8%)	192 (32.7%)	0.04	0.97	204 (34.8%)	184 (31.3%)	0.07	0.95	184 (31.3%)	168 (28.6%)	0.06	0.95
CADG11 - Preventive/ Administrative	197 (33.6%)	204 (34.8%)	0.03	1.02	197 (33.6%)	186 (31.7%)	0.04	0.97	186 (31.7%)	204 (34.8%)	0.07	1.05
CADG12 - Pregnancy	14 (2.4%)	8 (1.4%)	0.08	0.58	14 (2.4%)	9 (1.5%)	0.06	0.65	9 (1.5%)	9 (1.5%)	0	1
Income Quintile (0-20)	112 (19.1%)	98 (16.7%)	0.06	0.9	112 (19.1%)	110 (18.7%)	0.01	0.99	110 (18.7%)	94 (16.0%)	0.07	0.88
Income Quintile (20-40)	161 (27.4%)	155 (26.4%)	0.02	0.98	161 (27.4%)	162 (27.6%)	0	1	162 (27.6%)	151 (25.7%)	0.04	0.96
Income Quintile (40-60)	176 (30.0%)	187 (31.9%)	0.04	1.03	176 (30.0%)	172 (29.3%)	0.01	0.99	172 (29.3%)	174 (29.6%)	0.01	1.01
Income Quintile (60-80)	91 (15.5%)	95 (16.2%)	0.02	1.04	91 (15.5%)	102 (17.4%)	0.05	1.1	102 (17.4%)	115 (19.6%)	0.06	1.1
Income Quintile (80-100)	47 (8.0%)	52 (8.9%)	0.03	1.1	47 (8.0%)	41 (7.0%)	0.04	0.88	41 (7.0%)	53 (9.0%)	0.08	1.26
Number of hospital admissions 1-year prior	0.25 ± 0.66	0.30 ± 0.80	0.07	0.68	0.25 ± 0.66	0.27 ± 0.65	0.03	1.02	0.27 ± 0.65	0.31 ± 0.79	0.05	0.68
Number of ED visits 1-year prior	1.38 ± 2.07	1.08 ± 2.05	0.14	1.02	1.38 ± 2.07	1.28 ± 1.95	0.05	1.13	1.28 ± 1.95	1.21 ± 1.94	0.04	1.01
Index Hospital Admission	59 (10.1%)	59 (10.1%)	0	1	59 (10.1%)	59 (10.1%)	0	1	59 (10.1%)	59 (10.1%)	0	1

Appendix 7. Baseline Characteristics of Matched Enrollees and Comparators for TC/C OCOT

OCOT (n=437)	IFM & Historic from Same Facilities				IFM & Concurrent Comparator Facilities				Concurrent & Historic Comparator Facilities			
Variable	Enrollee Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio	Enrollee Mean(SD)/%	Concurrent Mean(SD)/%	Standard Difference	Variance Ratio	Concurrent Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio
Age	73.80 ± 12.36	73.78 ± 12.30	0	1.01	73.80 ± 12.36	73.77 ± 12.37	0	1	73.77 ± 12.37	73.76 ± 12.35	0	1
Sex (Male)	240 (54.9%)	240 (54.9%)	0	1	240 (54.9%)	240 (54.9%)	0	1	240 (54.9%)	240 (54.9%)	0	1
Propensity	0.70 ± 0.67	0.72 ± 0.65	0.02	1.04	2.02 ± 0.78	2.07 ± 0.74	0.06	1.11	1.84 ± 0.76	1.88 ± 0.73	0.06	1.08
Rurality (RIO 2008)	0.88 ± 3.45	1.46 ± 6.92	0.11	0.25	0.88 ± 3.45	0.96 ± 2.79	0.02	1.53	0.96 ± 2.79	1.00 ± 2.88	0.02	0.94
CADG1 - Acute Minor	356 (81.5%)	360 (82.4%)	0.02	0.96	356 (81.5%)	344 (78.7%)	0.07	1.11	344 (78.7%)	343 (78.5%)	0.01	1.01
CADG2 - Acute Major	385 (88.1%)	395 (90.4%)	0.07	0.83	385 (88.1%)	380 (87.0%)	0.03	1.08	380 (87.0%)	382 (87.4%)	0.01	0.97
CADG3 - Likely To Recur	300 (68.6%)	298 (68.2%)	0.01	1.01	300 (68.6%)	289 (66.1%)	0.05	1.04	289 (66.1%)	291 (66.6%)	0.01	0.99
CADG4 - Asthma	20 (4.6%)	20 (4.6%)	0	1	20 (4.6%)	16 (3.7%)	0.05	0.81	16 (3.7%)	17 (3.9%)	0.01	1.06
CADG5 - Chronic Medical Unstable	338 (77.3%)	336 (76.9%)	0.01	1.01	338 (77.3%)	346 (79.2%)	0.04	0.94	346 (79.2%)	347 (79.4%)	0.01	0.99
CADG6 - Chronic Medical Stable	361 (82.6%)	369 (84.4%)	0.05	0.91	361 (82.6%)	361 (82.6%)	0	1	361 (82.6%)	358 (81.9%)	0.02	1.03
CADG7 - Chronic Specialty Stable	38 (8.7%)	44 (10.1%)	0.05	1.14	38 (8.7%)	37 (8.5%)	0.01	0.98	37 (8.5%)	37 (8.5%)	0	1
CADG8 - Eye/Dental	85 (19.5%)	93 (21.3%)	0.05	1.07	85 (19.5%)	91 (20.8%)	0.03	1.05	91 (20.8%)	91 (20.8%)	0	1
CADG9 - Chronic Specialty Unstable	115 (26.3%)	117 (26.8%)	0.01	1.01	115 (26.3%)	97 (22.2%)	0.1	0.89	97 (22.2%)	93 (21.3%)	0.02	0.97
CADG10 - Psychosocial	165 (37.8%)	157 (35.9%)	0.04	0.98	165 (37.8%)	158 (36.2%)	0.03	0.98	158 (36.2%)	162 (37.1%)	0.02	1.01
CADG11 - Preventive/ Administrative	152 (34.8%)	151 (34.6%)	0	1	152 (34.8%)	163 (37.3%)	0.05	1.03	163 (37.3%)	160 (36.6%)	0.01	0.99
CADG12 - Pregnancy	.	.	.	.	.	.	.	.	.	.	.	.
Income Quintile (0-20)	87 (19.9%)	80 (18.3%)	0.04	0.94	87 (19.9%)	89 (20.4%)	0.01	1.02	89 (20.4%)	79 (18.1%)	0.06	0.91
Income Quintile (20-40)	95 (21.7%)	82 (18.8%)	0.07	0.9	95 (21.7%)	102 (23.3%)	0.04	1.05	102 (23.3%)	109 (24.9%)	0.04	1.05
Income Quintile (40-60)	68 (15.6%)	72 (16.5%)	0.02	1.05	68 (15.6%)	67 (15.3%)	0.01	0.99	67 (15.3%)	68 (15.6%)	0.01	1.01
Income Quintile (60-80)	76 (17.4%)	79 (18.1%)	0.02	1.03	76 (17.4%)	76 (17.4%)	0	1	76 (17.4%)	87 (19.9%)	0.06	1.11
Income Quintile (80-100)	111 (25.4%)	124 (28.4%)	0.07	1.07	111 (25.4%)	103 (23.6%)	0.04	0.95	103 (23.6%)	94 (21.5%)	0.05	0.94
Discharged Home	309 (70.7%)	300 (68.6%)	0.04	1.04	309 (70.7%)	310 (70.9%)	0.01	1	310 (70.9%)	320 (73.2%)	0.05	0.95
Discharged to Inpatient Rehab	.	.	.	.	0 (0.0%)	*1 - 5	0.07	.	*1 - 5	*1 - 5	0.07	2.99
Number of hospital admissions 1-year prior	0.29 ± 0.70	0.27 ± 0.77	0.03	0.83	0.29 ± 0.70	0.31 ± 0.69	0.02	1.02	0.31 ± 0.69	0.30 ± 0.65	0.01	1.14
Number of ED visits 1-year prior	0.98 ± 1.60	0.98 ± 1.71	0	0.88	0.98 ± 1.60	0.97 ± 1.36	0.01	1.38	0.97 ± 1.36	1.04 ± 1.53	0.04	0.79
Administered tPA	48 (11.0%)	50 (11.4%)	0.01	1.04	48 (11.0%)	50 (11.4%)	0.01	1.04	50 (11.4%)	59 (13.5%)	0.06	1.15

Appendix 8. Baseline Characteristics of Matched Enrollees and Comparators for MH PPATH

PPATH (n=1,636)	IFM & Historic from Same Facilities				IFM & Concurrent Comparator Facilities				Concurrent & Historic Comparator Facilities			
Variable	Enrollee Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio	Enrollee Mean(SD)/%	Concurrent Mean(SD)/%	Standard Difference	Variance Ratio	Concurrent Mean(SD)/%	Historic Mean(SD)/%	Standard Difference	Variance Ratio
Age	65.29 ± 9.43	65.31 ± 9.41	0	1	65.29 ± 9.43	65.29 ± 9.42	0	1	65.29 ± 9.42	65.29 ± 9.43	0	1
Sex (Male)	1,322 (80.8%)	1,322 (80.8%)	0	1	1,322 (80.8%)	1,322 (80.8%)	0	1	1,322 (80.8%)	1,322 (80.8%)	0	1
Propensity	0.26 ± 0.37	0.27 ± 0.37	0.01	1	1.28 ± 0.76	1.36 ± 0.74	0.1	1.06	1.64 ± 0.71	1.70 ± 0.69	0.09	1.06
Rurality (RIO 2008)	1.66 ± 3.00	1.70 ± 3.28	0.01	0.83	1.66 ± 3.00	1.68 ± 3.35	0.01	0.8	1.68 ± 3.35	1.75 ± 3.44	0.02	0.95
CADG1 - Acute Minor	1,325 (81.0%)	1,333 (81.5%)	0.01	0.98	1,325 (81.0%)	1,314 (80.3%)	0.02	1.03	1,314 (80.3%)	1,318 (80.6%)	0.01	0.99
CADG2 - Acute Major	1,514 (92.5%)	1,506 (92.1%)	0.02	1.06	1,514 (92.5%)	1,528 (93.4%)	0.03	0.89	1,528 (93.4%)	1,531 (93.6%)	0.01	0.97
CADG3 - Likely To Recur	1,070 (65.4%)	1,054 (64.4%)	0.02	1.01	1,070 (65.4%)	1,046 (63.9%)	0.03	1.02	1,046 (63.9%)	1,060 (64.8%)	0.02	0.99
CADG4 - Asthma	97 (5.9%)	96 (5.9%)	0	0.99	97 (5.9%)	99 (6.1%)	0.01	1.02	99 (6.1%)	84 (5.1%)	0.04	0.86
CADG5 - Chronic Medical Unstable	1,510 (92.3%)	1,502 (91.8%)	0.02	1.06	1,510 (92.3%)	1,539 (94.1%)	0.07	0.78	1,539 (94.1%)	1,533 (93.7%)	0.02	1.06
CADG6 - Chronic Medical Stable	1,404 (85.8%)	1,410 (86.2%)	0.01	0.98	1,404 (85.8%)	1,401 (85.6%)	0.01	1.01	1,401 (85.6%)	1,391 (85.0%)	0.02	1.04
CADG7 - Chronic Specialty Stable	101 (6.2%)	90 (5.5%)	0.03	0.9	101 (6.2%)	105 (6.4%)	0.01	1.04	105 (6.4%)	108 (6.6%)	0.01	1.03
CADG8 - Eye/Dental	259 (15.8%)	255 (15.6%)	0.01	0.99	259 (15.8%)	216 (13.2%)	0.07	0.86	216 (13.2%)	219 (13.4%)	0.01	1.01
CADG9 - Chronic Specialty Unstable	296 (18.1%)	285 (17.4%)	0.02	0.97	296 (18.1%)	288 (17.6%)	0.01	0.98	288 (17.6%)	267 (16.3%)	0.03	0.94
CADG10 - Psychosocial	502 (30.7%)	496 (30.3%)	0.01	0.99	502 (30.7%)	488 (29.8%)	0.02	0.98	488 (29.8%)	510 (31.2%)	0.03	1.03
CADG11 - Preventive/ Administrative	539 (32.9%)	551 (33.7%)	0.02	1.01	539 (32.9%)	519 (31.7%)	0.03	0.98	519 (31.7%)	564 (34.5%)	0.06	1.04
CADG12 - Pregnancy	*1 - 5	*1 - 5	0	1	*1 - 5	*1 - 5	0	1	*1 - 5	0 (0.0%)	0.03	0
Income Quintile (0-20)	186 (11.4%)	213 (13.0%)	0.05	1.12	186 (11.4%)	209 (12.8%)	0.04	1.11	209 (12.8%)	236 (14.4%)	0.05	1.11
Income Quintile (20-40)	282 (17.2%)	271 (16.6%)	0.02	0.97	282 (17.2%)	323 (19.7%)	0.06	1.11	323 (19.7%)	348 (21.3%)	0.04	1.06
Income Quintile (40-60)	390 (23.8%)	406 (24.8%)	0.02	1.03	390 (23.8%)	386 (23.6%)	0.01	0.99	386 (23.6%)	366 (22.4%)	0.03	0.96
Income Quintile (60-80)	435 (26.6%)	419 (25.6%)	0.02	0.98	435 (26.6%)	389 (23.8%)	0.06	0.93	389 (23.8%)	367 (22.4%)	0.03	0.96
Income Quintile (80-100)	343 (21.0%)	327 (20.0%)	0.02	0.97	343 (21.0%)	329 (20.1%)	0.02	0.97	329 (20.1%)	319 (19.5%)	0.02	0.98
Urgent Procedure	1,017 (62.2%)	1,022 (62.5%)	0.01	1	1,017 (62.2%)	1,008 (61.6%)	0.01	1.01	1,008 (61.6%)	1,001 (61.2%)	0.01	1
Elective Procedure	619 (37.8%)	614 (37.5%)	0.01	1	619 (37.8%)	628 (38.4%)	0.01	1.01	628 (38.4%)	635 (38.8%)	0.01	1
Surgery Type (Valve)	84 (5.1%)	93 (5.7%)	0.02	1.1	84 (5.1%)	92 (5.6%)	0.02	1.09	92 (5.6%)	99 (6.1%)	0.02	1.07
Surgery Type (CABG/Valve)	75 (4.6%)	72 (4.4%)	0.01	0.96	75 (4.6%)	86 (5.3%)	0.03	1.14	86 (5.3%)	83 (5.1%)	0.01	0.97
Surgery Type (CABG)	1,341 (82.0%)	1,336 (81.7%)	0.01	1.01	1,341 (82.0%)	1,327 (81.1%)	0.02	1.04	1,327 (81.1%)	1,326 (81.1%)	0	1
Surgery Type (Other	136 (8.3%)	135 (8.3%)	0	0.99	136 (8.3%)	131 (8.0%)	0.01	0.97	131 (8.0%)	128 (7.8%)	0.01	0.98
Number of hospital admissions 1-year prior	0.24 ± 0.58	0.24 ± 0.55	0	1.08	0.24 ± 0.58	0.27 ± 0.57	0.05	1.01	0.27 ± 0.57	0.27 ± 0.59	0	0.93
Number of ED visits 1-year prior	0.84 ± 1.16	0.83 ± 1.26	0.01	0.85	0.84 ± 1.16	0.86 ± 1.11	0.01	1.11	0.86 ± 1.11	0.87 ± 1.28	0.01	0.75

Appendix 9. Additional Outcomes from DID Model Estimates for All Projects Combined

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Oct 2015-March 2018)	Relative Difference (Post / Pre)	Absolute Difference (Post - Pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Acute LOS (days)	(n=4448)	IFM	6.74	5.74	0.85	-1.00	<.0001	0.93	-0.39	0.0002
		non-IFM	6.84	6.23	0.91	-0.61	<.0001			
Mean Number of Readmissions	30 days (n=4527)	IFM	0.10	0.08	0.76	-0.02	0.02	0.72	-0.03	0.06
		non-IFM	0.09	0.10	1.05	0.00	0.7			
	60-days (n=4219)	IFM	0.23	0.18	0.79	-0.05	<.0001	0.81	-0.04	0.003
		non-IFM	0.21	0.21	0.98	0.00	0.71			
	90-days (n=3949)	IFM	0.29	0.24	0.82	-0.05	<.0001	0.87	-0.04	0.05
		non-IFM	0.28	0.27	0.94	-0.02	0.21			
Readmission Rate	30-days (n=4527)	IFM	0.18	0.15	0.84	-0.03	<.0001	0.84	-0.03	0.001
		non-IFM	0.17	0.17	1.00	0	0.96			
	60-days (n=4219)	IFM	0.23	0.19	0.85	-0.03	<.0001	0.85	-0.04	0.001
		non-IFM	0.21	0.21	1.00	0	0.93			
	90-days (n=3949)	IFM	0.26	0.23	0.87	-0.03	<.0001	0.88	-0.03	0.007
		non-IFM	0.24	0.24	1.00	0	0.91			
Mean Number of ED Visits	30-days (n=4527)	IFM	0.35	0.30	0.86	-0.05	0.0004	0.89	-0.04	0.06
		non-IFM	0.36	0.35	0.97	-0.01	0.43			
	60-days (n=4219)	IFM	0.52	0.47	0.89	-0.06	0.004	0.9	-0.05	0.06
		non-IFM	0.54	0.54	0.99	-0.01	0.81			
	90-days (n=3949)	IFM	0.69	0.63	0.91	-0.06	0.02	0.93	-0.05	0.15
		non-IFM	0.72	0.71	0.99	-0.01	0.75			
ED Visit Rate	30-days (n=4527)	IFM	0.29	0.26	0.89	-0.03	0.0002	0.88	-0.03	0.006
		non-IFM	0.29	0.29	1.01	0	0.83			
	60-days (n=4219)	IFM	0.35	0.33	0.92	-0.03	0.007	0.91	-0.03	0.02
		non-IFM	0.35	0.36	1.01	0.01	0.61			
	90-days (n=3949)	IFM	0.4	0.38	0.95	-0.02	0.08	0.95	-0.02	0.14
		non-IFM	0.4	0.4	1.01	0	0.76			

Appendix 10. Additional Outcomes from DID Model Estimates HNHB ICC 2.0

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Oct 2015-March 2018)	Relative Difference (Post / Pre)	Absolute Difference (Post - Pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Acute LOS (days)	(n=1946)	IFM	7.74	6.22	0.8	-1.52	<.0001	0.89	-0.77	0.0003
		non-IFM	7.63	6.88	0.9	-0.75	<.0001			
Mean Number of Readmissions	30 days (n=1601)	IFM	0.27	0.20	0.74	-0.07	<.0001	0.73	-0.07	0.002
		non-IFM	0.24	0.24	1.02	0.00	0.81			
	60-days (n=1378)	IFM	0.43	0.34	0.78	-0.10	0.0003	0.75	-0.11	0.004
		non-IFM	0.41	0.42	1.03	0.01	0.64			
	90-days (n=1165)	IFM	0.57	0.44	0.78	-0.13	0.0002	0.83	-0.09	0.05
		non-IFM	0.57	0.53	0.93	-0.04	0.31			
Readmission Rate	30-days (n=1601)	IFM	0.23	0.18	0.75	-0.06	<.0001	0.77	-0.05	0.007
		non-IFM	0.21	0.21	0.97	-0.01	0.7			
	60-days (n=1378)	IFM	0.32	0.25	0.78	-0.07	<.0001	0.77	-0.07	0.002
		non-IFM	0.31	0.31	1.01	0	0.81			
	90-days (n=1165)	IFM	0.38	0.31	0.80	-0.08	<.0001	0.83	-0.06	0.02
		non-IFM	0.37	0.36	0.97	-0.01	0.58			
Mean Number of ED Visits	30-days (n=1601)	IFM	0.42	0.34	0.81	-0.08	0.0008	0.9	-0.03	0.24
		non-IFM	0.45	0.41	0.9	-0.05	0.11			
	60-days (n=1378)	IFM	0.68	0.62	0.91	-0.06	0.1	0.93	-0.05	0.38
		non-IFM	0.76	0.74	0.98	-0.02	0.7			
	90-days (n=1165)	IFM	0.92	0.82	0.89	-0.10	0.05	0.95	-0.04	0.55
		non-IFM	1.03	0.97	0.94	-0.06	0.3			
ED Visit Rate	30-days (n=1601)	IFM	0.31	0.26	0.85	-0.05	0.004	0.89	-0.03	0.16
		non-IFM	0.32	0.31	0.95	-0.01	0.39			
	60-days (n=1378)	IFM	0.43	0.38	0.89	-0.05	0.01	0.89	-0.05	0.08
		non-IFM	0.44	0.44	1.00	0	0.94			
	90-days (n=1165)	IFM	0.52	0.45	0.88	-0.06	0.001	0.9	-0.05	0.07
		non-IFM	0.52	0.5	0.97	-0.01	0.48			

Appendix 11. Additional Outcomes from DID Model Estimates C NYC ICC

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Jan 2015-March 2018)	Relative Difference (Post / Pre)	Absolute Difference (Post - Pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Acute LOS (days)	(n=164)	IFM	5.27	4.74	0.9	-0.53	0.17	0.88	-0.66	0.25
		non-IFM	5.70	5.83	1.02	0.13	0.79			
Mean Number of Readmissions	30 days (n=151)	IFM	0.25	0.20	0.81	-0.05	0.4	1.27	0.04	0.51
		non-IFM	0.24	0.15	0.64	-0.09	0.08			
	60-days (n=134)	IFM	0.33	0.23	0.70	-0.10	0.16	0.88	-0.02	0.69
		non-IFM	0.37	0.30	0.80	-0.07	0.33			
	90-days (n=124)	IFM	0.39	0.32	0.83	-0.06	0.49	1.24	0.12	0.49
		non-IFM	0.56	0.38	0.67	-0.19	0.06			
Readmission Rate	30-days (n=151)	IFM	0.22	0.18	0.82	-0.04	0.4	1.23	0.03	0.62
		non-IFM	0.22	0.15	0.67	-0.07	0.1			
	60-days (n=134)	IFM	0.27	0.2	0.75	-0.07	0.21	0.97	0	1
		non-IFM	0.3	0.23	0.77	-0.07	0.22			
	90-days (n=124)	IFM	0.29	0.23	0.81	-0.06	0.35	0.94	-0.01	0.92
		non-IFM	0.34	0.29	0.86	-0.05	0.41			
Mean Number of ED Visits	30-days (n=151)	IFM	0.30	0.29	0.98	-0.01	0.92	1.22	0.07	0.53
		non-IFM	0.40	0.32	0.8	-0.08	0.26			
	60-days (n=134)	IFM	0.42	0.40	0.96	-0.01	0.87	1.25	0.15	0.43
		non-IFM	0.72	0.56	0.77	-0.16	0.14			
	90-days (n=124)	IFM	0.58	0.56	0.96	-0.02	0.84	1.29	0.24	0.36
		non-IFM	1.04	0.77	0.74	-0.27	0.08			
ED Visit Rate	30-days (n=151)	IFM	0.25	0.25	1.03	0.01	0.9	1.14	0.03	0.65
		non-IFM	0.28	0.25	0.91	-0.03	0.57			
	60-days (n=134)	IFM	0.31	0.32	1.05	0.01	0.8	1.17	0.05	0.52
		non-IFM	0.38	0.34	0.90	-0.04	0.49			
	90-days (n=124)	IFM	0.36	0.37	1.02	0.01	0.9	1.12	0.05	0.58
		non-IFM	0.47	0.43	0.91	-0.04	0.5			

Appendix 12. Additional Outcomes from DID Model Estimates SW CC2H

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Oct 2015-March 2018)	Relative Difference (Post / Pre)	Absolute Difference (Post - Pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Acute LOS (days)	**(n=207)**	**IFM**	5.25	5.16	0.98	-0.09	0.8	1.2	0.96	0.08
		non-IFM	5.83	4.78	0.82	-1.04	0.005			
Mean Number of Readmissions	**30 days (n=187)**	**IFM**	0.19	0.12	0.63	-0.07	0.08	1.12	0.03	0.76
		non-IFM	0.22	0.12	0.56	-0.10	0.03			
	60-days (n=171)	**IFM**	0.37	0.19	0.52	-0.18	0.007	1.00	-0.02	0.99
		non-IFM	0.33	0.18	0.53	-0.16	0.01			
	90-days (n=153)	**IFM**	0.48	0.29	0.62	-0.18	0.02	0.91	-0.03	0.76
		non-IFM	0.48	0.33	0.68	-0.16	0.08			
Readmission Rate	**30-days (n=187)**	**IFM**	0.16	0.1	0.60	-0.06	0.06	0.89	-0.01	0.91
		non-IFM	0.18	0.12	0.68	-0.06	0.11			
	60-days (n=171)	**IFM**	0.29	0.16	0.54	-0.13	0.003	0.88	-0.04	0.57
		non-IFM	0.26	0.16	0.61	-0.1	0.03			
	90-days (n=153)	**IFM**	0.33	0.24	0.74	-0.09	0.1	1.05	0.02	0.78
		non-IFM	0.35	0.25	0.70	-0.1	0.04			
Mean Number of ED Visits	**30-days (n=187)**	**IFM**	0.38	0.21	0.56	-0.17	0.02	1.22	0.07	0.57
		non-IFM	0.44	0.20	0.46	-0.24	0.0007			
	60-days (n=171)	**IFM**	0.61	0.36	0.58	-0.26	0.007	1.23	0.1	0.47
		non-IFM	0.68	0.32	0.47	-0.36	0.0001			
	90-days (n=153)	**IFM**	0.77	0.59	0.77	-0.18	0.12	1.27	0.2	0.35
		non-IFM	0.95	0.58	0.61	-0.37	0.006			
ED Visit Rate	**30-days (n=187)**	**IFM**	0.28	0.16	0.56	-0.12	0.005	0.96	0.01	0.94
		non-IFM	0.3	0.18	0.58	-0.13	0.004			
	60-days (n=171)	**IFM**	0.39	0.25	0.63	-0.15	0.005	1.04	0.02	0.75
		non-IFM	0.42	0.25	0.6	-0.17	0.0008			
	90-days (n=153)	**IFM**	0.45	0.39	0.85	-0.07	0.24	1.2	0.08	0.34
		non-IFM	0.5	0.35	0.71	-0.14	0.01			

Appendix 13. Additional Outcomes from DID Model Estimates CW H2H

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Nov 2015-March 2018)	Relative Difference (Post / Pre)	Absolute Difference (Post - Pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Acute LOS (days)	(n=59)	IFM	10.29	3.17	0.31	-7.12	<.0001	0.35	-6.07	<.0001
		non-IFM	9.61	8.56	0.89	-1.05	0.29			
Mean Number of Readmissions	30 days (n=565)	IFM	0.11	0.09	0.87	-0.01	0.46	1.01	0	0.96
		non-IFM	0.10	0.09	0.86	-0.01	0.46			
	60-days (n=552)	IFM	0.15	0.13	0.89	-0.02	0.5	0.92	-0.01	0.72
		non-IFM	0.13	0.13	0.97	0.00	0.88			
	90-days (n=542)	IFM	0.19	0.18	0.94	-0.01	0.7	0.9	-0.02	0.63
		non-IFM	0.15	0.16	1.05	0.01	0.78			
Readmission Rate	30-days (n=565)	IFM	0.1	0.09	0.93	-0.01	0.67	1.01	0	1
		non-IFM	0.09	0.08	0.92	-0.01	0.67			
	60-days (n=552)	IFM	0.13	0.11	0.89	-0.01	0.45	0.86	-0.02	0.5
		non-IFM	0.11	0.11	1.03	0	0.85			
	90-days (n=542)	IFM	0.15	0.14	0.90	-0.01	0.48	0.84	-0.02	0.4
		non-IFM	0.12	0.13	1.08	0.01	0.64			
Mean Number of ED Visits	30-days (n=565)	IFM	0.57	0.67	1.18	0.10	0.1	1.00	0	0.98
		non-IFM	0.60	0.70	1.17	0.10	0.16			
	60-days (n=552)	IFM	0.73	0.82	1.11	0.08	0.25	0.96	-0.03	0.8
		non-IFM	0.74	0.85	1.15	0.11	0.18			
	90-days (n=542)	IFM	0.84	0.93	1.11	0.09	0.27	0.97	-0.04	0.81
		non-IFM	0.86	0.98	1.14	0.12	0.21			
ED Visit Rate	30-days (n=565)	IFM	0.35	0.42	1.22	0.08	0.009	1.17	0.06	0.12
		non-IFM	0.35	0.36	1.05	0.02	0.58			
	60-days (n=552)	IFM	0.4	0.47	1.17	0.07	0.03	1.09	0.04	0.31
		non-IFM	0.38	0.41	1.07	0.03	0.39			
	90-days (n=542)	IFM	0.43	0.49	1.15	0.06	0.04	1.09	0.04	0.33
		non-IFM	0.42	0.45	1.06	0.02	0.42			

Appendix 14. Additional Outcomes from DID Model Estimates TC/C OCOT

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Nov 2015-March 2018)	Relative Difference (Post / Pre)	Absolute Difference (Post - Pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Acute LOS (days)	(n=437)	IFM	5.03	3.90	0.78	-1.13	<.0001	0.89	-0.38	0.09
		non-IFM	5.85	5.10	0.87	-0.75	0.006			
Mean Number of Readmissions	30 days (n=403)	IFM	0.11	0.11	1.00	0.00	1	0.91	-0.01	0.76
		non-IFM	0.07	0.08	1.10	0.01	0.71			
	60-days (n=377)	IFM	0.16	0.15	0.97	-0.01	0.86	1.02	0	0.95
		non-IFM	0.11	0.10	0.95	-0.01	0.83			
	90-days (n=362)	IFM	0.19	0.20	1.09	0.02	0.66	1.15	0.02	0.64
		non-IFM	0.15	0.14	0.94	-0.01	0.8			
Readmission Rate	30-days (n=403)	IFM	0.10	0.10	0.98	0	0.91	0.82	-0.01	0.58
		non-IFM	0.06	0.08	1.19	0.01	0.48			
	60-days (n=377)	IFM	0.14	0.12	0.85	-0.02	0.4	0.96	-0.01	0.75
		non-IFM	0.1	0.09	0.89	-0.01	0.62			
	90-days (n=362)	IFM	0.17	0.15	0.88	-0.02	0.48	1.01	0	0.94
		non-IFM	0.13	0.11	0.87	-0.02	0.51			
Mean Number of ED Visits	30-days (n=403)	IFM	0.21	0.24	1.14	0.03	0.45	0.86	-0.02	0.58
		non-IFM	0.15	0.19	1.32	0.05	0.16			
	60-days (n=377)	IFM	0.36	0.37	1.03	0.01	0.85	0.96	-0.01	0.87
		non-IFM	0.26	0.28	1.07	0.02	0.68			
	90-days (n=362)	IFM	0.48	0.46	0.97	-0.02	0.8	0.88	-0.05	0.58
		non-IFM	0.38	0.42	1.09	0.04	0.57			
ED Visit Rate	30-days (n=403)	IFM	0.17	0.17	1.00	0	1	0.75	-0.04	0.28
		non-IFM	0.12	0.16	1.34	0.04	0.09			
	60-days (n=377)	IFM	0.26	0.24	0.95	-0.01	0.68	0.85	-0.03	0.46
		non-IFM	0.19	0.21	1.11	0.02	0.47			
	90-days (n=362)	IFM	0.31	0.28	0.90	-0.03	0.38	0.9	-0.03	0.55
		non-IFM	0.26	0.26	1.00	0	1			

Appendix 15. Additional Outcomes from DID Model Estimates MH PPATH

Outcome	Time Period (sample size)	Group	Pre (Oct 2012-Sept 2014)	Post (Feb 2015-March 2018)	Relative Difference (Post / Pre)	Absolute Difference (Post - Pre)	p-value	DID (Relative)	DID (Absolute)	p-value
Mean Index Acute LOS (days)	(n=1636)	IFM	8.70	8.20	0.94	-0.50	0.002	0.95	-0.42	0.06
		non-IFM	8.38	8.30	0.99	-0.08	0.59			
Mean Number of Readmissions	30 days (n=1621)	IFM	0.10	0.08	0.76	-0.02	0.02	0.72	-0.03	0.06
		non-IFM	0.09	0.10	1.05	0.00	0.7			
	60-days (n=1608)	IFM	0.14	0.12	0.84	-0.02	0.1	0.82	-0.03	0.17
		non-IFM	0.13	0.13	1.03	0.00	0.78			
	90-days (n=1604)	IFM	0.17	0.14	0.84	-0.03	0.08	0.8	-0.03	0.12
		non-IFM	0.16	0.16	1.04	0.01	0.67			
Readmission Rate	30-days (n=1621)	IFM	0.1	0.07	0.77	-0.02	0.02	0.72	-0.03	0.04
		non-IFM	0.08	0.09	1.07	0.01	0.53			
	60-days (n=1608)	IFM	0.12	0.1	0.85	-0.02	0.1	0.8	-0.02	0.11
		non-IFM	0.11	0.12	1.06	0.01	0.54			
	90-days (n=1604)	IFM	0.14	0.12	0.86	-0.02	0.1	0.81	-0.03	0.1
		non-IFM	0.13	0.14	1.06	0.01	0.5			
Mean Number of ED Visits	30-days (n=1621)	IFM	0.32	0.24	0.75	-0.08	0.0004	0.75	-0.08	0.01
		non-IFM	0.32	0.32	1	0.00	0.96			
	60-days (n=1608)	IFM	0.45	0.36	0.8	-0.09	0.001	0.77	-0.11	0.01
		non-IFM	0.44	0.45	1.03	0.01	0.67			
	90-days (n=1604)	IFM	0.54	0.46	0.86	-0.08	0.03	0.82	-0.1	0.04
		non-IFM	0.52	0.54	1.05	0.02	0.5			
ED Visit Rate	30-days (n=1621)	IFM	0.23	0.18	0.81	-0.04	0.002	0.77	-0.05	0.006
		non-IFM	0.22	0.24	1.05	0.01	0.43			
	60-days (n=1608)	IFM	0.29	0.26	0.90	-0.03	0.06	0.84	-0.05	0.03
		non-IFM	0.28	0.3	1.06	0.02	0.26			
	90-days (n=1604)	IFM	0.32	0.31	0.97	-0.01	0.55	0.9	-0.03	0.13
		non-IFM	0.31	0.34	1.08	0.02	0.13			