

# Costs of Health Care Across Primary Care Models in Ontario

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## OBJECTIVES

### Context:

Ontario reformed its primary care sector with the introduction of new models. All new models encourage enrolment of patients to a primary care physician, have access requirements for after-hours care and incentives for the delivery of a list of preventive and chronic disease management services. The new models are also characterized by mixed payment mechanisms, which include some Fee-for-Service (FFS), capitation and performance components. Physicians can still work in a traditional FFS environment. Over ¾ of the Ontario population is now enrolled with a physician in one of the new models introduced.

In parallel to the reform, payments to primary care physicians doubled between 1993/94 and 2009/10 to reach over \$3 billion.

The objective of this study is to estimate the cost implications of the new models.

## DATA SOURCES AND STUDY POPULATION

### Study design:

- Retrospective, cross-sectional.

### Data sources:

- Cost and utilization data for CIHI and MOHLTC Databases for Acute, Emergency Department, Ambulatory Care, Inpatient Rehabilitation, Complex Continuing Care, Long Term Care, Home Care, Physician and Lab Services, Drug Benefits (publicly covered);
- Registered Persons Database (RPDB);
- Client Agency Program Enrolment (CAPE).

### Study population:

10% random sample of the adult Ontario population eligible for OHIP and had at least one physician encounter (OHIP billing).

Cohort size: 1,094,687

## MEASURES AND ANALYSIS

### Measures

- Outcomes:
  - Primary care costs: billings, capitation, shadow billing;
  - Total healthcare costs: hospital (admissions and outpatient care), physician (primary care and specialists), prescribed drug (covered by public insurance), long term care, rehabilitation, home care, lab, non-medical providers billings.
- Independent variable:
  - primary care models: Fee-For-Service (FFS - reference); not enrolled, Comprehensive Care Model (CCM); Family Health Group (FHG); Family Health Network (FHN); Family Health Organization (FHO); Family Health Team (FHT);
- Adjustment factors: age, sex, ACG® weight, neighbourhood income quintile, rurality index (RIO).

### Analysis

- Descriptive statistics:
  - Mean costs per person aggregated at the primary care model level;
- Incremental costs associated with each primary care models: regression models using a generalized linear model (GLM) with log-link, Gamma family;
  - Model diagnostics: modified Park test.

## RESULTS

Figure 1: Distribution of Patients Across Models

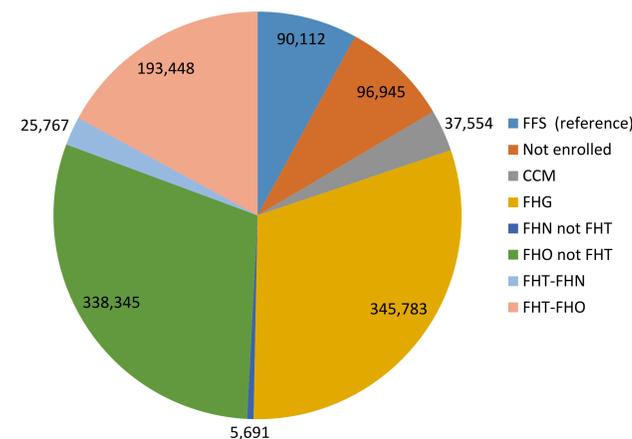


Figure 2: Average Patient Costs Across Health Care Sectors

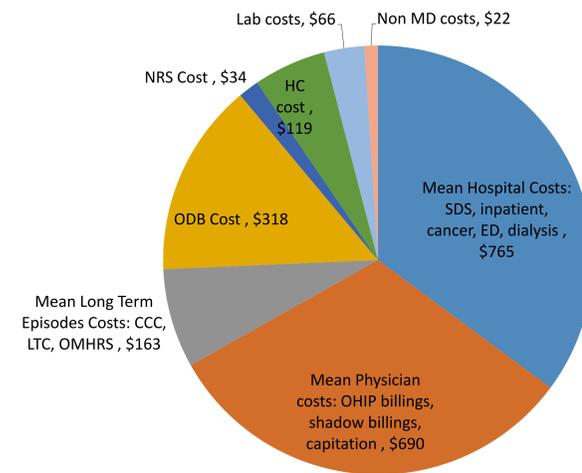


Figure 3: Patients Characteristics By Primary Care Model

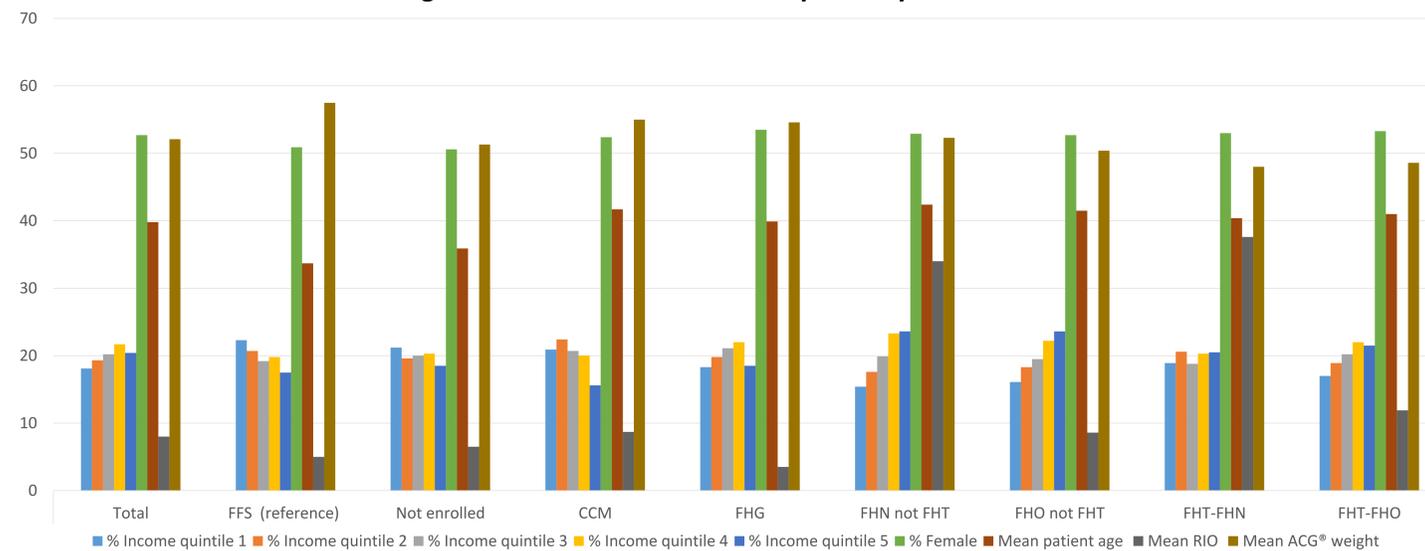
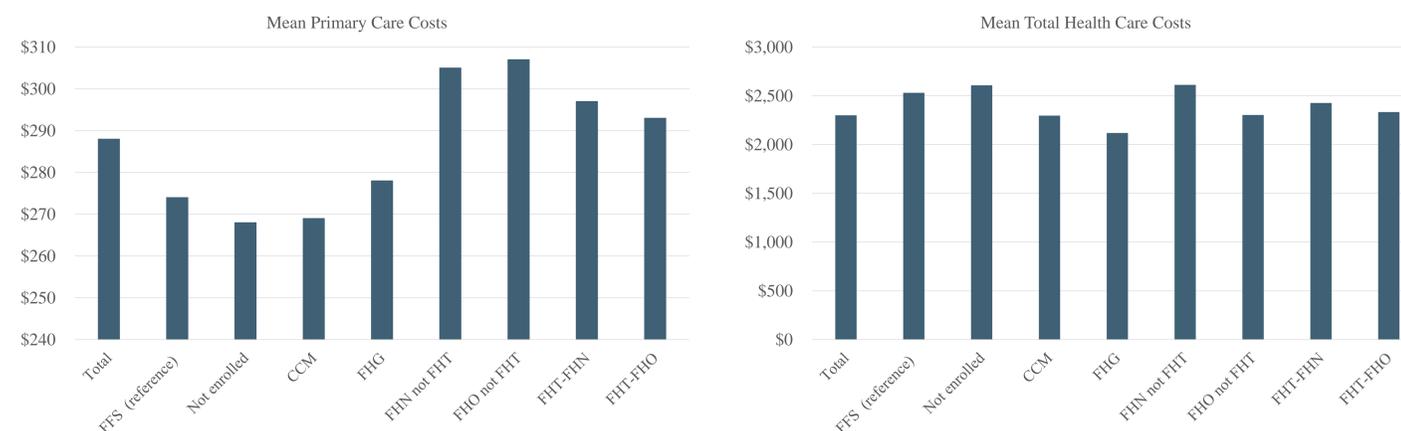


Figure 4: Mean Primary Care and Total Health Care Costs Across Primary Care Models



## RESULTS

Table 1: Adjusted Incremental Costs Associated with Each Primary Care Model

Variable	Primary Care Cost (in \$)	Total Health Care Cost (in \$)
<b>Practice Characteristics:</b>		
FFS	reference	reference
Not enrolled	-5	130*
CCM	-32***	-658***
FHG	-13**	-667***
FHN not FHT	0.1	-446***
FHO not FHT	16***	-485**
FHT - FHN	2	-433***
FHT - FHO	5	-392***
Practice RIO	0.3***	7***
<b>Patient Characteristics:</b>		
Patient age	4***	61***
Patient female	48***	-101***
ACG® weight	128***	2,947***
Income quintile 1	Reference	Reference
Income quintile 2	-17***	-325***
Income quintile 3	-21***	-436***
Income quintile 4	-27***	-517***
Income quintile 5	-33***	-607***

Significance at \*\*\*p<0.001; \*\* p<0.01; \*p<0.05

## IMPLICATIONS

Primary care costs were significantly higher (by \$16) for patients enrolled with FHO physicians and lower in patients enrolled with CCM (by \$32) and FHG (by \$13) physicians.

The higher costs in FHO may be related to two policy objectives: make family medicine more attractive with the potential for higher earnings; attracting practicing physicians into a prospective payment model with a shared risk.

Patients who were not enrolled have similar primary care costs to patients who were seeing FFS physicians but higher total health care costs (by \$130).

Total health care costs were lower of patients enrolled with a physician in any model compared to patients of FFS physicians.

The lower total health care costs suggests that the investment in primary care may have benefited the health care system with potentially substituting for more expensive care.

The results call for more research on FHT patients and on patients who see physicians in a new model but are not enrolled. Not enrolled patients have higher total health care costs and there could be some selection on the part of physicians.

## ACKNOWLEDGEMENTS

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