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Health administrative data can be used to define a shared care typology for people with HIV

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Abstract

Objectives: Building on an existing theoretical shared primary care/specialist care framework to (1) develop a unique typology of care for people living with human immunodeficiency virus (HIV) in Ontario, (2) assess sensitivity of the typology by varying typology definitions, and (3) describe characteristics of typology categories.

Study Design and Setting: Retrospective population-based observational study from April 1, 2009, to March 31, 2012. A total of 13,480 eligible patients with HIV and receiving publicly funded health care in Ontario. We derived a typology of care by linking patients to usual family physicians and to HIV specialists with five possible patterns of care. Patient and physician characteristics and outpatient visits for HIV-related and non−HIV-related care were used to assess the robustness and characteristics of the typology.

Results: Five possible patterns of care were described as low engagement (8.6%), exclusively primary care (52.7%), family physician-dominated comanagement (10.0%), specialist-dominated comanagement (30.5%), and exclusively specialist care (5.2%). Sensitivity analyses demonstrated robustness of typology assignments. Visit patterns varied in ways that conform to typology assignments.

Conclusion: We anticipate this typology can be used to assess the impact of care patterns on the quality of primary care for people living with HIV.

Keywords: Human immunodeficiency virus; Primary health care; Chronic disease; Comorbidity; Health services delivery; Shared care; HIV/AIDS; Integrated care

1. Introduction

Patients with chronic conditions that are less commonly seen in primary care practice benefit from specialist expertise [1]. As a good example, there is evidence that human immunodeficiency virus (HIV) specialists and more experienced HIV practitioners provide higher quality of care as measured by disease-specific indicators [2−7]. However, as people with HIV on combination antiretroviral therapy are now living substantially longer, they are likely to acquire comorbidities related to aging as well as from the effects of HIV and its treatment [8−12]. As with other chronic conditions, there is increasing recognition that

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What is new?

Key findings

- Using routinely collected administrative data, we developed and characterized a theoretically defined typology of how care is shared between family physicians and specialists for people living with human immunodeficiency virus (HIV).
- Most patients receive most of their care from family physicians, and few receive care exclusively from specialists.
- Visit rates approximately doubled in models in which patients saw a specialist in addition to a family physician.

What this adds to what was known?

- Our findings highlight the variation in ways care is delivered to people living with HIV and quantifies the amount of care received by physician specialty.

What is the implication and what should change now?

- This typology of care, assigned using administrative data, is the first such tool that can be used at a population level to determine how different models of care impact quality of care for patients with chronic disease.

people with HIV require primary care approaches to health promotion and comorbid disease management [13−21]. This balance of care needs makes HIV an ideal condition to study the interface of shared care between primary care physicians and specialists.

Research using health administrative data provides an opportunity to explore how primary care physicians and specialists share care for patients with HIV. Lafata et al. [22] used a simple categorization of patients with diabetes according to whether they saw exclusively endocrinologists, exclusively primary care providers, or had shared care by both specialties. Patients seeing only endocrinologists were less likely to receive preventative care, and those receiving shared care were more likely to receive a full complement of disease-specific and primary care. Katz et al. [23] used cluster analysis to categorize patients with chronic disease based on their patterns of ambulatory visits. Eighty-four percent of patients fell into a cluster where most care was provided by their usual family physician. However, several had patterns that reflected low continuity of care, unusually high ambulatory care use, or in which specialists (rather than family physicians) were the patient's main provider; these clusters overall performed less well. This empirical approach to categorizing shared care elicited 15 quite varied categories, making it difficult to understand their impact on quality of care.

Ontario is the Canadian province with the highest number of people living with HIV. We have a single payer health care system in which most physician billing claims are captured in provincial administrative databases. We previously used administrative databases to demonstrate large variability in the provision of HIV care by physician specialty and HIV experience [24]. In this article, our objectives are to (1) explore a unique, administratively defined typology of shared care (Text box 1) (2) assess the sensitivity of this typology by performing sensitivity analyses of our typology definitions, and (3) describe the characteristics of this typology by examining the patients, physicians, and patterns of health care use among the typology categories. Our typology builds on a predefined framework of the roles of specialists and the level of responsibility they assume for care of the index condition compared with a referring family physician [25]. This framework can be used to develop and evaluate strategies to improve the quality of the specialist−primary care interface [26].

2. Methods

2.1. Data sources

We used the administrative databases held at the Institute for Clinical Evaluative Sciences (ICES) to abstract all data for this study. These databases are made available to accredited researchers through a data sharing agreement with the Ontario Ministry of Health and Long Term Care and are individually linked using a coded identification number in accordance with the provincial Personal Health Information Protection Act. The databases used include the Registered Persons Database (RPDB), which includes demographic and mortality data for all individuals eligible for provincial health care, the Ontario Health Insurance Program (OHIP) billing claims system, which records claims for approximately 95% of physician services conducted in the province, the Discharge Abstract Database, which contains all provincial hospital discharge data, the National Ambulatory Care Reporting System, which captures information on visits to emergency departments, Citizen and Immigration Canada data, which contains demographic and socioeconomic information on all individuals granted permanent residency in Canada, the Client Agency Program Enrollment (CAPE) registry, which tracks patient enrollment to individual family physicians, and the ICES Physician Database (IPDB), which contains information on physician demographics, training, and practice setting.

2.2. Eligible population

We identified eligible individuals in Ontario from the RPDB. To obtain a cohort of people with HIV in the province, we used data from the OHIP billing claims system. To these data, we applied a previously validated algorithm to