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A system-level study of initiation, engagement, and equity in outpatient substance use treatment

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ABSTRACT

Understanding the nature of variations in the quality of substance use treatment is critical to ensuring equity in service delivery and maximizing treatment effectiveness. We used adapted versions of the US Healthcare Effectiveness Data and Information Set (HEDIS) treatment initiation and engagement measures to assess care quality in specialized outpatient services for substance use in Ontario, Canada. Using administrative data, we calculated rates of outpatient treatment initiation and engagement (N = 120,394 episodes) and investigated variation by client characteristics and treatment mandates. About half of clients who entered outpatient treatment met the criteria for initiation (i.e., had a second visit within 14 days) and 30% met the criteria for engagement (i.e., had another two visits within 30 days of initiation). The likelihood of treatment initiation and engagement was greater among older people, those with more education, those who were not mandated to enter treatment, and those with greater substance use at admission. People who entered treatment for cannabis were less likely to engage. Engagement was less likely among men than women, but gender differences were slight overall. This study demonstrates the feasibility of using adapted versions of two common measures to characterise care quality in substance use treatment services in the Canadian context. Overall, the magnitude of associations with client characteristics were quite small, suggesting that initiation and engagement were not overly localized to specific client subgroups. Findings suggest that the Ontario system has difficulty retaining clients who enter treatment and that most outpatient treatment involves care episodes of limited duration.

1. Introduction

Understanding variation in the quality of substance use treatment across clients and episodes of care is critical to ensuring equity in service delivery and maximizing treatment effectiveness. Treatment initiation and engagement represent key performance measures for substance use treatment processes in the United States, having been endorsed by the National Quality Forum (NQF) and adopted by the National Committee for Quality Assurance (NCQA) as indicators in the Healthcare Effectiveness Data and Information Set (HEDIS) (Garnick, Lee, Horgan, Acevedo, & Washington Circle Public Sector, 2009; National Committee for Quality Assurance, 2017b). We extend the application of these measures to evaluate performance in a single-payer system in Ontario, Canada, and use them as the basis to examine variation in service quality by characteristics of clients and admission pathways. Of particular focus here are differences in initiation and engagement by legal and other mandates to attend treatment, given the equivocal nature of evidence on these associations. This represents the first application of these performance measures to substance use treatment in Canada.

1.1. Processes of substance use treatment

The *processes* of substance use treatment refer to the elements of programs and aspects of therapeutic involvement that support or impede positive outcomes (Simpson, 2004). Factors such as the timing and intensity of appointments early on during a treatment episode predict longer retention and better downstream outcomes, including reduced substance use and criminal recidivism (Garnick et al., 2007; Harris, Humphreys, Bowe, Tiet, & Finney, 2010; Hser, Evans, Huang, & Anglin, 2004; Simpson, Joe, & Rowan-Szal, 1997). High drop-out rates in the initial weeks of treatment present a major challenge for treatment providers. In addition to the negative prognosis for clients, early attrition carries high costs to programs in terms of resources dedicated to

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assessment and treatment planning in the early stages of treatment. Formal efforts to derive process measures for substance use treatment have focused on the initial weeks of the treatment episode, given that drop-out is highest at this time and the benefits of treatment are unlikely to have accrued to any great extent.

Two key measures of early treatment processes are treatment initiation and engagement. Treatment *initiation* refers to the receipt of alcohol or other drug treatment within 14 days of diagnosis, while *engagement* refers to the receipt of two or more services for alcohol or other drugs within 30 days of initiation (National Committee for Quality Assurance, 2017b). Initially developed by the Washington Circle, a multidisciplinary expert panel convened by the US Center for Substance Abuse Treatment (Garnick et al., 2009; Garnick, Horgan, Acevedo, McCorry, & Weisner, 2012; Garnick, Horgan, & Chalk, 2006), these measures have been core indicators in HEDIS since 2004 and so are widely used in the US to evaluate the quality of care in both public and private substance use services. They have also been used extensively in research to evaluate equity and effectiveness of care for substance use disorders delivered in specialized treatment, primary care and general medical settings (Acevedo, Garnick, Ritter, Horgan, & Lundgren, 2015; Acevedo, Ganrnic, Dunigan et al., 2015, Bensley et al., 2017; Dunigan et al., 2014; Hepner et al., 2017; Kim et al., 2011; Lee et al., 2012; Watkins et al., 2017). With some variation across client subgroups, engagement is typically associated with better treatment outcomes, including client perceptions of improvement in symptoms and functioning, reduced substance use, lower likelihood of arrest, better employment outcomes, and lower mortality (Dunigan et al., 2014; Garnick et al., 2007; Garnick et al., 2014; Harris et al., 2010; Hepner et al., 2017; Paddock et al., 2017).

1.2. Equity in substance use treatment processes

Examining variation in process measures across subgroups of the treatment population can help to pinpoint gaps in the system (Garnick et al., 2006; McCarty, Gustafson, Capoccia, & Cotter, 2009). Such studies address one key aspect of *procedural equity*, which concerns fairness in the structures and process of care (Aday, Begley, & Slater, 1998). Younger age, lower socio-economic status, and belonging to an ethnocultural minority tend to predict premature drop-out and shorter retention in treatment, as do greater substance and mental problem severity and injection drug use (IDU) (Brecht, Greenwell, & Anglin, 2005; Brorson, Ajo Arnevik, Rand-Hendriksen, & Duckert, 2013; Campbell, Weisner, & Sterling, 2006; Krawczyk et al., 2017; Mennis & Stahler, 2016). Gender differences in service use are more complex: rather than differences in rates of treatment retention, evidence points toward gender differences in the *predictors* of treatment entry and retention, including age, race, and co-occurring mental health problems (Green, Polen, Dickinson, Lynch, & Bennett, 2002; Greenfield et al., 2007; Mertens & Weisner, 2000; Stark, 1992). More generally, women disproportionately encounter barriers to service use related to childcare and child custody, stigma, and a treatment system that is traditionally male-oriented and dominated (Green et al., 2002; Greenfield et al., 2007). Such factors can be expected to translate into differences in treatment participation.

Other than sociodemographic characteristics, factors related to admission pathways, such as mandates from the legal system, employers, or child protection agencies, also tend to be associated with retention and treatment attendance. Mandates are typically associated with longer retention (Brecht et al., 2005; Copeland & Maxwell, 2007; Lawental, McLellan, Grissom, Brill, & O'Brien, 1996; Weisner et al., 2009; Young, 2002), likely stemming from sanctions placed on non-attendance. That said, other studies (conducted outside of the US) have found legal mandates to be associated with shorter retention (Beynon, Bellis, & McVeigh, 2006; Stevens et al., 2005). Whereas variations in treatment processes by sociodemographic characteristics (controlling for problem severity) signal potential gaps in system coverage and/or care quality, the meaning of variations in processes by mandates is less clear, both conceptually and empirically. There is a lack of work examining variation in the impact of mandates on treatment processes across population subgroups.

1.3. Objectives

Using system-level administrative health data, we calculated adapted versions of the HEDIS measures of initiation and engagement within a Canadian system of specialized psychosocial services for substance use. Our objectives were to: 1) calculate annual rates of initiation and engagement for a 5-year period (2008–09 to 2012–13), and 2) investigate variation in these performance measures by client characteristics and treatment mandates. These indicators of performance have not previously been calculated for services within a Canadian treatment system. Given prior research showing gender differences in the predictors of service use patterns, attention was given to gender variation in rates and predictors of initiation and engagement.

2. Methods

2.1. Data source

We conducted a secondary analysis of administrative data from psychosocial substance use treatment services in the province of Ontario (population 13.9 million). All publicly funded, specialized substance use treatment agencies report data on client characteristics and service use to a centralized information system, the Drug and Alcohol Treatment Information System (DATIS; www.datis.ca; (Ogborne, Braun, & Rush, 1998). Data entry is supported by a web-based user platform. Sociodemographic characteristics, details on substance use and problem substances, and characteristics of the admission (e.g., referral source, treatment mandates) are entered by the service provider at admission, typically following the first face-to-face encounter. Unique identifiers are auto-generated for agencies. The probabilistic matching algorithm within Oracle (UTL_MATCH) was used to identify and link records across clients in the database, based on provincial health card number, gender, first and last name, last name at birth, and date of birth (Oracle, 2010). DATIS staff conduct systematic ongoing data quality checks and review each agency's data with agency staff.

DATIS does not record services for substance use provided outside of the publicly-funded specialized system of care. Substance-related services provided in primary care settings or emergency departments are excluded from our analysis, as are services provided by mental health care providers, private treatment clinics, and self-help groups (e.g., AA/NA). Opioid agonist treatment (OAT) is provided through physician offices and health clinics, which also do not report to DATIS.

Within DATIS, the modality or setting of program(s) associated with each admission is automatically generated by the system (e.g., withdrawal management services, residential treatment, outpatient treatment). This analysis used data on encounters in outpatient treatment programs (although transitions from outpatient to residential treatment were included in the calculation of treatment initiation and engagement). Outpatient services include assessment and treating planning, group and individual counselling, continuing care, and intensive day or evening treatment provided to people who live in the community (i.e., services provided in non-residential settings). Admission and discharge dates are mandatory data elements recorded for all clients and treatment modalities. An optional clinical-tracking module is available for use by treatment providers to record the dates of encounters (e.g., outpatient sessions) with clients. Because we required the dates of outpatient sessions to calculate treatment initiation and engagement, programs that do not employ the clinical tracking module were excluded from this study. Rather than excluding whole treatment agencies outright, this resulted in the exclusion of select outpatient programs