



Low Rates of Adoption and Implementation of Rapid HIV Testing in Substance Use Disorder Treatment Programs



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ABSTRACT

Introduction: Rapid HIV testing (RHT) greatly increases the proportion of clients who learn their test results. However, existing studies have not examined the adoption and implementation of RHT in programs treating persons with substance use disorders, one of the population groups at higher risk for HIV infection.

Methods: We examined 196 opioid treatment programs (OTPs) using data from the 2011 National Drug Abuse Treatment System Survey (NDATSS). We used logistic regressions to identify client and organizational characteristics of OTPs associated with availability of on-site RHT. We then used zero-inflated negative binomial regressions to measure the association between the availability of RHT on-site and the number of clients tested for HIV. **Results:** Only 31.6% of OTPs offered on-site rapid HIV testing to their clients. Rapid HIV testing was more commonly available on-site in larger, publicly owned and better-staffed OTPs. On the other hand, on-site rapid HIV testing was less common in OTPs that prescribed only buprenorphine as a method of opioid dependence treatment. The availability of rapid HIV testing on-site reduced the likelihood that an OTP did not test any of its clients during the prior year. But on-site availability rapid HIV testing was not otherwise associated with an increased number of clients tested for HIV at an OTP.

Conclusions: New strategies are needed to a) promote the adoption of rapid HIV testing on-site in substance use disorder treatment programs and b) encourage substance use disorder treatment providers to offer rapid HIV testing to their clients when it is available.

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1. Introduction

More than 1.2 million people in the United States are living with HIV, with an estimated 50,000 new infections each year (CDC, 2012, 2015). Substance use is strongly associated with HIV (CDC, 2012, 2014). Nearly 25% of HIV/AIDS cases are directly or indirectly related to injecting drug use (SAMHSA, 2010) and HIV prevalence is also high among non-injecting drug users (CDC, 2013b; Tempalski et al., 2009).

Despite the role of substance use in HIV transmission in the US, the rate of HIV testing among substance users remains limited. In 2012, about 37% of HIV-infected persons who inject drugs (PWID) were unaware of their infection status (Spiller, Broz, Wejnert, Nerlander, & Paz-Bailey, 2015), thus preventing linkage to HIV medical care and

initiation of treatment. This is in part the case because the availability of HIV testing services remains low in substance use disorder treatment programs. Although an increasing proportion of substance users attend such treatment programs (SAMHSA, 2014), more than a third of all substance use disorder treatment programs in the nation did not offer HIV testing to their clients in 2011 (D'Aunno, Pollack, Jiang, Metsch, & Friedmann, 2014).

The limited availability of HIV testing in substance use disorder treatment programs is often due to the complexities of the traditional HIV testing protocol, which requires drawing venous blood from clients as well as access to laboratory facilities (CDC, 2013a). Few substance use disorder treatment programs – which are often small, community-based organizations – can afford the investment in facilities, equipment, certifications and/or human resources required to implement this protocol (Pilcher, Christopoulos, & Golden, 2010).

Furthermore, laboratory-based HIV antibody testing can take up to 2 weeks to produce results, if the antibody test result is positive and confirmatory testing must be conducted. Clients are thus required to visit the health facility a second time to receive their test results. Significant proportions of clients fail to do so however. Thus, even in

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substance use disorder treatment programs that offer such HIV testing services, a large number of clients who get tested do not learn their HIV infection status (Franco-Paredes, Tellez, & del Rio, 2006; Grusky, Roberts, & Swanson, 2007).

The introduction of rapid HIV testing (RHT) assays addresses these barriers to increasing awareness of HIV infection among substance users (Schwartz et al., 2013). RHT uses blood from a finger-stick or oral fluid from a swab, and can be conducted under a Clinical Laboratory Improvement Amendments (CLIA) Certificate of Waiver (Branson, 2015). It does not require extensive laboratory facilities and can be performed without a doctor, nurse, or phlebotomist. RHT is also highly accurate (Delaney et al., 2011; Pai et al., 2012), and yields preliminary results in 20 minutes or less, which allows testing and notification of results to occur during the same visit. In a recent trial, on-site RHT in substance use disorder treatment programs substantially increased receipt of HIV test results (Metsch et al., 2012) and was cost-effective (Schackman et al., 2013).

The FDA approved CLIA-waived RHT in 2003, but few studies have examined the adoption and implementation of on-site RHT in substance use disorder treatment programs. In this paper, we used nationally representative survey data to document the extent to which substance use disorder treatment programs have adopted and implemented RHT several years after FDA approval.

Our study is informed by the structure, process, and outcome (SPO) framework for describing health services and examining the determinants of quality of health care in health care organizations (Donabedian, 1988, 2005). In this framework, “structure” describes the context in which care is delivered, whereas “process” refers to aspects of the medical and technical decisions that determine the delivery of care. Finally, “outcomes” in the SPO framework refer to changes in health status or knowledge among patients that result from the delivery of healthcare. Examples of structures include organizational characteristics such as staffing, ownership, and accreditation (Aletraris & Roman, 2015; D’Aunno, 2006; D’Aunno et al., 2014), whereas examples of processes include treatment strategy or diagnostic tools. Both structures and processes of substance use disorder treatment programs have been linked to HIV-related outcomes among their clients, including the uptake of HIV testing and awareness of HIV status (Frimpong, Guerrero, Kong, & Tsai, 2015; Knudsen, Ducharme, & Roman, 2007; Pollack & D’Aunno, 2010; Wheeler & Nahra, 2000).

We first examined which structures and processes of substance use disorder treatment programs were associated with the availability of RHT services on-site. We then tested whether the availability of RHT on-site was associated with higher levels of HIV testing among the clients of these treatment programs.

2. Methods

2.1. Data sources

We focused on the adoption and implementation of RHT in opioid treatment programs (OTPs). We defined an OTP as a physical facility with resources dedicated specifically to treating opiate dependence through methadone or buprenorphine. The Substance Abuse and Mental Health Services Administration (SAMHSA) licenses all OTPs. It thus has a list that precisely identifies the entire U.S. population of approved OTPs. In 2011, there were 1,459 licensed OTPs with about 304,000 opioid-dependent individuals receiving services on any given day. This represents approximately 8% of all substance use disorder treatment programs and 26% of the total population of substance users in the US (SAMHSA, 2012).

The National Drug Abuse Treatment System Survey (NDATSS) uses SAMHSA’s list as a sampling frame to enroll a nationally representative sample of OTPs. It was initiated in 1988, with waves of data collection taking place in 1988, 1995, 2000, 2005 and 2011. In 2011, OTPs that participated in the 2005 wave of the NDATSS were contacted. To ensure

that the 2011 sample was nationally representative and had adequate statistical power, additional OTPs were selected at random from SAMHSA’s, 2011 list of OTPs and were contacted. Of all the 2005 and newly selected OTPs contacted in 2011 (a target sample of 230 OTPs), 200 completed surveys, for a response rate of 86.6 percent (D’Aunno et al., 2014). OTP directors and clinical supervisors were interviewed by phone. Directors provided information concerning ownership, finances, organizational structure, and managed care arrangements of their respective OTPs. Clinical supervisors provided information regarding staff composition, client characteristics, volume of care and available treatment and ancillary services (e.g., HIV testing).

The 2011 NDATSS used established methods that maximized reliability and validity in telephone surveys. OTP directors and clinical supervisors were sent a worksheet ahead of the survey interview to help compile relevant study data. They were also encouraged to gather and review documents (e.g., monthly clinic logs and reports) ahead of the interview to ensure accurate reporting of the numbers of clients who received various services (e.g., HIV testing). Other methods included pretesting the survey with a random sample of programs and performing extensive computer reliability checks to signal inconsistent responses (e.g., percentage of clients with various demographic characteristics should sum to 100%). Interviewers then worked with respondents to resolve inconsistencies. Results were further scrutinized for reliability and validity. Reliability checks included comparisons of reported totals (e.g., total revenue) with the sum of reported detail (e.g., revenues by source); and comparison of responses to related questions; assessments of the consistency of responses provided by director and supervisor. Results from several analyses provided support for NDATSS data reliability and validity (Pollack & D’Aunno, 2010).

2.2. Measures

Outcome

Our outcome of interest is the number of OTP clients tested for HIV. Clinical supervisors were asked how many clients of the OTP were tested for HIV during the year prior to the survey. Clinical supervisors were asked to assess this number regardless of the location of the test (i.e., at the OTP or elsewhere) and the testing method used (i.e., rapid or laboratory-based HIV testing).

Processes

Our main process of interest is the on-site availability of rapid HIV testing in OTPs. We created a binary variable that takes value 1 if RHT was offered on-site to clients and 0 otherwise. To do so, we used two questions from the NDATSS. First, OTP directors were asked whether RHT was offered on-site at their OTP (yes/no). Second, clinical supervisors were also asked whether some clients were tested on-site using RHT kits at their OTP. In total, 51 directors reported on-site availability of RHT at their OTPs. Among OTPs where the director did not report on-site availability of RHT however, 11 clinical supervisors reported that some clients were tested on-site using RHT. We thus classified 62 OTPs as having RHT available on-site. We also classified OTPs by pharmacological method of opioid addiction treatment. We created a categorical variable taking value 1 if the OTP provided methadone treatment only, 2 if the OTP provided buprenorphine prescription only, and 3 if that OTP provided both methadone and buprenorphine prescriptions.

Structures

We included independent variables describing the organizational characteristics of each OTP, i.e., their structures. We included a categorical variable describing ownership (private for-profit, private not-for-profit, or public), as well as two binary variables taking value 1 if the OTP was affiliated with a hospital or a mental health facility, respectively. We also used data provided by OTP directors to create another binary variable taking value 1 if the OTP held accreditation from The Joint Commission on the Accreditation of Healthcare Organizations (TJC). Finally,

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