



Research Paper

Predicting pharmacy syringe sales to people who inject drugs: Policy, practice and perceptions



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ABSTRACT

Background: Pharmacies have much to contribute to the health of people who inject drugs (PWID) and to community efforts in HIV and hepatitis C (HCV) prevention through syringe access. However, little is known about what predicts pharmacy syringe sales without a prescription.

Objective: To identify factors predicting pharmacy syringes sales to PWID.

Methods: A hybrid staggered online survey of 298 Indiana community pharmacists occurred from July–September 2016 measuring pharmacy policy, practice, and pharmacist perceptions about syringe sales to PWID. Separate bivariate logistical regressions were followed by multivariable logistic regression to predict pharmacy syringe sales and pharmacist comfort dispensing syringes to PWID.

Results: Half (50.5%) of Indiana pharmacies sold syringes without a prescription to PWID. Pharmacy syringe sales was strongly associated with pharmacist supportive beliefs about syringe access by PWID and their comfort level selling syringes to PWID. Notably, pharmacies located in communities with high rates of opioid overdose mortality were 56% less likely to sell syringes without a prescription than those in communities with lower rates. Pharmacist comfort dispensing syringes was associated with being male, working at a pharmacy that sold syringes to PWID and one that stocked naloxone, having been asked about syringe access by medical providers, and agreement that PWID should be able to buy syringes without a prescription.

Conclusions: As communities with high rates of opioid overdose mortality were less likely to have pharmacies that dispensed syringes to PWID, a concerted effort with these communities and their pharmacies should be made to understand opportunities to increase syringe access. Future studies should explore nuances between theoretical support for syringe access by PWID without a prescription and actual dispensing behaviors. Addressing potential policy conflicts and offering continuing education on non-prescription syringe distribution for pharmacists may improve comfort distributing syringes to PWID, and therefore increase pharmacy syringe sales.

Introduction

Pharmacies are often overlooked as public health partners, despite their ubiquity and access by populations underserved by the primary healthcare system (Smith et al., 2005; Calis et al., 2004; Meyerson,

Ryder & Richey-Smith, 2013; Meyerson, Ryder, Von Hippel, & Coy, 2013). Recent studies report the success of pharmacy-based vaccination and medication management, and the importance of pharmacies for populations socially and structurally marginalized due to chemical dependency and HIV status or risk (Deas & McCree, 2010; Hirsch,

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Rosenquist, Best, Miller, & Gilmer, 2009; Amesty, Blaney, Crawford, Rivera, & Fuller, 2012; Lutnik, Case, & Kral, 2012; Murphy et al., 2012; Meyerson, Carter et al., 2016; Meyerson, Agle et al., 2016).

The 2015 HIV outbreak among people injecting the opioid oxycodone in a rural Indiana community highlighted the significant health and systems disparities long experienced by rural communities and by people who inject drugs (PWID) (Conrad et al., 2015; Meyerson et al., 2017). Like several states, Indiana faces a wave of opioid addiction and overdose death (Rudd, Aleshire, Zibbell, & Gladden, 2016; Dombrowski, Crawford, Khan, & Tyler, 2016; Jones, Christensen, & Gladden, 2017) without a strong public health infrastructure to adequately address the need (Trust for America's Health, 2016).

Public policy to improve PWID health outcomes in the wake of the 2015 HIV outbreak included state law to expand access to sterile syringes by allowing syringe exchange on a county-by-county basis (Indiana Code 16-41-7.5). However, policy adoption has been difficult for myriad reasons detailed elsewhere (Meyerson et al., 2017), and there is some evidence that communities are de-adopting it (Hedger 2017).

Indiana law does, however, permit pharmacy syringe dispensing to adults without a prescription (Indiana Code § 35-48-4-8.5 and 856 Indiana Admin. Code 2-6-18), and state Board of Pharmacy policy adds the exception that if the syringe is for human use, the age restriction does not apply (Indiana Board of Pharmacy; Reg 28, Ch VI, Sec 6.32). Syringe possession remains problematic, however, because Indiana law defines syringes, needles, hypodermic devices or objects used for injection drugs as drug paraphernalia (Temple University Policy Surveillance Program, 2017). That said, given the difficulty of syringe exchange policy adoption and the permissibility of syringe access through pharmacies, it is likely that Indiana pharmacies may be the best point of syringe access to reduce HIV and HCV among PWID.

Indiana pharmacists have supported an expanded public health role for HIV prevention as shown in studies of pharmacist views on HIV testing and over-the-counter HIV test dispensing (Meyerson, Ryder & Richey-Smith, 2013; Meyerson, Ryder, Von Hippel et al., 2013; Ryder, Meyerson, Coy, & Von Hippel, 2013; Meyerson, Carter et al., 2016; Meyerson, Agle et al., 2016). However, little to nothing is known about pharmacist attitudes or pharmacy practice regarding syringe sales to PWID in Indiana. Studies of syringe sales elsewhere have identified potential structural, organizational, and behavioral factors associated with syringe sales (Neaigus et al., 2008; Kerr et al., 2010; Bramson et al., 2015; Ruiz et al., 2016; Sherman et al., 2015), yet many existing studies of pharmacist attitudes about syringe sales are old, as they were conducted in the early 1990s after some state paraphernalia laws were changed to allow pharmacy syringe sales (Gleghorn, Gilbert, & David, 1997; Gostin, Lazzarini, Jones, & Flaherty, 1997; Case, Beckett, & Jones, 1998; Wright-De Agüero, Weinstein, Jones, & Miles, 1998). More recent studies were conducted in 2002, as states investigated pharmacy access options due to the continued ban on federal funding for syringe access programming (Lewis, Koester, & Bush, 2002; Rich et al., 2002). While helpful, these studies have not 'connected the dots' by investigating the collection of factors and their contribution to syringe dispensing such as law, pharmacy policy, pharmacist belief/attitudes/comfort levels with and about syringe dispensing, and community need for syringe access. To our knowledge, there have been no attempts to predict pharmacy syringe sales without a prescription to PWID, despite its importance to understanding the current opportunities to improve PWID health through pharmacy partners. Such knowledge could inform the development of pharmacy-based public health practice interventions to increase PWID access to syringes, particularly in areas of high need and low public health resource.

This study sought to identify community, pharmacy, pharmacist attitude, and policy factors associated with pharmacy syringe sale to likely PWID in the state of Indiana. Based on prior pharmacy syringe studies, we hypothesized that pharmacy syringe sales without a

prescription to PWID would be a function of community need and pharmacist attitudes and beliefs.

Methods

An online survey of all Indiana managing pharmacists in community pharmacies (N = 850) was conducted from July to September 2016. Managing pharmacists were surveyed in order to avoid selection bias, as it is a singular role in each pharmacy. As is further described elsewhere (Agle et al., 2017; Meyerson et al. (in review)), pharmacists were identified by matching a 2016 list of managing pharmacists obtained from the state Board of Pharmacy with a list of retail pharmacies provided by Hayes Directories, Inc. (December 2015, Mission Viejo, CA).

Data were collected using a hybrid method with two staggered, mailed paper invitations followed by a postcard reminder. The invitation contained a brief description of the survey, unique identification number (UID) assigned to the pharmacy, and a Quick Response code linking directly to the survey. The initial survey invitation included a \$5.00 bill as an incentive. The delivery of such a pre-incentive for pharmacist survey research has precedent, and has been used with increasing regularity and good results among physicians (Edwards, Cooper, Roberts, & Frost, 2005; James, Ziegenfuss, Tilburt, Harris, & Beebe, 2011; Klabunde et al., 2012; Hardigan, Popovici, & Carvajal, 2016). This study was deemed exempt by the Indiana University Institutional Review Board.

The survey contained questions about pharmacist demographics, pharmacy policy, pharmacist education and practice, attitudes about pharmacy syringe sales to PWID and the effectiveness of this practice for the health of PWID, and levels of personal comfort with syringe sales under likely and legal scenarios which are reported below in Table 3.

For the regression analyses, there were two outcome measures: 1) pharmacy syringe sales without a prescription to PWID (yes/no) and, based on regression findings, 2) pharmacist comfort dispensing syringes to PWID (yes/no).

Independent variables included pharmacist characteristics (gender, age, race/ethnicity, pharmacy degree, reported receipt of continuing education about nonprescription syringe sales in the past 2 years); pharmacy type (chain, mass merchandiser, food-store pharmacy, independent pharmacy); current pharmacy practice allowing the sale of syringes without a prescription to PWID; pharmacist attitude about the benefit of syringe sales to PWID; and pharmacist personal comfort level regarding dispensing syringes to PWID.

To assess attitudes about the benefit of syringe sales to PWID, pharmacists were asked to rate their level of agreement with two statements about syringe sales to PWID using a 5-point Likert scale: strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, and strongly disagree. The two statements were: 1) *Injection drug users should always be allowed to buy syringes without a prescription*, and 2) *Dispensing syringes to injection drug users will reduce harm to addicts in my community*. For the analyses, 'strongly agree' and 'somewhat agree' were combined into 'agree' while the remaining categories were combined into 'do not agree' due to small sample sizes.

Community health need for syringe access by PWID was measured by the following proxy indicators: medically underserved area (MUA) designation by the U.S. Health Resources and Services Administration (HRSA, 2016), average age-adjusted opioid overdose mortality rate for the period from 2002 to 2013 (the most recent available) grouped as high, mid, low/unstable (Indiana State Epidemiologic Outcomes Working Group, 2016), whether the county was adopting syringe exchange (yes/no) (Meyerson et al., 2017), and whether in the past 2 years pharmacists were asked about non-prescription syringe sales by customers, medical providers (physicians or nurses) or other pharmacists (measured as separate items).

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