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# Effectiveness of Syringe Services Programs

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## PREFACE

The VA Evidence Synthesis Program (ESP) was established in 2007 to conduct timely, rigorous, and independent systematic reviews to support VA clinicians, program leadership, and policymakers improve the health of Veterans. ESP reviews have been used to develop evidence-informed clinical policies, practice guidelines, and performance measures; to guide implementation of programs and services that improve Veterans' health and wellbeing; and to set the direction of research to close important evidence gaps. Four ESP Centers are located across the US. Centers are led by recognized experts in evidence synthesis, often with roles as practicing VA clinicians. The Coordinating Center, located in Portland, Oregon, manages program operations, ensures methodological consistency and quality of products, engages with stakeholders, and addresses urgent evidence synthesis needs.

Nominations of review topics are solicited several times each year and submitted via the [ESP website](#). Topics are selected based on the availability of relevant evidence and the likelihood that a review on the topic would be feasible and have broad utility across the VA system. If selected, topics are refined with input from Operational Partners (below), ESP staff, and additional subject matter experts. Draft ESP reviews undergo external peer review to ensure they are methodologically sound, unbiased, and include all important evidence on the topic. Peer reviewers must disclose any relevant financial or non-financial conflicts of interest. In seeking broad expertise and perspectives during review development, conflicting viewpoints are common and often result in productive scientific discourse that improves the relevance and rigor of the review. The ESP works to balance divergent views and to manage or mitigate potential conflicts of interest.

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### ***Operational Partners***

Operational partners are system-level stakeholders who help ensure relevance of the review topic to the VA, contribute to the development of and approve final project scope and timeframe for completion, provide feedback on the draft report, and provide consultation on strategies for dissemination of the report to the field and relevant groups.

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#### **Disclosures**

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The findings and conclusions in this document are those of the author(s) who are responsible for its contents and do not necessarily represent the views of the Department of Veterans Affairs or the United States government. Therefore, no statement in this article should be construed as an official position of the Department of Veterans Affairs. The final research questions, methodology, and/or conclusions may not necessarily represent the views of contributing operational and content experts. No investigators have affiliations or financial involvement (eg, employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties) that conflict with material presented in the report.

# *Executive Summary*

## KEY FINDINGS

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- ▶ Despite some gaps, the evidence demonstrating the potential benefits of SSPs and relative lack of harms is sufficient to support SSP implementation when possible.
  - ▶ SSP utilization likely lowers HIV transmission and reduces injection risk behaviors, and may lower HCV transmission, promote carrying naloxone, increase exposure to overdose education, and facilitate referral to and enrollment in treatment services. SSP use and presence in communities does not appear to increase injection frequency, unsafe syringe disposal practices, or neighborhood crime rates.
  - ▶ Preliminary evidence suggests that combined SSP and OUD treatment programs may improve some outcomes more than either intervention alone. Coordinated or co-located SSP and OUD treatment interventions represent a promising area for future research.
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Substance use-related harms including drug overdose deaths and new cases of human immunodeficiency virus (HIV) and hepatitis C (HCV) are increasing in the US. Syringe services programs (SSPs) started in the 1980s as community-based efforts to distribute sterile syringes and provide safe injection information to people who inject drugs (PWID) in response to rising HIV infection rates. SSPs are guided by harm reduction principles, which aim to mitigate the negative consequences of drug use. The term *SSP* broadly refers to the provision of sterile syringes and other supplies and is inclusive of any setting that provides these supplies for the intended injection of drugs. The present report is an attempt to provide an overall picture of what is known about the benefits and potential harms of SSPs, which has been an active area of research for the past 4 decades. This report was requested by the VA Offices of Mental Health and Suicide Prevention, Research and Development, and Specialty Care Services to inform VA efforts to meet the goals of the Office of National Drug Control Policy and to implement best practices for harm reduction in VHA settings.

Our search identified 399 potentially relevant articles after deduplication and title and abstract screening. We relied on results of a 2022 review of reviews to describe the effectiveness of SSPs on HIV and HCV transmission, as well as injection risk behaviors. We prioritized synthesis of 48 primary studies to evaluate the potential benefits and harms of SSPs related to injection frequency, naloxone distribution and overdose education, linkage to substance use treatment and utilization of treatment services, syringe disposal practices, and neighborhood crime rates. We also synthesized available evidence on whether outcomes vary by syringe exchange model (needs-based versus 1-for-1) or presence/absence of program components.

The 2022 review of reviews found sufficient evidence that SSPs prevent HIV transmission among PWID and tentative evidence that SSPs prevent HCV transmission. Studies of HCV prevention had less consistent results compared to studies of HIV prevention, but it is unknown whether the weaker benefit in terms of HCV prevention is primarily due to study factors (such as the ways SSP use was defined and measured in studies evaluating HCV transmission) or differences in HIV and HCV transmissibility. Additionally, the relatively recent availability of curative therapy options for HCV is likely altering the epidemiology of HCV in ways that have not yet been reflected in available evidence. The same 2022 review of reviews found sufficient evidence that SSP use reduced injection risk behaviors, an important intermediate outcome when considering that a primary aim of SSPs is to prevent infectious disease transmission.

Importantly, SSP use does not appear to increase injection frequency, unsafe disposal of syringes, or neighborhood crime rates. SSP use may be associated with increased treatment linkage and/or use of treatment services among PWID compared to no SSP use (or less use). Preliminary evidence suggests that coordinated or co-located SSPs and programs offering OUD treatment may have improved outcomes relative to either program alone, which represents a promising area for future research.

Studies of public health interventions in real-world settings often must rely on observational research methods that are intrinsically less rigorous than study designs available in clinical contexts. These methodological limitations lower the strength of available evidence for individual SSP outcomes (listed below). However, when looking across outcomes, the preponderance of evidence demonstrating the potential benefits of SSPs and relative lack of harms is more than sufficient to support SSP implementation when possible.

### ES Table. Summary of Evidence

Outcome	Evidence	Findings
HIV transmission	1 RoR <sup>1</sup>	SSPs likely prevent HIV transmission.
HCV transmission	1 RoR <sup>1</sup>	SSPs may prevent HCV transmission. Coordinated or co-located SSPs and programs offering OUD treatment may have improved outcomes relative to either program alone.
Injection risk behaviors	1 RoR <sup>1</sup> 1 SR <sup>2</sup>	SSPs likely reduce injection risk behaviors. Use of SSPs offering needs-based or greater than 1-for-1 syringe exchange may be associated with a reduction in syringe re-use compared to use of SSPs with 1-for-1 syringe exchange policies or caps on the number of syringes dispensed.
Injection frequency	1 RCT, <sup>3</sup> 6 cohort, <sup>4-9</sup> and 9 pre-post <sup>10-18</sup> studies	SSP use does not appear to be associated with an increase in injection frequency.
Naloxone distribution	1 serial cross-sectional <sup>19</sup> and 4 cross-sectional <sup>20-23</sup> studies	SSP use may be associated with higher rates of carrying naloxone.
Overdose education	2 cross-sectional studies <sup>21,24</sup>	SSP use may be associated with receipt of overdose education.
Linkage to SUD treatment and utilization of treatment services	6 cohort <sup>4,5,25-28</sup> and 3 pre-post <sup>11,16,17</sup> studies	SSP use may be associated with increased treatment linkage and/or use of treatment services compared to no SSP use (or less use).
Syringe disposal	1 RCT, <sup>29</sup> 2 pre-post, <sup>16,17</sup> 11 cross-sectional, <sup>30-40</sup> and 7 ecological <sup>41-47</sup> studies	SSP use and/or presence of an SSP does not appear to be associated with an increase in unsafe syringe disposal practices.
Neighborhood crime rates	2 ecological studies <sup>48,49</sup>	Presence of an SSP does not appear to be associated with an increase in neighborhood crime rates.

*Abbreviations.* OUD=opioid use disorder; PWID=people who inject drugs; RCT=randomized controlled trial; RoR= review of reviews; SSP=syringe services program.