Drug Testing for Patients with Substance Use Disorder: Clinical Effectiveness and Guidelines
Authors: Charlotte Wells, Eldiflor Felipe


Acknowledgments:

Disclaimer: The information in this document is intended to help Canadian health care decision-makers, health care professionals, health systems leaders, and policy-makers make well-informed decisions and thereby improve the quality of health care services. While patients and others may access this document, the document is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose. The information in this document should not be used as a substitute for professional medical advice or as a substitute for the application of clinical judgment in respect of the care of a particular patient or other professional judgment in any decision-making process. The Canadian Agency for Drugs and Technologies in Health (CADTH) does not endorse any information, drugs, therapies, treatments, products, processes, or services.

While care has been taken to ensure that the information prepared by CADTH in this document is accurate, complete, and up-to-date as at the applicable date the material was first published by CADTH, CADTH does not make any guarantees to that effect. CADTH does not guarantee and is not responsible for the quality, currency, propriety, accuracy, or reasonableness of any statements, information, or conclusions contained in any third-party materials used in preparing this document. The views and opinions of third parties published in this document do not necessarily state or reflect those of CADTH.

CADTH is not responsible for any errors, omissions, injury, loss, or damage arising from or relating to the use (or misuse) of any information, statements, or conclusions contained in or implied by the contents of this document or any of the source materials.

This document may contain links to third-party websites. CADTH does not have control over the content of such sites. Use of third-party sites is governed by the third-party website owners' own terms and conditions set out for such sites. CADTH does not make any guarantee with respect to any information contained on such third-party sites and CADTH is not responsible for any injury, loss, or damage suffered as a result of using such third-party sites. CADTH has no responsibility for the collection, use, and disclosure of personal information by third-party sites.

Subject to the aforementioned limitations, the views expressed herein are those of CADTH and do not necessarily represent the views of Canada’s federal, provincial, or territorial governments or any third party supplier of information.

This document is prepared and intended for use in the context of the Canadian health care system. The use of this document outside of Canada is done so at the user’s own risk.

This disclaimer and any questions or matters of any nature arising from or relating to the content or use (or misuse) of this document will be governed by and interpreted in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein, and all proceedings shall be subject to the exclusive jurisdiction of the courts of the Province of Ontario, Canada.

The copyright and other intellectual property rights in this document are owned by CADTH and its licensors. These rights are protected by the Canadian Copyright Act and other national and international laws and agreements. Users are permitted to make copies of this document for non-commercial purposes only, provided it is not modified when reproduced and appropriate credit is given to CADTH and its licensors.

About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada’s health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.
Research Questions

1. What is the clinical effectiveness of blood or urine testing during diagnosis, treatment, and aftercare of patients with suspected or confirmed substance use disorder?

2. What are the evidence-based guidelines regarding the use of blood or urine testing during diagnosis, treatment, and aftercare of patients with suspected or confirmed substance use disorder?

Key Findings

One systematic review and three non-randomized studies were identified regarding drug testing for patients with substance use disorder. Additionally, one evidence based guideline was identified.

Methods

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were used to limit retrieval by publication type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2012 and June 13, 2017. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Patients presenting with substance use disorder (initial diagnosis), patients in treatment, or during aftercare (within approximately one year after completion of treatment)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Blood or urine drug testing for alcohol, cannabis, opioids, and illicit drugs</td>
</tr>
</tbody>
</table>
| Comparator | Q1: No drug testing; Alternate frequency of drug testing; Modalities compared with each other (i.e., blood testing vs. urine testing)  
Q2: No comparator |
| Outcomes | Q1: Clinical effectiveness (e.g., appropriate identification and management of patients with substance use disorder; rate or duration of abstinence; prevention of relapse or assistance with abstinence during treatment and aftercare; health-related quality of life, patient satisfaction)  
Q2: Evidence-based guidelines for use of drug testing, including recommendations for:  
- Type of testing (i.e., urine and/or blood) during diagnosis, treatment, and aftercare for substance use disorder;  
- Choice of specific blood and/or urine tests during diagnosis, treatment, and aftercare for substance use disorder;  
- Frequency or interval of urine or blood testing, or at certain milestones (e.g., before discharge);  
- Choice of mandatory versus voluntary drug testing during treatment;  
- Duration of time following treatment in which testing would be recommended (e.g., up to one year, or two years after discharge from active treatment) |
| Study Designs | Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines |
Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

One systematic review and three non-randomized studies were identified regarding drug testing for patients with substance use disorder. Additionally, one evidence based guideline was identified. No relevant health technology assessments or randomized controlled trials were identified.

Additional references of potential interest are provided in the appendix.

Overall Summary of Findings

One systematic review\(^1\) and three non-randomized studies\(^2-4\) were identified regarding drug testing for patients with substance use disorder. Additionally, one evidence based guideline was identified.\(^5\)

The identified systematic review\(^1\) examined the effectiveness of urine drug tests (UDT) for the medical management of patients who consume psychoactive substances. The authors of the review concluded that the limited number of poor quality studies was not sufficient to support a benefit or the value of performing UDTs for this population.\(^1\)

Two of the three identified non-randomized studies also examined UDTs and outcomes associated with their use.\(^2,3\) The authors of the first non-randomized study\(^2\) examined implementation of opioid-therapy guidelines in the Veteran’s Affairs healthcare system and stated that higher levels of UDT in this population were associated with lower risk of suicide and drug events. The second study\(^3\) concluded that older, female, disabled, severely addicted individuals and individuals with legal and social problems were more likely to benefit from UDTs. They also concluded that UDTs are important tools to use in the primary care setting when assessing patients, as underreporting is a common problem in these subpopulations.\(^3\) The final non-randomized study\(^4\) compared the self-reporting of drug use to both oral fluid and blood testing in pre-anesthetic patients. The authors concluded that self-reporting revealed higher usage of illicit substances and may lead to more appropriate and tailored treatment when compared to blood testing or oral fluid testing.\(^4\)

The identified guideline by the American Pain Society and College on Problems of Drug Dependence in Collaboration with the Heart Rhythm Society\(^5\) strongly recommends for urine drug screens to be obtained for patients who are initiating methadone treatment and for them to be conducted at regular intervals during methadone maintenance. This is recommended regardless of a patients’ risk status.\(^5\) The guideline authors do, however, admit that this recommendation is based on low-quality evidence and there is a lack of studies evaluating the optimal frequency of UDT in methadone maintenance patients.\(^5\)
References Summarized

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies


Guidelines and Recommendations
See: Urine Drug Testing
Appendix — Further Information

Non-Randomized Studies – Alternate Population


   PubMed: PM27344042

Clinical Practice Guidelines – Unspecified Methodology


   PubMed: PM27338974


   See: III. The Practice of Drug Testing


    PubMed: PM22786451

Alternate Population


    See: Recommended Frequency of UDT and PDMP

Review Articles


    PubMed: PM27071006


    PubMed: PM23631601

Additional References
