Drug Testing for Patients with Substance Use Disorder: Clinical Effectiveness and Guidelines
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**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>
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<tr>
<td>Intervention</td>
<td>Blood or urine drug testing for alcohol, cannabis, opioids, and illicit drugs</td>
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| 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


Clinical Practice Guidelines – Unspecified Methodology


Alternate Population


Review Articles


Additional References
