

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Drug Testing for Patients with Substance Use Disorder: Clinical Effectiveness and Guidelines

Service Line: Rapid Response Service
Version: 1.0
Publication Date: June 28, 2017
Report Length: 7 Pages

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Cite As: Drug testing for patients with substance use disorder: clinical effectiveness and guidelines. Ottawa: CADTH; 2017 Jun. (CADTH rapid response report: summary of abstracts).

Acknowledgments:

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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

Population	Patients presenting with substance use disorder (initial diagnosis), patients in treatment, or during aftercare (within approximately one year after completion of treatment)
Intervention	Blood or urine drug testing for alcohol, cannabis, opioids, and illicit drugs
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: <ul style="list-style-type: none"> •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 review¹ and three non-randomized studies²⁻⁴ were identified regarding drug testing for patients with substance use disorder. Additionally, one evidence based guideline was identified.⁵

The identified systematic review¹ 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 study² 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 study³ 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 study⁴ 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 Society⁵ 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

1. Dupouy J, Memier V, Catala H, Lavit M, Oustric S, Lapeyre-Mestre M. Does urine drug abuse screening help for managing patients? A systematic review. *Drug Alcohol Depend.* 2014 Mar 1;136:11-20.
[PubMed: PM24417964](#)

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

2. Brennan PL, Del Re AC, Henderson PT, Trafton JA. Healthcare system-wide implementation of opioid-safety guideline recommendations: the case of urine drug screening and opioid-patient suicide- and overdose-related events in the Veterans Health Administration. *Transl Behav Med [Internet]*. 2016 Dec [cited 2017 Jun 27];6(4):605-12. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC5110498>
[PubMed: PM27384953](#)
3. McDonell MG, Graves MC, West II, Ries RK, Donovan DM, Bumgardner K, et al. Utility of point-of-care urine drug tests in the treatment of primary care patients with drug use disorders. *J Addict Med [Internet]*. 2016 May [cited 2017 Jun 27];10(3):196-201. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4880495>
[PubMed: PM27159345](#)
4. Kork F, Kleinwachter R, Weiss-Gerlach E, Broecker S, Pragst F, Wernecke KD, et al. Oral fluid testing for illicit substance use in preanaesthetic care. *J Int Med Res.* 2012;40(1):194-203.
[PubMed: PM22429359](#)

Guidelines and Recommendations

5. Chou R, Cruciani RA, Fiellin DA, Compton P, Farrar JT, Haigney MC, et al. Methadone safety: a clinical practice guideline from the American Pain Society and College on Problems of Drug Dependence, in collaboration with the Heart Rhythm Society. *J Pain [Internet]*. 2014 Apr [cited 2017 Jun 27];15(4):321-37. Available from: [http://www.jpain.org/article/S1526-5900\(14\)00522-7/pdf](http://www.jpain.org/article/S1526-5900(14)00522-7/pdf)
[PubMed: PM24685458](#)
See: Urine Drug Testing

Appendix — Further Information

Non-Randomized Studies – Alternate Population

6. Casolin A. Comparison of urine and oral fluid for workplace drug testing. *J Anal Toxicol* [Internet]. 2016 Sep [cited 2017 Jun 27];40(7):479-85. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4986628>
PubMed: PM27344042

Clinical Practice Guidelines – Unspecified Methodology

7. Hadland SE, Levy S. Objective testing: urine and other drug tests. *Child Adolesc Psychiatr Clin N Am*. 2016 Jul;25(3):549-65.
PubMed: PM27338974
8. Drug testing: a white paper of the American Society of Addiction Medicine (ASAM) [Internet]. Chevy Chase (MD): American Society of Addiction Medicine (ASAM); 2013 Oct 26. [cited 2017 Jun 27]. Available from: <https://www.asam.org/docs/default-source/public-policy-statements/drug-testing-a-white-paper-by-asam.pdf>
See: III. The Practice of Drug Testing
9. Guidelines for ordering urine testing for drugs-of-abuse: targeted and screening tests (CLP013) [Internet]. Toronto: Ontario Association of Medical Laboratories (OAML); 2017 Mar. [cited 2017 Jun 27]. Available from: <http://oaml.com/wp-content/uploads/2016/05/OAMLGUIDELINEFORORDERINGDOAFINALMarch142013.pdf>
10. Owen GT, Burton AW, Schade CM, Passik S. Urine drug testing: current recommendations and best practices. *Pain Physician*. 2012 Jul;15(3 Suppl):ES119-ES133.
PubMed: PM22786451

Alternate Population

11. Pain management opioid safety: a quick reference guide (2014) [Internet]. Washington (DC): U.S. Department of Veterans Affairs; 2014 Jul. [cited 2017 Jun 27]. Available from: https://www.pbm.va.gov/AcademicDetailingService/Documents/Pain_Provider_AD_Quick_Reference_Guide.pdf
See: Recommended Frequency of UDT and PDMP

Review Articles

12. Barthwell AG. Clinical and public health considerations in urine drug testing to identify and treat substance use. *Subst Use Misuse*. 2016 May 11;51(6):700-10.
PubMed: PM27071006
13. Goodman DJ, Wolff KB. Screening for substance abuse in women's health: a public health imperative. *J Midwifery Womens Health*. 2013 May;58(3):278-87.
PubMed: PM23631601

14. Melanson SE. The utility of immunoassays for urine drug testing. Clin Lab Med. 2012 Sep;32(3):429-47.
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http://www.bpac.org.nz/resources/bt/2012/docs/best_tests_mar2012_druguse_pages_10-17.pdf
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https://webcampus.drexelmed.edu/nida/module_1/default_FrameSet.htm