

The use of urine drug screening for safer opioid prescribing in chronic non-cancer pain patients in rural Northern Ontario



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ABSTRACT

The prevalence of opioid abuse has reached an epidemic level. National guidelines recommend safer opioid prescribing practices, including consideration of monitoring patients with urine drug screening (UDS). There is little evidence supporting or refuting the use of UDS in the context of chronic non-cancer pain (CNC) patients. The Marathon Family Health Team (MFHT) has implemented a randomized UDS program, aimed at making the prescribing of opioids safer. This research project evaluated the efficacy of randomized UDS to detect and manage opioid misuse amongst patients with CNC. Of the 77 patients prescribed opioids for CNC and stratified as low-risk, 71.4% completed at least one UDS during the 12-month study period. Of these, 80% completed at least one random UDS (≤ 36 hours of notice), and 20% completed only scheduled UDS. Overall, 66.4% of the UDS results were expected, 29.7% unexpected, and 3.9% equivocal. The physicians at MFHT took action for 58.8% of the aberrant results. By the end of the study period, UDS led directly to concrete management steps in 15/77 patients (19.5%). Of the 77 patients, 4 were escalated to an addiction program, 2 were tapered or discontinued from opioids, and 9 were escalated to a higher-risk monitoring system directly as a result of UDS. The results of this study show that in the primary care setting, UDS can be effective for detecting and managing misuse amongst low-risk CNC patients being prescribed opioids.

BACKGROUND

The rate at which CNC patients are being prescribed opioids continues to increase.¹⁻³ Addictions and prescription drug overdoses have become a global epidemic.⁴ According to a recent report from Harvard Medical School in the United States, opioid misuse and the number of opioid-related deaths is now comparable to deaths caused by smoking.⁵ The Public Health Agency of Canada reported that about 2,500 Canadians (865 from Ontario) died from opioid overdoses in 2016.^{5,6} This number is much higher as compared to the 728 opioid-related deaths in 2015 reported by Ontario Public Health data.⁶



<http://www.abchealthnews.com/2016/05/06/maloxone-reverses-opioid-overdose-saves-lives/>

Historically, higher rates of drug abuse have been seen in rural and remote communities of Northern Ontario as compared to the rest of the province.⁷ Several screening tools have been developed to detect opioid misuse and diversion. National guidelines for prescribing opioids for CNC recommend considering UDS as one risk mitigation strategy.⁸ However, it is unknown to what extent UDS, in a primary care setting, can help detect and guide management of opioid misuse.



<http://www.cbc.ca/news/canada/toronto/harm-reduction-workers-open-letter-emergency-opioid-crisis-overdose-deaths-1.4264783>



<https://beta.theglobeandmail.com/news/national/ontario-invests-222-million-to-combat-opioid-crisis/article36113584/>

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MARATHON FAMILY HEALTH TEAM



- Of the 3,913 patients at MFHT, 103 are prescribed opioids for chronic pain (>90 days duration), of which 97 are for non-cancer, non-palliative pain.
- Of the CNC patients, 77 patients were stratified into the low-risk program, 7 into the high-risk program, 6 were excluded from UDS for other reasons by their family physician (poor mobility, or receiving medications under observation in chronic care, etc.), and 7 patients should have been enrolled in the low-risk stream but were missed.
- 10% of all low-risk patients are randomly selected per month, through a computerized program, to complete UDS.

RESEARCH OBJECTIVES

The general objective of this study is to:

- Analyze whether random UDS, done by primary care providers in rural communities, is effective in detecting and managing misuse amongst patients being prescribed opioids for CNC.

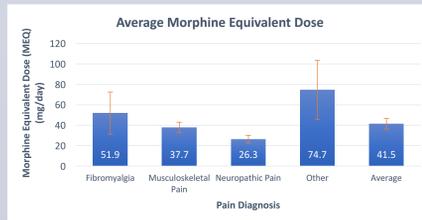
The specific objectives of this study are to:

- Analyze the efficacy of random UDS in a primary care setting.
- Compare different methods of UDS.
- Determine whether UDS results directly led to physician action in managing opioid misuse.

METHODOLOGY

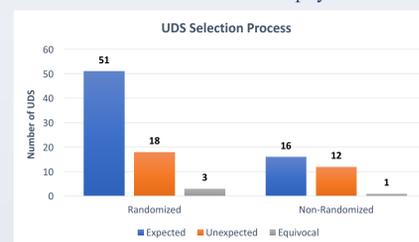
The project was approved by the Lakehead University Research Ethics Board, as per Tri Council Policy Statement, as it involves collecting data from human participants. No direct patient consent was required as the project involves collecting secondary data from patient chart reviews. Patient data collected from the MFHT EMR was stored in password protected electronic files. The data collected from patient chart reviews was analyzed using the SPSS software.

PATIENT DEMOGRAPHICS

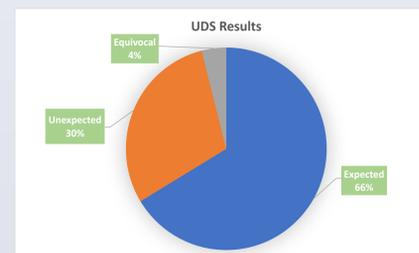


RESULTS

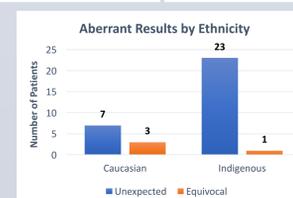
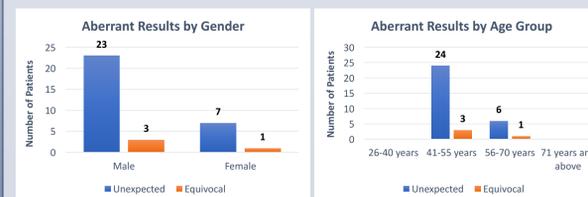
- Efficacy of random UDS in a primary care setting**
 - 55/77 patients provided at least one urine sample during the 12-month study period.
 - 44/55 patients provided at least one *random* urine sample (patient notified ≤ 36 hours of appointment).
 - 11/55 patients provided only *scheduled* urine sample(s) (patient had >36 hours of notice before appointment).
- Of the total urine drug screens done:
 - 74% were initially selected through a randomization process.
 - 26% were "non-randomized" or physician-selected.



- Of the total urine drug screens done:
 - 76.2% were unscheduled (≤ 36 hours of notice).
 - 23.8% were scheduled (>36 hours of notice).



- Previous studies suggest that ~30% of UDS results will be aberrant, most of them due to cannabis and non-detection of prescribed substances.⁹
- Cannabis in the urine was *not* considered an unexpected result in this study. If it were considered unexpected, then the number of aberrant results would increase significantly.
- Therefore, this study suggests higher rates of aberrant UDS results in rural Northern Ontario compared to previously published numbers in other populations.

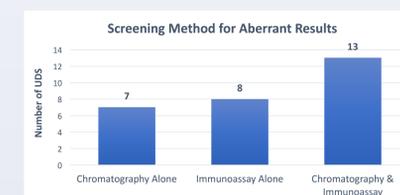


- The randomization program was effective in picking up aberrant (unexpected and equivocal) results:
 - 61.8% of the aberrant results were detected through the random selection process.
 - 70.6% were detected through a short-notice appointment.

➤ These results show that the random selection process for UDS is an effective method for detecting aberrant results in a primary care setting.

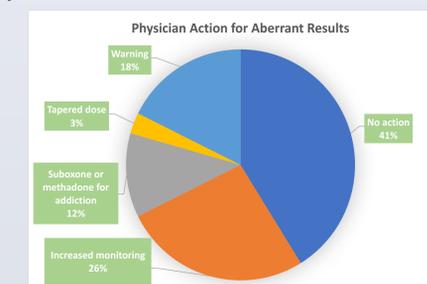
RESULTS

- Comparison of different UDS methods**
 - Chromatography and immunoassay, separately as well as in combination, were determined to be more effective at capturing aberrant results as compared to self-report.
 - 25% of aberrant results detected by chromatography alone.
 - 28.6% detected by immunoassay alone.
 - 46.4% detected by chromatography and immunoassay.
 - Only 2/77 patients admitted to any non-prescribed drugs or medications on self-report.



➤ A combination of immunoassay and chromatography was determined to be the best UDS test method as compared to either of these tests used individually. Self-report was not a helpful tool in detecting aberrant drug use in this population.

3. Physician action



- Physicians took action for 58.8% of the aberrant results.
- Of the 77 patients in the program at the beginning of the study, 15 patients had UDS results that directly led to either escalation to an addiction program (4), tapering or discontinuing of opioid medication (2), or being escalated to a higher-risk monitoring system (9).

CONCLUSIONS

The general objective of this study was to analyze the extent to which systematic randomized UDS, in a primary care setting, can help detect and manage opioid misuse amongst CNC patients in rural and remote communities of Northern Ontario. This study had some limitations as it had a small data set and no control population to compare statistical significance of the results. The UDS program analyzed in this study requires minimal resources and could be replicated by other primary care teams.

Overall, this study suggests that randomized UDS in primary care can lead to safer prescribing of opioids through identification of at-risk patients and subsequent escalation to addictions programs, or tighter monitoring and prescribing practices.

ACKNOWLEDGMENTS

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⁹Turner JA, Saunders K, Shortreed SM, LeResche L, Riddell K, Rapp SE, et al. Chronic Opioid Therapy Urine Drug Testing in Primary Care: Prevalence and Predictors of Aberrant Results. J Gen Intern Med. 2014 Dec;29(12):1663-71.