

Random urinalysis testing in federal corrections

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Reports on offender drug use from correctional jurisdictions worldwide have shown that the issue of drug use in institutions is not unique to the Correctional Service of Canada (CSC). CSC has in place a program of regular urinalysis to test offenders for drug use inside the institutions as well as while on conditional release in the community.

This article presents the findings of an analysis of CSC's random urinalysis program in federal institutions, looking at trends over time in the proportion of tests that come back positive for drug use, refusal rates and types of drugs found as well as differences in results by gender, region and security level.

Urinalysis in federal institutions can be requested for several reasons. Offenders can be asked to provide a sample when there are reasonable grounds to suspect drug use, as a condition of participation in a program or activity involving community contact, and as part of a condition of participation in substance-abuse treatment programs.

Offenders are also required to provide a urine sample for testing if their name has been chosen for participation in the random testing program. Random urinalysis is conducted among incarcerated offenders, and the policy and guidelines that govern its use are outlined in the *Corrections and Conditional Release Act (CCRA)* and the *Corrections and Conditional Release Regulations (CCRR)*.² The goals of random urinalysis, as described in the CSC guidelines on urinalysis testing under random selection, are to "...ensure

the security of the penitentiary and the safety of persons by deterring the use of and trafficking in intoxicants in the penitentiary."³

Although urinalysis is a well-established technology, it is not without limitations. Results of urine tests must be interpreted with caution due to the range of possible factors that could influence results. Technical challenges in the interpretation of results include variability in clearance rates of drugs of abuse, differences in individual physiology, and cross-reactivity in urinalysis screening procedures. In addition, there are operational factors such as non-random patterns in sample collection that could potentially influence the accuracy of the results. These can pose serious challenges to effective implementation of a program of random urine testing.⁴

Random urinalysis in institutions

For this study, all institutional random-urinalysis sample records in the Offender Management System (OMS) from January 1996 to December 2004 were examined. OMS is an administrative database used by CSC to record information relating to every offender in custody and on conditional release in the community. In total 58,873 random samples were requested during the period of study.

Random urinalysis represents a significant proportion of all urinalysis conducted in institutions, representing 45% of all institutional testing done in 1997 and increasing significantly

Trends in urinalysis requests in Canadian federal institutions

Reason for testing	1996	1997	1998	2002	2003 ⁵	2004
Random	42% (6778)	45% (7096)	44% (6018)	52% (6565)	63% (6524)	64%*** (6476)
All other testing [†]	58% (9322)	55% (8507)	56% (7652)	48% (5946)	37% (3792)	36% (3601)
Total	16,100	15,603	13,670	12,511	10,316	10,077

*** Z=-43.81, p < .0001 V=0.14

[†] All other institutional testing includes testing done on a voluntary basis, on reasonable grounds, as required as part of program participation and, prior to 2003, for the sanction of three consecutive negative tests following a positive test.

to 64% of all institutional testing in 2004. As can be seen in Table 1, however, this is due not to an increase in the number of requests for random testing (which has remained rather stable over the years), but rather to a decrease in requests for other reasons. In 2004, testing for reasons other than the random program represented only 36% of all institutional testing.

Positive samples identified through the random urinalysis program are occasionally due to legitimate prescription drug use. Currently in OMS, there is no area to accurately record positive samples that are due to prescription drug use. One method to determine whether or not a positive urinalysis result is due to prescribed medication is to examine the action taken (or not taken) as a result of a positive test. Between 1996 and 2004, 9% of all positive random urinalysis requests (N=613) were recorded as positive with no follow-up action taken.

A sample of these cases was examined in more detail by accessing individual urinalysis records and manually extracting the data for each case. A total of 473 records between 1998 and 2003 were examined. During that time period, 54 positive samples with no follow-up action were recorded in women's institutions, with 61% found to be due to prescription drug use. In men's institutions, 419 samples were recorded as having no follow-up action taken, of which 39% were due to prescription drug use.

For those records where prescription drug use could not be verified, it also could not be

eliminated as a reason for the positive test result. Either information was missing, or it was inaccessible to the researchers. In 3% of cases, a note was found on the file stating that the offender had been released or transferred.

Obviously, then, when interpreting urinalysis results from the random program, one cannot ignore the possibility of a positive test result being due to legitimate drug use. This is difficult to verify, however, due to the current lack of information on CSC administrative databases. Since only 32% of positive urinalysis test results could be attributed to prescription drug use during the study period, all positive tests where no follow-up action was taken were included in the analysis.

Positive results and refusal rates

In examining the national trends in urinalysis results, it was found that the rate of positive results has remained stable over time, resting at an average of 11% of all random urinalysis tests. As can be seen in Figure 1, the refusal rate has increased moderately, going from 9% in 1996 to 12% in 2004.

Positive rates have shown little change over time within regions or security levels. In 2004, the Atlantic region had a positive rate of 16%, Quebec had a positive rate of 13%, Ontario's positive rate was 11%, the Prairie region's was 7%, and the Pacific region's was 13%.

In maximum-security institutions, the proportion of requests for random urinalysis that returned a

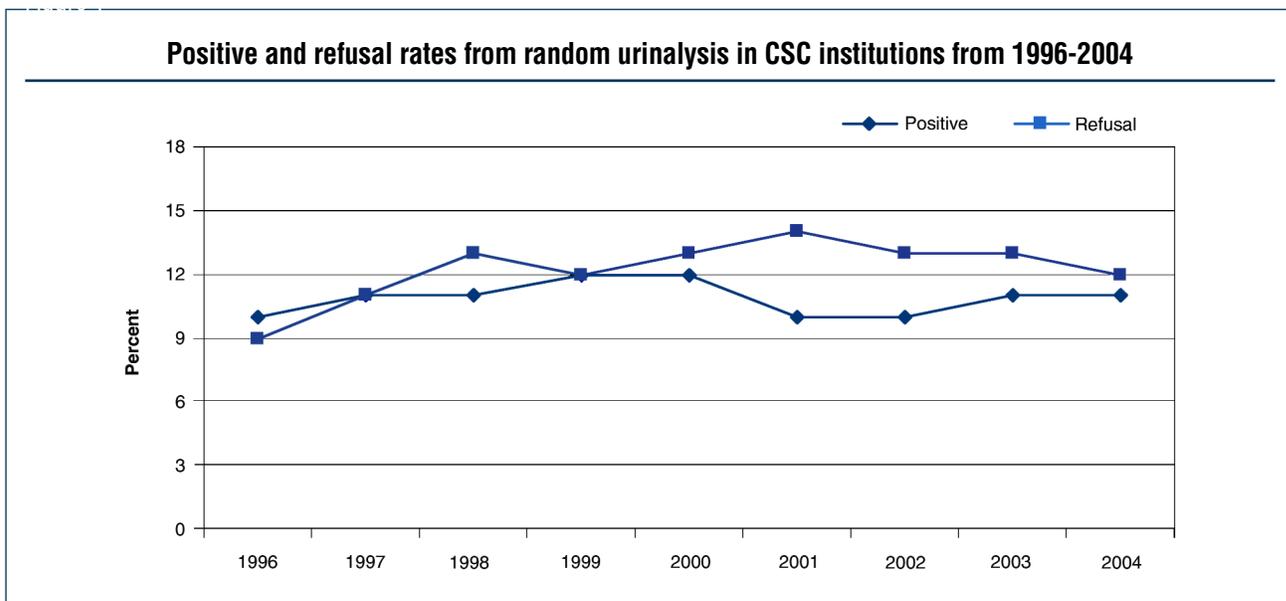
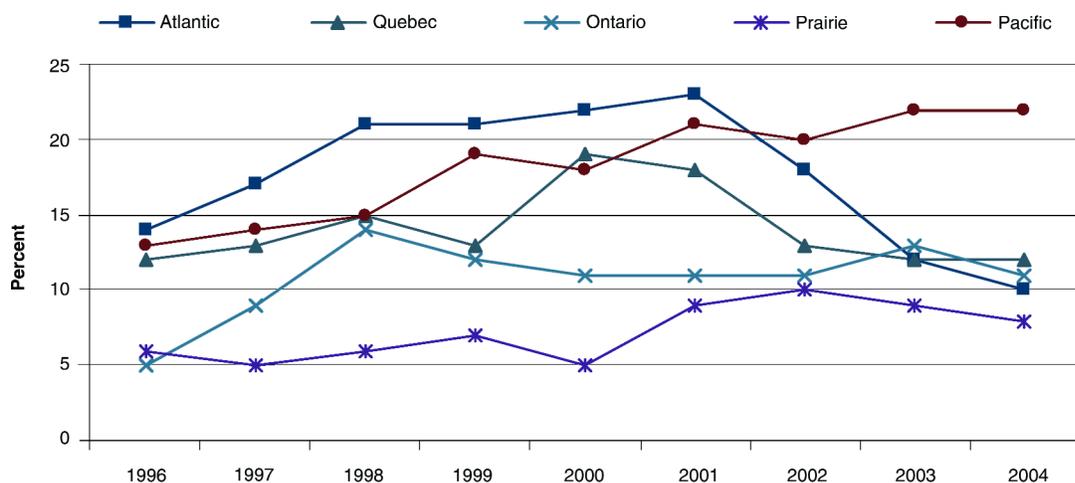


Figure 2

Regional refusal rate for random urinalysis in federal institutions from 1996-2004



positive result was 8%, in medium security it was 13%, in minimum security it was 8%, and in multilevel-security institutions, which represent primarily women’s institutions, the positive rate was 4% in 2004.

Regional- and institutional-level analyses of refusal rates have shown some interesting trends. In the Atlantic region, refusal rates have decreased significantly since reaching a high of 23% in 2001, moving to 10% in 2004 (Figure 2). The Quebec region has also shown a decrease in refusals, going from 18% in 2001 to 12% in 2004. In contrast, refusals in the Pacific region have been steadily increasing since 1996, going from a low of 13% to 22% in 2004. This refusal rate was significantly higher than that of other regions in 2004.

Maximum-security institutions have shown a decrease in refusals since 2001, going from a high of 28% to 14% in 2004. Maximum-security institutions in the Atlantic region and in Quebec account for the majority of the decrease. Refusals in medium security have demonstrated a slight increasing trend, going from 9% in 1996 to 14% in 2004. Meanwhile, refusals in minimum-security and multilevel institutions have remained stable at, on average, 2% and 8% respectively.

Diluted samples

Offenders can dilute urine by consuming large amounts of liquid before they submit a urine sample. Dilution forces the kidneys to eliminate excess liquid rapidly, which results in reduced

drug concentrations in urine. It is possible to reduce the concentration of a drug in urine below the established cut-off levels, resulting in a false-negative sample. In 1997, CSC introduced methods to detect diluted samples, and consequently they are identified at the laboratory and subjected to further testing at a lower cut-off for drugs.⁶

In both 2003 and 2004, 5% of samples requested from women’s facilities were found to have been diluted and returned as negative for drug use. This represents a significant increase from earlier years, where diluted samples represented 1-2% of all random samples. Between 1997 and 2004, only 3 out of 49 diluted samples from women’s facilities (6%) were found to contain evidence of drug use.

In men’s facilities, the total percentage of diluted samples has remained stable over the years at between 1-2% of all samples. The percentage of positive diluted samples has also remained stable, at less than 1% of all random samples. Between 1997 and 2004, 181 samples from men’s facilities were found positive for drug use after being detected through the dilution protocol, representing 22% of all diluted samples. Most (82%) were positive for THC, 7% for opiates, 2% for benzodiazepines, and 4% for cocaine.

Drug types

The proportion of different types of drugs found in positive samples has not changed significantly over time. In 2004, THC was found in 82% of

positive samples, opiates in 14%, benzodiazepines in 6%, cocaine in 1% and amphetamines in 0.43%.

Although drug types found in positive samples have not changed significantly since 1996, one interesting trend was found. There has been an increase in opiate drugs detected in samples from maximum-security institutions in the Ontario region. More specifically, in the time period 1996-2001, in maximum-security institutions in the Ontario region, opiates were found in 12% of all positive random urinalysis tests. By 2002-2004, this had increased fourfold to an average of 44% of all positive random tests.

Gender

Some significant gender differences were noted in the types of drugs found. The data in Table 2 represent all data collected over the study period, from 1996 to 2004. Analysis showed that women were more likely to submit a positive sample for opiates and benzodiazepines, while men were more likely to submit samples positive for THC. It is possible, however, that these discrepancies are due to legitimate prescriptions.

Poly-drug detection

Occasionally samples were positive for more than one drug. The rate of poly-drug detection for women and men was approximately equal during the study period (8% and 7% respectively). Interestingly, samples that contained more than one drug were equally likely to be positive for THC as those positive for one drug. However,

poly-drug samples were more likely to contain opiates, benzodiazepines and cocaine as compared with samples positive for a single drug (Figure 3). This would suggest that these drugs are more often used in combination with other drugs, while THC is equally likely to be used on its own or in combination with other drugs.

Conclusion

The results of the random drug testing program have shown that, nationally, the positive rate has remained stable while the refusal rate has shown a marginal increase since 1996. Regionally there have been significant changes in refusal rates, in particular in the Atlantic region (decrease), Quebec region (decrease) and Pacific region (increase).

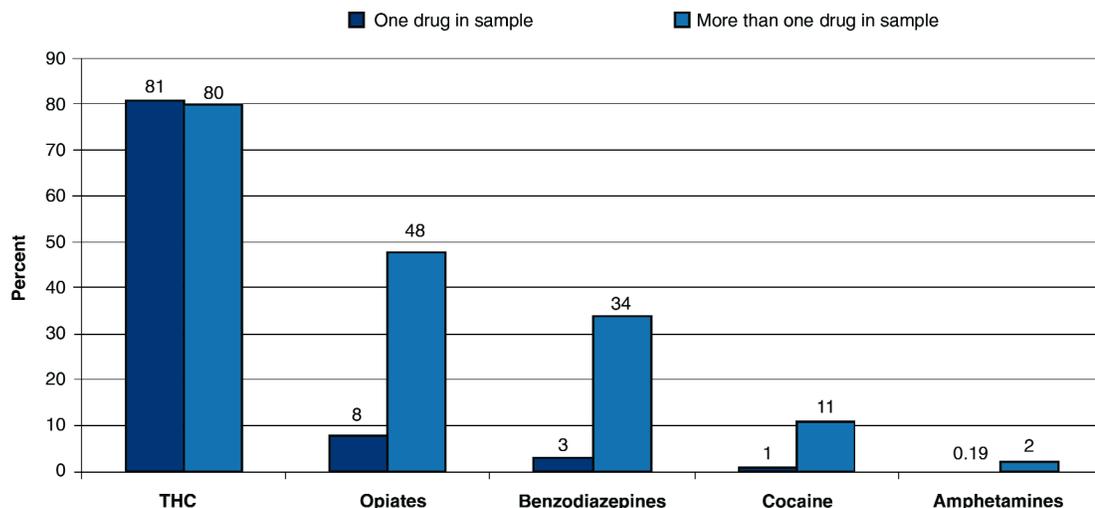
Table 2

Gender differences in drug types found through random urinalysis

	Men (%)	Women (%)
THC	81	9
Opiates	12	26
Benzodiazepine	7	62
Cocaine	2	3
Amphetamines	0.31	1
Other drugs [‡]	4	13

[‡]Other drugs include methylphenidate, Prozac, LSD, PCP, alcohol, and pentazocine. Among women, 11% of samples in the "other drugs" category were positive for Prozac.

Drug types found in random urinalysis samples containing more than one drug compared to single drug samples from 1996-2004



The proportion of samples that were found to have been diluted has remained relatively stable since the introduction of the dilution protocol in 1997, but increased in 2003/2004 in women's facilities.

The types of drugs found in positive samples have not changed significantly over time, with one exception: in maximum-security institutions in Ontario region, opiates have, in recent years, been detected at a much higher rate than in previous years.

Drug types found in men's samples differ from those found in women's samples, which may be a reflection of patterns in prescribed drug use in women's facilities.

Finally, drugs other than THC are more likely to be used in combination with other drugs, as evidenced by the higher positive rate in poly-drug samples. ■

- ¹ 23 Brook Street, Montague, Prince Edward Island C0A 1R0.
- ² Government of Canada. (1992). *Corrections and Conditional Release Act*. Ottawa, ON: Government of Canada. Government of Canada. (1992). *Corrections and Conditional Release Regulations*. Ottawa, ON: Government of Canada.
- ³ Correctional Service Canada. (1998). *CCRA review: Urinalysis testing program*. Ottawa, ON: Government of Canada.
- ⁴ Wish, E.D., and Gropper, B.A. (1990). Drug testing by the criminal justice system: Methods, research and applications. In M. Tonry, and J.Q. Wilson (Eds.). *Drugs and Crime*. (pp. 321-391). Chicago, IL: University of Chicago Press.
- ⁵ In 2003, the practice of requiring offenders who test positive to submit monthly tests until they had submitted three consecutive negative tests was discontinued following a court challenge. The judge ruled the practice to be "ultra vires" or outside the jurisdiction of the CCRA and CCRR.
- ⁶ Fraser, A.D., & Zamecnik, J. (2003). Impact of lowering the screening and confirmation cutoff values for urine drug testing based on dilution indicators. *Therapeutic Drug Monitoring*, 25(6), 723-727.

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