



No. 260

Self-reported Drug Use: How Prevalent is Under- reporting?

Kiah McGregor and Toni Makkai

This paper examines the extent to which participants in the Drug Use Monitoring in Australia (DUMA) program under-report their drug use. DUMA participants are asked to answer a questionnaire about their use of drugs, as well as to supply a urine sample. This sample is tested for the presence of illicit drugs and compared with the self-reported answers in the questionnaire.

The present study focuses on use of heroin, cocaine and methamphetamine. It found that, of those detainees testing positive, heroin users were more likely to report their use of that drug than users of cocaine or methamphetamine. Consideration is given to possible errors that may lead to inconsistent results between the urinalysis test and self-reported information, as well as reasons why under-reporting may occur, with a specific focus on sociodemographic factors.

Adam Graycar
Director

Most current information available on the extent of illicit drug use in Australia relies on users accurately self-reporting their consumption. Even if confidentiality is assured, given that the use and possession of illicit drugs is a crime, it logically follows that there may be cases when the use and extent of use of illicit substances is either denied or under-reported. The concealment of illicit drug use can result from embarrassment, fear of punishment or social disapproval (Swadi 1990). In the criminal justice environment the fear of punishment may be heightened if respondents perceive that supplying accurate information could lead to further repercussions (Harrison 1997; Harrell 1997). There is also the possibility of over-reporting, although this is not usually a problem when examining self-reported drug use (Barnea et al. 1987; Petzel et al. 1973; Single et al. 1975 all cited in Swadi 1990).

Knowledge of drug use among the criminally active population is important for both operational and strategic policy-making. Much of this knowledge is based on self-reports from those being surveyed, yet there has been little work done on the validity of self-reported drug use in the Australian context before now, either among "at-risk" groups or the general population. Using data collected during interviews conducted for the Drug Use Monitoring in Australia (DUMA) project, this paper examines self-reported drug use among a sample of police detainees and compares that information with results of urinalysis testing. The paper considers three drug types—opiates, amphetamines and cocaine.

DUMA

DUMA commenced in 1999 and is part of an international study first developed in the United States (Makkai 1999). In Australia, DUMA is funded by the Commonwealth Attorney-General's Department and the South Australian Attorney-Generals' Department. It operates in seven sites located in four states. The sites are at the Southport and Brisbane City watchhouses

**AUSTRALIAN INSTITUTE
OF CRIMINOLOGY**

trends

&

issues

in crime and criminal justice

June 2003

ISSN 0817-8542

ISBN 0 642 53811 5



Australian Institute
of Criminology
GPO Box 2944
Canberra ACT 2601
Australia

Tel: 02 6260 9221

Fax: 02 6260 9201

For a complete list and the full text of the papers in the Trends and Issues in Crime and Criminal Justice series, visit the AIC web site at:

<http://www.aic.gov.au>

Disclaimer: This research paper does not necessarily reflect the policy position of the Commonwealth Government.

(Queensland), the East Perth lock-up (Western Australia), Bankstown and Parramatta police stations (New South Wales) and the Adelaide City watchhouse and Elizabeth police station cells (South Australia). The South Australian and Brisbane sites joined the program in the beginning of 2002 (see Makkai & McGregor 2003).

The research is conducted quarterly, and each period of data collection lasts for three to four weeks. Respondents are drawn from people detained by police during the research period. The participants are adult women and men. Juveniles are interviewed at the New South Wales sites only but are not included in the present analysis. Detainees are asked to participate in the study if:

- they have been held in custody for less than 48 hours;
- they are suitable for an interview – not violent, unwell or intoxicated; and
- they are deemed by the police officer in charge as safe to approach.

There are two components to the study: an interviewer-led questionnaire and a urine sample. Detainees are asked to provide both the urine specimen and to participate in the face-to-face interview when they are first approached. Participation in both aspects of the DUMA project are confidential and voluntary. Detainees provide informed consent before becoming involved. Participants may elect not to answer specific questions during the interview, and they may refuse to provide a urine sample either at the beginning or once the interview is completed. Interviewers are not permitted to discuss the material collected with anyone except their DUMA supervisor. Police officers are not permitted to read completed questionnaires.

The participation rate for DUMA is high. For the period that DUMA has been running, 9,074 out of a possible 10,597 detainees (86 per cent) have been interviewed. Seventy-five per cent

of the detainees participating in DUMA (6,841) have provided a urine sample.

Included in the following analysis are those adult detainees that gave a useable urine sample. A small number of people (59) have been excluded from the analysis because the samples provided were diluted, contained insufficient urine to conduct tests or the samples were damaged in transit. In addition, juvenile detainees have been excluded as this information is only collected in two of the sites. A total of 6,477 surveys and results of urine samples are included in the following analysis.

Method of Drug Testing

A number of methods are available to test for the presence of illicit drugs, including analysing hair, blood, oral swabs or urine samples (Makkai 2000). DUMA collects urine specimens for urinalysis. While the collection of urine samples may cause embarrassment, such samples provide a more accurate report of recent illicit drug use (Makkai 2000). All urine provided first undergoes screening. The screening method used to detect illicit drugs in urine is EMIT (the enzyme multiplied immunoassay technique), which detects specific illicit drugs including cannabis, methadone and cocaine, and classes of drugs, including opiates, amphetamines and benzodiazepines. Where screening results are positive for the classes of drugs (opiates, amphetamines and benzodiazepines), DUMA undertakes confirmatory tests to identify whether, for example, the presence of opiates is because of

the consumption of heroin or codeine. The method used is GC/MS (gas chromatography/mass spectrometry), which enables identification of the different compounds. DUMA uses cut-off scores set by Australian Standards (presented in Table 1).

The following analysis examines the urinalysis result for heroin, cocaine and methamphetamine. Cocaine results have been taken from the initial screen test, while heroin and methamphetamine results are taken from the confirmatory testing done for opiates and amphetamines. It is deemed that a detainee has tested positive for heroin if he or she tests positive for monoacetylmorphine, if the concentration of morphine is greater than the concentration of codeine, or if morphine is found in isolation. For more detailed information on drug testing, see Makkai (2000).

With regard to self-reported information, DUMA enquires about the use of a range of drugs including cannabis, cocaine, heroin, amphetamines and methamphetamines, ecstasy, hallucinogens, benzodiazepines, and street methadone. Heroin and amphetamines are both commonly used “hard” illicit drugs among detainees interviewed by DUMA, and are discussed below. Cocaine is also discussed – its self-reported use has increased over the time of the project and it is recognised as a “hard” illicit drug. DUMA collects information on whether a specific drug has ever been tried, used in the past year, used in the past 30 days, and used in the past two to three days.¹ The following analysis examines self-reported drug use in the preceding two to three days and 30 days for heroin, methamphetamine and cocaine.

Table 1: *Cut-off levels and drug detection times*

	Cut-off AS 4308 (ug/L)	Average detection time
Amphetamines	300	2–4 days
Benzodiazepines (hydrolysed)	100	2–14 days
Cannabis	50	Up to 30 days for heavy use; 2–10 days for casual use
Cocaine	300	2–3 days
Methadone	300	2–4 days
Opiates	300	2–3 days

Drug Use Among the DUMA Sample

While the focus of this paper is recent drug use, it must be noted that self-reported drug use among this sample of police detainees is much higher than in the general population. The National Drug Strategy Household Survey conducted by the Australian Institute of Health and Welfare (AIHW) asks about use in the past 12 months (AIHW 2002). The percentage self-reporting heroin² use in the past 12 months was 0.5 per cent in the general population and 19 per cent in the DUMA sample. Likewise, the percentage self-reporting amphetamine use in the past 12 months among the general population was 3.4 percent compared with 25 per cent in the DUMA sample. For cocaine, the difference in use was 1.3 per cent in the general population versus 2.4 per cent in the DUMA sample. This highlights why special attention needs to be given to this group—they are at a much higher risk of using drugs than the general population.

Concordance between Urinalysis Results and Self-Reported Drug Use

Table 2 examines the concordance between detainees’ self-reported use and the urinalysis results for use in the past two to three days and in the past 30 days. Heroin has the highest level of concordance between those who tested positive and those who self-reported use in the past two to three days. Of those detainees who tested positive to heroin (as described above), around 68 per cent self-reported using heroin in the past two to three days and 32 per cent denied use. With regard to those detainees testing negative to heroin, only two per cent self-reported use of the drug in the past two to three days; possible reasons for this are discussed below.

Not surprisingly, of those who tested positive to heroin, the percentage reporting use in the

Table 2: Comparing urinalysis and self-reported drug use

	Detainees recording positive urinalysis results (%)	Detainees recording negative urinalysis results (%)
Heroin		
Self-reported use past 2–3 days	68	2
Denied use past 2–3 days	32	98
Self-reported use past 30 days	80	8
Denied use past 30 days	20	92
Methamphetamine		
Self-reported use past 2–3 days	57	3
Denied use past 2–3 days	43	97
Self-reported use past 30 days	80	19
Denied use past 30 days	20	81
Cocaine		
Self-reported use past 2–3 days	63	1
Denied use past 2–3 days	37	99
Self-reported use past 30 days	76	5
Denied use past 30 days	24	95

Source: Australian Institute of Criminology, DUMA collection 1999–2002 [computer file]

past 30 days was greater than those reporting use in the past two to three days (80 per cent). This pattern is consistent among the three classes of drugs examined, most notably methamphetamine. Of those detainees testing positive to methamphetamine, 57 per cent reported use in the past two to three days, with 43 per cent denying use. However, like heroin, 80 per cent reported use in the past 30 days. Whether the difference between the two drugs’ levels of concordance for very recent use is due to a greater stigma attached to the use of amphetamines or due to users of amphetamines being more recreational users is arguable.

Two types of errors can occur when examining the results of urine testing. The first is a type A error. Type A errors occur when a positive urinalysis result is recorded but the use of the drug is denied. As is highlighted in Table 2, of those detainees testing positive, about 32 per cent denied heroin use in the past two to three days, 43 per cent denied methamphetamine use, and, although overall the numbers are very low, around 37 per cent denied cocaine use during the past two to three days. Type A errors may legitimately occur through a false positive urine test. The assay used to detect classes of drugs can differ in sensitivity to less well known drugs within a class such as amphetamines, which may influence whether the

presence of a drug is recorded as positive (Riley, Lu & Taylor 2000, p. 182). It was suggested by Visher (1991) that this occurs in around one to two per cent of cases. Urinalysis results cannot account for all discordance between the percentage testing positive and the percentage self-reporting use, and this must be explained through under-reporting of illicit drug use by the detainee. It must also be noted that under-reporting may also occur through a miscalculation of time since the drug was last taken. It is for this reason that the results for the past 30 days have also been presented—to capture those people who have given incorrect but not deliberately misleading results.

Type B errors refer to the number of detainees who have a negative urinalysis, but have self-reported that they have used recently. This can occur legitimately through a false negative urine test or through a detainee misleading the interviewer. It is more likely, however, that a type B error results from a miscalculation of the time since the drug was consumed, that it was metabolised faster than usual, or that sufficient fluids have been consumed to mask the agent. In addition, the absorption rate may vary, depending on the method (that is, oral or injecting) of consumption of the dose (Cone 1997) or, alternatively, the drug consumed may not be what the detainee was led to believe. The levels of type B

errors among this sample are low and can be seen in Table 2. Around three per cent of detainees testing negative to methamphetamine, two per cent testing negative to heroin and one per cent testing negative to cocaine self-reported use of the drug in the past two to three days.

A good example of detainees not getting what they thought they were getting is the case of MDMA (methylenedioxymethyl-amphetamine), known commonly as ecstasy. The DUMA questionnaire asks specifically about the use of ecstasy in the past two to three days and urinalysis testing is able to detect the presence of MDMA for this period. Of those detainees who self-reported using ecstasy in the past two to three days, 20 per cent tested positive to MDMA. However, 65 per cent of detainees who reported MDMA use in the past two to three days tested positive to methamphetamine. This result may indicate that in the case of ecstasy, few detainees are getting what they pay for.

When examining the prevalence of under-reporting drug use, it is important to compare the relationship between all responses not just the self-reported results for those with a positive urinalysis result (Harrison 1995). The total concordance rate is the number of detainees that did not test positive and denied use and those that tested positive and admitted use during the past two to three days as a percentage of the whole sample. The total concordance rates are 98 per cent for cocaine, 92 per cent for heroin, and 86 per cent for methamphetamine.

recent use (two to three days), mainly due to miscalculation of time leading to under-reporting occurring, although not deliberate. Given this methodological issue, for the purposes of this analysis self-reported use or denial in the past 30 days will be examined, providing a more adequate representation of those deliberately under-reporting their drug use.

Tables 3 to 5 examine whether the characteristics of detainees who under-report drug use differ from those who accurately report their drug use. Two thousand and ninety-eight detainees (83 per cent) tested positive to heroin or methamphetamine or cocaine, 400 detainees (16 per cent) tested positive to two of the three drugs, and 23 detainees (one per cent) tested positive to all three drugs. For those detainees that tested positive to two or three of the drugs, under-reporting only needed to occur for one of the drugs for them to be placed in the under-reporting category. In fact, over 95 per cent of the sample under-reported either none or all of their drug taking.

Table 3 shows the socio-demographic profile of those detainees who accurately reported use against those who under-reported use. As can be seen, there are no gender or educational differences between the two groups. Single detainees were slightly more likely to accurately report use, however this relationship is not statistically significant. Differences do exist between the groups when other sociodemographic variables are examined. Those detainees who were over the age of 30 were more

likely to under-report their drug use (37 per cent compared with 29 per cent) than those detainees who had received money from full-time work in the past 30 days (24 per cent compared with 11 per cent). Those detainees who lived in their own house over the past 30 days were also more likely to under-report their drug use (46 per cent against 34 per cent).

The findings presented in Table 3 suggest, consistent with the work of Magura et al. (1987) and Myrick et al. (2002), that those detainees with the most to lose were more likely to under-report their drug use. Older detainees living in their own home and employed full time are more likely to under-report their drug use than younger detainees who are not employed full time and living in a home not their own. No differences were found when gender, single status and educational level were examined, suggesting that it is not who you are, but what you have to lose that makes the difference when examining under-reporting of drug use.

Table 4 examines offending behaviour and past contact with the criminal justice system. The more serious offences—violent, property or drug offences—are examined. Detainees who were charged with a violent offence were no more likely to under-report than accurately report their drug use. However, those detainees who had been detained for a property offence were less likely to under-report their drug use. In addition, those detainees who had been in contact with the criminal justice system in the

Explaining Under-reporting of Drug Use

Of greatest concern to those social scientists undertaking drug-use research is the level of under-reporting (type A errors). The following section examines only those detainees that tested positive to heroin, methamphetamine or cocaine. As discussed above, there can be problems examining the levels of people under-reporting

Table 3: Sociodemographic profile by accuracy of self-reported drug use, percentage of detainees testing positive to heroin, methamphetamine or cocaine

	Accurately reporting	Under-reporting	Total
Male	79	80	79
Single	61	58	60
10 years or less of education	47	49	47
Over 30 years of age*	29	37	31
Received money from full-time work past 30 days*	11	24	14
Lived in own house past 30 days*	34	46	37
(Total n)**	(1,960)	(561)	(2,521)

* Statistical difference exists between groups, p<0.05 level.

** Due to missing data, totals for the above categories may differ slightly.

Source: Australian Institute of Criminology, DUMA collection 1999–2002 [computer file]

Table 4: *Offending behaviour by accuracy of self-reported drug use, percentage of detainees testing positive to heroin, methamphetamine, or cocaine*

	Accurately reporting	Under-reporting	Total
Detained for a violent offence	15	18	16
Detained for a property offence*	50	39	47
Detained for a drug offence*	15	12	14
Self-reported arrest in the past 12 months*	72	52	68
Self-reported prison in the past 12 months*	33	24	31
(Total n)**	(1,960)	(561)	(2,521)

* Statistical difference exists between groups , p<0.05.

** Due to missing data, totals for the above categories may differ slightly.

Source: Australian Institute of Criminology, DUMA collection 1999–2002 [computer file]

previous 12 months, either through arrest or imprisonment, were less likely to under-report their drug use. It would appear, then, that the more serious offenders and/or offenders with a history of criminal behaviour were more likely to report their drug use accurately.

Table 5 examines self-reported drug activity across a range of measures. Detainees that under-reported their drug use were less likely to report engaging in other kinds of drug-related activities. For example, 86 per cent of detainees who consistently reported use also self-reported buying drugs in the past 30 days. However, 50 per cent of detainees who inconsistently reported their drug use reported purchasing drugs in the past 30 days.

The differences between the accurate reporting and under-reporting seen in Table 5 may be attributed to one of two hypotheses. The first, and most obvious, is that if a detainee was to report their recent drug use inconsistently, they may also under-report other aspects of their drug using. For example, those in treatment programs who may anticipate negative sanctions for illicit drug use may be unwilling to disclose drug use (Magura et al. 1987; Harrell 1997). Meanwhile, it may be that once offenders and clients in treatment have been labelled as drug users, they have less reason to conceal illicit drug use (Harrison 1995). The difference in response appears to relate to the stage at which the offender or client is in the criminal justice system or treatment program (Magura, Laudet & Goldberger 1999).

Conversely, it may be that detainees who inconsistently report their drug use are recreational users who deem that their drug use is minor enough not to report on, and that as recreational users the negative responses given to other questions relating to drug use are in fact accurate. This hypothesis is supported in part by the difference in the percentage of detainees who self-reported being dependent on one of the three drugs in the previous 12 months (66 per cent of consistent reporters compared with 24 per cent of inconsistent reporters). Also in support of the second hypothesis is comparative research done by Hser, Magione & Boyle (1999) of patients with sexually transmitted diseases, patients in emergency rooms and arrestees. This research showed that those who admitted being dependent on drugs at some time were more likely to report their recent drug use. However, it is most likely that a combination of the two hypotheses account for the differences seen in Table 5.

Table 5: *Self-reported drug activities by accuracy of self-reported drug use, percentage of detainees testing positive to heroin, methamphetamine, or cocaine*

	Accurately reporting	Under-reporting	Total
On drugs at time of arrest*	68	44	63
Looking for drugs at time of arrest*	20	7	17
Purchased drugs past 30 days*	86	50	78
Dependent on illicit drugs past 12 months*	75	39	67
Ever been in drug/alcohol treatment**†	59	47	57
Ever made money from drugs*	59	38	54
(Total n)**	(1,960)	(561)	(2,521)

* Statistical difference exists between groups p<0.05.

** Due to missing data, totals for the above categories may differ slightly.

† Only asked during 2001 and 2002.

Source: Australian Institute of Criminology, DUMA collection 1999–2002 [computer file]

Discussion

Policy-makers rely on findings of self-reported drug use and it is important to engage in systematic and rigorous work to determine the accuracy of the findings. While a major focus of this paper has been examining the profile of those people that under-report or inconsistently report, the majority do accurately report their drug use—either negatively or positively. Among all adult detainees who provided a usable sample, there is a high total concordance rate between self-reported illicit drug use during the past two to three days and the results of urinalysis—92 per cent for heroin, 86 per cent for methamphetamine and 98 per cent for cocaine. However, as discussed above, when examining drug use it is important to examine the characteristics of those people that use drugs, as this is the group that are likely to give inconsistent answers when questioned on recent drug use.

The pattern that emerges of detainees who have used drugs recently and are more likely to under-report their use are detainees who:

- live in their own home;
- are employed full time;
- are over the age of 30;
- have not self-reported a drug dependence in the past 12 months; and
- have not self-reported being engaged in the drug market in the past 30 days.

Conversely, the pattern that emerges of detainees who have used drugs recently and are more likely to accurately report their use are those who:

- have been detained for a property offence;
- have had prior contact with the criminal justice system over the past year;
- self-report being on drugs at time of arrest;
- self-report being engaged in the drug market in the past 30 days;
- self-report being drug dependent in the past 12 months; and
- self-report being in drug or alcohol treatment during their lifetime.

This analysis has implications for both studies of the general population and studies of potential high-risk groups. While detainees who use illicit drugs and have been in contact with the criminal justice system or in treatment are more likely to report accurately, others who lead more socially accepted lifestyles are more likely to under-report their drug use. Given this, the context in which studies of general populations and high-risk groups are conducted need consideration, as unfavourable circumstances may lead to a high level of under-reporting.

Notes

- 1 Detainees were asked about use in the past three days during 1999 and 2000 and use in the past two days during 2001 and 2002.
- 2 The figure for the general population includes methadone and other opiates (AIHW 2002).

Acknowledgment

DUMA is funded under a two-year grant from the Commonwealth Attorney-General's Department and the South Australian Attorney-General's Department. The Sallenger Centre at Edith Cowan University, Marg Hauritz Pty Ltd, Forsythe Consultants Pty Ltd, and Walsh and Associates Pty Ltd collected the data for the AIC's DUMA project, with the assistance of the New South Wales, Queensland, Western Australia and South Australia police.

The authors would like to acknowledge Dr Margaret Cameron for her contribution to an earlier draft of this paper.

References

- Australian Institute of Health and Welfare 2002, "National Drug Strategy Household Survey: Detailed findings", *Drug Statistics Series*, no. 11, Australian Institute of Health and Welfare, Canberra.
- Cone, E. 1997, "New developments in biological measures of drug prevalence", in L. Harrison & A. Hughes (eds), *The Validity of Self-Reported Drug Use: Improving the Accuracy of Survey Estimates*, US Department of Health and Human Services, National Institutes of Health, NIDA Research Monograph 167, pp. 108–29.
- Harrell, A. 1997, "The validity of self-reported drug use data: The accuracy of responses on confidential self-administered answered sheets", in L. Harrison & A. Hughes (eds), *The Validity of Self-Reported Drug Use: Improving the Accuracy of Survey Estimates*, US Department of Health and Human Services, National Institutes of Health, NIDA Research Monograph 167, pp. 37–58.
- Harrison, L. 1997, "The validity of self-reported drug use in survey research: An overview and critique of research methods", in L. Harrison & A. Hughes (eds), *The Validity of Self-Reported Drug Use: Improving the Accuracy of Survey Estimates*, US Department of Health and Human Services, National Institutes of Health, NIDA Research Monograph 167, pp. 17–36.
- 1995, "The validity of self-reported data on drug use", *Journal of Drug Issues*, vol. 25, no. 1, pp. 91–111.
- Hser, Y., Magione, M. & Boyle, K. 1999, "Validity of self-report of drug use among STD patients, ER patients and arrestees", *American Journal of Drug & Alcohol Abuse*, vol. 25, no. 1, pp. 81–91.
- Magura, S., Goldsmith, D., Casriel, C., Goldstein, P.J. & Lipton, D. 1987, "The validity of methadone clients' self-reported drug use", *International Journal of Addictions*, vol. 22, no. 8, pp. 727–49.
- Magura, S., Laudet, A. & Goldberger, B. 1999, "Improving the validity of behavioural drug abuse research through drug testing", in T. Mieczkowski (ed.), *Drug Testing Technology: Assessment of Field Applications*, CRC Press, Boca Raton.
- Makkai, T. 2000, *Drug Use Monitoring in Australia: Drug Detection Testing, Research and Public Policy Series*, no. 25, Australian Institute of Criminology, Canberra.
- 1999, *Drug Use Monitoring in Australia: A Brief Description, Research and Public Policy Series*, no. 21, Australian Institute of Criminology, Canberra.
- Makkai, T. & McGregor, K. 2003, *Drug Use Monitoring in Australia: 2002 Annual Report on Drug Use Among Police Detainees, Research and Public Policy Series*, no. 47, Australian Institute of Criminology, Canberra.
- Manski, C., Pepper, J. & Petrie, C. 2001, *Informing America's Policy on Illegal Drugs*, National Academy Press, Washington DC.
- Myrick, H., Henderson, S., Dansky, B., Pelic, C. & Brady, K. 2002, "Clinical characteristics of under-reporters on urine drug screens in a cocaine treatment study", *The American Journal on Addictions*, vol. 11, pp. 255–61.
- Riley, K., Lu, N. & Taylor, B. 2000, "Drug screening: A comparison of urinalysis results from two independent laboratories", *Journal of Drug Issues*, vol. 30, no. 1, pp. 171–86.
- Swadi, H. 1990, "Validating and improving the validity of self-reports in adolescent substance misuse surveys", *Journal of Drug Issues*, vol. 20, no. 3, pp. 473–86.
- Visher, C. 1991, *A Comparison of Urinalysis Technologies for Drug Testing in Criminal Justice*, National Institute of Justice, Washington DC.

Kiah McGregor is a Research Analyst at the Australian Institute of Criminology.
Dr Toni Makkai is Director of Research at the AIC.



General Editor, Trends and Issues in Crime and Criminal Justice series:
Dr Adam Graycar, Director
Australian Institute of Criminology
GPO Box 2944
Canberra ACT 2601 Australia
Note: Trends and Issues in Crime and Criminal Justice are refereed papers.
Project no: 0015