NACD
National Advisory Committee on Drugs

ROSIE
Research Outcome Study in Ireland
*Evaluating Drug Treatment Effectiveness*

# Findings 4

# SUMMARY OF 1-YEAR OUTCOMES
## METHADONE MODALITY

### Research Outcome Study in Ireland (ROSI*E*)

The Research Outcome Study in Ireland (ROSI*E*) is the first national, prospective, longitudinal, multi-site drug treatment outcome study in the country. The National Advisory Committee on Drugs (NACD) commissioned this research in 2002 as required by the National Drugs Strategy Action 99. The aim of the Study is to recruit and follow opiate users entering treatment over a period of time documenting the changes observed. The contract was awarded to Dr Catherine Comiskey and NUI Maynooth.

The ROSI*E* study follows participants from the point of commencing a new treatment episode (treatment intake) and monitors progress at time-anchored points; 6 months, 1-year and 3-years after treatment intake. Between September 2003 and July 2004, the ROSI*E* study recruited 404 opiate users on entry into three-index treatments; methadone maintenance/reduction (53.2%, n=215) structured detoxification (20%, n=81) and abstinence-based treatment (20.3%, n=82). In addition, a sub-sample of opiate users were recruited from needle-exchanges (6.4%, n=26).These modalities were part of the tender brief from the NACD as they were considered to represent the most widely implemented interventions for opiate users in Ireland.

### Methadone Cohort: Follow-up Rates

Of the 215 people recruited within the methadone modality, 91% (n=196) were located and 78% (n=167) successfully completed a 1-year interview. Ten individuals withdrew from the study, 19 people were located but not successfully interviewed, and an additional 19 participants were not located. These 48 people 'lost' to follow-up were excluded from the comparative analysis to allow for valid assessment across the two time periods. However, it is worth noting that 30 of these participants were known to be still in their index treatment at 1-year. This is the fourth paper in the ROSI*E* Findings series and it provides a snapshot of the outcomes for people in the methadone modality one year after treatment intake.

### KEY MESSAGES

- Retention in the methadone modality exceeded rates reported in comparable outcome studies; 79% of the cohort were still receiving treatment in the methadone modality at 1-year follow-up.
- Participants' reported use of heroin, methadone (non-prescribed), benzodiazepines (non-prescribed), cocaine and crack reduced at 1-year follow-up.
- The most substantial changes were in opiate consumption; in terms of the proportions of participants using the drugs, the frequency of use and the average quantities consumed.
- Reductions in reported involvement in acquisitive crime (from 28% at treatment intake to 15% at 1-year) and selling/supplying drugs (from 22% at treatment intake to 11% at 1-year) were observed.
- A decrease in the number of participants who reported injecting drug use and in the frequency of injecting drug use was observed at 1-year.
- Injecting-related risk behaviour was low at treatment intake and remained stable over the time period being reported.
- Participants' physical and mental health symptoms remained largely unchanged between treatment intake and 1-year follow-up.
- No participants had died in the 1-year follow-up period within this modality.

### Methadone Modality

The provision of methadone, a long-acting opiate agonist, under medical supervision, is the main pharmacological substitution intervention for opiate users in Ireland. Initially, a low commencing dose (usually between 10-40 mls) is prescribed, aimed at achieving a level of comfort while reducing the likelihood of overdose. By the end of six weeks of treatment, the individual is usually stabilised on an appropriate therapeutic dose.

Methadone maintenance is a long-term treatment option of no fixed duration, usually forming part of a wider process of assisting an individual to reduce various forms of drug-related-harm, and to address social, legal and financial problems, until the person is ready and willing to withdraw from the drug substitution therapy. There are different models of maintenance prescribing, ranging from highly structured regimes to low-threshold programmes. The ROSI*E* study methadone cohort was recruited from the three main methadone treatment settings in Ireland; community-based clinics (22%, n=48), health board clinics (50%, n=108) and general practitioners in primary health care settings (25%, n=54). In addition, five individuals were recruited from the prison setting; however, due to an industrial dispute at the time of fieldwork, recruitment within this setting had to be terminated.

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# METHODOLOGY

## 1. Study design

The 404 ROS*IE* study participants were recruited from both inpatient (hospital, residential programmes & prisons) and outpatient settings (community-based clinics, health board clinics & GPs). Participants had to be over 18 years, commencing a new treatment episode, prepared to consent to the tracking/follow-up procedures, and willing to provide locator information. Treatment agencies participating in the study were purposively (not randomly) sampled to reflect drug treatment in Ireland, and the known geographical spread of provision and range of services. In total, 44 agencies providing approximately 54 services located in rural, urban and inner-city areas of Ireland were involved in the study. In addition, a Research Advisory Group was established by the NACD to support and monitor the research project.

Participants were interviewed at the three time periods using a pre-prepared interview schedule which examined key outcome measures including

- Drug use (drug type, frequency, cost and quantity of drug use)
- General health (a 10-point physical & mental health assessment)
- Social functioning (employment, accommodation, involvement in crime)
- Harm (injecting behaviour & experience of overdose)
- Mortality (participant/contact feedback & checking non-followed-up participants against the General Mortality Register).

In addition to a lifetime measure, measures were taken of behaviours in the 90 days preceding interviews, except for injecting-related risk behaviour variables when 30 days was used. Individuals were asked about their use of 16 substances. This document focuses on the seven most frequently reported problem drugs – referred to as target drugs – (i.e. heroin, methadone (non-prescribed), benzodiazepines (non-prescribed), cocaine powder, crack cocaine, cannabis & alcohol) and reports changes in use patterns at 1-year.

## 2. Follow-up

Follow-up of participants was assisted by the provision of at least four contacts (locator information) for each person (including a drug treatment contact, family member, GP & others). A small remuneration was provided at 1-year follow-up to acknowledge the ongoing participation of the individual in the study.

## 3. Study limitations

1. Although the findings presented here highlight positive outcomes for study participants, they do not indicate a direct causal relationship between the treatment received and the outcomes observed.
2. The study did not randomly allocate participants to treatment settings/modality or employ a control group (drug users with similar profiles not attending the index treatment).
3. Any individual behaviour change is the result of the interaction of three factors, the person, the environment and the intervention, all of which can influence outcomes but could not be controlled for in this study.

## 4. Understanding this paper

Data are presented on the 167 individuals recruited within the methadone modality who completed treatment intake and 1-year follow-up interviews. Only individuals who provided valid answers to each individual question at the two time periods were included in the analysis. Missing data were handled by excluding the cases from the particular analysis. Changes in categorical variables were analysed using the McNemar test. When the results of these tests were found to be statistically significant[1] an asterisk (*) was inserted into the frequency tables and/or graphs. Full details of these tests will form part of the ROS*IE* Study Technical Report on 12-month Outcomes. Percentages are rounded up. Comparisons of means were analysed using paired-sample t-tests (‡ indicates statistical significance).

## 5. ROS*IE* Findings Series

- **ROS*IE* Findings 1** reported on the 1-year outcomes for the followed-up population (n=305) across all modalities.
- **ROS*IE* Findings 2** presented 1-year outcomes for individuals recruited within the detoxification modality.
- **ROS*IE* Findings 3** presented 1-year outcomes for participants recruited within the abstinence modality.
- **ROS*IE* Findings 4** (this document) presents 1-year outcomes for individuals recruited within the methadone modality.

Further issue-based documents will be published in due course.

*1 Statistical significance can only be stated when tests have been carried out on the data to establish the degree of confidence with which we can infer that the differences in the observed findings are true and not due to sampling or other error. This is usually reported at a 5% level of probability which means where a p value is found to be less than or equal to 0.05 we can be confident that 95 times out of 100 the outcomes and differences observed are not due to chance.*

## Profile of Participants at Treatment Intake

The demographic characteristics of participants (n=215) in the methadone modality are presented in Table 1. The treatment entrants were typically male, on average 28 years-of-age, and primarily reliant on social welfare payments. The majority of the cohort (64%) were parents of children under 18 years-of-age. Three-fifths of participants had spent some time in prison and 17% were homeless in the 90 days prior to treatment intake interview.

**Table 1 Demographic profile of participants at treatment intake**

| | |
|---|---|
| Gender (% male) | 68 |
| Average age (yrs) | 28 |
| [a] Early school leavers (%) | 43 |
| [b] Main source of income (%) | |
| Social welfare | 81 |
| Employed | 19 |
| [b] Homeless (%) | 17 |
| Ever in prison (%) | 60 |
| Parents (%) | 64 |

[a] *Defined as leaving school before 16 years, or before completion of three years of post-primary education (Education, Welfare Act 2000)*

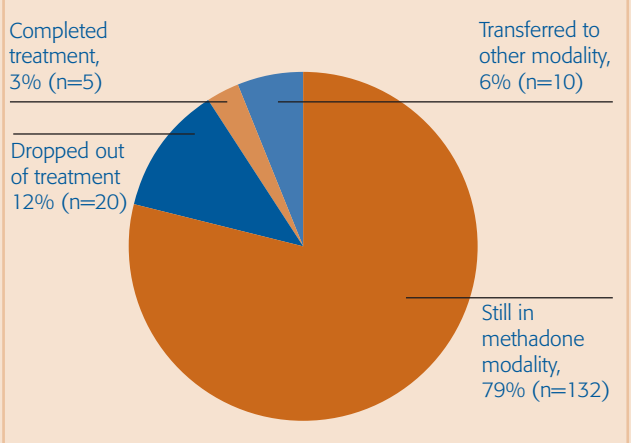
[b] *In the 90 days prior to interview at treatment intake*

## Treatment Retention

Methadone is a long-term treatment option. Figure 1 shows that retention in this modality was high; 79% (n=132) of the followed-up cohort were still receiving methadone treatment at 1-year. The vast majority of these 132 individuals continued to receive treatment in their index treatment setting (n=106); the remaining 26 people transferred to another methadone setting within the follow-up period, without a break in treatment.

Twelve per cent of participants dropped out of methadone treatment during the follow-up period; an additional 3% reported that they completed their methadone treatment, and 6% transferred to another treatment modality.

**Figure 1 Treatment Outcome at 1-year**




## Treatment Status at 1-year

One year after treatment intake 90% (n=151) of participants reported being in some form of drug treatment. The majority of the cohort was in methadone treatment (84%). As indicated previously, in most cases (132/141) these individuals' had been in continuous methadone treatment over the 1-year period. At 1-year follow-up interview, two participants were in a structured detoxification programme and none were in residential rehabilitation. Twenty-six per cent of the cohort reported attending one-to-one counselling and 15% were in group work; this category includes Narcotics Anonymous (NA) meetings, aftercare programmes, and Community Employment Schemes.

**Table 2 Treatment category at 1-year interview**

| [a] Treatment at 1-year | % | n |
|---|---|---|
| Currently in Treatment | 90 | 151 |
| Methadone maintenance/reduction | 84 | 141 |
| Detoxification programme | 1 | 2 |
| Residential rehabilitation | 0 | 0 |
| One-to-one counselling | 26 | 44 |
| Group Work | 15 | 25 |

[a] *Percentages do not sum to 100, as categories are not mutually exclusive*

## Drug Use Outcomes

The number of people who reported using heroin, methadone (non-prescribed), benzodiazepines (non-prescribed), cocaine powder and crack cocaine in the 90 days prior to interview decreased between treatment intake and 1-year follow-up (See Table 3). Polydrug use in the 90 days prior to interview also reduced; from 78% (n=131) at treatment intake to 56% (n=94) at 1-year. The average number of days in which heroin, methadone (non-prescribed) and benzodiazepines (non-prescribed) were used in the 90 days prior to interview reduced. Non-significant reductions were observed in the frequency of use of the other target drugs, as indicated by changes in mean days used (Table 3). In addition, the consumption levels of heroin, methadone (non-prescribed) and cocaine decreased over the time period, as indicated by changes in the mean daily quantity used in the 90 days prior to interview.

The most substantial changes in drug use over the follow-up time period was in individuals' opiate consumption (i.e. heroin and non-prescribed methadone); in terms of the proportions of participants using the drugs, the frequency of use and mean daily quantities consumed. It is worth noting that at 1-year follow-up 16% (n=27) of participants reported that they had not used any illicit drugs (excluding alcohol) in the 90 days prior to interview.

**Table 3 Drug use in the 90 days prior to treatment intake & 1-year interview**

| | % Used | | | | Mean days used | | | | Mean daily quantity used | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Intake | | 1-year | | Intake | | 1-year | | Intake | | 1-year | |
| | % | n | % | n | Mean | sd | Mean | sd | Mean | sd | Mean | sd |
| Heroin (grams) | 84 | 139 | 53 | 88* | 49.8 | 35.9 | 15.4 | 27.6‡ | 1.0 | 1.0 | 0.3 | 0.7‡ |
| [a] Methadone (mls) | 48 | 80 | 16 | 26* | 15.9 | 26.6 | 3.8 | 15.0‡ | 31.5 | 44.1 | 9.5 | 33.9‡ |
| [a] Benzodiazepines (mgs) | 44 | 72 | 26 | 43* | 17.6 | 32.9 | 7.1 | 18.3‡ | 35.6 | 93.4 | 22.7 | 87.1 |
| Cocaine (grams) | 40 | 66 | 22 | 37* | 4.8 | 12.8 | 3.7 | 14.0 | 0.8 | 2.6 | 0.3 | 1.1‡ |
| Crack cocaine | 16 | 26 | 7 | 12* | 2.6 | 11.6 | 1.2 | 7.9 | nc | nc | nc | nc |
| Cannabis (joints) | 67 | 104 | 63 | 98 | 43.8 | 41.8 | 37.8 | 40.6 | 5.4 | 11.7 | 5.7 | 16.4 |
| Alcohol (units) | 55 | 84 | 54 | 82 | 12.1 | 22.4 | 11.8 | 23.5 | 7.0 | 9.0 | 6.8 | 11.1 |

* *McNemar test revealed statistically significant changes.* ‡ *Paired t-test showed statistical significance. nc Crack cocaine was excluded from the analysis due to the inconsistency in the way data was reported.* [a] *Refers to the use of non-prescribed drugs.*

## Average amount spent on each drug

The aforementioned changes in reported drug use were accompanied by the following changes in the average amount individuals spent (€) on a typical drug using day, on four substances:

- A reduction in the average daily heroin spend[a] from €115.10 (sd=155.0) at treatment intake to €35.80 (sd=109.30) at 1-year
- A reduction in the average daily cocaine powder spend[b] from €87.70 (sd=282.70) at treatment intake to €20.70 (sd=74.30) at 1-year
- A reduction in the average daily crack cocaine spend[c] from €32.50 (sd=103.30) at treatment intake to €10.40 (sd=42.5) at 1-year
- A (non-significant) reduction in the average daily cannabis spend[d] from €2.10 (sd=4.5) at treatment intake to €2.00 (sd=5.80) at 1-year

[a] *Based on a bag of heroin (0.113 grams) costing €20*

[b] *Based on 1 gram of cocaine powder costing €110 at intake €66 at 1-year*

[c] *Based on 1 rock costing €50 and/or the cost of cocaine powder as above*

[d] *Based on 1 ounce of cannabis costing €110 at intake €100 at 1-year (cost per joint, 39c at intake 35c at 1-year)*

Considering only those who reported the use of each drug at intake and 1-year follow up on a typical drug using day, the following was observed:

- At baseline, half of the respondents using **heroin** were spending more than €88.50 per day, while at 1-year, half of the respondents were spending more than €40 per day.
- At baseline, half of the respondents using **cocaine** were spending more than €110 per day, while at 1-year, half of the respondents were spending more than €66 per day.
- At baseline, half of the respondents using **crack cocaine** were spending more than €249.25 per day, while at 1-year, half of the respondents were spending more than €161.17 per day.
- At baseline, half of the respondents using **cannabis** were spending more than €3.20 per day, while at 1-year, half of the respondents were spending more than €3.09 per day.

## Crime Outcomes

There was a reduction in the percentage of participants' reporting involvement in acquisitive crime, from 28% (n=44) at treatment intake to 15% (n=23) at 1-year.

The numbers of participants who reported selling/supplying drugs in the 90 days prior to interview decreased between treatment intake and 1-year (see Table 4). In addition, the proportion of participants' who reported theft from a shop, handling stolen goods, and soliciting reduced over this time period.

Overall, a higher proportion of participants reported criminal involvement in the 90 days prior to treatment intake interview (49%, n=75) compared to 1-year follow-up interview (27%, n=41).

**Table 4 Offending behaviour in the 90 days prior to treatment intake & 1-year interview**

| | % committed | | | |
|---|---|---|---|---|
| | Intake | | 1-year | |
| | % | n | % | n |
| Selling/supplying | 22 | 33 | 11 | 17* |
| Theft from a person | 8 | 12 | 3 | 5 |
| Theft from a house/home | 5 | 7 | 5 | 8 |
| Theft from a shop etc. | 20 | 30 | 9 | 14* |
| Theft from a vehicle | 5 | 8 | 4 | 6 |
| Theft of a vehicle | 6 | 9 | 3 | 4 |
| Handling stolen goods | 22 | 33 | 8 | 12* |
| Fraud/forgery/deception | 8 | 12 | 3 | 4 |
| Assault | 5 | 7 | 3 | 4 |
| Criminal damage | 5 | 8 | 3 | 4 |
| Soliciting | 6 | 9 | 1 | 1* |
| Breach of the peace | 7 | 10 | 2 | 3 |

* *McNemar test revealed statistically significant changes*

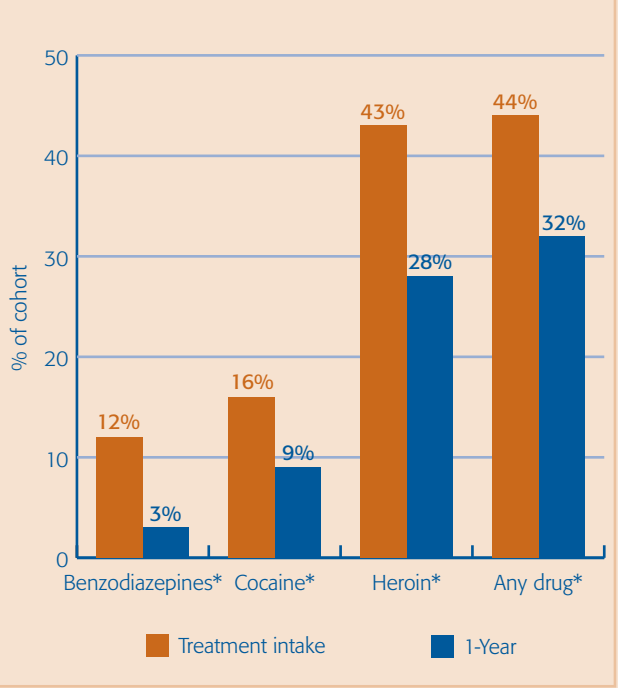
## Risk Behaviour Outcomes

The reduction in participants' drug use was accompanied by a decrease in the numbers who reported injecting drug use. At treatment intake 44% (n=73) of the cohort injected a drug in the 90 days prior to interview compared with 32% (n=53) at 1-year. A statistically significant decrease in injecting was reported across the three most commonly injected substances; cocaine, heroin and benzodiazepines (see Figure 2).

Participants also reported a decrease in the frequency of injecting drug use, as indicated by changes in the average number of days individuals reported injecting in the 90 days prior to treatment intake and 1-year interview. At treatment intake, participants reported injecting on average 23.1 days (sd=34.6) out of the previous 90, this reduced to 8.5 days (sd=21.1) at 1-year follow-up. A non-significant reduction was observed in the average number of times per day individuals reported injecting. At treatment intake, individuals reported injecting on average 1.4 times per day (sd=2.2), compared with 0.9 times per day (sd=3.1) at 1-year.

There was a (non-significant) reduction in the proportion of participants who reported an overdose in the 90 days prior to interview, from 8% (n=12) at treatment intake to 6% (n=9) at 1-year.

**Figure 2 Injecting drug use by drug type in the 90 days prior to treatment intake & 1-year interview**




* *McNemar test revealed statistically significant change*

There were no (significant) changes in participants' injecting-related risk behaviours. At treatment intake, participants reported low rates of borrowing, lending, and reusing own injecting equipment; and the sharing of injecting paraphernalia (e.g. spoons and filters). Slight reductions in the numbers who reported lending used injecting equipment, reusing own injecting equipment, and sharing injecting paraphernalia were observed (see Table 5).

**Table 5 Injecting-related risk behaviour in the 30 days prior to treatment intake & 1-year interview**

| | % reported | | | |
|---|---|---|---|---|
| | Intake | | 1-year | |
| | % | n | % | n |
| Borrowed used needles/ syringes | 3 | 4 | 3 | 4 |
| Lent used needles/syringes | 5 | 7 | 5 | 8 |
| Reused own needles/ syringes | 15 | 19 | 11 | 14 |
| Used filters/spoons after someone | 4 | 6 | 2 | 3 |

## Health Outcomes

Few significant improvements in the physical or mental health symptoms of the respondents were evident over the time period.

Table 6 shows that the numbers of participants who reported nine of the 10 physical health symptoms increased over the time period. A significant increase in the proportions reporting one of these symptoms, stomach pains, was observed.

**Table 6 Physical health symptoms in the 90 days prior to treatment intake & 1-year interview**

| | % reported | | | |
|---|---|---|---|---|
| | Intake | | 1-year | |
| | % | n | % | n |
| Poor appetite | 74 | 110 | 68 | 101 |
| Tiredness/fatigue | 66 | 97 | 67 | 99 |
| Nausea (feeling sick) | 37 | 55 | 38 | 56 |
| Stomach pains | 28 | 41 | 39 | 58* |
| Difficulty breathing | 27 | 40 | 28 | 41 |
| Chest pains | 18 | 26 | 18 | 27 |
| Joint/bone pains | 25 | 37 | 29 | 44 |
| Muscle pains | 22 | 33 | 25 | 37 |
| Numbness/tingling arms/legs | 18 | 26 | 23 | 34 |
| Tremors/shakes | 22 | 31 | 22 | 32 |

* *McNemar test revealed statistically significant changes*

Table 7 illustrates that there were some changes (although not statistically significant) in the proportion of participants reporting the range of mental health symptoms over the time period under investigation. Reductions were observed in the numbers reporting four mental health symptom, feeling tense, feeling worthless, feeling lonely, and thoughts of ending life. Conversely, increases were observed in the numbers who reported the remaining six mental health symptoms.

**Table 7 Mental health symptoms in the 90 days prior to treatment intake & 1-year interview**

| | % reported | | | |
|---|---|---|---|---|
| | Intake | | 1-year | |
| | % | n | % | n |
| Feeling tense | 55 | 76 | 53 | 73 |
| Suddenly scared for no reason | 25 | 35 | 25 | 36 |
| Feeling fearful | 29 | 40 | 34 | 46 |
| Nervous/shaking inside | 30 | 42 | 33 | 46 |
| Panic attacks | 18 | 26 | 24 | 34 |
| Feeling hopeless about future | 53 | 72 | 53 | 73 |
| Feelings of worthlessness | 46 | 63 | 40 | 55 |
| No interest in things | 52 | 74 | 58 | 82 |
| Feeling lonely | 50 | 69 | 47 | 64 |
| Thoughts of ending life | 22 | 30 | 20 | 27 |

## Service Contact

There was an increase in participants' contact with three health and social care services – GP's, employment/education services and housing/homeless services – from treatment intake to 1-year (see Table 8). The increase in contact with the latter was accompanied by a decrease in reported homelessness in the 90 days prior to interview (from 17% at treatment intake to 10% at 1-year). In addition, although not statistically significant, participants' reported a decrease in hospital admissions and treatment in A & E departments.

**Table 8 Contact with health & social care services in the 90 days prior to treatment intake & 1-year interview**

| | % reported | | | |
|---|---|---|---|---|
| | Intake | | 1-year | |
| | % | n | % | n |
| Stayed overnight in hospital | 11 | 18 | 8 | 13 |
| Treated in A & E | 17 | 27 | 14 | 22 |
| Seen GP | 34 | 52 | 46 | 69* |
| Out-patient appointment | 12 | 19 | 14 | 21 |
| Contact with social services | 8 | 13 | 10 | 16 |
| Employment/education services | 11 | 16 | 31 | 45* |
| Social welfare services | 25 | 38 | 18 | 28 |
| Housing/homeless services | 13 | 19 | 29 | 43* |

* *McNemar test revealed statistically significant changes*

## Differences Between Those Interviewed at 1-year and Those 'Lost' to Follow-up

Less than one-quarter of the cohort (22%, n=48) did not complete the 1-year follow-up interview. Analysis was undertaken to determine whether there were any differences between those interviewed at 1-year and those 'lost' to follow-up at treatment intake, which may bias the results in the current document.

Table 9 shows the differences (at treatment intake) in key variables between the two groups. Participants who were interviewed at 1-year were significantly more likely to have been on social welfare.

The treatment intake characteristics and problems of participants interviewed at 1-year and those 'lost' to follow-up were compared using a logistic regression of key variables (age, gender, frequency of heroin use, quantity of heroin used, frequency of cocaine use, number of drugs used, number of days injecting drug use, frequency of alcohol use, previous treatment for drug/alcohol use, treatment setting). The results showed none of the variables had a significant effect on whether participants were interviewed at 1-year.

**Table 9 Comparison of participant characteristics at treatment intake between those 'lost' to 1-year follow-up and those interviewed**

| | 'Lost' | Interviewed |
|---|---|---|
| | (n=48) | (n=167) |
| Gender (% male) | 77 | 66 |
| Mean age (yrs) | 29.4 | 28.2 |
| Age left school (yrs) | 14.8 | 15.2 |
| On social welfare (%) | 66 | 85* |
| Treatment setting | | |
| Inpatient (%) | 10 | 0 |
| Outpatient (%) | 90 | 100 |
| Time on waiting list (wks) | 12.8 | 11.1 |
| Rated treatment as very important (%) | 77 | 80 |
| Used heroin last 90 days (%) | 75 | 84 |
| Mean days used heroin | 38.5 | 49.8 |
| Used cocaine last 90 days (%) | 44 | 40 |
| Mean days used cocaine | 5.6 | 4.8 |
| Used alcohol last 90 days (%) | 50 | 55 |
| Mean days used alcohol | 12.2 | 12.0 |
| Injected last 90 days (%) | 42 | 44 |
| Still on methadone (%) | 62.5 | 79 |

* *Chi-square test statistically significant*

## Conclusion

ROSI*E* is the first national study to have examined 1-year treatment outcomes for opiate users. The findings presented in this document demonstrate that retention in methadone treatment was high, and continued participation in a methadone programme substantially reduces individuals' opiate use, their injecting drug use, and their involvement in acquisitive crime.

Retention in the methadone modality was higher then in comparable outcome studies. The vast majority of ROSI*E* participants followed up within the methadone modality (79%, n=132) continued to receive methadone treatment. Even when we add those lost to follow-up interview, the overall retention rate remains high at 75% (n=162/215). Retention rates in NTORS, the UK outcome study, were lower; 56% of individuals recruited within the methadone maintenance and 51% within methadone reduction programmes were still in methadone treatment at 1-year (Gossop *et al*., 2000)[1]. Furthermore, only 18% of the ROSI*E* participants left methadone treatment over the 1-year follow-up (drop out 12%, transferred to other modality 6%) compared with one-third (32.6%, n=156) of the NTORS methadone cohort. In the Australian outcome study, ATOS, 44% of those who entered methadone at treatment intake were still enrolled in their index treatment at 1-year follow-up (Darke *et al*., 2005)[2]. DORIS, the Scottish outcome study reported that 51.2% of individuals recruited in the methadone modality were still in their index treatment agency at eight months follow-up (Slote Morrison & McKeganey, 2006)[3]. In addition, a higher rate of retention in the national treatment system was observed among the ROSI*E* methadone cohort at 1-year than in other outcome studies; 90% reported being in some form of treatment at 1-year, compared with 72% of the NTORS methadone maintenance group and 70% of the methadone reduction group (Gossop *et al*., 2000)[1] and 79% of the ATOS methadone cohort (Teesson *et al*., 2006)[4].

ROSI*E* drug use outcomes were broadly comparable with other studies. Within the ROSI*E* study significant reductions in the proportions using heroin, non-prescribed methadone, benzodiazepines, cocaine and crack cocaine were observed. In addition, the frequency of use of heroin, non-prescribed methadone and benzodiazepines also reduced significantly. The NTORS study also found significant reductions in the frequency of use of heroin, non-prescribed methadone, benzodiazepines, crack cocaine and cocaine powder among individuals recruited within the methadone modality at 1-year follow-up (Gossip *et al*, 2000)[1]. As in NTORS findings from the ROSI*E* study indicate less satisfactory reductions in alcohol use. Within the ROSI*E* study there were no significant reductions in the proportions using alcohol, the mean amount of alcohol consumed or in the mean number of days alcohol was used. However, the proportions drinking within the ROSI*E* study were lower than those observed in NTORS 54% vs. 63% (Gossop *et al*., 2000)[1].

The ATOS study (Teeson *et al*., 2006)[4] reported a higher heroin abstinence rate at 1-year compared with ROSI*E* (65% vs. 47%). However, their rates related to abstinence in the preceding month, while ROSI*E* employed longer time periods and abstinence rates applied to the 90 days preceding interview. The definition of abstinence varies from one study to another. At 1-year, 16% of the ROSI*E* cohort reported abstinence from all illicit and non-prescribed drugs. NTORS rates were somewhat higher, with 24.3% of the methadone maintenance cohort reporting abstinence from all illicit drugs at 2-years (Gossop *et al*., 2001)[5]. The DORIS study usually refers to abstinence as being abstinence from all drugs (including prescribed methadone). McKeganey *et al*., (2006)[6] reported a drug abstinence rate of 3.4% for the methadone cohort at 33 months post treatment intake; ROSI*E*'s comparable abstinence rate was 5% at 1-year.

In terms of the ROSI*E* participants' physical and mental health, no significant improvements were observed. Within ATOS a health index was computed and authors observed some significant improvements in both the physical and mental health of participants (Teesson *et al*., 2006)[4]. Similarly with NTORS authors found that improvements in health were only observed in certain groups (Gossip *et al*., 2000)[1]. However, the authors observed that at 1-year follow-up the health status of NTORS'clients was still somewhat problematic.

Methadone is a long-term treatment option; consequently retention in treatment is considered a key outcome at 1-year. In this study individuals recruited in the ROSI*E* methadone modality compared favourably with other international outcome studies. Participants' drug use reduced, as did their injecting behaviour, and involvement in crime. Although improvements in physical and mental health were disappointing, results from the ROSI*E* 3-year follow-up will shed some light on whether improvements in this domain are associated with long-term treatment.

## References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