Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population

Technical Report

UCD DUBLIN

NACDA
National Advisory Committee on Drugs and Alcohol

Executive Summary

Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population

This Technical Report provides background to and detailed information about the methods employed and logistics associated with the 2011 UCD/NACDA Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population. It also contains copies of documentation such as the questionnaire and the prisoner information leaflets.

The main report of the 2011 UCD/NACDA Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population is published as a separate document.

National Advisory Committee on Drugs and Alcohol (NACDA)* Research Advisory Group

Dr. Justine Horgan, Senior Researcher, NACDA

Ms. Joan O'Flynn, Director NACD (from February 2011 to February 2012)

Ms. Susan Scally, Director, NACD (to February 2011)

Mr. Tony Geoghegan, Merchants Quay

Dr. Jean Long, Alcohol and Drug Unit, Health Research Board

Ms. Frances Nangle Connor, Director of Nursing Services, Irish Prison Service

Ms. Dairearca Ní Néill, Office of Minister for Drugs (from February 2011)

Mr. Aidan O'Hora, Health Protection Surveillance Centre, Health Services Executive

Ms. Nicola Perry, Coordinator, Community Response

Mr. Julian Pugh, Social Inclusion Unit, Health Services Executive

Ms. Anna Quigley, HIV Alliance

* In 2013 the remit of the NACD was extended to include alcohol and is now called the National Advisory Committee on Drugs and Alcohol (NACDA).

UCD Team

Principal Investigator: Dr. Anne Drummond Senior Lecturer, SPHPPS*

Co-Principal Investigator: Dr. Mary Codd, Senior Lecturer, SPHPPS*

SPHPPS* Team:

Professor Cecily Kelleher, Head of School SPHPPS*

Ms. Nora Ann Donnelly, Research Assistant

Mr. Darren McCausland, Research Assistant

Ms. Joanna Kozielec, Administrator (to August 2011)

Ms. Brid O'Shea, Administrator (from August 2011)

UCD Advisors:

Dr. Anna Clarke, SPHPPS*

Dr. Jeff Connell, National Virus Reference Laboratory

Dr. Gloria Crispino O'Connell, Centre for Support and Training in Analysis and Research

Dr. Suzie Coughlan, National Virus Reference Laboratory

Prof. Denis Cusack, Medical Bureau of Road Safety and Forensic & Legal Medicine, UCD School of Medicine and Medical Science

Professor Leslie Daly, Centre for Support and Training in Analysis and Research

Dr. Deirdre Healy, UCD Institute of Criminology

Dr. Richie Maguire, Medical Bureau of Road Safety and UCD

Dr. John Mehegan, SPHPPS*

Professor Ian O'Donnell, UCD Institute of Criminology

** UCD School of Public Health, Physiotherapy and Population Science*

This document should be cited as: Drummond, A., Codd, M., Donnelly, N., McCausland, D., Mehegan, J., Daly, L. and Kelleher, C. (2014). *Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population Technical Report.* Dublin: National Advisory Committee on Drugs and Alcohol.

Acknowledgements

The research team would like to thank all of the prisoners who participated in this study.

We would also like to thank the following for their invaluable advice, support and contribution:

- Members of the NACDA Research Advisory Group
- The Chair, Director, Senior Researcher and staff of the NACDA
- Members of the advisory team in UCD
- The Director General of the Irish Prison Service and the Prison Based Research Ethics Committee
- Prison Governors, Deputy Governors and Assistant Governors, Chief Officers, Assistant Chief Officers, and Officers
- The appointed Prison Liaison person in each prison
- Complex Nurse Managers, Nurse Managers, Nurse Officers, and Addiction Nurses
- Teachers, Counsellors and Industrial Supervisors
- Frances Nangle Connor, Geoff Gibbons, Seamus Beirne and John Weadick of the Irish Prison Service
- Prisoners who helped with piloting the study instruments and documentation
- Red Cross Volunteer prisoners in Wheatfield prison
- Staff and clients in PACE in Santry, who helped with piloting the instruments and documentation.

The team also thanks fieldworkers and occasional research assistants: Siobhan Boyle, David Doyle, Sherly George, Paul Harrington, Alan Macken, Michelle Martyn, Orla McMahon, Róisín Nic Chártaigh, Stephanie Offergeld, Etáin Quigley, Ruth Rafferty, and Eílis Sutton.

Table of Contents

Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population

Table of Contents

Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population

List of Tables

List of Figures

Glossary of Acronyms

Anti-HCV	Hepatitis C Virus Antibody Test
Anti-HIV	HIV Virus Antibody Test
ASF	Adjusted Sampling Frame
BBV	Blood-Borne Virus
CI	Confidence Interval
DOA	Drug of Abuse
EIA	Enzyme Immunoassays
ELISA	Enzyme-Linked Immunosorbent Assays
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
HBsAG	Hepatitis B surface antigen test
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human Immunodeficiency Virus
IDU	Intravenous Drug Use(r)
IPS	Irish Prison Service
MDT	Mandatory Drug Test
NACDA	National Advisory Committee on Drugs and Alcohol
NSP	Needle and Syringe exchange Programme
OR	Odds Ratio
PD	Problem Drug Use
PRIS	Prisoners' IPS identity number
RAG	Research Advisory Group
SF	Sampling Frame
UCD	University College Dublin

Chapter 1 Study Overview and Project Management

Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population

1.1 Background

The National Advisory Committee on Drugs and Alcohol (NACDA) was established in July 2000 to advise the Government in relation to the prevalence, prevention, treatment/rehabilitation and consequences of problem drug use in Ireland, based on the analysis of research findings and information. The Committee oversees the delivery of a work programme on the extent, nature, causes and effects of drug use in Ireland. The research and information actions for which the NACDA has lead responsibility are set out in the National Drugs Strategy (interim) 2009–2016.

The mission of the Irish Prison Service is to provide safe, secure and humane custody for people who are sent to prison. In 2010 the Irish Prison Service had an average of 4,000 prisoners in custody at any one time and reported 13,557 committals in 2008 which comprised of 10,928 persons. All prisoners committed to prison receive a health screen and medical assessment from appropriately qualified staff.

A Steering Group, set up under the aegis of the former National Drug Strategy Team, carried out an assessment of the need for prison-based needle exchange in Ireland in 2009. The report's primary conclusions were that prison needle exchange constitutes a viable and effective means of addressing the remaining drug problem and its associated health risks within Irish prisons but that there was no up to date information on the prevalence of drug use, including intravenous drug use, in Irish prison settings. The Steering Group therefore recommended that research into the prevalence of drug use, including intravenous drug use, and Blood-Borne Viruses among prisoners should be carried out before consideration be given to introducing needle exchange into a prison setting.

Against this background, the NACDA sought to establish the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the prisoner population. It was intended to validate the self-reported drug results through the screening of saliva for drug metabolites.

1.2 Request for Tender

The NACDA published a request for tender (Appendix 1) for the study on 31 May 2010 and University College Dublin (UCD) submitted a tender on 12 Jul 2010. On 02 Sep 2010, the NACDA requested that the scope of the tender be amended to include only inmates (exclude committals); UCD submitted a revised tender on 10 Sep 2010. UCD was notified on 18 Sep 2010 that their tender was successful. UCD sent an application for ethical approval for the study to the Prison-Based Research Ethics Committee on 21 Sep 2010, which was approved subject to committee agreement of the consent form when developed.

1.3 Study Aim and Objectives

The aim of the study was to estimate the prevalence of drug use, including intravenous drug use, among the prisoner population in Ireland in order to determine the need for drug treatment and harm reduction (including needle exchange) services in Irish prisoners.

The project objectives were:

1. To describe the nature, extent and pattern of consumption for different drugs among the prisoner population;
2. To describe methods of drug use, including intravenous drug use, among the prisoner population;
3. To estimate the prevalence of blood-borne viruses among the prisoner population and to identify associated risk behaviours;
4. To measure the uptake of individual drug treatment and harm reduction interventions (including hepatitis B vaccination) in prison.

1.4 NACDA Research Advisory Group

The Research Advisory Group (RAG) comprised the Director and Senior Researcher from the NACDA, in addition to representation from the Irish Prison Service, the Health Services Executive, the Health Research Board, the Office of the Minister for Drugs, Merchants Quay, and the HIV Alliance. A list of individuals representing these organisations is provided in Appendix 2. Close collaboration with the RAG took place during the lifetime of the research project to enable the early identification and resolution of design or other research issues.

1.5 UCD Study Team

The UCD study team comprised two Principal Investigators, two full-time research assistants dedicated to the project, and an advisory team comprised of senior academics with experience and expertise relevant to the project from both within the UCD School of Public Health, Physiotherapy and Population Science, and from expert UCD units, such as the National Virus Reference Laboratory and the Medical Bureau of Road Safety. A team of fieldworkers was recruited for the duration of fieldwork. Details of the UCD team are provided in appendices 3 and 4.

1.6 UCD Liaison with NACDA

The team liaised with the NACDA Research Advisory Group (RAG) for the project on a schedule agreed at an early stage of the project. Meetings with UCD and the NACDA and/or the RAG were held on a regular basis. UCD provided regular reports to the RAG.

1.7 UCD Team Project Management

The PIs (Principal Investigator and co-Principal Investigator) met formally on a monthly basis throughout the time of the project with the research assistants and senior academics. Advisory team members from the Institute of Criminology, the National Virus Reference Laboratory and the Medical Bureau for Road Safety attended at relevant stages of the project. Meetings were chaired by the Principal Investigator and key decisions and actions were minuted. These meetings were concerned with high level decision-making on data instrumentation, analysis and dissemination strategies.

One or both PIs held regular (at least weekly) operational meetings with the research assistants throughout the lifetime of the project including during the data collection and cleaning stages. The purposes of these meetings were to deliver successful response rates, handle practicalities that arose with data collection or respondents, and to keep to the pre-agreed timelines for data collection, inputting and analysis.

Chapter 2 Study Design

Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population

This is a cross-sectional study of the prisoner population in the Republic of Ireland. The study was undertaken in all prisons targeting a random sample of prisoners. The study instruments comprised a self-administered questionnaire, and separate oral fluid sampling for a) five drugs (cannabinoids, opiates, methadone, cocaine and benzodiazepines); and b) blood-borne viruses (hepatitis B, hepatitis C and the Human Immunodeficiency Virus (HIV)).

2.1 Sampling

This section describes the sample size calculations, the sampling strategy and the sampling procedures.

2.1.1 Sample Size Calculations

Calculation of the sample size for accurate estimation of a proportion (in this instance a prevalence rate) used the estimated populations of prison inmates outlined in the NACDA tender document, and was based on: the size of the population from which the sample was to be drawn; the estimated prevalence of the condition of interest; an acceptable the margin of error for the prevalence estimate; and the level of confidence with which the prevalence will be estimated.

a) As the objective was to determine with accuracy the prevalence of drug use and blood-borne viruses (BBVs) in the prison inmate population, the prevalence rates reported in previous similar studies in similar populations were used. The study by Allwright et al. (1999) reported any drug use among inmates as 54%, and any BBV among inmates as 38.5%.

b) As the prevalence of the condition/trait of interest in the population is an estimate and may vary depending on certain characteristics of the population and over time it is necessary to determine the maximum desirable margin of error. This usually ranges from 2% to 5%. The margin chosen has a significant effect on the sample size required. These parameters have been summarised in the table below and estimates of the sample sizes required and the numbers needed to survey are derived for different margins of error (Sample Size Calculator: http://www.raosoft.com/samplesize.html). In statistical terms a 10% interval (i.e. 5% margin of error) within which the 'true' population prevalence of either drug use or BBVs lies may be regarded as being unreasonably large (http://www.research-advisors.com/tools/samplesize.htm). A sample size which permits an interval of 6% (i.e. margin of +/-3%) was chosen.

c) The confidence level with which it is desired to establish the estimate of prevalence (i.e. an acceptable Type 1 error risk) was set at 95%.

The computations based on all of the inputs outlined above are given in the table below.

Table 2.1 Sample size computations

Population Size	Prevalence	Margin of Error	Required Sample Size	N needed to Survey
Inmates	**Any Drug Use**			**Assuming 80% Response**
4,000[1]	54%[2]	3%	839	1,049
	Any BBVs			
	38.5%[2]	3%	807	1,009

1 NACDA Estimate
2 Allwright et al.,1999

The likely response rate took into account the response rates to similar studies among prison inmates, which vary from 62% in Northern Ireland (Danis et al., 2007) to 80% in the UK (Weild et al., 2000) to 85% in Ireland (Allwright et al., 1999). A likely response rate of 80% among inmates was used.

In summary, using a sample of 1,049 prison inmates in order to achieve a sample of approximately 840 (with 80% response rate), there is a 95% probability that the estimate of prevalence of any drug use (of those assessed) or any blood-borne virus (of HIV, Hep B or Hep C) derived will be within 3% of the population values for these rates. A sample size which permits a 6% interval (i.e. margin of +3%) was chosen.

2.2 Sampling Strategy

In the absence of any data that allowed the prisons to be categorised definitively as high, medium or low drug use, all prisons were included in the study. The sampling strategy was to survey a random sample of the prison population proportionate to the population in each prison, to achieve a sample size of 840, in order to estimate prevalence of drug use and blood-borne virus prevalence with a confidence level of 95% and a ± 3% margin of error. It was expected that a greater number (approximately 1,050) would need to be randomly selected in order to achieve this sample, based on an expectation of a slightly lower response rate (80%) to that of previous similar Irish studies.

Sampling frame: All inmates (sentenced and remand) currently in prison in the Republic of Ireland (2009 bed capacity 4,106: daily average occupancy 3,881). In this context, 'currently' implied current to the period in which the study was administered.

Final sample size required: It was estimated that 840 participants were required to provide estimates of prevalence of drug use and BBVs which are within 3% of previous published estimates of same.

Sample size chosen: Based on previous estimates of participation among prisoners, and anticipating an 80% response rate, it was calculated that 1,050 prisoners would need to be selected from the sampling frame for approach. If in the event that participation was substantially lower than 80% in the first prisons, for whatever reason, it was planned that the sample size to be chosen in subsequent prisons would be increased to ensure an adequate number for estimation of prevalence. During fieldwork, the response rate was lower than anticipated in the first few prisons visited and the sample size was increased accordingly. This process is described below.

Sampling Strategy: Participants were selected using random sampling within prisons proportionate to the number in each prison. The exception was Limerick Female Prison, which at the time of strategy development had an operational capacity of 22. For logistical reasons and in the interest of enhancing participation, all inmates in this prison were to be surveyed.

Exclusion Criteria: Prisoners aged $<$ 18 years and $\geq$ 65 years old, hospitalised prisoners or those deemed unfit to consent or participate, and prisoners deemed to be too high a security risk by the Irish Prison Service (IPS). Prisoners not present on the day of the study were also excluded from random selection where this was known in advance.

Sampling: Following exclusions, sampling was random within prisons, proportionate to occupancy, and without replacement.

2.3 Sampling Procedure

Fieldwork (described below) was carried out on a prison by prison basis over a seven week period between February and April 2011.

The sampling procedure was as follows:

- A live list of PRIS numbers (prisoners' IPS identity number) for all prisoners in custody aged 18 to 64 inclusive for each prison was provided, by the IPS IT department, to the Governor of each prison, on a date shortly before each visit. The sampling frame (SF) for all prisons combined thus comprised a total of 4,474 prisoners aged between 18 and 64 inclusive. Because fieldwork was carried out over seven weeks, the list for each prison was generated on a rolling basis as near to the date of the visit as feasible for prison logistics purposes, and lists will have included an unidentifiable number of prisoners who appeared on more than one list (double-counted) due to prisoner movement between prisons over the timeframe of the study. The IPS considered that this was likely to be a relatively low number.
- The Governors were asked to exclude the following from the list: prisoners who they deemed could not be included for security reasons, prisoners deemed medically or psychologically unfit to participate, and prisoners for whom it was known in advance would not be in custody during the visit due to being released, on planned temporary release, in court, or in hospital. Political prisoners, having been notified about the study in advance by the relevant Governor, declined as a group to participate and were also excluded in advance of random sampling. In total, 485 prisoners (11%) were excluded from the lists by the Governors in advance of random sampling.
- Each Governor provided his/her list of non-excluded prisoners' PRIS numbers to the team. These combined lists, the adjusted sampling frame (ASF), comprised 3,989 prisoners.
- A random sample was generated by the research team for each prison and the list of PRIS numbers returned to the Governor. The proportion selected by random sample was decided on a prison by prison basis, based on the target sample number in each prison (proportionate to population size) but mediated by locally provided information about prisoner turnover, Governors' views on how likely prisoners would be to participate, and the response rate in previously visited prisons or prisons with a similar prisoner profile. This was based on the formula shown in figure 2.1.
- In six prisons it was necessary to increase the initially requested proportion and additional time or a follow-up visit to the prison was arranged if necessary. These prisons were among the earlier prisons visited during fieldwork: Mountjoy (increased requested sample from 27% to 41%), Wheatfield (from 34% to 52%), Portlaoise (from 47% to 60%), Cloverhill (from 42% to 50%), St. Patrick's Institution (from 53% to 71%), and Dóchas (from 55% to 70%). The final proportion of randomly selected prisoners ranged from 28% to 71% of the population in individual prisons, with the exception of Limerick female prison, where all prisoners aged 18 to 64 were included in the sample because of the very small population involved. The total sample requested from all prisons was 1,989, (total 50% of ASF, range 28–100% for individual prisons).
- During fieldwork, 323 prisoners (8% of ASF) were not available to participate in the study on the day(s) of the team's visit, because of unanticipated transfer, release, temporary release, court, hospital visit, 23-hour lock up or being placed in isolation, or not being available for unspecified reasons. This included a small number of selected prisoners (10) deemed not to have sufficient English to understand what they were being asked to attend. Towards the end of fieldwork, a small number of the selected prisoners (6) who identified themselves as having previously participated in another prison were also considered unavailable for participation.

Thus the final eligible available sample was 1,666 prisoners, which overall comprised 37% of the original sampling frame (SF), and 42% (range 28–63%) of the adjusted sampling frame (ASF) (Table 2.2).

Figure 2.1 Formula for random sampling ratio for each prison

Formula for individual prisons

$$x = \frac{n}{[n1 - n2 - ((n1-n2)*y) - [n1-n2 - ((n1-n2)*y)] *z]}$$

n	Sample targeted in each prison
n1	Sampling Frame: actual prison census of population aged 18–64 within one week of survey
n2	IPS exclusions
(n1–n2)*y	Estimated eligible available sample
[n1–n2 - ((n1–n2)*y)]	Estimated number that might not participate
x	Sampling ratio for each prison
y	Anticipated proportion not available on the day. This varied from prison to prison
z	Anticipated non-response rate on the day. This varied from prison to prison

On completion of the study, across all of the prisons y = 0.16 and x = 0.5

Formula for all prisons combined

$$X = \sum_{1}^{j} \left[\frac{N}{[n1-n2 - ((n1-n2)*y) - [n1-n2 - ((n1-n2)*y)]*z]} \right]$$

j	Number of prisons
N	Sample targeted across all prisons
n1	Sampling Frame: actual prison census of population aged 18–64 within one week of survey
n2	IPS exclusions
(n1–n2)*y	Estimated eligible available sample
[n1–n2 - ((n1–n2)*y)]	Estimated number that might not participate
X	Sampling ratio across all prisons
y	Anticipated proportion not available on the day. This varied from prison to prison
z	Anticipated non-response rate on the day. This varied from prison to prison

Table 2.2 Sampling frame, exclusions and final sample by prison

Prison	Sampling Frame (SF) n	Excluded in advance by Governors n	Adjusted Sampling Frame (ASF) n	Random sample (no.) requested n	Requested Sample as % of ASF %	Excluded/ not available on the day n	Final (eligible available) sample n	Final sample as % of ASF %
Arbour Hill	143	12	131	52	39.7	3	49	37.4
Castlerea	384	33	351	166	47.3	10	156	44.4
Cloverhill	414	10	404	202	50.0	49	153	37.9
Cork	309	28	281	141	50.2	22	119	42.3
Dóchas Centre	140	8	132	93	70.5	19	74	56.1
Limerick (F)	38	–	38	38	100.0	14	24	63.2
Limerick (M)	319	–	319	160	50.2	23	137	42.9
Loughan House	149	–	149	74	49.7	28	46	30.9
Midlands	548	37	511	256	50.1	58	198	38.7
Mountjoy	691	106	585	237	40.5	34	203	34.7
Portlaoise	269	54	215	130	60.5	13	117	54.4
Shelton Abbey	106	20	86	34	39.5	2	32	37.2
St. Patricks	184	71	113	80	70.8	20	60	53.1
Training Unit	113	21	92	26	28.3	–	26	28.3
Wheatfield	667	85	582	300	51.5	28	272	46.7
Total	**4,474**	**485**	**3,989**	**1,989**	**49.9**	**323**	**1,666**	**41.8**

The design process comprised development and piloting of 3 components:

- advance documentation;
- participant information and questionnaire;
- process.

3.1 Development and Piloting of Advance Documentation

Advance documentation consisted of 4 items: a staff information leaflet, a prisoner letter, a prisoner leaflet and a prison poster. Development of all documentation was iterative, with decisions about changes being made and implemented when feedback was received from any particular group, in advance of the draft being provided to the subsequent group. A copy of each is provided in the appendices.

3.1.1 Staff Information Sheet

The staff information sheet was designed for a professional reader. The content of the staff information sheet was reviewed within the study team, before being reviewed at piloting stage by staff in Cloverhill prison, at which stage no amendments were suggested. The content of the staff information sheet closely followed the content of the prisoner information documents, and was not finalised until after the prisoner documentation was agreed. It was then tailored for the target staff population.

3.1.2 Prisoner Letter and Leaflet

The draft prisoner letter and draft prisoner leaflet, prepared with the intention of being provided to all prisons and delivered to every prisoner by cell drop, were designed for a low literacy audience. The format was designed in a manner known to facilitate ease of reading for participants with reading difficulties: a sans serif font (verdana) was used to decrease the likelihood that words would run together; minimum font size 12 was used where possible, in order to increase the size of the letter shapes; consideration of font size was balanced with the effect of larger font sizes on the length of the document. Bullet points were used as much as possible. Ample space between themes and 'chunking' of themes was used to facilitate participants' distinguishing themes mentally; account was also taken of spacing between the items. Chunked text was spaced out so that readers could easily tell each chunk apart.

Comments on early drafts were initially invited from the study team, and then from the wider academic team within UCD. Following revisions recommended by peers, the letter and leaflet were piloted for literacy and ease of reading with two separate prisoner groups. A prison teacher facilitated access to a group of 7–10 male prisoners in the School in Mountjoy prison on 11 Jan 2011. The group was asked to comment on the one-page letter and the three-fold double-sided A4 leaflet separately. Participants were given very little advance information about the study, merely told that we would be carrying out research and the letter would describe it. They were presented with the letter and asked to read it and to identify what questions they would have if they received only the letter; they were then presented with the draft leaflet, along with the same briefing. The group recommended that the letter have more bullet points, and to reduce the amount of prose. Readability was not identified as an issue of concern, and while there were few questions about the letter or leaflet content, as the group generally felt they were self-explanatory, greater emphasis on confidentiality and anonymity and on assuring readers that DNA testing would not be used was recommended including review of the sequence of information to reflect these emphases. Participants also pointed out that mandatory drug testing is carried out in prisons using saliva samples and many prisoners would associate the two, which may put them off participating, and it was suggested that the research be disassociated from mandatory drug testing. Some participants suggested adding colour to the leaflet. Two literacy teachers were present for the session, and their views on readability were also requested and taken into account. Recommended changes were reviewed, decisions made and implemented and the leaflet was re-circulated among the team for comment.

PACE (http://www.paceorganisation.ie/) is a community based voluntary agency that works with people with an offending background who have experienced periods of imprisonment. The Director of PACE was approached and she agreed to facilitate access to a group of clients for piloting of documentation. On 27 Jan 2011, a group of 4 male and 2 female ex-prisoners at the PACE training centre in Santry participated in a focus group discussion, the primary purpose of which was to pilot the questionnaire, however as part of the introduction to the questionnaire, the group were also asked to comment on the leaflet and poster. A constructive discussion took place and minor amendments were incorporated into the subsequent revision. The group recommended removing reference to "no DNA" from the poster as they felt that this would put potential participants off; they agreed that it should remain in the leaflet. Their contribution to the questionnaire is documented below.

In advance of the afternoon of 02 February 2011, when the questionnaire was piloted in real-time in Cloverhill prison, the volunteers for that session, who had been recruited by a Nurse Officer, were provided with a copy of the draft letter and leaflet. At the beginning of the pilot session the 20 participants were asked for comments on the drafts.

Readability scores (calculated as a function of number of words per sentence and number of syllables per word) for the final drafts of the documents were calculated using the function in Word, and are shown below (Flesch, 1948). The nearer the Flesch Reading Ease score is to 100, the easier it is to read, and the Flesch-Kincaid Grade level formula translates the 0–100 score to a US Grade Level.

Table 3.1 Reading Ease Scores and Grade Levels for Prisoner Information Documentation

	Flesch Reading Ease		Flesch-Kincaid Grade Level	
Advance Prisoner letter	72.0	(fairly easy)	US grade 6.2	approx age 11
Advance Prisoner leaflet	80.4	(easy)	US grade 5.2	approx age 10
Participant Information Sheet	77.0	(fairly easy)	US grade 5.8	approx age 11
Participant Consent Form	83.0	(easy)	US grade 5.1	approx age 10

Finally, when peer and prisoner piloting was complete, the post-pilot leaflet and letter were sent to NALA for editing. The NALA editor agreed that bullet points are good practice in Plain English, but felt that in this context it was not suitable for the letter, and changed it accordingly into a more traditional letter format, without affecting content; line spacing was adjusted to keep the letter format to one page. The leaflet content was trimmed slightly to take account of repetition between the letter and leaflet and some of the heading font sizes were increased for clarity and visual impact. While graphics are normally recommended in leaflets of this nature, the editor considered that the addition of graphics might detract from the serious nature of the topic and only recommended minor adjustments to colour (coloured background to the text box on the cover). A text box giving formal information about the study, i.e. the names of the researchers, was also recommended.

3.2 Development and Piloting of the Questionnaire

The questionnaire instrument designed for this study took account of European Monitoring Centre for Drugs and Drug Addition (EMCDDA) requirements, with appropriate modifications for both the Irish context and the prison context. While EMCDDA principles recommend the use of face to face interviews, the sample size required for this study and the timeframe available within the prisons for data collection precluded face to face data collection in a prison setting and it was agreed with the Research Advisory Group that a self-administered questionnaire was the most appropriate method for the prisoner population. Self-administered questionnaires, in combination with saliva sample collection, had previously been successfully used with prisoner populations in Ireland (Allwright et al., 1999), England and Wales (Weild et al., 2000) and Northern Ireland (Danis et al., 2007).

3.2.1 Questionnaire Content

Questionnaire content was developed in consultation with a number of parties:

- The most up-to-date EMCDDA questions for standard table 9 were provided by the Irish EMCDDA focal point (Health Research Board, Alcohol and Drug Unit);
- Account was taken of relevant questions and wording successfully used in the most recent NACDA Drug Prevalence Survey (2008), and in the most recent relevant Irish prisoner surveys (Allwright et al., 1999; Centre for Health Promotion Studies, 2000).
- The Research Advisory Group, including the Irish Prison Service representative;
- Complex nurse managers, nurse managers and addiction nurses from the Irish Prison Service provided advice on drug treatment and harm reduction options within the prison setting and the terminology in use in Irish prisons around drug use.

New questions included questions that aided determination of whether participants were in prison or outside of prison at the time of drug use, particularly for questions on drug use in the last 12 months or the last 30 days. In addition a new series of questions were developed to ascertain which drug treatment and harm reduction services participants had needed while in prison; in particular the Irish Prison Service requested an additional question on whether prisoners were able to access services that they considered that they needed during their present sentence.

The questionnaire and supporting documentation were developed in the English language. Account was taken that the nationality of 91.5% of sentenced prisoners in 2009 was either Irish or UK (IPS, 2010 – Annual report 2009). Of the remaining 8.5% the largest single grouping was of EU or other European prisoners (5.7%) with the remainder divided between African, Asian, South or Central American, North American or Australasian. Following discussion with RAG, it was agreed that any selected prisoner who had a language difficulty but that wanted to participate would be dealt with on a case-by-case basis.

Sections were developed in order to orientate participants, and instructions on sequencing were included. In the most recent NACDA Drug Prevalence Survey (NACDA, 2010/11), show cards were used to show participants the different names by which drugs might be known; because this was not feasible using a self-administered questionnaire, alternative names for different drugs were included within the questionnaire instructions.

3.2.2 Questionnaire Format

In designing the layout of the questionnaire account was taken of the literacy and learning difficulty levels that might be expected among the Irish prisoner population and following the advice of NALA, plain English guides and following discussion with prison teachers. The questionnaire comprised mostly closed dichotomous (mostly yes/no) and multiple choice questions, with the exception of questions such as what country participants were born in and ethnicity, or questions where participants were asked to report a number, e.g. age, number of times needles shared, etc.

Questionnaire format also took account of the factors known to facilitate ease of reading for participants with reading difficulties: a sans serif font (arial) was used; consideration of font size was balanced with the effect of larger font sizes on the length of the questionnaire, but where possible font size 12 was used. Ample space was provided between themes and 'chunking' of themes was used to facilitate participants' distinguishing themes mentally, making use of a page per theme where possible and the use of clear borders around themes; account was also taken of spacing between the questions. On the final questionnaire, matte paper was used to minimise glare.

3.2.3 Research Advisory Group Consultation

An early draft of the questionnaire was submitted to the Research Advisory Group (RAG) for review in advance of a meeting on 03 Dec 2010, which included all of the questions provided by the EMCDDA focal point. At this meeting it was agreed that the questionnaire was too long for a prison context. Following a discussion at the meeting focusing on what questions were needed to achieve the objectives of the study, and consultation with the wider RAG group, feedback from the RAG was provided on 16 Dec 2010, and EMCDDA questions that could be excluded for the prisoner context were identified and removed. In addition a recommended drug sequence for the drug use prevalence questions was provided by the RAG, and it was recommended that core questions be placed as early as possible to facilitate individuals who may be less inclined to complete later sections of the questionnaire. Following input by the research team, peer researchers, prisoners and ex-offenders (detailed below), a penultimate draft of the questionnaire was reviewed and signed off by the RAG subject to minor amendments on 03 February 2011.

3.2.4 Research Team and Peer Researcher Consultation

Following initial revisions the questionnaire was subjected to the School of Public Health, Physiotherapy and Population Science (SPHPPS) internal piloting procedure during which the draft questionnaire was tested by members of the core project team advisors and subsequently circulated to key research academic staff, including many who had experience working with literacy-challenged populations and marginalised groups, including prisoners. This process ensured that all questions were included, with correct wording, in a consistent sequence. It also checked flow and routing of questions. Suggested amendments were taken account of in subsequent development. A major concern was the amount of repetition and the length of the questionnaire in a setting where attention span was likely to be limited, and a decision was taken to greatly simplify the format and to develop tables of questions, particularly for repetitious areas such as ever, recent and current drug use.

Completion of the (draft) questionnaire was also included as an exercise in the training day for fieldworkers (07 February 2011), and fieldworker comments were considered in subsequent revision.

3.2.5 Prisoner and Ex-Offender Consultation

Following revisions recommended by research peers, the questionnaire was piloted for content as well as for literacy and ease of reading with two separate prisoner groups. Initially the group of 7–10 male prisoners in the school in Mountjoy prison (who commented on the draft documentation at the same session on 11 Jan 2011) was asked to comment on key sections of the survey (questions on ever, recent and current drug use) in the new tabular format. Subsequently the group of 6 male and female ex-offenders attending training with PACE in Santry (27 Jan 2011) was asked to complete and comment on the full draft questionnaire. The questionnaire was administered to this group one page at a time and feedback on ease of completion, orientation, terminology, sequence and ease of reading was elicited on a page by page basis. Participants were also asked to identify any questions or concepts that they did not understand. Much of this discussion focused on the logistics of drug taking in a prison setting. A constructive discussion took place in relation to every page and feedback was incorporated into the subsequent revision. Changes to the survey were made following these two sessions.

On the morning of 02 February 2011, the revised questionnaire was piloted in Cloverhill prison with a group of 7 prisoner volunteers, with the research team again seeking feedback, on a page by page basis, on questionnaire layout, sequencing, content, and ease of reading. A constructive discussion was held.

Finally, on the afternoon of 02 February 2011, the questionnaire was piloted in real-time, along with the full process of information session, consenting, administration of the questionnaire and collection of saliva samples, in Cloverhill prison, with a group of 20 prisoners, simulating the proposed process for actual fieldwork conditions. The amount of time taken to complete the questionnaire was noted (not longer than 20 minutes). There were some participants with literacy difficulties among the pilot group and they were assisted during completion of the questionnaire.

3.2.6 Questionnaire Approval

Questionnaire development, consultation and piloting incorporated minor revisions to language and terminology, sequence and format.

The final questionnaire collected data on:

- Demographic information;
- Drug use;
- Injecting drug use;
- Risk behaviour for BBVs;
- General health.

The final questionnaire was signed off by the NACDA Research Advisory Group and is provided in appendix 13.

3.3 Piloting of Process and Information Session Documentation

Draft Standard Operating Procedures (SOPs) for labelling of samples, data collection and individual fieldworker roles were developed in advance of the pilot of the information session and data collection process.

The entire data collection process was piloted in Cloverhill prison on 02 February 2011. This included piloting of the process from preparation and packing of the equipment required for daily visits, to arrival at prison entrance and progression through security, through providing the information session to prisoners, consenting process, questionnaire completion, sample collection, to management of linking the questionnaires to the samples, all the way through to deconstructing the survey from samples collected, returning to UCD, secure filing of the questionnaires and dispatch of samples to the laboratory for analysis.

3.3.1 Preparation of Equipment

Equipment was transported by fieldworkers daily in wheeled suitcases or backpacks, and distributed between the cases to ensure that none were too heavy to be carried up and down staircases by individual fieldworkers as required to access the rooms allocated for data collection as there are few lifts in prisons. Cases and packs were arranged in a consistent manner, so that fieldworkers always knew the location of all equipment. Arrangements were as follows:

- Person in charge case: fieldwork log sheets and other paperwork, stationery supplies;
- Sample kit case: sufficient sample kits and folders for one day's collection;
- Paperwork case: participant information sheets, consent forms, questionnaires;
- Supplies case: sampling trays, gloves, pens, extension leads, sweets, aprons, bins, refuse bags;
- Clipboards case: clipboards for participants to lean on;
- AV case: laptop and data screen projector and associated leads.

Minor amendments were made to the contents of cases following the pilot process.

3.3.2 Information Session

The participant information sheet contained almost identical information to the combined letter and leaflet, and the content of the participant information sheet (Appendix 10) was based on the contents of the sheet. A power-point presentation was prepared also based on this content. On 02 February 2011, 20 participants attended the pilot information session. There were a few questions from participants following the information presentation, however most stated that they had already read the leaflet and understood what was involved. All of the attendees agreed to participate, and complete the survey and provide samples. It should be noted that these participants were aware that they were facilitating a pilot process and that their data would not be used in the final report, nor would their samples be analysed. Participants were asked, however, whether they would participate fully if the process was the actual study and they agreed that they would. The information session and question session took about 15 minutes.

Minor changes were made to the presentation following the pilot process.

3.3.3 Data Collection

All participants completed the questionnaire in less than 20 minutes. A small number of participants required assistance with reading and writing and this was accommodated within the session and within the room. The participants included drug users. Sample collection was carried out as participants completed their questionnaire and took at least 10–15 minutes per participant. Following the pilot it was noted that while many participants wanted to stay to talk, some participants were impatient to leave once their questionnaire was completed, and did not like having to wait around for their samples to be taken. It was agreed that in order to reduce data collection time, the sample labelling process could be done in advance of entering the prison instead of during the session. Following data collection, each participant's labelled questionnaire and samples were placed together in a plastic pack.

Following the pilot the SOP for data collection was amended to remove in-the-field labelling of samples, and a SOP for labelling in advance was developed.

3.3.4 Deconstruction of Data Collection Packs

During piloting, packs were deconstructed at base. Following piloting it was decided to complete the deconstruction process in the prison after each session, as this facilitated completion of the fieldwork log, and allowed any inconsistencies to be checked before closing the process and before leaving the prison.

3.3.5 Pilot Process Review

The pilot process was both essential and valuable. It confirmed the suitability of the process, and allowed amendments and refinements to the process, which made it more efficient.

3.3.6 Final Amendment to Questionnaire

It should be noted that an amendment to one question and to the information session was made following the first day or two in the field. In the first two to three days in the field participants unanimously agreed that there was often a significant waiting time for services, and that they would find it difficult to answer the question on whether 'drug treatment services were available to them in prison' unless a clarification was added so that the question was whether 'drug treatment services were available to them in prison when they needed them'. This amendment was communicated to all subsequent participants as part of the information session.

This section describes the fieldwork schedule and arrangements, including the data collection process. Fieldwork commenced on 18 February 2011, and took place on a daily basis on all working weekdays up to and including 08 Apr 2011. The Irish Prison Service (IPS) required that fieldwork take place primarily in February and March 2011.

4.1 Fieldwork: Schedule

All 14 prisons in Ireland were included in the study. An initial schedule of prison visits was drafted, taking into account the average number of prisoners in custody in each prison (using the prison population on the first of the month for three consecutive months in the latter half of 2010 as a base) and the target sample of prisoners (including the proportionate number required from each prison). The schedule was based on the assumption that prisons could facilitate the team meeting selected prisoners in groups of 20. During January and February 2011, the Principal Investigator met individually with the Governor and/or Deputy Governor of each prison, as well as key personnel in each prison, identified by the Governor as likely to be associated with the process. At this visit, the proposed dates were agreed and the proposed location for data collection within each prison was identified, viewed and agreed. During fieldwork the planned schedule was amended as required to take account of additional days and/or second visits required to individual prisons (table 4.1), for reasons outlined previously. Thirty seven fieldwork days were completed over thirty five consecutive working days.

Table 4.1 Number of planned and actual fieldwork days by prison

Prison	Number of planned fieldwork days	Number of actual fieldwork days
Arbour Hill	1	1
Castlerea	2.5	2.5
Cloverhill	3	3
Cork	2	2
Dóchas Centre	1	1.5
Limerick Female	0.5	1
Limerick Male	2	3
Loughan House	1	1
Midlands	4	5
Mountjoy Male	4	6
Portlaoise	2	2
Shelton Abbey	1	1
St. Patrick's	1	2
Training Unit	1	1
Wheatfield	4.5	5
Total	**30.5**	**37***

* 35 calendar days

4.2 Fieldwork: Team and Roster

The complete fieldwork team comprised two UCD Principal Investigators (PIs), two UCD researchers, and a panel of 10 fieldworkers recruited specifically for the fieldwork phase of the project. The team of fieldworkers was recruited via a formal process, which included submission of a written CV, including experience of research and fieldwork experience. The team included health professionals who could answer questions relating to BBVs and risk status. Fieldworkers were drawn from graduates of health and social sciences including a skill-mix of some with graduate qualifications in public health and some in criminology. Fifteen potential fieldworkers attended a personal interview

(Dec 2010 and Jan 2011) and 12 candidates were invited to attend a fieldworker briefing and training programme, which included a site visit/orientation to a prison. Many had previous fieldwork experience. Fieldworkers' attendance at briefing, training in fieldwork protocols and a prison visit was part of the fieldworker assessment process and non-attendance precluded inclusion on the team.

Training and briefings for fieldworkers were held on 07 and 08 February 2011. To facilitate entry to prisons, an application for Garda security clearance was submitted via the Irish Prison Service for all fieldworkers. Each fieldworker was provided with a letter from UCD identifying them as a member of the fieldworker team.

A fieldwork roster was designed taking account of the prison schedule, PIs, researcher and fieldworker availability and travel requirements. The fieldwork roster ensured a skill-mix of senior academics and researchers, experienced and less experienced fieldworkers on any given day; a minimum of one PI and one senior researcher was available for most fieldwork days and a team normally comprised four to six personnel. The PI normally took on the role of liaison with IPS personnel and the UCD researcher took the role of Person in Charge of the fieldwork team. The roster was amended as required to take account of changes to the prison schedule. It was necessary to have two teams in the field on three days over the thirty five working day period. Teams were Dublin-based and travelled to non-Dublin prisons for the duration of the visit. Fieldwork required a total of one hundred and ninety seven person days.

4.3 Fieldwork: Advance Arrangements

In advance of each prison visit, Governors and relevant IPS staff were provided with details of proposed arrangements, in addition to staff information sheets and prisoner packs containing a brochure and letter to be delivered by cell drop, and posters to promote the study among both staff and prisoners. In one prison prisoners (Red Cross Volunteers) promoted the study among peers. Staff information was disseminated in advance of the study being notified to prisoners through a cell drop of letter and information sheet, and display of the posters in prominent places.

Information sessions for prison staff were held where requested. Security clearance for the fieldwork team was arranged by the Governor in all prisons.

4.4 Fieldwork: Data Collection Process

4.4.1 Arrival

On arrival in each prison on the first day of data collection, the team of fieldworkers were met by the appointed prison liaison and brought to meet key personnel, such as the Governor and/or Deputy Governor, and to relevant Chief Officers and Acting Chief Officers, and to any staff (generally Officers, and occasionally Nurse Officers) allocated to work directly with the fieldworkers in bringing selected prisoners to the room.

4.4.2 Preparation

Each day, the senior member of the fieldwork team briefed the IPS staff assigned to go to the landings/cell areas to collect prisoners. In a small number of prisons individual prisoners were notified in advance that they had been selected to participate in the study and were expecting the call, but in the majority of prisons selected prisoners found out that they had been selected when approached on the day by the designated officer(s). In eight prisons, where the response rate was less than expected, the senior member of the team sought permission from prison Governors and senior staff to accompany the designated IPS staff when they went to collect selected prisoners. This was permitted in three prisons.

In order to collect attendees, the randomly selected list of PRIS numbers in prison officers' possession now contained names and cell locations and prison-related information, and was collated into an attendance schedule by the IPS liaison taking into account the time available (number of days), landing locations, security, prisoner movement patterns and other logistical issues. These lists with prisoner names were not provided to the fieldwork team.

Briefing of the officers escorting prisoners included asking them:

- To inform the prisoners they had been randomly selected to participate in the voluntary and confidential study on drugs and health in prisons about which they had recently received information;
- To encourage selected prisoners to attend the information session before making up their minds regarding participation;
- To encourage prisoners who had visits, school, gym, work, court, or individual appointments scheduled for that morning or afternoon to attend a later session (this was mostly possible in prisons where the schedule was greater than one day); officers were encouraged to note these prisoners' names and to return to them to ask again;
- To note prisoners who declined to attend, but to let them know that if they changed their minds they could attend a later session.

The Prison Liaison who was overseeing the visit was alerted at the start of the visit that he/she would be asked to provide participation information relating to the randomly selected sample list, to the senior fieldwork team member at the end of the prison visit, specifically:

- The number of selected prisoners approached;
- The number of selected prisoners who declined;
- The number of selected prisoners who were not available to attend (no longer in custody [released or transferred], on temporary release, in court, in hospital, unavailable for security reasons), or, late in the schedule, prisoners who had completed the study previously in a different prison.

The fieldwork team, under the supervision of the person in charge (PIC) of fieldwork that day, set up the allocated room in readiness for the process. The PIC began by allocating each fieldworker a fieldworker number and associated responsibility sheet, which listed his/her specific tasks for both the morning and afternoon sessions. In most prisons the primary location was in either a school classroom, or a large room such as a sports hall, auditorium or boardroom. During data collection an officer, or officers, normally remained just outside the door of, or adjacent to, the room. Only one prison deemed it necessary to have officers present in the room for the information sessions, and in that case the officers sat outside the room during data collection.

4.4.3 Information Session Part 1

Selected prisoners who came to the information session were provided with a participant information sheet and an information presentation about the process of collecting data through a) the self-administered questionnaire and b) the oral fluid samples, following which a discussion took place and questions were answered. Issues of confidentiality and anonymity were addressed and attendees were notified that because of anonymity, no individual's results would be available or identifiable to any other party. This also meant that indiviudals would not receive their sample results but participants were informed that blood-borne virus testing could be requested and would be facilitated through the Irish Prison Service Medical Centres.

On very few occasions individual attendees declined to participate at that stage and left during or at the end of part 1 of the information session; however, the vast majority of attendees acknowledged receiving and reading the letter and brochure that was circulated in advance of the visit and most of the information was not new to them. Attendees that were called away from a session for a visit, or for other reasons such as a scheduled health-related appointment, were encouraged to return to a subsequent session; if they did not return, they were deemed to have declined to participate.

4.4.4 Consent

Consent forms (on duplicate paper) were distributed, each with a clipboard and pen, and the consent form was read out loud, explained to the group of attendees and questions were addressed. Consent forms were signed by willing attendees, who were informed that they could consent to none, one, two or all of the individual components of the study, i.e. the questionnaire, the drug test and the blood-borne virus test. A small number of attendees were willing to consent, but unwilling to sign their name, and they were permitted to sign their initials or mark an X, as long as their signature/mark was witnessed. Consent form signatures were witnessed and co-signed by a fieldworker, and the groups' original consent forms were placed together in a sealed envelope, and participants were assured that the consent forms were not linkable in any way to the questionnaires or to the samples; duplicate consent forms were given to prisoners to keep. Participants held onto the clipboard and pen to complete the questionnaire. At this stage any attendees that did not wish to participate were able to leave. The overall number of attendees who did not wish to participate was noted, however, no data was collected from them.

4.4.5 Information Session Part 2

Part 2 of the information session comprised orientation to the questionnaire document. The questionnaire was presented on a page by page basis, normally using a power-point presentation, screened onto a wall or screen, if available. The structure and layout and the way in which the responses should be entered were explained. Some particular questions were highlighted and explained in detail. Questions from participants were encouraged and addressed. Participants were reminded about the confidentiality of the study and told not to write their name or PRIS number anywhere on the questionnaire. The group was told that members of the team would be happy to assist anyone who wanted help with reading or writing or completion of the questionnaire for any reason.

4.4.6 Completion of the Questionnaire

Each consenting participant was then provided with a questionnaire. Discreet assistance was provided to those who required it. Assistance varied from minimal assistance with individual questions or some sections of the questionnaire, to reading out questions for which the participant then entered the response, to full face-to-face administration of the questionnaire. In many cases participants simply stated that they could not read and/or write, or that they had left their spectacles in the cell, and openly requested assistance, but in other cases, assistance was offered to participants who appeared to need it. It appeared that assistance was mostly required for literacy reasons or due to poor English language reading skills. No enumeration of requests for assistance was made. All of the allocated rooms were large enough to allow privacy during this process. It should be noted that the majority of participants displayed no concerns about privacy, chose to sit very near to one another while completing the questionnaire, and at times openly discussed their responses with participants sitting near to them. The average time taken to complete a questionnaire was 20 minutes.

4.4.7 Oral Fluid Sample Collection

Depending on the circumstances, sometimes during but normally immediately following completion of the questionnaire, a fieldworker approached each participant with a sample tray and a transparent A4 sized sample folder containing two oral fluid sampling kits. Each kit and associated forms were pre-coded with the same study identification number, which would become the unique 'study ID' for that participant. The fieldworker checked the participant's duplicate consent form and proceeded to collect the samples for which consent had been provided. Oral fluid samples were collected separately, using propriety drug testing kits for blood-borne viruses (BBVs) and Drugs of Abuse (DOA). The protocol was designed so that the BBV specimen was always collected first, followed by the DOA sample. The Oral Fluid Collection Devices consist of a treated, absorbent cotton fibre pad affixed to a plastic shaft (Oral Specimen Collection Pad) and a preservative solution in a plastic container (Oral Specimen Vial). The Oral Specimen Collection Pad, impregnated with a mixture of common salts and gelatin, creates a hypertonic environment that produces an osmotic gradient across the buccal and gingival mucosae. The pad was placed in contact with the gingival mucosa (between the gum and cheek) which enhances the flow of mucosal transudate onto the absorptive cotton fibres of the pad. The pad is left in situ for 3 minutes. Following collection of the oral specimen, the Oral Specimen Collection Pad was removed from the mouth and placed into the Oral Specimen Vial. The Oral Specimen Vial contains a preservative solution that inhibits the growth of oral microorganisms recovered on the Oral Specimen Collection Pad. The vial was sealed with a plastic cap and placed in the tube provided. Collected specimens can be stored at between 4°C and 37°C for 21 days.

Figure 4.1 Sample tray

Figure 4.2 Sample folder

Figure 4.3 BBV sample kit contents

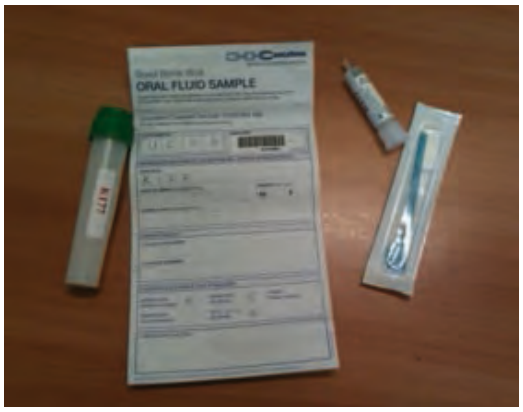


Figure 4.4 DOA sample kit contents

Figure 4.5 Fieldwork log

NACD Study: Fieldwork Session Log

Fieldwork Session Log

Centre	
Date	
AM/PM	
Start Time	
Finish Time	

PIC	
FW1	
FW2	
FW3	
FW4	
FW5	
Other	

No. requested from IPS	
No. unavailable for session	
No. declined to attend	
No. attended session	
No. Consented to:	
Survey + 2 samples	
Survey + BBV only	
Survey + DOA only	
Survey only	
2 samples only	
BBV only	
DOA only	
Total Consent Forms	

Returns					
Study ID		FW Signature (Initials)	Survey ✓	BBV Sample ✓	DOA Sample ✓
Totals					

PIC Signature:	Date:

The sample folder also contained an additional study ID label, which was placed on the front page of the questionnaire following completion. Therefore it was possible to link the BBV sample, DOA sample and the questionnaire (for those who participated in all three components) to one another but none of them could be traced back to any individual participant. Once the oral fluid sample(s) were taken, the fieldworker asked permission of the participant to look through the questionnaire in case any sections had been omitted in error. This provided an opportunity for the fieldworker to clarify any areas of obvious ambiguity and to amend if necessary. In a minority of cases/sessions this step was not possible because of time and logistical constraints. Both the questionnaire and the samples from each individual participant were then placed together into the transparent sample folder, with the study ID labels visible. Individual oral fluid sample envelopes were not sealed at this stage. Participant names or PRIS numbers were not collected by the fieldwork team and were not recorded on any data collection instrument (questionnaire or oral fluid samples) or on fieldwork logs. When completed, participants were thanked for participating and returned to their landings/cells. A number of participants left their duplicate consent forms behind in the room – these were removed from the prison by the team and securely shredded.

4.4.8 Deconstruction of Sample Folder Contents

At the end of each morning and afternoon session, the sample folder contents were deconstructed by three team members. Questionnaires, BBV and DOA samples were separated and counted and recorded in the fieldwork log. Labelling was checked for consistency and to ensure that it was in place on all components. DOA and BBV samples were sealed into the (provided) individual plastic postal envelopes, placed into appropriately labelled larger opaque plastic bags (which were labelled either DOA or BBV, and whether from the morning or afternoon session, along with the date). Questionnaires were packed in bundles by dated morning or afternoon session. Materials were transported in this manner to UCD, at the end of each day for prisons in or near to Dublin, and at the end of the fieldwork trip for prisons at a distance from Dublin. Questionnaires were securely stored in date order in UCD. BBV and DOA samples were boxed and subsequently collected on a pre-booked basis on the next working day by the laboratory's couriers. BBV samples were transported to the West of Scotland Virology Laboratory at Gartnavel General Hospital, which is part of the Scottish National Blood-Borne Virus Specialist Testing Service. DOA samples were transported to Concateno's Laboratory in Abingdon, UK.

4.4.9 Flexibility Required in Different Prisons

While the aim was to address up to 20 participants in the designated room during each morning or afternoon session, due to individual prison schedules availability of prisoners was normally limited to 10.30 to 12.00 in the mornings and 14.30 to 16.00 in the afternoons (i.e. outside of lockdown/meal/personal hygiene times). In addition, while the allocated room(s) in all prisons could physically accommodate 20 prisoners, and while in most cases a gathering of 20 was permitted by the prison, prisoners did not always arrive at the same time for the sessions and often arrived sporadically in small groups. It was therefore often necessary to provide an information session for less than 20 attendees, and at times to have two or three information/data collection sessions within a single morning or afternoon. In a number of prisons, movement of prisoners was also restricted in order to accommodate the security arrangements needed to segregate gang members and associates. In addition, some sessions, in order to include randomly selected participants who were segregated or on protection, were held with very small groups, and occasionally on a one-to-one basis, in locations such as segregation units, recreation areas, corridors, and staff offices. The largest number of participants from whom data was collected during a single morning or afternoon was 32; the lowest number was 0. These arrangements contributed to the need for additional days to be added to the original prison visit schedule.

4.4.10 Non-Participation

Of the 1,666 in the final eligible available sample, 780 (47%) declined to attend the information session. Of the 886 prisoners who attended the information session, 62 (7%) declined to participate in the study (table 4.2).

Table 4.2 Prisoners who declined to attend and declined to participate by prison

Prison	Final eligible available sample	Declined to attend		Attended	Attendees who declined to participate		Declined Total	
	n	n	%	n	n	%	n	%
Arbour Hill	49	13	26.5	36	1	2.8	14	28.6
Castlerea	156	65	41.7	91	9	9.9	74	47.4
Cloverhill	153	98	64.1	55	4	7.3	102	66.7
Cork	119	64	53.8	55	2	3.6	66	55.5
Dóchas Centre	74	41	55.4	33	–	–	41	55.4
Limerick (F)	24	12	50.0	12	–	–	12	50.0
Limerick (M)	137	89	65.0	48	2	4.2	91	66.4
Loughan House	46	7	15.2	39	11	28.2	18	39.1
Midlands	198	96	48.5	102	11	10.8	107	54.0
Mountjoy	203	62	30.5	141	13	9.2	75	36.9
Portlaoise	117	91	77.8	26	4	15.4	95	81.2
Shelton Abbey	32	–	–	32	1	3.1	1	3.1
St. Patricks	60	20	33.3	40	–	–	20	33.3
Training Unit	26	–	–	26	–	–	–	–
Wheatfield	272	122	44.9	150	4	2.7	126	46.3
Total	**1,666**	**780**	**46.8**	**886**	**62**	**7.0**	**842**	**50.5**

Reasons for declining to attend reported by collecting officers, sometimes witnessed on landings by fieldworkers, and suggested by prisoners who did attend, are listed below:

- Busy: gym, school, workshop, work
- Mistrust, suspicion, cynicism
- Apathy
- "Don't do drugs"
- Concerns re MDT (increased in prisons where MDT was taking place during visit)
- Concerns re DNA.

In summary, the final effective sample was 824 (49.5%) of those selected to participate.

5.1 Response Rates

Eight hundred and twenty four prisoners took part in the study, giving an overall response rate of 49.5%. A detailed breakdown by prison is provided in table 5.1.

Table 5.1 Response rate by prison

Prison	Final eligible available sample	Declined total		Participants	Response rate
	n	n	%	n	%
Arbour Hill	49	14	28.6	35	71.4
Castlerea	156	74	47.4	82	52.6
Cloverhill	153	102	66.7	51	33.3
Cork	119	66	55.5	53	44.5
Dóchas Centre	74	41	55.4	33	44.6
Limerick (F)	24	12	50.0	12	50.0
Limerick (M)	137	91	66.4	46	33.6
Loughan House	46	18	39.1	28	60.9
Midlands	198	107	54.0	91	46.0
Mountjoy	203	75	36.9	128	63.1
Portlaoise	117	95	81.2	22	18.8
Shelton Abbey	32	1	3.1	31	96.9
St. Patricks	60	20	33.3	40	66.7
Training Unit	26	–	–	26	100.0
Wheatfield	272	126	46.3	146	53.7
Total	**1,666**	**842**	**50.5**	**824**	**49.5**

The overwhelming majority of participants took part in all three components of the study (the questionnaire, BBV sampling, DOA sampling or a combination); participation rates for each component of the study are provided in table 5.2.

Table 5.2 Participation in study components by prison

Prison	Attended	Declined all components	Participated in at least one component	Component Participation		
				Questionnaire	BBV	DOA
	n	n	n	n	n	n
Arbour Hill	36	1	35	35	33	33
Castlerea	91	9	82	82	78	78
Cloverhill	55	4	51	51	45	45
Cork	55	2	53	53	51	51
Dóchas Centre	33	–	33	33	33	33
Limerick (F)	12	–	12	12	12	12
Limerick (M)	48	2	46	46	44	44
Loughan House	39	11	28	25	27	28
Midlands	102	11	91	91	87	89
Mountjoy	141	13	128	128	121	122
Portlaoise	26	4	22	22	16	15
Shelton Abbey	32	1	31	31	31	31
St. Patricks	40	–	40	40	38	38
Training Unit	26	–	26	26	26	26
Wheatfield	150	4	146	145	139	137
Total	**886**	**62**	**824**	**820**	**781**	**782**
Component participation rate				99.5%	94.8%	94.9%

5.2 Factors Influencing Response Rates

A number of possible influences on the response rate were anticipated:

- While previous Irish studies included questions about drug use, the emphasis was on either health or ill-health, whereas the present study focused on drug use, evidenced by its primary aim and primary funder. The last Irish prison hepatitis prevalence study (Allwright et al., 1999) included an oral fluid test for blood-borne viruses but not a test for drugs. It was anticipated that prisoners with a tendency to mistrust authority or with a cynical attitude may not believe assurances about confidentiality and anonymity and might perceive that they would have more to lose in a study on drugs than in a study on health.
- The IPS introduced mandatory drug testing (MDT) under the 2007 Prison Rules. MDT is carried out on a random basis, and is not popular. MDT utilises oral fluid samples, and some prisoners may have made incorrect assumptions about the purpose of oral fluid sampling in this study.

Because these factors were known, while a response rate of 80% (slightly lower than previous Irish studies) was targeted by the study team, it was recognised from the outset this might be difficult to achieve. To obtain as high a rate as possible, every effort was made to highlight the above factors and dispel concerns transparently. To overcome the potential impact on participation, prisons were saturated with advance information (for both staff and prisoners) about the voluntary nature of each component of the study (including the drug test), and about anonymity and confidentiality, and the team engaged with Governors, Chiefs, Assistant Chief Officers, Nurse Managers, chaplains and teachers to help disseminate this message. The team tried to dispel concerns and misconceptions in advance of the study commencing and during information sessions, however, anecdotally the IPS acknowledge that prisoners now have a much greater awareness and suspicion of any swab taken for BBV or DOA because of increased exposure to issues around DNA and the use of DNA sampling in criminal cases.

Two potential influences on response, which were also considered in advance, did not appear, during fieldwork, to be a cause of concern:

- Peer influence was seen during information sessions to work both ways. In some cases, if an attendee decided not to participate and leave the room, his or her friends would often also do the same; however, it also happened on many occasions that individual attendees encouraged their friends to participate and even took on the role of explaining the importance of the study to others. Observation during data collection suggests that this was fairly evenly balanced. While this is likely to have also occurred, un-witnessed by the team, on landings, the extent of this is not known;
- In some prisons a proportion of prisoners are segregated at their own request, for protection purposes, and may not have participated because of fear for their own safety. While some of these prisoners may have been excluded from the sampling frame by the IPS pre-random selection (which would not have affected the response rate), where possible every effort was made to allow such prisoners to participate if selected and the team was brought to protection and segregation units in a number of prisons to this end.

No inducements or incentives were used to either get selected prisoners to come to the information session or to participate once there. Some participants in a small number of prisons suggested that participation would have been increased if refreshments had been provided, however a) this was not logistically possible in the majority of prisons and b) if refreshments were taken directly before the oral fluid sampling test, results may have been adversely affected.

It emerged during fieldwork that some of the stated aims of Mandatory Drug Testing (MDT) on MDT posters on display in prisons were not dissimilar to the aims stated in the study literature: to establish the level of drug misuse in prisons, find out who needed help and to support them. Although MDT aimed to do this at individual level and carries sanctions for refusal and for positive testing, and the study aimed to do so at population level in an anonymous manner with no possible negative outcomes for participants, this may have been too fine a distinction for some.

Possible reasons for particularly low response rates in individual prisons suggested by IPS staff, and supported by anecdotal evidence fieldworkers gained from speaking with participants and those who declined on landings, included:

- A reluctance among some remand prisoners to engage in any activity that is not mandatory or that has any possibility of getting them into trouble in advance of sentencing;
- Concerns among prisoners following media reported events about the use of DNA for identification purposes, which occurred during fieldwork;
- Mandatory Drug Testing taking place at the same time as data collection for this study, in one prison in an adjacent room; and
- Gang-related influence and/or instructions regarding participation.

While a number of studies have been carried out in prisons internationally on the prevalence of one or more blood-borne viruses, which generally included collecting data on risk behaviour such as drug use, and some studies have been carried out on drug use specifically, most studies are not directly comparable. Twelve prison studies that focused on blood-borne viruses, and nine that focused on drug use were reviewed with a range of response rates from 24% (Sleiman, 2004 in Belgium) to 94% (Radun et al., 2008, in Germany). A number of differences were found in aspects of these studies that can affect response. There are differences in methodologies for ascertaining data, such as clinical assessment interviews (Fotiadou et al., 2004; Lukasiewicz et al., 2007), semi-structured or structured one-to-one interviews (Dye and Isaacs, 1991; Power et al., 1992), interviewer or self-administered questionnaires (Koulierakis, 2000; Sleiman, 2004; Zakaria et al., 2010), extracting data from medical records (Singleton et al., 1999; Saiz de la Hoya et al., 2011) and biological sampling (Butler et al., 1997; Malliori et al., 1998; Ford et al., 2000; Radun et al., 2008). There are also differences in the sample targeted, with seven national random samples (Power et al., 1992; Singleton et al., 1999; Koulierakis, 2000; Lukasiewicz et al., 2007; Radun et al., 2008; Zakaria et al., 2010; Saiz de la Hoya et al., 2011), and in the type of prisoner approached, whether inmates or entrants or both. Some studies lack sufficient detail on sampling procedures to make a valid comparison

(Singleton et al., 1999; Power et al., 1992; Ford et al., 2000; Sleiman, 2004), and the response rate is not provided in others, or no denominator information is available (Kirwan et al., 2011; Saiz de la Hoya et al., 2011). In terms of those studies that looked specifically at drug use amongst prisoners, some did not ask about drug use in prison (Fazel et al., 2006), while others employed a measurement that was not temporally specific ('ever use in prison') and avoided asking about use within the last month, with the explicit aim of alleviating fear of disciplinary action and increasing participation (Power et al., 1992; Sleiman, 2004). Finally, no studies were found that collected biological samples for drug testing.

At 49.5%, the response rate in this study is lower than in two methodologically comparable previous Irish studies, both national cross-sectional studies carried out 12–13 years ago in prisons using a random sampling strategy. In a study on the prevalence of blood-borne viruses among a national sample of prison inmates, Allwright et al. (1999) achieved an 85% response rate in 1998; the only national general healthcare study of the Irish prison population (Centre for Health Promotion Studies, 2000) achieved an 88% response rate in 1999. Each study was carried out using a methodology broadly similar to the current study (both used a self-completion questionnaire and Allwright used oral fluid sampling), and while containing some drug-related questions, including injecting drug use, neither included a biological test for drugs. The Long et al. (2000) study of prevalence of blood-borne viruses amongst committals (entrants) to Irish prisons employed the same measurements of drug use to that of Allwright et al. (1999) and achieved a 96% response. This response rate is in line with other studies which looked specifically at committals. The Fazel et al. (2006) systematic review of substance abuse and dependence amongst prison entrants on reception into prison included thirteen studies that had a response rate above 75%, three of which were 100%; one study was excluded because of a non-participation rate of greater than 50%.

In a broadly comparable study of 8% of the prison population in 8 selected prisons in England and Wales in 1998, Weild et al. (2000) achieved an 83% participation rate in a census sample of eligible prisoners; a question was asked about ever injecting drugs in prison but drug testing was not part of the study. A hepatitis C incidence study, using a cohort study design at 0 and 6 months, a self-completion survey and saliva sampling, in a single prison in Scotland in 1999/2000 achieved an 85% participation rate, but it is not clear how participants were recruited (Champion et al., 2004). Following the methodologies and adapting the survey instruments used in the Republic of Ireland and in England and Wales, Danis et al. (2007) collected data in Northern Ireland's three prisons in 2004, and achieved a 62% response rate. The lowest response rate in the Northern Ireland study was 41% in a medium security prison. In Scotland, an annual census survey of all Scottish prisoners is undertaken, and includes health questions (including BBV and drug-related questions); it achieved a response rate of 73% in 2006 (Graham, 2007), 62% in 2008 (Scottish Prison Service, 2008) and 62% in 2009 (Scottish Prison Service, 2009). A National Inmate Infectious Diseases and Risk-Behaviour Survey undertaken in Canada in 2007 (Zakaria, 2010), using a self-administered questionnaire but no biological sampling, achieved an estimated 48% response rate. Notwithstanding the differences in sampling and data being collected, there appears to be a downwards trend over time in the proportion of prisoners willing to participate in this type of research.

Possible explanations for the lower response rate in the current study include a number of developments that have taken place in the last decade:

- Continuous improvements in Irish prison facilities in the intervening period: improvements have taken place in the school and work opportunities available and the gym facilities provided to inmates in many prisons. Many prisoners declined because they were too busy to attend and prioritised school/work/gym over participation.
- IPS annual reports for 2000 to 2003 show the introduction across all prisons of in-cell televisions; prior to that time TVs were located in a recreation room in each wing or division landing (IPS, 2002, 2003, 2004). Having TVs in cells allows access to information about modern DNA testing techniques and provides more immediate knowledge of current national and international events outside of the prison. Many prisoners expressed concerns about the potential uses of their DNA from specimens collected. Anecdotally the IPS acknowledge that current prisoners have a much greater awareness and suspicion of any swab taken for BBV or DOA because of increased exposure to issues around DNA and the use of DNA sampling in criminal cases.

- The IPS introduced a Drugs Policy in May 2006, and while including improvements to treatment services and links to the community, the policy has also introduced and made widely known a range of measures to reduce drug supply: drug dog detection services, enhanced security screening for all persons entering prisons, improved expertise in searching and intelligence gathering (IPS, 2006). In some of the prisons visited, control measures had been increased in the weeks and months prior to the visit. A minority of attendees, some of whom participated in the study, strongly expressed the view that the study was an exercise on the part of the Prison Service to collect information to justify further controls, at both individual prison level and prison service level. Many perceived that this would result in more stringent screening for visitors and visiting arrangements. It is possible that some of those who declined before meeting the research team were also of this view.
- IPS staff, from Governors to escorting officers, provided every possible resource to facilitate the study, and escorting officers were the key personnel bringing selected prisoners to the study room. However, in the prisons where the team requested but were not able to visit landings with escorting officers to inform randomly selected prisoners that they were invited to the information session, staffing, particularly related to security issues, was one of the reasons cited for why this was not possible. While none of the comparable previous Irish or British studies specify who made the initial approach to selected prisoners, it is possible that staffing levels in 1999 facilitated research team members to visit landings for this purpose. While a crude measure, in 1999 the number of staff exceeded the number of prisoners; there were 3,073 staff (all grades) for a daily average of 2,871 prisoners and 10,834 committals (IPS, 2002). In 2009/10, the number of prisoners exceeded the number of staff; in 2010 there were 3,385 staff (all grades) for a population of around 4,100 (CPT, 2011) and 15,425 committals (IPS, 2010), and recent reports have highlighted the impact of overcrowding and escalating violence (Irish Prison Chaplains, 2010; CPT, 2011). The team found that in the three prisons where visiting landings was permitted, a number of prisoners whose first inclination was to decline attended the information session following a brief explanation and encouragement from a team member and subsequently participated. Landing visits also helped to provide an insight into the reasons why some declined.

5.3 Potential Impact of Non-Response

A concern in any study of this type is the potential impact of non-response on the validity of the results obtained. Non-responders may differ from responders in respects which are relevant to the outcomes of the study. In this instance the concern would be that non-responders may differ in relation to their drug use habits or BBV status. While every effort was made to ensure as high a response rate as possible (prior notification, information sessions with prison staff and prisoners, assurances of confidentiality, etc.) it must be acknowledged that this is a particularly challenging group from which to illicit co-operation. There are many reasons for this, including:

a) lack of availability due to court appearances, visitations, school, gym or work activities;

b) apathy and disillusionment with anything to do with establishment;

c) suspicion of the motivation for the study;

d) confusion with Mandatory Drug Testing in the prison; and

e) concerns about confidentiality of the data and possible repercussions and sanctions.

It is not clear, however, that these factors were unique to those who are more or less likely to be drug users or BBV positive. Therefore, it is not possible to say what impact, if any, a higher response rate would have had on the prevalence rates derived. Suffice it to say that the final sample achieved was representative of the total population of prisoners in custody at the time on all major demographic variables and on prison-related variables of length of time in custody and methadone use, and is therefore acceptable for data interpretation purposes. The demographic characteristics of the prisoner sample are also similar to that found in previous surveys (Hannon et al., 2007) and in keeping with the international scientific literature – prisoners are much more likely to be male, in their thirties, with very poor levels of education.

A commercial company in the UK (Concateno) was selected to carry out analysis of oral fluid samples because they provide a full service from specimen collection devices, through logistics, to laboratory analysis for oral fluid specimen analysis for both drug metabolite testing and blood-borne virus testing. Concateno undertake drug metabolite testing in its own laboratory in England and their blood-borne virus testing is carried out in the West of Scotland Virology Laboratory.

Saliva is a complex mixture of parotid, submandibular, sublingual and minor salivary gland secretions mixed with mucin, bacteria, leukocytes, sloughed epithelial cells, gingival crevicular fluid, and mucosal transudate. Mucosal transudate is the fluid derived from the passive transport of serum components through the oral mucosa into the mouth.

Two proprietary devices, manufactured by Orasure, were used for sample collection: Intercept Oral Fluid Collection device for DOA testing, and Orasure Oral Fluid Collection Device for BBV testing. The devices differ in product labelling and the buffer fluid solution used.

The Oral Fluid Collection Devices consist of a treated, absorbent cotton fibre pad affixed to a plastic shaft (Oral Specimen Collection Pad) and a preservative solution in a plastic container (Oral Specimen Vial). The Oral Specimen Collection Pad, impregnated with a mixture of common salts and gelatin, creates a hypertonic environment that produces an osmotic gradient across the buccal and gingival mucosae. The pad is placed in contact with the gingival mucosa (between the lower gum and cheek) which enhances the flow of mucosal transudate onto the absorptive cotton fibres of the pad.

Following collection of the oral specimen, the Oral Specimen Collection Pad is removed from the mouth and is placed into the Oral Specimen Vial. The Oral Specimen Vial contains a preservative solution that inhibits the growth of oral microorganisms recovered on the Oral Specimen Collection Pad. The vial is sealed with a plastic cap and transported to a laboratory for processing and testing. Collected specimens can be stored at between 4°C and 37°C for 21 days.

Manufacturer's information is available at:

http://www.orasure.com/docs/pdfs/products/intercept/Intercept-Package-Insert-English.pdf

http://www.orasure.com/docs/pdfs/products/orasure_oral/OraSure-Oral-Specimen-Package-Insert.pdf

6.1 Oral fluid Sample Testing for Drugs of Abuse

Oral fluid analysis for Drugs of Abuse was carried out in Concateno's laboratory in Abingdon, Oxfordshire, UK. There are limitations to testing biological samples for drug metabolites because the actual time a particular drug will remain detectable in any biological sample from different individuals will change significantly based on a wide range of variables, including: the amount of actual drug consumed, the pharmacological properties of the drug, the amount of fluids consumed after ingestion of the drug, the amount of exercise taken after ingestion of the drug, the health of the individual, the genetic makeup of the individual, and the tolerance of the individual to the drug.

Oral fluid drug testing reliability is affected by contributory factors such as the administration method of the drug (for example, when smoked or taken orally, deposits can be left in the mouth) and the variability of pH levels within oral fluid. Concateno only publish detection windows on single dose use, and note that regular use could extend the following oral fluid detection windows by one day: Cannabinoids (THC) 12-24 hours; Opiates 2-3 days; Benzodiazepines 1-2 days; Cocaine 1-2 days; and Methadone 1-2 days.

For drug screening purposes oral fluid testing using Enzyme-linked immunosorbent assays (ELISA), also known as enzyme immunoassays (EIA), is appropriate. The tests works by means of a colour reaction which is produced in the presence or absence of compounds of similar physical structure to the target compound of the given assay. The intensity of the colour reaction for a given sample is compared to the intensity of the colour reaction for a calibration sample of known concentration of the target analyte. As the reaction is triggered by a structurally similar compound it is susceptible to interference (of cross-reactivity) with compounds which are structurally similar to the

target compound, but not the compound itself or of the same group (e.g. opiates), therefore the result produced by this method are indicative and do not unequivocally identify the drug as present, however the test is appropriate for screening use and the sensitivity and specificity rates for the tests are shown below. There is a small risk of false positives, however for non-legal and screening purposes immunoassay is very reliable. For legal purposes, positive or non-negative screening results may require a more detailed confirmation test, but screening tests are appropriate in an anonymous study, where follow-up testing of individuals is not possible. The table below shows the sensitivity and specificity for each test.

Table 6.1 Sensitivity and specificity of oral fluid Drug of Abuse testing

Test	Sensitivity (%)	Specificity (%)
Benzodiazepines	86	92
Cannabis	96	89
Cocaine	96	87
Opiates	93	90
Methadone	100	94

The OraSure Technologies Intercept® MICRO-PLATE assays can accurately and reliably detect drugs of abuse in samples collected with the Intercept Oral Specimen Collection Device. Studies have shown that there is good agreement between assay results and confirmation testing by gas chromatography/mass spectrometry (GC/MS or GC/MS/MS) (Manufacturer's information).

Individual results by Study ID were provided to UCD, individually or in small batches, by email on an intermittent basis during and after fieldwork. Collated results were provided to UCD in an Excel spread-sheet following completion of the study.

During fieldwork 70 DOA samples were misdirected within the laboratory system and did not reach the laboratory for testing. Samples were tracked to a final destination and confirmed as having been put beyond use, most likely through incineration. As the samples were completely anonymous they were not traceable to the study or to any individual who participated and no data protection issues arose. The NACDA committee and Research Advisory Group were informed and consulted in addition to the Prison-Based Research Ethics Committee. Ultimately, following the laboratory evaluating the compatibility of the assay with the collector, and using the anonymous study ID system, it was possible to test for DOA 68 of those samples that had been provided for BBV analysis.

The laboratory have confirmed that analysis of control BBV samples matching previously tested DOA samples for drugs of abuse demonstrated that analysis of BBV samples for drugs of abuse using the DOA ELISA is a valid approach within the same limitation as the DOA immunoassay. The elapsed time and different buffer did not appear to make any difference to the analysis except for the cannabinoids (THC) assay, which was backed up by LC-MS-MS analysis to identify any false positives. As the ELISA test was not designed to be used for BBV samples there are not equivalent sensitivity and specificity data for the BBV samples tested for DOA, although the control testing done at Abingdon only demonstrated discrepancies on the cannabinoids assay. This proved to be a scientifically valid route for analysis of 68 of the 70 BBV samples, thus minimising the loss to the study to 2 (of 782) DOA results (0.3%). In summary, the laboratory is satisfied that the DOA results on the BBV samples are valid for all of the tests.

6.2 Oral fluid Sample Testing for Blood-Borne Viruses

Blood-borne virus analyses were carried out in the West of Scotland Virology Laboratory at Gartnavel General Hospital, which is part of the Scottish National Blood-Borne Virus Specialist Testing Service. It holds Clinical Pathology Association (CPA) accreditation incorporating Standards of the Medical Laboratory ISO 15189:2003. Diagnosis of hepatitis B, hepatitis C and HIV is made by taking blood from subjects and carrying out serological tests. In recent years oral fluid analysis techniques have been developed and they have been used in previous prison population studies to estimate prevalence of hepatitis B, hepatitis C and HIV. This is a more convenient and safer body fluid on which to carry out virological tests and results obtained are comparable to those obtained with blood tests.

The assays (or tests) used in this study were specific to each blood-borne virus:

- Hepatitis B: Hepatitis B surface antigen test (Murex HBsAg Version 3, Murex Biotech Limited); Sensitivity 90.7%, Specificity 100%.
- Hepatitis C: Anti-HCV antibody test (modified Ortho HCV 3.0 Elisa Test System, Ortho Clinical Diagnostics); Sensitivity 83%, Specificity 93%.
- HIV: Vironostika HIV (Uni-Form II plus O, Biomerieux); Sensitivity 97.2%, Specificity 100%.

The sensitivity rate indicates the proportion of positive cases which are correctly identified by the test as positive, so for example, for HIV above, with a sensitivity rate of 97.2%, we will know that 97.2% of those that test positive for HIV are actually positive. The specificity rate indicates the proportion of negative cases which are correctly identified by the test as negative. So, for example, for hepatitis B and HIV above, with a specificity rate of 100%, we will know that 100% of those that test negative are actually negative.

In previous prison studies testing carried out for estimating prevalence of hepatitis B has used different tests. For example Kazi et al. (2010) and Saiz de la Hoya et al. (2011) tested for hepatitis B using HB surface antigen (HBs Ag). Long et al. (2000) and Butler et al. (2007) used anti-HBc (antibodies to the hepatitis B core antigen) testing. However Guimarães et al. (2001), Butler et al. (1997) and Mahfoud et al. (2010) used both anti-HBsAg and anti-HBc to estimate the prevalence. The test deemed appropriate to use in this study to establish the prevalence of current (recent or chronic) infection with hepatitis B was the anti-HBsAg test. The question of whether it was necessary to also carry out the anti-HBc (anti-core antigen) test was considered. It was possible that a small proportion of participants who are anti-HBsAg negative may be anti-HBc positive, indicating past infection. However, since these persons are unlikely to be viraemic, neither currently nor chronically infected with hepatitis B (and therefore will not be counted as prevalent cases), nor do they pose a risk of transmission, therefore, it was deemed not necessary to carry out the anti-HBc test on those who are anti-HBsAg negative in this study.

Individual results by Study ID were provided to UCD, individually or in small batches, by email on an intermittent basis during and after fieldwork. Collated results were provided to UCD in an Excel spread-sheet following completion of the study. Results and final interpretation of results were reviewed by the National Virus Reference Laboratory.

7.1 Data Entry

All questionnaires and biological samples were assigned a linked study ID as previously described. A data dictionary was compiled and a set of data entry rules was agreed. The data dictionary contained:

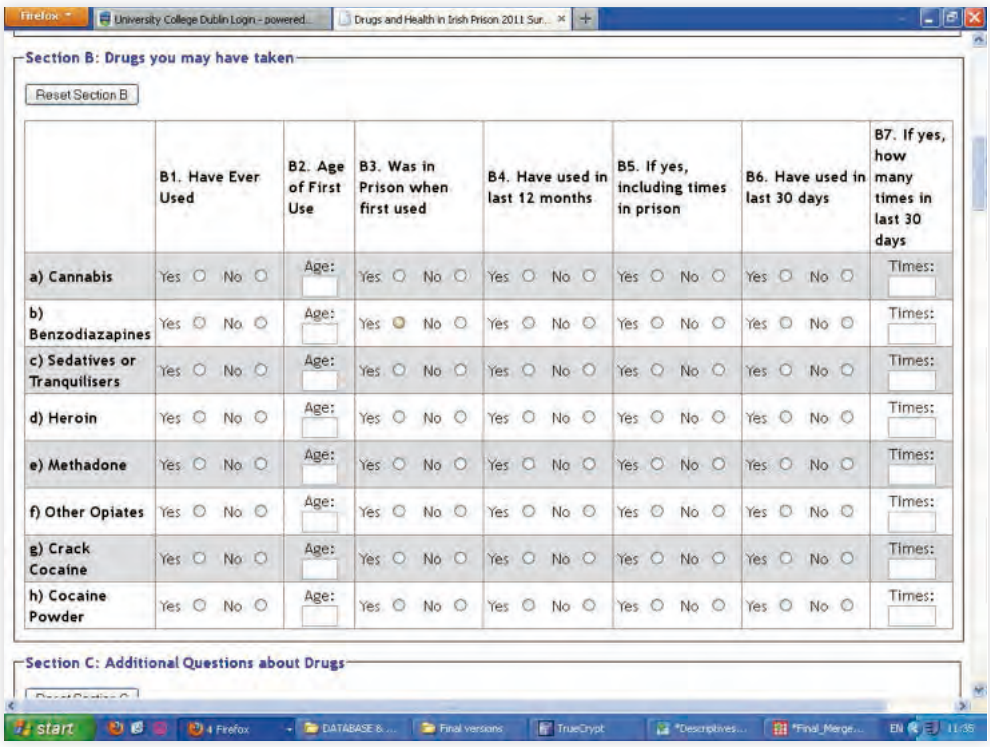
- Abbreviated variable names
- Full name of variables
- Definitions of variables (unit of measurement)
- Source(s)
- Coding options.

Weekly data management meetings were held throughout the data entry and analysis process.

In order to facilitate accurate and speedy data entry of questionnaire data, the questionnaire form was reproduced as a web page form. This web page form had an input element (button, checkbox, text field as appropriate) corresponding exactly to each entry on the original survey form. The web form was written and processed using standard web technologies (PHP/HTML/Javascript), with the appropriate files installed in a folder on the user's desktop. A local-only web server was installed on each machine used for data entry (WampServer version 2.1), with the URL (Universal Resource Locator) http://localhost/prisonstudy/set up to allow the user to access the form using any standard web-browser (e.g. Mozilla Firefox).

The user entered data on the web form exactly as it was entered by the participant in the original questionnaire form. On completing the web form, the user clicked a "submit" button at the bottom of the web page form. This resulted in the web form entries being captured according to the coding options defined in the data dictionary. The output for each questionnaire was written to a two-line tab-delimited text file located in a folder on the user's desktop. The first line of the text file contained the abbreviated variable names as defined in the data dictionary. The second line contained the entry for the corresponding variables as defined in the data dictionary.

Figure 7.1 Screenshot of a web form



The output file was capable of being opened in Microsoft Excel or any other spreadsheet program. The name given to each output file was "`Study ID`.txt", where `Study ID` was the unique identifier of each participant in the survey. Hence the questionnaire data were contained in a set of single files for each questionnaire participant. At the end of each day of data entry the set of files was removed from the desktop of the user's machine and moved to a secure (Trucrypt encrypted) location.

Double data entry of 100% of questionnaire data was carried out. In order to reduce possible errors due to data entry, each survey was captured twice using the web form, each time by a different person. This resulted in two sets of individual-output files. One of these was arbitrarily denoted as the master set and the other the copy set.

7.2 Data Consistency Checking

Basic consistency checking was carried out during data entry. A data Quality Assurance Issue Log was created and modified throughout the data entry process, to identify any anomalies or other issues that arose, and to document decisions.

Linked questions were examined for consistency and where inconsistent data was identified a decision was made on the correct interpretation by two project personnel based on the data given, context of the question(s) and links to data provided elsewhere in the questionnaire where relevant. This decision was noted and initialled by the user on the survey instrument. On completion of data entry, simple data processing scripts were written (using PHP) to compare each individual-output file in the master set to the corresponding one in the copy set to check for inconsistent data entry for that individual. The output of this consistency check procedure was a text file recording the individual cases which had inconsistent data entry, and for which variables they had an inconsistently entered value. In many cases the cause of discrepancy was due to simple typographical differences (such as capitalisation) between the entries in the master and copy datasets. These differences were fixed and thus excluded from any further discrepancy checking. Using the data file that identified the remaining discrepancies, the researchers rechecked the original surveys to find the source of the error, and corrected the individual-output files in the master set accordingly.

All the individual-output files in the corrected master set were then collated into a single spread-sheet containing all the individual survey entries for the study. A first pass through the double entered data to check for inconsistent entries found that a considerable number were due to interpretation differences between the data enterers on what to enter where there should have been a logical "blank" in the data but where the survey respondent had entered a value. It was decided to correct for these logical blanks before proceeding with further inconsistency checking. A complete list of logical blank consistencies that were required in the survey is provided in figure 7.2.

These logical blanks were only corrected where there was consistency in the double entered data for the pivot question in each case, e.g. if Q1, Section B given as NO in both copies of the double entered forms for that individual. If the pivot questions were inconsistent, the original surveys were checked before further correction for logical blanks. The correction for logical blanks was automated using data processing scripts written in the PHP scripting language. This procedure for removing the logical blanks removed the bulk of the inconsistencies due to data entry.

Figure 7.3 summarises consistency checks carried out to identify situations where prisoners answered 'yes' to certain questions, which by definition implied 'yes' to previous questions which they had left blank. This 'backfill' strategy was applied to all relevant questions in the sections outlined.

When discrepancies due to typographical errors and logical blanks were removed the overall rate of data entry errors was 0.8% (based on all sections except for demographic data which were analysed prior to the discrepancy checking process being automated). This means there was a rate of 99.2% consistency between the double-entered data (master and copy datasets). The outstanding errors were resolved by referring to the original data source and two researchers making joint decisions on a case-by-case basis.

Figure 7.2 Summary of Consistency Checks following from survey answers "No" – Logical Blanks

Section B:

For each drug a) to h):

- If Q1 ticked as NO (coding = 2), all answers for Q2 through Q7 set as MISSING (coding = 999)
- If Q4 ticked as NO (coding = 2), all answers for Q5 through Q7 set as MISSING (coding = 999)
- If Q6 ticked as NO (coding = 2), answer for Q7 set as MISSING (coding = 999)

Section D:

If Q1 ticked as NO (coding = 2), all answers for remaining questions in Sections D and E set as MISSING (coding = 999)

For each drug a) to m):

- If Q2 ticked as NO (coding = 2), all answers for Q3 through Q8 set as MISSING (coding = 999)
- If Q5 ticked as NO (coding = 2), all answers for Q6 through Q8 set as MISSING (coding = 999)
- if Q7 ticked as NO (coding = 2), answer for Q8 set as MISSING (coding = 999)

Section E: (see first comment on Section D)

Q7, for each of options a) to c)

- If Q7 ticked as NO (coding = 2), answers for Q8 and Q9 set as MISSING (coding = 999)

Section F:

For each of a) In Prison and b) Outside prison:

- If both Q4 and Q5 ticked as NO (coding = 2), all answers for Q6 through Q10 set as MISSING (coding = 999)
- If both Q6 and Q7 ticked as NO (coding = 2), answer for Q8 set as MISSING (coding = 999)

Section G:

For each virus a) to c):

- If Q1 ticked as NO (coding = 2), all answers for Q2 through Q6 set as MISSING (coding = 999)
- If Q7 ticked as NO (coding = 2) or Don't Know (coding = 3), answers for Q8 and Q9 set to MISSING (coding = 999
- If Q8 ticked as NO (coding = 2) or Don't Know (coding = 3), answer for Q9 set to MISSING (coding = 999)

Section J:

- If Q2 ticked as NO (coding = 2), all answers for Q3 through Q7 set as MISSING (coding = 999)
- If Q4 ticked as NO (coding = 2), answers for Q5 and Q6 set as MISSING (coding = 999)
- If Q8 ticked as NO (coding = 2), all answers for Q9 through Q14 set as MISSING (coding = 999)

Figure 7.3 Summary of Consistency Checks where answers "yes" may have been missing

Section B:

For each drug a) to h):

- If Q7 not 0 AND not MISSING (coding = 999), answers for Q6, Q4 and Q1 must be YES (coding = 1)
- If Q6 ticked as YES (coding = 1), answer for Q4 and Q1 must be YES (coding = 1)
- If Q5 ticked as YES (coding = 1), answer for Q4 and Q1 must be YES (coding = 1)
- If Q4 ticked as YES (coding = 1), answer for Q1 must be YES (coding = 1)
- If Q3 ticked as YES (coding = 1), answer for Q1 must be YES (coding = 1)
- If Q2 not empty AND not MISSING (coding = 999), answers for Q1 must be YES (coding = 1)

Section D:

For each drug a) to m):

- If Q8 not 0 AND not MISSING (coding = 999), answers for Q7, Q5, Q2 and EverIV (Q1) must be YES (coding = 1)
- If Q7 ticked as YES (coding = 1), answer for Q5, Q2 and EverIV (Q1) must be YES (coding = 1)
- If Q6 ticked as YES (coding = 1), answer for Q5, Q2 and EverIV (Q1) must be YES (coding = 1)
- If Q5 ticked as YES (coding = 1), answer for Q2 and EverIV (Q1) must be YES (coding = 1)
- If Q4 ticked as YES (coding = 1), answer for Q2 and EverIV (Q1) must be YES (coding = 1)
- If Q3 not empty AND not MISSING (coding = 999), answers for Q2 and EverIV (Q1) must be YES (coding = 1)
- If Q2 ticked as YES (coding = 1), answer for EverIV (Q1) must be YES (coding = 1)

Section E:

Every question in Section E must be MISSING (coding = 999) if EverIV (Q1) in Section D ticked as NO (coding = 2) or MISSING (coding = 999).

Section G:

For each virus a) to c):

- If Q5 ticked as YES (coding = 1) OR NO (coding = 2), answer for Q1 must be YES (coding = 1)
- If Q3 ticked as YES (coding = 1) OR NO (coding = 2), answer for Q1 must be YES (coding = 1)

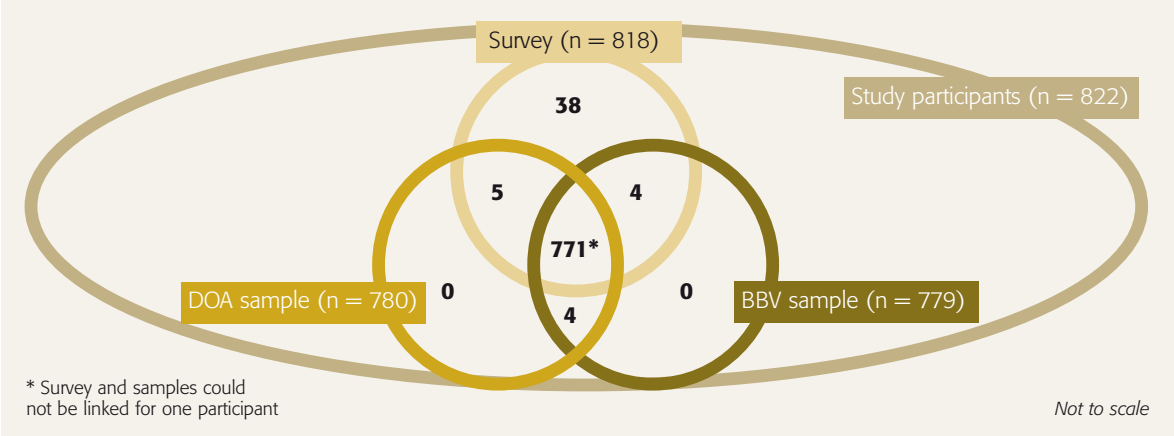
Section J:

- If Q7 not empty AND not MISSING (coding = 999), answer for Q4 must be NO (coding = 2) and Cigs (Q2) must be YES (coding = 1)
- If Q6 not empty AND not MISSING (coding = 999), answers for Q4 and Cigs (Q2) must be YES (coding = 1)
- If Q5 not empty AND not MISSING (coding = 999), answers for Q4 and Cigs (Q2) must be YES (coding = 1)
- If Q4 ticked as YES (coding = 1), answer for Cigs (Q2) must be YES (coding = 1)
- If Q14 not empty AND not MISSING (coding = 999) and not NEVER (coding = 8), answer to Alc (Q8) must be YES (coding = 1)
- If Q13 not empty AND not MISSING (coding = 999) and not NEVER (coding = 8), answer to Alc (Q8) must be YES (coding = 1)
- If any of Q12 not MISSING (coding = 999), answer for Alc (Q8) must be YES (coding = 1)
- If Q11 not empty AND not ZERO (value = 0) AND not MISSING (coding = 999), answer to Alc (Q8) must be YES (coding = 1)
- If Q10 not empty AND not ZERO (value = 0) AND not MISSING (coding = 999), answers to Q9 and Alc (Q8) must be YES (coding = 1)

7.3 Denominators for Statistical Analysis

Following preliminary analysis two of the 824 participants were excluded as they reported that they were aged over 64 years; subsequent descriptions exclude these two cases. Figure 7.4 shows the remaining 822 eligible study participants and the study components in which they participated (survey and or BBV sample and or DOA sample).

Figure 7.4 Surveys completed and oral fluid samples collected in the study



There were 818 surveys completed. One survey was excluded (due to entirely nonsensical responses throughout the questionnaire) leaving 817 valid surveys. It is not unusual in surveys for respondents to fail to respond to individual questions; this may be an error on their part, or it may be because they do not want to answer the question. When estimating prevalence on self-reported questions the denominator for every question can be the total number of respondents to the survey, irrespective of missed items, or it can be the number of respondents to each individual item, thus having a different denominator for each item. In order to comply with EMCDDA guidelines, the NACDA requested that the latter method of estimating prevalence be used in this study.

There were 780 eligible DOA oral fluid samples collected. Three samples were excluded (1 sample with insufficient oral fluid for testing and 2 unavailable samples) leaving 777 DOA screening results available for statistical analysis. This number (n = 777) was used for all analyses based on DOA oral fluid results. It should be noted, however, that two DOA samples had insufficient specimen to carry out the cannabis test, therefore the denominator for analysis of cannabinoids from oral fluid was 775.

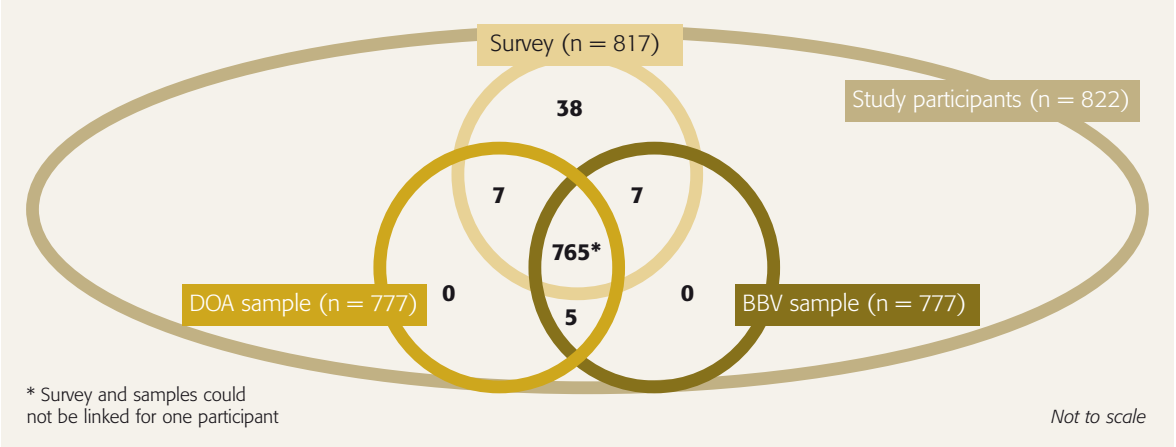
There were 779 BBV eligible BBV oral fluid samples collected. Two samples were excluded (rejected by the laboratory due to a labelling inconsistency) leaving 777 BBV sample results available for statistical analysis. This number (n=777) was the basis for all analyses of prevalence estimates based on BBV oral fluid.

There were 6 participants for whom survey and biological sampling data could not be linked – one of these participants completed a survey but the data could not be linked because while only the survey was completed during a morning session the participant returned in the afternoon and provided oral fluid samples for BBV and DOA screening. Thus, while results for all three components are available, it was not possible to link the survey data with the biological samples because two different study IDs were used (one for the survey and another for the DOA and BBV samples).

Figure 7.5 shows the components that were included in statistical analysis.

Concordance analysis of BBV samples with self-reported blood-borne virus status was based on the 771 participants for whom both survey results and BBV sample results are available and linkable.

Figure 7.5 Surveys and oral fluid samples available for statistical analysis



7.4 Data Analysis

Statistical analysis was carried out using PASW version 18, SAS version 9.1 and WinPepi version 11.15. For discrete/categorical variables data were described and summarised using frequency counts and percentages. For continuous variables data were described and summarised using means, standard deviations, medians, quartiles and ranges as appropriate.

Self-reported prevalence was estimated using all those who reported drug use (i.e. responded 'Yes' to the prevalence questions) as the numerator and all those who responded to relevant survey questions as the denominator; missing values for prevalence questions were excluded from the denominator. Prevalence of BBV and DOA screening was estimated based on all those who tested positive to the relevant test as the numerator and all those who provided usable samples (n = 777) as the denominator. As described in section 7.3 the denominator for cannabis was 775 and there were no other missing values.

Confidence intervals (95%) were calculated for prevalence proportions. The approach for confidence interval estimation for a proportion is based on Wilson's score method (Wilson, 1927) without continuity correction, using the finite population adjustment proposed by Burstein (1975). This is implemented in WinPepi.

In the formulae below:

L	is the lower confidence limit for the 100(1-α)% confidence interval
U	is the upper confidence limit for the 100(1-α)% confidence interval
p	is the observed proportion
	(Note: if p = 1 then U = 1; if p = 0 then L = 0)
N	is the (finite) population size
n	is the sample size from that population
$Z_{1-\alpha/2}$	is the (1-α/2)th percentile of the normal distribution.
	(For a 95% confidence interval $Z_{1-\alpha/2} = 1.96$.)

$$L = p - \frac{1}{2n} - \sqrt{\frac{N-n}{N-1}} \times \left[p - \frac{1}{2n} - \left(\frac{2np + Z^2_{1-\alpha/2} - Z_{1-\alpha/2}\sqrt{Z^2_{1-\alpha/2} + 4np(1-p)}}{2(n + Z^2_{1-\alpha/2})} \right) \right]$$

$$U = p + \frac{p}{n} + \sqrt{\frac{N-n}{N-1}} \times \left[\left(\frac{2np + Z^2_{1-\alpha/2} + Z_{1-\alpha/2}\sqrt{Z^2_{1-\alpha/2} + 4np(1-p)}}{2(n + Z^2_{1-\alpha/2})} \right) - p - \frac{p}{n} \right]$$

For comparisons between groups (e.g. male versus female) the appropriate statistical techniques were used: paired or independent t-tests or Wilcoxon Rank Sum test for comparison of means and medians/distributions respectively. For comparisons between proportions the Pearson Chi square test or Fisher's Exact Test were used as appropriate. Differences with a p value < 0.05 were regarded as statistically significant.

Analysis of factors potentially predictive of blood-borne virus status was carried out using multivariate analysis for a dichotomous dependent variable, i.e. logistic regression. Odds Ratios and 95% confidence intervals are reported for variables found to be significant in multivariate analysis. These are generated from the Logistic Regression process.

Prison Drug Use Categories

A cluster analysis was performed to see if any obvious drug use classification for the prisons was naturally apparent in the data. Cluster analysis is a useful and widely used technique to probe a dataset to see if core objects in the dataset (e.g. the prisons) are naturally grouped based on some set of observations for each of these objects (e.g. the drug use level in each prison) (Kaufmann, 1990).

In this analysis we were interested in looking at the prisons according to the drugs associated with the EMCDDA definition of *recent problematic drug use* (EMCDDA, 2006). Recent problematic drug users are defined as those *who have injected or regularly used opiates, cocaine, amphetamines in the last 12 months*. This definition includes legal opiates such methadone. In this study data were not collected on 12 month frequency of use, however we used reported use of the key drugs (from this definition) in the last 12 months in individual prisons in an attempt to identify prisons which group together according to drug use of resident prisoners. Hence, from the survey data we determined the use levels in the last 12 months for prisoners in each prison for each of Heroin, Methadone, Other Opiates, Crack Cocaine, Cocaine Powder (survey Section B, questions 4 d to h inclusive) and injected Amphetamines (Section D, question 5 b) – the use level is the percentage of prisoners who answered 'yes' to the question, and excluding those who refused to answer the question. Note that this is the use level in the last 12 months regardless of whether that use was inside or outside prison.

Cluster analysis looks at how 'close' objects are to each other based on the observations. This requires a 'distance' between objects. Using a Euclidean measure, the distance between two objects A and B is defined as:

$$D_{AB} = \sqrt{\sum_i (x_i^A - x_i^B)^2}$$

where x_i^A, x_i^B are the values for the i^{th} observation for A and B respectively. In this analysis there are six observations for each prison, and the squared 'distance' between two prisons is the sum of the squares of the differences between the two prisons for each of these six observations. Other measures of 'distance' are also possible, but there is no compelling reason not to use the standard Euclidean measure in this analysis. Normally the x_i are observations taken at different scales or units, and the data needs to be standardised to remove this scale dependence. In this analysis all the six observations are use levels valued between 0 and 1 so no such standardisation is necessary.

One of the primary methods for performing cluster analysis is Hierarchical (also called Agglomerative) clustering (Kaufmann et al., 1990). This is a bottom up approach: the algorithm starts by joining the 'closest' two objects to form a cluster, and successively joins the next closest objects/clusters to form the new greater cluster until the data are finally described by a single cluster. The results from hierarchical clustering are best illustrated using a dendrogram (tree diagram). The resulting dendrogram for this present analysis is shown in figure 7.6. Reading from the bottom up, each horizontal line in the tree represents an agglomeration step in the algorithm. The items grouped below this horizontal line give the cluster formed at that step of the algorithm. The data objects (i.e. prisons) are on the horizontal axis, and the distance between the clusters joined at each step on the vertical axis. A large change in vertical height in forming a cluster signifies that the cluster formed at this step is 'loose' and probably not a valid cluster. Conversely, a short vertical span for a given cluster signifies a compact cluster likely to be a true grouping in the data. Note there is no scale on the horizontal axis: this is merely an ordering of the objects to correctly display the tree structure.

The number and membership of any clusters in the data are determined by inspection of this dendrogram. The dendrogram in figure 7.6 strongly shows a 4 cluster solution in the data. These clusters are outlined by the different coloured rectangles overlayed on the dendrogram.

An important point to note is that the only input to this Hierarchical clustering algorithm is the distance matrix, DAB, as defined above. This only gives the distance between objects (prisons), not between clusters of objects. Hence a further choice is required of how to determine this distance between clusters as they are formed, based solely on the distance between objects. Amongst the several standard methods are:

- *Complete Linkage:* the distance between two clusters is measured by the largest possible distance between observations in the two clusters. Usually clusters with similar diameters are obtained.
- *Average Linkage:* the distance between two clusters is given by the average of the distances between all the possible pairs of observations. Usually clusters with similar variances are obtained.
- *Ward's method:* This method is based upon the concept of within sum of squares. The two clusters with the smallest between sum of squares are joined. This method is regarded as very efficient and usually finds the most compact clusters in the data.

Each of these methods generally produces slightly different dendrograms and cluster memberships. Ward's method was used to generate the dendrogram in figure 7.6. The other methods produced slightly different dendrograms but similar cluster memberships.

It is also possible to use a top-down approach to cluster analysis, so-called Partitional Clustering. Unlike Hierarchical clustering, in Partitional clustering the number of clusters is not inferred from the results but is an input to the algorithm. The number of clusters expected, k, must first be chosen, and then the output of the Partitional techniques is the membership of these k clusters. There is no dendrogram in this approach. The different Partitional algorithms all work similarly: the objects are initially randomly partitioned into k clusters, and then the membership of these clusters is iteratively changed to maximise some objective measure of 'distance' between clusters. The most commonly used Partitional technique is the *k-means* algorithm (Kaufmann et al., 1990). As a further check on the results of our Hierarchical clustering we also applied k-means clustering with an input number of clusters k=4. This produced an identical cluster membership as given in the dendrogram in Figure 7.6.

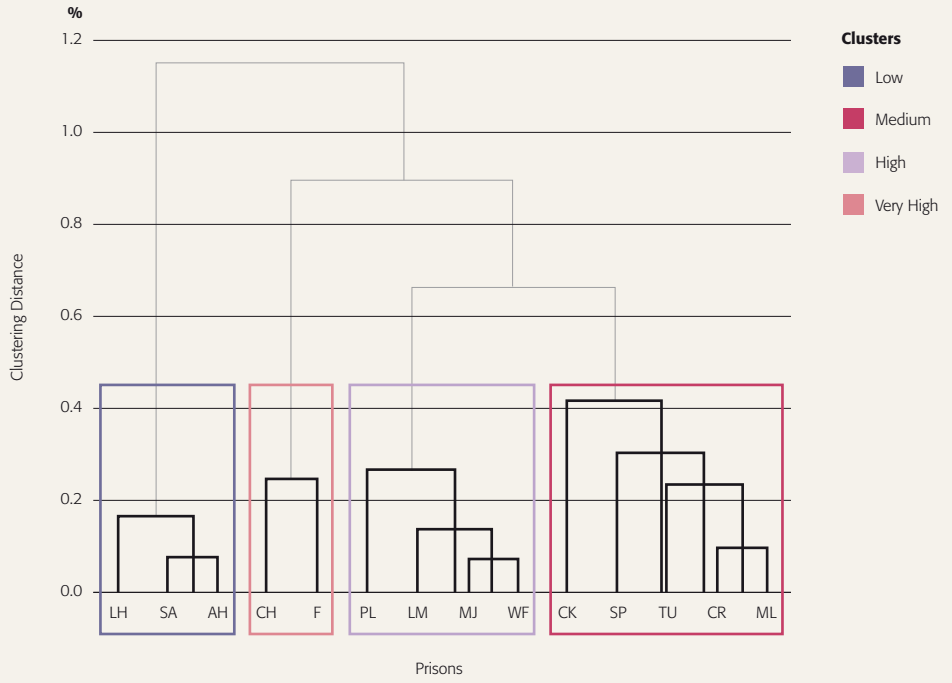
It is important to note that there is no best method to use in cluster analysis. The type of data in the analysis is irrelevant to the method used. What is relevant is the "shape" of the clusters, but of course this is not *a-priori* known. Where there are clearly distinct clusters, regardless of shape, all the cluster methods will give the same number of clusters and identical cluster membership. Where there is some overlap between clusters, the different methods will favour different cluster shapes, and so it is possible that the different cluster methods will give different numbers of clusters and cluster membership. Hence, in a cluster analysis, it is important to try different methods and see if there is consensus across the methods – this is true in this study. Partitional k-means and Hierarchical clustering are methods that reveal the most compact clusters in the data, so the results from these methods are generally trusted most.

When this study commenced, no model existed for categorising prison according to the drug use history of its residents. This post-hoc clustering model provides a means of categorising prisons based on prisoners' self-reported use in the previous 12 months of the six drugs included in the EMCDDA 'problem drug use' definition. This provides a way of describing drug use within the prison service at an aggregate level including all prisons without compromising confidentiality or anonymity by naming individual prisons. It must be emphasised that this is based on self-reported drug use among those who participated in the study.

Cluster analysis is only a descriptive technique, not a statistical testing methodology. Results are very much a matter of interpretation. However, the hierarchical clustering method employed in this study strongly shows a four cluster description of the data, and the summary statistics for each cluster as reported elsewhere in this report also strongly support this four group structure in the data.

Figure 7.6 Dendrogram resulting from hierarchical clustering of prisons based on recent (12 month) 'problematic' drug use of prisoners

Cluster Dendrogram



Dendrogram resulting from hierarchical clustering (Ward's method) of prisons based on recent (12 month) problematic drug use of prisoners, inside or outside of prison. This dendrogram strongly suggests four clusters of prisons. We label these clusters Low, Medium, High and Very High based on summary statistics for these clusters reported elsewhere in the report. These cluster memberships are:

Low
(n = 91)
SA: Shelton Abbey
AH: Arbour Hill
LH: Loughan House

Medium
(n = 289)
CK: Cork
SP: St Patrick's Institution
CR: Castlerea
ML: Midlands
TU: Training Unit

High
(n = 341)
PL: Portlaoise
LM: Limerick Male
MJ: Mountjoy
WF: Wheatfield

Very High
(n = 96)
F: Female
CH: Cloverhill

Note that both female prisons were pre-grouped as one: they showed similar statistics and are clearly distinct from the other prisons in the study. This is borne out by this cluster analysis and other descriptive statistics in this report.

The prison drug use categories showing the number of prisoners in each category are provided in the table below.

Table 7.2 Prison drug use categories

Low use	Medium use	High use	Very high use
(n = 91)	(n = 289)	(n = 341)	(n = 96)
Arbour Hill	Castlerea	Limerick Male	Cloverhill
Loughan House	Cork	Mountjoy	Dóchas
Shelton Abbey	Midlands	Portlaoise	Limerick Female
	St. Patrick's Institution	Wheatfield	
	Training Unit		

Note: within categories prisons are presented in alphabetical order, not in order of severity of drug use.

7.5 Response Rate by Prison Drug Use Category

As the prevalence of lifetime, last year and last month self-reported drug use (including IV drug use), and of biologically proven drug use and blood-borne viruses are reported by prison category as well as overall, it was considered relevant to examine the response rates by prison category.

Participation was considerably lower in the 'very high' drug use prison category (38%) compared with that in the other categories (74%, 52% and 47% in the 'low', 'medium' and 'high' use prisons).

Table 7.3 Response rate by prison drug use category

	Final eligible available sample	Declined total		Participants	Response rate
	n	n	%	n	%
Low Use	127	33	26.0	94	74.0
Medium Use	559	267	47.8	292	52.2
High Use	729	387	53.1	342	46.9
Very High Use	251	155	61.8	96	38.2
Total	**1,666**	**842**	**50.5**	**824**	**49.5**

It could be suggested that this may reflect a reluctance of prisoners in the 'very high' use prisons to participate in a study which could reveal their drug use habits. While there is no way of out-ruling that possibility, it cannot be assumed to have a 'cause and effect' relationship on study participation. There are several other potential reasons for reduced participation in these particular prisons, including:

- A higher proportion of prisoners in the 'very high' drug use prisons are likely to be in short term and pre-sentence custody (committals, remand prisoners, etc). It is known, for example, that 68% of those in the 'very high' use prisons are remand prisoners, compared with 4.9%, 8.7% and 0.25% of those in the 'high', 'medium' and 'low' use prison respectively (IPS, 2011). The three prisons in the 'very high' drug use category are the prisons with the highest proportion of remand/trial prisoners in the system (Dóchas; 23%, Limerick female; 19% and Cloverhill; 84%). In contrast the prisons in the 'low' drug use category comprise Arbour Hill, where the population is largely made up of long term sentenced prisoners with no remand/trial prisoners, and the open prisons Shelton Abbey and Loughan House, with virtually no remand prisoners (IPS, 2011);
- A significantly higher proportion of the prison population in the 'very high' use prisons (49.5%) had been in prison for less than 3 months compared with the other prison categories (10.3%, 21.3% and 17.3% in low, medium and high use prisons respectively) (Appendix 15). While prisoners in custody < 3 months also comprised a higher proportion of the sample from the 'very high' use prisons compared with the same proportion from the other categories of prison, the relative proportion was lower (12.3% vs 18.9%, 14.3% and 17.7% respectively). This substantiates the relative lack of availability of prisoners in the very high use prisons due to court appearances, solicitors' visits and interaction with other relevant professionals compared with this group of prisoners in the other prison categories; and
- The two female prisons in Ireland are included in the 'very high' drug use category. It is known that the committal rate among female prisoners (12.4% of committals are females; 3.8% of the prison population are female) is higher than that among male prisoners (87.6% of committals are male; 96.2% of the prison population are male) (IPS, 2011). It has also been noted in the previous studies that women prisoners less likely to participate in studies than male prisoners (Allwright et al, 1999; Centre for Health Promotion Studies, 2000).

Notwithstanding the reasons for lower participation rates in the 'very high' use prisons, the potential impact of varying rates of participation on the overall prevalence rates of drug use and blood-borne viruses were considered. The prevalence of lifetime, last year and last month self-reported drug use (including IV drug use), and of biologically proven drug use and blood-borne viruses and other study parameters are reported by prison category. Overall (crude) prevalence rates for all drugs and BBVs were adjusted for participation rate by prison category. The

'weighted' prevalence rates derived were compared with the crude rates. Results of these analyses are provided in table 7.4. It will be noted that the impact of varying participation rates on the overall prevalence of lifetime, 12 month and 30 day drug use is negligible. The impact of varying participation by prison category on the overall prevalence of the blood-borne viruses is also negligible.

Therefore, in the interest of ease of interpretation and comparability with previous studies, it was decided to present overall crude prevalence rates rather than weighted prevalence rates for both drugs and BBVs in this study. To our knowledge this is the first study in Ireland or the UK in which prison category has been defined as described and has been used to report use of drugs and BBVs by category.

Table 7.4 Potential impact of weighting by prison category on overall prevalence rates reported

LIFETIME USE	Crude Prevalence Rate	Weighted Prevalence Rate	Prevalence Difference	Prev. Diffs Ranked	Median	Range
Cannabis	86.9%	87.1%	0.2%	0.2%	0.55%	0.2%–1.3%
Benzos	67.8%	68.4%	0.6%	0.2%		
Seds/Tranqs	58.2%	58.7%	0.5%	0.4%		
Heroin	43.3%	44.4%	1.0%	0.5%		
Methadone	32.6%	33.9%	1.3%	0.6%		
Other Opiates	32.5%	32.9%	0.4%	0.9%		
Crack Cocaine	35.6%	36.5%	0.9%	1.0%		
Cocaine Pwder	74.2%	74.4%	0.2%	1.3%		

LAST YEAR USE	Crude Prevalence Rate	Weighted Prevalence Rate	Prevalence Difference	Prev. Diffs Ranked	Median	Range
Cannabis	68.6%	69.0%	0.4%	0.2%	0.7%	0.2%–1.3%
Benzos	54.6%	55.4%	0.8%	0.4%		
Seds/Tranqs	46.3%	47.0%	0.7%	0.7%		
Heroin	29.5%	30.2%	0.8%	0.7%		
Methadone	20.9%	22.2%	1.3%	0.7%		
Other Opiates	13.0%	13.2%	0.2%	0.8%		
Crack Cocaine	11.7%	12.4%	0.7%	0.8%		
Cocaine Pwder	28.6%	29.3%	0.7%	1.3%		

LAST MONTH USE	Crude Prevalence Rate	Weighted Prevalence Rate	Prevalence Difference	Prev. Diffs Ranked	Median	Range
Cannabis	43.4%	43.4%	0.0%	0.0%	0.1%	0.0%–0.9%
Benzos	29.0%	29.5%	0.5%	0.0%		
Seds/Tranqs	24.8%	25.3%	0.6%	0.1%		
Heroin	11.1%	11.2%	0.1%	0.1%		
Methadone	13.3%	14.2%	0.9%	0.1%		
Other Opiates	4.4%	4.4%	0.0%	0.5%		
Crack Cocaine	1.9%	2.0%	0.1%	0.6%		
Cocaine Pwder	5.2%	5.3%	0.1%	0.9%		

BBVs	Crude Prevalence Rate	Weighted Prevalence Rate	Prevalence Difference
Hepatitis B	0.26%	0.24%	-0.02%
Hepatitis C	12.87%	13.75%	0.88%
HIV	1.93%	2.17%	0.24%

Agresti, A., and Coull, B,A. (1998). 'Approximate is better than 'exact' for interval estimation of binomial proportions. *The American Statistician* 52: 119–126.

Allwright, S., Barry, J., Bradley, F., Long, J. and Thornton, L. (1999). *Hepatitis B, hepatitis C and HIV in Irish prisoners: prevalence and risk.* Dublin: the Stationery Office.

Burstein, H. (1975). Finite population correction for binominal confidence limits. *Journal of the American Statistical Association.* 70(349): 67-69.

Butler, T. G., Dolan, K. A., Ferson, M. J., McGuinness, L. M., Brown, P. R., Robertson, P. W. (1997). Hepatitis B and C in New South Wales prisons: prevalence and risk factors. *The Medical Journal of Australia.* 166(3): 127-30.

Butler, T., Boonwaat, L., Hailstone, S., Falconer, T., Lems, P., Ginley, T., Read, V., Smith, N., Levy, M., Dore, G., Kaldor, J. (2007). The 2004 Australian prison entrants' blood-borne virus and risk behaviour survey. *Australian and New Zealand Journal of Public Health.* 31(1): 44-50.

Centre for Health Promotion Studies, NUI Galway. (2000). *General Healthcare Study of the Irish Prison Population.* Dublin: Department of Justice, Equality and Law Reform.

Champion, J. K., Taylor, A., Hutchinson, S., Cameron, S., McMenamin, J., Mitchell, A. and Goldberg, D. (2004). Incidence of Hepatitis C Virus Infection and Associated Risk Factors among Scottish Prison Inmates: A Cohort Study. *American Journal of Epidemiology.* 159(5): 514-519.

Danis, K., Doherty, L., McCarthy, M., Carrol, J. and Kennedy, H. (2007). Hepatitis and HIV in Northern Ireland Prisons: A Cross-Sectional Study. *Eurosurveillance* 12:9-12.

Dye, S. and Isaacs, C. (1991). Intravenous drug misuse among prison inmates: implications for the spread of HIV. *British Medical Journal* 302: 1506.

European Committee for the Prevention of Torture and Inhuman or Degrading Treatment of Punishment (CPT) (2011). *Report to the Government of Ireland on the visit to Ireland carried out by the European Committee for the Prevention of Torture and Inhuman or Degrading Treatment of Punishment.* Strasbourg: Council of Europe.

European Monitoring Centre for Drugs and Drugs Addiction (EMCDDA) (2006). *Annual report 2006: The state of the drugs problem in Europe.* Lisbon: EMCDDA, European Monitoring Centre for Drugs and Drug Addiction.

Fazel, S., Bains, P., and Doll, H. (2006). Substance abuse and dependence in prisoners: a systematic review. *Addiction.* 101(2): 181-191.

Flesch, R. (1948). A new readability yardstick. *Journal of Applied Psychology* 32: 221–233.

Ford, P. M., Pearson, M., Sankar-Mistry, P., Stevenson, T., Bell, D. and Austin, J. (2000). HIV, Hepatitis C and risk behaviour in a Canadian medium-security federal penitentiary. *QJM: An International Journal of Medicine.* 93(2):113-119.

Fotiadou, M., Livaditis, M., Manou, I., Kaniotou, E., Samakouri, M., Tzavaras, N., Xenitidis, K. (2004). Self Reported Substance Misuse in Greek Male Prisoners. *European Addiction Research.* 10(2):56-60.

Graham, L. (2007). *Prison health in Scotland: A health care needs assessment.* Edinburgh: Scottish Prison Service.

Guimarães, T., Granato, C. F. H., Varella, D., Ferraz, M. L. G., Castelo, A., Kallás, G. (2001). High prevalence of hepatitis C in a Brazilian prison: Identification of risk factors for infection. *The Brazilian Journal of Infectious Diseases.* 5(3): 111-118.

Irish Prison Chaplains Report (2010). Irish Prison Chaplains Annual Report 2010. Dublin: Archdiocese of Dublin. Available from: http://www.dublindiocese.ie/index.php?option=com_content&task=view&id=2180&Itemid=373 [Accessed 20th June 2011].

Reference List

Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population

Irish Prison Service. (2002). Irish Prison Service Report 1999 and 2000. Dublin: the Stationery Office.

Irish Prison Service. (2003). Irish Prison Service Report 2001. Dublin: the Stationery Office.

Irish Prison Service. (2004). Irish Prison Service Report 2003. Dublin: the Stationery Office.

Irish Prison Service. (2006). Keeping Drugs out of Prison. Drugs Policy and Strategy. Longford: Irish Prison Service.

Irish Prison Service. (2010). Irish Prison Service Annual Report 2009. Longford: Irish Prison Service.

Kaufman L., and Rousseeuw P.J. (1990). *Finding groups in data: an introduction to Cluster Analysis.* New York: Wiley-Interscience.

Kazi, A.M., Shah, S.A., Jenkins, C.A., Shepherd, B.E. Vermund, S.H. (2010). Risk factors and prevalence of tuberculosis, human immunodeficiency virus, syphilis, hepatitis B virus and hepatitis C virus among prisoners in Pakistan. *International Journal of Infectious Diseases.* 14(3): 60-66.

Kirwan, P., Evans, B., Brant, L. (2011). Hepatitis C and B testing in English Prisons is low but increasing. *Journal of Public Health.* 33(2): 197-204.

Koulierakis, G., Gnardellis, C., Agrafiotis, D., Power, K. (2000). HIV risk behaviour correlates among injecting drug users in Greek Prisons. *Addiction.* 95(8): 1207-1216.

Long, J., Allwright, S., Barry, J., Reaper Reynolds, S., Thornton, L., and Bradley, F. (2000). *Hepatitis B, hepatitis C and HIV in Irish Prisoners part II: prevalence and risk in committal prisoners.* Dublin: Stationary Office.

Lukasiewicz, M., Falissard, B., Michel, L., Neveu, X., Reynaud, M., Gasquet, I. (2007). Prevalence and factors associated with alcohol and drug-related disorders in prison: a French National Study. *Substance Abuse Treatment, Prevention and Policy.* 2(1):1-10.

Mahfoud, Z., Kassak, K., Kreidieh, K., Shamra, S., Ramia, S. (2010). Prevalence to antibodies to human immunodeficiency virus (HIV), hepatitis B and hepatitis C and risk factors in prisoners in Lebanon. *The Journal of Infection in Developing Countries.* 4(3):144-149.

Malliori, M., Sypsa, V., Psichogiou, M., Touloumi, G., Skoutelis, A., Tassopoulos, N., Hatzakis, A., and Stefanis, C. (1998). A survey of blood-borne viruses and associated risk behaviours in Greek Prisons. *Addiction.* 93(2):243-251.

National Advisory Committee on Drugs (NACD) & Drug and Alcohol Information and Research Unit (DAIRU) (2008). Drug Use in Ireland and Northern Ireland – First Results from the 2006/2007 Drug Prevalence Survey Bulletin 1. Available from http://www.nacda.ie/publications/prevalence_bulletin1_results.html. [accessed on 20th September 2011].

National Advisory Committee on Drugs (NACD) (2008) NACD Drug Prevalence Survey 2006/2007 – Technical Report. Dublin: NACD.

Newcombe, R. G. (1998). Interval estimation for the difference between independent proportion: comparison of eleven methods. Statistics in Medicine 17 (8): 873-890.

Power, K.G., Markova, I., Rowlands, A., McKee, K.J., Anslow, P.J., and Kilfedder, C. (1992). Intravenous drug use and HIV transmission amongst inmates in Scottish Prisons. *British Journal of Addiction.* 87:35-45.

Radun, D., Weilandt, C., Eckert, J., Schüttler C.G., Weid, F.J., Kücherer, C., Hamouda, O., Cross-sectional study on Seroprevalence regarding Hepatitis B, Hepatitis C, and HIV, Risk, Behaviour, Knowledge and Attitudes about Bloodborne infections among adult prisoners in Germany – preliminary results. Cited in Klempova, D. and Wiessing, L. (2008). *2007 EU expert meetings (9-12 October) on Key Indicators 'Drug related Infectios Diseases' and 'Problem Drug Use' Meeting Report European Monitoring Centre for Drugs and Drug Addiction.* Available from http://www.emcdda.europa.eu/html.cfm/index64548EN.html [accessed 14th June 2011].

Saiz de la Hoya, P., Marco, A., Garcia-Guerrero, J., and Rivera, A. (2011). Hepatitis C and B prevalence in Spanish prisons. *European Journal of Clinical Microbiology and Infectious Diseases.* 30(7): 857-862.

Scottish Prison Service (2008). Prisoner Survey 2008. Edinburgh: Scottish Prison Service. Available from: http://www.sps.gov.uk/Publications/Publication75.aspx [accessed 14th June 2011].

Scottish Prison Service (2009). Prisoner Survey 2009. Edinburgh: Scottish Prison Service. Available from: http://www.sps.gov.uk/Publications/Publication79.aspx [accessed 14th June 2011].

Singleton, N., Farrell, M., and Meltzer, H., (1999). Substance misuse among prisoners in England and Wales. London: National Office for Statistics.

Sleiman, S. (eds) (2004). Belgian national report on drugs 2004. Belgium: Scientific Institute of public health available from http://www.drugsandalcohol.ie/11817/1/NR_2004_Belgium.pdf [accessed 14th June 2011].

Weild, A., Gill, O., Bennett, D., Livingstone, S., Parry, J. and Curran, L. (2000). Prevalence of HIV, hepatitis B and hepatitis C antibodies in prisoners in England and Wales: a national survey. *Communicable Disease and Public Health.* 3(2):121-6.

Wilson, E. B. (1927). Probable inference, the law of succession, and statistical inference. *Journal of the American Statistical Association* 22: 209–212.

Zakaria, D., Thompson, J.M., Jarvis, A. and Borgotta, F. (2010). *Summary of Emerging Findings from the 2007 National Inmate Infectious Diseases and Risk-Behaviours Survey.* Correctional Service of Canada. http://www.csc-scc.gc.ca/text/rsrch/reports/r211/r211-eng.pdf accessed October 2010.

Appendix 1: Request for Tender published 31 May 2010

Tender to Undertake a Study on the Prevalence of Drug Use, including Intravenous Drug Use, and Blood-Borne Viruses among the Irish Prisoner Population

Commission

The National Advisory Committee on Drugs (NACD)* wishes to commission a study to estimate the prevalence of drug use, including intravenous drug use, among the prisoner population in Ireland in order to determine the need for drug treatment and harm reduction (including needle exchange) services in Irish prisons.

The objectives of the study are:

- To describe the nature, extent and pattern of consumption for different drugs among the prisoner population when in the community and when in prison;
- To describe methods of drug use, including intravenous drug use, among the prisoner population;
- To estimate the prevalence of blood-borne viruses among the prisoner population and to identify associated risk behaviours;
- To measure the uptake of individual drug treatment and harm reduction interventions (including hepatitis B vaccination) when in the community and when in prison.

The study will be jointly funded by the NACD and the Irish Prison Service.

* In 2013 the remit of the NACD was extended to include Alcohol and is now called the National Advisory Committee on Drugs and Alcohol (NACDA).

Background

The National Advisory Committee on Drugs (NACD) was established in July 2000 to advise the Government in relation to the prevalence, prevention, treatment/rehabilitation and consequences of problem drug use in Ireland, based on the analysis of research findings and information. The Committee oversees the delivery of a work programme on the extent, nature, causes and effects of drug use in Ireland. The research and information actions for which the NACD has lead responsibility are set out in the National Drugs Strategy (interim) 2009-2016, which is available on www.pobail.ie.

The mission of the Irish Prison Service is to provide safe, secure and humane custody for people who are sent to prison. The Irish Prison Service currently has an average of 4,000 prisoners in custody at any one time and had 13,557 committals in 2008 which comprised of 10,928 persons. It is anticipated that this figure will be exceeded when data becomes available for 2009. All prisoners committed to prison receive a health screen and medical assessment from appropriately qualified staff. Information on healthcare provision to prisoners is set out in the appendix.

Background Information

A Steering Group, set up under the aegis of the former National Drug Strategy Team, carried out an assessment of the need for prison-based needle exchange in Ireland in 2009. A copy of the report is attached. The report's primary conclusions were that prison needle exchange constitutes a viable and effective means of addressing the remaining drug problem and its associated health risks within Irish prisons but that there is no up to date information on the prevalence of drug use including intravenous drug use in Irish prison settings. The Steering Group therefore recommended that research into the prevalence of drug use, including intravenous drug use, and Blood-Borne viruses among prisoners should be carried out before consideration is given to introducing needle exchange into a prison setting.

The Brief

Against this background, the NACD is seeking to establish the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the prisoner population. The project will involve:

- an approach to surveying prison entrants (committals) and a cross-section of prison inmates (remand and sentenced) during particular time periods**;
- the development of a representative sampling strategy and the calculation of an adequate sample size;

- the identification of appropriate methods to collect and test biological samples for drug-related blood-borne viruses, of note, these methods should have high specificity and sensitivity but be acceptable to the survey population;
- the design of an appropriate anonymous questionnaire and a system to link the questionnaire with the biological sample;
- the obtaining of ethical approval from the prison research ethics committee;
- the organisation of the completion of this questionnaire by a high proportion of the selected sample;
- the accurate entry and validation of data;
- analysis of data (using appropriate statistical methods) to answer the questions set out in the study objectives;
- the presentation of the full study methods, findings and their implications in a written report and oral presentation to the NACD.

** Note: It is intended to validate the self reported drug results through the screening of saliva for drug metabolites.

Survey mode

To address objective 1, it will be necessary to ensure that the questionnaire instruments adhere to the EMCDDA protocol for General Population Surveys on drug use; the methods for these surveys were adapted for Ireland (http://www.nacd.ie/publications/NACD_IpsosMORI-Technical-report-Final-23-May-08.pdf). Data relating to drug prevalence on a lifetime, last year (recent) and last month (current) basis will be required on all drug types as set out in Tables 1.1. to 1.3 from the 2006/2007 Drug Prevalence Survey. (http://www.nacd.ie/publications/44598NACDConfidenceTables3.pdf).

When addressing objectives 2 and 3, the study should be guided by the protocol for the EMCDDA key indicator on drug related infectious diseases (http://www.emcdda.europa.eu/html.cfm/index65537EN.html).This key indicator collects data on the extent of infectious diseases – primarily HIV, hepatitis C and hepatitis B infection – among people who inject drugs. Assessment of the uptake of needle exchange and other harm reduction options, including methadone treatment, drug fee options and counselling, will be a core objective of the study; the Irish prison services will provide you with a list of current treatment and harm reduction services. The potential contractors will be expected to obtain ethical approval in their proposal. Copy of prison ethics application is included as an additional document on eTenders.

Additional documentation

The following additional documentation is provided:

- A copy of the ROI Population Study Questionnaire for 2010/2011 is included as an additional document on eTenders;
- A copy of the reports prepared for the Minister for Justice, Equality and Law Reform (Parts 1 and II) on Hepatitis B, Hepatitis C and HIV in Irish Prisoners: Prevalence and Risk.
- http://www.drugsandalcohol.ie/5110/3/Long_Prevalence_risk_prisoners.pdf
- http://www.drugsandalcohol.ie/5015/3/Long_prevalence_risk_prisoners_part_1.pdf

Research Advisory Group

The Research Advisory Group (RAG) comprising representatives from the NACD, the Irish Prison Service, the Health Research Board, the Office of the Minister for Drugs and other interested parties have been invited to oversee the project. The successful bidder will be expected to report to this RAG on progress during the research. Close collaboration with the Research Advisory Group is expected during the lifetime of this research project to enable the early identification and resolution of design or other research difficulties.

Timescale of the project

The survey of inmates (sentenced and remand) should be carried out between November 2010 and December 2010 or sooner depending on speed of access to interviewees and the survey of entrants should be carried out between February 2011 and March 2011.

Requirements

Tenders must submit a written proposal detailing the following;

- Research methodology to be employed and justification of outputs (please be guided by bullet points set out in the brief);
- Project management from conception to completion with clear milestones;
- Personnel involved their credentials and qualifications;
- Track Record in this field;
- Description of administrative and technical costs.

Evaluation of the submissions will be based on the following criteria and on the basis of the following scores:

- Research methodology (35)
- Understanding of the issues involved;
- Understanding of the work involved;
- Feasibility of the approach suggested;
- Methods to ensure confidentiality.
- Project management (40)
- Ability to deliver key outputs on time;
- Clarity in description of milestones;
- Track record in this field;
- Qualifications and capacity of personnel.
- Value for Money (25)

A full and detailed breakdown of fees and costs (excluding VAT) is required. Tenderers should indicate the estimated number of person/days for completing the work. The NACD reserves the right to reject any or all of the proposals submitted and will not be obliged to accept the lowest or any tender.

Data Protection and Intellectual Property

Researchers/contractors must comply with data protection legislation. The successful bidder will be expected to demonstrate steps they will take to protect and store the data from corruption, infiltration and technical damage. The Intellectual Property issues are dealt with in the sample contract which is on the NACD website. Submission of a tender proposal will be taken as acceptance of these terms.

Financial Details

The researcher must set out a description and justification for the costs of implementing the brief. A separate financial report will also be required on completion of the project before final payment is made.

NACD Contract

A copy of the NACD contract is available to download from the NACD website.

A Freedom of Information Declaration

A Freedom of Information Declaration must be completed and returned with the tender. This is available to download from the NACD website.

Closing Date for Submissions

Five copies of the tender together with a signed Freedom of Information Declaration (form attached) and an up-to-date Tax Clearance Certificate should be sent to the NACD offices, and include a short CV of those leading and managing this study, no later than **3.00pm, Monday, 12th July 2010**.

Tenders will not be accepted by email.

Please mark your envelope **'Prison Study' Tender and address to**:

The Secretary
NACD
1st Floor
Dún Aimhirgin
43-49 Mespil Road
Dublin 4
Ireland

Tel: 00 353 1 647 3240
Fax: 00 353 1 647 3150
Email: info@nacd.ie; Web: www.nacd.ie

Appendix

Healthcare provision in Prisons

Primary care is the model of care through which healthcare is delivered; it is the linchpin of the prison healthcare system. The effectiveness of this system is crucial to the provision of secondary and tertiary care. The Irish Prison Service (IPS) is working towards a service that is structured and organised in a way that delivers maximum outcomes for patients.

The main domains of care apart from Primary Care would fall into the following categories Chronic Disease Management, Mental Health and Drug Treatment.

The service is currently provided by a mix of part-time and full-time doctors, who attend the various prisons for varying periods of time commensurate with the numbers and needs of the prisons population. The service is heavily dependant on support from Nurses and Medical Orderlies. The service is provided using a Multidisciplinary model and intra-disciplinary working processes. The IPS is working towards having a structure that will offer, from appropriately competent staff, a system to ensure systematic review of all patients.

The IPS has developed a set of basic Healthcare Standards, which represent an outline of practical provision of care at institutional level, the aim of which is to achieve a consistent approach to the delivery of service across fourteen prison locations, providing a benchmark for such provision. The Standards set out the processes for assessment, primary care intervention, treatment and specialist service engagement. The Healthcare Standards are based on best international guidance in the delivery of prison healthcare.

The IPS provided substitution treatment for some 2424 prisoners in 2009 of whom 266 were new to treatment.

Drug rehabilitation programmes for prisoners involve a significant multidimensional input by a diverse range of general and specialist services provided both by the IPS and visiting statutory and non-statutory organisations. The IPS has committed significant investment in recent years to respond to addiction issues in the prison system. The most significant recent development has been the awarding of a contract for the provision of addiction counselling services to Merchants Quay Ireland. Addiction counselling services are now available in prisons and places of detention where prisoners require such a service. The addiction counselling service delivers approximately 1,500 prisoner contacts per month. Feed back on this service from clients is very positive.

Note: following publication the tender was changed to exclude a study of committals and the objectives were changed accordingly.

Appendix 2: NACD Research Advisory Group

Dr. Justine Horgan, Senior Researcher, NACD

Ms. Joan O'Flynn, Director NACD (from February 2011 to February 2012)

Ms. Susan Scally, Director, NACD (to February 2011)

Mr. Tony Geoghegan, Merchants Quay

Dr. Jean Long, Alcohol and Drug Unit, Health Research Board

Ms. Frances Nangle Connor, Director of Nursing Services, Irish Prison Service

Ms. Dairearca NiNeill, Office of Minister for Drugs (from February 2011)

Mr. Aidan O'Hora, Health Protection Surveillance Centre, Health Services Executive

Ms. Nicola Perry, Coordinator, Community Response

Mr. Julian Pugh, Social Inclusion Unit, Health Services Executive

Ms. Anna Quigley, HIV Alliance

Appendix 3: UCD study team

Principal Investigator: Dr. Anne Drummond Senior Lecturer, SPHPPS*

Co-Principal Investigator: Dr. Mary Codd, Senior Lecturer, SPHPPS*

SPHPPS* Team:

Ms. Nora Ann Donnelly, Research Assistant

Professor Cecily Kelleher, Head of School SPHPPS*

Mr. Darren McCausland, Research Assistant

Ms. Joanna Kozielec, Administrator (to August 2011)

Ms. Brid O'Shea, Administrator (from August 2011)

UCD Advisors:

Dr. Anna Clarke, SPHPPS*

Dr. Jeff Connell, National Virus Reference Laboratory

Dr. Gloria Crispino O'Connell, Centre for Support and Training in Analysis and Research

Dr. Suzie Coughlan, National Virus Reference Laboratory

Prof. Denis Cusack, Medical Bureau of Road Safety and Forensic & Legal Medicine, UCD School of Medicine and Medical Science

Professor Leslie Daly, Centre for Support and Training in Analysis and Research

Dr. Deirdre Healy, UCD Institute of Criminology

Dr. Richie Maguire, Medical Bureau of Road Safety and UCD

Dr. John Mehegan, SPHPPS*

Professor Ian O'Donnell, UCD Institute of Criminology

Drafting Team:

Dr. Anne Drummond

Dr. Mary Codd

Ms. Nora-Ann Donnelly

Prof. Cecily Kelleher

Mr. Darren McCausland

Dr. John Mehegan

** UCD School of Public Health, Physiotherapy and Population Science*

Appendix 4: Fieldwork Team

UCD Researchers

1. Dr. Anne Drummond	RGN, RM, MSc, PhD, FIOSH
2. Dr. Mary Codd	MD, MPH, PhD, FFPHMI
3. Ms. Nora Ann Donnelly	MSocSc, MSc
4. Mr. Darren McCausland	BA, MA
5. Dr. Deirdre Healy	PhD

Fieldworker Panel

5. Boyle, Siobhan	BSc Public Health, MPH
6. Doyle, David	BA, MA, PhD
7. George, Sherly	BSc Nursing, MSc Nursing
8. Harrington, Paul	BA
9. Macken, Alan	BA, MSocSc
10. Martyn, Michelle	BA Soc Sc, MA Criminology
11. McMahon, Orla	BSc (Hons)
12. NicChartaigh, Róisín	BA, MSc
13. Offergeld, Stephanie	BSc Nursing, Associate Degree LLM Law
14. Quigley, Etáin	BSocSc, MSocSc
15. Rafferty, Ruth	BSc, MSc
16. Sutton, Eílis	BSc (Hons)

Appendix 5: Prisoner Leaflet

What if I start but change my mind half way through?

You can change your mind any time until we collect the survey and swabs. You don't have to give us any reason and you won't be placed on report.

What if I want my test results?

We can't give you your test results, because we won't know which results are yours. If you want to know your HIV or Hepatitis status, we **can** help you to arrange testing through the Prison Health Service or your GP.

Who will have access to my survey answers and saliva swabs?

We are the only ones who will have access to your information, and your name will not be used so it will be anonymous. We will make sure that no one can find out information about you. Swabs will be destroyed and cannot be tested for anything you do not consent to.

What will happen to the results of the study?

We will write up and publish our findings. This will be done in a way that will not identify you or anyone else who took part. But, the overall findings will help the healthcare staff to decide what drug treatments and services are needed in prisons.

What good will it do me?

The findings will help healthcare staff to plan suitable drug treatment services which will improve healthcare. This will be good for all prisoners. There are no benefits straight away for those who take part.

What harm might it do me?

It will not do you any harm.

- We will not tell anyone about who took part.
- We will **not** ask you to put your name on the survey or on the swabs.
- We will make sure that no one can identify you in the final reports.

What if I want more information?

If you are picked, we will answer any questions that you have at the information session.

Dr Anne Drummond and Dr Mary Codd
School of Public Health
University College Dublin

Research Study on Drugs and Health in Prison

We are researchers from University College Dublin. We will visit your prison soon to find out what drug treatment services are needed in prisons so that services can be improved.

You might be picked and asked to take part, so we have tried to answer any questions that you might have. Whether or not you use drugs, we hope you will take part.

Please read this leaflet carefully. Talk about it with your family or friends. If you can read it, please read it to others who can't. The healthcare staff, counsellors, teachers, chaplains or officers will also help you with the leaflet if you ask.

What is the reason for the study?

We need your help to learn more about:

- how many prisoners use drugs
- how they use them
- how many prisoners experience health problems like HIV or Hepatitis
- what drug treatment and harm-reduction services prisoners use
- what services are needed.

What is involved?

If you are picked and you agree to take part, you will be asked to fill in a survey and to give two mouth swabs for saliva samples.

Who is paying for the study?

The National Advisory Committee (NACD) on Drugs and the Irish Prison Service.

Who is doing the study?

Researchers from University College Dublin and the NACD are doing the research. They are independent of the Prison Service.

Why did I get this letter and leaflet?

About a quarter of sentenced and remand prisoners will be picked at random. You might be picked so we want you to know what is involved.

Do I have to take part?

No. Taking part is voluntary so you do not have to. If you do take part, you can drop out if you change your mind.

You don't have to decide yet. We want you to read this leaflet and, if you are picked, we will tell you more at our group information session. You can decide about taking part when you have had a chance to ask questions and have all the information that you need.

What happens if I am picked to take part?

An Officer will bring you to a group information session. You will be given more information about the study and you'll have a chance to ask questions.

What if I decide not to take part?

If you decide not to take part, that is fine. You won't be placed on report. We'll simply ask you to stay in the information session room while those who are taking part fill in the survey and have their swabs taken. That way only the people in the room will know who took part.

What if I decide to take part?

We will ask you to consent to fill in a confidential survey about drugs and health in prison and to give saliva samples. This will all take about 1 hour. The saliva samples will be tested for Hepatitis B, Hepatitis C and HIV and for certain drugs (Benzodiazepines, Heroin or other Opiates, Cocaine, Cannabis, Methadone).

Please note:

- The drug test is **not** the same as mandatory drug testing (MDT).
- It is **not** a DNA test.

The study is being done to help us understand the extent of the problem of drug use in prison. We will not know which result belongs to you. We are only interested in the overall patterns of the results.

Appendix 6: Prisoner letter

UCD School of Public Health, Physiotherapy and Population Science

University College Dublin,
Woodview House,
Belfield, Dublin 4, Ireland

T +353 1 716 3442
F +353 1 716 3421

Scoil na Sláinte Poiblí, na Fisiteiripe agus Eolaíocht an Daonra UCD

An Coláiste Ollscoile, Baile Átha Cliath,
Áras Woodview,
Belfield, Baile Átha Cliath 4, Eire

public.health@ucd.ie
www.ucd.ie/phps

Research Study on Drugs and Health in Prison

Dear Sir

We are health professional researchers from University College Dublin (UCD) and we will be visiting your prison in the next few weeks. We are carrying out a research study on Drugs and Health in Prison because we want to find out exactly what drug treatment services are needed. In this way, better services can be planned to meet the needs. This study will be completely confidential.

Whether or not you use drugs, we hope you will take part. Your knowledge and experience will help us to understand the extent of the problem. This will let the Prison Service know how to improve services, which will benefit all prisoners.

We will be picking prisoners at random to come to a group information session. You are getting this letter because you might be one of the people picked. At the session, we will tell you more about the study and invite you to take part.

When you come to the information session, you will have a chance to ask questions. If you agree to be part of the study, we will ask you to:

- fill in a survey about drugs and health, and
- give saliva samples for drug testing, and Hepatitis B, Hepatitis C and HIV testing.

The saliva samples will be destroyed after testing. They will **not** be tested for DNA. The National Advisory Committee on Drugs (NACD) and the Irish Prison Service are paying for the research. UCD and the NACD are doing the research. We will make sure that only researchers see the information collected from you. Your name won't be put on the survey or the samples. Any information you give in the survey will be confidential, and the test results will be confidential. No one will be able to identify you when we write up our findings.

The survey and testing will all take just over one hour of your time. You can freely decide not to take part. You don't have to give any reason and you will not be placed on report. The leaflet that comes with this letter gives more information about the research. If you can read it, please also read it to others who can't. The nurses, addiction nurses or counsellors, teachers, chaplains, and officers in your prison will also help any prisoner with the information in the brochure.

Yours faithfully

Dr Anne Drummond, UCD

Dr Mary Codd, UCD

Appendix 7: IPS Staff Information Sheet

Research Study on Drugs and Health in Prison
IPS Staff Information Sheet

These pages contain information about this confidential study on drugs and health in Irish prisons, which will take place in Spring 2011. We need the help of IPS staff to help prisoners understand that this is a **voluntary, confidential** study that aims to **benefit all prisoners** by identifying drug treatment and harm reduction needs in prison.

What is the reason for the study?

The study aims to find out confidentially what drug treatment and harm reduction services are needed in Irish prisons. We need prisoners' help to learn more about:

- how many prisoners use drugs
- how they use them
- how many prisoners experience health problems like HIV or Hepatitis
- what drug treatment and harm reduction services prisoners use
- what services are needed.

Who is paying for the study?

The National Advisory Committee on Drugs (NACD) and the Irish Prison Service are jointly paying for the study.

Who is doing the study?

Researchers from the School of Public Health in UCD in association with the NACD are doing the research. We will manage all of the information collected. We are emphasising to participants that we are independent of the Prison Service.

What is involved?

We will select a random sample of about 25% of all prisoners to fill in a survey and to give two mouth swabs for saliva samples. We will see selected candidates in groups of 20 for an information session, at the end of which we will collect the data from those who consent. There is an appointed prison liaison person in each prison who is working with us to manage logistics on this project.

Do prisoners have to take part?

Taking part is voluntary so prisoners do not have to. If they do start to take part they can still decide to stop during the process. We need your help to encourage those selected in the random selection process to come to the information session where we can allay any concerns they may have and answer questions. **Then** they can decide whether to take part or not.

What if a prisoner decides to take part?

We will ask them to consent to fill in an anonymous and confidential survey and to give two saliva samples.

- The survey will take an average of 20 minutes. The process will take about 90 minutes.
- The saliva will be collected using mouth swabs. Swabs will be tested for Hepatitis B, Hepatitis C and HIV and for drugs (Heroin or other Opiates, Cocaine, Cannabis, Methadone and Benzodiazepines).
- We will reassure participants that the samples will **never** be tested for DNA.
- We will reassure participants that having the drug test is **not the same** as the mandatory drug test (MDT). There are no risks to prisoner privileges associated with taking part.
- Prisoners taking part will help us to understand the extent of the problem of drug use in prison. We will not know which result belongs to each prisoner, only the overall patterns of results.

What if a prisoner decides not to take part?

If someone decides not to take part, that is fine. They will be reassured that they won't be placed on report, nor is there any other negative consequence. We'll probably ask them to stay in the information session room while those who are taking part fill in the survey and have their swabs taken. That way only the people in the room will know who took part in the study.

What if a participant starts but changes their mind half way through?

Participants can change their mind any time until we collect the survey and swabs, without penalty or loss of benefits, and without telling us why. Because there are no names on anything, after we collect the survey and swabs we won't know which ones belong to which prisoner.

What if a participant wants to know their test results?

We can't give them their test results, because we won't know which results are theirs. If an individual wants to know their HIV or Hepatitis status, we can refer them to the healthcare staff and/or give them a letter requesting a test. They can give the letter to the prison healthcare staff, or to their GP if they are being released soon, and they will arrange a test and give them the results.

Who will have access to a participant's answers and test results?

We are the only ones who will have access to the information participants provide. Their name will not be used so it will be anonymous. We will make sure that no one can find out information about any individual. Swabs will be destroyed and cannot be tested for anything a participant did not consent to.

What will happen to the results of the study?

We will collect and analyse all the information and write up and publish our findings. These will be written in a way that will not identify any individual, but the overall findings will help prison healthcare staff to plan the drug treatments and services needed in prisons.
After the study, researchers in the National Advisory Committee on Drugs (NACD) will keep a copy of the file. They will keep it in a way that allows it to be analysed further for future research reasons but will not allow any individual to be identifiable.

What good will it do prisoners if they take part?

The findings will help healthcare staff plan appropriate drug treatment services and will improve healthcare. This will be good for all prisoners. There are no immediate benefits for those taking part.

Can it do a prisoner any harm if they take part?

Prisoners might worry that they could be placed on report or that it might affect parole or temporary release. This won't happen because it is confidential and anonymous.

How can IPS staff help?

IPS staff are helping by arranging that we can meet the groups of prisoners selected for the random sample. You can help by reassuring any concerned prisoners of the confidential and anonymous nature of the study, the independence of the researchers from the IPS and by stressing the aim of the study, which is to improve healthcare for all prisoners. We want to survey both those who do and who do not take drugs. Prisoners will all receive an information leaflet about the study and some prisoners may ask someone to read it to them; if you are asked, we would appreciate your help.

We are happy to answer any questions you have about the study (anne.drummond@ucd.ie).

Dr. Anne Drummond and Dr. Mary Codd, School of Public Health, University College Dublin

Appendix 8: IPS Drug Treatment and School Staff letter

UCD School of Public Health, Physiotherapy and Population Science

University College Dublin,
Woodview House,
Belfield, Dublin 4, Ireland

T +353 1 716 3442
F +353 1 716 3421

Scoil na Sláinte Poibli, na Fisiteiripe agus Eolaiocht an Daonra UCD

An Coláiste Ollscoile, Baile Átha Cliath,
Áras Woodview,
Belfield, Baile Átha Cliath 4, Eire

public.health@ucd.ie
www.ucd.ie/phps

To Head Teachers, Head Chaplains, Head Drug Counsellors and Chief Nurse Officers

Re: Drugs and Health in Prison Study

I have attached information, designed for IPS staff, about the above study. Our research team will be coming into your prison within the next 7 to 10 days. Management will be circulating information leaflets to all staff, but just in case it takes time to filter down, I am enclosing some staff information leaflets for your information and for your team. Prison staff will be circulating information to all prisoners, in the form of a letter and leaflet by cell-drop, providing advance information about the study (copy of prisoner information enclosed so that you know what is coming).

While visiting all prisons in setting up the study, I met with a number of nurses, teachers, drug counsellors and chaplains, but I did not get to meet them in every prison. I am aware that a number of prisoners have difficulty reading, and we have designed the documentation using the principles of plain English, and all prisoner documentation has also been reviewed by the NALA editing service. Notwithstanding that, as you will see in the leaflet, we have also encouraged prisoners to seek help with reading the documents from staff within the prisons if they wish. We think your teams are the personnel most likely to be approached in this regard, and wanted to alert you in advance. We do not expect you to mediate the message, simply to help with reading if necessary.

If you have any queries please do not hesitate to contact me on anne.drummond@ucd.ie. I will be in the prisons most days from mid-February to early April, but if you give me your number and a good time to call, I will get back to you as soon as I can.

With kind regards

Dr. Anne Drummond
Principal Investigator

Appendix 9: Prison Poster (A3 size)

UCD DUBLIN

Research Study on Drugs and Health in Irish Prisons 2011

NACD
National Advisory Committee on Drugs

It's

- ✔ Voluntary
- ✔ Anonymous
- ✔ Confidential
- ✔ **Good** for prisoner health

We will be here on

If **you** are picked please come to our information session and we will tell you more

Appendix 10: Participant Information Sheet

Research Study on Drugs and Health in Prison
Information Sheet

These pages contain information about this confidential study on drugs and health in Irish prisons.

What is the reason for the study?

We want to find out confidentially what drug treatment services are needed in Irish prisons. We need your help to learn more about:

- how many prisoners use drugs
- how they use them
- how many prisoners experience health problems like HIV or Hepatitis
- what drug treatment and harm reduction services prisoners use
- what services are needed.

What is involved?

We want you to fill in a survey and to give two mouth swabs for saliva samples.

Who is paying for the study?

The National Advisory Committee on Drugs (NACD) and the Irish Prison Service are paying for the study.

Who is doing the study?

Researchers from University College Dublin (UCD) and the NACD are doing the research. We will take care of all of the information collected. We are independent of the Prison Service.

Do I have to take part?

Taking part is voluntary so you do not have to. If you do you can decide to stop during the study.

What if I decide to take part?

If you do, we will ask you to consent to fill in an anonymous and confidential survey and to give two saliva samples.

- The survey will take about 20 minutes.
- The saliva will be collected using mouth swabs. They will be tested for Hepatitis B, Hepatitis C and HIV and for certain drugs (Heroin or other Opiates, Cocaine, Cannabis, Methadone and Benzodiazepines).
- The samples will **never** be tested for DNA.
- The drug test is not the same as the mandatory drug testing (MDT). It will not even be tested in the same laboratory.
- Your taking part will help us understand the extent of the problem of drug use in prison. We will not know which result belongs to you, only the overall patterns of results.

What if I decide not to take part?

If you decide not to take part, that is fine. We won't tell anyone. You won't be placed on report. We'll simply ask you to stay in the room while those who are taking part fill in the survey and have their swabs taken. That way only the people in this room will know who took part in the study.

What if I start but change my mind half way through?

You can change your mind any time until we collect the survey and swabs, without penalty or loss of benefits, and without telling us why. Because there are no names on anything, after we collect the survey and swabs we won't know which ones belong to you.

What if I want to know my test results?

We can't give you your test results, because we won't know which results are yours. If you want to know your HIV or Hepatitis status, we can give you a letter requesting a test. You can give the letter to the prison healthcare staff, or to your GP if you are being released soon, and they will arrange a test and give you the results.

Who will have access to my answers and test results?

We are the only ones who will have access to your information. Your name will not be used so it will be anonymous. We will make sure that no one can find out information about you. Swabs will be destroyed and cannot be tested for anything you did not consent to.

What will happen to the results of the study?

We will collect and analyse all the information and write up and publish our findings. These will be written in a way that will not identify you or any individual, but the overall findings will help prison healthcare staff to plan the drug treatments and services needed in prisons.
After the study, researchers in the National Advisory Committee on Drugs (NACD) will keep a copy of the file. They will keep it in a way that allows it to be analysed further for future research reasons but will not allow any individual to be identifiable.

What good will it do me if I take part?

The findings will help healthcare staff plan appropriate drug treatment services and will improve healthcare. This will be good for all prisoners. There are no benefits straight away for those who take part.

What harm might it do me if I take part?

You might worry that you could be placed on report or that it might affect parole or temporary release. This won't happen. We have planned this study so that:

- We will **not** tell anyone if you took part or not.
- We will **not** ask you to put your name on the survey or on the swabs.
- We will keep your consent form separately to your survey and swabs.
- We will put a number on the surveys and swabs to link them to each other, but those numbers will **not** be linked to your name.
- We will make sure that **no one** can identify you in the final reports.

Please ask us any questions you have about the study.

Dr. Anne Drummond and Dr. Mary Codd,
School of Public Health, University College Dublin

Appendix 11: Presentation provided to prisoners

Drugs and Health in Prison Study

Confidential

Reason for the study

- We need your help to find out.....
  - how many prisoners use drugs
  - how they use them
  - how many prisoners experience health problems like HIV* or Hepatitis B or C*
  - what drug treatment and harm-reduction services prisoners use
  - **what services are needed.**

What's involved?

- Fill in a survey AND
- Give 2 mouth swabs for saliva samples

Who's paying?

- National Advisory Committee on Drugs
- Irish Prison Service

Who is doing the research?

- University College Dublin
- National Advisory Committee on Drugs
- We are **independent** of the prison service

Voluntary

- You do **not** have to take part unless you want to

What's involved?

- Fill in a survey

And...

What's involved?

- Give 2 mouth swabs
- Saliva samples
  - 1 for Infection
    - Hepatitis B, Hepatitis C and HIV
  - 1 for Drug testing
    - Benzodiazepines, cannabis, methadone, heroin or other opiates, cocaine

Nothing to do with....

Questions?

- What if I don't want to take part?
  - No problem!
- What if I start and change my mind?
  - No problem!
- The point at which you can't change your mind is after you hand up your survey and swabs

Test results?

- We cannot give you results because....
- NO NAMES ON ANYTHING
- NO name on survey
- NO name on samples
- But you **can** get a test done by the healthcare staff or a GP

Who will see your answers?

- Only UCD and NACD
- But it is all anonymous

Results of the Study

- We will write up our findings
- We will make sure **no one can be identified** in it
- UCD and NACD will keep a copy of the file for research reasons only

What good will the study do?

- Hopefully it will help plan better healthcare for all prisoners

What harm could it do?

- NO HARM
- No names or PRIS numbers
- Anonymous
- Confidential

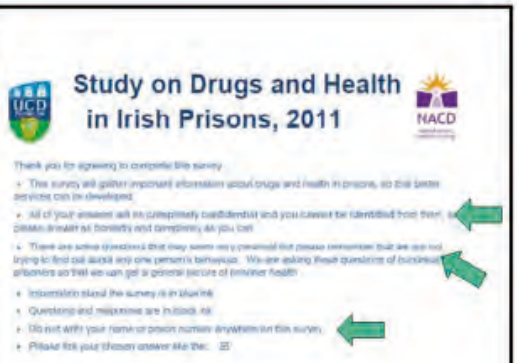
Any questions?

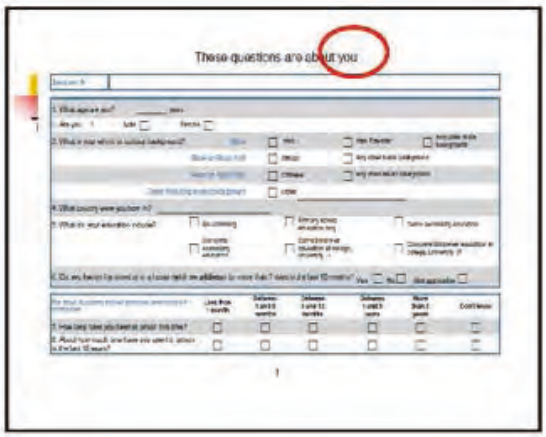
Consent form

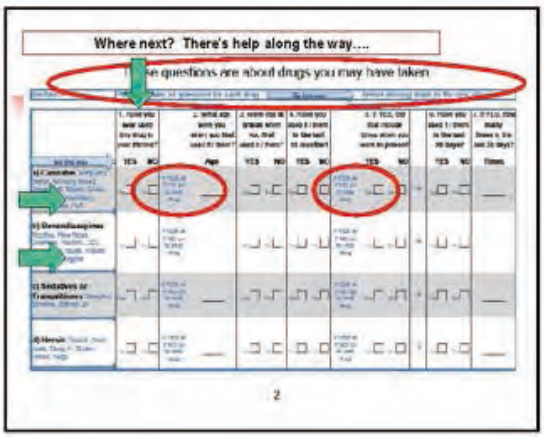
Signed

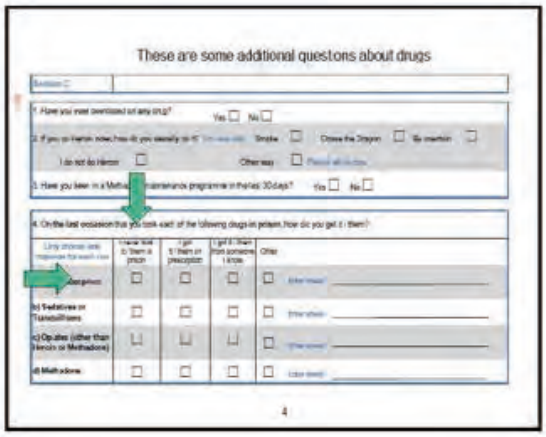
Signed (witness)

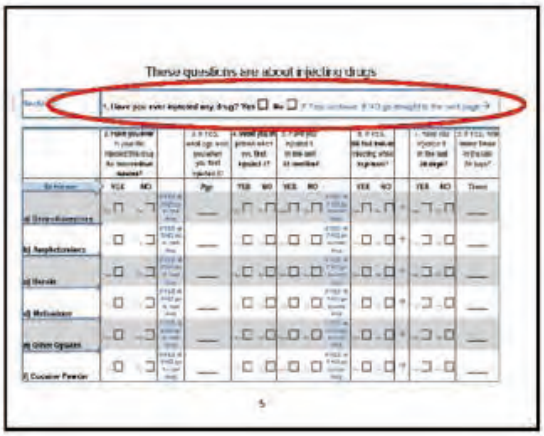
Study on Drugs and Health in Irish Prisons, 2011

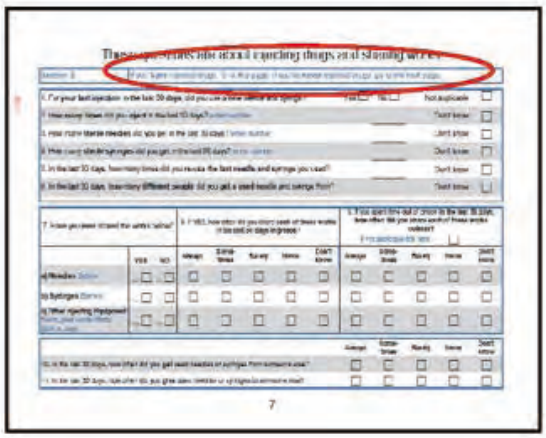


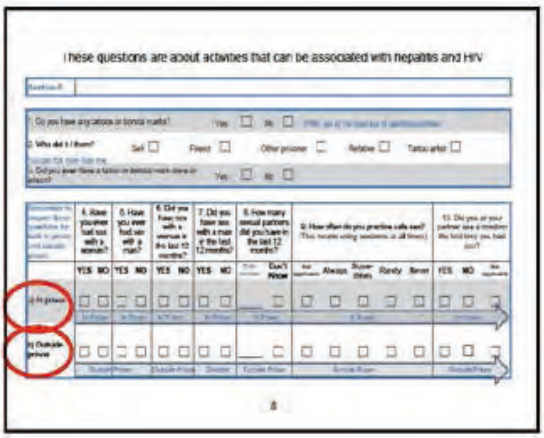

These questions are about you


Where next? There's help along the way....


These are some additional questons about drugs

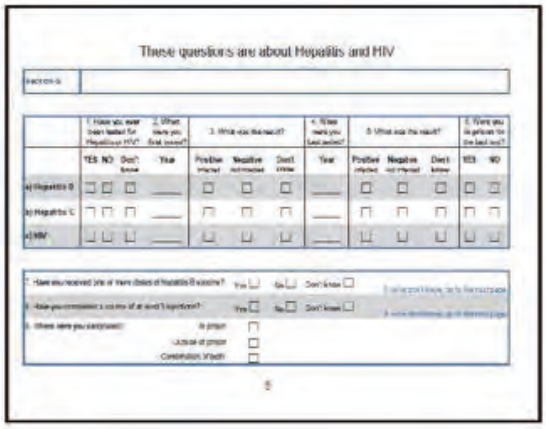

These questions are about injecting drugs

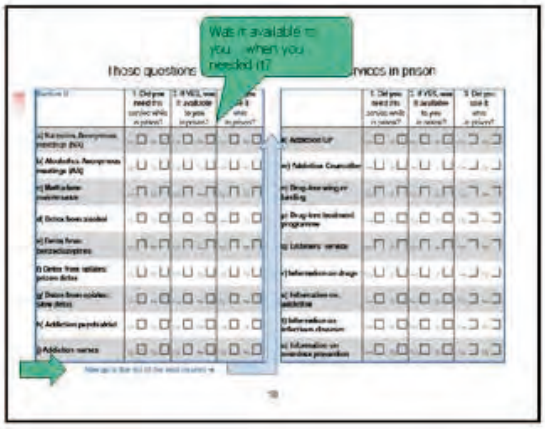


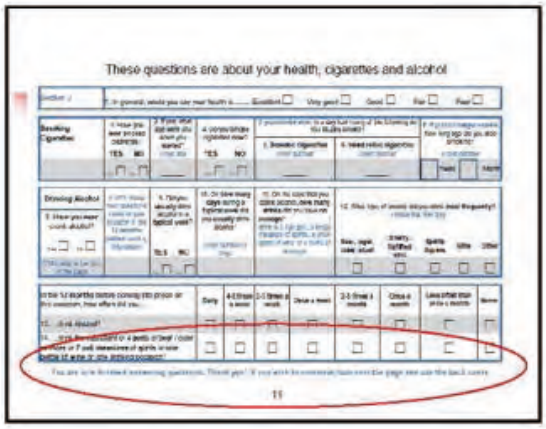

These questions are about activities that can be associated with hepatitis and HIV

Appendices

Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population







Appendix 12: Letter requesting BBV testing provided to prisoners on request

UCD School of Public Health, Physiotherapy and Population Science

University College Dublin,
Woodview House,
Belfield, Dublin 4, Ireland

T +353 1 716 3442
F +353 1 716 3421

Scoil na Sláinte Poiblí, na Fisiteiripe agus Eolaíocht an Daonra UCD

An Cóláiste Ollscoile, Baile Átha Cliath,
Aras Woodview,
Belfield, Baile Átha Cliath 4, Eire

public.health@ucd.ie
www.ucd.ie/phps

To whom it concerns

I met the bearer of this letter in the course of a research study. He/she would like to be tested for:

Hepatitis B ☐

Hepatitis C ☐

HIV ☐

We would be grateful if you could facilitate this request.

With kind regards

Dr. Anne Drummond

Appendix 13: Questionnaire

Official use only	Date of Survey	Centre	Study ID

Study on Drugs and Health in Irish Prisons, 2011

Thank you for agreeing to complete this survey

- This survey will gather important information about drugs and health in prisons, so that better services can be developed
- All of your answers will be **completely confidential** and **you cannot be identified** from them, so please answer as honestly and completely as you can
- There are some questions that may seem very personal but please remember that we are not trying to find out about any one person's behaviour. We are asking these questions of hundreds of prisoners so that we can get a general picture of prisoner health
- Information about the survey is in blue ink
- Questions and responses are in black ink
- Do **not** write your name or prison number anywhere on this survey
- Please tick your chosen answer like this: ☑

These questions are about you

Section A

1. What age are you? _____ years

2. Are you....? Male ☐ Female ☐

3. What is your ethnic or cultural background?

White	☐ Irish	☐ Irish Traveller	☐ Any other white background
Black or Black Irish	☐ African	☐ Any other black background	
Asian or Asian Irish	☐ Chinese	☐ Any other Asian background	
Other including mixed background	☐ Other _____		

4. What country were you born in? _____

5. What did your education include?

☐ No schooling	☐ Primary school education only	☐ Some secondary education
☐ Complete secondary education	☐ Some third level education at college, university, IT	☐ Complete third level education at college, university, IT

6. Did you live on the street or in a hostel (**with no address**) for more than 7 days in the last 12 months? Yes ☐ No ☐ Not applicable ☐

For these questions include sentence and remand if continuous	Less than 1 month	Between 1 and 3 months	Between 3 and 12 months	Between 1 and 3 years	More than 3 years	Don't know
7. How long have you been in prison this time?	☐	☐	☐	☐	☐	☐
8. About how much time have you spent in prison in the last 10 years?	☐	☐	☐	☐	☐	☐

1

These questions are about drugs you may have taken

Section B	Please answer all questions for each drug → Go this way → before moving down to the next drug											
	1. Have you **ever** used this drug in your lifetime?			2. What age were you when you **first** used it / them?	3. Were you **in prison** when you **first** used it / them?		4. Have you used it / them **in the last 12 months?**			5. If YES, did that include times when you were **in prison?**			6. Have you used it / them **in the last 30 days?**		7. If YES, how **many times** in the last 30 days?
Go this way	YES	NO		Age	YES	NO	YES	NO		YES	NO		YES	NO	Times
a) Cannabis Marijuana, Ganja, Whacky Backy Dope, Shit, Skunk, Grass, Resin, Pot, Hash(ish), Weed, Draw, Puff	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐	→	Yes ☐	No ☐	____
b) Benzodiazapines Roofies, Row Rows, Downers, Roches, D2s, D5s, D10s, Blues, Valium, Upjohns, Moggies	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐	→	Yes ☐	No ☐	____
c) Sedatives or Tranquillisers Sleepers, Zimmos, Stilnoc, Zs	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐	→	Yes ☐	No ☐	____
d) Heroin Smack, Gear, Junk, Skag, H, Brown, Horse, Yego	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐	→	Yes ☐	No ☐	____

Section B	Please answer all questions for each drug → Go this way → before moving down to the next drug										
	1. Have you **ever** used this drug in your lifetime?		2. What age were you when you **first** used it / them?	3. Were you **in prison** when you **first** used it / them?	4. Have you used it / them **in the last 12 months?**		5. If YES, did that include times when you were **in prison?**		6. Have you used it / them **in the last 30 days?**	7. If YES, how **many times** in the last 30 days?
Go this way	YES NO		Age	YES NO	YES NO		YES NO		YES NO	Times
e) Methadone Physeptone, Phy, Green (phy), Brown (phy)	Yes ☐ No ☐	If YES → If NO go to next drug	_____	Yes ☐ No ☐	Yes ☐ No ☐	If YES → If NO go to next drug	Yes ☐ No ☐	→	Yes ☐ No ☐	_____
f) Other Opiates Diffs, Dikes, Peach, Napps, Pethidine, DF's, Morphine, Opium, Codeine	Yes ☐ No ☐	If YES → If NO go to next drug	_____	Yes ☐ No ☐	Yes ☐ No ☐	If YES → If NO go to next drug	Yes ☐ No ☐	→	Yes ☐ No ☐	_____
g) Crack Cocaine Rock, Stones, Freebase	Yes ☐ No ☐	If YES → If NO go to next drug	_____	Yes ☐ No ☐	Yes ☐ No ☐	If YES → If NO go to next drug	Yes ☐ No ☐	→	Yes ☐ No ☐	_____
h) Cocaine Powder Charlie, Coke, Snow, Nose Candy, Blow, White, Sniff	Yes ☐ No ☐	If YES → If NO go to next drug	_____	Yes ☐ No ☐	Yes ☐ No ☐	If YES → If NO go to next drug	Yes ☐ No ☐	→	Yes ☐ No ☐	_____

These are some additional questions about drugs

Section C

1. Have you **ever** overdosed on **any** drug? Yes ☐ No ☐

2. If you do Heroin **now**, how do you **usually** do it? tick one only Smoke ☐ Chase the Dragon ☐ By injection ☐

I do not do Heroin ☐ Other way ☐ Please tell us how _____

3. Have you been in a Methadone maintenance programme in the last 30 days? Yes ☐ No ☐

4. On **the last occasion** that you took each of the following drugs **in prison**, how did you get it / them?

Only choose one response for each row	I never took it / them in prison	I got it / them on prescription	I got it / them from someone I know	Other
a) Benzodiazepines	☐	☐	☐	☐ Enter where _____
b) Sedatives or Tranquillisers	☐	☐	☐	☐ Enter where _____
c) Opiates (other than Heroin or Methadone)	☐	☐	☐	☐ Enter where _____
d) Methadone	☐	☐	☐	☐ Enter where _____

These questions are about injecting drugs

Section D	1. Have you ever injected any drug? Yes ☐ No ☐ If Yes, continue, If NO go straight to the next page →

	2. Have you **ever** in your life injected this drug for non-medical reasons?		3. If YES, what age were you when you **first** injected it?	4. Were you **in prison** when you **first** injected it?		5. Have you injected it **in the last 12 months?**		6. If YES, did that include injecting while **in prison?**		7. Have you injected it **in the last 30 days?**		8. If YES, how **many times** in the last 30 days?
Go this way	YES	NO	Age	YES	NO	YES	NO	YES	NO	YES	NO	Times
a) Benzodiazepines	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐ →	Yes ☐	No ☐	____
b) Amphetamines	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐ →	Yes ☐	No ☐	____
c) Heroin	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐ →	Yes ☐	No ☐	____
d) Methadone	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐ →	Yes ☐	No ☐	____
e) Other Opiates	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐ →	Yes ☐	No ☐	____
f) Cocaine Powder	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐ →	Yes ☐	No ☐	____

5

These questions are about injecting drugs

Section D	If you **have** injected drugs, please fill in this page; if you've **never** injected drugs, keep going straight to the next page.

	2. Have you **ever** in your life injected this drug for non-medical reasons?			3. If YES, what age were you when you **first** injected it?	4. Were you **in prison** when you **first** injected it?		5. Have you injected it **in the last 12 months?**			6. If YES, did that include injecting while **in prison?**			7. Have you injected it **in the last 30 days?**		8. If YES, how **many times** in the last 30 days?
Go this way →	YES	NO		Age	YES	NO	YES	NO		YES	NO		YES	NO	Times
g) Mephedrone Snow →	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐	→	Yes ☐	No ☐	____
h) Methylone Blow →	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐	→	Yes ☐	No ☐	____
j) Crystal Meth →	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐	→	Yes ☐	No ☐	____
k) Steroids →	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐	→	Yes ☐	No ☐	____
m) Any other drug	Yes ☐	No ☐	If YES → If NO go to next drug	____	Yes ☐	No ☐	Yes ☐	No ☐	If YES → If NO go to next drug	Yes ☐	No ☐	→	Yes ☐	No ☐	____

These questions are about injecting drugs and sharing works

Section E	If you **have** injected drugs, fill in this page; if you've **never** injected drugs, go to the next page.

1. For **your last injection in the last 30 days**, did you use a **new** needle and syringe?	Yes ☐	No ☐	Not applicable	☐
2. How **many times** did you **inject** in the last 30 days? enter number		_____	Don't know	☐
3. How many **sterile needles** did you get in the last 30 days? enter number		_____	Don't know	☐
4. How many **sterile syringes** did you get in the last 30 days? enter number		_____	Don't know	☐
5. In the last 30 days, how many times did you **re-use the last needle and syringe** you used?		_____	Don't know	☐
6. In the last 30 days, how many **different people** did you **get a used** needle and syringe from?		_____	Don't know	☐

7. Have you **ever** shared the works below?			8. If YES, how often did you share **each of these works** in the **last 30 days in prison**?					9. If you spent time **out** of prison **in the last 30 days, how often did you share each of these works outside?** If not applicable tick here ☐				
	YES	NO	Always	Some-times	Rarely	Never	Don't know	Always	Some-times	Rarely	Never	Don't know
a) Needles Spikes	Yes ☐	No ☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b) Syringes Barrels	Yes ☐	No ☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c) Other injecting Equipment Water, acid, lemon filters, spoons, cups	Yes ☐	No ☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

	Always	Some-times	Rarely	Never	Don't know
10. In the last 30 days, how often did you **get** used needles or syringes from someone else?	☐	☐	☐	☐	☐
11. In the last 30 days, how often did you **give** used needles or syringes to someone else?	☐	☐	☐	☐	☐

These questions are about activities that can be associated with hepatitis and HIV

Section F

1. Do you have any tattoos or borstal marks?	Yes ☐	No ☐	If NO, go to the next set of questions below			
2. Who did it / them? You can tick more than one	Self ☐	Friend ☐	Other prisoner ☐	Relative ☐	Tattoo artist ☐	
3. Did you ever have a tattoo or borstal mark done in prison?	Yes ☐	No ☐				

Remember to answer these questions for both in prison and outside prison	4. Have you ever had sex with a woman?		5. Have you ever had sex with a man?		6. Did you have sex with a woman in the last 12 months?		7. Did you have sex with a man in the last 12 months?		8. How many sexual partners did you have in the last 12 months?		9. How often do you practice safe sex? (This means using condoms at all times)					10. Did you or your partner use a condom the last time you had sex?		
	YES	NO	YES	NO	YES	NO	YES	NO	Enter Number	Don't Know	Not applicable	Always	Some-times	Rarely	Never	YES	NO	Not applicable
a) In prison	☐	☐	☐	☐	☐	☐	☐	☐	____	☐	☐	☐	☐	☐	☐	☐	☐	☐
	In Prison		In Prison		In Prison		In Prison		In Prison		In Prison					In Prison		
b) Outside prison	☐	☐	☐	☐	☐	☐	☐	☐	____	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Outside Prison				Outside Prison		Outside		Outside Prison		Outside Prison					Outside Prison		

These questions are about Hepatitis and HIV

Section G	

	1. Have you **ever** been tested for Hepatitis or HIV?			2. When were you **first** tested?	3. What was the result?			4. When were you **last** tested?	5. What was the result?			6. Were you **in prison** for the **last** test?	
	YES	**NO**	**Don't know**	**Year**	**Positive** Infected	**Negative** Not infected	**Don't know**	**Year**	**Positive** Infected	**Negative** Not infected	**Don't know**	**YES**	**NO**
a) Hepatitis B	☐	☐	☐	_____	☐	☐	☐	_____	☐	☐	☐	☐	☐
b) Hepatitis C	☐	☐	☐	_____	☐	☐	☐	_____	☐	☐	☐	☐	☐
c) HIV	☐	☐	☐	_____	☐	☐	☐	_____	☐	☐	☐	☐	☐

7. Have you received one or more doses of hepatitis B vaccine?	Yes ☐	No ☐	Don't know ☐	If no or don't know, go to the next page
8. Have you completed a course of at least 3 injections?	Yes ☐	No ☐	Don't know ☐	If no or don't know, go to the next page
9. Where were you vaccinated?	In prison ☐			
	Outside of prison ☐			
	Combination of both ☐			

9

These questions are about drug treatment services in prison

Section H	1. Did you need this service while in prison?	2. If YES, was it available to you in prison?	3. Did you use it while in prison?
a) Narcotics Anonymous meetings (NA)	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
b) Alcoholics Anonymous meetings (AA)	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
c) Methadone maintenance	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
d) Detox from alcohol	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
e) Detox from benzodiazepines	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
f) Detox from opiates: prison detox	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
g) Detox from opiates: slow detox	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
h) Addiction psychiatrist	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
j) Addiction nurses	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐

	1. Did you need this service while in prison?	2. If YES, was it available to you in prison?	3. Did you use it while in prison?
k) Addiction GP	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
m) Addiction Counsellor	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
n) Drug-free wing or landing	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
p) Drug-free treatment programme	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
q) Listeners' service	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
r) Information on drugs	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
s) Information on addiction	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
t) Information on infectious diseases	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
u) Information on overdose prevention	Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐

Now go to the top of the next column →

10

These questions are about your health, cigarettes and alcohol

Section J	1. In general, would you say your health is..... Excellent ☐ Very good ☐ Good ☐ Fair ☐ Poor ☐

Smoking Cigarettes	2. Have you **ever** smoked cigarettes? YES NO	3. If yes, what age were you when you started? Enter age	4. Do you smoke cigarettes **now?** YES NO	If you smoke now, in a day how many of the following do you usually smoke? 5. **Branded Cigarettes** Enter number	6. **Hand-rolled cigarettes** Enter number	**7.** If you no longer smoke, how long ago did you stop smoking? Enter number
	Yes ☐ No ☐	____	Yes ☐ No ☐	____	____	☐ Years ☐ Months

Drinking Alcohol	If YES, these next questions relate to your situation in the **12 months before** coming into prison	9. Did you **usually** drink alcohol in a **typical** week?	10. On **how many days** during a **typical** week did you **usually** drink alcohol?	11. On the days that you drank alcohol, **how many drinks** did you have **on average?** 1 drink is a half pint, a single measure of spirits, a small glass of wine or a bottle of alcopops	12. What type of alcohol did you drink **most frequently?** Please tick one only				
8. Have you **ever** drunk alcohol? Yes ☐ No ☐		YES NO	Enter number of days		**Beer, lager, cider, stout**	**Sherry, fortified wine**	**Spirits liquers**	**Wine**	**Other**
If NO, skip to the end of the page		Yes ☐ No ☐	____	____	☐	☐	☐	☐	☐

In the **12 months** before coming into prison on this occasion, how **often** did you...	**Daily**	**4-5 times a week**	**2-3 times a week**	**Once a week**	**2-3 times a month**	**Once a month**	**Less often than once a month**	**Never**
13. ...drink Alcohol?	☐	☐	☐	☐	☐	☐	☐	☐
14. ...drink the equivalent of **4 pints** of beer / cider **or more** or **7 pub measures** of spirits or **one bottle of wine** on one drinking occasion?	☐	☐	☐	☐	☐	☐	☐	☐

You are now finished answering questions. Thank you! If you wish to comment, turn over the page and use the back cover.

11

Appendix 14: Consent Form

Research Study on Drugs and Health in Prison

Consent Form

It has been explained to me what this research is about and why I was asked to take part.

1 I know what this research is about.
2 I have had a chance to ask questions
3 I understand that legally the swabs cannot be tested for DNA
4 I know I don't have to take part if I don't want to.
5 I know that if I start I can stop or drop out if I want
6 I know I can't drop out after the survey and swabs are collected.
7 I know that my answers and test results are confidential and that I cannot be identified.
8 I know that University College Dublin and the National Advisory Committee on Drugs will keep the information for future use for research reasons only. They will keep it in a way in which I cannot be identified.

9 I know that if I sign this form, I agree to — Tick

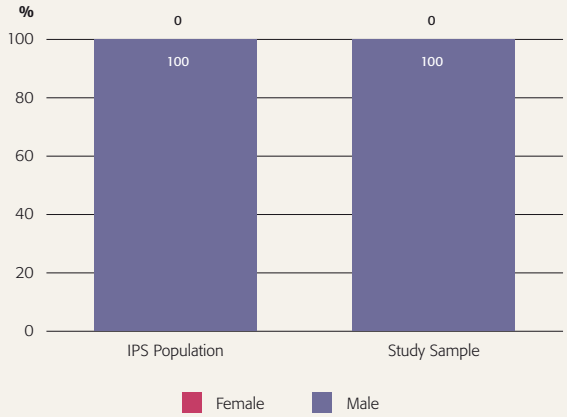
- Fill in the survey on drugs and health ☐
- Give saliva on a mouth swab for testing for Hepatitis B, Hepatitis C and HIV ☐
- Give saliva on a mouth swab for drug testing (heroin or other opiates, cocaine, cannabis, methadone and benzodiazepines) ☐

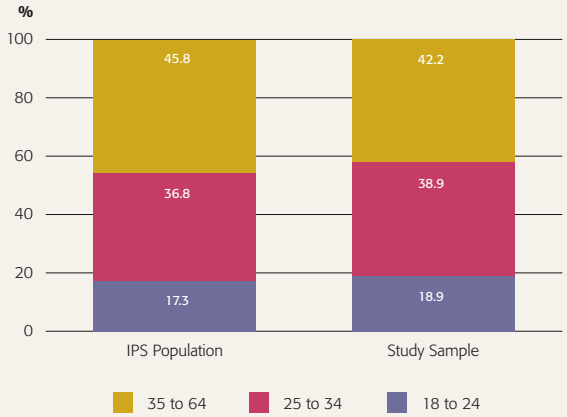
Signed _____ Date _____

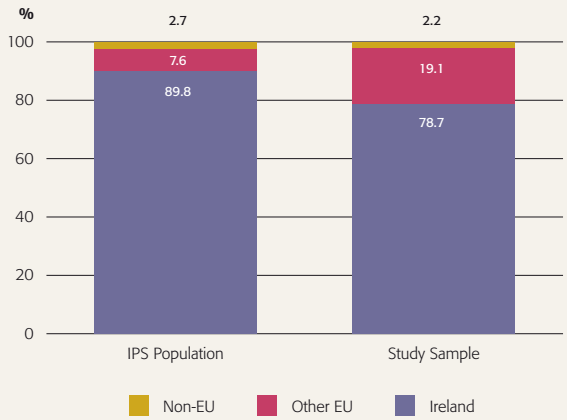
Signed (witness) _____ Date _____

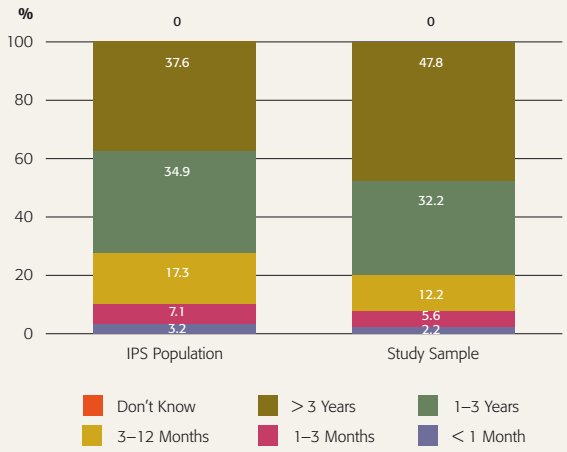
Appendix 15: Sample and population by prison drug use category (gender, age group, region of birth, length of time in prison)

Low Drug Use Prisons

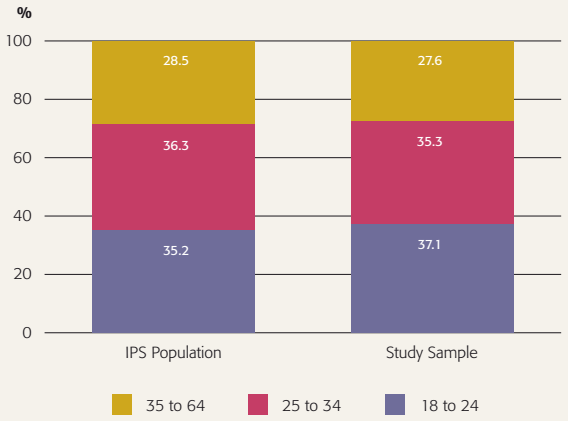


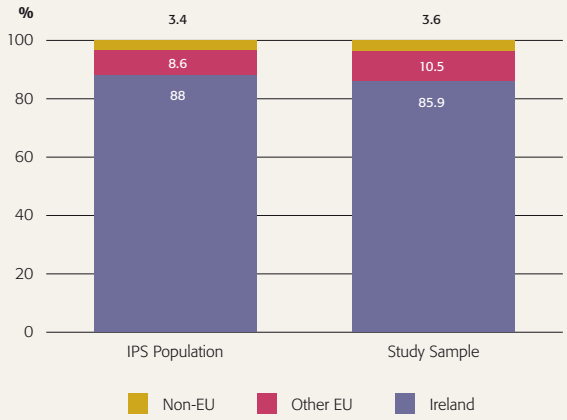




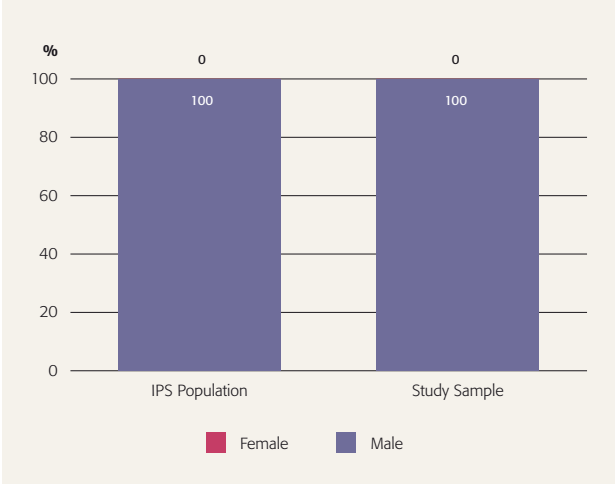


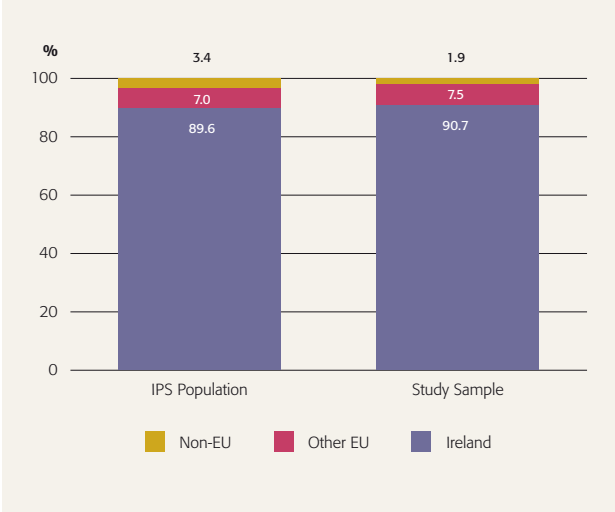
Medium Drug Use Prisons

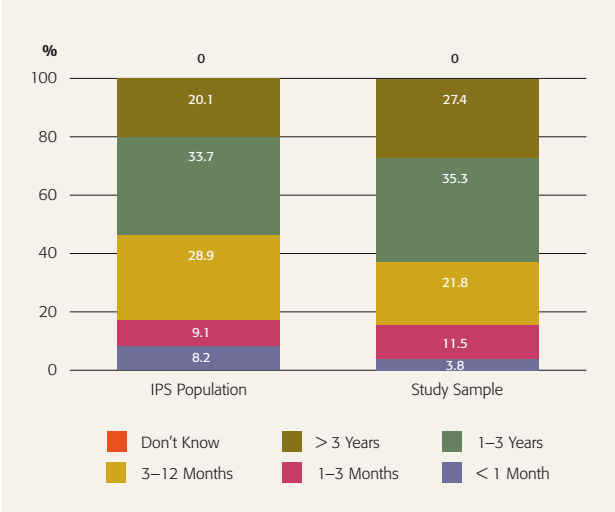




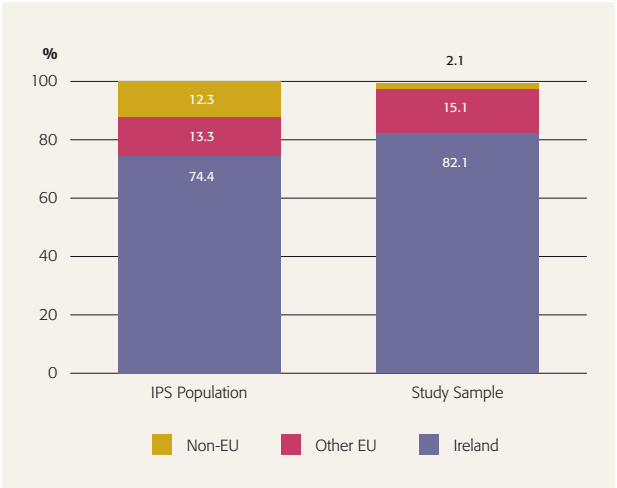
High Drug Use Prisons







Very High Drug Use Prisons



Appendices

Study on the prevalence of drug use, including intravenous drug use, and blood-borne viruses among the Irish prisoner population

Published by the NACDA

NACDA
National Advisory Committee on Drugs and Alcohol

National Advisory Committee on Drugs and Alcohol (NACDA)
Hawkins House
Hawkins St
Dublin 2

Tel: 00 353 1 635 4283
Email: nacda@nacda.ie
Web: www.nacda.ie

June 2014