Hepatitis B, Hepatitis C and HIV In Irish Prisoners: Prevalence and Risk

Report prepared for the Minister for Justice, Equality and Law Reform
by
the Department of Community Health and General Practice,
Trinity College, Dublin

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Dr Shane Allwright[1]
Dr Joseph Barry[1,2]
Dr Fiona Bradley[1]
Ms Jean Long[1]
Dr Lelia Thornton[2]

[1] Department of Community Health and General Practice, Trinity College Dublin
[2] Department of Public Health, Eastern Health Board, Dr. Steevens' Hospital

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List of Abbreviations

CI	Confidence interval
df	Degrees of freedom
EIA	Enzyme immunoassay
GP	General practitioner
HBc	Hepatitis B virus core antigen
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
IDU	Injecting drug use/user
RIA	Radio-immune assays
TB	Tuberculosis

Glossary of Terms

A cross sectional survey is a descriptive (epidemiological) study in which the status of a group of individuals is assessed at a point in time, with respect to the presence or absence of both the exposure(s) and disease(s) of interest.

Prevalence estimates the proportion of the population that have a disease at a specific point or period in time.

Random sampling is a technique used to select the survey sample from the total population of interest by which every member has an equal chance of being selected.

A confidence interval is the range of values in which the true value of a parameter (e.g. proportion) is likely to be found. By convention a 95% confidence interval is usually calculated i.e. the range that will include the true value 95% of the time.

A p-value is a probability value which measures the likelihood that an observed result occurred due to chance alone. Probability is measured between the range 0-1. by convention a value of $p < 0.05$ is considered statistically significant (for health related studies).

X2 test is a statistical test to determine if there is a statistically significant association between two grouped variables.

Multiple logistic regression analysis is a statistical technique employed to estimate the level of association between one or more variables and a binary outcome of interest while controlling for a number of confounding factors (other factors independently associated with both the exposure and the outcome). The odds ratio is used to measure the association.

The odds ratio calculates the ratio of the odds of exposure among the cases (those with the disease) to that among the controls (those without the disease). An odds ratio of 1 implies the same experience among the cases and the controls. An odds ratio less than 1 implies the exposure is protective and an odds ratio greater than 1 implies those exposed have a higher risk of contracting the disease.

A cohort is a group of individuals with a similar time linked exposure/experience.

Response rate is the proportion of the selected sample who take part in a study.

IgG is a test which ensures that the specimen is of adequate quality for analysis.

RIBA is a confirmatory test for hepatitis C.

Summary

A cross sectional survey of hepatitis B, hepatitis C and HIV prevalence in the Irish prisoner population was undertaken. The study was carried out in nine prisons, five of which had been classified as high risk and four as medium risk for infection. All the high risk prisons were in Dublin while the medium risk prisons were outside Dublin. Overall there was excellent co-operation with the survey; the response rate was 88%. A total of 1,205 prisoners took part in the survey, which consisted of completing a four page questionnaire and collecting a sample of oral fluid for testing for antibodies to hepatitis B, hepatitis C and HIV. The fieldwork for the study was carried out between September and November 1998.

Overall the prevalence of infection with hepatitis B among prisoners was 9%, the prevalence of infection with hepatitis C was 37% and the prevalence of HIV was 2%. Infection rates in women prisoners were slightly, but not significantly, higher: prevalence of hepatitis B was 12%, hepatitis C prevalence was 42% and HIV prevalence 2%. All infection rates were considerably higher in the high risk prisons and, not unexpectedly, among drug users (where the prevalence of hepatitis B was 19%, hepatitis C was 81% and HIV was 4%). Hepatitis B prevalence was higher in those over 30 whereas hepatitis C rates were higher in those under 30; 38.5% of all prisoners had evidence of at least one of these three infections.

Only 29% had completed the three dose course of hepatitis B vaccination although a further 19% had received one or two doses.

Six hundred and thirty respondents (52%) reported opiate use and 514 (43%) reported ever injecting drugs. The percentage reporting ever injecting drugs was 21% in the medium risk prisons and 58% in the high risk prisons. 60% of women prisoners reported injecting drug use. 21% of injectors first started injecting in prison. Just over one third (37%) had shared drug injecting equipment (needles, syringes, spoons and filters) before committal to prison. Of those who injected in prison, 58% had shared drug injecting equipment (all types). Almost half (45%) of injecting drug users who had been in prison for three months or more said they had injected drugs in the preceding month, and, of these, one third had injected more than 20 times.

One in 40 (28/1116) men reported ever having anal sex with another man and just under 2% (20/1087) reported having anal sex with men in prison.

Multivariate logistic regression analyses showed that injecting drug use was by far the most important predictor for both hepatitis B and hepatitis C infection. Prevalence of hepatitis C was higher in younger prisoners and the risk of infection was higher in those who had spent longer in prison and, among injecting drug users, in those who shared injecting equipment. Although injecting drug use was associated with increased risk for all three infections, for HIV and hepatitis B, sexual practices were also important. Anal sex was the strongest predictor of HIV although the numbers involved were very small. A history of treatment for sexually transmitted infections was linked to increased risk of both HIV and hepatitis B.

The frequency of drug using practices and prevalence of the three infections were all significantly greater in the Dublin prisons. Numerically, hepatitis C was by far the most important of three infections. The fact that hepatitis C was commoner in younger prisoners implies health problems of major proportions in the next ten to twenty years. Clearly the survey findings raise serious questions about how best to manage the current and future health and safety of both prisoners and staff.

1 - Introduction

1.1 Hepatitis B, hepatitis C and HIV in Ireland

Detailed epidemiological data are not available for hepatitis B infection in the Irish population as a whole. In Ireland the prevalence of hepatitis B is low among the general population, about 1 in 4,000 among new blood donors and 1 in 3,000 women attending for antenatal care.[1] Data from specific sub-groups show a high prevalence of hepatitis B markers (68% and 50%) in persons with intellectual disability living in residential accommodation[2,3] and a prevalence of 11% in intellectually disabled persons not living in residential accommodation.[4] In a cohort of injectors attending Eastern Health Board methadone clinics the prevalence of anti-hepatitis B core antibody, based on laboratory reports, was 29% (Dr. J. Barry, personal communication, 1995).

Hepatitis C in Ireland mainly occurs in two populations: cohorts of individuals who became infected through anti D or other infected blood products, and injecting drug users. Among injecting drug users the prevalence varied between 52%[5] and 76% (Dr. J. Barry, personal communication, 1995).

The rate of HIV infection in antenatal women is 0.02%.[6] Voluntary linked testing for antibodies to HIV has been available in Ireland since 1985 and, up to the end of 1998, there had been 1,986 persons identified as having antibodies to HIV.[7] Of these, 844 (42%) were intravenous drug users and 458 (23%) were homosexual men. In the cohort of injectors attending Eastern Health Board methadone clinics in 1997, the prevalence of HIV, based on laboratory reports, was 8% (Dr. J. Barry, personal communication, 1995).

From the above one can deduce that all three viruses are more prevalent in drug users than in the general population and, among drug users, hepatitis C is the most common.

1.2 Prisons in Ireland

In 1993 the Department of Justice published the *Report of the Advisory Committee on Communicable Diseases in Prison*.[8] Neither hepatitis B nor hepatitis C were mentioned in the report and, in relation to HIV, the report stated that 'current policy may militate against a prisoner seeking advice about their HIV status when in prison'. In February 1996, the Department of Justice estimated that 40% of prisoners had a history of serious drug misuse.[9] At that time the total prison population was just over 2,000. Since 1993 there has not been a published report on policy in relation to infection control in prison. With regard to hepatitis B vaccine, a written policy has been circulated to prison medical staff and the policy is to offer vaccination to those with sentences longer than eight months (Dr. E. Dooley, personal communication, 1995). In order to maximise protection against hepatitis B, three doses are required at zero, one and six months.

In March 1999, the Department of Justice, Equality and Law Reform circulated a draft action plan entitled *Drug Misuse and Drug Treatment in the Prison System*.[10] The action plan advocates that services available outside prison to injecting drug users should be available within prison where at all possible. The Department of Justice has not published any systematic information on prevalence of hepatitis B, hepatitis C, or HIV among the prisoner population. "Prisoner" is a named category in the voluntary linked HIV testing system and, since 1985, 26 individuals with such a designation have tested positive.[7] This is not a reliable indicator of prevalence of the virus among prisoners.

1.3 Hepatitis B, hepatitis C and HIV in prisons elsewhere

The reported prevalence of HIV in prisons in western Europe is generally low, 0-2%,[11,12,13] although one French prison reported HIV prevalence of 6%.[14] The prevalence of hepatitis B and C in prisons has been less frequently reported. Two studies carried out in Australia and Greece reported a high prevalence of hepatitis C (39%, and 58% respectively).[15,16] The study in Greece also indicated that 81% of its injecting drug users had hepatitis C; in the same study the prevalence of hepatitis B was 58% among the prison population and 63% among those injecting drugs.[16] Several studies have also examined practices that may increase the risk of contracting these infections. Injecting drug use was the most common risk factor for hepatitis B, hepatitis C and HIV.[16,17,18] Studies also reveal that those who share equipment, particularly needless or syringes, were most at risk.[16,18,19] Individuals injecting for more than six years were also more likely to develop hepatitis C.[16] Two studies found that those who had spent more time in prison were more likely to have contracted hepatitis C.[16,20] Hepatitis B was associated with a high incidence of sharing injecting equipment and male homosexual intercourse.[14]

1.4 Use of oral fluid

Traditionally, prevalence of hepatitis B, hepatitis C and HIV has been estimated by taking blood from subjects and carrying out a range of serological tests. Recently, techniques have been developed to allow for oral fluid analysis. 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.

1.5 Drug policy in Ireland

In Ireland a larger proportion of individuals with HIV infection acquired their infection through injecting drug use than in other northern European countries.[21] In 1991 the Department of Health published a *Government Strategy to Prevent Drug Misuse*.[22] This strategy represented a major policy shift in that it introduced a harm reduction approach, including the provision of methadone maintenance and needle exchange for injecting drug users on a wide scale. This policy was endorsed in 1992 in the *Report of the National AIDS Strategy Committee*.[23] There are currently just under 4,000 individuals addicted to opiates who are on methadone replacement therapy (Dr. J. Barry, personal communication, 1999) and over 6,000 individuals have presented for needle exchange in the Dublin area since the service began in 1989.[24] Government policy in relation to drugs was reviewed and in 1996 the *Report of the Ministerial Task Force on Measures to Reduce the Demand for Drugs* recommended that specific attention be paid to prisons in the response to the drug issue.[25] It was estimated at that time that approximately 70% of prisoners in Mountjoy prison had a history of drug misuse.

There has been one attempt to measure the prevalence of opiate use in Ireland. This was a capture-recapture estimate, based on three 1996 data sets: methadone treatment list, acute hospital discharges and police data.[26] The analysis was confined to Dublin residents and the estimated total number of opiate users was 13,460 (95% confidence interval 12,037 – 15,306), a prevalence of 21 per 1,000 aged 15 – 54. The wide confidence interval occurred because there was little overlap between the data sets. Also, it was not clear whether the police data represented habitual opiate users.

1.6 Rationale for the study

It is against this background that the Department of Justice, Equality and Law Reform commissioned a study of the prevalence of hepatitis B, hepatitis C and HIV in Irish prisoners. The Department of Community Health & General Practice, Trinity College Dublin, was awarded the contract to undertake the study. The terms of reference in the Request for Proposal are given in Appendix 1.The study was designed in two phases: a census survey of 1,200 prisoners and a survey of 600 committal prisoners. The results of the census survey are presented in this report.

1.7 Aim and objectives

The overall aim of the survey was to determine the prevalence of hepatitis B, hepatitis C and HIV in the Irish prisoner population, and to examine the association between the prevalence of these infections and factors such as age, prison history and risk behaviour, in particular injecting drug use, with a view to minimising transmission of hepatitis B, hepatitis C and HIV in Irish prisons.

The objectives were to:

- measure the prevalence of 3 blood borne viral infections: hepatitis B, hepatitis C and HIV in high and medium risk Irish prisons.
- determine the extent of self reported risk behaviours in prisoners, both before and during current sentence.
- measure the association between risk behaviour, in particular injecting drug use, and prevalence.
- compare self-reported prevalence of hepatitis B, hepatitis C and HIV with actual prevalence.
- estimate the extent of hepatitis B immunisation in the prisoner population.

2 - Methods

2.1 Sampling

The prison population in Ireland at the time of the survey numbered approximately 2,700, located in 15 prisons. A sampling strategy was devised which allowed conclusions to be drawn about infection rates in groups of similar prisons by categorising the 15 prisons according to expected prevalence rates for infection as high, medium or low. The decision to group the prisons in this way assured both confidentiality and an adequate sample for accurate estimation of infection prevalence.

The three low risk prisons (Curragh, Castlerea and Arbour Hill) were excluded as the number of prisoners involved (approximately 275) was inadequate to allow for a stable estimation of prevalence. For the purpose of sample size calculation, the predicted prevalence of infection, in particular hepatitis C, was estimated using information obtained from a study of drug users attending Health Board run clinics (Dr. J. Barry, personal communication, 1995), together with information from the Department of Justice, Equality and Law Reform on the estimated prevalence of intravenous drug use in prisons. It was estimated that a sample size of 1,200 was required.[27] Nine prisons were selected for survey: all the high risk prisons and a random sample (proportional to population size) of the medium risk prisons. The high risk prisons were Mountjoy Male, Mountjoy Female, St Patrick's Institution, Wheatfield and the Training Unit, and the medium risk prisons were Cork, Limerick, Portlaoise and Shelton Abbey.* Following discussion with the Department of Justice, Equality and Law Reform and with representatives of political prisoners, it was agreed that political prisoners would not form part of the study population.

A census of all prisoners on a given day was carried out in the medium risk prisons and the two small high risk prisons, while in the three larger high risk prisons half of the population was sampled. Prisoners who were absent from the premises at the time of the survey, and the very small number of prisoners who were considered by the prison governor to be a safety risk for the research staff, were excluded from the sample.

The survey was carried out over a three month period from September to November 1998. The fieldwork took between one and two days to complete in each prison.

2.2 Fieldwork

Preparatory work was carried out in each prison through meetings between the research team and the prison governor and key staff. The approach taken in carrying out the survey varied in different prisons according to the conditions and population of the individual prison. Staff and prisoners were briefed in advance of the survey by posters on notice boards, and by individual information leaflets.

The survey was carried out by a team of researchers who met the prisoners in groups. The groups varied in size from 10 to 40. The survey team was briefed in advance and consisted of health professionals and non-professional researchers (see Appendix 2). A health professional was available at all times to answer questions of a medical nature. The prisoners were given an introductory talk lasting five to ten minutes explaining the purpose and process of the survey. They were advised that all data collected would be anonymous and confidential and that no

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* The medium risk prisons not selected were: Fort Mitchell, Loughan House and Shanganagh Castle

information that could identify an individual would be released to the prison authorities or to the Department of Justice, Equality and Law Reform. Prisoners were informed that they would not be able to get their individual test results from the survey, but were advised that testing was available through the prison medical service. They were invited to ask questions or make comments. With the agreement of the prisoners, the survey then proceeded.

Prisoners who did not wish to meet the researchers in a group setting were approached individually to explain the study to them and to seek their co-operation. In many cases this approach was successful and the survey was then carried out, usually in their cell. Those who did not wish to provide an oral fluid sample were asked to complete a questionnaire and some did so. The survey was voluntary. All eligible prisoners were encouraged to participate but no inducements were offered and no negative sanctions were imposed on non-respondents.

2.3 Data collection instruments

There were two parts to the survey: collection of an oral fluid specimen and completion of a questionnaire (Appendices 3a and 3b). In order to complete the process as quickly as possible, the questionnaire was generally filled in while the oral fluid specimen was being collected.

The questionnaire was developed from that used by the Public Health Laboratory Service team in England and Wales and consisted of closed, multiple choice questions relating to demography, details of prison sentence, history of injecting drug use, sexual practices, self-reported HIV and hepatitis testing and results, and hepatitis B vaccination history. The questionnaire was self-administered and took an average of 5 minutes to complete. Those who had literacy difficulties were assisted in completing the questionnaire by a researcher. The survey was anonymous – no name, address or other identifier was recorded on either the questionnaire or the oral fluid specimen. Once completed, the questionnaire and oral fluid specimen were placed in an envelope by the respondent and all envelopes were then placed in a collection bag. A number was later assigned to each questionnaire and specimen, linking the two. At the end of each day of fieldwork the questionnaires were checked for internal consistency.

On the survey day, anonymous demographic information was gathered on the entire prison population in each prison to calculate response rate and establish representativeness of respondents.

The survey procedures, including the use of the questionnaire and the oral fluid testing, were piloted on a group of prisoners and appropriate alternations were made following this experience.

2.4 Collection of oral fluid specimens

Oral fluid specimens were collected with a proprietary device called EpiScreen™ (Epitope Inc., Oregon, USA). It consists of a cotton fibre pad treated with a hypertonic salt solution on a plastic stick. Capillaries lining the gum and cheek mucosae leak significant amounts of plasma proteins, including immunoglobulins, into the mouth. The EpiScreen™ pad is designed to collect oral fluid specimens rich in this capillary transudate (‘oral mucosal transudate’). The pad is placed between the lower gum and cheek and held in place for at least two minutes. After collection, the pad is placed in a tube, provided as part of the collection kit, containing a non-toxic preservative solution that inhibits bacterial growth and degradation of immunoglobulins. Once specimens are collected they can be stored for up to 21 days at temperatures between 4 °C and 37 °C. For this study, specimens were kept refrigerated until transported in several large batches by overnight courier to the Central Public Health Laboratory in the United Kingdom. Laboratory processing of the specimens commenced on the next working day and the specimens were tested blind to demographic and risk factor characteristics. The laboratory techniques used by the Central Public Health Laboratory are described in Appendix 4.

2.5 Explanation of laboratory tests used

The laboratory test used on the oral fluid specimens was different for each of the three viruses examined. Knowledge of what each test implies is necessary to interpret the test results and a brief description of each test is given here.

The hepatitis B antibody test used in this survey measures antibodies to the hepatitis B core antigen. This is a measure of ever having been infected 'naturally' with the hepatitis B virus. Best available evidence is that the long term carrier rate, and hence infectivity of someone who has ever been infected with hepatitis B is 10%[28]. The anti hepatitis core test in this survey has a sensitivity of 82% (18% false negative) and specificity greater than 99% (les than 1% false positive).

For hepatitis C, the Central Public Health Laboratory tests for antibodies to the hepatitis C virus. The presence of antibodies to hepatitis C virus indicates previous or current infection; in 80% to 85% of cases the infection persists.[29, 30] The sensitivity of the antibody test used in this survey is estimated to be 80%. This means that the false negative rate is 20%: one in every five who test negative are actually positive. The specificity was 100% which implies that all test results which are positive are truly positive.

The test for antibodies to the HIV virus used in this survey is a measure of ever having been infected with HIV. Best knowledge is that people who have ever been infected with HIV remain infectious for the duration of their lifetime. Both sensitivity and specificity for the antibody test to HIV used in this survey were greater than 99% (manufacturer's data).

2.6 Comments and observations

During the course of the survey, respondents volunteered unsolicited comments about various aspects of prison life. Although such comments were not sought, nor collected in a systematic manner, the research team considered that some of the comments might be informative. It was decided therefore to contact all the survey team after the survey was finished to ask them to send us prisoners' comments and their own observations on prison health care issues. Nineteen of the 25 data collectors responded. These replies were analysed by identifying the main themes in the respondents' comments and including actual comments where appropriate.

2.7 Statistical methods

Data entry was carried out using an automated procedure[31] and was subsequently checked manually. Statistical analysis was carried out using JMP IN.[32]

Pearson $\chi 2$ test was used to compare proportions in independent groups of categorical data. Multiple logistic regression models were developed to determine which variables best predicted positive antibody results. Exact 95% confidence intervals were calculated for proportions of binomial variables and for regression adjusted odds ratios.

3 - Results

The results of this study are presented in seven sections.

3.1 General information including response rate, age and gender profile and prison history of the respondents.
3.2 Prevalence of hepatitis B, hepatitis C and HIV.
3.3 Hepatitis B vaccination.
3.4 Prevalence and characteristics of drug use.
3.5 Reported sexual practice and behaviour.
3.6 Analysis of factors contributing to increased risk of hepatitis B, hepatitis C and HIV.
3.7 Synopsis of the respondents' comments and researchers' observations on prison health care.

The frequency distributions of the responses to the questions in the questionnaire are given in appendix 5.

Table totals vary throughout as not all respondents answered all questions.

Most analyses are given by prison group rather than by individual prison to preserve confidentiality; moreover, because of frequent transfers, activities reported in one prison may refer to events that took place in a previous prison.

3.1 – General information

3.1.1 Response rates

The governors of the nine selected prisons agreed to the survey; 1,205 out of 1,366 prisoners agreed to participate in the survey, an overall response rate of 88%; 1,193 prisoners contributed an analysable oral fluid sample. The response rate for each prison is shown in Table 1. All the participating prisons had high response rates.

Table 1 – Response rate by prison

Prison	Prison population on the day of the survey	Exclusions*	Sample selected	Number responded	Response rate (%)
High risk					
Mountjay Male	769	3	375	359	96
Mountjoy Female	64	3	61	50	82
The Training Unit	85	1	84	77	92
St Patricks	184	15	94	88	94
Wheatfield	349	2	175	143	82
Medium risk					
Cork	266	7	259	288	88
Limerick M&F	197	12	185	142	77
Portlaoise	94**	2	92	80	87
Shelton Abbey	41	0	41	38	93
Total	2049	45	1366	1205#	88

* Exclusions were those not available for the survey (in court, in hospital, on temporary release or discharged that morning); already surveyed in previous prison; seriously ill; too dangerous (7 in Cork, 2 in Wheatfield)
** Political prisoners excluded (approximately 50 – exact number not released for security reasons)
# 11 respondents did not provide an oral fluid sample and one sample was inadequate for analysis

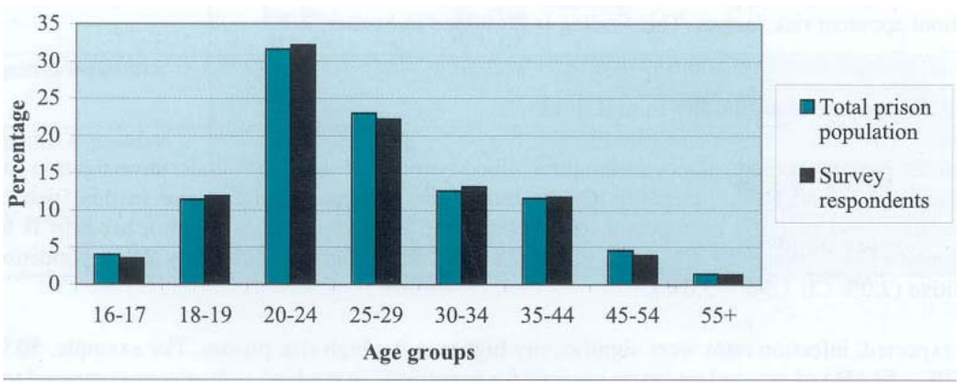
3.1.2 Age and gender of respondents

The age profile of the respondents was similar to that of the overall population of the nine participating prisons at the time of the survey (Figure 1).

As anticipated, the prison population was very young (Figure 1). Almost half the respondents were less than 25 years of age, and 40 (3.5%) were aged 16 or 17. All those under 18 years were male and half of them were detained in prisons other than St. Patricks.

Only 57 (4.7%) of the 1,205 respondents were women. The age distribution was similar in men and women ($\chi^2 = 4.7$, df 3, p-value = 0.243)

Figure 1 – Age profile of prison population and survey respondents

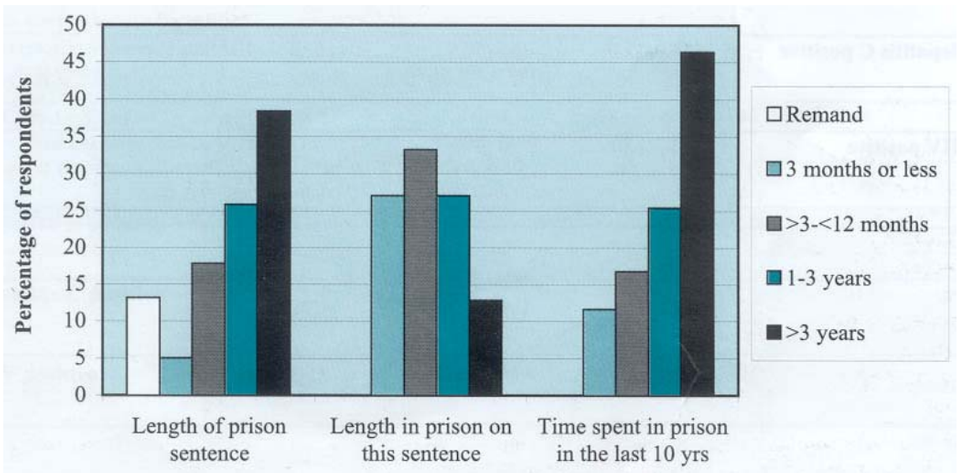


Pearson $\chi^2 = 12.2$, df 7, p =.0954

3.1.3 Prison history

Details of the respondents' prison history are summarised in Figure 2. More than one third (38.3%, 458) of the respondents said they were currently serving a sentence of more than three years and almost half (46.3%, 546) reported having been in prison for more than three years during the last 10 years.

Figure 2 – Prison history of respondents



Only two of the 40 respondents aged less than 18 were serving a sentence longer than three year. However, three had spent more than three of the past 10 years in prison. Eleven were on remand.

In cross sectional surveys, short sentence prisoners tend to be under represented. In this survey there were only 157 (13.1%) remand prisoners and 60 (5%) prisoners with a sentence of three months or less. Consequently a survey of committal prisoners has also been undertaken in order to review this group. The results will be reported separately.

3.2 Prevalence of hepatitis B, hepatitis C and HIV

Prevalence was determined using antibody assays of oral fluid (Section 3.2.1). These rates were compared with self reported infection status (Section 3.2.2). Although most of those with infections reported injecting drug use or sexual risk behaviours, some respondents had evidence of infection without apparent risk factors. This finding is discussed in Section 3.2.3.

3.2.1 Prevalence of antibodies in oral fluid

Table 2a presents the prevalence of the three blood borne viral infections under investigation (hepatitis B, hepatitis C and HIV). Hepatitis C was by far the most common of these in this Irish prisoner population; 442 of 1,193 respondents tested positive (37%, CI*: 34.3% – 39.9%); hepatitis B was less common (104/1,193, 8.7% – CI: 7.2% – 10.5%). HIV was relatively rare: only 24 respondents tested positive (2.0% CI: 1.3% – 3.0%).

As expected, infection rates were significantly higher in the high risk prisons. For example, 50.9% (CI: 47.2% – 54.6%) of respondents were positive for hepatitis C in the high risk prisons compared to 16.5% (CI: 13.3% – 20.1%) in the medium risk prisons. The five Dublin prisons, Mountjoy Male and Female, St. Patrick's Institution, the Training Unit and Wheatfield Place of Detention, have been defined for sampling purposes as high risk prisons as they were known to have illicit drug problems (see Methods). The proportion of respondents in these five prisons who reported ever injecting drugs was 58%, significantly higher than the 21% in the medium risk i.e. non Dublin prisons (see Table 7, Section 3.4.1). The high infection rates in the high risk prisons are consistent with the high infection risks in injecting drug users (see below).

Table 2a – Prevalence of hepatitis B and C and HIV by prison category

	All **Total: 1193** **No. (%)** ***95% CI***	**High risk** **Total: 713** **No. (%)** ***95% CI***	**Medium risk** **Total: 480** **No. (%)** ***95% CI***	**Test of association**
Hepatitis B positive	104 (8.7) *7.2-10.5*	87 (12.2) *9.9-14.8*	17 (3.5) *2.1-5.6*	Hepatitis B positive prisoners were significantly more likely to reside in a high risk prison Pearson x2 = 27, df = 1, p < .0001
Hepatitis C positive	442 (37.0) *34.3-39.9*	363 (50.9) *47.2-54.6*	79 (16.5) *13.3-20.1*	Hepatitis C positive prisoners were significantly more likely to reside in a high risk prison Pearson x2 = 146, df = 1, p < .0001
HIV positive	24 (2.0) *1.3-3.0*	20 (2.8) *1.7-4.3*	4 (0.8) *0.2-2.1*	HIV positive prisoners were significantly more likely to reside in a high risk prison Pearson x2 = 5.6, df = 1, p = .0174

* CI denotes 95% confidence interval.

Each of the three infections was far more common in those who reported ever injection drugs than in non users (Table 2b). Hepatitis B and HIV occurred more frequently in prisoners aged 3.0 or over than in those under 30 years of age; hepatitis C was more frequent in those under 30 than in those aged 30 or over (Table 2c). the highest infection rate for hepatitis C was found in those aged 20-24 years (not shown in table). Infection rates for hepatitis B and C were slightly higher in the women prisoners although the differences were not significantly different (Table 2d).

Four of the 40 respondents under 18 years of age were hepatitis C positive; none were hepatitis B or HIV positive.

Table 2b – Prevalence of hepatitis B and C and HIV by injecting drug use

	IDU **Total: 509** **No. (%)** ***95% CI***	**Non IDU** **Total: 669** **No. (%)** ***95% CI***	**Test of association**
Hepatitis B positive	94 (18.5) *15.2-22.1*	10 (1.5) *0.7-2.9*	Testing positive for hepatitis B was significantly associated with reported injecting drug use Pearson χ2 = 103.5, df = 1, p < .0001
Hepatitis C positive	414 (81.3) *77.7-84.6*	25 (3.7) *2.4-5.5*	Testing positive for hepatitis C was significantly associated with reported injecting drug use Pearson χ2 = 744.5, df = 1, p < .0001
HIV positive	18 (3.5) *2.1-5.5*	6 (0.9) *0.3-1.9*	Testing positive for HIV was significantly more associated with reported injecting drug use Pearson χ2 = 10.1, df = 1, p = .0015

Table 2c – Prevalence of hepatitis B and C and HIV by age

	< 30 yr **Total: 797** **No. (%)** ***95% CI***	**≥ 30 yr** **Total: 340** **No. (%)** ***95% CI***	**Test of association**
Hepatitis B positive	52 (6.5) *4.9-8.5*	47 (13.8) *10.3-18.0*	Testing positive for hepatitis B was significantly less likely among respondents under 30 years of age. Pearson χ2 = 16, df = 1, p < .0001
Hepatitis C positive	327 (41.0) *37.6-44.5*	91 (26.8) *22.1-31.8*	Testing positive for hepatitis C was significantly more likely in respondents under 30 years of age. Pearson χ2 = 20.9, df = 1, p < .0001
HIV positive	8 (1.0) *0.4-1.8*	15 (4.4) *2.7-7.5*	Testing positive for HIV was significantly less likely in respondents under 30 years of age. Pearson χ2 = 14, df = 1, p = .0002

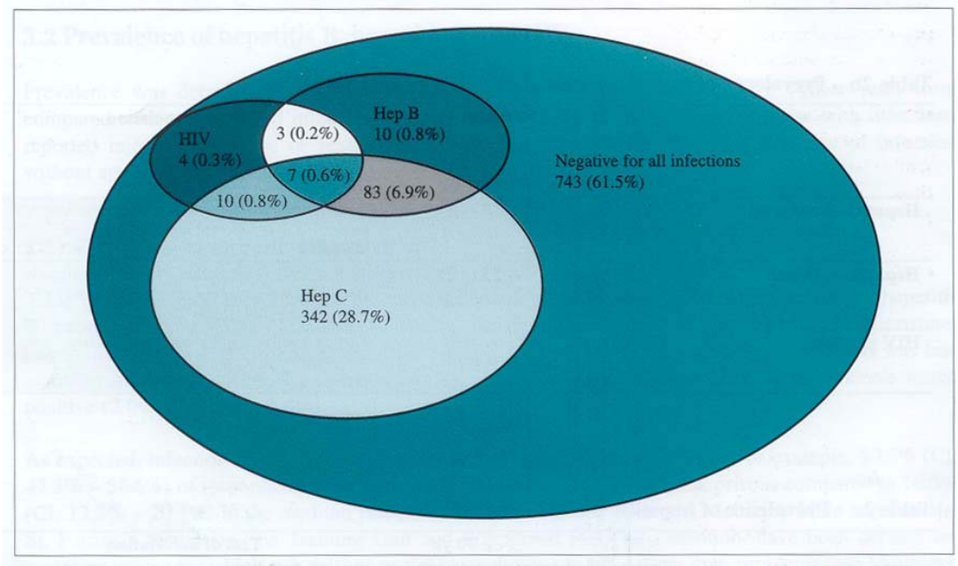
Table 2d – Prevalence of hepatitis B and C and HIV by gender

	Women **Total: 57** **No. (%)** ***95% CI***	**Men** **Total: 1136** **No. (%)** ***95% CI***	**Test of association**
Hepatitis B positive	7 (12.3) *5.1-23.7*	97 (8.5) *7-10.3*	Pearson χ2 = 0.9, df = 1, p = .3284 NS
Hepatitis C positive	24 (42.1) *29.1-55.9*	418 (36.8) *34.0-37.7*	Pearson χ2 = 0.7, df = 1, p = .4180 NS
HIV positive	1 (1.7) *.04-9.4*	23 (2) *1.3-3.0*	Pearson χ2 = 0.02, df = 1, p = .8872 NS

NS = not significant

Figure 3 shows the inter-relationship between the three infections. 38.5% of prisoners had evidence of infection with at least one virus. Most of those who had antibodies to hepatitis B or HIV also had antibodies to one or more of the other two viruses (90% and 83% respectively) whereas only 23% (101/443) of those infected with hepatitis C had an additional infection.

Figure 3 – Number (%) of respondents oral fluid test positive for hepatitis B and C and HIV and the overlap between the infections, N = 1193 (100%)



3.2.2 Comparison of prevalence from oral fluid assays and from self reporting

The self reported prevalence for each infection was lower than that derived from the oral fluid assays (Table 3). Using self reports to estimate prevalence within the prisons would have seriously under-estimated the scale of the infection problem. The majority of respondents said they had not been tested previously. Others did not know whether they had been tested for the viruses, and of those who said they had been previously tested, a considerable number said they did not know the result.

Table 3 – Comparison of proportions positive for oral fluid test with self reported status, as a percentage of the total survey population and as a percentage of those previously tested

		Oral fluid test No. (%)	Self reported status as a % of total survey population No. (%)	Self reported status as a % of those tested No. (%)
Hepatitis B	**Positive**	104 (8.7)	63 (5.2)	63 (19.6)
	Negative	1089 (91.3)		209 (64.9)
	Do not know			50 (15.5)
	Total	1193 (100)	1205 (100)	322 (100)
Hepatitis C	**Positive**	442 (37)	232 (19.2)	232 (67.8)
	Negative	751 (63)		76 (22.2)
	Do not know			34 (9.9)
	Total	1193 (100)	1205 (100)	342 (100)
HIV	**Positive**	24 (2)	20 (1.7)	20 (4.5)
	Negative	11769 (98)		370 (83.5)
	Do not know			51 (12)
	Total	1193 (100)	1205 (100)	443 (100)

The respondents who reported previous tests for any of these infections differed from the wider group in that they were more likely to be drug users. For example, those who reported having had a test for hepatitis C were eight times more likely to be injecting drug users (59.3% of injectors said they had had a test compared to only 7.1% of non injectors); those reporting a test for hepatitis B or HIV were almost four times more likely to be injecting drug users (see Appendix 5). Consequently the apparent prevalence for all three infections in the previously tested group (self reported status) was considerably higher than in the overall group.

Tables 4a-4c show the number of respondents who reported a previous negative test result but tested positive to the oral fluid assay and vice versa. (Note: The numbers in these tables relate only to respondents who knew their test results.) Over a third (28/75) who claimed to have had a negative test result for hepatitis C had a positive oral fluid test result. The proportion of those testing positive but reporting negative was lower for hepatitis B (10%, 21/208) and for HIV (2%, 8/367). It was surprising to note that 58% (11/19) of those who reported being HIV positive tested negative on the oral fluid assay, while almost half (30/63) who self reported being hepatitis B positive tested negative. Eleven (4.8%) of those who reported that they were hepatitis C positive were negative on the oral fluid test. Possible reasons for these discrepancies include: mistakes in filling out the questionnaire, misunderstanding the question, deliberate misrepresentation, change in antibody status since the previous test, and test error (including discrepancies between different laboratories).

Table 4a – Self reported hepatitis B status and the oral fluid test results

Oral fluid Test result	Reported hepatitis B result Positive	Negative	
Positive	33	21°	54
Negative	30*	187	217
	63	208	271

° *Respondent reported negative hepatitis B status but tested positive*
* *Respondent reported positive hepatitis B status but tested negative*

Table 4b – Self reported hepatitis C status and the oral fluid test results

Oral fluid Test result	Reported hepatitis C result Positive	Negative	
Positive	218	28°	241
Negative	11*	477	63
	229	75	304

° *Respondent reported negative hepatitis C status but tested positive*
* *Respondent reported positive hepatitis C status but tested negative*

Table 4c – Self reported HIV status and the oral fluid test results

Oral fluid Test result	Reported HIV result Positive	Negative	
Positive	8	8°	16
Negative	11*	359	370
	19	367	386

°*Respondent reported negative hepatitis HIV status but tested positive*
* *Respondent reported positive hepatitis HIV status but tested negative*

3.2.3 Infections among respondents with no risk factors

There were 536 (out of 1.205) respondents who reported having none of the main risk factors (i.e. said they had never injected drugs, never had anal sex with a man either inside or outside prison, and never been treated for a sexually transmitted infection). Among this subgroup there were seven who were hepatitis B positive, 28 hepatitis C positive and three HIV positive; three of these were positive for both hepatitis B and C. all were men.

Ninety-two (out of 536) had reported smoking heroin in the last year. When these were excluded, there remained five who were hepatitis B positive, nine hepatitis C positive and three HIV positive. All were unaware of being positive except one who had reported a previous positive hepatitis C result.

Deliberate misrepresentation may explain these infections in respondents with no apparent risk factors. They may have had a partner whose sexual history was unknown to them. Alternatively they may have been infected through tattoos, needle stick injuries, infected blood products or other unidentified routes of infection such as sharing razors and/or toothbrushes. Overcrowding in prison may be another contributing factor.

3.3 Uptake of hepatitis B vaccine

Self reported vaccine uptake rate by prison is shown in Table 5. Vaccine uptake overall was disappointingly low:

- 28.9% of respondents reported completing three doses of hepatitis B
- 19.0% completed one or two doses
- 52.1% reported not receiving hepatitis B vaccine.

In only 4 prisons (Mountjoy Male and Female, Training Unit and Portlaoise) were the majority of respondents immunised, partially or fully. In the other prisons, including two of the high risk Dublin prisons (Wheatfield and St. Patricks), the majority of prisoners reported not having had any doses of hepatitis B vaccine.

Only one (2.5%) of the 40 respondents under 18 had completed three doses of hepatitis B vaccine; a further three (7.5%) had received one or two doses. Vaccine uptake rates were equally low in those who were still susceptible to hepatitis B infection i.e. respondents whose antibody status was hepatitis B negative. (see Appendix 6)

Table 5 – Reported hepatitis B vaccine coverage in each prison

Prison	Completed 3 doses No. (%)	Completed 1 or 2 doses No. (%)	Did not receive Vaccine No. (%)	Total
Portlaoise	37 (47.4)	24 (30.8)	17 (21.8)	78
Mountjoy female	22 (44.9)	7 (14.3)	20 (40.8)	49
Training Unit	30 (43.5)	21 (30.4)	18 (26.1)	69
Mountjoy male	149 (43.3)	96 (27.9)	99 (28.8)	344
Wheatfield	19 (16.1)	21 (17.8)	78 (66.1)	118
Limerick male	15 (14.2)	11 (10.5)	79 (75.3)	105
St Patricks	10 (13.7)	6 (8.2)	57 (78.1)	73
Cork	20 (11)	10 (5.5)	151 (83.5)	181
Shelton Abbey	2 (7.1)	4 (14.2)	22 (78.6)	28
Limerick female	0 (0)	0 (0)	6 (100)	6
Total	**304 (28.9)**	**200 (19.0)**	**547 (52.1)**	**1051**

Table 6a shows the proportions with hepatitis B vaccine by length of time spent in prison over the last ten years. As it is Department of Justice, Equality and Law Reform policy that all prisoners sentenced for eight months (equivalent to serving six months) or more should be offered hepatitis B vaccination, it is not surprising that completion rates were highest in those who had spent more than three of the last 10 years in prison. However, there were large numbers who had spent more than six months in prison over the last 10 years who remained unvaccinated. High proportions of short sentences in some prisons are unlikely to account fully for low vaccination rates.

There appears to be an active vaccination programme in the adult prisons of the Mountjoy complex. Overall however, it is clear that the vaccination programme is not reaching many of those at risk (see Tables 6b and 6c), and further efforts are required to rectify this shortfall.

Table 6a – Hepatitis B vaccination coverage by time spent in prison in the last 10 years

Hepatitis B vaccine status	Time in prison in the past 10 years ≤ 3 years No./Total (%)	 > 3 years No./Total (%)	Test of association
1 or more doses	182/535 (34.0)	321/500 (64.2)	Pearson $\chi 2 = 94.2$, df = 1, p < .0001 Respondents who had spent more than 3 years in prison were significantly more likely to have started a course of hepatitis B vaccine.
3 doses completed (of those who had at least 1 dose)	90/182 (49.5)	213/321 (66.3)	Pearson $\chi 2 = 13.6$, df = 1, p < .0001 Of those who started vaccination, the respondents in prison over 3 yrs were more likely to report completing the course.

Table 6b – Hepatitis B vaccination coverage by injecting drug use

Hepatitis B vaccine status	Injecting drug users IDU No./Total (%)	 Non IDU No./Total (%)	Test of association
1 or more doses	300/480 (62.5)	321/500 (64.2)	Respondents who were IDUs were more likely to have commenced a course of vaccine. Pearson $\chi 2 = 73.5$, df = 1, p < .0001
3 doses completed (of those who had at least 1 dose)	184/300 (61.3)	118/202 (58.4)	Of those who started vaccination, IDU respondents were not more likely to report completing the course. Pearson $\chi 2 = 1.9$, df = 1, p = . 169

Table 6c – Hepatitis B vaccination coverage by hepatitis B status

Hepatitis B vaccine status	Hepatitis status (oral fluid) Negative No./Total(%)	 Positive No./Total(%)	Test of association
1 or more doses	447/948 (47.2)	54/97 (55.7)	Respondents who were oral fluid negative for hepatitis B were not more likely to have commenced hepatitis B vaccine. Pearson $\chi 2 = 2.6$, df = 1, p = .1097.
3 doses completed (of those who had at least 1 dose)	261/447 (58.4)	41/54 (75.9)	Of those who started vaccination, oral fluid positive respondents were more likely to report completing the course. Pearson $\chi 2 = 8.3$, df = 1, p = .004.

3.4 Drug use

3.4.1 Reported drug use

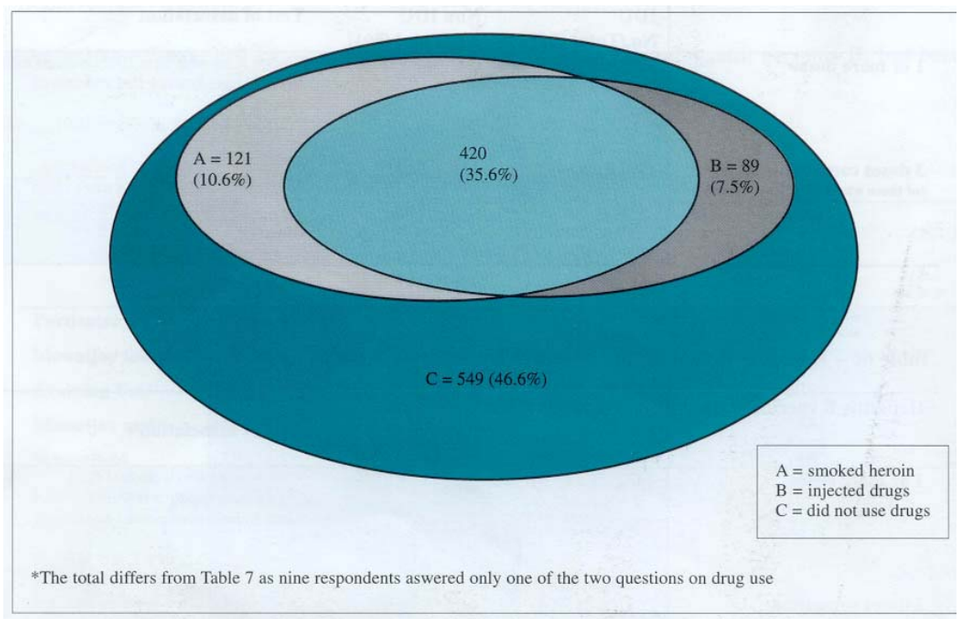
Table 7 shows that 545 respondents said they had smoked heroin in the last year and 514 stated they had (ever) injected drugs. The proportion reporting drug use was much higher in the high risk prisons. Overall, 630 of the 1,205 respondents said hey had used heroin (Figure 4). Most, but not all, of those who said they had smoked heroin in the last year had also injected drugs and vice versa.

Fifteen of the 40 respondents under 18 years of age reported smoking heroin in the last year and 10 reported ever injecting drugs.

Table 7 – Proportion of respondents who smoked heroin or ever injected drugs by prison category (high and medium risk)

	All No./Total (%)	High No./Total (%)	Medium No./Total (%)	Test of association
Smoked heroin in the last 12 months	545/1187 (45.9)	408/711 (57.4)	137/476 (28.8)	Smoking heroin in the last year was significantly more common in high risk prisons Pearson $\chi 2 = 93.9$, df = 1, p <.0001
Ever injected drugs	514/1188 (43.2)	414/712 (58.2)	100/477 (21)	Injecting drug use was significantly more common in high risk prisons Pearson $\chi 2 = 161.5$, df = 1, p= <.0001

Figure 4 – Inter-relationship between smoking heroin and injecting drug use N=1179 (100%)*



*The total differs from Table 7 as nine respondents aswered only one of the two questions on drug use

Women prisoners were more likely to smoke heroin and/or inject drugs. Almost 60% of women respondents reported smoking heroin in the last year compared to 45.2% of male respondents; 59.6% of women respondents reported ever injecting drugs compared to 42.4% of men (Table 8).

Table 8 – Proportion of respondents who smoked heroin or ever injected drugs by gender

	Women No./Total (%)	Gender Men No./Total (%)	Test of association
Smoked heroin in the last year	34/57 (59.6)	511/1130 (45.2)	Women were significantly more likely than men to report smoking heroin. Pearson $\chi 2 = 4.5$, df = 1, p = 0.0329
Ever injected	34/57 (59.6)	480/1131 (42.4)	Women were significantly more likely than men to report drug use. Pearson $\chi 2 = 6.5$, df = 1, p = 0.0105

More than half the injectors said they had commenced injecting before their 18th birthday (Figure 5). Most had been injecting for a considerable time period: 92% had first injected more than three years ago. Over 70% of injectors said they had injected drugs in the week prior to committal (55.9% in the previous 24 hours) Figure 6). This suggests that most were current drug users.

Figure 5 – Age started injecting drugs

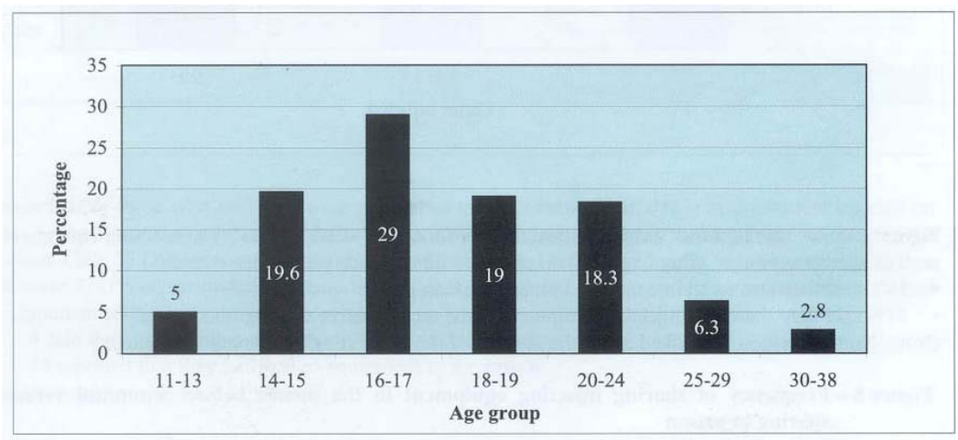
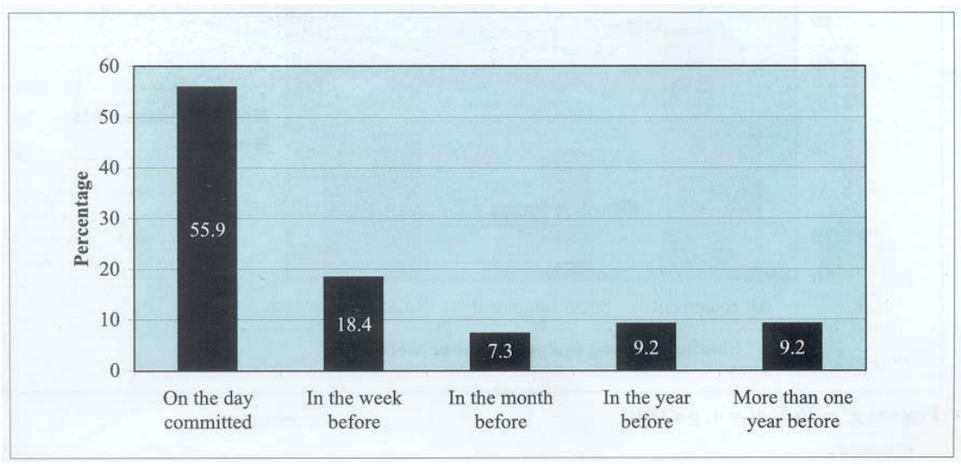


Figure 6 – Last time drug users injected before committal to prison



3.4.2 Reported drug using behaviour in prison

104 prisoners (8.6% of the 1,205 respondents), or fifth of injectors (104/506), said they first started injecting drugs while in prison.

Drug use within prison was common. For example, 45% of the 334 respondents with a history of injecting drug use who had been in prison for more than three months, stated that they had injected drugs in previous month; 103 (31%) reported injecting 1 to 19 times in the previous month while 48 (14%) said that they had injected more than 20 times (Figure 7).

Six of the 10 injectors 18 years of age reported injecting in the previous month.

Figure 7 – Frequency of injecting in the month prior to the survey among injecting drug users resident in prison for more than 3 months on this sentence (n = 334)

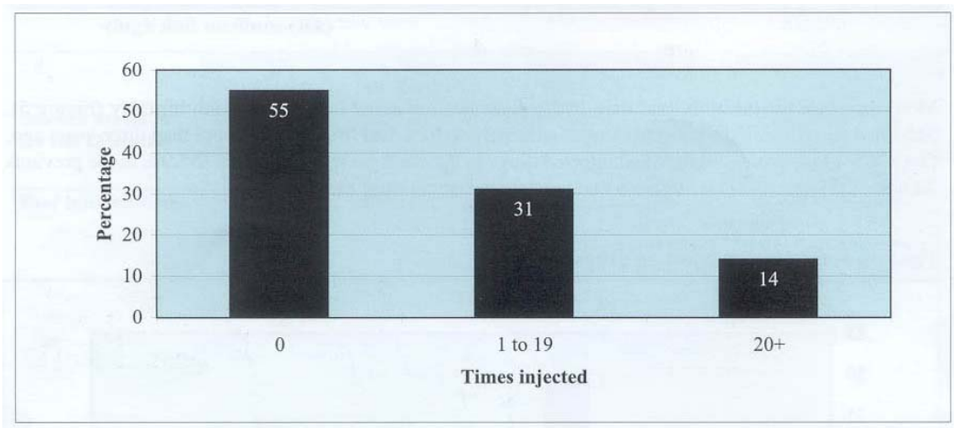
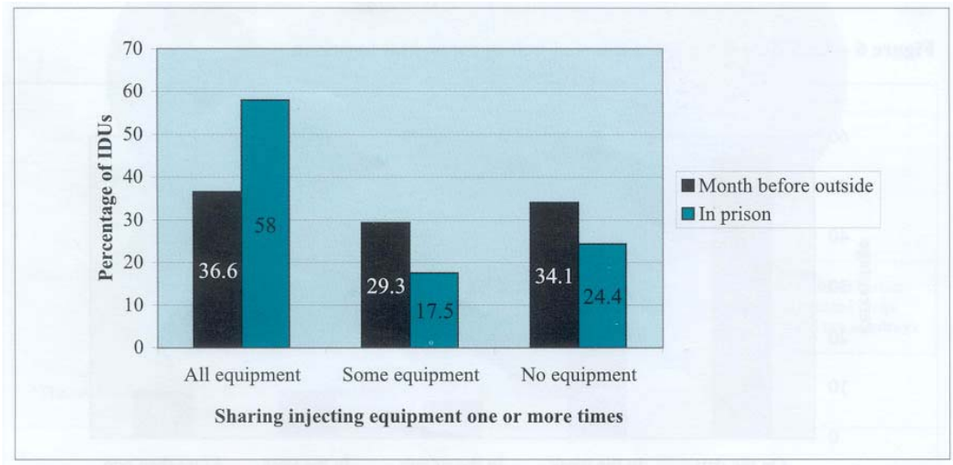


Figure 8 shows that injectors were significantly more likely to share 'works' (i.e. injecting equipment such as needles, syringes, filters, spoons) one or more times inside prison than outside:

- 58% said they shared all injecting equipment while in prison.
- 37% said they shared all injecting equipment in the month before coming into prison.

(Note. No information was asked about the number of times injecting equipment was shared).

Figure 8 – Frequency of sharing injecting equipment in the month before committal versus sharing in prison



Pearson $\chi^2 = 76.5$, df = 4, p <.0001

Five of the 10 injectors under the age of 18 reported sharing injecting equipment in the month before coming into prison, and two said they had shared injecting equipment in prison.

Those who shared injecting equipment were significantly more likely to be infected with hepatitis C than those who did not share it. Almost 87% of injectors who said they had shared injecting equipment in the month before coming into prison were infected with hepatitis C compared to 75.3% of those who had not shared outside in the month before committal (Pearson χ^2 = 8.9 df 1, p = 0.0023). The excess risk of sharing injecting equipment within the prison environment was even greater than sharing outside: 89.1% of those who said they had ever shared inside prison were infected with hepatitis C compared to 62.2% of those who had not shared in prison (χ2 = 45.3 df 1, p <.0023).

3.4.3 Methadone treatment prior to committal

Just over a third of the injecting drug users (187/502) said they were on a methadone programme prior to committal. This included three of the 10 injectors aged less than 18. Those committed to prison within the last three years were more likely to have been on a methadone programme prior to committal than those who had been in prison for more three years on the current sentence. (Table 9).

Table 9 – Number (%) on methadone at committal by length of time spent in prison on this sentence

Methadone	Time in prison on this sentence		Test of association
	≤3 years	> 3 years	
Yes	168/472 (39.3)	16/71 (22.5)	Respondents in prison for more than 3 years were significantly less likely to have been on a methadone programme prior to committal Pearson χ2 = 7.4, df = 1, p = .0066

Over half of those who said they were on methadone at committal (101/187) said they had injected on the day before entering the prison. A further 49 (25%) said they injected in the month before entering the prison. Only 37 (20%) respondents said they had not injected in the month prior to imprisonment. Fifteen of thee 37 (i.e. on methadone at committal and had not injected in the month prior to imprisonment) had recommended injecting drug use in prison.

- 4 said they had injected more than 20 times in the previous month
- 14 reported that they had shared equipment in the prison
- 10 tested positive for hepatitis C

3.5 Sexual practices

The sexual risk factors reported by respondents are shown in Table 10 separately for injecting drug users and non users. It was our impression that these questions were the least likely to have been answered truthfully.

Most respondents reported heterosexual activity in the year prior to committal. Only 28 men reported that they had ever had anal sex with a man (2.5% of the 1,116 men who responded to the question), and 20 (1.8% of the 1,087 who answered the question) reported having had anal sex with a man while prison. These two groups were not necessarily the same men. For example six men reported anal sex in prison having previously denied ever having sex with another man. It may be that this behaviour was, for them, atypical, and would not have occurred outside prison.

Other practices of note are listed below:

- Condom use (always or sometimes) was infrequent, especially by those reporting homosexual intercourse. However, these questions did not differentiate between monogamous relationships and casual partners.
- One eighth of respondents had been treated for sexually transmitted infections.
- Sexually transmitted infections were more common among injecting drug users.

Table 10 – Reported sexual risk factors

	All No./Total (%)	IDU No./Total (%)	IDU No./Total (%)
Heterosexual intercourse in the 12 months prior to committal	1088/1182 (92)	483/511 (94.5)	596/661 (90.2)
Use condoms during heterosexual intercourse	347/1026 (33.8)	138/451 (30.6)	205/566 (36.2)
Men ever have anal sex with men	28/1116 (2.5)	15/474 (3.40	12/633 (1.9)
Use condoms during male homosexual intercourse	4/21 (19)	1/14 (7.1)	3/7 (42.9)
Men ever have anal sex with men in prison	20/1087 (1.8)	9/464 (2)	10/613 (1.6)
Ever treated for STI*	147/1165 (12.6)	87/503 (17.3)	60/653 (9.2)

* Sexually transmitted infection

Tables 11-13 show the frequency of the various sexual practices among those who tested positive for one or more of the 3 infections. Relevant features were:

- HIV or hepatitis B positive men were more likely to have reported anal sex with men.
- Positive status of each of the three infections was more common in those reporting a history of treatment for sexually transmitted infections. (A history of sexually transmitted infections is an indicator of “unsafe sex”).
- HIV positive respondents were more likely to use condoms during heterosexual intercourse than those who were HIV negative. One interpretation of this finding is that HIV infected respondents were attempting to protect their partner(s).

Table 11 – Reported sexual risk factors for hepatitis B

	Hepatitis B		
	Positive No./Total (%)	Negative No./Total (%)	Test of association
Use condoms during heterosexual intercourse	29/90 (32.2)	317/931 (34.0)	Pearson $\chi 2 = 0.12$, df = 1, p = .7266 NS
Men ever have anal sex with men	7/95 (7.4)	21/1013 (2.1)	Respondents who tested positive for hepatitis B were more likely to have report that they had anal sex with another man Pearson $\chi 2 = 9.9$, df = 1, p =.0017
Men ever have anal sex with men in prison	2/92 (2.2)	18/987 (1.8)	Pearson $\chi 2 = 0.06$, df = 1, p = .8117 NS
Ever treated for STI*	26/101 (25.7)	121/1057 (11.4)	Respondents who tested positive for hepatitis B were more likely to have reported having treatment for STI Pearson $\chi 2 = 17$, df = 1, p <.0001

* Sexually transmitted infection
NS = Not significant

Table 12 – Reported sexual risk factors for hepatitis C

	Hepatitis C		
	Positive No./Total (%)	Negative No./Total (%)	Test of association
Use condoms during heterosexual intercourse	121/396 (30.6)	225/625 (36.0)	Pearson $\chi 2 = 3.2$, df = 1, p = .0733 NS
Men ever have anal sex with men	12/412 (2.9)	16/696 (2.3)	Pearson $\chi 2 = 0.4$, df = 1, p = .5293 NS
Men ever have anal sex with men in prison	7/399 (1.7)	13/680 (1.9)	Pearson $\chi 2 = 0.03$, df = 1, p = .8532 NS
Ever treated for STI*	73/432 (16.9)	74/726 (10.2)	Respondents who tested positive for hepatitis C were more likely to have reported having treatment for STI Pearson $\chi 2 = 11$, df = 1, p =.0009

* Sexually transmitted infection
NS = Not significant

Table 13 – Reported sexual risk factors for HIV

	HIV		
	Positive No./Total (%)	Negative No./Total (%)	Test of association
Use condoms during heterosexual intercourse	12/19 (63.2)	334/1002 (33.3)	Respondents who tested positive for HIV were more likely to use condoms. Pearson $\chi 2 = 7.4$, df = 1, p = .0065
Men ever have anal sex with men	5/23 (21.7)	23/1085 (2.1)	Male respondents who tested positive for HIV were more likely to have had anal sex with another man Pearson $\chi 2 = 35.2$, df = 1, p <.0001
Men ever have anal sex with men in prison	3/23 (13.0)	17/1056 (1.6)	Male respondents who tested positive for HIV were more likely to have had anal sex with another man in prison Pearson $\chi 2 = 16.2$, df = 1, p <.0001
Ever treated for STI*	9/24 (37.5)	138/1134 (12.2)	Respondents who tested positive for HIV were more likely to have reported having had treatment for STI Pearson $\chi 2 = 13.6$, df = 1, p = .0002

* Sexually transmitted infection
NS = Not significant

3.6 Risk factors for infection

Analysis of individual risk factors showed that by far the most important predictor of both hepatitis B and hepatitis C was a history of injecting drug use. The link between injecting drug use and hepatitis C was particularly strong. The strongest predictor of HIV infection was a history of anal sex with men. However, as the numbers involved were small, this was a less important factor in the overall picture than injecting drug use.

In order to clarify the links between these various risk factors, the factors were combined in multivariate analyses (logistic regression), the main findings of which are described below. The relationships presented below are those that remained statistically significant after taking account of the inter-linking of risk behaviours. (The associations are expressed as odds ratios (OR) adjusted or confounding).

- Respondents with evidence of hepatitis B infection were more likely to be injecting drug users, to be older, and to have been treated for sexually transmitted infections. After taking into account differences between respondents, those who reported ever injecting drugs were 22 times more likely to be hepatitis B positive than those who did not report injecting (adjusted OR 21.6, CI**10.9-47.6). Respondents aged 35 years or older were 10 times more likely to be hepatitis B positive than those aged 16-19 years (adjusted OR 9.7, CI 3.8-28.6). (Table 14a)
- Those positive for hepatitis C were very likely to be injecting drug users (adjusted OR 80.8, CI 47.9-143); they tended to be younger, smoke heroin (adjusted OR 2, CI 1.2-3.3), and the risk of infection increased with increasing time spent in prison during the last 10 years. (Table 14b)
- Individuals who reported ever injecting drugs were 3 times as likely to be HIV positive as non injectors (adjusted OR 3.4, CI 1.3-9.5), as were individuals who reported ever having been treated for a sexually transmitted infection (adjusted OR 3,0, CI 1.2-7.4). Men who had anal sex with other man were 8 times (adjusted OR 8.4, CI 2.4-25.1) more likely to be HIV positive (Table 14c). The total number who tested positive for HIV was very small (24/1993) and the numbers with each of the three main risk factors were even smaller (IDU: 18, STI: 9 and men having anal sex with men: 5), and there was a considerable degree of overlap (statistical interaction). Therefore inferences from this model are limited.

Table 14a – Logistic regression model to identify determinants of hepatitis B infection

	Total sample 1193 No.	**Hepatitis B negative 1089 No.**	**Hepatitis B positive 104 No.**	**Prevalence of hepatitis B %**	**Odds ratio**	**95% CI**	**p-value**
Ever injected drugs							
No	670	659	10	1.5	1		
Yes	509	415	94	18.5	21.6	10.9-47.6	<.0001
Missing	14						
Age group							
16-19	177	168	9	5.1	1		
20-24	367	341	26	7.1	1.5	0.6-4.1	.4106
25-34	399	362	37	9.3	2.3	1-6.3	.0720
35+	194	167	27	13.9	9.7	3.8-28.6	<.0001
Missing	56						
Ever treated for STI*							
No	1011	936	75	7.4	1		
Yes	147	121	26	17.7	1.9	1.1-3.3	.0183
Missing	35						

Whole model $\chi 2 = 142$ $R^2 = .22$ $p < .0001$

* Sexually transmitted infection

** CI denotes 95% confidence interval

Table 14b – Logistic regression model to identify determinants of hepatitis C infection

	Total sample 1193 No.	Hepatitis C negative 751 No.	Hepatitis C positive 442 No.	Prevalence of hepatitis C %	Odds ratio	95% CI	p-value
Ever injected drugs							
No	669	644	25	4.8	1		
Yes	509	95	414	80.2	80.8	47.9-143	<.0001
Missing	14						
Age group							
16-19	177	130	47	26.5	1		
20-24	367	192	175	47.7	2.8	1.5-5.3	.0016
25-34	399	241	158	39.6	1.8	.9-3.4	.754
35+	194	156	38	19.6	1.9	.8-4.5	.1133
Missing	56						
Total amount of time spent in prison over the last 10 years							
<3 months	136	116	20	15.4	1		
3-11 months	197	157	39	20.3	2.9	1.2-6.9	.0145
12-36 months	299	197	102	33.8	4.0	1.9-8.6	.0003
>3 years	538	261	277	51.3	6.5	3.2-13.3	<.0001
Missing	23						
Ever smoked heroin in the previous 12 months							
No	637	555	82	12.9	1		
Yes	540	187	353	65.4	2	1.2-3.3	.0072
Missing	16						

Whole model $\chi^2 = 847.7$ $R^2 = .58$ $p < .0001$

Table 14c – Logistic regression model to identify determinants of HIV infection

	Total sample 1193 No.	HIV negative 1169 No.	HIV positive 24 No.	Prevalence of HIV %	Odds ratio	95% CI*	p-value
Ever injected drugs							
No	669	663	6	0.9	1		
Yes	509	491	18	3.5	3.4	1.3-9.5	.0129
Missing	14						
Ever treated for STI							
No	1011	996	15	1.5	1		
Yes	147	138	9	6.1	3	1.2-7.4	.0180
Missing	35						
Men ever had anal sex with men							
No	1080	1062	18	1.7	1		
Yes	28	23	5	17.9	8.4	2.4-25.1	.0003
Missing	85						

Whole model $\chi^2 = 28.5$ $R^2 = .13$ $p < .0001$

Injecting drug use was clearly the biggest contributor to infection with hepatitis B and hepatitis C and was also important in HIV infection. Consequently the data have been analysed to identify behaviours which contributed to the 'riskiness' of injecting. The relationships below are those that remained significant after taking account of the inter-linking of risk behaviours (the associations are expressed as odds ratios (OR) adjusted for confounding). The detailed models are presented in Appendix 7a-7c.

- Injecting drug users aged 30 or over were 4 times more likely than injectors under 30 (adjusted OR 4.1. CI* 2.4-7.0) to have evidence of hepatitis B infection. Injectors with a history of treatment for sexually transmitted infection had twice the hepatitis B risk of those who had not reported treatment for sexually transmitted infection (adjusted OR 2.1, CI 1.1-3.7) Length of time injecting was also associated with a slight increase in risk of infection. The fact that infection rates remained higher in older respondents, even after controlling for the increased length of injecting that would be expected in older individuals, suggests a cohort effect.

- Injectors who had spent longer in prison over the last 10 years were more likely to have evidence of hepatitis C infection. Those who had shared needless in prison (adjusted OR 2.9, CI 1.5-5.7) or who reported frequent injecting in the month prior to the survey were also at increased risk of hepatitis C infection.

- Injectors who had been treated for a sexually transmitted infection had a higher risk of HIV than drug injectors who had not reported treatment for sexually transmitted infections (adjusted OR 2.8, CI 0.9-8.1). HIV positive injectors were more likely to report using condoms in heterosexual intercourse than HIV negative injectors; presumably this reflects an attempt to protect their partners.

* CI denotes 95% confidence interval

3.7 Comments and observations

On completion of the study, the interviewers were sent a one-page questionnaire, with the following questions:

"During your conversations with prisoners while conducting the survey, were any issues raised relating to health care in the prisons? Please describe"

"Do you have any observations to make about the prison health care service? Please describe"

Answers were received from 19/25 of the interviewers. A number of issues emerged from the answers. These are elucidated below, with *verbatim* quotes to exemplify each issue. The source (interview 1 – 19) is given in brackets at the end of each quote.

Many comments were negative. However, these should interpreted bearing in mind that those with complaints saw the survey as an opportunity to voice their dissatisfaction.

3.7.1 Medical care

There were a number of comments about the standards of medical care, the attitudes of some of the prison doctors and variations between medical care in different prisons:

'Praise for some doctors, criticism for others – Mountjoy and Cork in particular' (3)

'Difficulty seeing a doctor when required' (14)

'The doctor here doesn't give a shit' (inmate in Mountjoy men's)' (14)

'Lack of confidence in prison doctor' (17)

'Positions held by semi-retired, not so dynamic/innovative medics' (14)

'A few prisoners mentioned that there were a few good doctors attached to specialised units in the prison. One prisoner said Dr. x was very good man 'he speaks to us and listens to our problems', 'he treats us like humans'. Interestingly many complaints were about the Drs rather than the POs.' (19)

'The respondents were in general fairly negative about the health services provided in prisons. The medical officers in one of the prisons were severely criticised – it was stated that respondents always had to stand during medical consultations, and physical examinations were rarely, if ever, conducted.' (19)

3.7.2 Confidentiality

Concerns were expressed about the confidentiality of medical services and the medical orderly system. This is particularly relevant in the context of the new appointments of nurses to the prison health care system. As it stands, these nurses will also have the status of prison officers. Prisoners' anxieties about confidentiality are likely to be reinforced by this decision.

'Concern re. Confidentiality of medical records' (17)

'Lack of confidentiality – medical orderlies are prison officers' (3)

'Confidentiality was not respected according to prisoners. The governor, POs and other inmates often knew infected prisoners through leakage of info.' (19)

3.7.3 Treatment for drug users

A number of comments were made about the inadequacy of treatment facilities for drug users.

'Some prisoners felt strongly about the lack of support services for prisoners wishing to break a drug addiction.' (2)

'Many expressed the view that methadone should be more available in prison and that it should be possible to obtain maintenance methadone. Most felt that the detox on offer was to rapid, at too low a dose (Mountjoy men's)' (12).

'Methadone was not being given to responders who were on a programme on the outside'(18)

'Need for methadone maintenance programmes +/- needle exchange' (9)

'Requests for needle exchange services to be made available' (5)

3.7.4 Hepatitis B, hepatitis C and HIV

Not surprisingly, given that a prevalence survey was in progress, there were a number of specific factual questions about blood borne viral infections. Although some Dublin prisoners were well informed, it was evident that others were unclear about how such infections are transmitted. There appears to be a need for more education about methods of transmission, and the implications for future health of having these infections. Anxieties were expressed about testing for the presence of these infections while in prison. There were also observations about practices that might result in the transmission of such infections (such as sharing razors). Comments about the adequacy of the existing hepatitis B vaccination programme were also made:

'Prisoners requested info on hepatitis B/hepatitis C – implications for their present and future health – didn't know about it (and were positive)' (5)

'Non-drug users worried about their exposure to infections diseases' (5)

'A specific question – can hepatitis and HIV be contracted through sharing a cigarette or an apple?' (7)

'Another asked if he could have an HIV test done in prison and get the result.' (10)

'Some prisoners mention that they would never have a test for any of the viral diseases, as they would be interrogated rather than counselled, if they had a disease (infectious) they were treated with a very obvious non touch technique, this disease seemed more contemptuous than their crime. People with HIV, hepatitis and TB reported to be treated very poorly by prison officers, as there was an abnormal fear of contracting the disease. One prisoner was advised not to have testing, as he would be incapable of reducing his risk factors.' (19)

'One prisoner expressed his concerns about sterilisation of dental equipment between patients – was concerned re. Potential for transmission of blood borne viruses' (13)

'Woman – shared razors!' (17)

'Some prisoners were concerned that razors were being shared (17)

'Vaccination schedules were often incomplete, the prisoner unaware of how many should be administered and some had been vaccinated on multiple separate occasions – confusion and anxiety' (5)

3.7.5 Needs of the psychologically vulnerable

A few observations were made about both the treatments available to those with psychological difficulties, and the appropriateness of the setting for disturbed individuals. An example of good practice was also identified:

"2 disprin' when feelings of anxiety/depression expressed" (14)

'Definite need for greater psychological services in Mountjoy. I saw on two occasions three prisoners in one cell, two kept the suicidal one 'company'/Hardly the modern treatment, or have I missed something?' (14)

'Some more articulate prisoners commented that mentally disturbed prisoners in 'c' wing of Mountjoy should be in hospital – having seen what they were talking about I agree' (3)

'Cork – good psychiatric services – setting up cognitive skills course for ordinary prisoners (as well as sex offenders)' (16)

3.7.6 Organisational aspects of the prison medical services

A number of the survey team commented on organisational aspects of the prison medical service, and the variation in both access and standards that was evident from prison to prison. Observations varied from reporting the prisoners' perceived difficulties with access to both primary and secondary care, to suggestions as to how the service could be improved.

'One or two said they had been denied drugs for illness which they had for 15-20 years' (1)

'Difficulty seeing a doctor when required' (14)

'Poor access to prison doctor' (17)

'Many respondents said they were unhappy with the provision of health care given to hem i.e. length of time it took to see a doctor – very little time given to them by doctor. Many prisoners were started on hepatitis B vaccination programme did not know what they were getting.' (18)

'They discussed issues relating to inadequate primary care and GP facilities in prison. The need for a more comprehensive primary care services and better follow up was emphasised.' 'Limited access to health care, lack of privacy, assumption of malingering. As a result, delays in diagnosis, potentially damaging for the individual (and in the case of communicable disease – prisoners and staff and even relations)' (9)

'Liver biopsy appointments cancelled (in one case 5 times) because no prison staff available to accompany prisoner to hospital' (14)

'To a certain extent the present system seems to suit in that visits to hospital outpatients are welcomed by prisoners (day out) and prison officers (overtime, day out)' (3)

'Under-resourced' (3)

'Appears to run on an ad-hoc basis.' (14)

'Vagueness about accountability, more explicit policies would help' (3)

'Need more organised comprehensive primary care services and psychiatric services.' (9)

'Need for one medical director in each prison who would be interested in screening for TB, blood borne viruses etc. on entrance to prison system – should not only be based on symptoms and GP issues' (13)

3.7.7 General conditions in prison

Three general issues in relation to living conditions in prison were raised:

Food: *'Portlaoise best food, Limerick food awful and not enough! (this was said by quite a few prisoners, especially those who worked out in the gym)' (16)*

Hygiene: *'Toilets blocked, dirty, concern expressed re infection risk' (17)*

Activities: *'The positive impact of the gym and education on health was mentioned' (6)*

The happiest seeming person I met among the prisoners on the two occasions when I helped out was a young prisoner who ran exercise classes. And the prisoner seemed to have a good sense of their own worth which probably contributed to their general well-being. (Wording altered slightly to main confidentiality) *(7)*

3.7.8 Summary

Some examples of good care were identified but, in general, the comments point to shortcomings with the existing prison health care services, highlighting deficiencies in access, attitude and quality. The fact that the health care service is integrated with the prison regime was identified as a potential barrier to good care.

As people generally volunteer negative rather than positive views, these comments should be interpreted cautiously.

4 – Discussion

4.1 Environment of prisons

The organisation of health care within prisons presents greater challenges than the provision of comparable services outside prison. However, the very high response rate of prisoners in this study together with the excellent co-operation obtained by the research team from the prison staff at all levels augur well for future attempts to address the issues identified in this study. It is clear from the findings of the survey that Irish prisons vary significantly in their response to control of infection within them, to the extent of drug misuse, and to the prevalence of hepatitis B, hepatitis C and HIV among inmates. By and large prisons in Dublin have more drug use among the prison population and higher rates of infection. What is required is a tailor-made service for each prison within an overall framework of a co-ordinated response throughout the entire prison service. A broad consultative process will be required to identify the necessary changes and to bring them into effect. This consultative process will be most productive if it involves all the key stakeholders, including prisoners.

4.2 Infections within prison

There is a marked difference in the prevalence of the three viruses under investigation and, in common with studies in other countries, the prevalence of hepatitis C is by far the greatest. This finding is not surprising given the high proportion of prisoners who are drug users and the known high prevalence of hepatitis C in drug users in Ireland. Strategies to limit hepatitis C transmission outside prison need to be replicated inside prison and one of the cornerstones of this is methadone substitution treatment .The risk of hepatitis C increased with increasing time spent in prison. In the study there were 32 prisoners positive for antibodies to hepatitis C who reported never having injected drugs. A reduction in overcrowding should lessen the risk of infection by reducing the likelihood of risk behaviour. Hepatitis C was more common in young prisoners. This indicates that the health problems related to this infection will be an increasing feature in years to come.

Hepatitis B infection was associated with drug use and with older age. This may be explained by the introduction of heroin to Dublin in the early 1980s with an associated increase in cases of hepatitis B infection in the early cohorts of injecting drug users. Later cohorts of drug users may have been protected to some extent by the provision of harm reduction programmes (methadone maintenance and needle exchange) and hepatitis B vaccination, all of which were introduced in the early 1990s.

The very low prevalence of HIV in this study is consistent with data from outside prison which demonstrate a fall-off in the number of drug users presenting with HIV and AIDS in this country over the past 5 years. The predominant focus on HIV infection in the prison would seem to be somewhat misplaced, although HIV is always a cause of concern because of its high death rate. It should be stressed that the major public health issue identified in this study is hepatitis C.

The mismatch between self-reported prevalence and laboratory results has important implications for education programmes within the prison service. Some prisoners are unaware that they have been infected and may continue to transmit the infection.

Strategies employed outside prison to limit the transmission of these three viruses include the

provision of harm reduction services; these programmes need to be available on a wide scale within the prison service. The most appropriate methodology utilised to provide these services in the prison setting requires discussion and consultation with the relevant stakeholders. This should be dealt with as a matter of urgency.

4.3 Hepatitis B vaccination

Hepatitis B vaccination is an effective preventive measure. Our findings suggest a very variable uptake of vaccination. The written policy should be clearly displayed and available to doctors and prisoners. This should lead to increased vaccine uptake throughout the prison system. It is good medical practice outside prison to actively promote and provide hepatitis B vaccination to those groups who are at risk, and prisoners, whether they inject drugs or not, are regarded as a high risk group. Accordingly, a more active programme of vaccination needs to be put in place so that this highly effective preventive measure can be offered at every opportunity. For many drug users prison probably represents the best prospect of receiving hepatitis B vaccine. This opportunity should be taken in the interests of protecting individual prisoners and their families.

4.4. Drug use in prison

Apart from its impact on hepatitis B, hepatitis C and HIV, the drug issue in prison should be addressed in its own right. There is evidence from our survey of considerable drug use within Irish prisons, not confined to Dublin. There is also evidence of initiation into drug use within prison and of sharing of drug injection equipment within prison. Sharing of equipment within prison is more common than the sharing engaged in prior to committal. It is likely that some prisons will continue to inject and share injecting equipment while in prison and for these a supply of clean needles will lessen the risk of virus transmission. We appreciate that this is a contentious issue and raises justifiable concerns among staff. These concerns will need to be addressed in any proposed changes of policy and practice.

One third of drug users were on a methadone programme prior to imprisonment. Prisoners are rarely maintained on methadone in prison. If a greater proportion of drug users were offered methadone maintenance in prison, this would have the effect of lessening risk of viral transmission. This is a matter of some urgency.

The provision of such harm reduction strategies in prison can be contentious. However, a need has been identified and the case for the provision of these services within some prisons in Ireland is compelling.

4.5 Young prisoners

Almost 15% of the prisoners in the study were aged under 20 years. The greatest prevalence of hepatitis C infection was in the 20-24 age group. Interventions specifically targeted at teenage prisoners offer the best prospect of preventing acquisition of hepatitis C infection.

4.6 Sexual risk factors

We have found evidence of sexual contact between men in prison and an association between both hepatitis B and HIV infection and sex between men. This sexual activity needs to be acknowledged and preventive measures, such as education of prisoners and the provision of condoms, should be put in place.

4.7 Prison health service

The results of the qualitative component of the study raise concerns about the provision of medical care in prisons. Comments to the study team during the course of our fieldwork indi-

cated that there is a problem with confidentiality and with differing attitudes among prison doctors. The Department of Justice, Equality and Law Reform should ensure that the prison medical service is provided by staff who are committal to the policies that have been agreed. Equally, health professional staff require administrative and management support to encourage and maintain professional commitment to the provision of a quality health service for prisoners. This health service for prisoners should be seen to be separate from the custodial service. In our opinion, the best way to ensure this is to transfer responsibility for the prison health service from the Department of Justice, Equality and Law Reform to the Department of Health and Children.

4.8 Oral fluid

This study has demonstrated that the use of oral fluid as opposed to blood for antibody detection is feasible and easy to carry out. This method of antibody testing could be extended for use outside the prison population if a facility for laboratory analysis in Ireland can be arranged.

5 – Recommendations

We believe that major changes are needed in the organisation and delivery of the prison health service. As previously stated, this will best be achieved through a wide consultative process. As a contribution to this process, we present our recommendations. These are presented as (i) topic-specific and (ii) organisational recommendations.

5.1 Topic-specific recommendations

5.1.1 Infectious disease control

All prisoners, regardless of duration of sentence, should be offered hepatitis B vaccination on committal to prison, with the exception of those having documented evidence of immunity. For short term prisoners, accelerated vaccination should be offered.

In the event of a prisoner being released before completion of a course of vaccination, the prisoner should received the remaining doses through their general practitioner or in an alternative setting such as a health board clinic. Currently non-drug using ex-prisoners are not classified as high risk, so special arrangements would need to be made so that they can receive the service free of charge.

All prisoners should have the opportunity to request testing for hepatitis B, hepatitis C and HIV directly from the prison doctor, with assurances of confidentiality of both request and result.

The possibility of carrying out viral antibody testing by analysis of oral fluid rather than blood should be pursued. As the sensitivity of the hepatitis C test is only 80%, an additional more sensitive test may be required for those with negative oral fluid results.

Cases of hepatitis B and hepatitis C identified in prisoners should be notified to the relevant Director of Public Health (Medical Officer of Health) as per the *Infectious Disease Regulations, 1981.*

Details of cases of HIV should be reported to the relevant regional AIDS co-ordinator as per Department of Health guidelines.

An annual survey should be carried out on a random sample of prisoners to monitor trends in hepatitis C infection.

Prison authorities should ensure, as far as possible, that there is no sharing of razors or toothbrushes.

5.1.2 Drug services

All prisoners should have the option of being accommodated in a drug free prison unit. Such facilities should be available as a priority to young offenders

An individualised drug treatment and rehabilitation plan should be offered to all prisoners who are addicted to opiates. This should take account of the social, educational and medical needs of the prisoners and consequently will require multi-disciplinary input. Existing programmes in some prisons will provide a good basis for this.

Prisoners entering prison on a methadone programme should have that programme continued.

Details of prisoners on methadone should be reported to the central (methadone) treatment list as per the *Misuse of Drugs Act (1998 Regulations)*.

Any future methadone programmes in prison should be evaluated.

It is acknowledged that needle exchange in prison is a controversial issue which causes concerns among prison staff. Notwithstanding this, a strictly controlled supply of clean needles and syringes should be available for those prisoners who will continue to inject opiates.

A mechanism for the disposal of used needles and syringes should be provided.

Qualitative research should be carried out to:

i. examine changes in sharing practices among injecting drug users before and during imprisonment.
ii. determine the extent of knowledge among prisoners, and in particular non drug users, of hepatitis B, hepatitis C and HIV.

5.1.3 Sexual spread of infection

Condoms should available free of charge to all prisoners.

5.1.4 Education and training

A structured education programme, covering the topics of drug use, blood-borne infections and safe sex, should be offered on an ongoing basis to all prisoners and staff. Excellent examples of such programmes already exist in some prisons.

Further training on a range of health topics should be offered to those prison officers who wish it.

The results of this study should be made available in summary form to all prisoners and prison officers.

5.2 Organisational recommendations

In light of the identified health needs of prisoners, a prison drug service and a prison infection service should be set up, with identified responsibility, within an overall restructured prison health service.

The control of communicable disease is a public health function. A public health specialist(s) should have responsibility for this function in prisons.

Individual medical care for prisoners should be improved by the provision of a more comprehensive and accessible service, with a greater input of general practitioner time, supported by nurses who have either public health or practice nurse training.

Prison medical records should be held on networked computers to allow for ease of access and retrieval by prison doctors in other prisons. This would include the recording of viral antibody test results and vaccination status Confidentiality of records would have to be protected in such a system, with controlled access.

Pending a restructuring of the existing service, confusion about accountability and managerial responsibility in the prison medical service needs to be resolved as matter of the utmost urgency.

Uniform prison health policies for the control of communicable disease, including hepatitis B, hepatitis C and HIV, should be drawn up and disseminated within the prison service. A mechanism should be put in place to ensure that these policies are implemented.

Regular audit should be carried out on the prison health care service to allow for continuous improvement.

Where any new service is introduced a formal evaluation should be carried out after an appropriate period of time.

Only health professionals committed to working in a newly restructured prison health service should be employed. Consideration should be given to employing doctors with a primary commitment to the prison medical service rather than practice in the community, particularly in Mountjoy Prison.

The problem of overcrowding should be addressed as a matter of urgency, with particular attention to providing facilities for young offenders.

The potential for rehabilitation and quality health care to be provided on a much wider scale than heretofore in the prison system should be realised.

The goal of providing a health service for prisoners which is comparable to that outside prison is an ambitious one; it would be better served in our opinion if ultimate responsibility for the prison health service rested with the Department of Health and Children.

References

1. National Immunisation committee. *Immunisation guidelines for Ireland.* Dublin: Royal College of Physicians of Ireland, 1996:39.
2. Lyons R, Kelly P. Hobdell M, Gavin G, Clancy L. Hepatitis B infection in the residential mentally handicapped population. *Irish Medical Journal* 1987;80(12);410-411.
3. Scanlon S, Khan SA. Hepatitis B in a residential population with a mental handicap. *Irish Medical Journal* 1989;82(2);80-81.
4. Devlin JB, Mulcahy M, Corcoran R, Ramsay L, Tyndall P, Shattock A. Hepatitis B in non residential mentally handicapped population. *Journal of Intellectual Disability Research* 1993;37:553-560.
5. Smyth B, Keenan E, O'Connor JJ. Evaluation of the impact of Dublin's harm reduction programme on prevalence of hepatitis C among short-term injecting drug users. *Journal of Epidemiology and community Health* 1999; 53: 434-435.
6. HIV Surveillance Sub-Committee of the National Aids Strategy Committee. *Anonymous unlinked antenatal HIV screening in Ireland.* Dublin: Department of Health and Children, 1998:6.
7. Department of Health and children. *HIV/AIDS statistics.* Dublin Department of Health and Children, 1999.
8. Advisory Committee on Communicable Diseases in Prisons. *Report of the Advisory committee on Communicable Diseases in Prison.* Dublin: Department of Justice, 1993:52.
9. Department of Justice Equality and Law Reform. *Factsheet*. Dublin: Department of Justice Equality and Law Reform, 1996.
10. Department of Justice Quality and Law Reform. *Drug misuse and drug treatment in the prison system – draft action plan.* Dublin: Department of Justice, Equality and Law Reform, 1999.
11. Bellis MA, Weild AR, Beeching NJ, Mutton KJ, Syed Q. Prevalence of HIV and injecting drug use in men entering Liverpool prison. *British Medical Journal* 1997;315:30-31.
12. Bird AG, Gore SM, Burns SM, Duggie JG. Study of infection with HIV and related risk factors in young offenders' institution. *British Medical Journal* 1993;307:228-231.
13. Gore SM, Bird AG, Burns S, Ross AJ, Goldberg D. Anonymous HIV surveillance with risk-factors elicitation: at Perth (for men) and Cornton Vale (for women) Prisons in Scotland. *International Journal of STD & AIDS* 1997;8166-175.
14. Rotily M, Vernay-Vaisse C, Bouliere M, Galinier-Pujol A, Rousseau S, Obandia Y. HBV and HIV screening, and hepatitis B immunization programme in the prison of Marseille, France. *International Journal of STD &AIDS* 1997;8:735-759.
15. Crofts N, Stewart T, Hearne P, Ping XY, Breschkin AM, Locarnini SA. Spread of bloodborne viruses among Australian prison entrants. *British Medical Journal* 1995;310:285-288.
16. Malliori M. Sypsa V, Psichogiou M, Touloumi G, Skoutelis A, Tassopoulos N, et al. A survey of bloodborne viruses and associated risk behaviours in Greek prisons. *Addiction* 1998;93(2):243-251.
17. Rotily M, Galinier-Pujol A, Vernay-Vaisse C. Risk behaviours of inmates in south-eastern France. *AIDS Care* 1995;7(Supplement 1):S89-S93.
18. Rothon DA, Mathias RG, Schechter MT. Prevalence of HIV infection in provincial prisons in British Columbia. *Canadian Medical Association Journal* 1994;151(6):781-787.
19. Stark K, Bienzle U, Vonk R, Guggenmoos-Holzmann I. History of syringe sharing in prison and risk of hepatitis B virus, hepatitis C virus, and human immunodeficiency virus infection among injecting drug users in Berlin. *International Journal of Epidemiology* 1997;26(6):1359-1366.
20. Van Beek I, Dwyer R, Dore G, Luo K, Kaldor J. Infection with hepatitis C virus among injecting drug users in a prevention setting: retrospective cohort study. *British Medical Journal* 1998;317;433-437.
21. European Centres for the Epidemiological Monitoring of AIDS. *HIV/AIDS surveillance in Europe.* Saint Maurice, 1998: 33.
22. Department of Health. *Government strategy to prevent drug misuse.* Dublin: Department of Health, 1991.

23. The Sub-Committees of the National AIDS Strategy Committee. *Report and recommendations of the sub-committees. Dublin: The National AIDS Strategy Committee* 1992:89.
24. Mullen L. *Dublin Needle Exchange Programme: an analysis of first attenders 1990-1997* [M.Sc.dissertation]. University of Dublin. 1998.
25. Ministerial Task Force on Measures to Reduce the Demand for Drugs. *Second report of the Ministerial Task Force on Measures to Reduce the Demand for Drugs.* Dublin: Irish Government, 1997:91.
26. Comiskey C. *Prevalence estimate of opiate use in Dublin Ireland during 1996.* Dublin: Institute of Technology Tallaght, 1998:28.
27. Lwanga SK, Lemeshow S. *Sample size determination in health studies – A practical manual.* Geneva: World Health Organization, 1991.
28. Benenson AS. *Control of Communicable Disease Manual.* New York: American Public Health Association, 1995:222-223.
29. Berger A. Science commentary: Behaviour of hepatitis C virus. *British medical Journal* 1998;317:424-425.
30. Coutinho RA. HIV and hepatitis C among injecting drug users. *British Medical Journal* 1998;317:424-425.
31. Principia Products Inc. *Remark Office OMR-Version 4.* Pennsylvania: Principia Products Inc., 1997.
32. Sall J, Lehman a, (SAS Institute). *JMP Start Statistics-Version 3.2.* USA: Duxbury Press, 1996.
33. Connell JA, Parry JV, Mortimer PP, Duncan J. Novel assay for the detection of immunoglobulin G anti-human immunodeficiency virus in untreated saliva and urine. *Journal of Medical Virology* 1993;41:159-164.
34. Connell JA, Parry JV. Detection of anti-HIV in saliva and urine at the time of seroconversion. *Clinical and Diagnostic Virology* 1994;1:229-311.
35. Parry JV, Perry KR, Mortimer PP. Sensitive assays for viral antibodies in saliva: an alternative to tests on serum. *The Lancet* 1987;2:72-75.

Appendix 1 – Request for Proposal

Department of Justice, Equality and Law Reform

PRISONS DIVISION RESEARCH PROGRAMME

REQUEST FOR PROPOSAL (RFP)

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2. LEVEL OF HIV AND HEPATITIS INFECTION AMONG PRISONER POPULATION

1 Background

The Department of Justice, Equality and Law Reform is embarking on a research programme in relation to various matters within its area of responsibility. Several of these matters fall under the remit of the Prisons Division. Prisons Division has responsibility for the provision and maintenance of a secure, efficient and progressive system of containment and rehabilitation for offenders committed to custody. The Division aims to treat offenders while in custody with care, justice, dignity and respect with particular emphasis on health, education, training and offender welfare.

2 Project

In this context, the Prisons Division is seeking to establish levels of HIV and Hepatitis infection among the prisoner population. The project involves

- the design of an appropriate anonymous questionnaire;
- the organisation of the completion of this questionnaire across a wide representative sample of the prisoner population;
- the organisation of a complimentary programme of saliva testing;
- the compilation of the results of the questionnaire; and
- the study of those results and the production of a finished report on the findings.

Accordingly the Department hereby invites proposals for the provision of the above service. Proposals should include

- a detailed outline of the methodology
- timescale; and
- total cost of the research exercise

INVITATION TO TENDER

Appendix 2 – Survey team

Dr Shane Allwright	Senior Lecturer in Epidemiology*
Dr Joseph Barry	Public Health Doctor*
Dr Geira Baruda	Medical Doctor*
Dr Fiona Bradley	General Practitioner*
Ms Marlen Carvalho	Research Associate*
Dr Tara Conlon	General Practitioner
Mr Derek Duggan	4th year Dental Student
Dr Emer Feely	Public Health Doctor
Mr Killian Forde	ENN administrator*
Ms Carrie Garavan	Research Nurse, MPH
Ms Anne Halpin	Laboratory Technician, M.Sc.*
Ms Deirdre Handy	Executive Officer*
Dr Derval Igoe	Public Health Doctor
Ms Jean Long	Research Nurse, M.Sc.*
Dr Frank Lule	Medical Doctor*
Ms Geraldine McCullough	Research Nurse, M.Sc.*
Dr Paul McKeon	Public health Doctor
Ms Mary McSweeney	Research Associate*
Ms Ailbhe Mealy	Executive Officer*
Ms Louise Mullen	Psychologist, M.Sc.*
Dr Joan O'Donnell	Public Health Doctor
Prof Tom O'Dowd	General Practitioner*
Dr Jill O'Leary	Public Health Doctor
Ms Hilda O'Neill	Research Nurse, M.Sc.*
Dr Patrick O'Sullivan	Public Health Doctor
Ms Sheilagh Reaper-Reynolds	Education Officer
Ms Eimear Simms	Environmental Health Officer, M.Sc.*
Dr Lelia Thornton	Public Health Doctor
Dr Aregay Weldegebriel	Medical Doctor*

*affiliated with the Department of Community Health and General Practice, Trinity College Dublin.

Appendix 3a – Questionnaire for male respondents

DEPARTMENT OF COMMUNITY HEALTH
AND GENERAL PRACTICE, TCD

ANONYMOUS HIV & HEPATITIS SURVEY IN IRISH PRISONS

1 What age you? (in years) _____

PLEASE ANSWER BY FILLING IN THE CIRCLES LIKE THIS ..... o

2 How long is your prison sentence from beginning to end?

Remand ..... o
3 months or less ..... o
More than 3 months but less than 12 months .. o
1 to 3 years ..... o
More than 3 years ..... o

3 How long have you been in prison on this sentence/remand?

3 months or less ..... o
More than 3 months but less than 12 months .. o
1 to 3 years ..... o
More than 3 years ..... o

4 Approximately how much of the last 10 years have you spent in prison (including this sentence or remand)?

3 months or less ..... o
More than 3 months but less than 12 months .. o
1 to 3 years ..... o
More than 3 years ..... o

5 In the last year have you smoked (chased) heroin?

Yes ..... o
No ..... o

6 Have you EVER INJECTED drugs?

Yes ..... o
No ..... o

If YES, please turn to next page
If NO, please go to Question 14* on Page 3 ➔

7 ***How old were you when you first injected drugs?*** _____
(in years)

8 ***Were you in prison the FIRST time you ever injected?***

Yes	.....	o
No	.....	o

9 ***BEFORE coming into prison, when was the <u>last</u> time you injected?***

On the day you came into prison	.....	o
In the week before	.....	o
In the month before	.....	o
In the year before	.....	o
More then 1 year before	.....	o
Does not apply to me	.....	o

10 ***In the month BEFORE coming into prison, had you shared any of these works with someone else:***

- needles (spikes)?	Yes	.....	o
	No	.....	o
- syringes (barrels)?	Yes	.....	o
	No	.....	o
- others?	Yes	.....	o
- (filters, spoons etc.)	No	.....	o

11 ***Were you on a methadone programme at the time of committal?***

Yes	.....	o
No	.....	o

12 ***While IN PRISON, have you ever shared any of these works with someone else***

- needles (spikes)?	Yes	.....	o
	No	.....	o
- syringes (barrels)?	Yes	.....	o
	No	.....	o
- others?	Yes	.....	o
(filters, spoons etc.)	No	.....	o

13 ***How many times have you injected in the last month?*** _____

HALF WAY THERE!!!

14* In the 12 months before coming into prison, did you have sexual intercourse with women?

Yes ..... O
No ..... O

If yes, did you use condoms?

Always/Sometimes ..... O
Never ..... O

15 Did you EVER have anal sex with another man?

Yes ..... O
No ..... O

If yes, did you use condoms?

Always/Sometimes ..... O
Never ..... O

16 Have you had anal sex while in prison?

Yes ..... O
No ..... O

17 Have you ever been treated for an STD? *(sexually transmitted disease)*

Yes ..... O
No ..... O

18 Have you ever had a blood test for HIV

Yes ..... O
No ..... O
Don't know ..... O

If yes, what was the result?

Positive (infected) ..... O
Negative (not infected) ..... O
Don't know ..... O

Please turn to last page ➔ ➔

19 Have you ever had a blood test for hepatitis B?

Yes ..... o
No ..... o
Don't know ..... o

If yes, what was the result?

Positive (infected) ..... o
Positive (not infected) ..... o
Don't know ..... o

20 Have you been vaccinated against hepatitis B?

Yes ..... o
No ..... o
Don't know ..... o

If yes, were you vaccinated in prison?

Yes ..... o
No ..... o

If vaccinated, have you had the complete Course of 3 injections?

Yes ..... o
No ..... o
Don't know ..... o

21 Have you ever had a blood test for hepatitis C?

Yes ..... o
No ..... o
Don't know ..... o

If yes, what was the result?

Positive (infected) ..... o
Positive (not infected) ..... o
Don't know ..... o

THANKS FOR TAKING PART
PLEASE PUT THE SALIVA AND QUESTIONNAIRE IN THE ENVELOPE

Appendix 3b – Questionnaire for female respondents

DEPARTMENT OF COMMUNITY HEALTH
AND GENERAL PRACTICE, TCD

ANONYMOUS HIV & HEPATITIS SURVEY IN IRISH PRISONS

1 What age you? (in years) _____

PLEASE ANSWER BY FILLING IN THE CIRCLES LIKE THIS ..... o

2 How long is your prison sentence from beginning to end?

Remand ..... o
3 months or less ..... o
More than 3 months but less than 12 months .. o
1 to 3 years ..... o
More than 3 years ..... o

3 How long have you been in prison on this sentence/remand?

3 months or less ..... o
More than 3 months but less than 12 months .. o
1 to 3 years ..... o
More than 3 years ..... o

4 Approximately how much of the last 10 years have you spent in prison (including this sentence or remand)?

3 months or less ..... o
More than 3 months but less than 12 months .. o
1 to 3 years ..... o
More than 3 years ..... o

5 In the last year have you smoked (chased) heroin?

Yes ..... o
No ..... o

6 Have you EVER INJECTED drugs?

Yes ..... o
No ..... o

If YES, please turn to next page
If NO, please go to Question 14* on Page 3 ➔

1

7 ***How old were you when you first injected drugs? (in years)*** _____

8 ***Were you in prison the FIRST time you ever injected?***

Yes	.....	o
No	.....	o

9 ***BEFORE coming into prison, when was the last time you injected?***

On the day you came into prison	.....	o
In the week before	.....	o
In the month before	.....	o
In the year before	.....	o
More then 1 year before	.....	o
Does not apply to me	.....	o

10 ***In the month BEFORE coming into prison, had you shared any of these works with someone else:***

- needles (spikes)?	Yes	.....	o
	No	.....	o
- syringes (barrels)?	Yes	.....	o
	No	.....	o
- others?	Yes	.....	o
(filters, spoons etc.)	No	.....	o

11 ***Were you on a methadone programme at the time of committal?***

Yes	.....	o
No	.....	o

12 ***While IN PRISON, have you ever shared any of these works with someone else***

- needles (spikes)?	Yes	.....	o
	No	.....	o
- syringes (barrels)?	Yes	.....	o
	No	.....	o
- others?	Yes	.....	o
(filters, spoons etc.)	No	.....	o

13 ***How many times have you injected in the last month?*** _____

HALF WAY THERE!!!

14* In the 12 months before coming into prison, did you have sexual intercourse with men?

Yes ..... O
No ..... O

If yes, did you use condoms?

Always/Sometimes ..... O
Never ..... O

15 Have you ever been treated for an STD?
(sexually transmitted disease)

Yes ..... O
No ..... O

16 Have you ever had a blood test for HIV

Yes ..... O
No ..... O
Don't know ..... O

If yes, what was the result?

Positive (infected) ..... O
Negative (not infected) ..... O
Don't know ..... O

Please turn to last page ➔ ➔

17 Have you ever had a blood test for hepatitis B?

Yes ..... o
No ..... o
Don't know ..... o

If yes, what was the result?

Positive (infected) ..... o
Positive (not infected) ..... o
Don't know ..... o

18 Have you been vaccinated against hepatitis B?

Yes ..... o
No ..... o
Don't know ..... o

If yes, were you vaccinated in prison?

Yes ..... o
No ..... o

If vaccinated, have you had the complete Course of 3 injections?

Yes ..... o
No ..... o
Don't know ..... o

19 Have you ever had a blood test for hepatitis C?

Yes ..... o
No ..... o
Don't know ..... o

If yes, what was the result?

Positive (infected) ..... o
Positive (not infected) ..... o
Don't know ..... o

THANKS FOR TAKING PART 
PLEASE PUT THE SALIVA AND QUESTIONNAIRE IN THE ENVELOPE 

Appendix 4 – Laboratory analysis of Oral fluid specimens

Each oral fluid specimen was tested for total IgG (to check specimen quality), anti-HIV, anti-HBc and anti-HCV antibodies.

- Anti-HIV testing was done using the Murex 1 + 2 GACELIASA (VK61,[33-34] Abbott Diagnostics, Maidenhead, UK), according to the manufacturer's instructions, with positives confirmed using a modified protocol for the Clonesystems Detect-HIV FIA (Biostat Diagnostics, Stockport, UK).

- Anti-HBc testing used Murex HBc ICE (Abbott Diagnostics, Maidenhead, UK), with positives confirmed with an 'in-house' RIA.[35]

- Anti-HCV antibodies were sought employing a modified protocol for the Ortho HCV 3.0 SAVe ELISA (Product number 940982, Ortho Diagnostics, Amersham, UK). Borderline reactives (OD/CO 0.8 – 3.0) were further investigated using a modified Chiron RIB. HCV 3.0 (Product number 930780, Ortho Diagnostics, Amersham, UK).

Appendix 5

Frequency distribution of questionnaire responses by prison type (medium and high risk) and injecting drug use.

Demographics and prison history

Variable	Outcome	All n (%)	High n (%)	Medium n (%)	IDU n (%)	Non IDU n (%)
Age in years	16-17	40 (3.5)	28 (4.1)	12 (2.6)	10 (2)	29 (4.5)
	18-19	137 (11.9)	94 (13.8)	43 (9.2)	59 (12.1)	77 (11.9)
	20-24	369 (32.1)	219 (32.2)	150 (32.1)	192 (39.3)	170 (26.3)
	25-29	255 (22.2)	145 (21.3)	110 (23.6)	123 (25.1)	130 (20.1)
	30-34	151 (13.2)	91 (13.4)	60 (12.8)	63 (12.9)	87 (13.5)
	35-44	135 (11.8)	78 (1.5)	57 (12.2)	39 (8)	95 (14.7)
	45-54	45 (3.9)	17 (2.5)	28 (6)	2 (0.4)	43 (6.6)
	55-64	14 (1.2)	7 (1)	7 (1.5)	1 (0.2)	13 (2)
	65+	1 (0.9)	1 (0.2)	0	0	1 (0.2)
	n	1147 (100)	680 (100)	467 (100)	489 (100)	645 (100)
Gender	Male	1148 (95.2)	S667 (93)	481 (98.6)	480 (93.4)	651 (96.6)
	Female	57 (4.7)	50 (7)	7 (1.4)	34 (6.6)	23 (3.4)
	n	1205 (100)	717 (100)	488 (100)	514 (100)	674 (100)
Length of prison sentence	Remain	157 (13.1)	120 (16.9)	37 (7.6)	65 (12.7)	92 (13.7)
	3 months or less	60 (5)	29 (4.1)	31 (6.4)	18 (3.5)	40 (5.9)
	>3-<12 months	213 (17.8)	111 (15.6)	102 (21)	66 (12.9)	144 (21.4)
	1-3	308 (25.8)	170 (23.9)	138 (28.5)	124 (24.3)	179 (26.6)
	>3 years	458 (38.3)	281 (39.5)	177 (36.5)	238 (46.6)	218 (32.4)
	n	1196 (100)	711 (100)	485 (100)	511 (100)	673 (100)
Length in prison on this sentence	3 months or less	319 (27)	201 (28.5)	118 (24.8)	119 (23.3)	198 (30)
	>3<12 months	392 (33.2)	223 (31.6)	169 (35.5)	154 (30.2)	232 (35.2)
	1-3 years	319 (27)	195 (27.7)	124 (26)	164 (32.2)	152 (23)
	>years	151 (12.8)	86 (12.2)	65 (13.7)	73 (14.3)	78 (11.8)
	n	1181 (100)	705 (100)	476 (100)	510 (100)	660 (100)
Time during the last 10 yr. Spent in prison	3 months or less	137 (11.6)	87 (12.3)	50 (10.5)	40 (7.8)	97 (14.7)
	>3<12 months	197 (16.7)	103 (14.6)	94 (19.8)	49 (9.6)	146 (22.1)
	1-3 years	300 (25.4)	167 (23.7)	133 (28.1)	121 (23.7)	175 (26.5)
	>3years	546 (46.3)	349 (49.4)	197 (41.6)	300 (58.8)	242 (36.7)
	n	1180 (100)	706 (100)	474 (100)	510 (100)	660 (100)

Drug use

Variable	Outcome	All n (%)	High n (%)	Medium n (%)	IDU n (%)	Non IDU n (%)
Smoked heroin in the last 12 months	Yes No n	545 (45.9) 642 (54.1) 1187 (100	408 (57.4) 303 (42.6) 711	137 (28.8) 339 (71.2) 476	420 (82.5) 89 (17.5) 509 (100)	121 (18.1) 549 (81.9) 670 (100)
Every injected drugs	Yes No n	514 (43.2) 674 (56.7) 1188 (100)	414 (58.2) 297 (41.8) 712 (100	100 (21) 377 (79) 477 (100)	514 (100)	 674 (100)
Age when first injected drugs	11-13 14-15 16-17 18-19 20-24 25-29 30-38 n	25 (5) 97 (19.6) 144 (29) 93 (18) 91 (1.4) 31 (6.3) (2.8) 495 (100)	22 (5.4) 78(19.3) 118 (29.2) 79 (19.5) 68 (16.8) 28 (6.9) 11 (2.7) 404 (100)	3 (3.3) 19 (20.9) 26 (28.6) 14 (15.4) 23 (25.3) 3 (3.3) 3 (3.3) 91 (100)	25 (5) 97 (19.6) 144 (29) 93 (18.8) 91 (18.4) 31 (6.3) 14 (2.8) 495 (100)	0
No. of years since first injection	<3 years 3-12 yrs 6-8 yrs 9-14 yrs 15+	85 (18) 153 (32.3) 110 (23.2) 72 (15.2) 53 (11.2) 473 (100)	68 (17.7) 127 (33) 98 (25.4) 55 (14.3) 37 (9.6) 385 (100)	17 (19.3) 26 (29.5) 12 (13.6) 17 (19.3) 16 (18.2) 88 (100)	85 (18) 153 (32.3) 110 (23.2) 72 (15.2) 53 (11.2) 473 (100)	0
Last time injected before coming into prison	On the day committed In the week before In the month before In the year before More than one year before n n	261 (52.3) 86 (17.2) 34 (6.8) 43 (8.6) 43 (8.6) 32.6.4 499 (100)	220 (54) 69 (1.9) 29 (7.1) 30 (7.4) 35 (8.6) 24 (5.9) 407 (100)	41 (44) 17 (18.3) 5 (5.4) 13 (14) 8 (8.6) 9 (9.7) 93 (100)	261 (52.3) 86 (17.2) 34 (6.8) 43 (8.6) 43 (8.6) 32 (6.4) 499 (100)	0
Started injecting in prison	Yes No n	104 (20.5) 402 (79.5) 506 (100)	82 (20) 329 (80) 412 (100)	22 (23.2) 73 (76.8) 95 (100)	104 (205) 402 (79.5) 506 (100)	0
On methadone prior to committal	Yes No n	187 (37.3) 315 (62.7) 502 (100)	156 (38.3) 253 (61.7) 409 (100)	31 (33.3) 62 (66.7) 93 (100)	187 (37.3) 315 (62.7) 502 (100)	0

Sharing equipment among injecting drug users

Variable	Outcome	All n (%)	High n (%)	Medium n (%)	IDU n (%)	Non IDU n (%)
Sharing before						
Needles	Yes No n	225 (46) 264 (54) 489 (100)	184 (46.1) 215 (53.8) 399 (100)	41 (45.6) 49 (54.4) 90 (100)	225 (46) 264 (54) 489 (100)	0
Syringes	Yes No n	232 (51.4) 219 (48.6) 451 (100)	192 (51.9) 178 (48.1) 370 (100)	40 (49.4) 41 (50.6) 81 (100)	232 (51.4) 219 (48.6) 451	0
Filters and spoons etc	Yes No n	263 (58.6) 186 (41.4) 449 (100)	220 (60) 147 (40) 367 (100)	43 (52.4) 39 (47.6) 82	263 (58.6) 186 (41.4) 449 (100)	0
Share before	All Some Zero	175 (36.6) 140 (29.3) 163 (34.1) 478 (100)	144 (36.9) 117 (30) 179 (33.1) 390 (100)	31 (35.2) 23 (26.1) 34 (38.6) 88 (100)	175 *36.6) 140 (29.3) 163 (34.1) 478 (100)	
Sharing inside						
Needles	Yes No n	351 (70.6) 146 (29.4) 497 (100)	295 (72.5) 112 (27.5) 407 (100)	56 (62.2) 34 (37.8) 90 (100)	351 (70.6) 146 (29.4) 497 (100)	0
Syringes	Yes No n	335 (72.2) 129 (27.8) 464 (100)	283 (73.9) 100 (26.1) 383 (100)	52 (64.2) 29 (35.8) 81 (100)	334 (72.1) 129 (27.9) 463 (100)	0
Filters and spoons etc.	Yes No n	304 (67.4) 147 (32.6) 451 (100)	255 (68.7) 116 (31.3) 371 (100)	49 (61.2) 31 (38.8) 80 (100)	304 (67.4) 147 (32.6) 451 (100)	0
Share in	All Some Zero	285 (58) 86 (17.5) 120 (24.4) 491 (100)	241 (59.8) 68 (17.1) 93 (23.1) 403 (100)	44 (49.4) 18 (20.2) 27 (30.3) 89 (100)	285 (58) 86 (17.5) 120 (24.4) 491 (100)	
Times injected in the last month	0 1-19 20+ n	221 (50.5) 141 (32.2) 76 (7.3) 438 (100)	154 (42.9) 133 (37) 72 (20.1) 359 (100)	67 (84.8) 8 (10.1) 4 (5.1) 89 (100)	221 (50.5) 141 (32.2) 76 (17.3) 438 (100)	0

Sexual practices and precautions

Variable	Outcome	All n (%)	High n (%)	Medium n (%)	IDU n (%)	Non IDU n (%)
Sexual intercourse with the opposite gender in the 12 months prior to committal	Yes No N	1088 (92) 94 (8) 1182 (100)	662 (93.1) 49 (6.9) 711 (100)	426 (90.4) 45 (9.6) 471 (100)	483 (94.5) 28 (5.5) 511 (100)	596 (90.2) 65 (9.8) 661 (100)
Use condoms during heterosexual intercourse	Yes No n	347 (33.8) 679 (66.2) 1026 (100)	211 (33.9) 412 (66.1) 623 (100)	136 (33.7) 267 (66.2) 403 (100)	138 (30.6) 313 (69.4) 451 (100)	205 (36.2) 361 (63.8) 566 (100)
Men ever have anal sex with men	Yes No n	28 (2.5) 1088 (97.5) 1116 (100)	14 (2.1) 639 (97.9) 653 (100)	14 (3) 449 (97) 463 (100)	15 (3.4) 459 (96.6) 474 (100)	12 (1.9) 621 (98.1) 633 (100)
Use condoms during male homosexual intercourse	Yes No n	4 (19) 17 (81) 21 (100)	3 (27.3) 8 (72.7) 11 (100)	1 (10) 9 (90) 10 (100)	1 (7.1) 13 (92.9) 14 (100)	3 (42.9) 4 (57.1) 7 (100)
Men ever have anal sex with men in prison	Yes No n	20 (1.8) 1067 (98.2) 1087 (100)	7 (1.1) 629 (98.9) 636 (100)	13 (2.9) 438 (97.1) 451 (100)	9 (2) 455 (98) 464 (100)	10 (1.6) 605 (98.5) 613 (100)
Ever treated for STD	Yes No n	147 (12.6) 1018 (87.4) 1165 (100)	103 (14.6) 600 (85.4) 703 (100)	44 (9.5) 418 (90.5) 462 (100)	87 (17.3) 416 (82.7) 503 (100)	60 (9.2) 593 (90.8) 653 (100)

Reported blood test results and vaccination coverage

Variable	Outcome	All n (%)	High n (%)	Medium n (%)	IDU n (%)	Non IDU n (%)
Ever have a blood test for HIV	Yes	449 (37.8)	328 (46.2)	121 (25.4)	332 (65)	116 (17.4)
	No	703 (59.3)	366 (51.5)	337 (70.8)	172 (33.6)	524 (78.8)
	Don't know	34 (2.9)	16 (2.2)	18 (3.8)	7 (1.4)	25 (3.8)
	n	1186 (100)	710 (100)	476 (100)	511 (100)	665 (100)
Reported HIV result	Yes	20 (4.5)	16 (4.9)	4 (3.4)	18 (5.5)	2 (1.7)
	No	370 (83.5)	269 (82.8)	101 (85.6)	274 (83.8)	95 (82.6)
	Don't know	53 (12)	40 (12.3)	13 (11)	35 (10.7)	18 (15.7)
	n	443 (100)	325 (100)	118 (100)	327 (100)	115 (100)
Ever have a blood test for hepatitis B	Yes	335 (28.5)	260 (36.8)	75 (16)	252 (49.6)	83 (12.6)
	No	773 (65.7)	411 (58.1)	362 (77)	231 (45.5)	534 (80.9)
	Don't know	69 (5.9)	36 (5.1)	33 (7)	25 (4.9)	43 (6.5)
	n	1177 (100)	707 (100)	470 (100)	508 (100)	660 (100)
Reported hepatitis B result	Yes	63 (19.6)	48 (19.2)	15 (20.8)	58 (24)	5 (6.3)
	No	209 (64.9)	164 (65.6)	45 (62.5)	152 (62.8)	57 (71.2)
	Don't know	50 (15.5)	38 (15.2)	12 (1.7)	32 (13.2)	18 (22.5)
	n	322 (100)	250 (100)	72 (100)	242 (100)	80 (100)
Ever have a blood test for hepatitis C	Yes	348 (29.9)	278 (39.6)	70 (15.2)	302 (59.3)	46 (7.1)
	No	725 (62.3)	382 (54.4)	343 (74.2)	188 (36.9)	530 (81.9)
	Don't know	91 (7.8)	42 (6)	49 (10.6)	19 (3.7)	71 (11)
	n	1164 (100)	702 (100)	462 (100)	509 (100)	646 (100)
Reported hepatitis C result	Yes	232 (67.8)	189 (69.5)	43 (61.4)	229 (76.6)	3 (7)
	No	76 (22.2)	56 (20.6)	20 (25.6)	44 (14.7)	32 (74.4)
	Don't know	34 (9.9)	27 (9.9)	7 (10)	26 (8.7)	8 (18.6)
	n	342 (100)	272 (100)	70 (100)	299 (100)	43 (16)
Vaccinated against hepatitis B	Yes	504 (43.5)	381 (54.7)	123 (26.6)	300 (59.6)	202 (31.2)
	No	547 (47.1)	272 (39)	275 (59.4)	180 (35.8)	361 (55.7)
	Don't know	109 (9.4)	44 (6.3)	65 (14)	23 (4.6)	85 (13.1)
	n	1160 (100)	697 (100)	463 (100)	503 (100)	648 (100)
Vaccinated in prison	Yes	446 (90.8)	334 (90.5)	112 (91.8)	266 (91.1)	179 (90.9)
	No	45 (9.2)	35 (5)	10 (8.2)	26 (8.9)	18 (9.1)
	n	491 (100)	369 (100)	122 (100)	292 (100)	197 (100)
Complete 3 doses of hepatitis vaccine	Yes	304 (60.4)	230 (61.2)	74 (58.3)	184 (61.7)	118 (58)
	No	180 (35.8)	132 (35.1)	48 (37.8)	101 (33.9)	79 (39)
	Don't know	19 (3.8)	14 (3.7)	5 (3.9)	13 (4.4)	6 (3)
	n	503 (100)	376 (100)	128 (100)	298 (100)	203 (100)

Oral fluid test results

Variable	Outcome	All n (%)	High n (%)	Medium n (%)	IDU n (%)	Non IDU n (%)
Test HIV positive	Yes	24 (2)	20 (2.8)	4 (0.8)	18 (3.5)	6 (0.9)
	No	1169 (98)	693 (97.2)	476 (99.2)	491 (96.5)	663 (99.1)
	n	1193 (100)	713 (100)	480 (100)	509 (100)	669 (100)
Test hepatitis B positive	Yes	104 (8.7)	87 (12.2)	17 (3.5)	92 (18)	11 (1.6)
	No	1089 (91.3)	626 (87.8)	463 (96.5)	417 (82)	658 (98.4)
	n	1193 (100)	713 (100)	480 (100)	509 (100)	669 (100)
Test hepatitis C positive	Yes	442 (37)	363 (50.9)	79 (16.5)	408 (80.2)	31 (4.6)
	No	751 (63)	350 (49.1)	401 (83.5)	101 (19.8)	638 (95.4)
	n	1193 (100)	713 (100)	480 (100)	509 (100)	669 (100)
Prison details						
Prison	Limerrick Female	7 (0.6)		7 (1.4)	2 (0.4)	5 (0.7)
	Mountjoy Female	50 (4.1)	50 (7)		32 (6.2)	18 (2.7)
	Portlaoise	80 (6.6)		80 (16.3)	33 (6.4)	47 (7)
	Shelton Abbey	38 (3.2)		38 (7.8)	10 (2)	24 (3.6)
	St Patricks	88 (7.3)	88 (12.3)		44 (8.6)	43 (6.4)
	Mountjoy Training	77 (6.4)	77 (10.7)		36 (7)	40 (5.9)
	Cork	228 (18.9)		228 (46.7)	37 (7.2)	187 (27.7)
	Limerick Male	135 (11.2)		135 (27.7)	18 (3.5)	114 (16.9)
	Mountjoy	359 (29.8)	359 (50.1)		222 (43.2)	136 (20.2)
	Wheatfield	143 (11.9)	143 (19.9)		80 (15.5)	60 (8.9)
	n	1205 (100)	717 (100)	488 (100)	514 (100)	675 (100)
Risk	High	717 (59.5)	717 (100)		414 (80.5)	297 (44.1)
	Medium	488 (40.5)		488 (100)	100 (19.5)	377 (55.9)
	n	1205 (100)			514 (100)	674 (100)

Appendix 6

Reported hepatitis B vaccine coverage in hepatitis B negative respondents only, in each prison

Prison	Completed 3 doses No. (%)	Completed 1 or 2 doses No. (%)	Did not receive Vaccine No. (%)	Total
Portlaoise	35 (47.9)	24 (32.9)	14 (19.2)	73
Mountjoy female	19 (43.2)	6 (13.6)	19 (43.2)	44
Training Unit	27 (42.2)	21 (32.8)	16 (25)	64
Mountjoy male	118 (41.1)	86 (30)	83 (28.9)	287
Wheatfield	17 (16.3)	18 (17.3)	69 (66.3)	104
St Patricks	10 (14.5)	6 (8.7)	53 (76.8)	69
Limerick male	14 (13.7)	11 (10.9)	76 (75.2)	101
Cork	20 (11.5)	10 (5.7)	144 (82.8)	174
Shelton Abbey	1 (3.7)	5 (18.5)	21 (77.8)	27
Limerick female	0 (0)	0 (0)	5 (100)	5
Total	**261 (27.5)**	**187 (19.7)**	**500 (52.8)**	**948**

Appendix 7

Table 7a – Logistic regression model to identify determinants of hepatitis B infection among the injecting drug using population

	Total sample IDU 509 No.	**IDUs Hepatitis B negative 416 No.**	**IDUs Hepatitis B positive 93 No.**	**Prevalence of hepatitis B % **	**Odds ratio**	**95% CI**	**p-value**
Age							
<30	382	331	51	13.3	1		
≥30	102	64	38	37.2	4.1	2.4-7.0	<.0001
Missing	25						
Year since first injected							
3+	85	79	6	7.1	1		
<3 years	383	301	82	19.4	.3.5	.1-.9	=.0548
Missing	41						
Ever treated for STI							
No	412	346	66	16.0	1		
Yes	87	62	25	28.7	2.1	1.1-3.7	=.0154
Missing	10						
Age x Time since 1st inject					0.8	03-6.9	=.8373

Whole model $\chi^2 = 44.2$ $R^2 = .10$ $p < .0001$

Table 7b – Logistic regression model to identify determinants of hepatitis C infection among the injecting drug using population

	Total sample IDU 509 No.	**IDUs Hepatitis C negative 101 No.**	**IDUs Hepatitis C positive 408 No.**	**Prevalence of hepatitis C % **	**Odds ratio**	**95% CI**	**p-value**
Total amount of time spent in prison over the last 10 years							
<3 months	40	21	19	47.5	1		
3-11 months	49	13	36	73.5	2.3	0.9-7.1	=.1347
12-36 months	120	25	97	80.8	2.4	0.9-6.6	=.0748
>36 months	296	36	260	87.4	2.9	1.1-7.2	=.0288
Missing	4						
Year since first injected							
3+	383	56	327	85.4	1		
<3 years	85	30	55	64.7	.34	.2-.6	=.0009
Missing	41						
Sharing needles In prison							
No	145	55	90	62.1	1		
Yes	347	33	314	90.5	2.9	1.5-5.7	=.0015
Missing	17						
No of times injected in the month prior to the survey							
0	221	44	177	80.1	1		
1-19	139	20	119	85.6	1.1	0.5-2.1	=.8855
20+	74	7	67	90.5	3.0	1.1-10.4	=.0462
Missing	75						

Whole model $\chi 2 = 53.4$ $R^2 = .15$ $p < .0001$

Table 7c – Logistic regression model to identify determinants of HIV infection among the injecting drug using population

	Total sample IDU 509 No.	**IDUs HIV negative 491 No.**	**IDUs HIV positive 18 No.**	**Prevalence of HIV %**	**Odds ratio**	**95% CI**	**p-value**
Ever treated for STI							
No	412	401	1	2.7	1		
Yes	87	80	7	8	2.8	0.9-8.1	=.0565
Missing	10						
Use condom when have sex with women							
No	311	307	4	1.3	1		
Yes	138	126	12	8.7	7.1	2.4-26	=.0009
Missing	60						

Whole model $\chi 2 = 17.3$ $R^2 = .13$ $p < .0002$

Appendix 8 - Comments and observations made by the survey team

All responses to Question 1	Informant
Issues raised during conversations with prisoners:	
Several prisoners expressed that the doctors examination was very quick and usually not relevant to the condition for which they asked to be seen	1
One or two said they had been denied drugs for illness which they had for 15-20 years	1
Some prisoners felt strongly about the lack of support services for prisoners wishing to break a drug addition	2
Many felt hopeless that nothing is or will be done regarding help for prisoners with big drug problems, but were not sure what needed to be done	2
A number claimed they had tests done for hepatitis B, hepatitis C and HIV but were not informed of results	2
Praise for some doctors, criticism for other – Mountjoy and Cork in particular	3
Confidentiality seems to be a problem	3
Some more articulate prisoners commented that mentally disturbed prisoners in 'c' wing of Mountjoy should be in hospital – having seen what they were taking about I agree	3
Prisoners requested info on hepatitis B, hepatitis C – implications for their present and future health – didn't know about it (and were positive)	5
Confidentiality issues with guards knowing test results obtained through the prison medical service	5
Requests for needle exchange services to be made available	5
Non-drug users worried about their exposure to infectious diseases	5
Vaccination schedules were often incomplete, the prisoner unaware of how many should be administered and some had been vaccinated on multiple separate occasions – confusion and anxiety	5
Female prisoners commented on inappropriateness of those suffering from psychiatric conditions in their midst	6
The positive impact of the gym and education on health was mentioned	6
A specific question – can hepatitis and HIV be contracted through sharing a cigarette or an apple?	7
They discussed issues relating to inadequate primary care and GP facilities in prison. The need for a more comprehensive primary care service and better follow up was emphasised	9
They discussed the need for methadone maintenance programmes	9

One prisoner suggested that salivary testing should be used in prison rather than needles 10

Another asked if he could have an HIV test done in prison and get the result 10

Limited access to health care, Lack of privacy, Assumption of malingering. As a result, delays in diagnosis, potentially damaging for the individual (and in the care of communicable disease – prisoners and staff and even relations) 11

Many expressed the view that methadone should be more available in prison and that it should be possible to obtain maintenance methadone. Most felt that the detox on offer was too rapid, at too low a dose (Mountjoy men) 12

One prisoner expressed his concerns about sterilisation of dental equipment between patients – was concerned re potential for transmission of blood borne viruses 13

Difficulty seeing a doctor when required 14

Liver biopsy appointments cancelled (in one case 5 times) because no prison staff available to accompany prisoner to hospital 14

'2 disprin' when feelings of anxiety/depression expressed 14

The doctor here doesn't give a shit (inmate in Mountjoy men) 14

No point complaining, no one cares anyhow 14

Women – shared razors! 16

Confidentiality – prisoners didn't trust some medical officers (prison officers) 16

Food: Portlaoise best food, Limerick food awful and not enough! (this was said by quite a few prisoners, especially those who worked out in the gym) 16

Concern re confidentiality of medical records 17

Poor access to prison doctor 17

Lack of confidence in prison doctor 17

Toilets blocked, dirty, concern expressed re infection risk 17

Some prisoners were concerned that razors were being shared 17

Several responders said they were not being given medication they get on the outside 18

Methadone was not being given to responders who were on a programme on the outside 18

The respondents were in general fairly negative about the health services provided in prisons. The medical officers in one of the prisons were severely criticised – it was stated that respondents always had to stand during medical consultations, and physical examinations were rarely, if ever conducted. 19

Some respondents felt that the medical officers thought that the prisoners were subhuman and they did not merit medical attention. They treated them with 'contempt'. One prisoner said 'oh the Drs in this prison never look us in the eye, they don't listen to our problems.' 19

Some prisoners mention that they would never have a test for any of the viral diseases, as they would be interrogated rather than counselled, if they had a disease (infectious) they were treated with a very obvious non touch technique, this disease seemed more contemptuous than their crime. People with HIV, hepatitis and TB reported to be treated very poorly by prison officers, as there was an abnormal fear of contracting the disease. One prisoner was advised not to have testing, as he would be incapable of reducing his risk factors.	19
Confidentiality was not respected according to prisoners. The governor, POs and other inmates often knew infected prisoners through leakage of info.	19
Some of the prisoners mentioned that they would never have a test for any of the diseases, as they did not want to deal with the consequences. Hepatitis vaccine was the one health intervention that could be accessed. However Hepatitis B positive individuals were also given the vaccine, although prisoners with short sentences were refused vaccines, as they could not complete the 6-month course. One prisoner said 'the vaccine sure that is the only part of the H/S that functions here'.	19
Many prisoners felt that research surveys were a good thing as it recorded problems and may be used to improve the situation.	19
One prisoner said that the only drugs available were sleeping tablets and aspirin	19
A few prisoners mentioned that there were a few good doctors attached to specialised units with the prison. One prisoner said Dr. X was a very good man 'he speaks to us and listens to our problems', 'he treats us like humans'. Interestingly many complaints were about the Drs rather than the POs.	19
Many comments were negative as they were unsolicited and those with complaints took the opportunity to voice them.	19

All responses to Question 2	**Informant**
Observations about the prison health care service:	
Although tests for hepatitis B, hepatitis C and HIV seemed readily available in the prisons there seemed to be no structured support infrastructure for infected prisoners	2
Under-resourced	3
Lack of confidentiality – medical orderlies are prison officers	3
Vagueness about accountability	3
More explicit policies would help	3
To a certain extent the present system seems to suit in that visits to hospital out-patients are welcomed by prisoners (day out) and prison officers (overtime, day out)	3
The prisoners seem to identify the health service they receive with the guards & prison regime rather than something separate from them – this may inhibit their accessing of the system except in acute circumstance	5
There is no consistency of prevention services and treatment between prisons, and the quality of care can be a matter of where you are and which doctor is looking after you. The prisoners move between prisons frequently – by their account	5
Some of the prisoners seemed to lack information. Are there health information/promotion programmes in place?	7
Are interested individuals among the prisoner population trained to deliver health promotion to their fellow prisoners?	7
The happiest seeming person I met among the prisoners on the two occasions when I helped out was a young prisoner who ran exercise classes. And the prisoner seemed to have a good sense of their own worth which probably contributed to their general well-being. (Wording altered slightly to maintain confidentiality)	7
Need more organised comprehensive primary care services and psychiatric services	9
Need for methadone maintenance programmes +/- needle exchange	9
The need for a more organised hepatitis B vaccination programme	9
Many of the prisoners were unaware of their HIV/hepatitis status and were anxious to get the results of the testing which was carried out as part of this survey. This issue could be addressed by the prison health care service in the future	10
In Portlaoise the prisoners, in general, seemed quite happy with their circumstances	10
Prisoners forgo the right to freedom in prison – they should not have any worse a medical system than any non-incarcerated person should expect on the outside	11

Need for one medical director on each prison who would be interested in screening for TB, blood borne viruses etc. on entrance to prison system – should not only be based on symptoms and GP issues	13
Appears to run on an ad-hoc basis.	14
Positions held by semi-retired, not so dynamic/innovative medics.	14
Definite need for greater psychological services in Mountjoy. I saw on 2 occasions 3 prisoners in one cell, 2 kept the suicidal one 'company'/Hardly the modern treatment, or have I missed something?	14
Prisoners particularly unhappy about health care service in Limerick and Mountjoy. 'Treated and spoken to like animals'	16
Never given proper examination (except in Training Unit)	16
One prisoner (Limerick) was refused x–ray for probable broken arm	16
Cork – good psychiatric services – setting up cognitive skills course for ordinary prisoners (as well as sex offenders)	16
Many responders said they were unhappy with the provision of health care given to them i.e. length of time it took to see a doctor – very little time given to them by doctor. Many prisoners who were started on hepatitis B vaccination programme did not know what they were getting.	18
I think it would be unfair to make any detailed comments about the health services although there are a few issues which would warrant valid investigation *Health services as a right or entitlement* *Medical orderlies used as health professionals* *Medical orderlies divulging confidential info to other POs* *Medical orderlies providing drug treatment through metal bars* *Medical orderlies putting prisoners requests on the long finger* *Prison officers paranoia about contracting infectious disease* *The infection control methods within the prison* *Treatment of 'drug abuse in the same manner as alcohol abuse* *The use of benzos rather than methadone to stabilise/satisfy drug addicts* *Smoking policy in the prison seems contrary to current legislation* *The fact that medical doctors need to order 'basic needs' such as diets, clothes and toiletries*	19

Wt. P63588. 1,050. 8.99. Cahill. (M60343). G.Spl.