Hepatitis C Prevalence and Incidence among Scottish Prisoners and Staff Views of its Management

Executive Summary

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Background

Hepatitis C virus (HCV) infection is currently a major public health issue worldwide (Shepard et al, 2005). The World Health Organization estimates that between 130 and 170 million of the world’s population is infected with the HCV virus (WHO 2011). In Scotland, approximately 1% or 50,000 people are estimated to be infected with the HCV virus and most (85-90%) of these cases have acquired their infection through drug injecting practices (Roy et al, 2007). Injecting drug use within the prison setting has been recognised as high risk behaviour contributing to the transmission rates of blood borne viruses among incarcerated populations. The majority of people coming into prison in Scotland have a drug problem, with current figures showing that 73% test positive for illegal drugs on admission, and 2% admit injecting during their current sentence (NHS National Services Scotland, 2011).

No current evidence of the prevalence and incidence of HCV among Scottish prisoners is available. Accordingly, Action 23 of the Hepatitis C Action Plan for Scotland Phase II (Scottish Government, 2008) called for a survey of Hepatitis C prevalence and incidence among prisoners in Scotland to be undertaken.

In addition, a qualitative exploration of staff views on the management of HCV and prevention strategies was undertaken.

Aim

To generate reliable data to inform the SPS and the NHS to develop effective needs led interventions for hepatitis C (HCV) infected prisoners, and to enable an informed assessment of the effectiveness of measures to prevent the spread of blood borne viruses, especially hepatitis C, within the prison setting, as outlined in the Hepatitis C Action Plan for Scotland Phase II (Scottish Government, 2008).

Prisoner Survey

A cross-sectional survey using a structured questionnaire that measured HCV risk behaviours was conducted in all fourteen closed prisons in Scotland between June 2010 and March 2011. The survey was voluntary and anonymous.

A total of 5187 questionnaires were completed during the survey (79% response rate). A number of prisoners completed the questionnaire more than once (in different prisons), and hence 5076 individual prisoners participated in the survey. Ninety-seven percent of participants also provided an anonymous blood spot sample which allowed for detection of both prevalence (having ever been infected) and incidence (recent infections) of HCV infection.

Ninety-five per cent (4808/5076) of the participants were male and five per cent (268/5076) were female. Mean age was 32.4 years (range 16.3 – 83.7 years), with two thirds of prisoners (3390/5076) falling within the 20-39 year age group. The largest proportion of respondents (36%, 1819/5076) lived in the Greater Glasgow and Clyde Health Board area when in the community.
Key Results - Prisoner Survey

Injecting risk behaviours
A third of all respondents (32%, 1625/5076) reported having ever injected drugs (IDUs). Eight per cent (404/5076) had ever injected in prison and 2.5% (127/5076) admitted to having injected drugs during their current period of incarceration. More than half of these (72/127) had injected on no more than five occasions and over two thirds (69%) reported injecting less than monthly and only 26% reported injecting more than weekly or daily.

Of those that had injected during their current sentence, 58% (74/127) reported injecting with needles and syringes previously used by someone else.

The proportion of injectors in each prison who injected during their current sentence ranged from zero to 31%.

Other risk behaviours
During their current imprisonment, 23% of prisoners (n=1148) reported being involved in a fight in which blood was shed, 8% (n=403) had had a tattoo, over 2% (n=126) had been body pierced, just under 2% (n=88) had been stabbed with a needle and 2.5% (n=120) reported anal sex. Of those who had been tattooed or body pierced, at least 40% of both of these actions had been undertaken with unsterile equipment. Of those who reported anal sex, only 7% reported always using a condom.

Statistical analyses showed an association between length of sentence and engaging in risk behaviours such that the longer the sentence the greater the likelihood of prisoners undertaking a risk behaviour.

Hepatitis C antibody prevalence
HCV antibody prevalence among all prisoners was 19%, ranging from 1% to 34% across prisons. Further analysis demonstrated that the variation between prisons reflected the differences in characteristics of prisoners, (rather than a “within prison” factor), in terms of the number and proportion of injectors and which geographical community the prisoners came from.

Among prisoners with a history of drug injecting HCV antibody prevalence was 53% and 3% among non-injectors.

A higher HCV prevalence was also found among women prisoners who had ever injected (65%) than among male prisoners with an injecting history (52%). The 65% prevalence among women prisoners who had ever injected is similar to the 69% prevalence rate among female injectors in the community with a prison history (University of the West of Scotland et al, 2012).

The HCV antibody prevalence rate among prisoners is consistent with previous studies of Scottish prisoners in the mid 1990s which found that 49% of prisoners who reported injecting were HCV antibody positive and 3% of prisoners who did not report injecting (Gore et al, 1999).
The findings are also consistent with the 57% HCV prevalence rate found among Scottish community samples of injectors, (University of the West of Scotland et al, 2012).

**Hepatitis C incidence**
Following HCV infection, it can take several weeks for antibodies against HCV to become detectable in laboratory assays, therefore antibody tests alone are unable to determine very early infections. Viral RNA, detected by the polymerase chain reaction (PCR) assay, can be detected earlier from about two weeks after infection and is the only viral marker detectable in early infection. Detection is not possible with saliva samples, thus only dried blood spots can be tested for RNA.

Based on previous studies (Hope et al, 2011, Page-Shafer et al, 2008), a window period of 51-75 days was assumed. Thus, the estimate of in-prison recent infections is based only on those prisoners who had been incarcerated for a sufficient period, i.e. prisoners with at least 70 days in prison, so that any recent infection could be attributed to the prison.

A total of 3887 HCV antibody negative blood spots samples were available for PCR testing. Just under a fifth (19%, 722/3887) were insufficient for testing. Of the remaining 3165 samples, 2454 were obtained from prisoners who had been incarcerated for at least 70 days.

A total of four recent infections were identified. One of the four was probably infected prior to imprisonment as the prisoner had been in prison for only nine days, leaving three prisoners who were likely to have been infected during their imprisonment. Two of the three had a history of drug injecting, one reported ever injecting in prison, but none reported injecting during their current sentence or any other risk behaviour.

The estimated incidence rate was less than 1% (or 1 per 100 person years) among all prisoners, less than 3% among prisoners with an injecting history and 5-7% among prisoners who had ever injected in prison.

These estimates are well below HCV incidence rate of 12 per 100 person years among community injectors (University of the West of Scotland et al, 2010) and below the HCV incidence in HMP Shotts in which found an overall incidence of 3.3 per 100 person years of incarceration risk and 11.9 per 100 person years of incarceration risk among ever injectors (Champion et al, 2004). Incidence among those with an injecting history (<3%) compares favourably with incidence rates found among this group elsewhere : 5.5 – 34.2 per 100 person years (Macalino et al, 2004b; Butler et al, 2004; Dolan et al, 2010; Teutsch et al, 2010).

**Hepatitis C testing and treatment**
Less than half of all participants (44%; 2207/5076) reported having been tested for Hepatitis C. More than three quarters (78%; 1273/1625) of IDUs had ever been tested compared with 27% (930/3433) of non-IDUs.
Two thirds (66%, 1460/2207) of those who had been tested for Hepatitis C had last been tested in prison. IDUs and non-IDUs were both more likely to have had their more recent test in prison (61% and 74% of those ever tested respectively).

One fifth of self-reported HCV positive prisoners said that they were receiving HCV treatment at the time of the study, of whom 79% (71/90) were receiving treatment in prison, a large increase in the proportion receiving in-prison treatment in 2006 (Scottish Government, 2008).

Undiagnosed hepatitis C infection
Of the 933 people who tested HCV antibody positive during the anonymous surveillance survey, just under half (44%, 412/933) were not aware of their HCV antibody positive status. Of these, 41% (167/412) had never been tested and 44% (181/412) wrongly believed they were hepatitis C antibody negative.

Hepatitis B vaccination
More than half (56%, 2853/5076) of prisoners reported being vaccinated against hepatitis B (HBV); IDUs were much more likely to have been vaccinated than non-IDUs (76% and 47% respectively).

The majority of reported HBV vaccinations occurred in prison: 79% in prison, 12% in prison and community; and 9% solely in the community.

Prisoners’ views on provision of new health care services
Just under half of prisoners thought that IDU prisoners should be given access to sterile needles and syringes; one third disagreed with this.

More IDUs (73%, 1183/1625) than non-IDUs (36%, 1246/3433) thought that sterile needles/syringes should be made available in prison. However, just over a third (34%, 559/1625) of IDUs reported that they would ask for them.

More prisoners (56%, 2840/5076) were in favour of a tattooing service than a body piercing service (41%, 2070/5076).

Qualitative Staff Interviews
Semi-structured in-depth interviews and focus groups elicited staff views on the management of Hepatitis C within the prison setting. Volunteer sampling was used to recruit residential officers, healthcare and addiction staff, and managerial staff from five of the 14 closed prisons.

Key Results – Qualitative Interviews
A total of 110 staff members participated of whom 53 (49%) were residential or prison officers, 30 (27%) were managers and 26 (24%) were health or addiction staff.
**Hepatitis C management and prevention strategies**

Non health and addiction staff were largely unaware of the hepatitis C management and prevention strategies that were in place (apart from methadone maintenance). Some staff spoke about the potential value of knowing more about the treatment process and its impact on prisoners.

Health and addiction staff expressed concerns about lack of resources to conduct HCV testing and to initiate treatment in the prisons.

**Methadone maintenance therapy**

Methadone maintenance therapy was widely perceived as having played a significant role in reducing the extent of injecting drug use in prisons and as having led to the prison being a safer environment for staff and prisoners by preventing the violence associated with ‘chasing drugs’.

Staff views were mixed on the impact of methadone on IDU prisoners. Many staff thought that methadone failed to help reduce non-injecting drug use and also failed to motivate drug users to get help for their drug use. Many of the officers believed that the maintenance programme should be replaced by a reduction programme that focuses on abstinence.

It was generally accepted that the methadone programme has helped to improve the overall health of prisoners, stabilise them and potentially address other issues in their lives.

**Needle exchanges in prison**

Staff views on the potential utility of in-prison needle exchange as an HCV prevention strategy were also sought. Prison officers and managers were largely not in favour of introducing a needle exchange. The main arguments against an in-prison needle-exchange were that: i) there was a lack of need given the perceived low volume of in-prison injecting; ii) safety of prisoners and staff would be jeopardised; iii) risk of needle-stick injury would increase; iv) it would encourage and condone drug use and drug injecting; v) prisoners would not want or use a needle exchange; and vi) it would be too difficult in the prison setting. The majority of those who considered that a needle exchange would be an advantage in the prison setting were health and addiction staff. The main arguments in favour of a needle exchange were that: i) it would help to prevent the transmission of HCV and other blood-borne viruses; ii) it would make prison a safer environment; iii) it is a missing component of existing harm reduction practices in prisons; and iv) it would remove contaminated needles from circulation.
Conclusions and implications for policy and practice

HCV Incidence and Prevalence
This nation-wide study has shown that incidence of hepatitis C is very low among Scottish prisoners, including prisoners with a history of injecting, and much lower than that found recently among community recruited Scottish IDUs and to that found in HMP Shotts in 1999. The low incidence of infection is most likely due to the low occurrence and low frequency of injecting reported by prisoners. The low prevalence of injecting may be attributable to the range of policies - in particular the increased availability of opiate substitution therapy (OST), particularly methadone maintenance therapy – that have been introduced by the Scottish Prison Service. The findings indicate, however, that if injecting was to increase, incidence rates could rise accordingly.

- It is imperative, therefore, that SPS continues, in collaboration with NHS, to provide these harm reduction measures and increase or improve them where necessary (e.g. by focussing on prisons which report higher than average rates of injecting). In addition, further education of the benefits of maintenance therapy is required for staff.

Moreover, whilst the risk and rate of different exposures, including injecting, during current imprisonment was low, risk is likely to accumulate with length of imprisonment.

- Thus those prisoners with longer sentences should be a particular target group when promoting harm reduction messages for all risk behaviours.

HCV prevalence is similar to IDU community populations and similar to that found in a sample of prisoners in the mid-1990s. Prevalence varied between prisons but these differences were likely to be a result of the proportion of prisoners that were injectors in the community and their demographic characteristics rather than a feature of the prisons themselves.

- However, those prisons that have high proportions of HCV infected prisoners should be given special attention by SPS and NHS when targeting policies and practices designed to prevent transmission and treat those already infected.

Other risk factors
Other potential risk factors, such as bloody fights, tattooing and body piercing, were more prevalent than injecting. None of these factors were associated with HCV prevalence or incidence.

- Nevertheless, because they pose potential risk of transmission, SPS and NHS should consider programmes to reduce the use of unsterile tattooing and body piercing equipment. Staff also believed that further awareness raising and education of prisoners was required.
Anal sex was not associated with HCV prevalence or incidence. The risk of HCV transmission through sexual intercourse is thought to be low, but is considerably higher for other blood borne viruses such as HIV and hepatitis B. Despite condoms being freely available in Scottish prisons, only a small minority of those reporting anal intercourse had used a condom.

- Prisons and the NHS should increase awareness of the risks of unprotected sexual intercourse and consider enhanced and alternative condom distribution systems to those currently in place.

**Hepatitis C testing**

Most IDUs had been tested and most had received their last test whilst in prison. Non-IDUs were much less likely to have been tested.

- As fighting and tattooing in prisons have been associated with transmission of HCV and fighting, in particular, was fairly prevalent, it is important that all prisoners are made aware of the risks and encouraged to be tested. SPS should endeavour to repeat awareness campaigns on a regular basis or ensure adequate, clear information is given to prisoners on entry to prison and throughout their sentence.

- It is important that the group of IDUs identified as HCV antibody positive but unaware of their status is identified so that treatment can be offered, and also for the promotion of harm reduction messages to prevent onward transmission. Prisoners, therefore, should be encouraged to be re-tested at regular intervals particularly if they have been at risk of infection.

**Hepatitis C treatment**

The proportion of HCV infected prisoners being treated in prison is a significant increase compared with five years ago and this is to be commended.

Staff in three of the five prisons included in the qualitative study, however, pointed out that limited staff resources was having an impact on their ability to provide treatment and testing in a timely manner, resulting in long waiting lists.

- Prisons and the NHS should consider how staff resources can be increased to enable testing and treatment to take place when prisoners express interest so that the window of opportunity is not lost.

Many staff who were interviewed, particularly managers and residential officers, felt that they did not have enough knowledge of the side effects of HCV treatment.
• SPS and NHS should consider providing further education and training on HCV treatment and its possible effects for all staff who have day-to-day contact with prisoners.

Hepatitis B vaccination
SPS deserves to be commended on the high rate of uptake of its HBV vaccination programme for prisoners. However, one quarter of IDUs and less that one half of non-IDUs remained unvaccinated.

• The reasons for this should be identified and strategies put in place to encourage a higher uptake among individual prisoners and those prisons with lower coverage.

Needle exchange in Scottish prisons
Most staff were not in favour of introducing needle exchange into prisons and just less than two thirds of IDUs said they would not use such a service.

No clear guidance is available on what factors should be taken into account when considering introducing needle exchange in prison. The WHO, UN, UNAIDS report (2007) recommends that the higher the level of prevalence of injecting drug use and associated risk behaviours, the more urgent is the need for in-prison needle exchange.

• This would suggest that with the current low level of injecting and associated low incidence rate, that there is proportionately less urgency for SPS to introduce needle exchange at present.

However, whilst prevalence and frequency of injecting in Scottish prisons is low, more than half of injections are undertaken with unsterile needles and syringes. Each injecting episode therefore confers considerable risk but incident infections are few because injecting prevalence and frequency is low.

• If SPS decides not to implement needle exchange, close monitoring of behaviour should be undertaken as any increase in injecting could lead to an increase in transmission of HCV.
References


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