Health Protection Agency

Hepatitis C in the UK

2012 Report

Health Protection Scotland

GIG CYMRU NHS WALES | Iechyd Cyhoeddus Cymru Public Health Wales

HSC Public Health Agency

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We would like to thank the clinicians, microbiologists, public health practitioners and other colleagues throughout the UK who have contributed to the surveillance systems used in this report.

In England, we would like to thank the Regional and Heath Protection Units' Hepatitis Leads; staff and participants of the Unlinked Anonymous Monitoring (UAM) survey of people who inject drugs in contact with drug services; NHS Blood and Transplant; Hospital Episode Statistics; (Copyright © 2012, re-used with the permission of The Health and Social Care Information Centre, all rights reserved); the Office for National Statistics (ONS carried out the original collection and collation of the data but bear no responsibility for their future analysis or interpretation); Concateno plc; Roche; Merck, Sharp & Dohme Ltd; the Department of Health's Commercial Medicines Unit; the Royal College of General Practitioners and the National Treatment Agency for Substance Misuse (NTA) for providing the data used in this report. In addition, we would like acknowledge the staff who coordinate and work in the laboratories who contribute to the Sentinel Surveillance of Hepatitis Testing Study.

In Northern Ireland, we would like to thank the Northern Ireland Hepatitis C Managed Clinical Network Steering Group; the Regional Virus Laboratory and Hepatology Service, Belfast Health and Social Care Trust; the Health and Social Care Board; the Department of Health and Social Services and Public Safety; Northern Ireland Statistics and Research Agency; the information staff of the Health Protection Service, Public Health Agency; and the Northern Ireland Blood Transfusion Service (NIBTS) for providing the data used in this report.

In Scotland, we would like to thank Scottish Government, the Hepatitis C Prevention Leads, Clinical and Executive Leads and Project Managers. We would also like to thank the Scottish Hepatitis C Clinical Database Monitoring Committee; Information Services Division Scotland; Hepatitis C Testing Laboratories; Hepatitis C Treatment Centres; services providing injecting equipment; University of West of Scotland; West of Scotland Specialist Virology Centre and the Scottish National Blood Transfusion Service (SNBTS) for providing the data used in this report.

In Wales, we would like to thank all staff involved in providing harm reduction services, virology diagnostic services, services providing treatment and care of individuals infected with hepatitis C and all involved in the delivery of the Blood Borne Viral Hepatitis Action Plan for Wales. We would also like to thank the Welsh Blood Service (WBS) and the NHS Wales Informatics service for providing the data used in this report.

Thanks also go to Shirley Cole for her administrative support throughout the preparation of the report.

Contents

Foreword

Over the past decade since national hepatitis C action plans were published, much has been achieved in each of the UK countries. This is now the fourth UK report and the seventh report for England. As more data are now available, we have refocused this report on those indicators that allow longer-term national progress to be tracked across the UK.

Reorganisation in England poses a challenge to hepatitis C provision, particularly for those marginalised groups of society who are most affected by the virus, but it also provides opportunities for better co-ordination and integration of services, with a higher profile for public health. It is vital that local commissioners in the NHS and in local authorities continue to work together to ensure that individuals are able to access health care and prevention services. Data systems will also need to be developed urgently to inform local commissioning and to monitor local progress to guarantee that everybody can benefit from an overall improvement in the national picture. We hope that this report will be a valuable resource for those working in hepatitis C prevention, management and control.

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Executive Summary

The scale of the problem

The most recent national estimates suggest that around 216,000 individuals are chronically infected with hepatitis C (HCV) in the UK;[1,2,3,4] most of this infection (~90%) is genotype 1 and genotype 3.

Injecting drug use continues to be the most important risk factor for HCV infection in the UK. Data from the Unlinked Anonymous Monitoring (UAM) survey of people who inject drugs (PWID) suggest that levels of infection in this group remain high in 2011 (45% in England, 29% in Northern Ireland and 39% in Wales); levels of infection among PWID surveyed in Scotland in 2010 are higher still (55%).

Both hospital admissions and deaths from HCV-related end stage liver disease (ESLD) and hepatocellular carcinoma (HCC) are continuing to rise in the UK. Hospital admissions have risen from 612 in 1998 to 1,979 in 2010, while deaths have risen from 98 in 1996 to 323 in 2010. An overall increase in registrations for liver transplants with a code of post-hepatitis C cirrhosis has been observed from 45 in 1996 to 101 in 2011

In England, statistical modelling predicts that 15,840 individuals will be living with HCV-related cirrhosis or HCC in England in 2020 if left untreated.

Action plans and work programmes are in place across the UK to help tackle the infection, and public health action is focused in four main areas:

- prevention of new infections
- increasing awareness of infection
- increasing testing and diagnosis
- getting diagnosed individuals into treatment and care.

Prevention of new infections

Since 2001, England has continued to invest in effective and accessible community drug treatment and the number of adult injectors receiving drug treatment increased to 114,855 in 2010/11.

Amongst those who continue to inject drugs, sharing of injecting equipment and associated paraphernalia is the main route of transmission of infection. National surveys of PWID across the UK suggest that levels of sharing may be falling. According to the UAM surveys, reported levels of direct sharing of needles and syringes in the four weeks preceding the 2011 survey were: 17% in England; 29% in Northern Ireland; and 11% in Wales. In Scotland in 2010/11 17% of PWID attending drug treatment services who had injected in the previous month reported needle/syringe sharing in the previous month.

To help reduce levels of sharing, Needle and Syringe Programmes (NSP) are being developed throughout the UK. In Scotland, the number of injection equipment provider outlets has increased to 255 in 2009/10 and approximately 4.7 million needles/syringes were distributed to PWID during 2009/10. In Northern Ireland, the number of packs dispensed by NSP has increased year-on-year since 2007/08, reaching 25,530 in 2011/12. In England, indirect measures of NSP coverage in 2011 suggest that the vast majority of PWID are

accessing NSP (in the 2011 UAM survey, 87% of people who had injected drugs in the previous year reported that they had used an NSP during that time). These and other data suggest that whilst NSP are being accessed by increasing numbers of PWID across the UK, there remains a need to increase the amount of equipment distributed with better targeting of this provision.

Across the UK, a number of methods have been used to gain insight into the number of new hepatitis C infections and likely trends in incidence over time. Incidence of hepatitis C infection among PWID in England, Wales and Northern Ireland in 2011 is estimated to be between 2 and 10 infections per 100 person years of exposure. In Scotland, incidence of infection among PWID in 2010 is within the same range, estimated at 9.5 per 100 person years. In England, infections in young adults and recent initiates to drug use suggest that incidence has remained relatively stable over recent years. Enhanced surveillance of newly acquired HCV infection in men who have sex with men (MSM) provides evidence of ongoing, but declining sexual transmission of HCV among HIV positive MSM.

Raising awareness of infection

Raising both professional and public awareness remains a priority and an important component of reducing the burden of undiagnosed infection.

Throughout the UK, a variety of initiatives are ongoing to increase public awareness of hepatitis C. These are specifically designed to target those at greatest risk of infection, including past or current PWID and individuals of South Asian origin. The success of these initiatives has been dependent on the significant contribution of numerous key stakeholders working across a range of settings. The NGO sector has been particularly influential and their work continues to complement that of government and public sector initiatives in this area.

In 2011, the UAM survey suggests that 50% of participating PWID in England were aware of their HCV positive status (an increase from 42% seen in 2001); levels of awareness of infection have been relatively stable in Wales and Northern Ireland in recent years (2011 levels are 56% and 61% respectively). In similar surveys of PWID in Scotland in 2010, among those who tested hepatitis C antibody positive, 44% reported that they had been diagnosed with hepatitis C and a further 12% reported having cleared the virus.

Education programmes are being developed to raise professional awareness both in primary care and among other individuals working with *at risk* populations. By June 2012, more than 600 individuals had completed the e-module from the Royal College of General Practitioners (RCGP) Certificate in the Detection, Diagnosis and Management of Hepatitis B and C in Primary Care; more than 300 had attended face-to-face training days in England and Wales and 219 individuals had completed Part 1 of the Certificate. In Wales, more than 100 individuals have completed their ‘Train the Trainer’ blood borne virus course and have rolled out this training programme to those working with *at risk* populations. More than 200 prison staff have completed a recently developed e-learning package that is being rolled out across the Welsh prison estate to improve the knowledge of prison staff in relation to blood borne viruses.

Increasing testing and diagnosis

By monitoring testing and diagnosis, we are able to assess the impact of awareness raising initiatives and prevention activity at a population level, as well as in sub-groups who are at increased risk of infection.

In England, sentinel surveillance suggests that levels of testing have stabilised since 2008, which may be the result of testing saturation among the pool of easy to access individuals and/or a reduction in awareness raising activity; a similar trend is observed in Northern Ireland. The increase in laboratory reports observed in England and Wales in 2011, particularly in London, is consistent with improved laboratory reporting, probably as a result of recent legislative changes in the notification of infectious diseases.[5] Sentinel surveillance shows that testing via primary care in England has continued to increase year-on-year between 2008 and 2011, suggesting that awareness of hepatitis C may be increasing in this setting. In the four largest NHS Boards in Scotland, levels of testing increased from approximately 18,000 in 1999 to 43,700 in 2010. Of the estimated 39,000 people living in Scotland with chronic hepatitis C infection, approximately half are thought to have been diagnosed by 2011.

Among PWID, data from the National Drug Treatment Monitoring Systems (NDTMS) suggest that levels of hepatitis C testing are continuing to rise in England. In 2011, more than 80% of PWID participating in the UAM survey reported ever having had a voluntary confidential test for hepatitis C (83% in England, 90% in Northern Ireland and 86% in Wales). In similar surveys in Scotland in 2010, 77% of PWID reported having been tested for hepatitis C in the past. Across the UK, alternative testing technologies, in particular dried blood spot testing (DBS), are continuing to contribute to the increased uptake of testing among PWID.

Sentinel surveillance data in England suggest that testing via prison services varies by gender with the number of males tested increasing year-on-year from 2008, while the number of females tested has varied over the same period. Between 2008 and 2011, significantly more females (25%) tested positive than males (12%), which may be due to a difference in the relative risk of female offenders having acquired hepatitis C compared to males, and/or differences in the offer and acceptance of blood-borne virus testing. In 2011, 6% of new receptions to English prisons received a hepatitis C test, and in Wales a liver health programme, which includes the promotion of diagnostic testing, was launched in 2012.

In the UK, hepatitis C in both new and repeat blood donors has continued to fall to a rate of 38 and 0.2 infections per 100,000 donations in new and repeat donors, respectively (2011). In England, a disproportionately large number of infections were seen in those of South Asian origin and in those of ‘other white’ backgrounds, the majority of whom were born outside the UK (particularly in Asia and Eastern Europe).

In England, sentinel surveillance data indicates that the number of people tested who were identified as being of South Asian origin increased year-on-year from 2008 to 2010 and then plateaued in 2011. The overall increase in testing may be a reflection of targeted awareness-raising campaigns that have taken place among South Asian communities over recent years. Sentinel surveillance also indicates that the number of people tested who were identified as being of Eastern European origin increased from 2008 to 2011. Over this period 6% of people of Eastern European origin tested HCV positive, suggesting that these individuals may be at increased risk of hepatitis C infection and/or are subject to more targeted testing. Further studies are needed to clarify the epidemiology of infection in this population group.

The National Institute for Health and Clinical Excellence (NICE) is currently consulting in guidance to ensure that more people at increased risk of hepatitis C (and B) infection are offered testing.[6]

Treatment and Care

NICE recommended antiviral treatments that will successfully clear hepatitis C virus in most patients should be available, including recently recommended direct acting antiviral agents for the treatment of genotype 1 infection. [7,8,9,10,11]

In England, an estimated 27,500 patients were treated between 2006 and 2011 with pegylated interferon as part of NICE recommended combination therapy. Among 1,714 patients for whom outcome of treatment in 2008 was reported to the HPA, 72% achieved a sustained viral response (SVR): 60% for genotype 1, 59% for genotype 4, 85% for genotype 2 and 82% for genotype 3. HPA analyses indicate that approximately 3% of those chronically infected are treated each year. Preliminary results from statistical models suggest that if treatment was increased to 10% in those with moderate HCV and to 20% in those with compensated cirrhosis annually, then the number of incident decompensated cirrhosis/HCC cases could be reduced by around 2,060 over the next 10 years.

In England, recent surveys suggest that 78% of Primary Care Trusts (PCTs) now have treatment care pathways in place for hepatitis C, with many having specific provision for offenders and joint prevention plans with drug services. In the UAM survey, more than half (57%) of the PWID who were aware of their hepatitis C status reported having seen a specialist nurse or doctor about their infection.

In the prison estate, a recent survey suggests that the majority of English prisons (74%) have written pathways in place to describe what happens following a positive result, with the majority of prisons in 2011 (86%) providing follow-up for prisoners being discharged into the community. The model of hepatitis C treatment delivery varies considerably across the English prison estate with a combination of *in reach* services provided by local hospitals, treatment provision *in house* overseen by prison doctors, and hospital outpatient appointments. From the 70 prisons that were able to supply data, at least 1,000 offenders had been referred for specialist assessment and more than 280 individuals from 74 prisons commenced antiviral treatment in 2010.

In Northern Ireland, referral rates of 91% and 85% were achieved in 2010 and 2011 respectively by following-up new laboratory confirmed diagnosis of hepatitis C infection three months after the initial confirmation.

In Scotland, of the estimated 18,000 diagnosed individuals living with chronic hepatitis C in 2011, an estimated 26% attended a specialist centre in 2011. Between 2007/08 and 2011/12 more than 4,000 individuals had been initiated on antiviral therapy in Scotland. Among patients (with either genotype 1, 2 or 3) initiated on pegylated interferon and ribavirin across nine clinics in Scotland during 2000-2007, 58% achieved a sustained viral response (SVR); this ranged from 39% in those with genotype 1 infection to 70% among those with genotype 2 or 3 infection.[12] In Scotland between 2007/08 and 2010/11, more than 300 chronically infected offenders were initiated on antiviral therapy within the prison estate.

The HPA has updated its template to help Drug Action Teams (DAT) and Health and Wellbeing Boards to estimate the prevalence of HCV in their local population.[13] Local prevalence estimates can be obtained by entering the DAT name, and the template also generates local predictions of the future burden of disease as well as estimates of the costs to treat infected individuals.

Conclusions

Action plans and work programmes have driven improvements in the prevention, diagnosis and treatment of HCV across the UK. Despite this, the morbidity and mortality from HCV-related liver disease is still increasing and therefore there is still much work to be done if we are to reduce the future burden of HCV-related disease in the UK.

Public Health Recommendations

1. **In England, local authorities, as the new commissioners of prevention services for people who inject drugs, need to sustain the current broad range of provision (including needle and syringe programmes) to minimise on-going transmission of hepatitis C.**

2. **The HPA and Public Health England should consider undertaking further prevalence studies, both overall and in migrants, to improve prevalence estimates and to identify whether additional targeted awareness-raising campaigns are required.**

3. **Testing among those attending specialist services for drug users needs to be sustained, and the use of newer technologies for testing in non-traditional settings should be further expanded throughout the UK.**

4. **There is an urgent need to ensure that reliable data on the number of patients treated for hepatitis C, including the use of recently recommended drugs, are collected by providers and are available for performance monitoring by commissioners.**

5. **Public Health England will need to review and help to establish systems for monitoring resistance to newer direct acting antiviral drugs, building on the current HPA development project aiming to measure baseline levels of HCV resistance to antiviral drugs, and to develop appropriate assays for future monitoring.**

6. **As commissioning responsibilities change in England, clinical commissioning groups and local authorities will need to work together to ensure that patient pathways are in place so that infected individuals identified in drugs services can also access treatment services for hepatitis C.**

7. **Commissioners should consider expanding provision of treatment in non-traditional settings to make treatment more accessible for individuals and to increase the potential for reducing transmission.**

8. **The NHS Commissioning Board and Public Health England should continue to strengthen hepatitis C awareness, testing and access to treatment for those in the prison setting.**

The scale of the problem

Hepatitis C infection in the UK

The most recent national estimates suggest that around 216,000 individuals are chronically infected with hepatitis C (HCV) in the UK.[1,2,3,4]

In England, latest estimates from evidence synthesis models, which date to 2005,[1] indicate that 160,000 adults are chronically infected with hepatitis C, equating to 0.4% of the adult population.

In Scotland, approximately 39,000 people were estimated to be chronically infected with hepatitis C during 2011; 0.8% of the Scottish population. This number is thought to have remained relatively stable in recent years,[14] based on available data indicating that the number of people who have left the chronically infected population (as a result of either treatment or mortality) equates to the number of people who have acquired and developed chronic infection each year.[14]

In England, sentinel surveillance data from 2002-2011 continue to show genotypes 1 (45%) and 3 (45%) predominating, with other genotypes comprising only 10% of infections. In Northern Ireland, of the 818 cases where genotype was known, 403 (49%) were genotype 1 and 315 (38%) genotype 3 (Table 1).

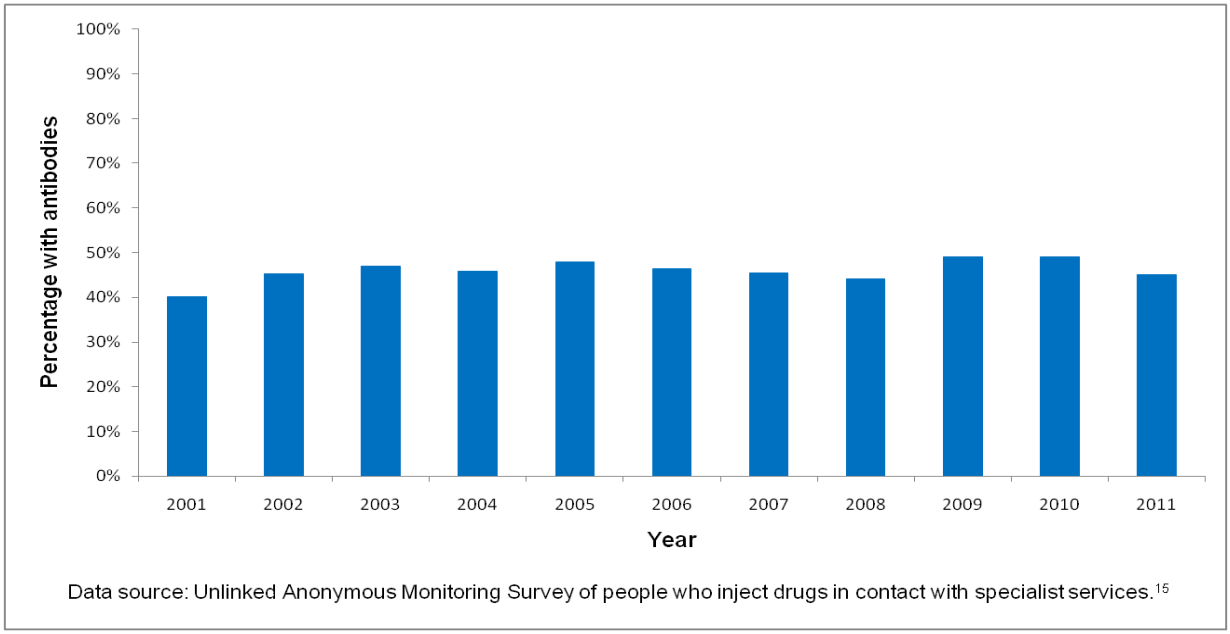
Throughout the UK, injecting drug use continues to be the most important risk factor for HCV infection (Table 2, Table 3)[14,16,17,] therefore monitoring infection among this important risk group remains a UK priority.

Prevalence of infection in people who inject drugs

In England, 45% of people who inject drugs (PWID) tested positive for antibodies to HCV in the 2011 Unlinked Anonymous Monitoring (UAM) survey of PWID in contact with drug services. This proportion has remained relatively stable over recent years (Figure 1).[15]

Hepatitis C prevalence among PWID participating in the UAM Survey in 2011 varied across England, with prevalence ranging from 33% in the West Midlands, East Midlands and North East regions to 60% in the North West[15] This finding is supported by statistical modelling, which shows that the prevalence of infection amongst individuals in England who have ever injected drugs is markedly higher in London and the North West (Table 4).[1]

Figure 1: Trend in HCV prevalence* among people who inject drugs in England: 2001-2011

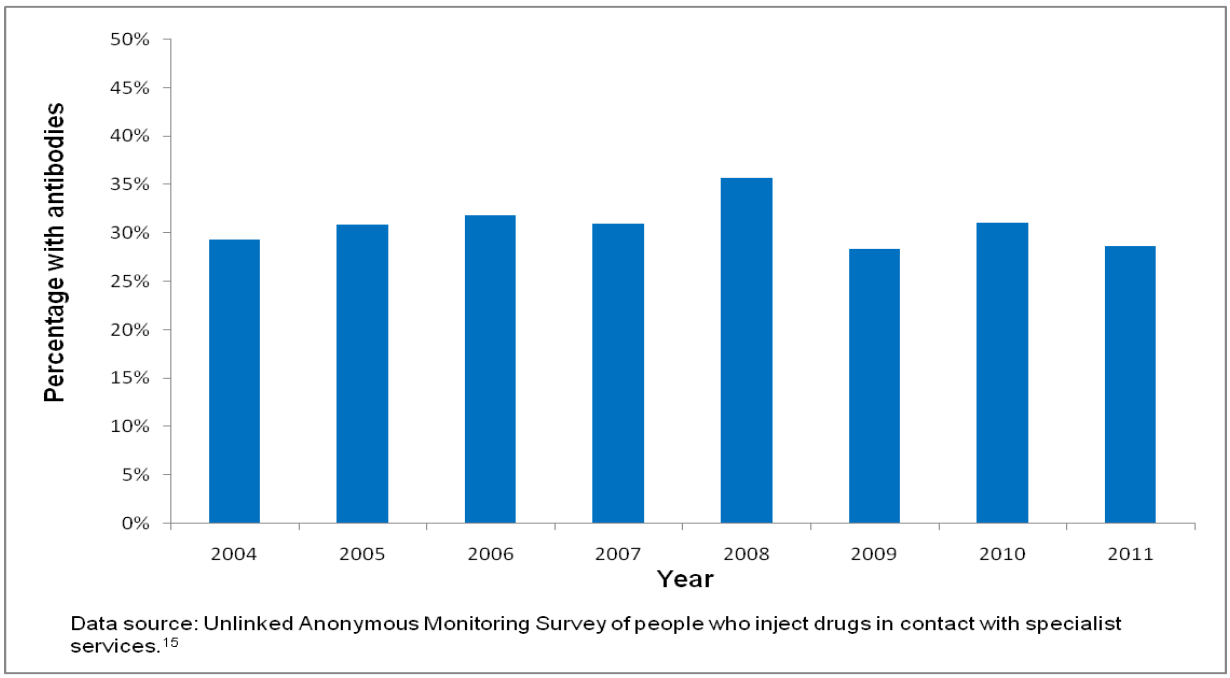


Data source: Unlinked Anonymous Monitoring Survey of people who inject drugs in contact with specialist services.[15]

* During 2009 to 2011 there was a phased change in the sample collected in the survey from an oral fluid to dried blood spot (DBS). The sensitivity of the anti-HCV tests on these two sample types is different. The sensitivity of the oral fluid test for anti-HCV is approximately 92%[18] that on DBS samples is close to 100%. Data presented here have been adjusted for the sensitivity of the oral fluid test.

In Northern Ireland, levels of infection are lower overall with 29% of PWID testing positive for antibodies in 2011; levels have varied little since 2004 (Figure 2).[15]

Figure 2: Trend in HCV prevalence* among people who inject drugs in Northern Ireland: 2004-2011



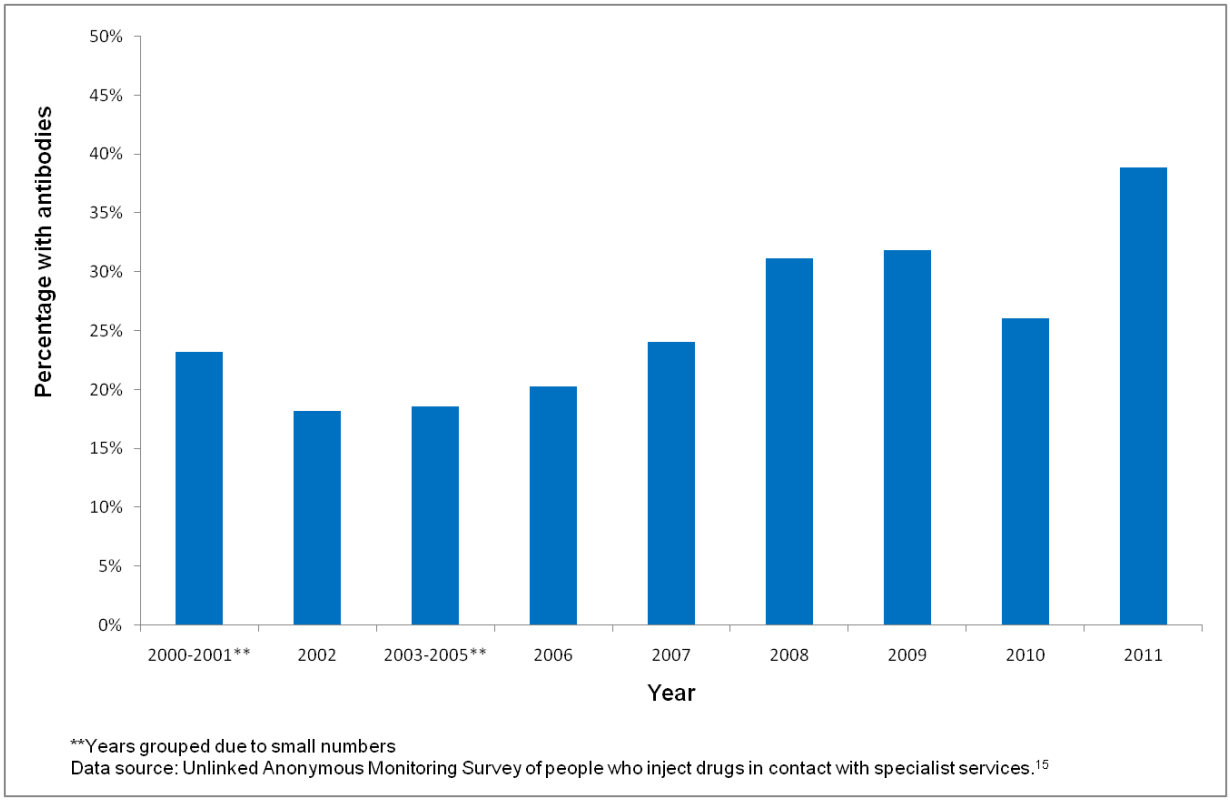
Data source: Unlinked Anonymous Monitoring Survey of people who inject drugs in contact with specialist services.[15]

* During 2009 to 2011 there was a phased change in the sample collected in the survey from an oral fluid to dried blood spot (DBS). The sensitivity of the anti-HCV tests on these two sample types is different. The sensitivity of the oral fluid test for anti-HCV is approximately 92%,[18] that on DBS samples is close to 100%. Data presented here have been adjusted for the sensitivity of the oral fluid test.

In Wales, UAM programme data suggest that levels of infection among PWID rose from 23% in 2000/01 to 39% in 2011 (Figure 3).[15] Given the relatively small sample size these results should be interpreted with caution. Work is currently underway to better understand the factors that have contributed to this change in prevalence, and initial analyses suggest that this change is probably not significant after adjusting for confounders. Enhanced surveillance of clients in substance misuse services undergoing routine diagnostic testing indicates a lower prevalence in 2011; of the 684 individuals with HCV test results who reported injecting drug use, 208 (30%) were found to have a reactive test for HCV antibody. The difference in estimates may reflect the different methods used and populations captured by these two systems, for example, those whose hepatitis C infection has already been diagnosed will be captured in the UAM survey but may not be included in the enhanced surveillance system.

Enhanced surveillance of PWID accessing blood borne virus (BBV) testing in drug services in Wales reported an increase in antibody prevalence from 9% among those injecting for two years or less to 37% among those injecting for five years or more (Table 5).

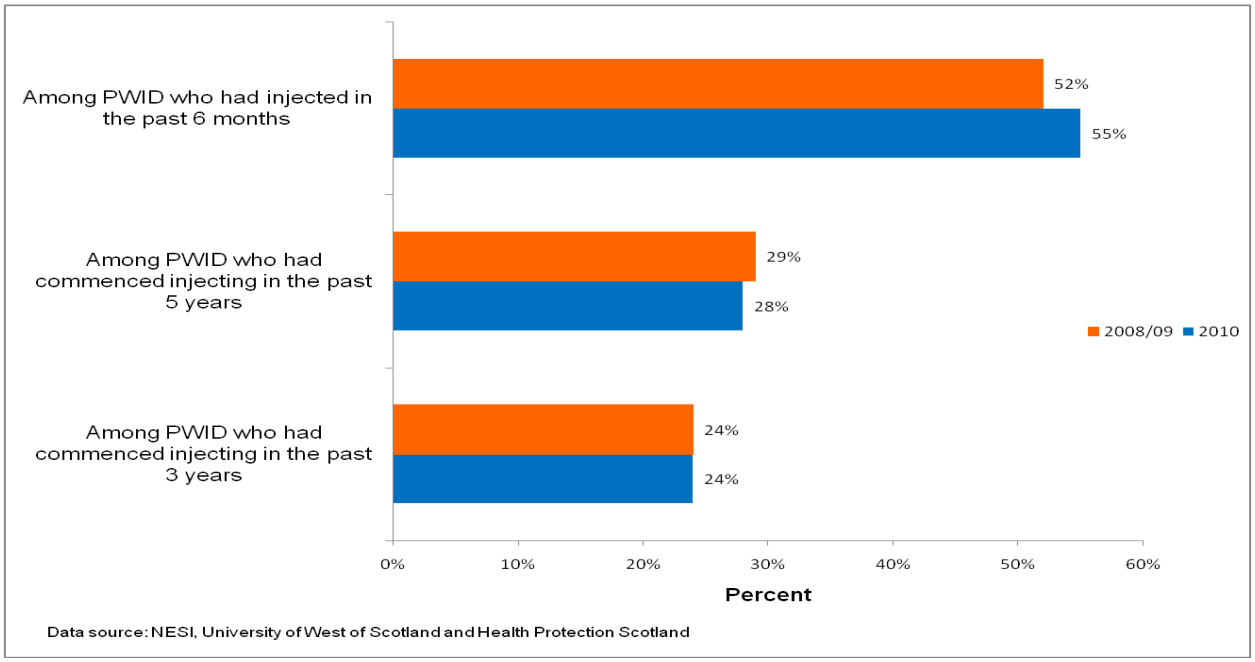
Figure 3: Trend in HCV prevalence* among people who inject drugs in Wales: 2000-2011



* During 2009 to 2011 there was a phased change in the sample collected in the survey from an oral fluid to dried blood spot (DBS). The sensitivity of the anti-HCV tests on these two sample types is different. The sensitivity of the oral fluid test for anti-HCV is approximately 92%[18] that on DBS samples is close to 100%. Data presented here have been adjusted for the sensitivity of the oral fluid test.

Across mainland Scotland, among PWID surveyed at services providing injection equipment during 2008-2009 and 2010, similar proportions tested positive for hepatitis C antibodies (in anonymous testing of their dried blood spot samples) (Figure 4):

Figure 4: Proportion of PWID, surveyed at services providing injection equipment across mainland Scotland in 2008/09 and 2010, who were found to be hepatitis C antibody positive



Deaths from, and hospital admissions for, HCV-related end stage liver disease (ESLD)

Both hospital admissions (Figure 5) and deaths (Figure 6) from HCV-related ESLD and hepatocellular carcinoma (HCC) are continuing to rise in the UK; hospital admissions rose from 612 in 1998 to 1,979 in 2010 (Figure 5), while deaths rose from 98 in 1996 to 323 in 2010 (Figure 6).

Figure 5: Annual number of individuals in England[1], Scotland[2] and Wales[1] hospitalised with HCV-related ESLD* or HCV-related HCC: 1998-2010

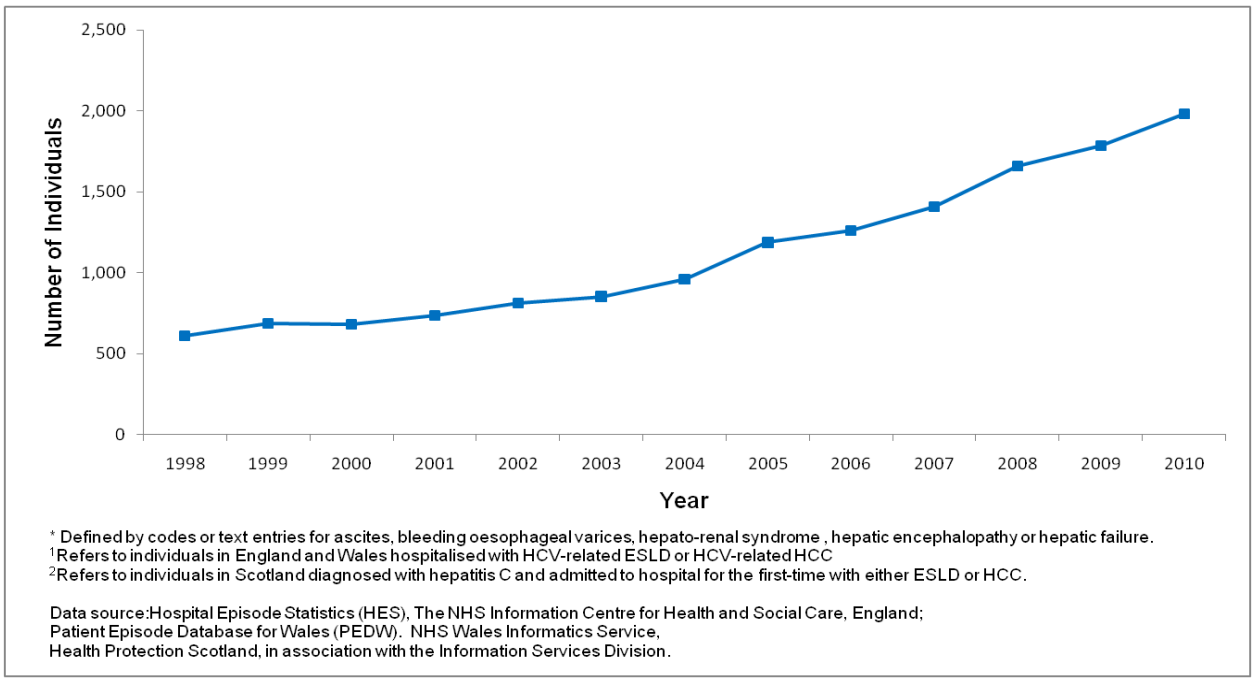
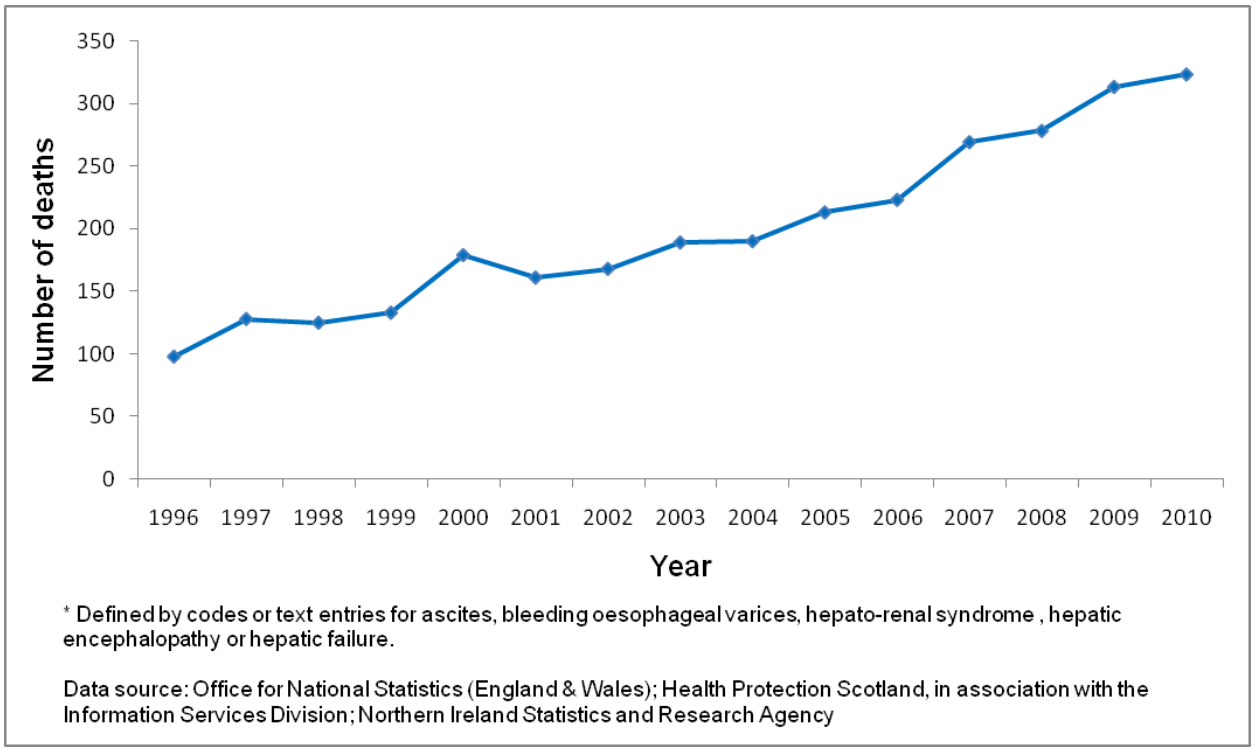


Figure 6: Deaths from ESLD* or HCC in those with hepatitis C mentioned on the death certificate in the UK: 1996-2010

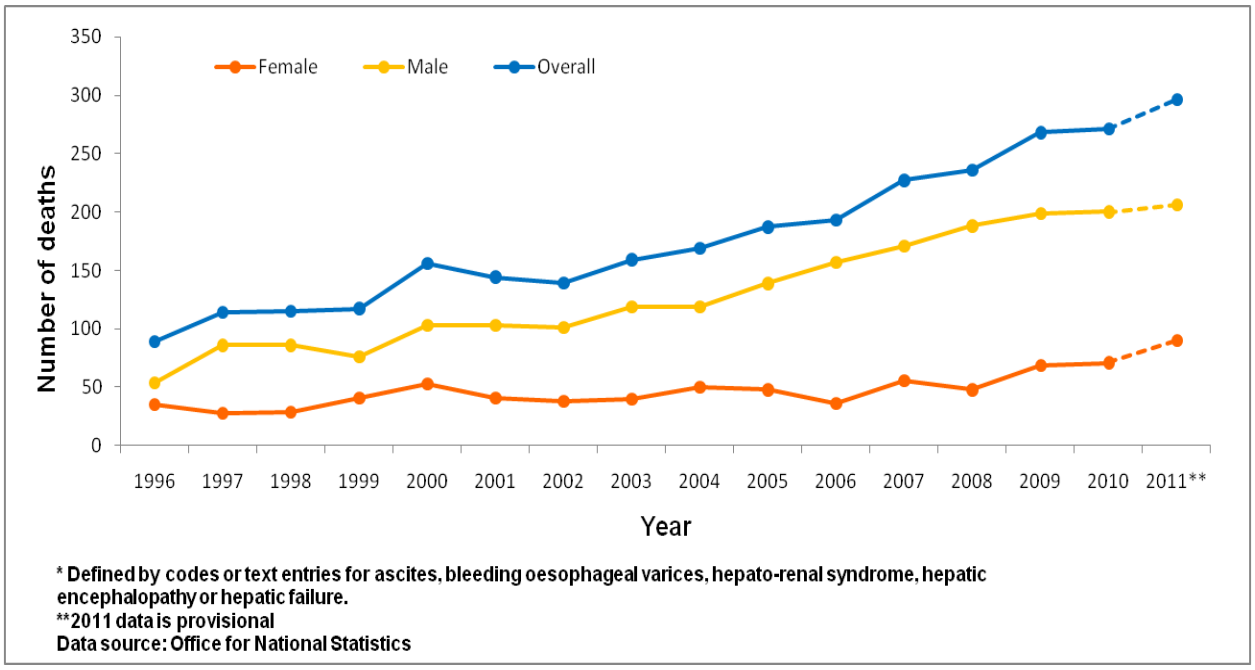


* Defined by codes or text entries for ascites, bleeding oesophageal varices, hepato-renal syndrome , hepatic encephalopathy or hepatic failure.

Data source: Office for National Statistics (England & Wales); Health Protection Scotland, in association with the Information Services Division; Northern Ireland Statistics and Research Agency

In England, a similar pattern is observed, with both hospital admissions (Table 6) and deaths (Figure 7) from HCV-related ESLD and HCC rising year-on-year. Deaths have risen from 89 in 1996 to 296 in 2011 (Figure 7), while hospital admissions have risen from 574 in 1998 to 2176 in 2011(provisional figure up to November 2011) (Table 6).

Figure 7: Deaths from ESLD* or HCC in those with HCV mentioned on their death certificate in England: 1996-2011**

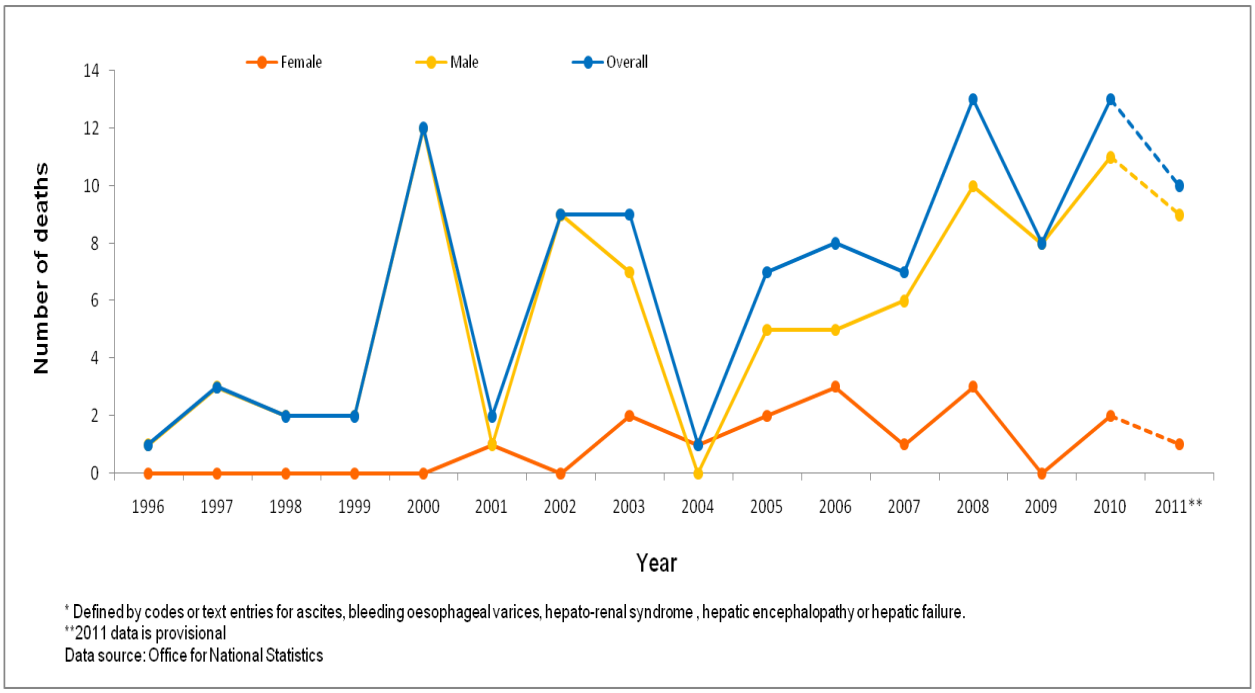


*** Defined by codes or text entries for ascites, bleeding oesophageal varices, hepato-renal syndrome, hepatic encephalopathy or hepatic failure.**
****2011 data is provisional**
Data source: Office for National Statistics

In Northern Ireland, 11 deaths from hepatitis C were registered in 2011, a rise from 5 in 2009.

In Wales, deaths recorded as HCV-related ESLD or HCC have fluctuated over the past decade however the numbers are very small (Figure 8), while hospital admissions for these indications have risen from 7 in 1997 to 60 in 2011 (Table 7).

Figure 8: Deaths from ESLD*, or HCC, in those with HCV mentioned on their death certificate in Wales: 1996-2011**

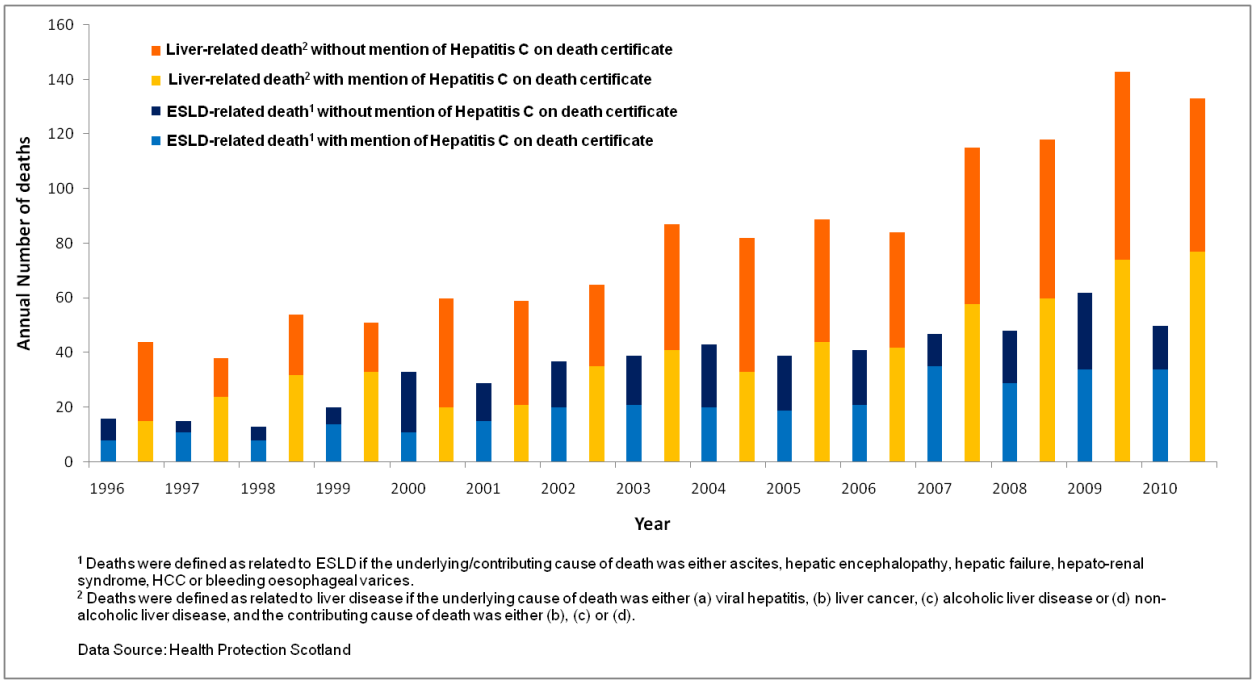


In Scotland, liver-related deaths among people diagnosed with hepatitis C increased from 44 in 1996 to 133 in 2010 (Figure 9), at an average annual increase of 8.9%. In recent years (2007-2010), the average annual increase was 6.4%.

By linking records in Scotland's National Hepatitis C Diagnoses Database to the national register of deaths, it is possible to determine that only 609 (50%) of the total 1,222 liver-related deaths during 1996-2010 among people diagnosed with hepatitis C, had any mention of hepatitis C on their death certificate. Among the 133 liver-related deaths in 2010, 96 (72%) had liver disease recorded as the underlying cause of death (alcoholic liver disease was the most prevalent underlying cause in 49), and 37 (28%) had liver disease only as a contributing cause of death; 103 (77%) were male, and 73 (55%) were aged less than 50 years.

ESLD-related disease among people diagnosed with hepatitis C in Scotland increased from 16 in 1996 to 50 in 2010 (Figure 9), at an average annual increase of 9.2%. Of the total 532 ESLD-related deaths during 1996-2010 among people diagnosed with hepatitis C, only 300 (56%) had hepatitis C mentioned on the death certificate.

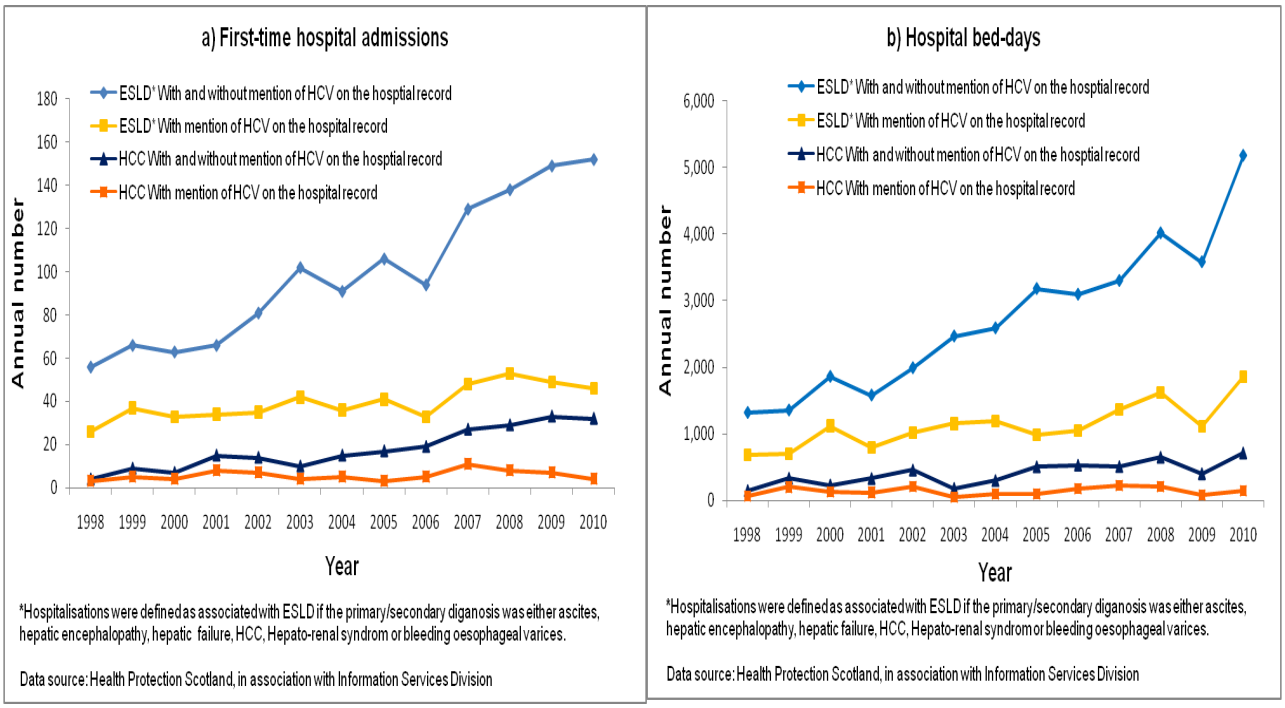
Figure 9: Annual number of deaths related to liver disease and end-stage liver disease (ESLD) among persons diagnosed with hepatitis C (antibody positive or RNA positive) in Scotland, during 1996-2010.



Data on hospitalisations were obtained via record-linkage of Scotland's National Hepatitis C Diagnoses Database to the national database on hospital admissions. These showed that first-time hospital admissions with ESLD in Scotland among people diagnosed with hepatitis C increased from 56 in 1998 to 152 in 2010 (Figure 10), at an average annual increase of 8.9%. Of the total 1,293 first-time hospital admissions for ESLD during 1998-2010 among people diagnosed with hepatitis C, only 513 (40%) had hepatitis C mentioned on the hospital record. Among the 152 first-time hospital admissions for ESLD in 2010, 115 (76%) were male, and 93 (61%) were aged less than 50 years. Hospital bed-days with ESLD among people diagnosed with hepatitis C increased from 1,323 in 1998 to 5,175 in 2010 (Figure 10), at an average annual increase of 11.5%.

First-time hospital admissions with HCC in Scotland among people diagnosed with hepatitis C increased from 4 in 1998 to 32 in 2010 (Figure 10), at an average annual increase of 15.0%. Of the total 231 first-time hospital admissions during 1998-2010 for HCC among people diagnosed with hepatitis C, only 74 (32%) had hepatitis C mentioned on the hospital record. Among the 32 first-time hospital admissions for HCC in 2010, 26 (81%) were male, and 7 (22%) were aged less than 50 years. Hospital bed-days with HCC among people diagnosed with hepatitis C increased from 144 in 1998 to 710 in 2010 (Figure 10), at an average annual rate of 8.0%.

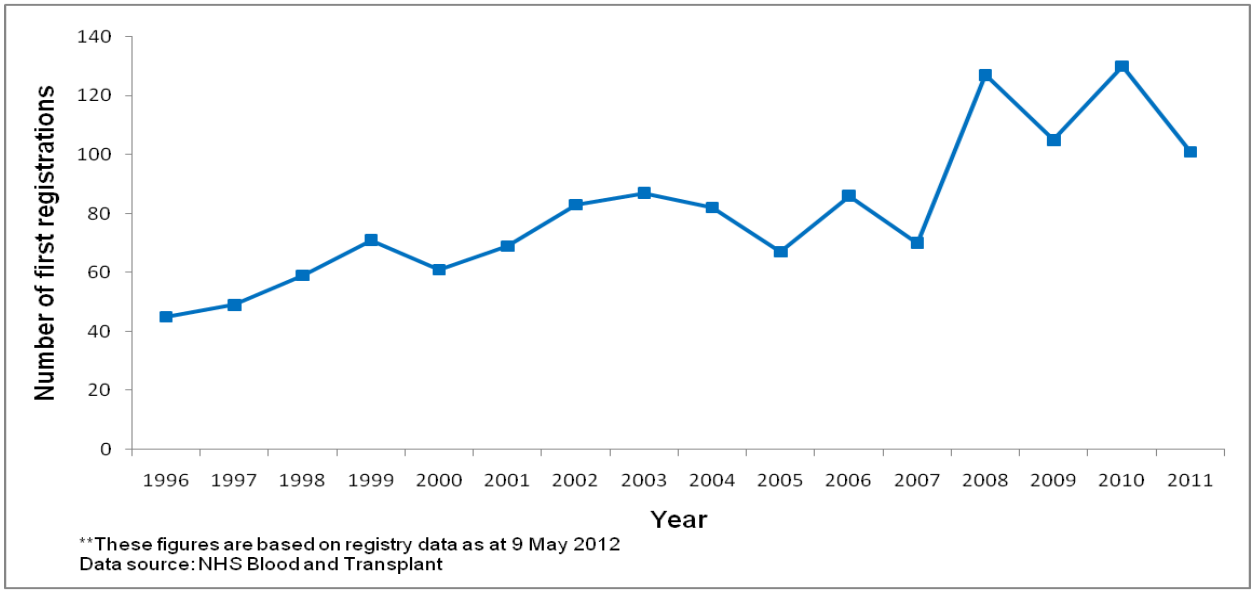
Figure 10: Annual number of: (a) first-time hospital admissions and (b) hospital bed-days associated with ESLD and HCC among persons diagnosed with hepatitis C (antibody positive or RNA positive) in Scotland, during 1998-2010.



Liver registrations and transplants for hepatitis C-related disease

In the UK, transplant data show a similar trend to deaths and hospitalisations with an overall increase in registrations for liver transplants with a code of post-hepatitis C cirrhosis from 45 in 1996 to 101 in 2011 (Figure 11).

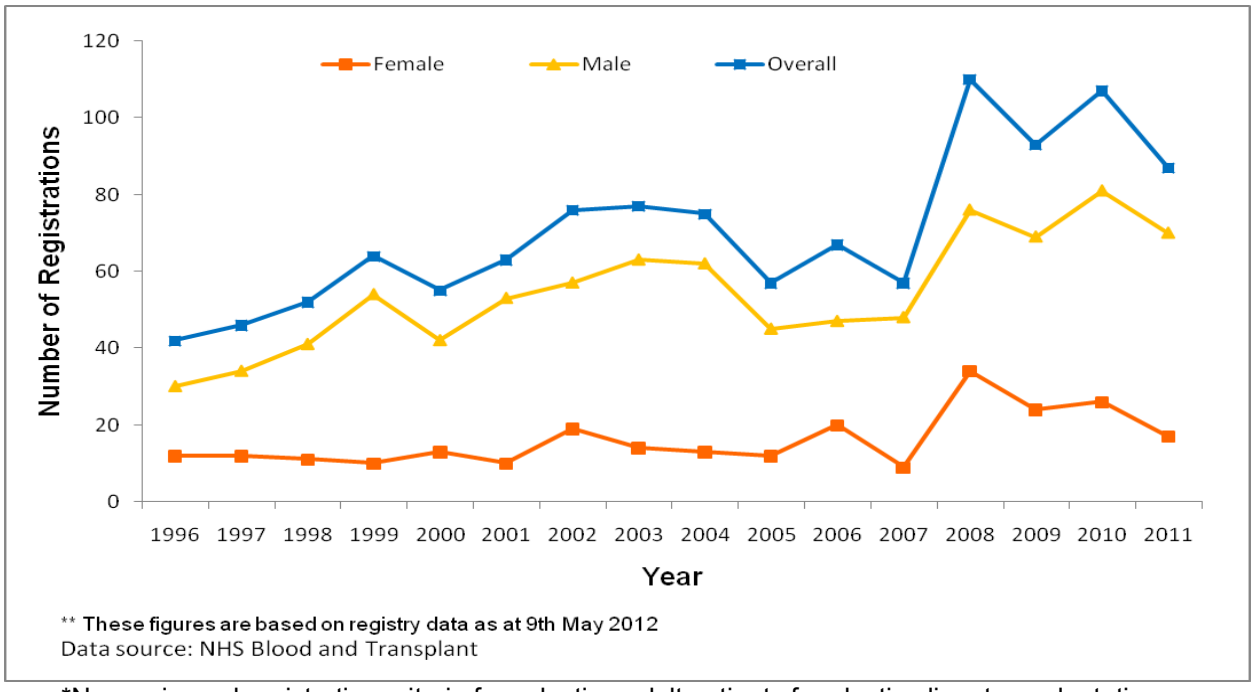
Figure 11: Number of first registrations* for a liver transplant with a code of post-hepatitis C cirrhosis in the UK: 1996-2011**



*New universal registration criteria for selecting adult patients for elective liver transplantation were introduced in September 2007[19]

The number of English residents with post-hepatitis C cirrhosis registering at NHS Blood and Transplant for a liver transplant increased from 42 registrations in 1996 to 87 in 2011 (Figure 12). A rise in liver transplants undertaken for this indication, from 43 in 1996 to 102 in 2011, was also observed (Table 8). Of all-liver transplants performed in England, the percentage carried out in patients with hepatitis C-related disease increased from 10% in 1996 to 18% in 2011 (Table 8).

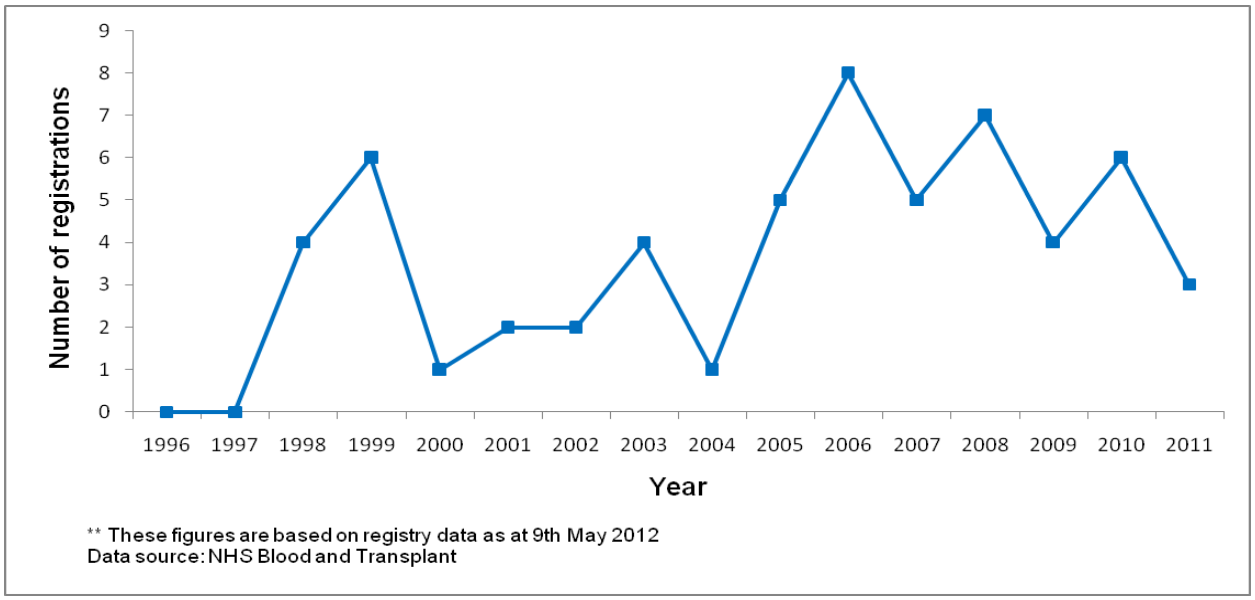
Figure 12: First registrations* for a liver transplant with a code of post-hepatitis C cirrhosis in England: 1996-2011**



*New universal registration criteria for selecting adult patients for elective liver transplantation were introduced in September 2007[19]

When taken together, only three residents from Northern Ireland and Wales with post-hepatitis C cirrhosis registered at NHS Blood and Transplant for a liver transplant in 2011 (Figure 13), and three patients underwent a transplant (Table 9). Neither the number of registrations, nor the number of transplants undertaken, for this indication has exceeded three or six in any one year since 1996 in Northern Ireland and Wales respectively (Figure 13, Table 9).

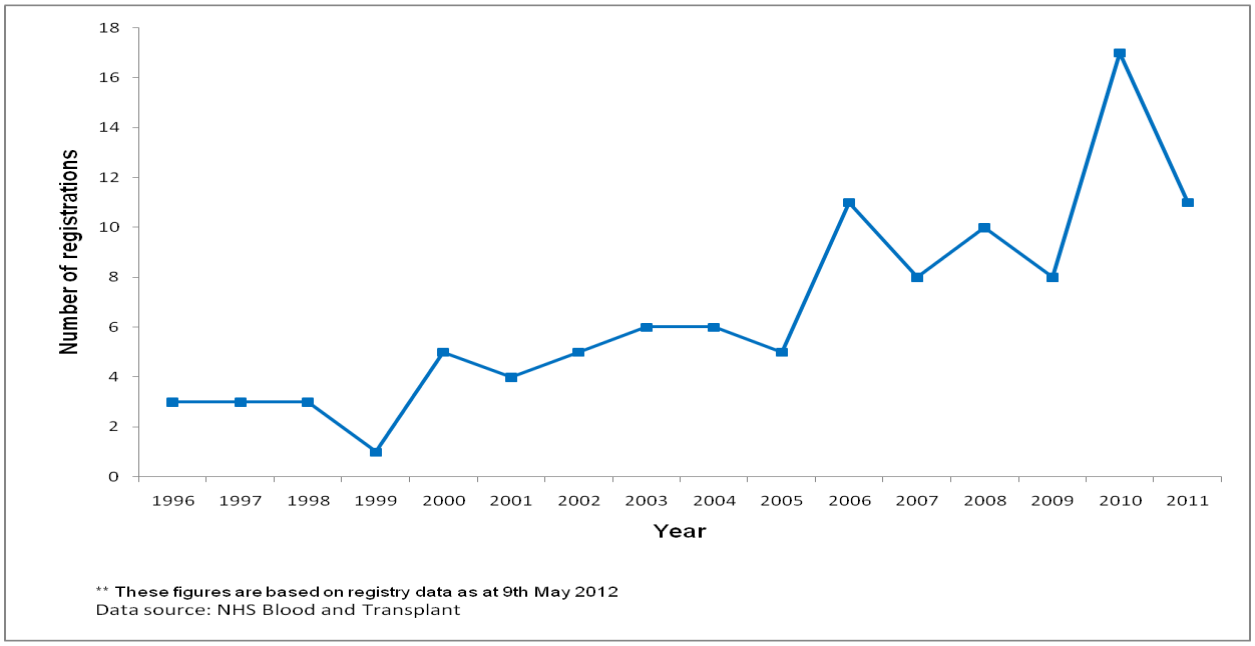
Figure 13: First registrations* for a liver transplant with a code of post-hepatitis C cirrhosis in Northern Ireland and Wales: 1996-2011**



*New universal registration criteria for selecting adult patients for elective liver transplantation were introduced in September 2007[19]

In Scotland, the overall number of liver transplant first registrations with a code of post-hepatitis C cirrhosis increased from three in 1996 to 17 in 2010. However in 2011, the numbers decreased to 11 (Figure 14). The number of first liver transplants in patients with post-hepatitis C cirrhosis and HCV-related HCC fluctuated between 1996 and 2011 (Table 10).

Figure 14: First registrations* for a liver transplant with a code of post-hepatitis C cirrhosis in Scotland: 1996-2011**

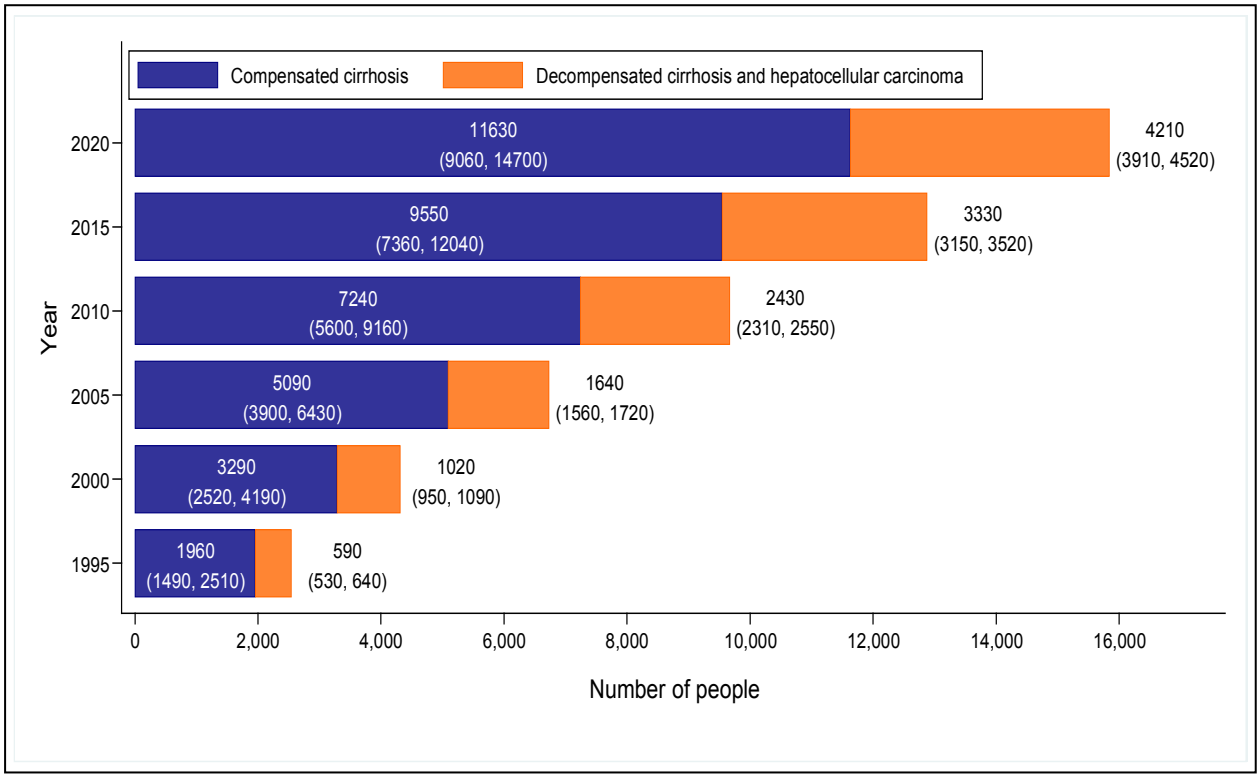


*New universal registration criteria for selecting adult patients for elective liver transplantation were introduced in September 2007[19]

Future burden of HCV-related disease and action areas

In England, statistical modelling predicts that 15,840 individuals will be living with HCV-related cirrhosis or HCC in England in 2020 if left untreated (Figure 15).[14,20]

Figure 15: Estimated number of people living with HCV-related cirrhosis or decompensated cirrhosis/HCC in England: 1995-2020 (95% credible intervals are given in parentheses)



To help tackle HCV infection, action plans and work programmes are in place across the UK, and public health action is focused in four main areas:

- prevention of new infections
- increasing awareness of infection
- increasing diagnosis
- getting diagnosed individuals into treatment and care.

The data presented in this report allow us to monitor the impact of prevention initiatives and awareness-raising activities that are taking place across the UK. National monitoring of numbers diagnosed and treated helps us to track our progress in controlling the infection, both in the general population as well as in those groups at particular risk of infection.

Prevention of infection in people who inject drugs

A growing body of evidence now exists to suggest that the combination of effective drug treatments (such as Opiate Substitution Therapy), support for safe injecting, for example through Needle and syringe programmes (NSPs), and treatment of HCV infection in PWID, can impact on the incidence and prevalence of HCV infection.[21,22]

England

Since 2001, England has continued to invest in effective and accessible community drug treatment. As a result, the number of adult injectors receiving drug treatment has increased by over a third (36%) from 84,216 in 2005/06 to 114,855 in 2010/11 (Table 11). This represents over half of all persons in drug treatment in 2010-11;[23] 46% (53,853) of injectors were currently injecting when they entered treatment. Of the 74,028 people newly presenting to treatment in 2010/11,[23] 32,569 (44%) were currently or previously injecting drugs, a slight fall from 2009/10.

In England, prevention measures to reduce injecting drug use are thought to be having an impact with evidence indicating that the prevalence of drug injecting is falling.[24]

NSPs are provided throughout England principally through pharmacies and specialist services. NSP coverage in England is estimated using data collected through the UAM survey of PWID. Participants in the UAM Survey are asked about their use of NSPs, and in 2011 the vast majority (87%, 1,359/1,568) of the participants who had injected during the preceding year, reported that they had used an NSP during that time (only 4% [57/1,568] of these participants had never used an NSP).

Those who had injected in the preceding four weeks were also asked about both the number of times they had injected, and the number of needles they had received during that time. In 2011, just over half (57%, 463 / 814) indicated that the number of needles they had received was greater than the number of times they had injected. These data should to be interpreted very cautiously. Firstly, some people get more needles than they need from exchanges, and pass them on to partners or friends (secondary distribution). Secondly, on average, more than one needle is likely to be needed per injection, as needles may also be used during drug preparation and an injection may require several attempts (and therefore needles) to access a vein.

Almost a third (32%, 308/954) of UAM Survey participants in 2011 who had injected during the preceding four weeks had injected with a needle that had been previously used and which they had attempted to clean.

Together these findings indicate that, in England the majority of PWID are accessing NSPs. However, they also suggest that the amount of equipment provided needs to be increased, and that provision needs to be better targeted. They also suggest a need for education on appropriate cleaning techniques for needles and syringes, such as using cold water and bleach to kill any virus on the equipment.

Wales

In 2011, the Welsh Harm Reduction Database (HRD) was active in 43 statutory and voluntary sector NSP sites across Wales, including five mobile services and three hostels. However, there remain 204 community pharmacies providing NSP services not yet linked to the HRD.

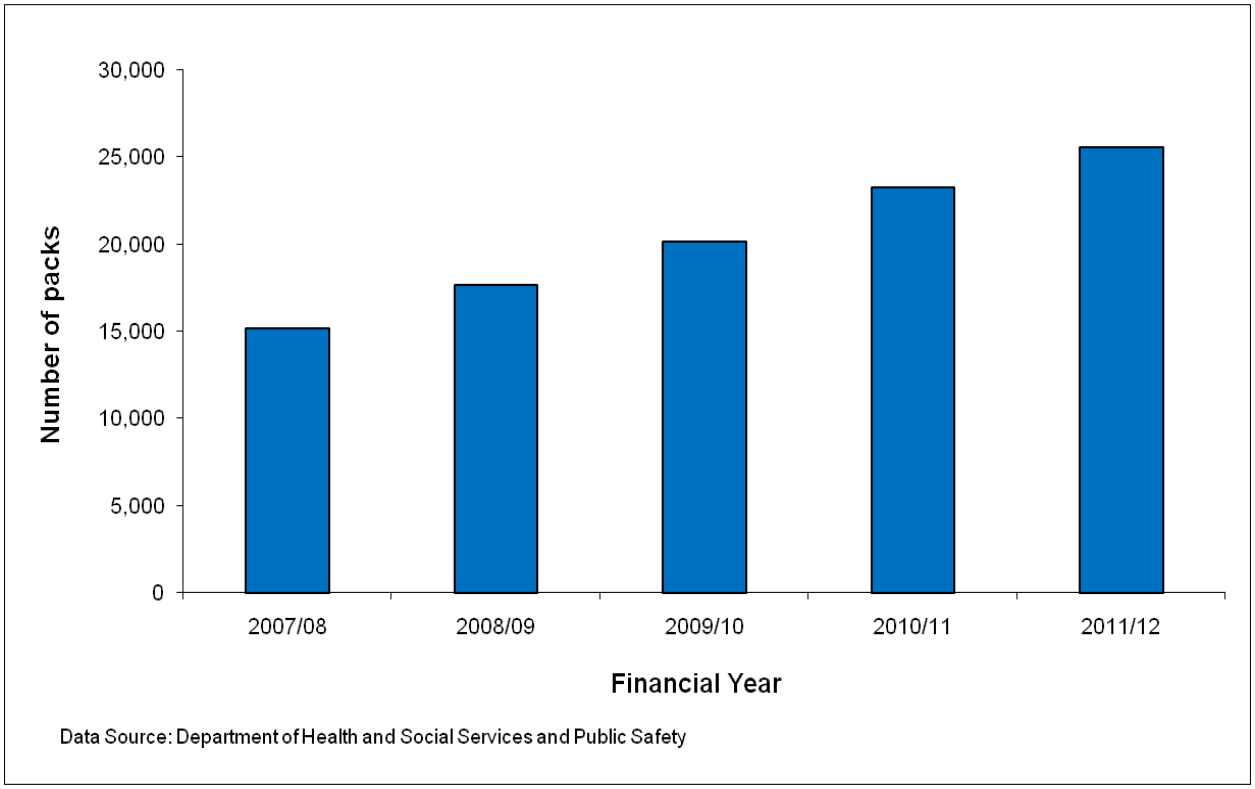
As such, data reported here do not represent activity amongst all PWID accessing NSP services across Wales.

Of the 7,343 active PWID recorded on the HRD, self reported HCV status was recorded for 27% (1,970 individuals) (Table 12). Data quality remains an issue and work is ongoing to improve this.

Northern Ireland

In Northern Ireland, needle exchange programmes have been developed, and the number of packs dispensed by needle exchange schemes has increased year-on-year since 2007/08, reaching 25,530 in 2011/12 (Figure 16).

Figure 16: Number of packs dispensed by needle exchange schemes in Northern Ireland: 2007/08-2011/12



Scotland

The estimated number of PWID (current) in mainland Scotland during 2006 was 23,900,[25] representing 0.7% of the Scottish population aged 15-64 years**.** This compares to an estimated 18,700 PWID (current) in mainland Scotland during 2003.[26] Data for 2009/10 are currently being collated and analysed by the Information Services Division (ISD) to generate an updated estimate of the number of PWID (current) in Scotland by NHS Board area.

In 2009/10, 255 injection equipment provider outlets, of which 200 (78%) were pharmacy based, were reported to be operating in Scotland.[27] These figures compare to 188 (including 136 pharmacy based), 210 (including 169 pharmacy based) and 240 (including 192 pharmacy based) injection equipment provider outlets reported to be operating in Scotland during 2004/05, 2007/08 and 2008/09, respectively.[28, 29, 30]

Approximately 4.7 million needles/syringes were distributed to PWID in Scotland during 2009/10, based on data reported by almost all (254/255) the injection equipment provider outlets. This is higher than the 3.6 million needles/syringes reported to have been distributed to PWID in Scotland during 2004/05, and marginally higher than the 4.4 million needles/syringes reported to have been distributed in 2007/08 and 2008/09 (Table 13).

The estimated number of needles/syringes distributed to each PWID in Scotland during 2009/10 was approximately 200, and ranged from 150 to 400 across NHS Boards.[31] The shortfall in sets of needles/syringes that need to be distributed to PWID in Scotland, if the number of such sets is to correspond with the number of injecting events (estimated at on average 465 per year), is estimated to be approximately six to seven million per year.

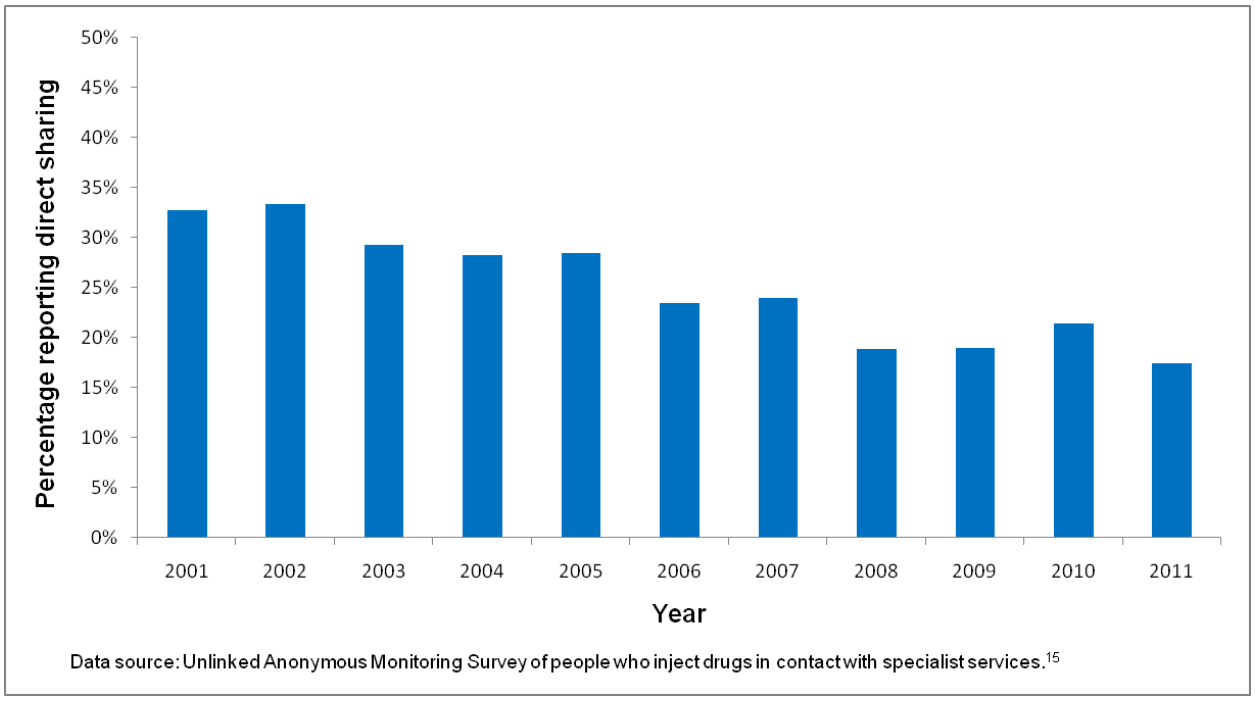
Data for 2009/10 highlight that a several-fold increase in the number of injecting paraphernalia items distributed to PWID occurred between 2008/09 and 2009/10, with an estimated six-fold increase in filters and four-fold increase in spoons/cookers (Table 13).

UK data on the sharing of needles and syringes by PWID

As the sharing of injecting equipment and associated paraphernalia is the main route of transmission of infection among PWID, it is important to monitor levels of sharing within this population.

In England, 17% of current injectors in the UAM Survey, reported direct sharing of needles and syringes in 2011 (Figure 17); this level has declined from 33% in 2001.[15] The reported level of needle and syringe sharing among the PWID participating in the UAM Survey in 2011 varied across England; with the level ranging from 11% in the North West region to 23% in the South West).[15]

Figure 17: Trends in sharing of needles and syringes in the preceding four weeks among people who inject drugs in England 2001-2011



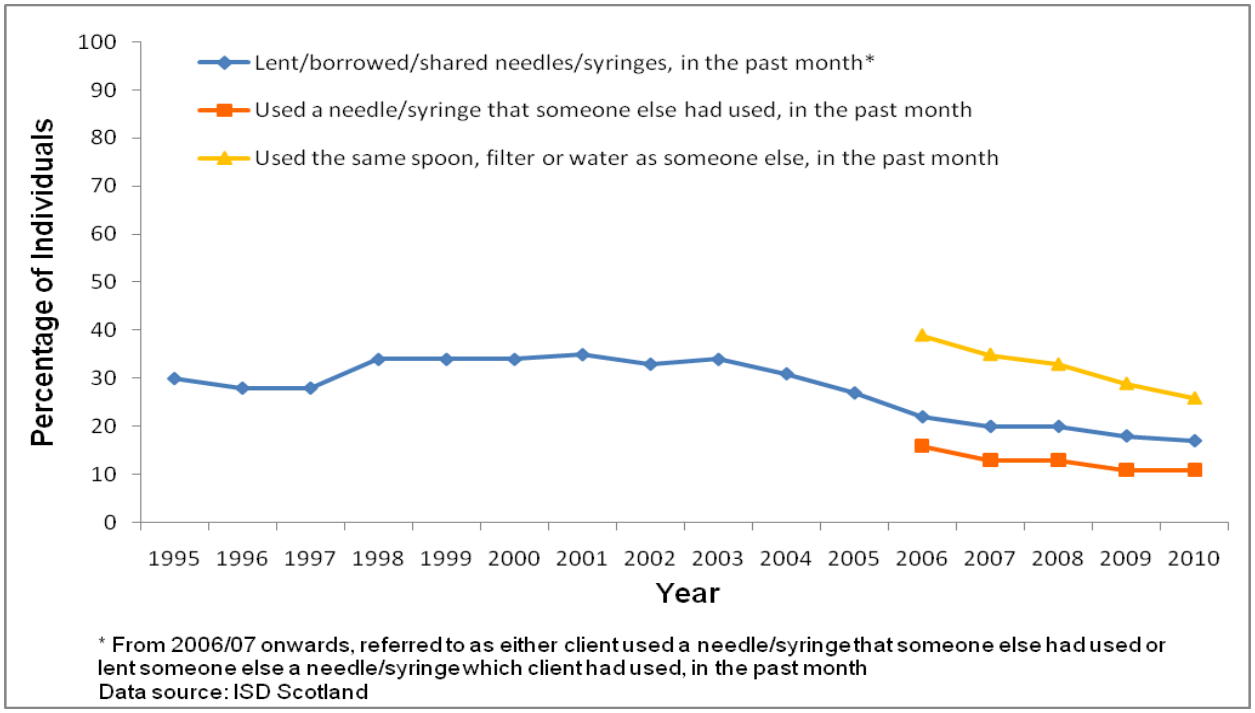
Data source: Unlinked Anonymous Monitoring Survey of people who inject drugs in contact with specialist services.[15]

In Northern Ireland, 29% of current injectors reported direct sharing of needles and syringes in 2011; this level has declined from 44% in 2002/03. In Wales, 11% reported direct sharing in 2011; this level has declined from 38% in 2000/01.[15]

In Scotland, among individuals attending drug treatment services and who had injected in the previous month, a decline in needle/syringe sharing (either borrowing or lending a used needle/syringe) in the previous month was observed from 27% to 35% during 1995/96 to 2005/06 to 18% to 22% during 2006/07 to 2009/10 and 17% during 2010/11 (Figure 18). Furthermore, a decline in only borrowing used needles/syringes in the past month was observed from 16% in 2006/07 to 11% in both 2009/10 and 2010/11.

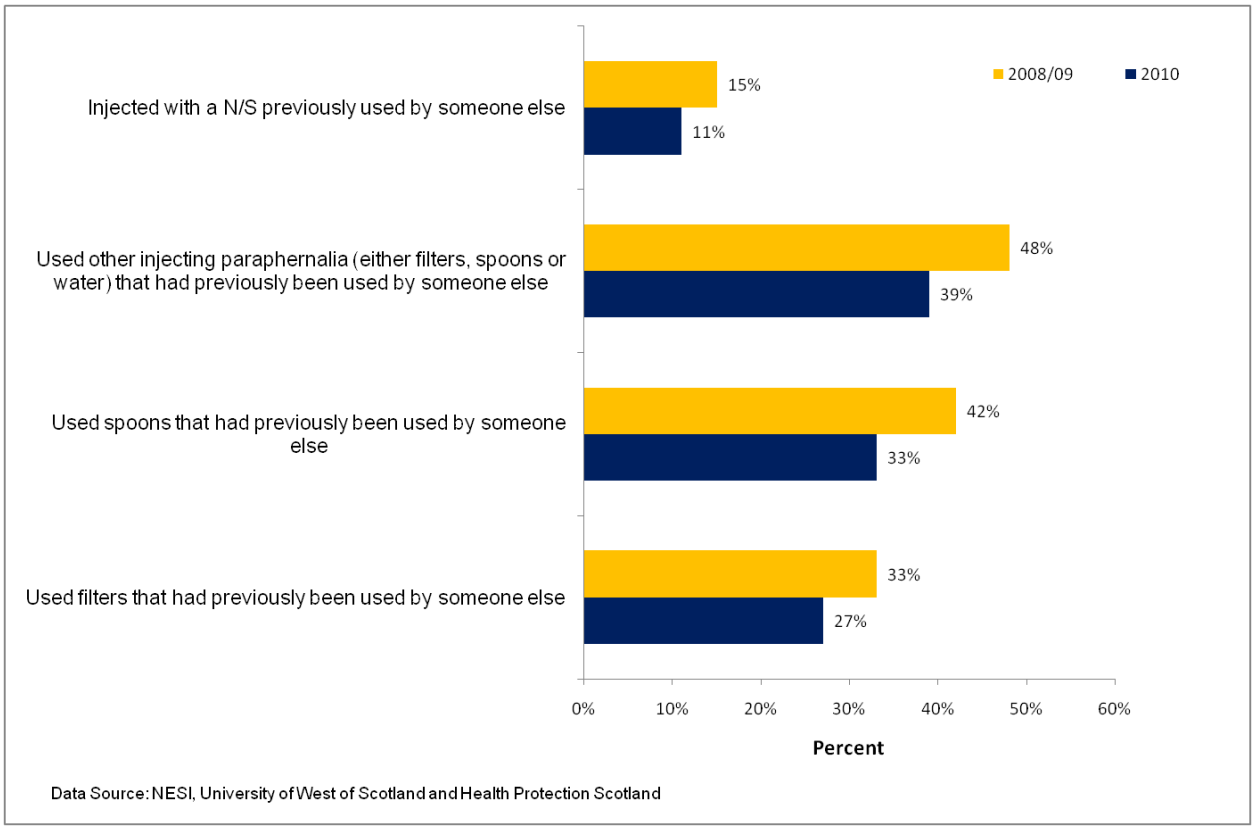
Among individuals attending drug treatment services in Scotland who had injected in the previous month, a decline in the proportion who had used the same injecting equipment (either a spoon, filter or water) as someone else in the past month was observed from 39% in 2006/07 to 26% in 2010/11 (Figure 18).

Figure 18: Percentage of individuals who reported that they had shared injecting equipment in the past month, among clients attending drug treatment services in Scotland who had injected drugs in the past month.



Of 2,407 PWID who had injected in the past six months interviewed at services providing injection equipment in Scotland during 2010, 11% reported having recently (last six months) injected with a needle/syringe previously used by someone else; this compares to 15% among PWID (current) similarly surveyed during June 2008 to June 2009 (Figure 19). In the same survey, 39% reported having recently (last six months) used other injecting paraphernalia (either filters, spoons or water) that had previously been used by someone else (with 33% having indicated spoons, 27% indicated filters, and 29% indicated water). These figures are lower than that reported among PWID (current) surveyed during June 2008 to June 2009, where 48% had recently (last six months) used other injecting paraphernalia that had previously been used by someone else (with 42% having indicated spoons, 33% indicated filters, and 31% indicated water) (Figure 19).

Figure 19: Proportion of PWID, surveyed at services providing injection equipment across mainland Scotland in 2008/09 and 2010, who reported sharing injection equipment.



Incidence of infection

Monitoring the impact of prevention measures on the incidence of infection remains a challenge as incident infection is difficult to measure directly. As a result, a number of methods have been used to generate information to provide insight into the likely trends in incidence over time.

In England, Wales and Northern Ireland, recent transmission of hepatitis C has been explored among the anti-HIV negative participants in the UAM survey of PWID by looking for those who have recently developed antibodies to hepatitis C. This has been undertaken by testing for antibody avidity in anti-HCV positive samples. Preliminary work suggests that antibodies with weak avidity, in the presence of hepatitis C RNA, are likely to be from individuals who have recently been infected. The length of time that samples from recently infected individuals will have antibodies with weak avidity is unclear, but this state may last from two to ten months. In the UAM survey in 2011, of those who tested antibody positive for hepatitis C, 27 had samples where the avidity of the antibody was weak and hepatitis C RNA was also present. There were 1,594 participants who were hepatitis C antibody negative in 2011; therefore, of the survey participants that could have recently acquired hepatitis C, 1.7% (27/1,621) had been infected. These data are consistent with an incidence of hepatitis C infection among PWID in England, Wales and Northern Ireland between 2 and 10 infections per 100 person years of exposure.

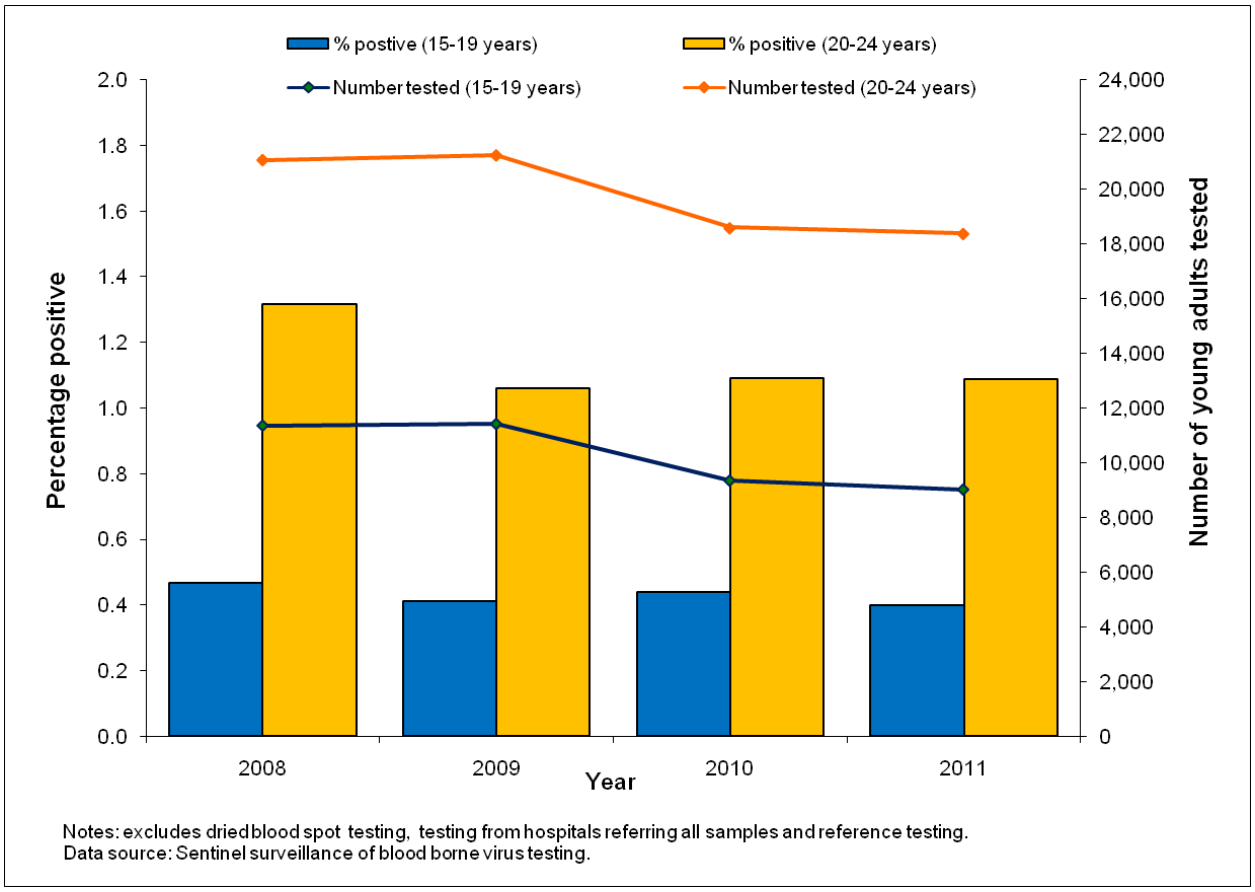
In the very early stages of hepatitis C infection, individuals have high levels of viraemia prior to developing antibodies - often referred to as the viraemic pre-seroconversion window. During this relatively short period, individuals will test hepatitis C antibody negative but RNA positive. In Scotland, among 1,288 PWID who tested hepatitis C antibody negative at services

providing injecting equipment during 2010 and, 1.5% were found to be RNA positive on dried blood spot testing; lower than the level among PWID surveyed in 2008-2009 (2.1%). Assuming a viraemic pre-seroconversion window period of 51 days,[32] the incidence of hepatitis C infection among PWID across Scotland is estimated at 9.5 per 100 person years during 2010; this compares with an estimated incidence of 13.3 per 100 person years during 2008-2009.

Because most new infections are acquired via injecting drug use at a relatively young age[33] the prevalence of infection in young adults or in recent initiates to injecting drug use, can be used as proxy measures.

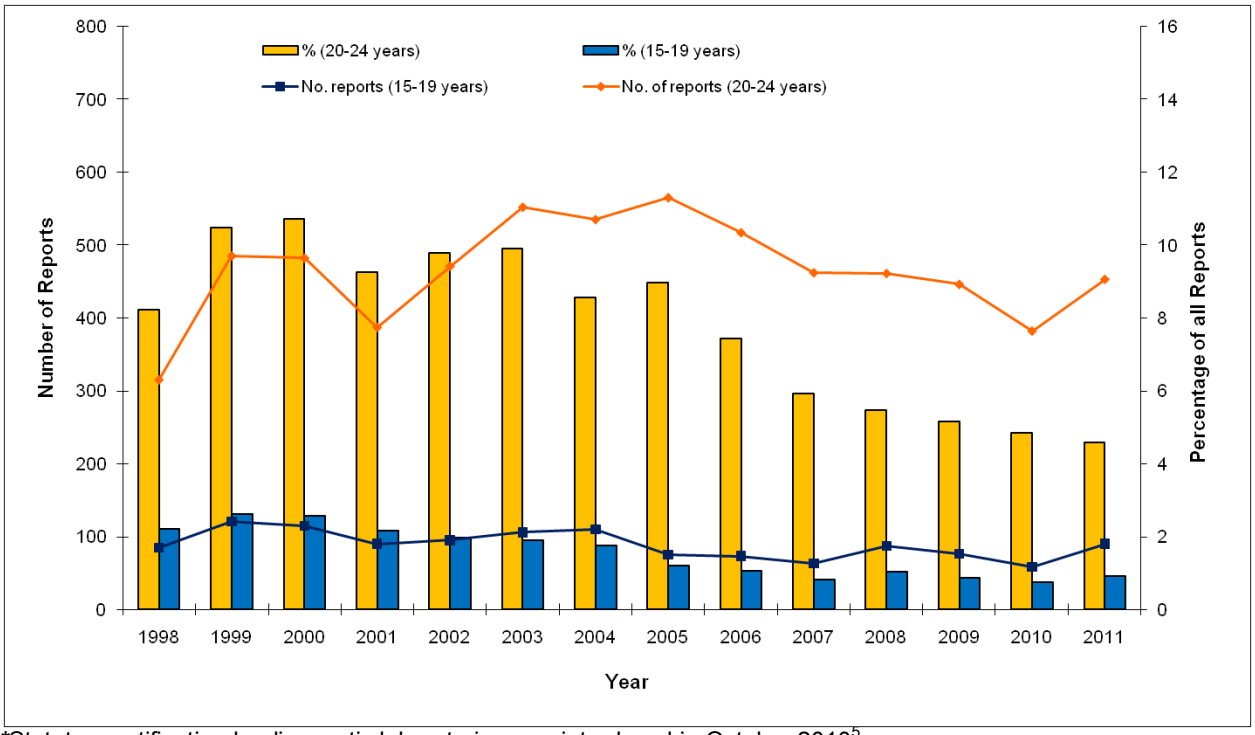
In England, these proxy measures suggest that incidence has remained relatively stable over recent years (Figure 20; Figure 21; Figure 22). The rise in numbers of laboratory reports of HCV infection in young adults over the last year (Figure 21 below) mirrors an increase in reports in the older population. This increase is likely to be the result of recent legislative changes that have made laboratory reporting *mandatory*, rather than *voluntary* as has been the case in previous years.[5] The stable proportion of anti-HCV tests that are positive in the sentinel surveillance laboratories that have participated consistently over the period (Figure 20), suggests that this change in reporting is the reason for the increase in number of laboratory reports nationally.

Figure 20: Number of anti-HCV tests performed in young adults and proportion positive by year in 24 sentinel laboratories 2008-2011



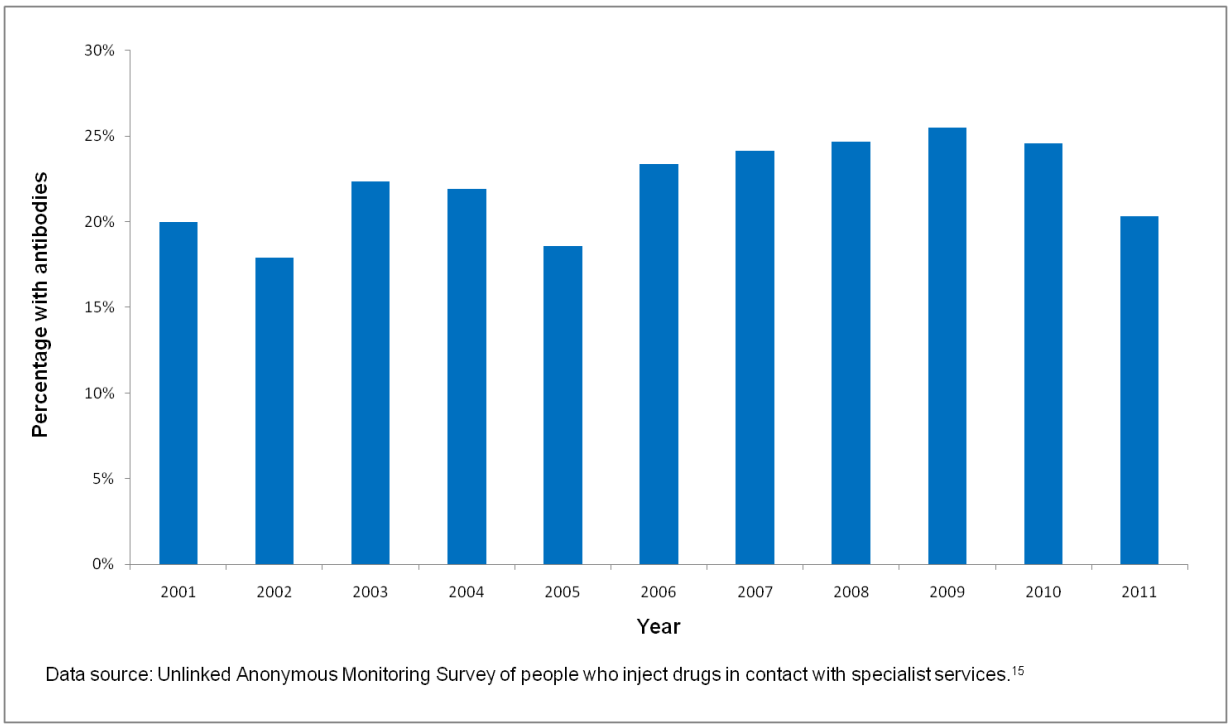
Notes: excludes dried blood spot testing, testing from hospitals referring all samples and reference testing.
Data source: Sentinel surveillance of blood borne virus testing.

Figure 21: Number of laboratory reports* of hepatitis C reported in young adults in England: 1998-2011



*Statutory notification by diagnostic laboratories was introduced in October 2010[5]

Figure 22: Hepatitis C prevalence* in those who began injecting in the last three years: England 2001-2011



* During 2009 to 2011 there was a phased change in the sample collected in the survey from an oral fluid to dried blood spot (DBS). The sensitivity of the anti-HCV tests on these two sample types is different. The sensitivity of the oral fluid test for anti-HCV is approximately 92%,[18] that on DBS samples is close to 100%. Data presented here have been adjusted for the sensitivity of the oral fluid test.

In England, enhanced surveillance of newly acquired HCV infection in men who have sex with men (MSM) provides evidence of ongoing, but declining sexual transmission of HCV among HIV positive MSM. In this population, the estimated incidence of infection declined significantly over time from 7.38 per 1,000 person years in 2008 to 1.46 in 2011($p<0.001$).

Diagnosis, testing and awareness of infection

Raising awareness of infection

As hepatitis C is usually asymptomatic in the early years of infection, many individuals remain undiagnosed. Raising both professional and public awareness therefore remains a priority and an important component of reducing the burden of undiagnosed infection.

Throughout the UK, a variety of initiatives are ongoing to increase public awareness of hepatitis C. These are specifically designed to target those at highest risk of infection, including past or current PWID and individuals of South Asian origin. The success of these initiatives has been dependent on the significant contribution of numerous stakeholders working across a range of settings. The NGO sector has been particularly influential and organisations such as The Hepatitis C Trust, the British Liver Trust, Addaction and the Scottish Drugs Forum (Hepatitis Scotland) deserve a special mention. Such work is essential and complements government and public sector initiatives in this important area.

In England, the Department of Health has funded the HPA to commission the Royal College of General Practitioners (RCGP) to develop a Certificate in the Detection, Diagnosis and Management of Hepatitis B and C in Primary Care.[34] By June 2012, 619 healthcare professionals had completed the e-learning module; 307 individuals had attended face-to-face training days in England and Wales and 219 individuals had completed Part 1 of the Certificate (comprising the e-module *and* face-to-face training). More than 40 candidates have enrolled for the Part 2 Certificate, which is aimed at the more advanced practitioner. Part 2 training includes the preparation of an evidence portfolio and a course completion interview following specialist clinical placements, self-directed study and work-based reflection and learning.

Dedicated hepatitis C websites for healthcare professionals, the general public and South Asian communities are available on the NHS Choices website:

- http://www.nhs.uk/hepc (includes a self-assessment tool on risk of having hepatitis C infection)
- http://www.nhs.uk/hepatitisc/southasian
- http://www.nhs.uk/hepatitisc/hcp

In Wales, 118 individuals have completed their 'Train the Trainer' course on blood borne viruses and have rolled out the training programme to those working with *at risk* populations. Within the prison setting, an e-learning package has been developed to improve the knowledge of prison staff in relation to blood borne viruses. This package is being rolled out across the Welsh prison estate and 200 prison staff have completed the training to date.

Testing and diagnosis in the general population

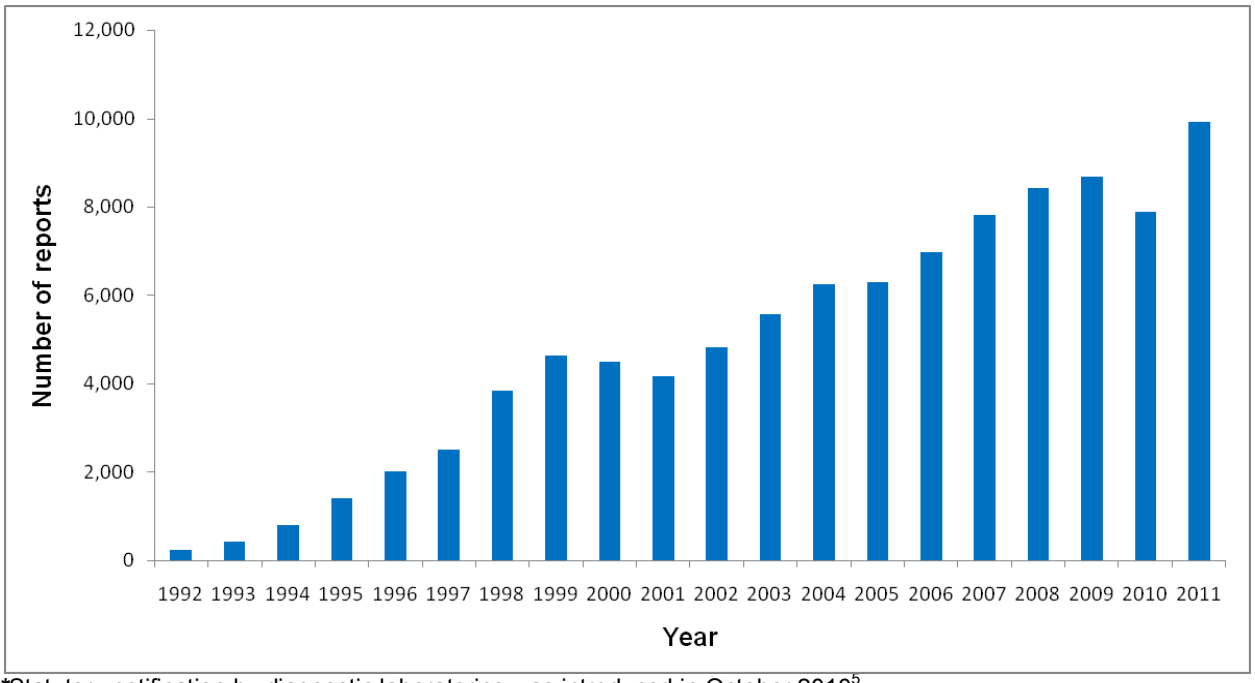
Trends in HCV diagnosis and testing are useful for monitoring the impact of awareness-raising initiatives and prevention activity; this in turn helps to track national progress controlling the infection. Monitoring testing and diagnosis is useful at a population level, as well as in sub-groups who are at increased risk of infection. Monitoring infection in blood donors, who are at low risk of blood borne virus infection, is also very useful for identifying new groups of individuals who may be at increased risk of infection. National Institute for Health and Clinical Excellence (NICE) public health guidance that is under consultation should, when published,

help to focus activity to ensure that more people at increased risk of hepatitis C (and B) infection are offered testing.[6]

England

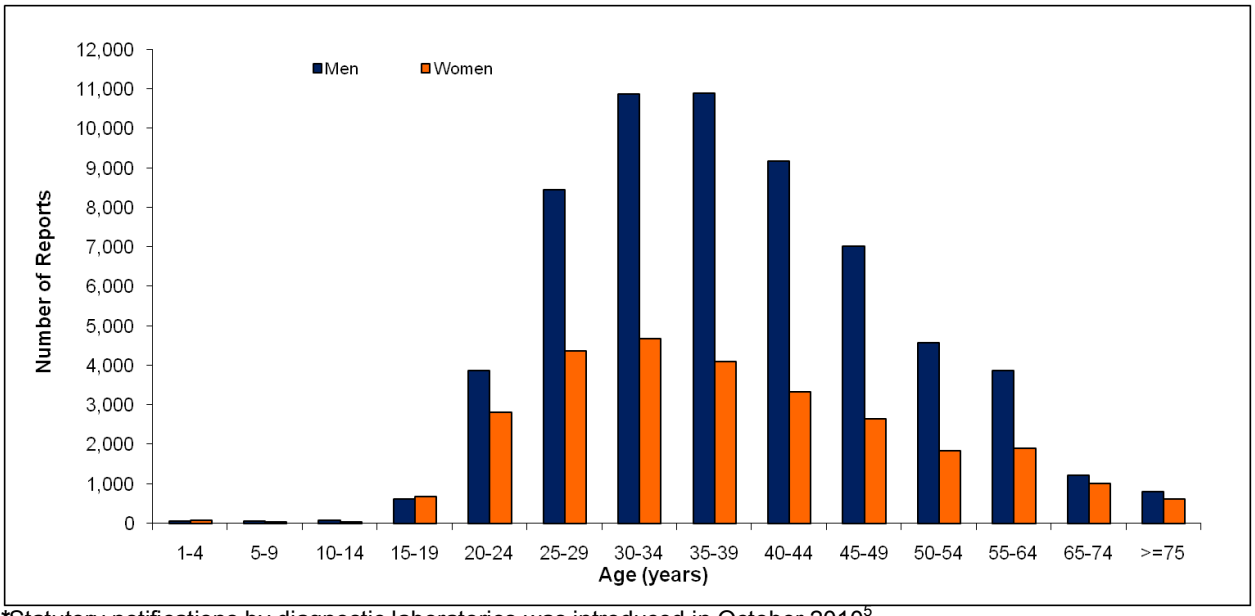
Over nearly two decades, there has been a steady increase in the number of laboratory confirmed reports of HCV in England with a seven-fold increase between 1995 and 2011. The number of laboratory reports of confirmed HCV infection increased by 25.5% from 2010 to 2011 (Figure 23). More than two-thirds of laboratory reports (69%) were in men; almost 50% of all reports received were in individuals aged between 25 and 39 years (Figure 24). The marked increase in 2011 is probably largely explained by the introduction of statutory laboratory reporting from October 2010.[5] It confirms that significant under-reporting of hepatitis C diagnoses is likely to have occurred in the past.

Figure 23: Number of laboratory reports* of hepatitis C infection from England 1992-2011



*Statutory notification by diagnostic laboratories was introduced in October 2010[5]

Figure 24: Age and sex distribution of laboratory reports* of hepatitis C from England: 1996-2011

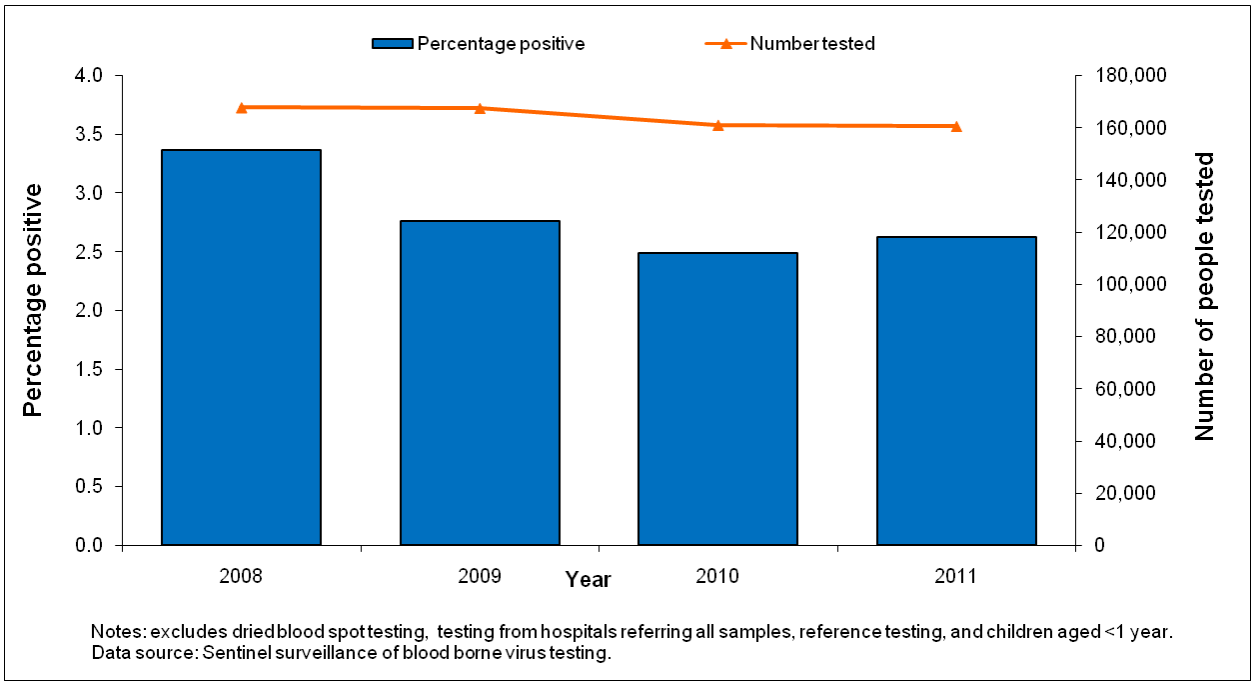


*Statutory notifications by diagnostic laboratories was introduced in October 2010[5]

There continues to be regional variation in the number of laboratory reports of hepatitis C in England with the highest figures being reported by laboratories in the North West and the lowest figures being reported by laboratories in the North East (Table 14). The percentage change in the number of reports between 2010 and 2011 was also variable. Major increases were seen in London, the Yorkshire and Humberside, East Midlands and South West regions. Smaller variations were seen in other regions. This pattern is consistent with the introduction of statutory reporting in 2010 leading to reports from laboratories in these regions that had not reported previously.

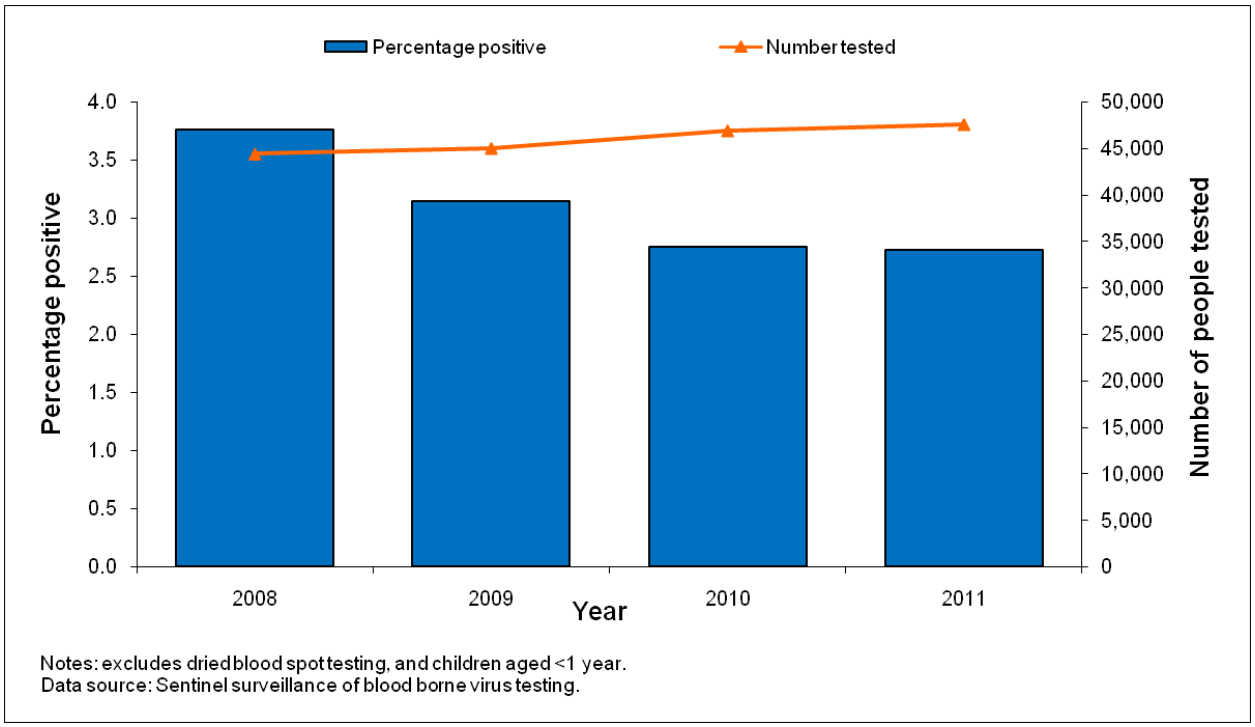
Trends in testing were analysed using data from the 24 sentinel laboratories where complete and consistent data have been available from January 2008 to December 2011 (Figure 25). Numbers of tests undertaken have levelled off since 2008. This may be partly due to testing saturation among the pool of 'easy-to-access' individuals. Overall, the proportion of people testing positive for anti-HCV has declined in recent years (2.6% in 2011), which is consistent with a higher proportion of individuals at relatively lower risk of infection being tested. In these sentinel laboratories annual number of new diagnoses has been relatively stable over the past few years. As information from sentinel surveillance is likely to be more consistent over time than data derived from routine reports, the observation of a national increase in laboratory reports in 2011 is consistent with improved reporting - probably reflecting the change in legislation around notification of infectious disease in 2010.[5]

Figure 25: Number of people tested for anti-HCV by year, and proportion positive, in 24 sentinel laboratories: 2008-2011



In primary care, testing continued to increase year-on-year between 2008 and 2011, suggesting that awareness of hepatitis C in this setting may be increasing which is encouraging. The proportion of individuals testing positive for hepatitis C decreased over this period from 3.8% in 2008 to 2.7% in 2011 (Figure 26).

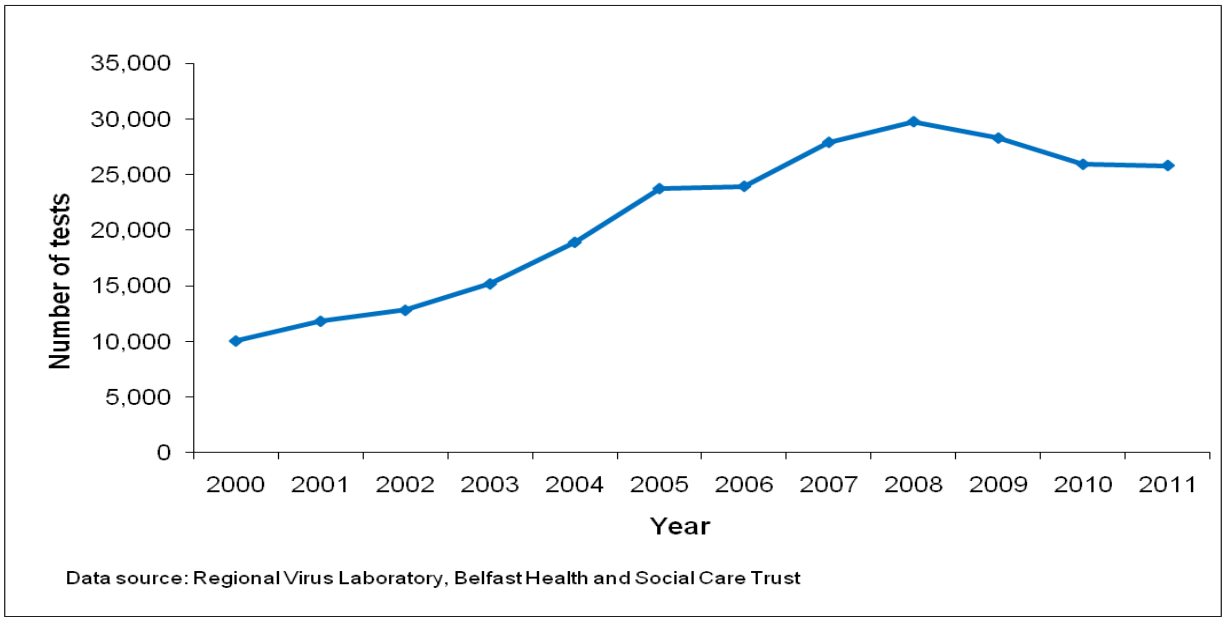
Figure 26: Number of people tested for anti-HCV by year, and proportion positive, through GP surgeries in 24 sentinel laboratories: 2008-2011



Northern Ireland

In Northern Ireland, there has also been an increasing trend in testing since 2000, although the number of HCV antibody tests requested in 2010 and 2011 were similar (25,842 in 2011). (Figure 27)

Figure 27: Number of HCV antibody tests requested in Northern Ireland: 2000-2011



The number of new laboratory confirmed antibody positive reports of hepatitis C has been very similar over the past three years with 113 confirmed infections in 2011 (Figure 28). In 2011, 76 (67%) of the 113 new laboratory confirmed cases were HCV RNA positive on the initial sample (Table 15).

The majority of confirmed cases of hepatitis C occurred in persons aged from 15 to 44 years old, with little change in proportions of different age groups over the past five years (Figure 29); 65% were male.

Figure 28: Laboratory-confirmed HCV antibody positive cases in Northern Ireland: 2000-2011

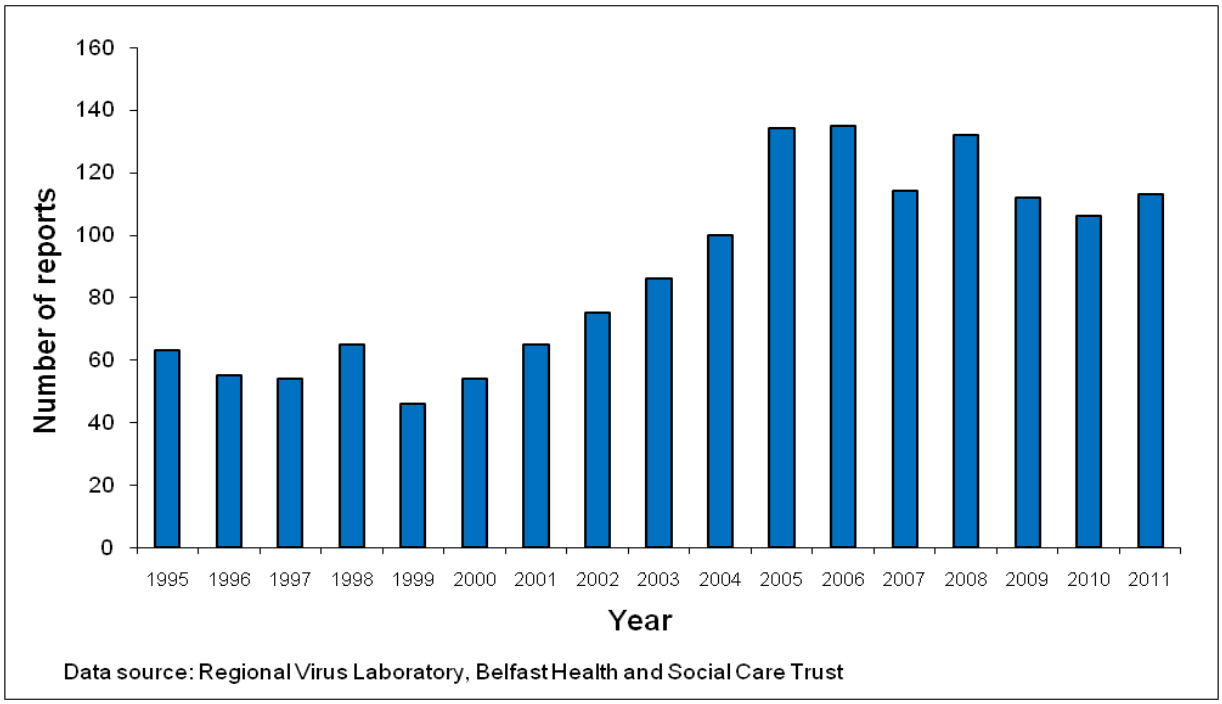
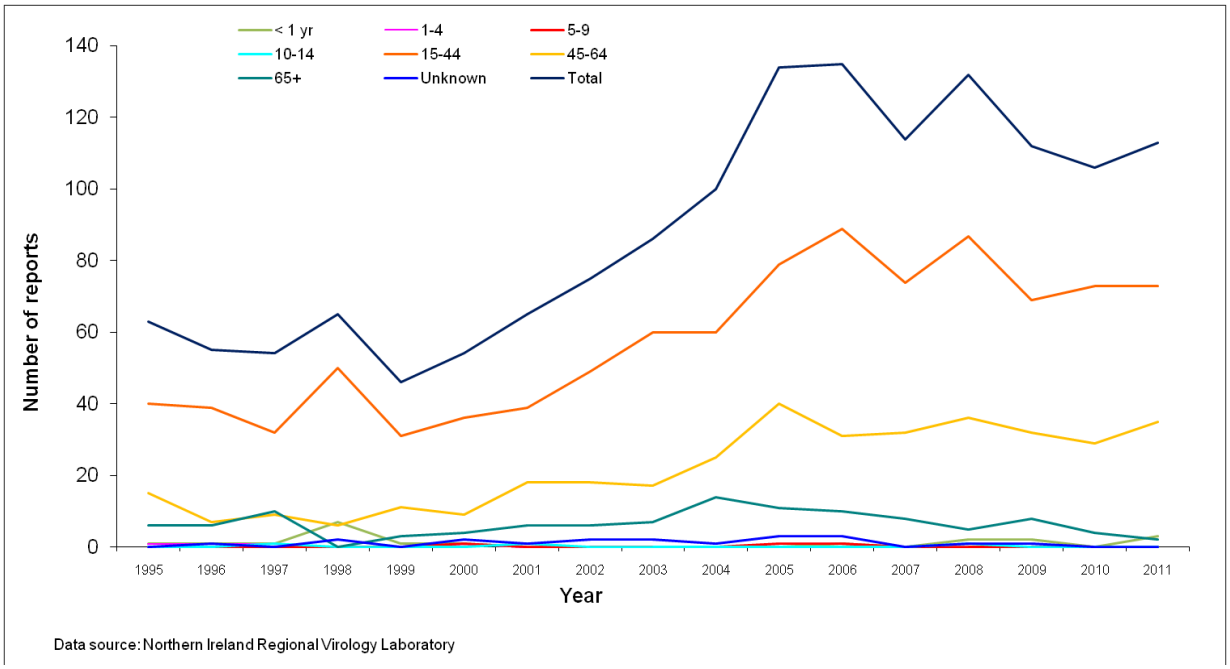
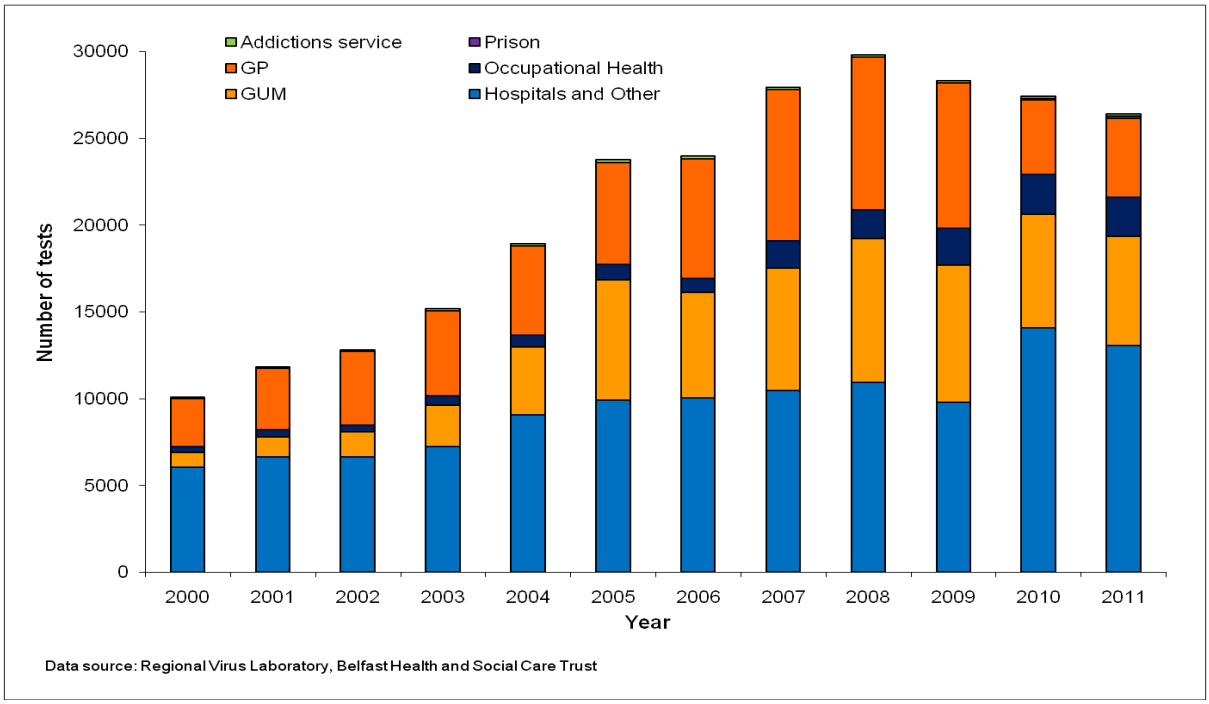


Figure 29: Laboratory confirmed HCV antibody positive cases in Northern Ireland, by age: 1995-2011



In Northern Ireland, the majority of HCV testing requests were received from hospitals (excluding genitourinary medicine (GUM) and occupational health), with most other requests received from GUM and primary care (Figure 30); the proportion of requests from primary care has decreased slightly since 2009.

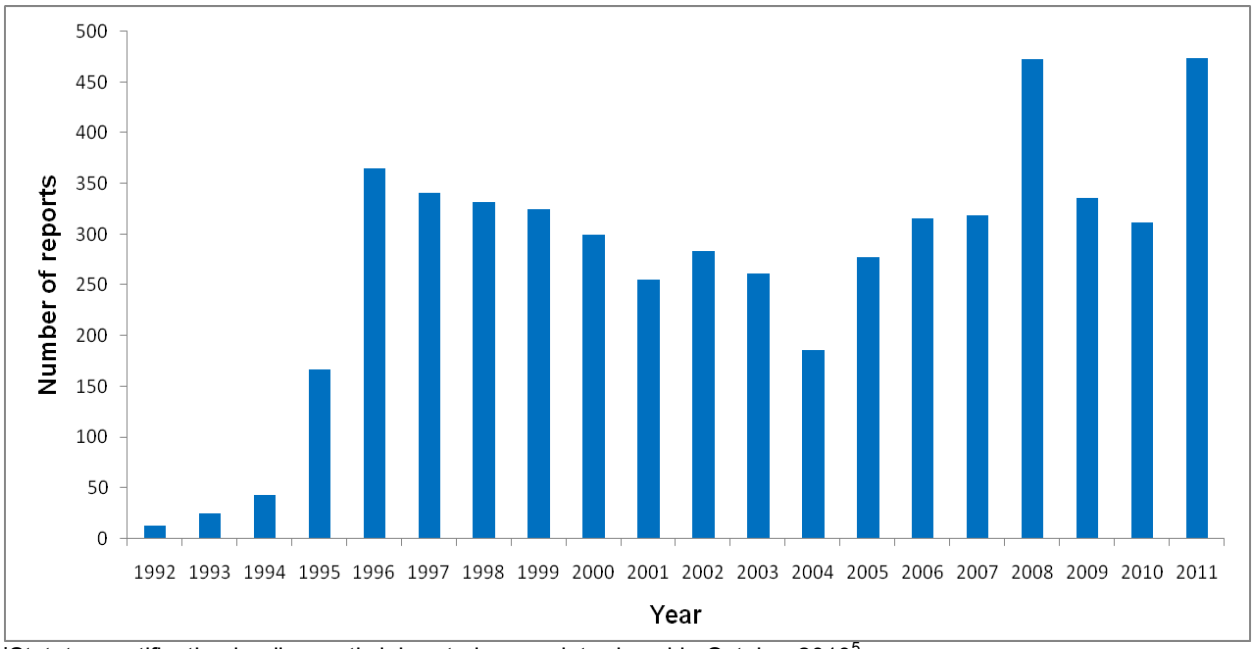
Figure 30: Source of hepatitis C antibody requests in Northern Ireland: 2000-2011



Wales

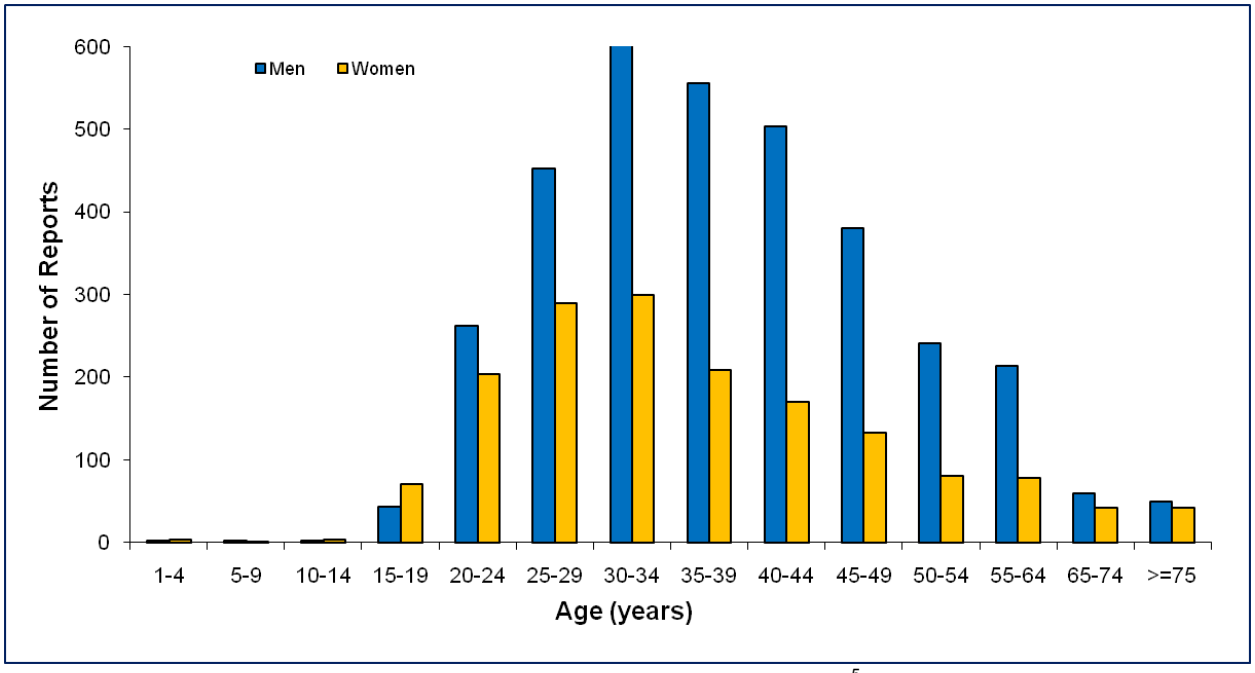
In Wales, the number of laboratory reports of hepatitis C infection has shown some variation since 1995 reaching 474 reports in 2011 (the highest number since 2008) (Figure 31). Most infections are occurring in males between the ages of 20 and 55 years with a peak in those aged 30 to 34 years (Figure 32).

Figure 31: Number of laboratory reports* of hepatitis C from Wales: 1992-2011



*Statutory notification by diagnostic laboratories was introduced in October 2010[5]

Figure 32: Age and sex distribution of laboratory reports* of hepatitis C in Wales: 1996-2011

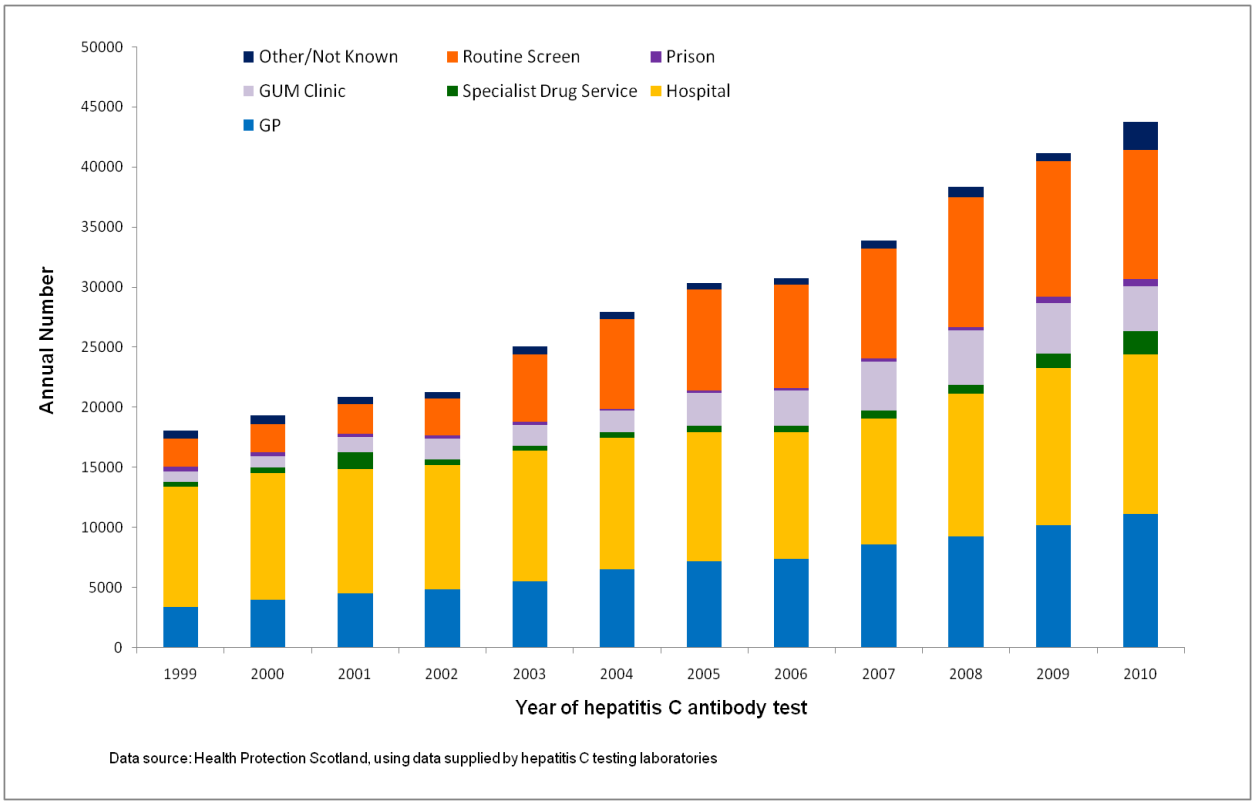


*Statutory notification by diagnostic laboratories was introduced in October 2010[5]

Scotland

The number of people tested for hepatitis C antibody in Scotland's four largest NHS Board areas (i.e. Lothian, Grampian, Greater Glasgow & Clyde, and Tayside) each year has increased from approximately 18,000 in 1999 to 43,700 in 2010 (Figure 33), at an average annual increase of 8.7%. Of the 43,700 people tested for hepatitis C antibody in 2010, 30.3% were undertaken in the hospital setting (including infectious disease and gastroenterology units), 25.5% by general practitioners, 24.5% as part of a routine screen (at either a renal, fertility or occupational health clinic), 8.6% in GUM clinics, 4.3% in specialist drug services, 1.4% in prisons, and 5.3% in other/not known settings. From 1999 to 2010, the number of people tested for hepatitis C antibody increased the most in GUM clinics, in settings undertaking routine screens (15.6%), and in general practice (10.9%). While in more recent years (from 2005 to 2010), the number of people tested for hepatitis C antibody increased the most in specialist drug services (by an average annual increase of 32.8%) and prisons (28.8%).

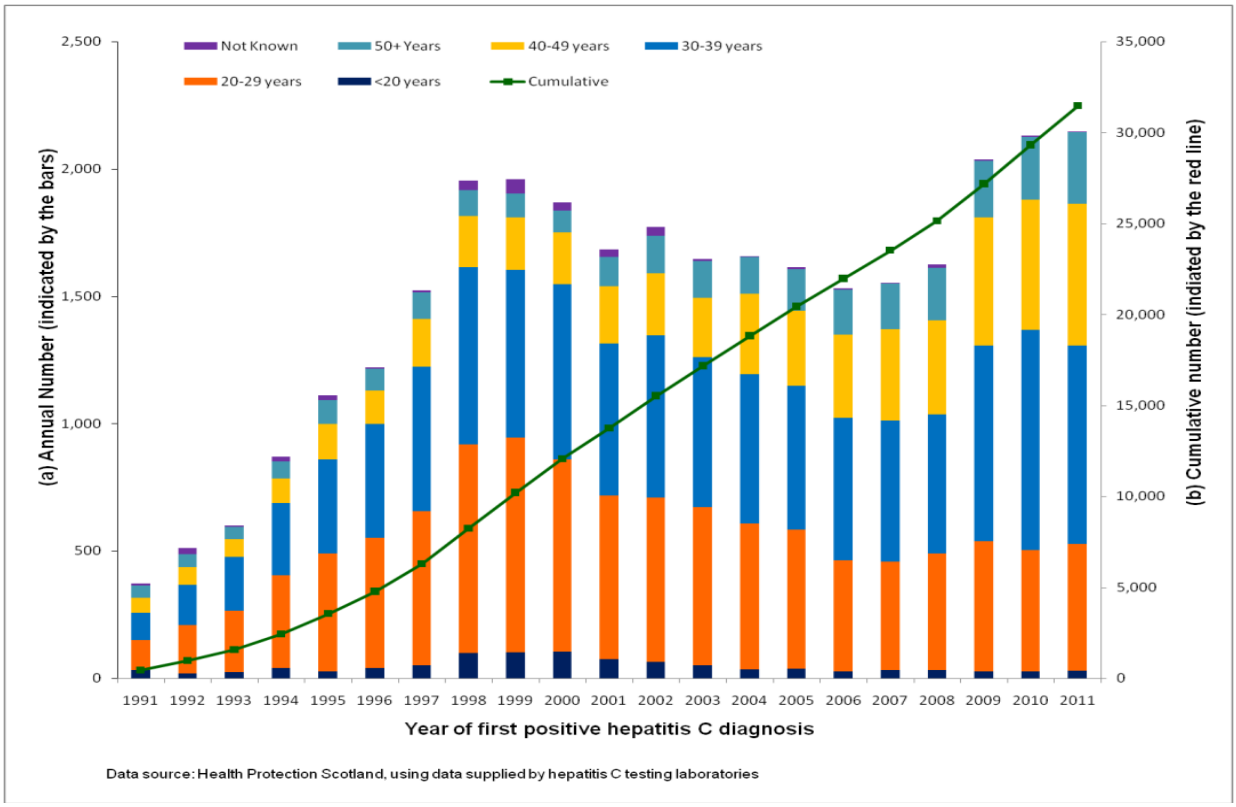
Figure 33: Annual number of people tested for hepatitis C antibody in Scotland's four largest NHS Board areas during 1999-2010, according to referral source



More than 2,000 new hepatitis C diagnoses were made each year in Scotland from 2009 to 2011, which compares to an average of 1,604 (range 1,531 to 1,658) new diagnoses made per year from 2003 to 2008 (Figure 34).[35] Of 2,147 new hepatitis C diagnoses made during 2011,[35] 23% were aged 20-29 years, 36% aged 30-39 years, 26% aged 40-49 years and 13% were aged 50 years and above, at the time of diagnosis; 65% were male; 48% reported injecting drug use, representing 95% of those with a known risk factor; and 21% were known to have been diagnosed by general practitioners, 19% in the hospital setting, 19% in specialist drug services, 5% in prisons, and 4% in GUM clinics (source of referral was not known in 30% of cases).

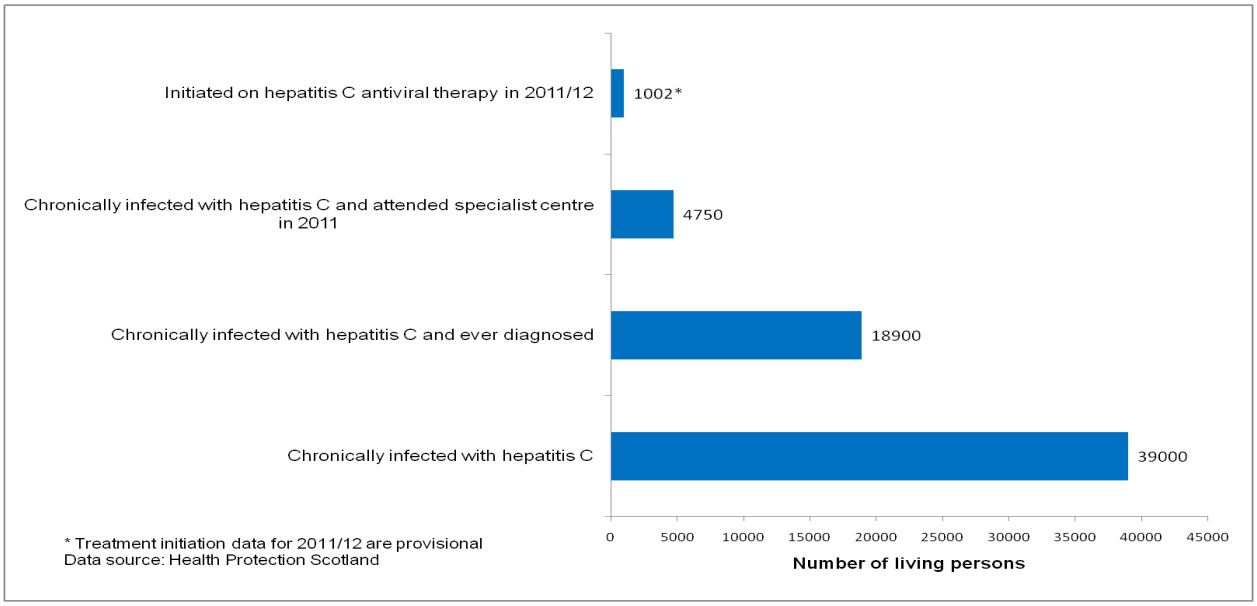
A total of 31,468 people had been diagnosed with hepatitis C in Scotland by the end of 2011 (Figure 34).[35] Of these, 13% were known to have died by 31 December 2010. Thus, approximately 0.9% of Scotland's population aged 15-59 years had been diagnosed hepatitis C antibody positive by the end of 2011.

Figure 34: Annual and cumulative numbers of people reported to be diagnosed hepatitis C antibody positive in Scotland, 1991-2011



Of the estimated 39,000 people living in Scotland with chronic hepatitis C infection, approximately 18,900 (49%) were estimated to have been diagnosed with hepatitis C by the end of 2011 (Figure 35), leaving an estimated 20,100 (51%) undiagnosed.

Figure 35: Estimated number of living people in Scotland in 2011, who were (i) chronically infected with hepatitis C, (ii) chronically infected with hepatitis C and ever diagnosed, (iii) chronically infected with hepatitis C and had attended a specialist centre in 2011, and (iv) initiated on hepatitis C antiviral therapy in 2011/12

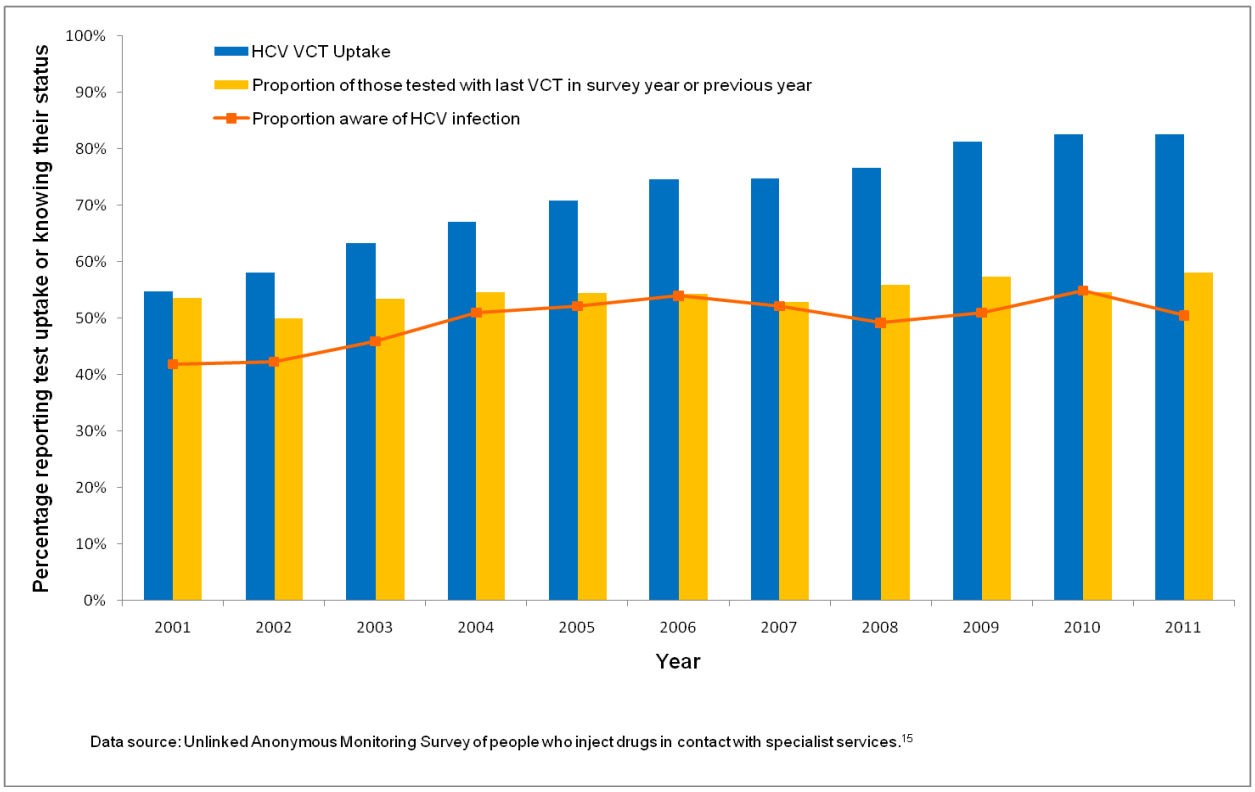


Testing and diagnosis in people who inject drugs

England

In 2011, 50% of HCV infected PWID in England participating in the UAM Survey reported being aware of their HCV positive status, an increase from 42% in 2001 (Figure 36).[15] In the same survey, 83% of PWID reported ever having had a voluntary confidential test for HCV in 2011, an increase from 55% in 2001 (Figure 36).[15] The proportion of those ever tested who had their last test during the preceding two years was around 58% in 2011 (n=904), slightly higher than the proportion reported in 2010 (55% n=1,048) (Figure 36).

Figure 36: Trends in reported uptake of voluntary confidential testing for HCV infection, and the proportion of those with HCV reporting being aware of their infection in England: 2001-2011



National Drug Treatment Monitoring Systems (NDTMS) data show that levels of hepatitis C testing among people who use drugs are continuing to rise in England. The hepatitis C test status of adults in drug treatment are available from 2005-2011 (Table 16). The proportion of adults in drug treatment who have a hepatitis C test recorded has increased from 11.8% (2005/06) to 51.5% (2010/11). A similar rise has been recorded in those adults newly presenting for drug treatment (11.6% in 2005/06 compared with 43.8% in 2010/11).

There continues to be a rise in testing among injectors (including those newly presenting for treatment), and in 2010/11, almost two-thirds (64.4%) of all adult injectors in treatment are recorded as having received a test. Similarly, the number of injectors newly presenting to treatment who were tested continues to rise, with 60.0% recorded as having had a hepatitis C test in 2010/11 (Table 17).

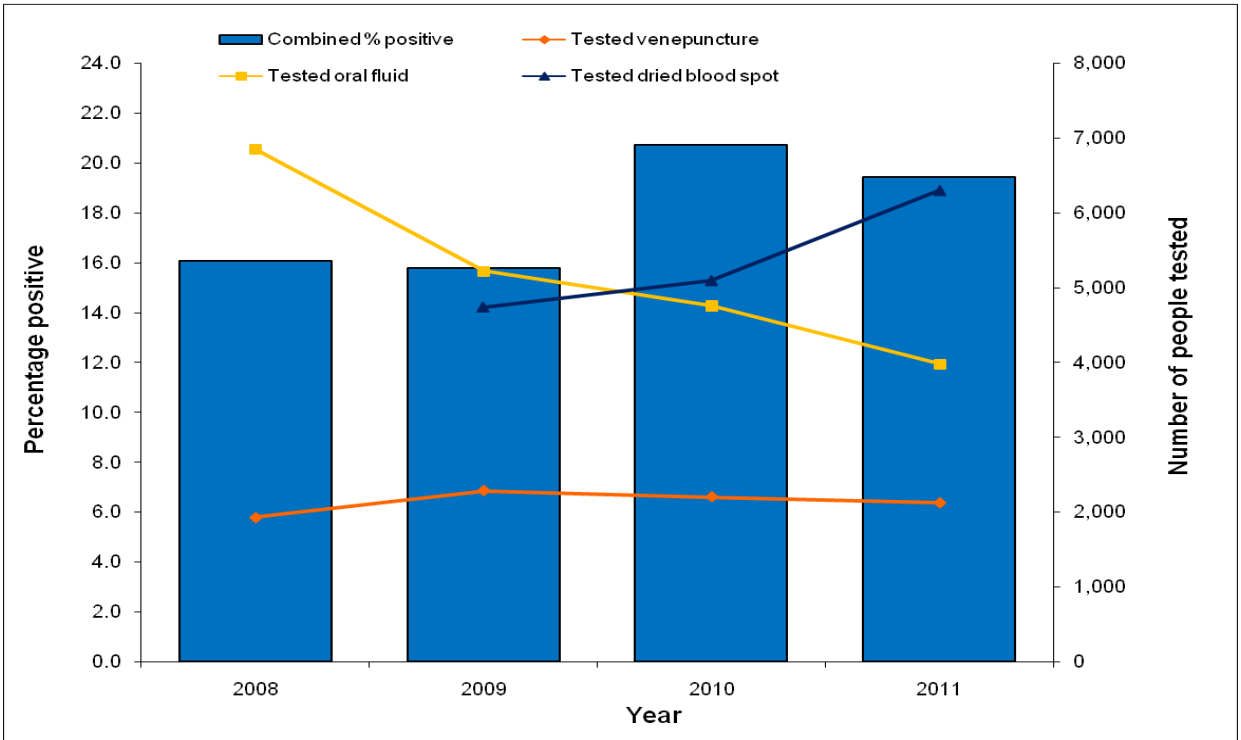
In 2010/11, more than three-quarters (78.5%; n=160,430) of all adults receiving drug treatment were recorded as having been offered a hepatitis C test (information about whether

people have been offered a hepatitis C test is recorded at the beginning of their latest period of treatment) and over half (53.20%, n=98,231) accepted the offer. The number of those accepting the offer of testing has increased each year since 2005/06, and has increased by 43% since 2008/09 (Table 18).

In 2010/11, over four fifths of current or previous injectors (injectors' are those who report injecting at the beginning of their latest period of treatment. It also includes those who were not injecting when they began treatment, but who report previous injecting) being treated in the England were offered a test (81.5%, n=93,552), and over two thirds accepted the offer (55.4%, n=63,603). About the same proportion of those newly presenting to treatment were offered testing (81.4%, n=26,504), with over half accepting the offer (Table 19).

Sentinel surveillance data suggests that alternative testing technologies are continuing to contribute to the increased uptake of testing in PWID (Figure 37). The number of people tested by venepuncture has remained relatively consistent, whereas the rate of dried blood spot (DBS) and oral fluid (OF) testing has increased over this period (Figure 37). The percentage testing HCV positive remains high in this population group at 18% overall.

Figure 37: Number of injecting drug users tested for anti-HCV in specialist services for drug users, by year, from multiple data sources: 2008-2011

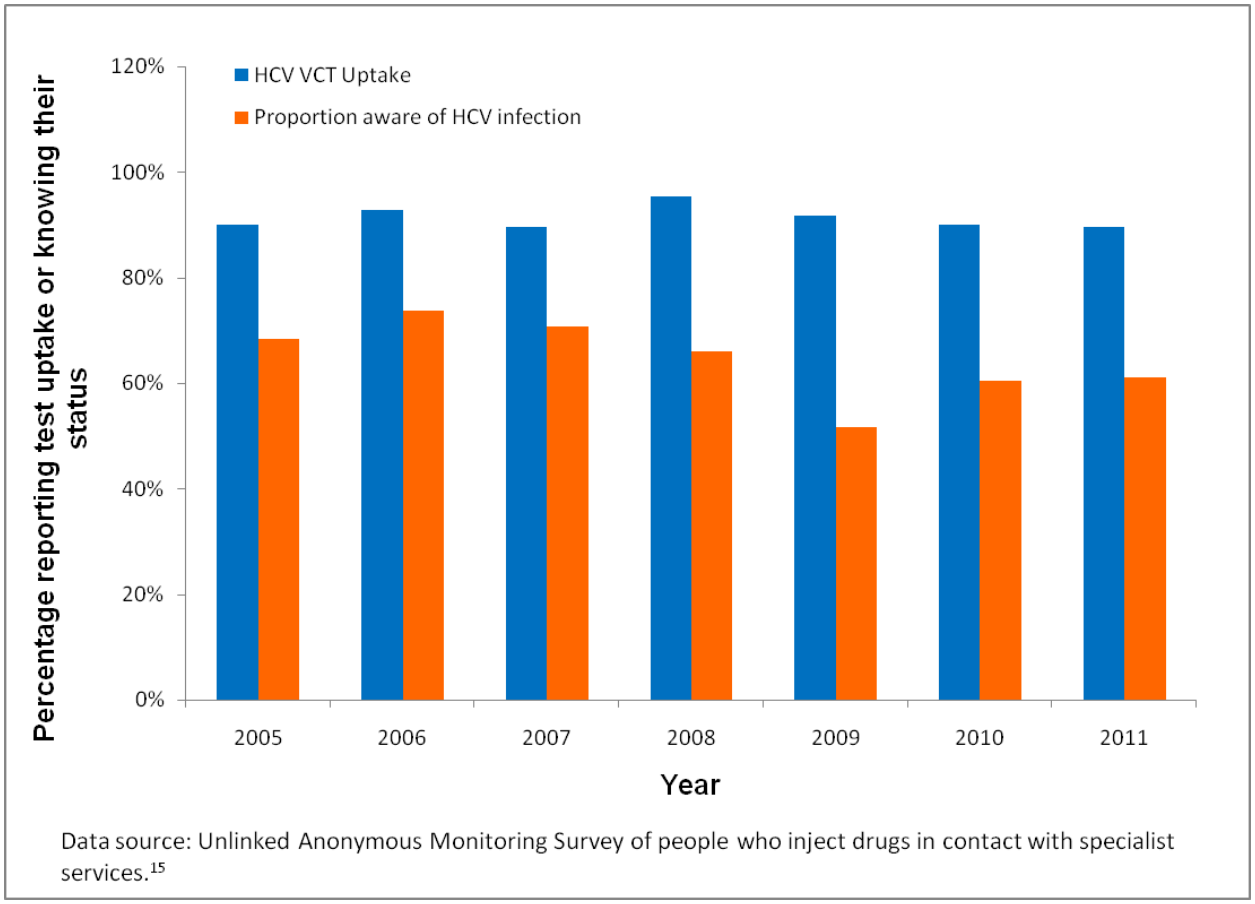


Notes: Sentinel surveillance data excludes reference testing, testing from hospitals referring all samples, and children aged <1 year. Only centres with complete data for the whole period were included.
Oral fluid and dried blood spot testing data excludes samples tested where a drug action team could not be identified.
Data Source: Sentinel Surveillance of blood borne virus testing and Concateno plc.

Northern Ireland

In the UAM Survey, 61% of HCV infected PWID in 2011 reported being aware of their HCV positive status, similar to levels reported in previous years; 90% reported ever having had a voluntary confidential test for HCV in 2011 (Figure 38).[15]

Figure 38: Trends in reported uptake of voluntary confidential testing for HCV infection, and the proportion of those with HCV reporting being aware of their infection in Northern Ireland: 2005 -2011*



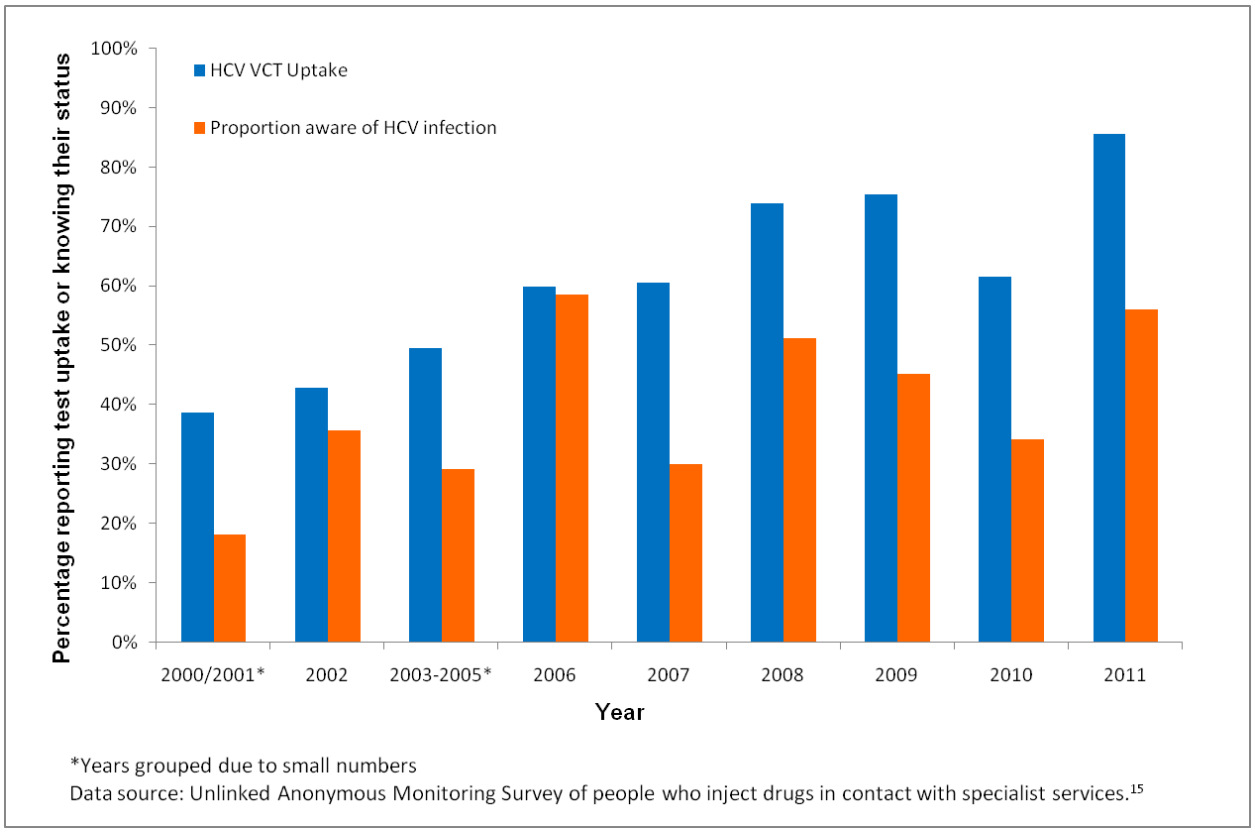
*HCV VCT uptake in 2002-2003 and 2004 was 79% and 80% respectively; the proportion aware of their HCV infection in 2002 -2004 was 74%; data are grouped due to small numbers

In Northern Ireland, 45 individuals were tested during a pilot study of DBS testing. Tested individuals were predominantly male (87%) with a history of incarceration (56%) and needle exchange service usage (91%). Of the total of 45, 27% had injected in the previous 28 days, 69% had injected in the last year and half gave a history of sharing drug paraphernalia at some stage.

Wales

In Wales, 56% (n=98) of HCV infected PWID participating in the UAM Survey in 2011 reported being aware of their HCV positive status, similar to levels reported in previous years (Figure 39); 86% reported ever having had a voluntary confidential test for HCV in 2011, an increase from 60% in 2006 (Figure 39).[15]

Figure 39: Trends in reported uptake of voluntary confidential testing for HCV infection, and the proportion of those with HCV reporting being aware of their infection in Wales: 2000-2011



DBS testing, primarily within drug services and potentially including non-injectors, in Wales shows that 18% (339/1847) of the specimens tested in 2011 were HCV antibody reactive (Table 20); of those with follow-up samples (70/339), 77% were confirmed as having active infection (Table 20). Work is ongoing to improve follow-up testing.

Scotland

In Scotland, among 3,100 PWID interviewed at services providing injection equipment during 2010, 77% reported having been tested for hepatitis C in the past, while 38% reported a test in the last year. When those who were diagnosed positive from a past test (that is, prior to 12 months ago) were excluded, the percentage of respondents who had been tested for hepatitis C in the last year increased to 45%; this figure compares to 40% reported by PWID surveyed during June 2008 to June 2009.

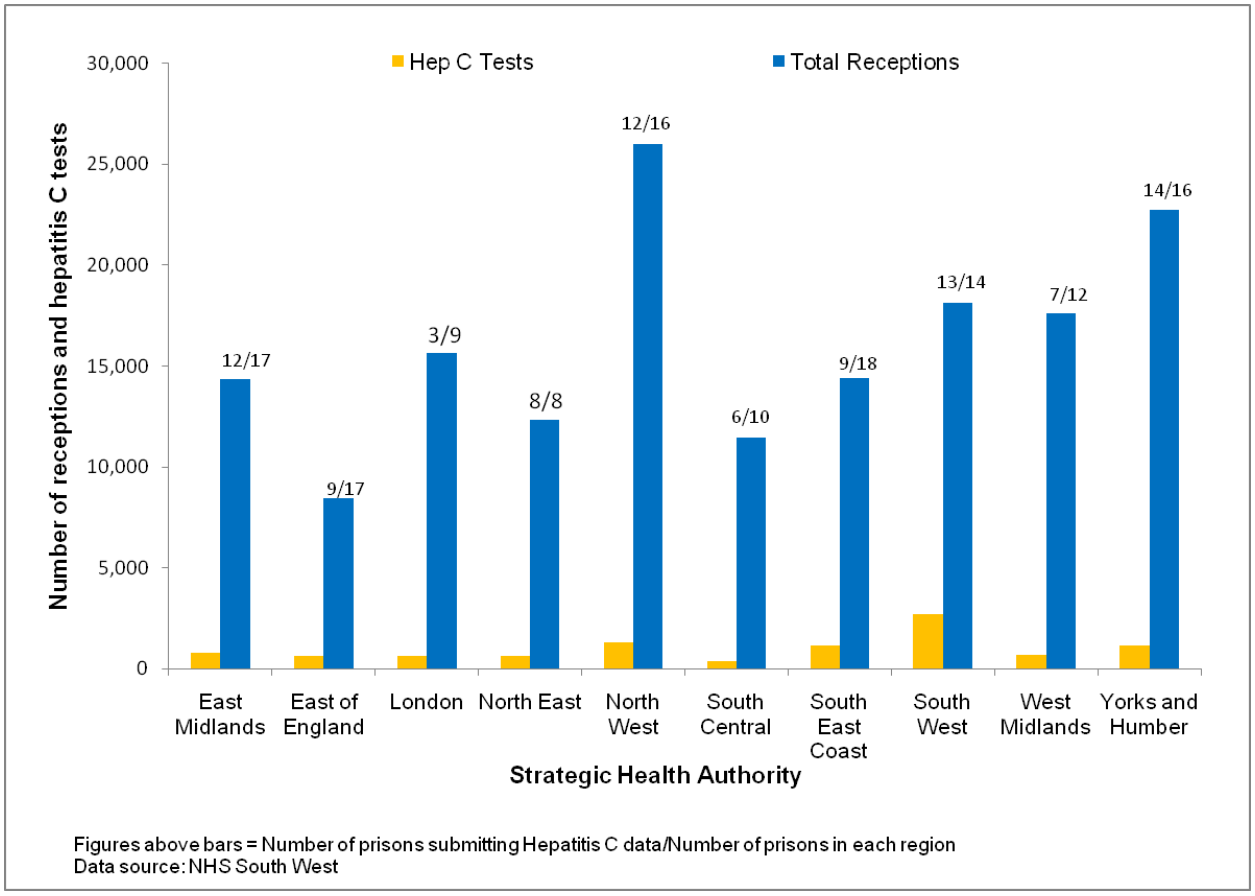
Among 1,747 PWID who were hepatitis C antibody positive, and were interviewed at services providing injection equipment in Scotland during 2010, 44% reported that they had been diagnosed hepatitis C positive and a further 12% reported having cleared the hepatitis C virus.

In Scotland, the introduction of DBS in specialist drug service settings has had a significant impact on levels of diagnosis. Of 2,147 new hepatitis C diagnoses made during 2011,[35] 408 (19%) were known to have been diagnosed in specialist drug services where DBS testing for hepatitis C was first introduced in 2009 (this figure compares with 12, 189, and 442 for years 2008, 2009 and 2010, respectively).

Testing and diagnosis among people in prisons

In England in 2007, Offender Health (OH) issued a set of Prison Health Performance Indicators (PHPIs) to guide Strategic Health Authorities (SHAs), Primary Care Trusts (PCTs) and prisons in England in judging their own performance in delivering healthcare services to prisoners. In 2009, in line with measures being developed in the wider NHS, OH redeveloped the PHPIs to become broader indicators of the quality of healthcare in prisons, as well as the performance of other contributing health and prison services. These are now referred to as Prison Health Performance & Quality Indicators (PHPQIs).[36] In 2010, an additional indicator was introduced around hepatitis C and data is collected nationally on the number of hepatitis C tests provided in prisons. In 2011, data show that, overall, 6.2% (9,970/161,125) of new receptions to English prisons receive a hepatitis C test (Figure 40). This figure varies from region to region, as does the proportion of prisons submitting data in each region (Figure 40). However, it should be noted that there is considerable under-reporting of test results for hepatitis C, which is partially linked to complexity of interpretation of test results as well as the process of data collection and reporting at some prisons.

Figure 40: Receptions to English prisons in 2011 who received a hepatitis C test

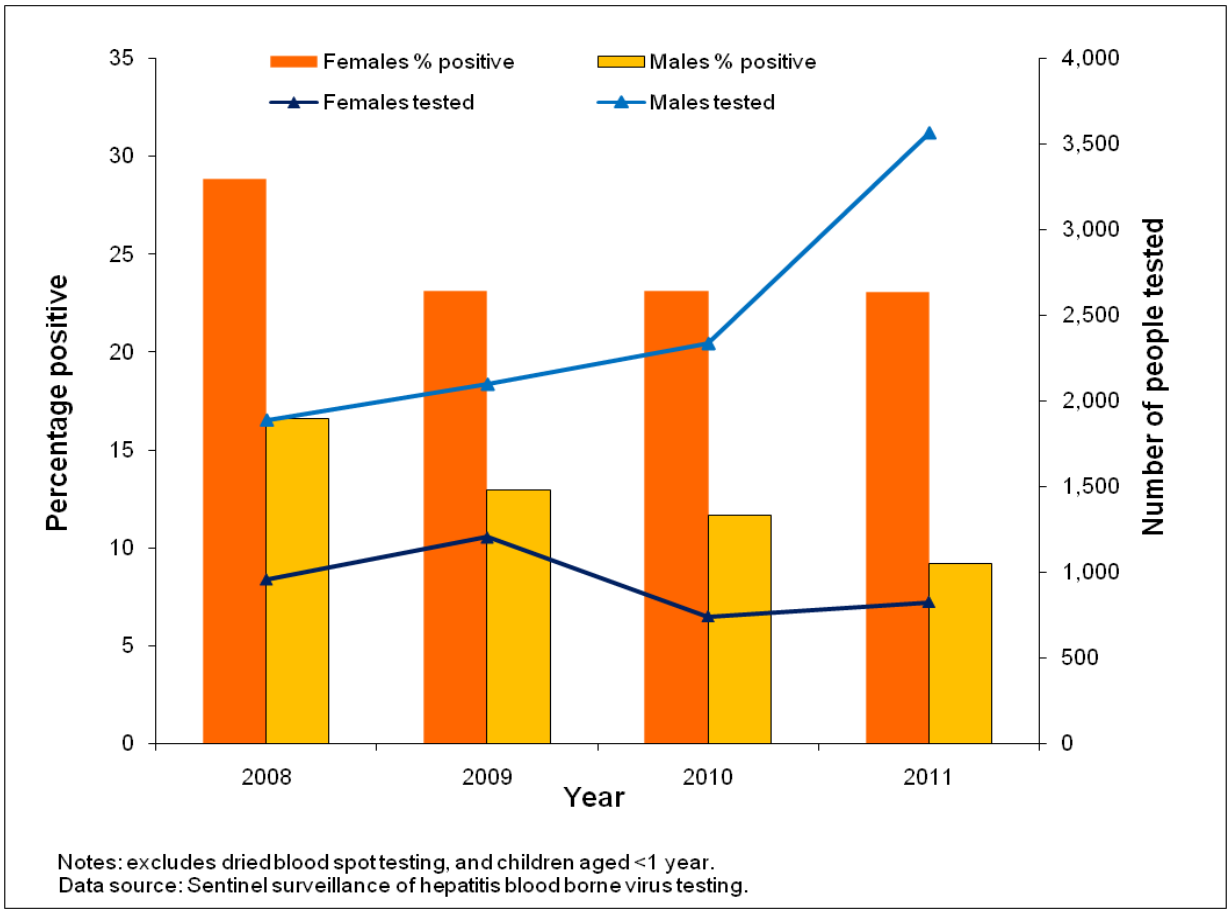


Figures above bars = Number of prisons submitting Hepatitis C data/Number of prisons in each region
Data source: NHS South West

In partnership with OH and the Department of Health's National Liver Disease Strategy Team, the HPA's Prison Infection Prevention (PIP) Team carried out a survey[37] of hepatitis C services in prisons in England between September and November 2011. Out of the 128 prisons in England that were invited to complete the survey, 110 responded (86%). The survey found that the overwhelming majority of prisons (109/110, 99%) use venous blood sampling for testing but 10% (11/110) also provided dried blood spot testing. Only 40% (44/110) of blood samples were routinely tested by PCR if they had a positive antibody test result.

Sentinel surveillance data in England suggest that testing via prison services varies by gender with the number of males tested increasing year-on-year, while the number of females tested has varied over the same period (Figure 41). The proportion of males testing positive has undergone a steady decline each year, however, the proportion of females testing positive has plateaued since 2009. Between 2008-2011, 25% of females tested positive compared to 12% of males ($p<0.001$). This may be due to a difference in the relative risk of female offenders having acquired hepatitis C compared to males, and/or differences in the offer and acceptance of blood-borne virus testing.

Figure 41: Number of people* tested for anti-HCV, and proportion positive, through prison services by year in 24 sentinel laboratories: 2008-2011



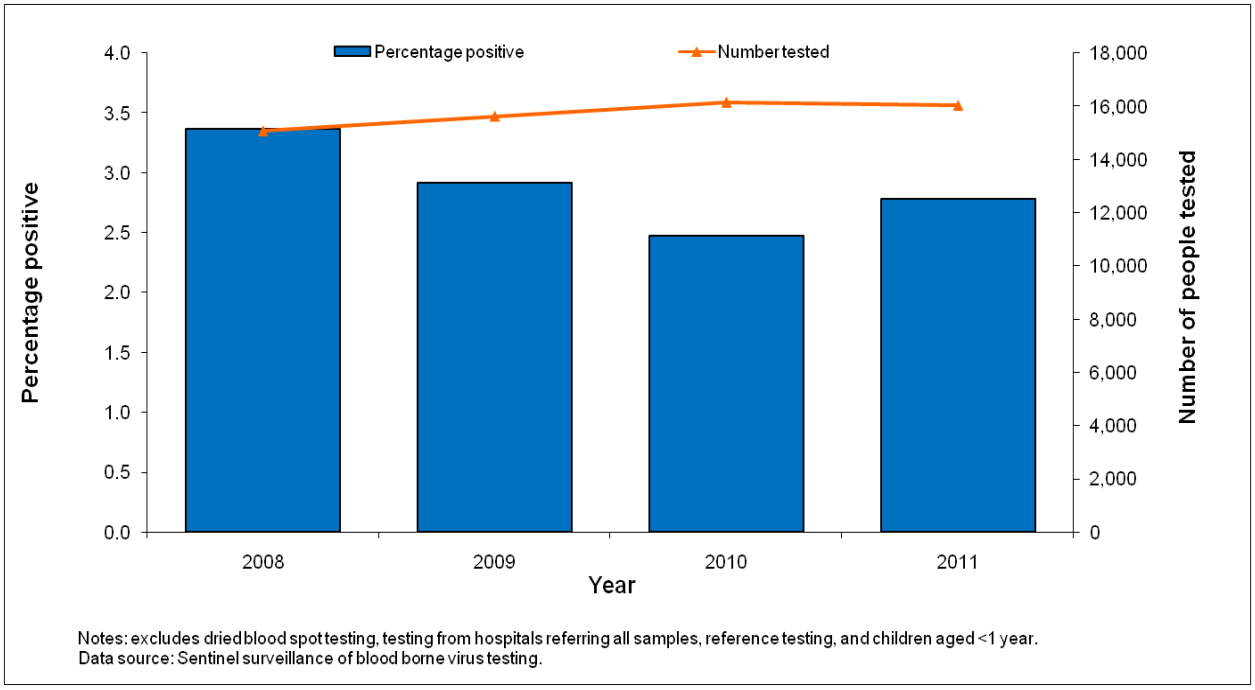
*401 individuals of unknown gender are not included in these figures.

In Wales a liver health programme with the promotion of diagnostic testing, including DBS, was launched across the Welsh prison estate in 2012 and data related to this are being collated.

Testing and diagnosis in Black and minority ethnic (BME) populations

In England, sentinel surveillance data indicates that the number of people tested who were identified as being of South Asian origin increased year-on-year from 2008 to 2010, then plateaued in 2011 (Figure 42). The overall increase in testing may be a reflection of targeted awareness-raising campaigns that have taken place among South Asian communities over recent years. Overall, the proportion of people of South Asian origin testing anti-HCV positive declined from 3.4% in 2008 to 2.8% in 2011.

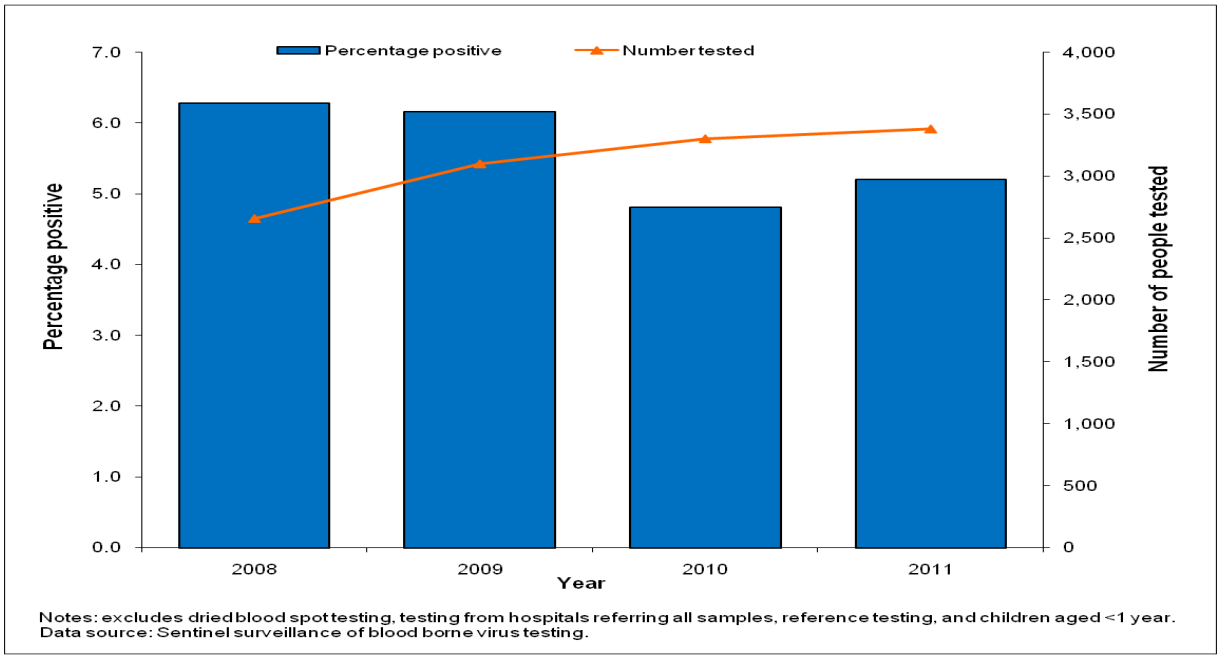
Figure 42: Number of South Asian people tested, and proportion positive, in 24 sentinel laboratories: 2008-2011



Notes: excludes dried blood spot testing, testing from hospitals referring all samples, reference testing, and children aged <1 year.
Data source: Sentinel surveillance of blood borne virus testing.

Sentinel surveillance data indicates that the number of people tested who were identified as being of Eastern European origin (using self-reports or ONOMAP[38] name analysis software), increased from 2,659 in 2008 to 3,383 to 2011 (Figure 43). Over this period (2008-2011), 6% of people of Eastern European origin tested positive. These data suggest that these individuals may be at relatively increased risk of having acquired hepatitis C and/or that testing of these ethnic groups is more targeted at higher risk individuals that in the general population.

Figure 43: Number of Eastern European people tested, and proportion positive, in 24 sentinel laboratories: 2008-2011



Notes: excludes dried blood spot testing, testing from hospitals referring all samples, reference testing, and children aged <1 year.
Data source: Sentinel surveillance of blood borne virus testing.

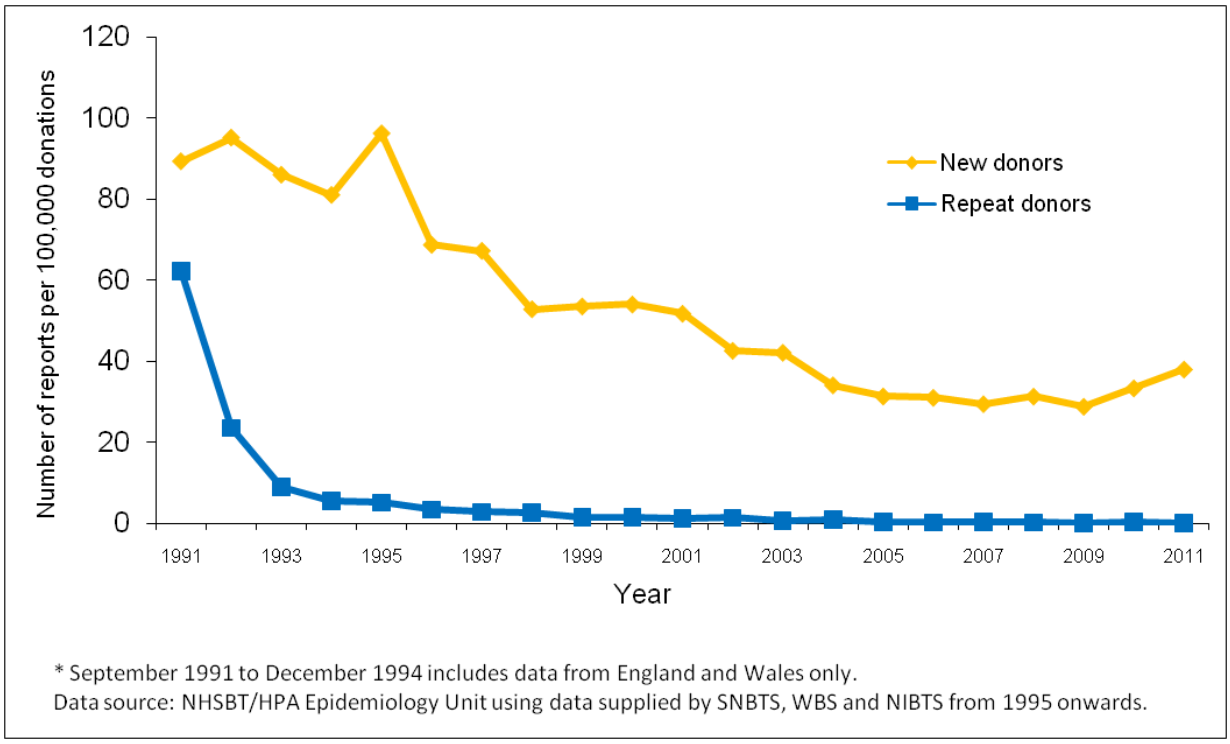
As the prevalence of HCV infection is known to be higher in parts of Africa[39,40,41] a pilot study among Nigerian and Ghanaian communities living in South East London was undertaken to test different approaches to testing in these communities and to obtain a preliminary estimate of HCV prevalence. This collaborative study between the South East London Health Protection Unit and HPA Colindale included individuals of Nigerian or Ghanaian descent who were over the age of 16 and who had lived for at least one year in Nigeria or Ghana. Individuals were recruited from African community meetings or via two sentinel GP practices. In total, 171 (134 from community sessions and 37 from sentinel GP practices) hepatitis C antibody oral fluid tests were carried out. Of these tests, eight (approx 5%) had initial anti-HCV reactive results. At the time of writing this report, confirmatory testing had been carried out on three of these, all of which tested negative for anti-HCV.

Testing and diagnosis in UK blood donors (low-risk population)

Monitoring infections in blood donors is important, as infections in populations at low risk of blood-borne viruses can be a marker of more significant problems in the wider population.

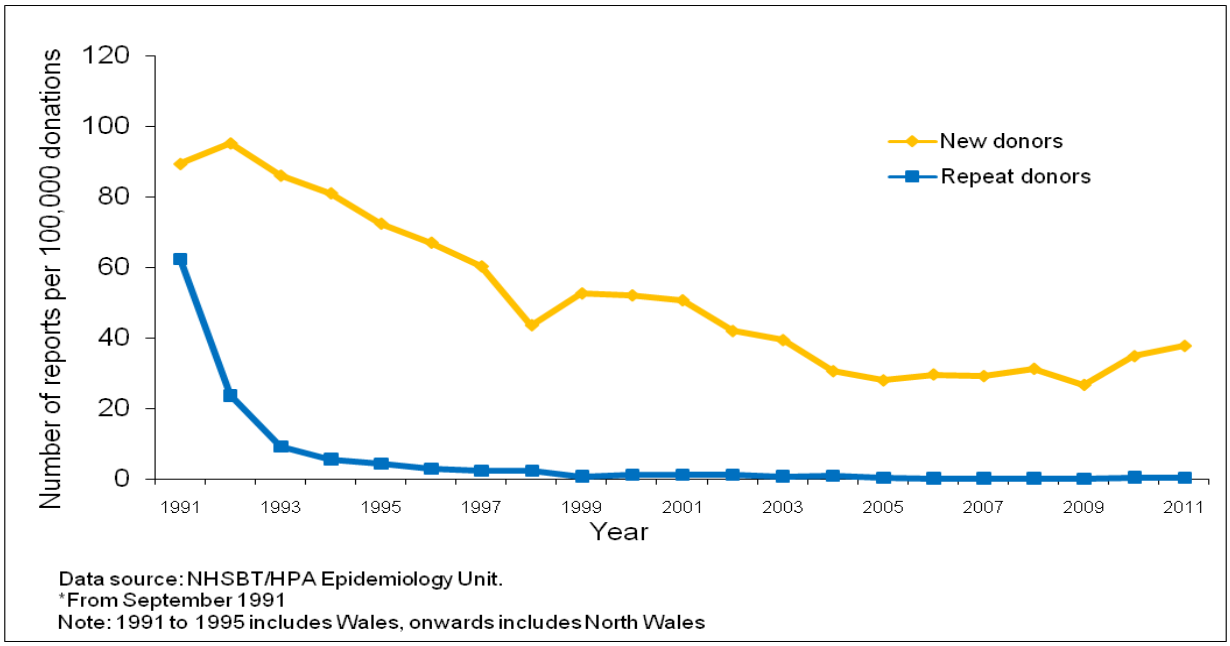
Overall in the UK, hepatitis C in both new and repeat donors has fallen. Since1995 (Figure 44), infections in new donors have fallen from a rate of 96.2 per 100,000 donations in 1995 to 38.0 in 2011, and the rate in repeat donors fell from 5.2 per 100,000 donations to 0.2 over the same period.

Figure 44: Rate of hepatitis C among new and repeat blood donors in UK during 1991*-2011



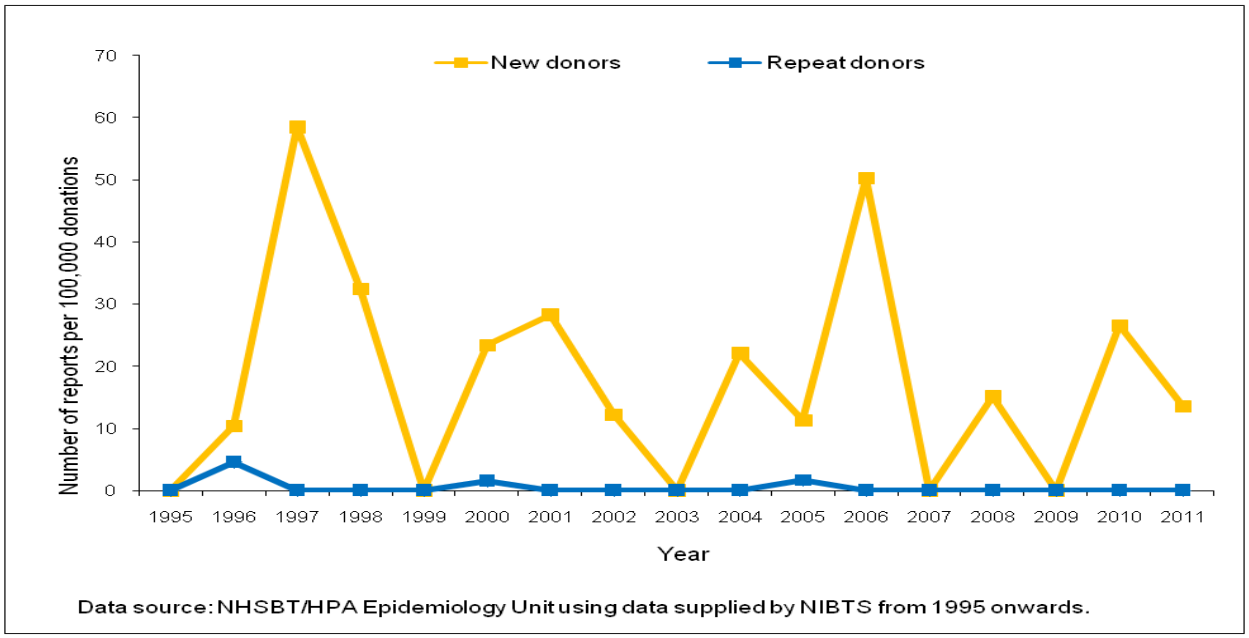
In 2011, 71 blood donors tested positive for HCV in England and North Wales; most (69%) infections detected were in new male blood donors and less than half were of white British ethnicity (Table 21). A disproportionately large number of infections were seen in those of South Asian origin and in those of 'other white' backgrounds, the majority of whom were born outside the UK, particularly in Asia and Eastern Europe. Since blood donation testing began in1991, fewer hepatitis C infections have been detected in donations from repeat donors compared with first time donors, and rates of infection have declined from 62.3 (1991) to 0.3 per 100,000 donations (in 2011) (Figure 45).

Figure 45: Rate of hepatitis C in blood donors in England: 1991*-2011. New and repeat donors



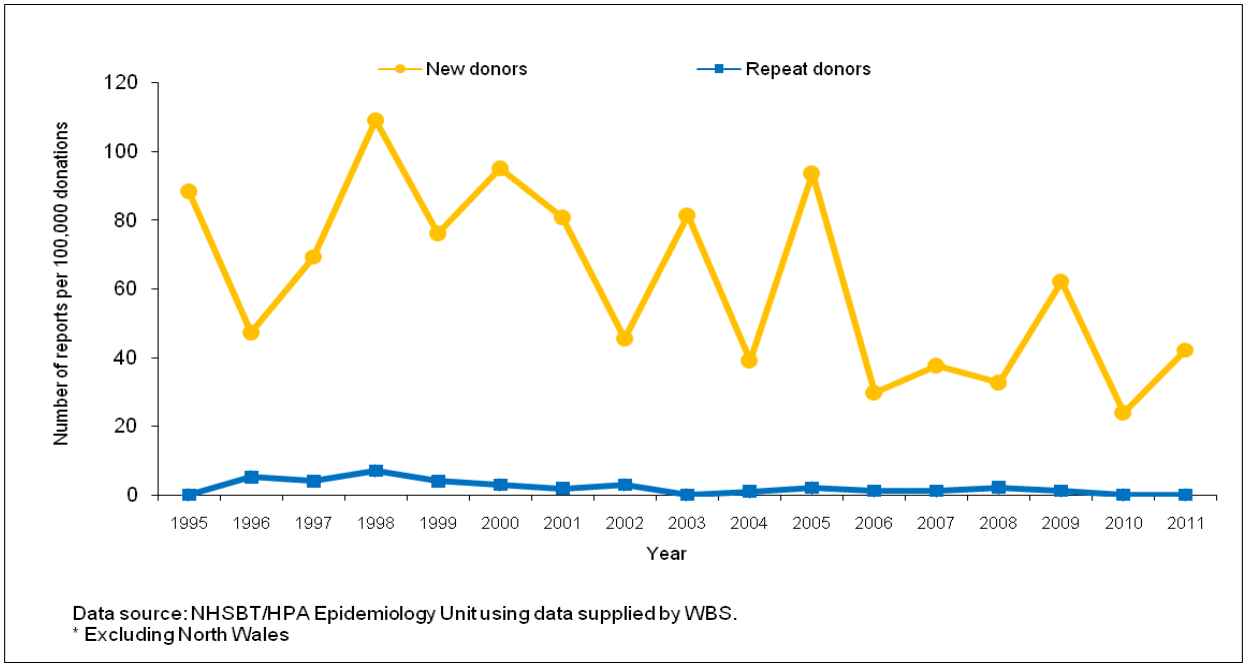
In Northern Ireland in 2011, 13.6 per 100,000 donations tested HCV positive (Figure 46). Hepatitis C is rarely detected in repeat donors and the rate of infection in new donors remains low but variable. (Figure 46)

Figure 46: Rate of hepatitis C in blood donors in Northern Ireland: 1995-2011. New and repeat donors



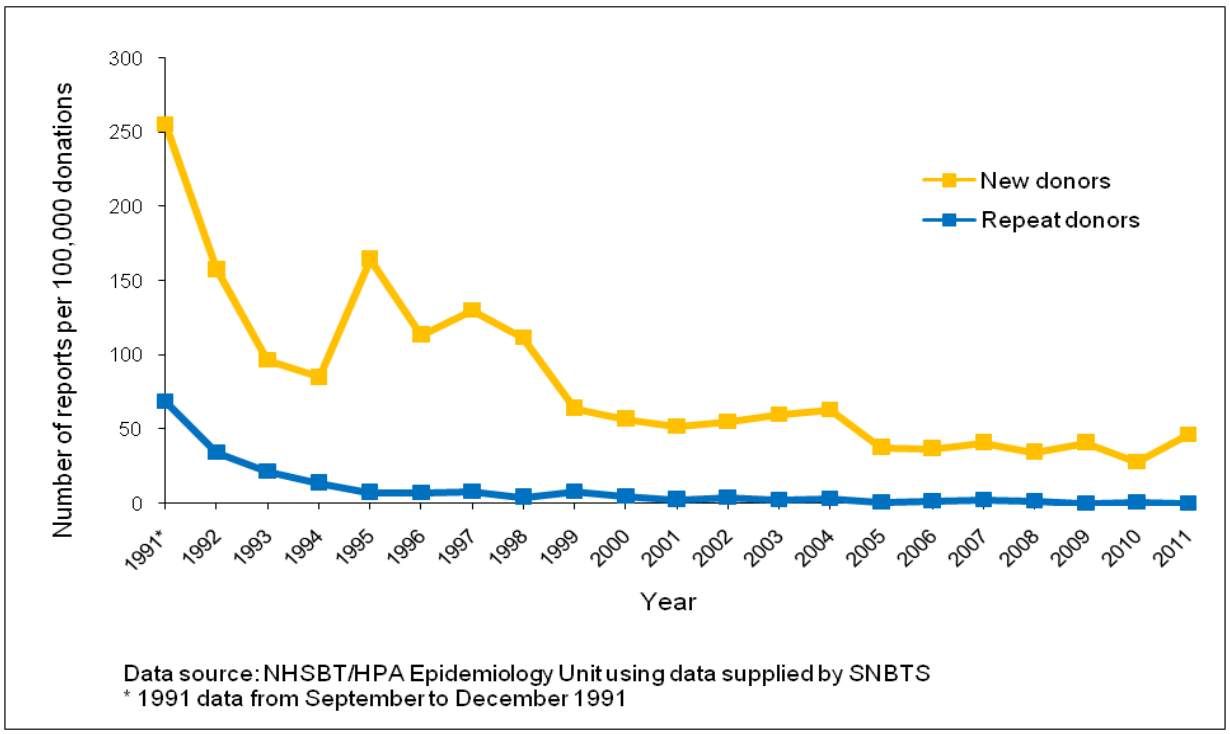
Excluding donations from North Wales, which are included in the English blood donor data, the rate of hepatitis C positive donations detected among all other new blood donors resident in Wales has declined overall (Figure 47). In 2011, a rate of 42.1 per 100,000 donations tested was observed amongst new donors; hepatitis C is rarely detected in repeat donors (Figure 47).

Figure 47: Rate of hepatitis C in blood donors in Wales*: 1995-2011. New and repeat donors



In Scotland, the rate of detection of hepatitis C among blood donors has declined in both new and repeat donors since 1991 (Figure 48). In 2011, a rate of 46.3 per 100,000 donations tested was observed among new donors; no repeat donor was found to be positive for hepatitis C.

Figure 48: Rate of hepatitis C among new and repeat blood donors in Scotland, during 1991*-2011.



Treatment and care

Many HCV infections occur in marginalised communities, in particular PWID and BME populations. It is therefore important to ensure that care pathways exist that allow these individuals, as well as others, to access the treatment and care they need.

Care pathways

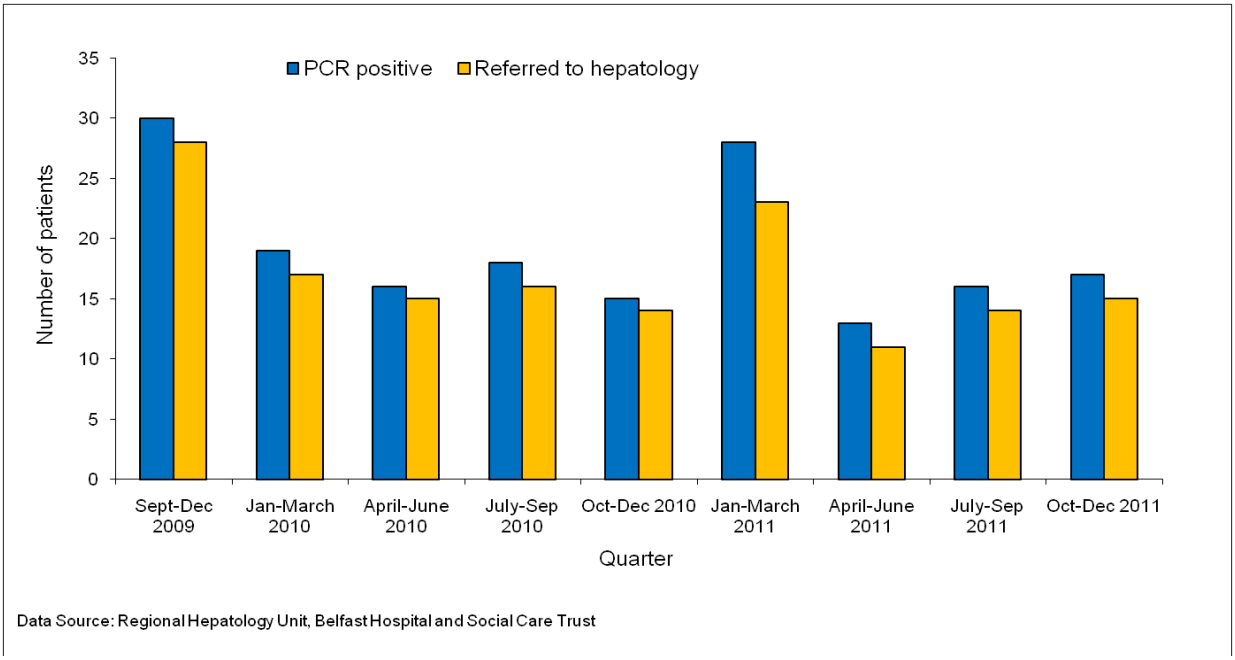
In England, one of the objectives in the HPA's Blood Borne Infections Programme Board Business Plan is to monitor and contribute towards improvements in the management of individuals with chronic hepatitis. The proportion of PCTs with treatment and care pathways in place for hepatitis C is one measure of this. In response to a survey in November 2011 in England, 24 of 26 health protection units (HPUs), representing 142/152 PCTs, reported progress via a proforma (Table 22). Seventy-eight percent of PCTs (111/142) were reported to have care pathways in place and 17 (71%) HPUs were involved in development of all or more than half of the pathways. Eleven (48%) HPUs reported that all or more than half of the care pathways had specific provision for prisoners and 12 (50%) HPUs reported that all or more than half of Drug Action Teams (DATs) had joint prevention plans with their PCTs; 10 (42%) HPUs reported that they were involved in all or more than half of their development plans. The proportion of PCTs with treatment and care pathways increased compared to 2010 (Table 22); however, the extent to which HPUs were involved in the development of those care pathways was slightly less in 2011 than in 2010. The extent to which HPUs were involved in development of DAT prevention plans was similar in both 2011 and 2010.

In England, preliminary information on access to HCV treatment services by PWID has been obtained from those participating in the UAM survey in 2011. Here participating PWID who reported having had a positive result to a diagnostic test for hepatitis C were asked: 'Have you ever seen a specialist nurse or doctor (e.g. a hepatologist) about your hepatitis C?' Among the survey participants in England with antibodies to hepatitis C who were are aware of their infection, 57% (237/414) reported that they had seen a specialist nurse or doctor about their infection, and of these 64% (152/237) reported being given medication related to their hepatitis C infection.

In the 2011 survey[37] of hepatitis C services in English prisons, 82/110 responding prisons (74%) had a written pathway in place to describe what happens following a positive hepatitis C result. Having a pathway in place is a requirement of the PHPQIs and most of those that do not currently have a pathway are in the process of developing one. The vast majority of prisons, 95 out of 110 (86%), provide follow up for prisoners being discharged into the community. For some prisons, this includes quite formal referral to a community based service. However, for others, this may simply involve giving a letter to the prisoner to give to their GP on release.

In Northern Ireland, from the third quarter of 2009, new laboratory-confirmed cases of hepatitis C have been followed-up three months after initial confirmation to check whether a referral to the Regional Hepatology Unit has been made. Contact is made with originating clinicians of HCV RNA positive cases where possible; following this contact referral rates are very good, with 62 referred of the 68 followed in 2010, (91%), and 63 of the 74 followed up in 2011 (85%). Work is ongoing to improve the rate of follow-up and to consider how to improve attendance rates after referral (Figure 49).

Figure 49: Referral of newly-diagnosed HCV RNA positive patients to hepatology



In Scotland, an estimated 18,000 people living in Scotland with chronic hepatitis C had been diagnosed with their infection by 2011; of these an estimated 4,750 (26%) had attended a specialist centre in 2011 (Figure 35).

Antiviral treatment for HCV infection

NICE recommended that antiviral treatments that will successfully clear hepatitis C virus in the majority of patients are made available. [7, 8, 9,10,11] In some UK countries, the number of individuals receiving anti-viral treatment is being monitored at a national level.

It is important to monitor levels of antiviral treatment at both national and local level to assess whether sufficient numbers of infected individuals are accessing treatment, and to identify and address any variation in hepatitis services that may exist across the UK.

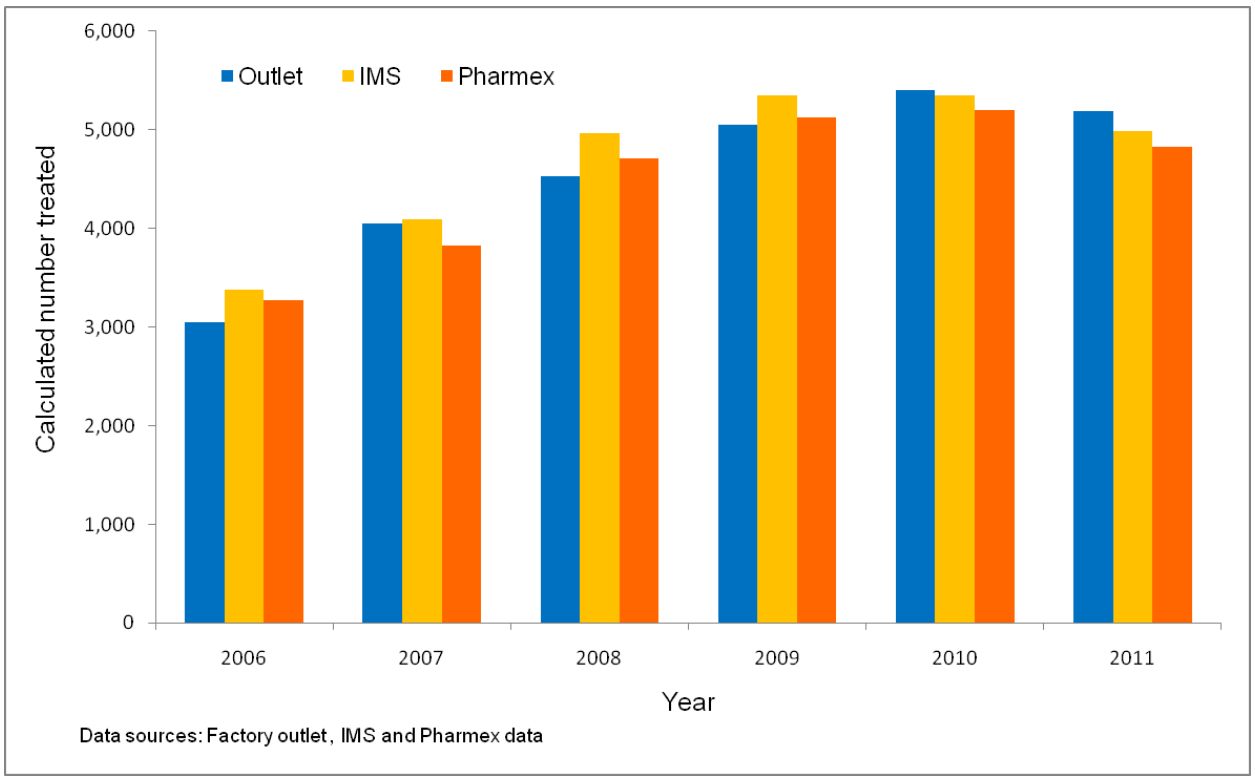
Data from England

In response to a national questionnaire issued in 2008 by the HPA, 130 (of a total 207) hospitals in England (response rate 201/207, 97%) reported treating patients with hepatitis C in 2008. Of the 85 (65%) hospitals that replied to a follow-up treatment questionnaire, 65 (76%) knew how many patients had started treatment or could provide an estimate (Table 23); these 65 hospitals reported starting 2,788 patients on antiviral treatment that year, similar to the number reported in the previous year (Table 23). Among 1,714 patients for whom treatment outcome in 2008 had been reported, preliminary results suggest that a SVR of 72% was achieved overall: 60% for genotype 1, 59% for genotype 4, 85% for genotype 2, 82% for genotype 3 and 70% among those whose genotype was reported as “other” or was unknown.

Because a proportion of clinical centres reported not knowing these figures, or failed to respond to requests for them, the HPA has used national data from pharmaceutical companies (factory outlet data), pharmacy purchasing data (Pharmex) and pharmacy prescribing data (IMS) to estimate how many individuals have been treated in England. These calculations suggest that around 27,500 patients with HCV could have been treated

with pegylated interferon as part of the NICE recommended combination therapy between 2006 and 2011. This is sufficient to have treated about 20% of the estimated total chronically infected population (Figure 50), although some may have been treated before 2006 when data was not collated.

Figure 50: Estimated numbers of HCV-positive patients receiving combined therapy based on national supply of pegylated interferon (factory outlet data, IMS and Pharmex data): 2006-2011



The magnitude of the annual increases in treatment declined between 2006 and 2010; in 2011 6% fewer patients were treated than in 2010. The decline in 2011 could be the result of a number of factors including: clinicians and/or patients waiting for new drugs, reaching clinical capacity, or reaching treatment saturation of those individuals who are easy-to-access, leaving mostly those who are harder to reach. Although guidelines exist which state that shorter courses of combination therapy can be considered in those achieving a rapid virological response,[42] anecdotal reports from clinicians suggest that this is unlikely to be the reason for the apparent fall in numbers treated in England over the last year.

Modelling work by the HPA is underway to examine the potential impact of an increase in the rate of treatment uptake on the predicted future burden of hepatitis C over the next 30 years and to estimate the number of new decompensated cirrhosis/HCC cases that may be averted. Analyses suggest that approximately 3% of the chronically infected population are treated each year. Initial results show that increasing treatment to 10% in those with moderate HCV and to 20% in those with compensated cirrhosis annually could reduce the number of new decompensated cirrhosis/HCC cases by around 2,060 (95% credible interval 1,750 – 2,430) over the next 10 years.

Pharmaceutical company research is ongoing to develop new drugs that both simplify treatment for hepatitis C and benefit patients for whom current treatments are ineffective. Two new direct acting antiviral agents (DAAs) have been recommended for use in genotype 1 infection[10,11] and other drugs are anticipated. In England, research has been funded at the

HPA by National Institute for Health Research's (NIHR) Centre for Health Protection Research to work closely with the clinicians using these new therapies to allow monitoring of the prevalence, clinical consequences and public health implications of antiviral resistance. This should build the foundation for developing a national monitoring system.

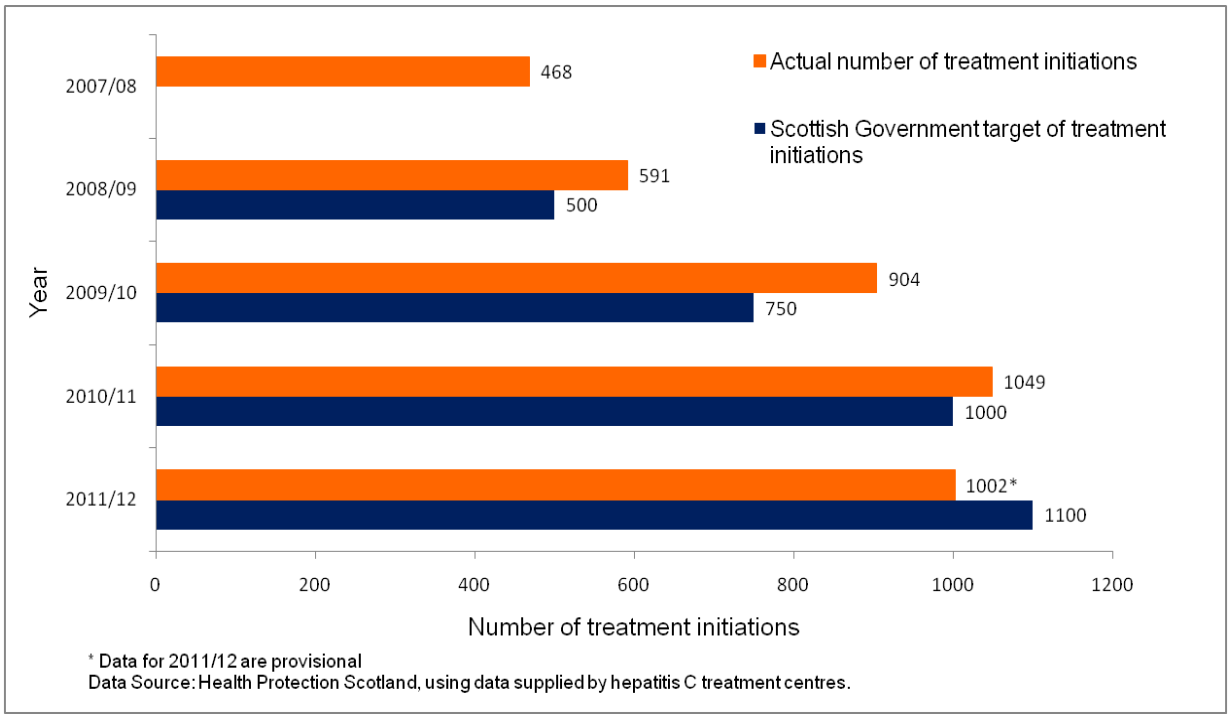
In 2011, a survey of hepatitis C services in English prisons[37] showed that the model for service delivery varies considerably across England; 45/110 responding prisons (41%) referred prisoners to outpatient hospital appointments; 59/110 prisons (54%) had an in-reach service provided by the local hospital and 22/110 (20%) of prisons provided treatment in-house overseen by the prison doctor (although it is not clear if this means that a prison doctor simply oversaw treatment prescribed and/or provided elsewhere or whether they had a more directive role in the care of their patients). It is difficult to provide accurate figures for the percentage of prisoners being assessed for, or commencing, treatment without an accurate figure for how many are hepatitis C positive and these data are not readily available. However, 70/110 prisons that responded were able to provide data on the number of prisoners who were referred for specialised assessment in 2010 (999 in all) and 74/110 prisons were able to provide data on the number of prisoners who commenced treatment in 2010 (281 in all).

By mapping existing provision for prisoners in England, in relation to hepatitis C testing and treatment, and developing a national database of services, the Department of Health's Liver Disease Strategy Team plans to co-ordinate a network of professionals across the country to enable better sharing of good practice and development of services. This work will be supported by PIP and OH to help ensure that ongoing data and information is provided to inform improvements to the testing and treatment of hepatitis C amongst prisoners in England.

Data from Scotland

The number of chronically infected people who began hepatitis C antiviral therapy in Scotland increased from 468 in 2007/08 to 591 in 2008/09, 904 in 2009/10 and 1,049 in 2010/11 (Figure 51). The numbers initiated on antiviral therapy exceed the Scottish Government targets of 500 in 2008/09, 750 in 2009/10 and 1,000 in 2010/11. Provisional data indicate that a total of 1,002 people were initiated on hepatitis C antiviral therapy in 2011/12 which is lower than the Scottish Government target of 1,100 for that financial year. However this needs to be considered in the context of the expected availability of protease inhibitors for the treatment of patients with genotype 1 virus infection in 2012/13.

Figure 51: The actual number, and the Scottish Government's target, of chronically infected people initiated on hepatitis C antiviral therapy in Scotland for the financial years, 2007/08-2011/12



Among patients (with either genotype 1, 2 or 3) initiated on pegylated interferon and ribavirin across nine clinics in Scotland during 2000-2007, 58% were known to have achieved a sustained viral response (SVR); this rate ranged from 39% among those with genotype 1 to 70% among those with genotypes 2 or 3.[12] SVR rates were marginally, although not significantly, lower among patients who reported having ever injected drugs: 36% among those with genotype 1 and 67% among those with genotypes 2 or 3.

Among people initiated on hepatitis C antiviral therapy in 16 hepatitis C treatment centres across Scotland, and who had reported a risk factor for infection, the number (and proportion) who had reported having ever injected drugs increased from 144 (58%) among those initiated in 2000 and 2001 to 803 (75%) in 2008 and 2009.[14] Among 901 people initiated on hepatitis C antiviral therapy in 16 centres across Scotland in 2010/11, the proportion who had reported having ever injected drugs (among those with a known risk factor) was higher again at 80%.

In Scotland, the number of chronically infected people initiated on hepatitis C antiviral therapy within the prison setting increased from 17 in 2007/08 (representing 4% of treatment initiations in that year) to 37 in 2008/09 (representing 6%), 112 in 2009/10 (representing 12%), and 143 in 2010/11 (representing 14%).

Support to help commission hepatitis C treatment and care

The HPA has updated its template to help DATs and Health and Wellbeing Boards estimate the prevalence of HCV in their local population[13] Local prevalence estimates can be obtained by entering the DAT name; the template will also generate local predictions of the future burden of disease as well as estimates of the costs to treat infected individuals. This information is still available by PCT by following the same link.[13]

Data Tables

Table 1: Laboratory confirmed cases of chronic hepatitis C in Northern Ireland (n=818) by genotype: 1990-2011

Genotype	Number of reports
1	403
2	56
3	315
4	33
5	2
6	9

Source: Regional Virus Laboratory and Regional Hepatology Service, Belfast Health and Social Care Trust

Table 2: Risk factor information in laboratory reports* of hepatitis C infection from England: 1996-2011

Risk factor (where reported)	Number of reports	Percentage
Injecting drug use	14734	90.1
Transfusion	221	1.4
Blood product recipient	120	0.7
Sexual exposure	334	2.0
Renal failure	73	0.4
Vertical (mother to baby) or Household	65	0.4
Occupational	17	0.1
Other	789	4.8
TOTAL	**16353**	**100**

*Statutory notification by diagnostic laboratories was introduced in October 2010 [5]

Table 3: Route of HCV transmission recorded for patients presenting for treatment to Regional Hepatology Unit, Belfast. 1990-2011

Route (where recorded)	Number
IVDU	382
Blood/blood products	118
Sex	37
Needlestick injury	13
Tattoo	13
Overseas healthcare	14
Mother to baby and household	6
Other	5

Data Source: Regional Hepatology Unit, Belfast Hospital and Social Care Trust

Table 4: Estimated HCV Prevalence by region and risk group in England (95% credible intervals) (2005)[1]

	Current IDUs	Ex-IDUs	White/other never injectors	South Asian never injectors
HCV prevalence (%) by region and risk group				
London	56 (51, 62)	39 (33, 46)	0.13 (0.08, 0.23)	0.76 (0.47, 1.35)
North West	61 (56, 66)	40 (34, 47)	0.05 (0.03, 0.09)	1.10 (0.35, 2.93)
Rest of England	37 (33, 41)	24 (19, 29)	0.04 (0.02, 0.07)	0.66 (0.40, 1.10)
HCV prevalence (in thousands) by region and risk group				
London	23 (19, 28)	26 (11, 51)	5.4 (3.4, 9.8)	4.1 (2.5, 7.3)
North West	20 (18, 23)	18 (8, 35)	1.8 (1.1, 3.5)	1.7 (0.5, 4.6)
Rest of England	45 (37, 54)	43 (19, 85)	7.5 (4.8, 14.4)	5.4 (3.2, 9.0)

Table 5: Enhanced Surveillance of BBV in people who inject drugs in Wales 2011[43]

Years of injecting drug history	Number of Individuals	Number of Individuals HCV +ve	Prevalence (%)
0-2y	**107**	**10**	**9**
3-4y	**63**	**9**	**14**
>5y	**514**	**189**	**37**
Total	**684**	**208**	**30**
Data source: Enhanced Surveillance of BBV in Wales database held by Public Health Wales, CDSC			

Table 6: Hospital admissions for end-stage liver disease* or hepatocellular carcinoma* in individuals with hepatitis C in England 1998-2011**

Year	Individuals with HCV	Individuals with HCV-related ESLD	Deaths from HCV-related ESLD (percentage of individuals with HCV-related ESLD)	Individuals with HCV-related HCC	Deaths from HCV-related HCC (percentage of individuals with HCV-related HCC)
1998	4,072	469	110 (23)	105	26 (25)
1999	4,708	489	124 (25)	145	36 (25)
2000	4,635	521	138 (26)	107	23 (21)
2001	5,304	543	149 (27)	137	33 (24)
2002	6,007	574	162 (28)	177	36 (20)
2003	6,563	607	175 (29)	173	46 (27)
2004	7,293	692	199 (29)	201	46 (23)
2005	8,025	868	252 (29)	243	56 (23)
2006	8,460	928	254 (27)	256	62 (24)
2007	8,962	1,029	287 (28)	275	63 (23)
2008	10,091	1,224	290 (24)	339	70 (21)
2009	10,447	1,317	349 (26)	361	71 (20)
2010	11,195	1,413	363 (26)	463	83 (18)
2011**	12,427	1,659	368 (22)	517	85 (16)
Data source: Hospital Episode Statistics, The NHS Information Centre for Health and Social Care					

*Defined by codes for hepatitis C, Hepatocellular carcinoma, ascites, bleeding oesophageal varices; hepato-renal syndrome, hepatic encephalopathy or hepatic failure.
** Provisional figure up to November 2011

Table 7: Number of Welsh residents[1] with hepatitis C who have ESLD* and/or HCC and have died from these conditions, in Wales 1997-2011

Number of patients[2] with HCV		Number of patients[2] with HCV related ESLD[4]		Deaths[3] from HCV related ESLD[4]		Number of patients[2] with HCV related HCC		Deaths[3] from HCV related HCC	
Year	Total	Year	Total	Year	Total (%)	Year	Total	Year	Total (%)
1997	178	1997	7	1997	1 (14)	1997	0	1997	0 (0)
1998	199	1998	9	1998	3 (33)	1998	0	1998	0 (0)
1999	197	1999	10	1999	1 (10)	1999	2	1999	1 (50)
2000	220	2000	12	2000	7 (58)	2000	5	2000	3 (60)
2001	241	2001	9	2001	2 (22)	2001	4	2001	1 (25)
2002	263	2002	16	2002	10 (63)	2002	3	2002	1 (33)
2003	289	2003	24	2003	5 (21)	2003	4	2003	2 (50)
2004	276	2004	22	2004	1 (5)	2004	3	2004	2 (67)
2005	318	2005	31	2005	9 (29)	2005	1	2005	1 (100)
2006	353	2006	29	2006	6 (21)	2006	8	2006	3 (38)
2007	321	2007	37	2007	9 (24)	2007	6	2007	0 (0)
2008	341	2008	27	2008	7 (26)	2008	8	2008	0 (0)
2009	329	2009	38	2009	10 (26)	2009	11	2009	2 (18)
2010	332	2010	39	2010	14 (36)	2010	14	2010	5 (36)
2011	384	2011	44	2011	17 (39)	2011	16	2011	5 (31)

Data source: Patient Episode Database for Wales (PEDW). NHS Wales Informatics Service.

[1]Data based on patients resident in Wales, admitted to providers in Wales or England. Admissions to non-NHS providers are not included.
[2]Count of distinct patients per year. If a patient is admitted twice within the same year, they are counted once only. Patients admitted in two years are counted once in each relevant year
[3]Deaths based on deaths in hospital. Deaths that occur elsewhere are not included in the analysis.
[4]Defined by codes for hepatitis C, Hepatocellular carcinoma, ascites, bleeding oesophageal varices; hepato-renal syndrome or hepatic failure.
*Data may be subject to change, as further data submissions may be received.

Table 8: Indications for liver transplants undertaken in HCV infected individuals in England: 1996-2011*

		First liver transplants with post hepatitis C cirrhosis at registration and HCV positive at registration or transplant (per cent of all liver transplants)			
Year	All Liver Transplants	Total	Post-hep C Cirrhosis	Hepatocellular carcinoma	Other Indication
1996	445	43 (10)	31 (7)	7 (2)	5 (1)
1997	485	57 (12)	44 (9)	10 (2)	3 (1)
1998	455	48 (11)	31 (7)	9 (2)	8 (2)
1999	494	76 (15)	51 (10)	19 (4)	6 (1)
2000	477	66 (14)	34 (7)	22 (5)	10 (2)
2001	482	68 (14)	44 (9)	20 (4)	4 (1)
2002	519	83 (16)	49 (9)	28 (5)	6 (1)
2003	476	76 (16)	47 (10)	21 (4)	8 (2)
2004	545	82 (15)	57 (10)	22 (4)	3 (1)
2005	468	55 (12)	28 (6)	21 (4)	6 (1)
2006	493	60 (12)	31 (6)	25 (5)	4 (1)
2007	497	65 (13)	30 (6)	28 (6)	7 (1)
2008	538	112 (21)	57 (11)	51 (9)	4 (1)
2009	523	92 (18)	40 (8)	49 (9)	3 (1)
2010	548	96 (18)	45 (8)	50 (9)	1 (0)
2011	572	102 (18)	49 (9)	51 (9)	2 (0)
TOTAL	**8017**	**1181 (15)**	**668 (8)**	**433 (5)**	**80 (1)**
*These figures are based on registry data as at 9 May 2012					
Data Source: NHS Blood and Transplant					

Table 9: Indications for liver transplants undertaken in HCV infected individuals in Northern Ireland and Wales: 1996-2011*

		First liver transplants with post hepatitis C cirrhosis at registration and HCV positive at registration or transplant (per cent of all liver transplants)			
Year	All Liver Transplants	Total	Post-hep C Cirrhosis	Hepatocellular carcinoma	Other Indication
1996	31	1 (3)	1 (3)	0 (0)	0 (0)
1997	42	1 (2)	1 (2)	0 (0)	0 (0)
1998	45	3 (7)	3 (7)	0 (0)	0 (0)
1999	45	6 (13)	5 (11)	1 (2)	0 (0)
2000	35	4 (11)	2 (6)	1 (3)	1 (3)
2001	43	1 (2)	0 (0)	1 (2)	0 (0)
2002	46	4 (9)	3 (7)	1 (2)	0 (0)
2003	31	3 (10)	1 (3)	0 (0)	2 (6)
2004	48	4 (8)	2 (4)	1 (2)	1 (2)
2005	24	1 (4)	1 (4)	0 (0)	0 (0)
2006	39	8 (21)	4 (10)	4 (10)	0 (0)
2007	50	6(12)	5 (10)	1 (2)	0 (0)
2008	52	8 (15)	4 (8)	3 (6)	1 (2)
2009	39	10 (26)	7 (18)	3 (8)	0 (0)
2010	40	5 (13)	2 (5)	3 (8)	0 (0)
2011	51	3 (6)	1 (2)	2 (4)	0 (0)
Total	661	68 (10)	42 (6)	21 (3)	5 (1)
*These figures are based on registry data as at 9 May 2012					
Data Source: NHS Blood and Transplant					

Table 10: Indications for liver transplant undertaken in HCV infected individuals in Scotland: 1996-2011*

		First liver transplants with post hepatitis C cirrhosis at registration and HCV positive at registration or transplant (per cent of all liver transplants)			
Year	All Liver Transplants	Total	Post-hep C Cirrhosis	Hepatocellular carcinoma	Other Indication
1996	44	4 (9)	4 (9)	0 (0)	0 (0)
1997	40	4 (10)	2 (5)	0 (0)	2 (5)
1998	54	7 (13)	3 (6)	2 (4)	2 (4)
1999	54	4 (7)	1 (2)	2 (4)	1 (2)
2000	58	6 (10)	4 (7)	1 (2)	1 (2)
2001	56	7 (13)	3 (5)	3 (5)	1 (2)
2002	59	5 (8)	4 (7)	1 (2)	0 (0)
2003	52	4 (8)	1 (2)	2 (4)	1 (2)
2004	55	6 (11)	3 (5)	3 (5)	0 (0)
2005	60	10 (17)	9 (15)	1 (2)	0 (0)
2006	64	6 (9)	4 (6)	1 (2)	1 (2)
2007	55	8 (15)	5 (9)	3 (5)	0 (0)
2008	78	12 (15)	5 (6)	7 (9)	0 (0)
2009	76	6 (8)	3 (4)	3 (4)	0 (0)
2010	85	19 (22)	10 (12)	9 (11)	0 (0)
2011	95	11 (12)	5 (5)	5 (5)	1 (1)
TOTAL	**985**	**119 (12)**	**66(7)**	**37 (4)**	**5 (1)**
*These figures are based on registry data as at 9 May 2012					
Data Source: NHS Blood and Transplant					

Table 11: Injecting status of adults in drug treatment 2005/06-2010/11 in England

Injecting status of adults in drug treatment												
	2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011	
Injecting status	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting
Current injector	47,897	18,724	54,570	18,589	57,500	18,524	59,923	18,421	56,419	14,892	53,853	12,850
Previously injected	36,319	16,180	42,510	16,976	48,124	18,413	54,371	20,415	58,161	20,448	61,002	19,719
All current/previous injectors	84,216	34,904	97,080	35,565	105,624	36,937	114,294	38,836	114,580	35,340	114,855	32,569
Data source: National Drug Treatment Monitoring System												

*This table shows the number of injectors where a person is classed as an injector if they have 'currently injecting' or 'previously injecting' listed as their injecting status within their latest treatment journey. If a person has been classified as 'currently injecting' and 'previously injecting' they are assumed to be 'currently injecting'. For all in treatment, clients who reported as 'currently injecting' when they entered treatment over the years may have ceased to inject during the reporting period. 'Newly presenting' refers to a person starting a new treatment journey in the financial year.

**The numbers for 2008/2009 vary slightly from those submitted for the 2009 HCV in the UK report for two main reasons – (i) because the 2008-09 drug treatment statistics were revised to include data from Bristol which were not available at the time of the 2009 publication, and (ii) a small change in the methodology used to calculate the numbers of people injecting drugs in order to correspond with methodology used in other reports by the NTA.

Table 12: Number of active PWID who have self-reported HCV status in Wales from the HRD.

Self-reported HCV status recorded	Drug type – reported primary substance used	
	Steroids and image enhancing drug* users	Drug users excluding steroid and image enhancing** drug users
Positive	5	129
Negative	271	828
Not Known	349	388
Total	625	1345
Data from Harm Reduction Database, Public Health Wales		

* steroids, growth hormone, melanotan

** heroin, cocaine, amphetamine, ketamine, 'legal highs'

Table 13: Number of injecting paraphernalia items (rounded to nearest 1,000) reported to have been distributed by injection equipment provider outlets in Scotland.

	2004/05	2007/08	2008/09	2009/10	N-fold increase from 2008/09 to 2009/10
Needles/syringes	3,554,000	4,438,000	4,381,000	4,681,000	1.1
Filters	NA	NA	356,000	2,224,000	6.2
Spoons/Cookers	NA	NA	509,000	2,143,000	4.2
Water	NA	NA	62,000	77,000	1.2

NA = Data not available

Table 14: Laboratory reports* of hepatitis C infection by English region: 1995-2011

Region	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
East Midlands	128	151	183	182	198	189	151	242	326	384	471	281	402	634	599	490	650	**5661**
Eastern	124	224	374	546	565	553	432	353	414	522	589	623	623	683	606	541	794	**8566**
London	203	263	257	335	300	265	319	332	397	749	811	1197	1023	975	864	953	2016	**11259**
North East	2	13	40	58	111	130	115	137	229	240	286	245	139	168	266	261	270	**2710**
North West	206	135	110	631	1057	898	1069	1383	2001	1851	1504	1366	1741	1667	2183	2000	1691	**21493**
South East	313	585	664	931	801	601	569	530	495	407	322	389	825	1133	1170	1165	1259	**12159**
South West	313	410	483	449	714	855	726	855	709	939	689	871	1045	1121	1005	714	906	**12804**
West Midlands	36	145	229	558	642	616	558	670	523	563	593	516	633	707	876	788	768	**9421**
Yorkshire and Humberside	66	77	157	142	237	393	236	306	477	588	1032	1475	1380	1325	1097	980	1554	**11522**
TOTAL	**1391**	**2003**	**2497**	**3832**	**4625**	**4500**	**4175**	**4808**	**5571**	**6243**	**6297**	**6963**	**7811**	**8413**	**8666**	**7892**	**9908**	**95595**

*Statutory notification by diagnostic laboratories was introduced in October 2010 [5]

Table 15: Reports of new cases of Hepatitis C in Northern Ireland where PCR is positive on initial sample

	PCR POS	PCR NEG	INSUFFICIENT	TOTAL
2010	73	28	5	**106**
2011	76	37	0	**113**

Data source: Regional Virus Laboratory, Belfast and Social Care Trust

Table 16: Hepatitis C test status of adults in drug treatment in England - all persons

Hepatitis C test status of adults in drug treatment - all persons													
		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011	
		All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting
Has a hepatitis C test recorded	No.	20,773	9,608	35,096	15,143	57,929	22,378	75,668	27,690	93,162	31,629	105,380	32,397
	%	11.8%	11.6%	18.1%	18.9%	28.8%	27.2%	35.9%	32.8%	45.0%	39.9%	51.5%	43.8%
Does not have a hepatitis C test recorded	No.	155,096	73,327	159,077	65,079	142,876	59,957	135,147	56,830	113,727	47,626	99,093	41,631
	%	88.2%	88.4%	81.9%	81.1%	71.2%	72.8%	64.1%	67.2%	55.0%	60.1%	48.5%	56.2%
Total		**175,869**	**82,935**	**194,173**	**80,222**	**200,805**	**82,335**	**210,815**	**84,520**	**206,889**	**79,255**	**204,473**	**74,028**

Data source: National Drug Treatment Monitoring System

*This table shows the number of injectors where a person is classed as an injector if they have 'currently injecting' or 'previously injecting' listed as their injecting status within their latest treatment journey. If a person has been classified as 'currently injecting' and 'previously injecting' they are assumed to be 'currently injecting'. For all in treatment, clients who reported as 'currently injecting' when they entered treatment over the years may have ceased to inject during the reporting period. 'Newly presenting' refers to a person starting a new treatment journey in the financial year.

**The numbers for 2008/2009 vary slightly from those submitted for the 2009 HCV in the UK report for two main reasons – (i) because the 2008-09 drug treatment statistics were revised to include data from Bristol which were not available at the time of the 2009 publication, and (ii) a small change in the methodology used to calculate the numbers of people injecting drugs in order to correspond with methodology used in other reports by the NTA.

Table 17: Hepatitis C test status of adults in drug treatment in England - injectors only

Hepatitis C test status of adults in drug treatment - injectors only													
		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011	
		All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting
Has a hepatitis C test recorded	No.	15,562	6,976	26,611	10,903	41,743	14,414	54,507	17,917	66,130	19,575	73,942	19,532
	%	18.5%	20.0%	27.4%	30.7%	39.5%	39.0%	47.7%	46.1%	57.7%	55.4%	64.4%	60.0%
Does not have a hepatitis C test recorded	No.	68,654	27,928	70,469	24,662	63,881	22,523	59,787	20,919	48,450	15,765	40,913	13,037
	%	81.5%	80.0%	72.6%	69.3%	60.5%	61.0%	52.3%	53.9%	42.3%	44.6%	35.6%	40.0%
Total		**84,216**	**34,904**	**97,080**	**35,565**	**105,624**	**36,937**	**114,294**	**38,836**	**114,580**	**35,340**	**114,855**	**32,569**
Data source: National Drug Treatment Monitoring System													

*This table shows the number of injectors where a person is classed as an injector if they have 'currently injecting' or 'previously injecting' listed as their injecting status within their latest treatment journey. If a person has been classified as 'currently injecting' and 'previously injecting' they are assumed to be 'currently injecting'. For all in treatment, clients who reported as 'currently injecting' when they entered treatment over the years may have ceased to inject during the reporting period. 'Newly presenting' refers to a person starting a new treatment journey in the financial year.

**The numbers for 2008/2009 vary slightly from those submitted for the 2009 HCV in the UK report for two main reasons – (i) because the 2008-09 drug treatment statistics were revised to include data from Bristol which were not available at the time of the 2009 publication, and (ii) a small change in the methodology used to calculate the numbers of people injecting drugs in order to correspond with methodology used in other reports by the NTA.

Table 18: Hepatitis C intervention status for adults in drug treatment in England- all persons

Hepatitis C intervention status for adults in drug treatment - all persons													
		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011	
Recorded hepatitis C status		All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting
Offered and accepted	No.	563	203	2,752	1,405	37,681	23,341	68,804	32,424	91,346	33,872	98,231	31,702
	%	0.3%	0.2%	1.4%	1.8%	18.8%	28.3%	32.6%	38.4%	44.2%	42.7%	48.0%	42.8%
Offered and refused	No.	452	180	1,878	962	23,531	15,345	42,711	22,080	56,488	25,450	62,199	26,291
	%	0.3%	0.2%	1.0%	1.2%	11.7%	18.6%	20.3%	26.1%	27.3%	32.1%	30.4%	35.5%
Assessed as not appropriate to offer	No.	n/a	n/a	n/a	n/a	n/a	n/a	1,253	614	8,603	6,176	13,287	7,858
	%	-	-	-	-	-	-	0.6%	0.7%	4.2%	7.8%	6.5%	10.6%
Not offered	No.	685	300	3,193	1,797	22,294	14,014	27,421	13,561	17,843	6,193	10,949	3,447
	%	0.4%	0.4%	1.6%	2.2%	11.1%	17.0%	13.0%	16.0%	8.6%	7.8%	5.4%	4.7%
Status recorded	No.	1,700	683	7,823	4,164	83,506	52,700	140,189	68,679	174,280	71,691	184,666	69,298
No recorded status	No.	174,169	82,252	186,350	76,058	117,299	29,635	70,626	15,841	32,609	7,564	19,807	4,730
	%	99.0%	99.2%	96.0%	94.8%	58.4%	36.0%	33.5%	18.7%	15.8%	9.5%	9.7%	6.4%
Total		**175,869**	**82,935**	**194,173**	**80,222**	**200,805**	**82,335**	**210,815**	**84,520**	**206,889**	**79,255**	**204,473**	**74,028**
Data source: National Drug Treatment Monitoring System													

*Information about whether people have been offered a hepatitis C test is recorded at the beginning of their latest period of treatment.

**This table shows the number of injectors where a person is classed as an injector if they have 'currently injecting' or 'previously injecting' listed as their injecting status within their latest treatment journey. If a person has been classified as 'currently injecting' and 'previously injecting' they are assumed to be 'currently injecting'. For all in treatment, clients who reported as 'currently injecting' when they entered treatment over the years may have ceased to inject during the reporting period. 'Newly presenting' refers to a person starting a new treatment journey in the financial year.

***The numbers for 2008/2009 vary slightly from those submitted for the 2009 HCV in the UK report for two main reasons – (i) because the 2008-09 drug treatment statistics were revised to include data from Bristol which were not available at the time of the 2009 publication, and (ii) a small change in the methodology used to calculate the numbers of people injecting drugs in order to correspond with methodology used in other reports by the NTA.

Table 19: Hepatitis C intervention status for adults in drug treatment in England– injectors only

Hepatitis C intervention status for adults in drug treatment - injectors only													
		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011	
Recorded hepatitis C status		All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting	All in treatment	Newly presenting
Offered and accepted	No.	442	144	2,060	957	24,386	13,449	44,376	18,258	59,210	18,218	63,603	16,589
	%	0.5%	0.4%	2.1%	2.7%	23.1%	36.4%	38.8%	47.0%	51.7%	51.6%	55.4%	50.9%
Offered and refused	No.	297	100	1,224	533	11,809	6,409	20,918	8,913	27,431	9,738	29,949	9,915
	%	0.4%	0.3%	1.3%	1.5%	11.2%	17.4%	18.3%	23.0%	23.9%	27.6%	26.1%	30.4%
Assessed as not appropriate to offer	No.	n/a	n/a	n/a	n/a	n/a	n/a	738	323	4,065	2,539	6,190	3,197
	%	-	-	-	-	-	-	0.6%	0.8%	3.5%	7.2%	5.4%	9.8%
Not offered	No.	424	171	2,076	1,019	11,340	5,832	13,230	5,384	8,471	2,249	5,599	1,306
	%	0.5%	0.5%	2.1%	2.9%	10.7%	15.8%	11.6%	13.9%	7.4%	6.4%	4.9%	4.0%
Status recorded	No.	1,163	415	5,360	2,509	47,535	25,690	79,262	32,878	99,177	32,744	105,341	31,007
No recorded status	No.	83,053	34,489	91,720	33,056	58,089	11,247	35,032	5,958	15,403	2,596	9,514	1,562
	%	98.6%	98.8%	94.5%	92.9%	55.0%	30.4%	30.7%	15.3%	13.4%	7.3%	8.3%	4.8%
Total		**84,216**	**34,904**	**97,080**	**35,565**	**105,624**	**36,937**	**114,294**	**38,836**	**114,580**	**35,340**	**114,855**	**32,569**
Data source: National Drug Treatment Monitoring System													

*Injectors' are those who report injecting at the beginning of their latest period of treatment. It also includes those who were not injecting when they began treatment, but who report previous injecting.

**This table shows the number of injectors where a person is classed as an injector if they have 'currently injecting' or 'previously injecting' listed as their injecting status within their latest treatment journey. If a person has been classified as 'currently injecting' and 'previously injecting' they are assumed to be 'currently injecting'. For all in treatment, clients who reported as 'currently injecting' when they entered treatment over the years may have ceased to inject during the reporting period. 'Newly presenting' refers to a person starting a new treatment journey in the financial year.

***The numbers for 2008/2009 vary slightly from those submitted for the 2009 HCV in the UK report for two main reasons – (i) because the 2008-09 drug treatment statistics were revised to include data from Bristol which were not available at the time of the 2009 publication, and (ii) a small change in the methodology used to calculate the numbers of people injecting drugs in order to correspond with methodology used in other reports by the NTA.

Table 20: Hepatitis C results from Dried Blood Spot Testing Wales in 2011

Year	Number of DBS tested	Number Of HCV Ab reactive	Number of follow up bloods received	Number of HCV PCR positive from FU
2011	**1847**	**339**	**70**	**54**
Data source: Virology Specialist Centre, Public Health Wales, University Hospital of Wales, Cardiff				

Table 21: Characteristics and probable exposure history of HCV infected blood donors by sex, England and North Wales 2011.

Characteristics of infected donors	New donors[1]				Repeat donors[1]				Total	
	Male	Female	Total	%	Male	Female	Total	%		%
Number	49	17	66	*100*	3	2	5	*100*	71	*100*
Prevalence per 100 000 donors	64.9	17.6	38.4		0.3	0.2	0.27		3.8	
Ethnic group										
White-British	20	8	28	*42*	3	1	4	*80*	32	*45*
Mixed-White/Black African	1	0	1	*2*	0	0	0	*0*	1	*1*
Mixed-White/Black Caribbean	1	0	1	*2*	0	0	0	*0*	1	*1*
Any other white background	13	7	20	*30*	0	1	1	*20*	21	*30*
Pakistani	9	1	10	*15*	0	0	0	*0*	10	*14*
Any other Asian background	3	1	4	*6*	0	0	0	*0*	4	*6*
Any other mixed background	1	0	1	*2*	0	0	0	*0*	1	*1*
Ethnicity information not disclosed	1	0	1	*2*	0	0	0	*0*	1	*1*
Area of birth										
UK	13	7	20	*30*	2	0	2	*40*	22	*31*
Europe excl UK	12	4	16	*24*	0	1	1	*20*	17	*24*
Asia	12	2	14	*21*	0	0	0	*0*	14	*20*
Other	2	1	3	*5*	0	0	0	*0*	3	*4*
Not known	10	3	13	*20*	1	1	2	*40*	15	*21*
Probable exposure category										
Injecting drug use	11	2	13	*20*	1	0	1	*20*	14	*20*
Non IDU	2	2	4	*6*	0	0	0	*0*	4	*6*
Sex between men and women	2	2	4	*6*	1	1	2	*40*	6	*8*
Blood/tissue transfer, blood product treatment	1	1	2	*3*	0	0	0	*0*	2	*3*
Blood contact possible	10	7	17	*26*	0	0	0	*0*	17	*24*
Family/household contact	1	1	2	*3*	0	0	0	*0*	2	*3*
Born in an endemic country[2]	6	1	7	*11*	0	0	0	*0*	7	*10*
Incomplete follow up	16	1	17	*26*	2	0	2	*40*	19	*27*

[1] As classified according to evidence supplied to the NHSBT/HPA Epidemiology Unit

[2] Probable risk in the absence of any other information

Table 22: Health Protection Agency audit of care pathways in England (2009-2011) – survey of HPUs

		Number in 2011 (%)	2010	2009
Treatment care pathways	Number of PCTs	142	%	%
	Number of prisons	119		
	Proportion of PCTs with treatment care pathway	111 (78.2)	71.3	47.8
	HPU involved in all	13 (54)	50	41.7
	HPU involved in more than half	4 (17)	30.8	20.8
	HPU involved in less than half	5 (21)	19.2	20.8
	Don't know	0 (0)	0	8.3
	Involved in none	2 (8)	0	4.2
HPUs reporting proportion of care pathways with specific provision for prisoners	All care pathways	5 (22)	34.6	26.1
	More than half	6 (26)	30.8	8.7
	Less than half	6 (26)	11.5	30.4
	Don't know	3 (13)	15.4	21.7
	None	3 (13)	7.7	8.7
HPUs reporting proportion of DATs that have joint prevention plans with PCTs	All DATs	7 (29)	23.1	20.8
	More than half	5 (21)	26.9	16.7
	Less than half	6 (25)	15.4	20.8
	Don't know	5 (21)	23.1	29.2
	None	1 (4)	11.5	29.2
Extent to which HPU involved in development of DAT prevention plan	HPU involved in all	6 (25)	23.1	29.2
	HPU involved in more than half	4 (17)	19.2	16.7
	HPU involved in less than half	8 (33)	26.9	29.2
	Don't know	1 (4)	7.7	12.5
	Involved in none	5 (21)	23.1	12.5

Table 23: Number of patients starting treatment in England in 2007- 2008 from hospital data

Year	Number of hospitals responding	Number of responding hospitals providing treatment data	Number of patients starting treatment in responding hospitals - including hospital estimates (% of treating hospitals)
2007	119/131 (91%)	76/119 (63%)	2829 (58%)
2008	85/130 (65%)	65/85 (76%)	2788 (50%)

Data Sources

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2. HPA Sentinel Surveillance of Hepatitis C Testing: http://www.hpa.org.uk/ssbbv
3. Unlinked Anonymous Monitoring survey of IDUs in contact with specialist drug services. http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/InjectingDrugUsers/
4. NHS Blood and Transplant/HPA Blood Donor Infection Surveillance Scheme: http://www.blood.co.uk/
5. Enhanced Surveillance off Newly Acquired Hepatitis C infection in men who have sex with men. http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/HIVAndSTIs/SurveillanceSystemsHIVAndSTIs/hivsti_SNAHC/
6. Office for National Statistics mortality data: http://www.statistics.gov.uk/default.asp
7. Hospital Episode Statistics, The NHS Information Centre for Health and Social Care: http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=53
8. Oral fluid testing data, Concateno plc: http://www.concateno.com/
9. Transplant data, NHS Blood and Transplant: http://www.organdonation.nhs.uk/ukt/default.jsp
10. National Drug Treatment Monitoring System: https://www.ndtms.net/Default.aspx
11. Northern Ireland Blood Transfusion Service: http://www.nibts.org/
12. NHS National Services Scotland (Health Protection Scotland and Information Services Division): http://www.nhsnss.org/index.php
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22. Public Health Agency: www.publichealth.hscni.net
23. Royal College of Physicians: http://www.rcgp.org.uk
24. Belfast Trust: www.belfasttrust.hscni.net
25. Northern Ireland Hepatitis B and C Managed Clinical Network: www.hepbandcni.net
26. Department of Health, Social Services and Public Safety: www.dhsspsni.gov.uk
27. Northern Ireland Statistics and Research Agency: www.nisra.gov.uk

Glossary of Abbreviations

Anti-HCV	Antibodies to hepatitis C virus
BBV	Blood borne virus
BME	Black and minority ethnic
CrI	Credible interval (CrI) is the Bayesian equivalent to a confidence interval (CI). Both capture the uncertainty associated with an estimate, and in a Bayesian framework the interpretation is that there is a 95% probability that the estimate lies within the interval.
DAA	Direct Acting Agents
DAT	Drug Action Team
DBS	Dried Blood Spot
DH	Department of Health
ESLD	End-stage liver disease
GP	General practitioner
GUM	Genitourinary medicine
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
HES	Hospital Episode Statistics
HIV	Human Immunodeficiency Virus
HPA	Health Protection Agency
HPU	Health Protection Unit
HRD	Harm Reduction Database
ISD	Information Services Division
MSM	Men who have sex with men
NDTMS	National Drug Treatment Monitoring System
NGO	Non-Governmental Organisation
NIBTS	Northern Ireland Blood Transfusion Service
NICE	National Institute for Health and Clinical Excellence
NIHR	National Institute for Health Research
NHS	National Health Service
NHSBT	National Health Service Blood and Transplant
NSP	Needle and Syringe Programme
NTA	National Treatment Agency for Substance Misuse
OF	Oral fluid
OH	Offender Health
ONS	Office for National Statistics
PCR	Polymerase Chain Reaction
PCT	Primary Care Trust
PEDW	Patient Episode Data for Wales
PHE	Public Health England
PIP	Prison Infection Prevention
PHPI	Prison Health Performance Indicators
PHPQI	Prison Health Performance and Quality Indicators
PWID	People who inject drugs
RCGP	Royal College of General Practitioners
RNA	Ribonucleic acid
SHA	Strategic Health Authority
SNBTS	Scottish National Blood Transfusion Service
SVR	Sustained viral response
UAM	Unlinked Anonymous Monitoring survey
UK	United Kingdom
WBS	Welsh Blood Service
WHO	World Health Organization

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July 2012

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