NI Regional Hepatitis B&C Managed Clinical Network Annual Report 2017

FOREWORD

We are delighted to present the 2017 report of the Northern Ireland Hepatitis B & C Managed Clinical Network.

In 2016 the World Health Organization published its Global health sector strategy on viral hepatitis 2016-2021, setting ambitious goals to reduce the global burden of hepatitis B and C by 2030. The network supports this strategy and will continue to coordinate, as appropriate,work to reach the goals set.

The Northern Ireland Hepatitis B and C managed clinical network works closely with statutory and voluntary organisations to disseminate information and training with the aim that more people will come forward for testing and referral for assessment.

This year we have undertaken work focusing on people who inject drugs, who are particularly at risk of contracting blood borne viruses (BBV). We have provided training for those who work in the sector and secured funding for dried blood spot testing to be used by drugs services to allow more people to know their hepatitis status. Work has also been carried out to increase the number of places offering needle exchange services and encouraging injectors of heroin to switch to smoking it to reduce the risk of BBV transmission.

We are also pleased to note that the UK will introduce hepatitis B vaccination into the routine schedule for babies, allowing all babies born from August 2017 to be protected against future risks of contracting hepatitis B. We would expect the coverage of this vaccine to rapidly exceed 90% in line with other vaccines in Northern Ireland. Work will continue with babies born to hepatitis B positive mothers to ensure that they receive their birth dose of vaccine within 24 hours and complete the appropriate schedule in a timely way.

Dr Lucy Jessop
Chair of Managed Clinical Network

Dr Neil McDougall
Clinical Lead

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Hepatitis B

Hepatitis B virus (HBV) is a blood borne virus that can cause serious liver disease, however a safe and effective vaccine is available to protect individuals from infection. Hepatitis B virus is transmitted between people by contact with the blood or other body fluids (i.e. semen and vaginal fluid) of an infected person. Hepatitis B is transmitted parenterally and sexually. Transmission most commonly occurs following sexual intercourse, as a result of blood to blood contact, including injury with contaminated sharp instruments or other equipment by people who inject drugs or by perinatal transmission from mother to child.

Modes of transmission are the same for the human immunodeficiency virus (HIV), but HBV is 50 to 100 times more infectious. Unlike HIV, HBV can survive outside the body for at least 7 days. During that time, the virus can still cause infection if it enters the body of a person who is not infected (CDC 2009)

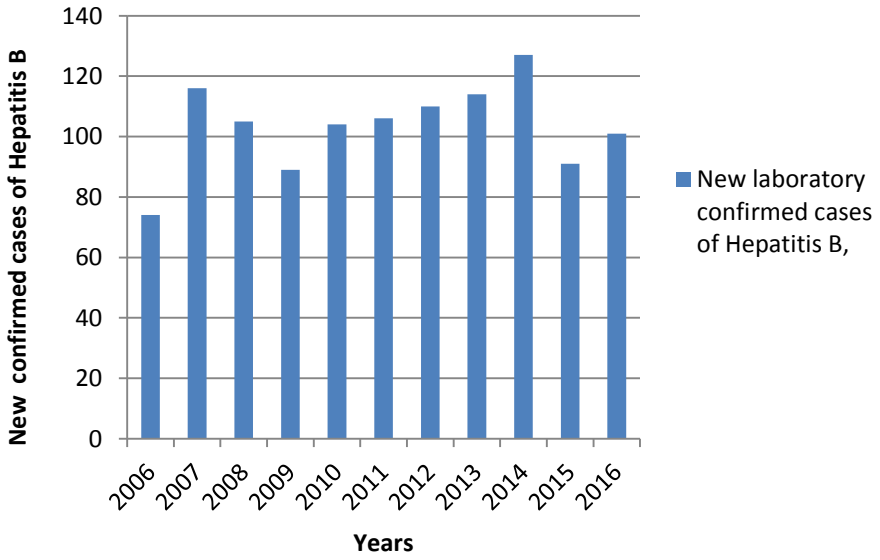
The Epidemiology of Hepatitis B in Northern Ireland 2006-2016

Northern Ireland is a very-low prevalence country for HBV with an average of 80 -120 new cases being diagnosed every year. In Northern Ireland, a total of 101 Hepatitis B infections were reported in 2016. 19 of which were acute infection and 82 chronic infections, of this 18 were new antenatal cases (figure 1).

Some of these infections will have been related to sexual transmission or injecting drug use; however, risk factor information is not available for the majority of cases.

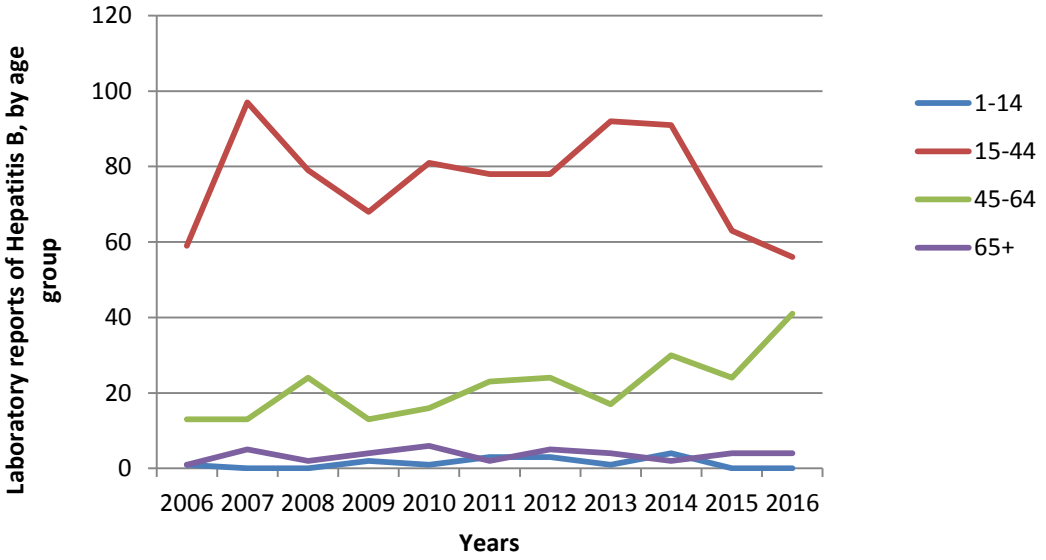
Certain ethnic groups living in Northern Ireland have strong links with parts of the world with high rates of HBV infection (sub-Saharan Africa, most of Asia, the Pacific, the Amazon, the southern parts of Eastern and Central Europe and the Middle East) and are particularly vulnerable to on-going risk of HBV transmission.

Figure 1: New Laboratory-confirmed cases of hepatitis B in Northern Ireland, 2006– 2016



Data source:- Regional Virology Laboratory/ PHA2016

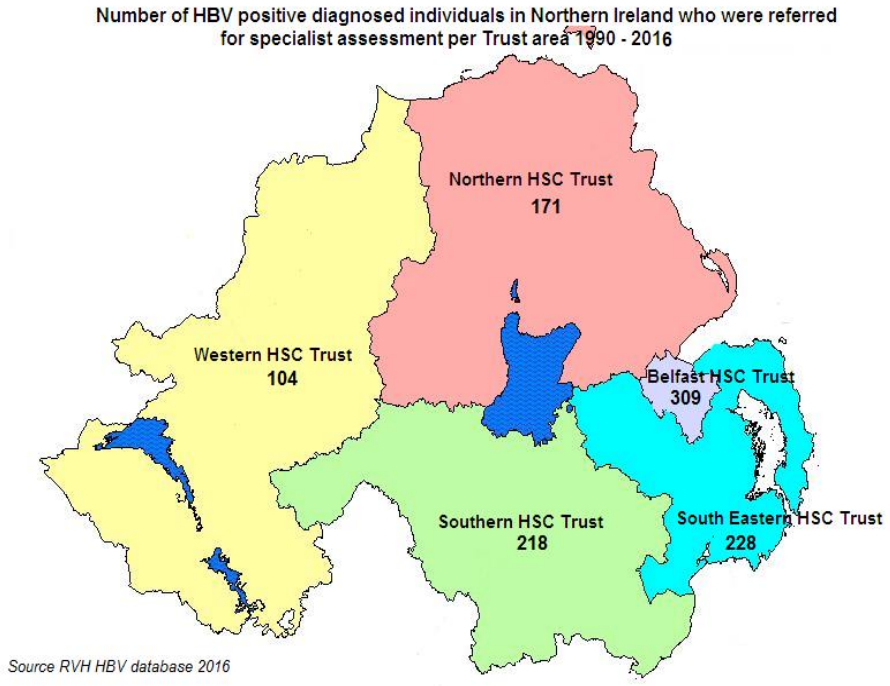
Figure 2: Laboratory reports of Hepatitis B by age group 2006 -2016



Data source:- Regional Virology Laboratory/ PHA 2016

The age group most affected is the 15-44 year old with 55% of those infected falling in this age group and 41% of cases being diagnosed in the 45-64 age group. Of the children (1-14 years) tested none tested positive in 2016(figure 2)

Figure 3: Referrals for specialist assessment at the RVH Liver Clinic



Treatments for Hepatitis B

All treatment of Chronic Hepatitis B in NI is based at the Royal Victoria Hospital Liver Unit. Patients are treated in line with NICE guidelines (NICE CG165) using either Pegulated Interferon alpha-2a for

up to 48 weeks or long term oral antiviral therapy. In addition, the antenatal hepatitis B pathway results in treatment of 2-3 women per year with oral antiviral therapy in the last trimester of pregnancy to reduce the risk of transmission of hepatitis B to the neonate.

Hepatitis B: - referral for specialist assessment

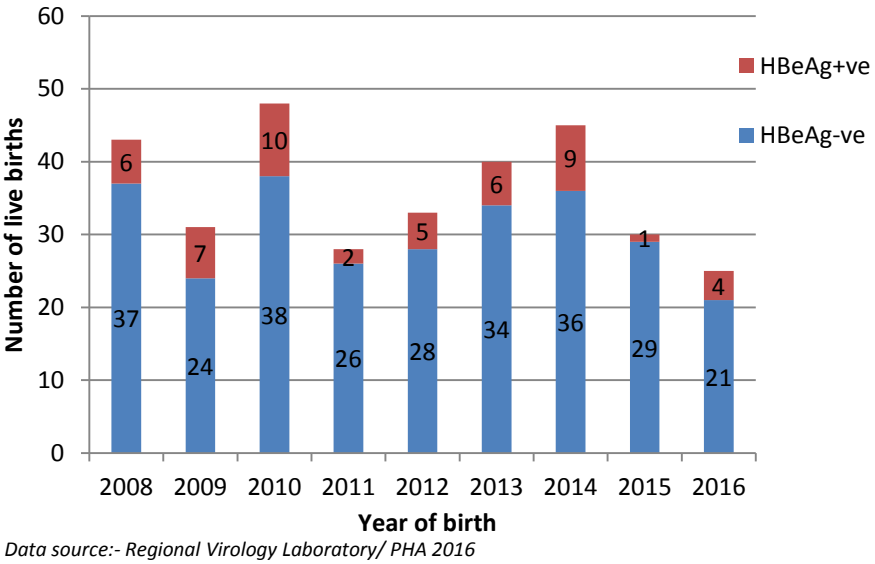
Notifications of acute and chronic hepatitis B are reported to the duty room of the Public Health Agency (PHA) in Northern Ireland. PHA recommends a suite of actions that include all patients with chronic hepatitis B being advised to be referred for specialist follow up to hepatology or gastroenterology. All pregnant women who are hepatitis B positive are referred and seen by a Hepatology consultant within 6 weeks from identification as per recommendation of the - UK National Screening Committee (2010).

The regional hepatology service and PHA have audited numbers referred for follow up in 2016 and 97% of individuals newly diagnosed with chronic Hepatitis B in 2016 have been referred for specialist assessment. The 3% not referred had either left Northern Ireland or were not registered with a GP. This means that all patients registered with a GP in Northern Ireland and diagnosed with chronic hepatitis B in 2016 had the opportunity to have assessment, advice and consideration for treatment by an appropriately trained specialist.

Hepatitis B vaccination programme

At present there is a selective hepatitis B vaccine programme in Northern Ireland to target pre- and post-exposure vaccines at people most at risk. This includes antenatal screening of all women in pregnancy to allow for timely vaccination of babies born to hepatitis B positive mothers to reduce their risk of contracting the disease.

Figure 4: Number of live births to Hepatitis B positive Mothers (DOB 2008 – 2016), Northern Ireland

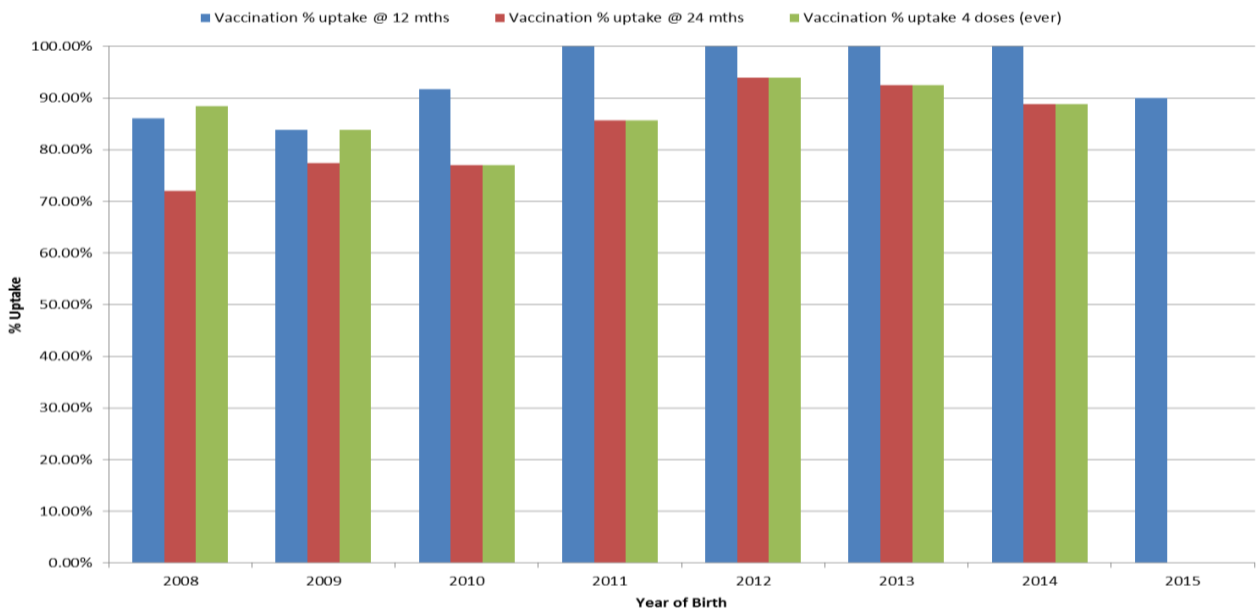


Data source:- Regional Virology Laboratory/ PHA 2016

In 2016 there were only 25 live births to hepatitis B positive women which is the lowest number in recent years (figure 4).

Immunisation of these babies is monitored at the age of 12 and 24 months and in recent years has been close to or greater than 90%. Some babies can become lost to follow-up if they leave Northern Ireland.

Figure 5: Hepatitis B Vaccination uptake (DOB 2008-2015), Northern Ireland



We are pleased to note that universal immunisation of babies with hepatitis B vaccine will start in the UK in October 2017. It is still important for babies born to hepatitis B positive mothers to have a dose of monovalent hepatitis B vaccine at birth, 1 and 12 months as well as the new routine schedule and this will continue to be monitored.

Hepatitis C

Hepatitis C is an infection of the liver caused by the hepatitis C virus (HCV). The virus is spread primarily through direct contact with the blood or bodily fluids of infected individuals. Intravenous drug use has become the main risk factor for HCV transmission in Europe as the infection can be easily transmitted from an infected injector to another when the needles and syringes or other injection equipment are shared; elsewhere nosocomial transmission (that is, acquired in hospitals and other healthcare facilities) and other routes of transmission are the most common (NICE 2013).
Primary exposure leads to an acute infection which is usually relatively mild with only 20-30% of infected individuals developing clinically evident acute hepatitis C. Chronic hepatitis C however is a progressive condition that accounts for at least one quarter of all cases of chronic liver disease. Chronic HCV infection has become a major health problem affecting an estimated 3% of the world's population (WHO 2016)

A significant proportion of chronic HCV infections are asymptomatic and progression of the disease can be slow, with cases remaining asymptomatic for one or two decades, but once established, chronic infection can progress to scarring of the liver (fibrosis), and advanced scarring (cirrhosis). In some

cases, those with cirrhosis will go on to develop liver failure or other complications of cirrhosis, including Liver cancer.

More detailed information on the epidemiology of hepatitis C in the UK is published annually by Public Health England. Available at: https://www.gov.uk/government/publications/hepatitis-c-in-the-uk

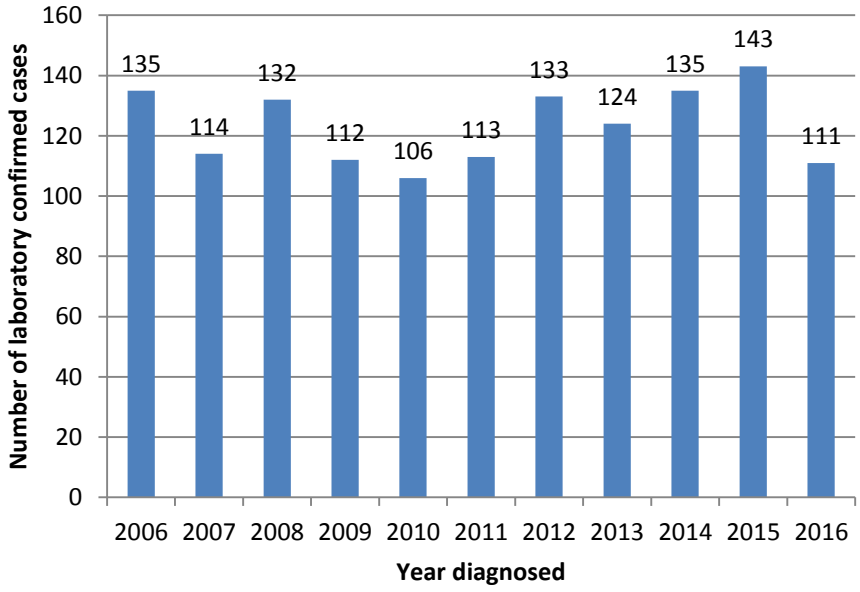
Hepatitis C is a curable infection, and it is our aspiration to support the WHO in its goal to eliminate hepatitis C as a major public health threat by 2030(figure 14).

On 28 May 2016, the World Health Assembly adopted a Global Health Sector Strategy (GHSS) on viral hepatitis for the period 2016 to 2021. This strategy introduced the first-ever global targets for viral hepatitis, including a 30% reduction in new cases of hepatitis C (HCV) and B (HBV) by 2020 and a 10% reduction in mortality. http://www.who.int/hepatitis/strategy2016-2021/ghss-hep/en/

The Epidemiology of Hepatitis C in Northern Ireland 2006-2016

Northern Ireland is a very-low prevalence country for HCV with an average of 120 new HCV PCR positive cases being diagnosed every year.

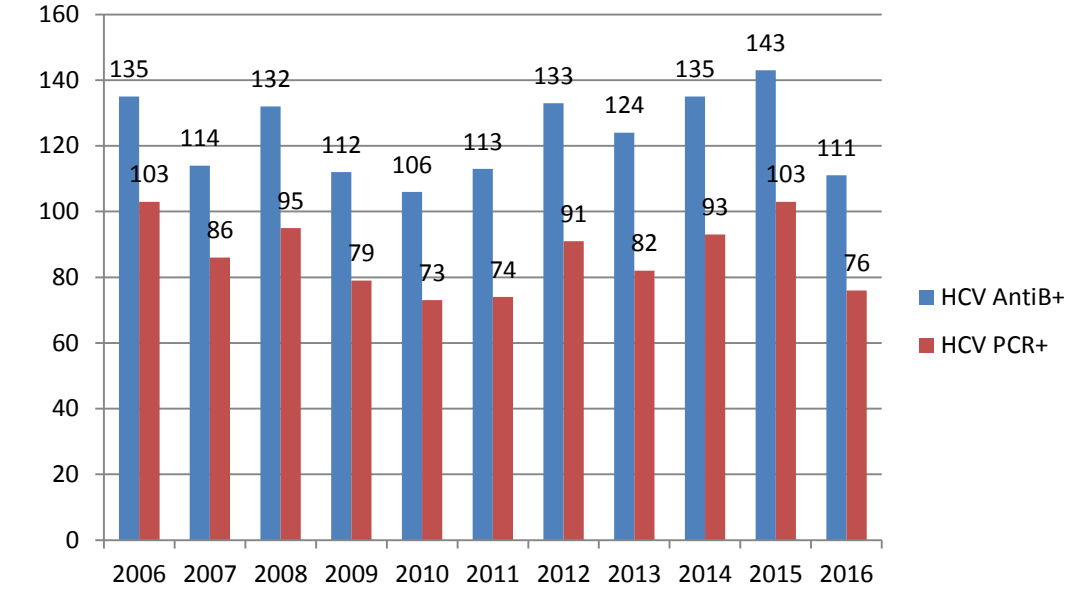
Figure 6: Laboratory-confirmed cases of hepatitis C in Northern Ireland, 2006 -2016



Data source:- Regional Virology Laboratory/ RVH hepatology database 2016

In the UK, it is estimated that around 214,000 people are living with chronic HCV.(9) Injecting drug use continues to be the most important risk factor for infection with around half of people who inject drugs (PWID) thought to have been infected in England and Wales, with levels being lower in Northern Ireland (23%) but higher in Scotland (57%) –(Hepatitis C in UK Report - 2015). In Northern Ireland the number of new laboratory confirmed antibody positive reports of hepatitis C is down 13 % on the figure for 2015 year to 111 new cases being diagnosed in 2016. 76 (69%) of the 111 new laboratory confirmed cases were HCV RNA positive (PCR positive) on initial sample testing. The cumulative total of laboratory confirmed cases of hepatitis C PCR positive in Northern Ireland from 1990 to 2016 is 2951

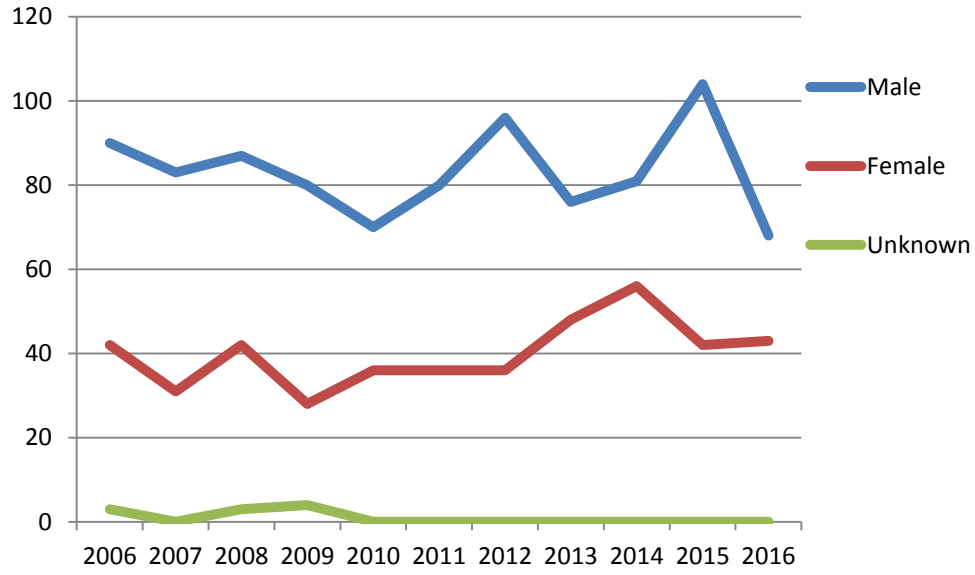
Figure 7:



Data source: Regional virology laboratory/ RVH local database 2016

All 76 HCV PCR positive cases diagnosed in 2016 will be followed up on and those referred to the Liver clinic in the Royal Victoria Hospital will be offered appointments for further testing and consideration for treatment.

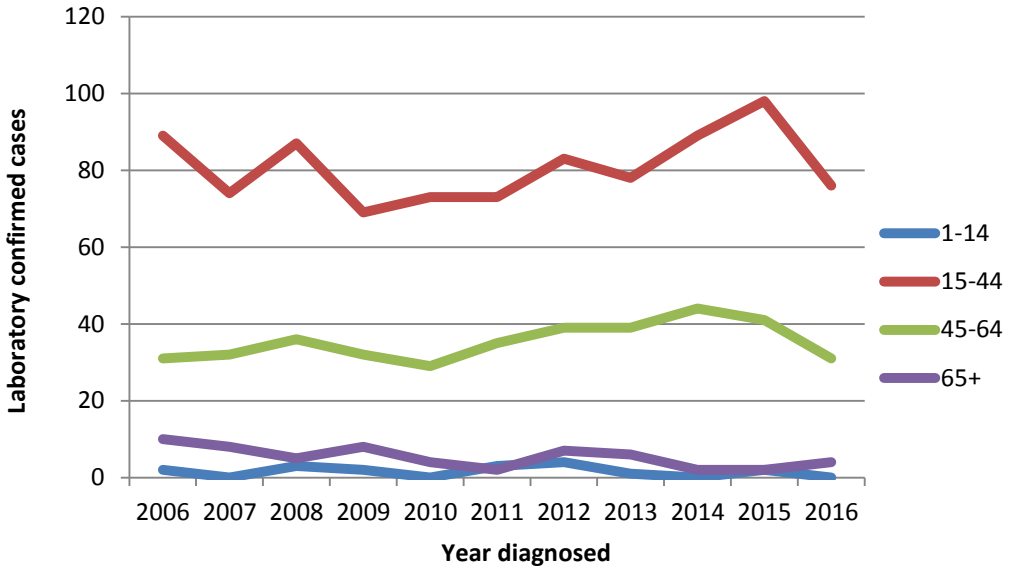
Figure 8: Gender of Laboratory confirmed cases of HCV antibody positive cases from 2006 - 2016



Data source:- Regional Virology Laboratory/ RVH hepatology database 2016

Information supplied by the Regional Virus Laboratory shows that there are approximately twice as many males are being infected with Hepatitis C than females. Of the 111 hepatitis C positive cases diagnosed in 2016, 68 (61%) were men and 43(39%) were women (figure 8).

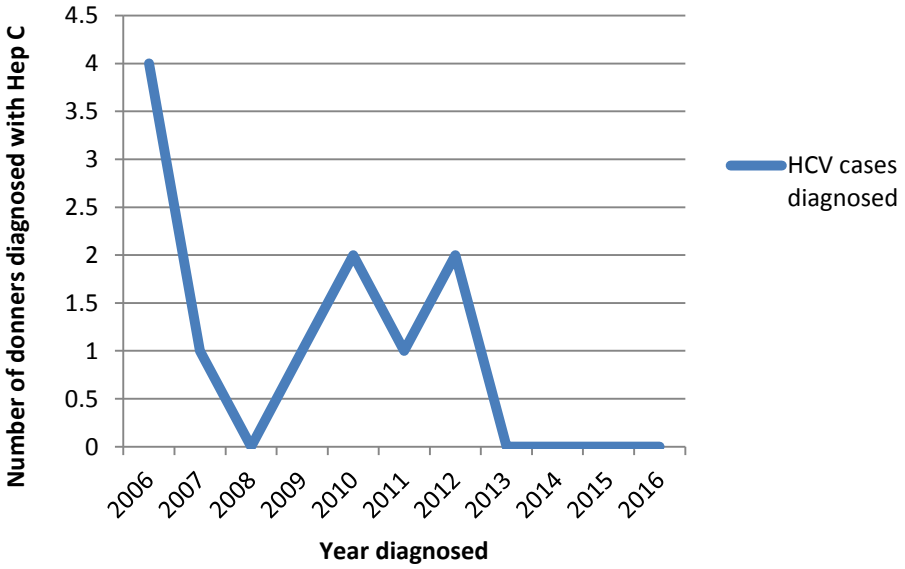
Figure 9: Laboratory-confirmed cases of hepatitis C in Northern Ireland, by age, 2006-2016



Data source:- Regional Virology Laboratory/ RVH hepatology database 2016

The majority of confirmed cases of hepatitis C occurred in persons aged from 15 to 44 years old with 47% of those diagnosed being aged 30 -40 years of age.

Figure 10: Frequency of hepatitis C (HCV) in potential blood donors in Northern Ireland 2006 – 2016



Data source:- NIBTS 2017

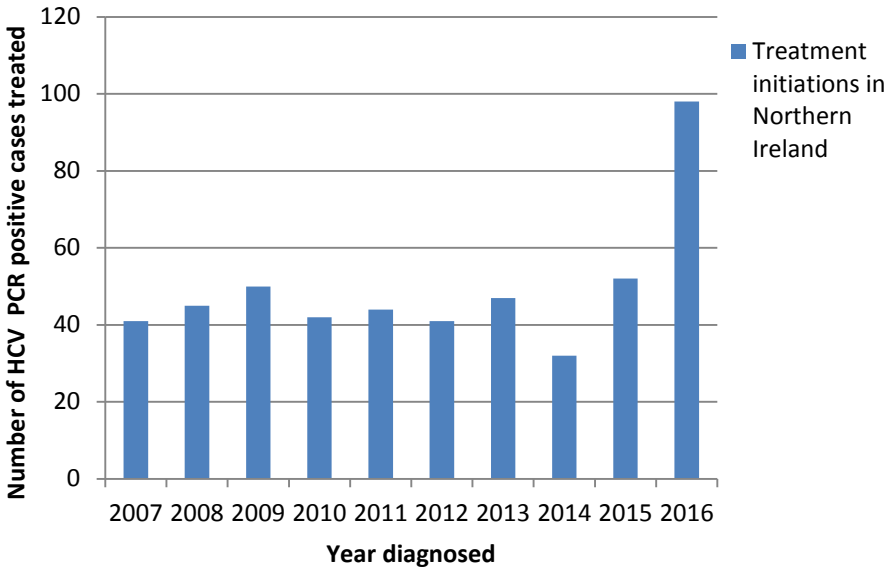
In Northern Ireland since 2013, HCV infection was not detected in donations from either new or repeat blood donors. All donors are screened for blood borne virus including hepatitis C before being allowed to donate blood.

Treatments for Hepatitis C

Treatment of HCV infection has changed dramatically in recent years. Interferon-based treatments have been replaced by all-oral therapies lasting 12-16 weeks with fewer side effects and cure rates in excess of 90%. The number of patients treated for HCV in NI during 2016 increased significantly due

to an initiative to make the new all-oral therapies available to those who had been waiting for interferon-free treatment after previous treatment failure (figure 11).

Figure 11: Hepatitis C Treatment initiations in Northern Ireland

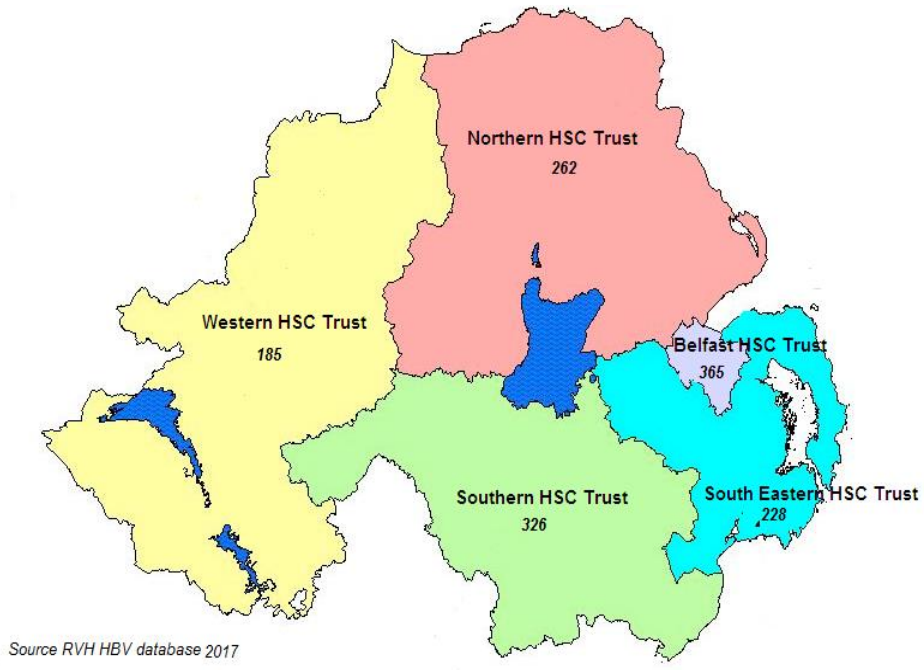


Data source: local RVH database 2016

A review of 105 treatments with interferon free all-oral HCV treatment in 2015/16 demonstrated a success rate (clearance of HCV) of 96%.

Referrals for specialist assessment at the RVH Liver Clinic

Figure 12: Number of HCV positive diagnosed individuals in NI who were referred for specialist assessment per trust area (1990-2017)



Figures from the Royal Victoria Hospitals Hepatitis C database for patients that present for specialist assessment and treatment shows that the highest number of patients being referred (365), come from Belfast Trust. The number being referred from the Southern Trust has risen significantly in the past few years (figure 12).

Figure 13: **Route of HCV transmission recorded by 1379 patients presenting for treatment from 1990 - 2016**

Route (where recorded 1990-2016)	Number (%)
PWID	712(53%)
Blood/blood products	134(8%)
Sex	54(4%)
Needle stick injury	17(1%)
Tattoo	55(4%)
Overseas healthcare	63(5%)
Mother to baby and household	8(0.5)
Other	10(0.6)
Unknown	326(23%)
TOTAL	1379(100%)
Data Source: Regional Hepatology Unit, Belfast Hospital and Social Care Trust 2016	

The above information (figure 13) is based on the information received from 1053 of the 1379 patients that have or are presenting for specialist assessment at the Hepatology Clinic in the Royal Victoria Hospital Belfast. The rest of the patients did not disclose or could not recall their route of exposure. The largest proportion of HCV infections (53%) in Northern Ireland can be attributed to injecting drug use.

Injecting drug use continues to be the most important risk factor for infection with around half of people who inject drugs (PWID) thought to have been infected in England and Wales, with levels being lower in Northern Ireland (23%) but higher in Scotland (57%). HCV disproportionately affects populations who are marginalised and underserved and have poorer access to healthcare and health outcomes (Hep C in UK 2016). In Northern Ireland, 17% of currently injecting PWID reported direct sharing of needles and syringes in 2014; this level is lower than the 28% in 2004 (Shooting Up, 2015)

Needle exchange services in Northern Ireland

The Northern Ireland Needle Syringe Exchange Scheme is a low threshold service for injecting drug users. It aims to help limit the spread of blood borne viruses such as HIV and Hepatitis B and C through providing sterile injecting equipment and safely disposing of used injecting equipment. Needle exchanges also provides advice, information and support to reduce the harms resulting from injecting, and support clients to access other relevant services, including treatment services.

There are 21 static needle exchanges in Northern Ireland: 20 are Community Pharmacy based, and there is one Trust based service in Ballymena. The Public Health Agency also funds 5 Low Threshold Services (one in each Trust area) and these provide an outreach needle exchange service.

Between April 2015 and March 2016, there were 28,978 visits to a needle exchange. This was an increase of 8% on the previous year's visits. Of those visits where the client disclosed what they would use the needles for, 54% were for opioids, and 42% were for steroids, and 5% were for tanning. A total of 36, 145 packs were given out, an increase of 6% on the previous year.

BBV awareness training in prisons in Northern Ireland

A bespoke BBV awareness session took place on three separate days at HMP Magilligan. Training was carried out by representatives from the sexual health teams in the Belfast and South Eastern Health and Social Care Trust and was facilitated by the Red Cross through their peer to peer training programme.

The sessions were designed to raise awareness, identify and manage BBV risk and to educate and support prisoners. As well as the benefit to those attending, the impact was extended to the wider prison community as attendees were supported to use leaflets that were provided to talk with other prisoners about BBVs.[1] Feedback from prisoners was very positive and, since the BBV awareness sessions, requests for BBV testing have increased as have requests for the HBV vaccine.

The success of this programme led to an expansion to other sites. 15 awareness sessions across three prisons in Northern Ireland have provided the opportunity to speak to 129 prisoners and 120 staff members. There are now plans to develop an accredited BBV programme for prisoners. ([1] A Mann's Guide to Hep B, Hep C and HIV leaflet)

Dried Blood Spot testing Workshop

In March 2017 the Hepatitis B and C network hosted a training day on dried blood spot testing for drugs services. Information was given regarding hepatitis B and C, consent, harm reduction advice for clients and the new treatments available for hepatitis C. The workshop was attended by 67 people and feedback was positive.

From 2017 funding was provided by PHA for three years in the first instance to allow all Trust drugs services to use dried blood spot testing for BBV's where this is appropriate. This will hopefully increase the number of people who inject drugs who are aware of their BBV status and who can be referred for treatment.

Looking ahead to 2020 and beyond

On 28 May 2016, the World Health Assembly adopted a Global Health Sector Strategy (GHSS) on viral hepatitis for the period 2016 to 2021. This strategy introduced the first-ever global targets for viral hepatitis, including a 30% reduction in new cases of hepatitis C (HCV) and B (HBV) by 2020 and a 10% reduction in mortality. The strategy looks at prevention, testing, links to care, treatment and chronic care (figure 14). The full document available at:- http://www.who.int/hepatitis/strategy2016-2021/ghss-hep/en/.

Although aspirational in nature, the Northern Ireland Hepatitis B and C Network shares its overall goals that new infections should be prevented, all people at potential risk of infection should be tested and those found to be positive should be referred for assessment for treatment and care.

Figure 14:

Table 1. Global hepatitis strategy targets at a glance

TARGET AREA	BASELINE 2015	2020 TARGETS	2030 TARGETS
Impact targets			
Incidence: New cases of chronic viral hepatitis B and C infections	Between 6 and 10 million infections are reduced to 0.9 million infections by 2030 (95% decline in hepatitis B virus infections, 80% decline in hepatitis C virus infections)	30% reduction (equivalent to 1% prevalence of HBsAg[1] among children)	90% reduction (equivalent to 0.1% prevalence of HBsAg among children)
Mortality: Viral hepatitis B and C deaths	1.4 million deaths reduced to less than 500 000 by 2030 (65% for both viral hepatitis B and C)	10% reduction	65% reduction
Service coverage targets			
Hepatitis B virus vaccination: childhood vaccine coverage (third dose coverage)	82%[2] in infants	90%	90%
Prevention of hepatitis B virus mother-to-child transmission: hepatitis B virus birth-dose vaccination coverage or other approach to prevent mother-to-child transmission	38%	50%	90%
Blood safety	39 countries do not routinely test all blood donations for transfusion-transmissible infections 89% of donations screened in a quality-assured manner[3]	All countries have haemovigilance systems in place to identify and quantify viral hepatitis transfusion transmission rates	Reduce rates of transmission by 99% compared with 2020.
Safe injections: percentage of injections administered with safety-engineered devices in and out of health facilities	5%	50%	90%
Harm reduction: number of sterile needles and syringes provided per person who injects drugs per year	20	200	300
Viral hepatitis B and C diagnosis	<5% of chronic hepatitis infections diagnosed	50%	90%
Viral hepatitis B and C treatment	<1% receiving treatment	5 million people receiving hepatitis B virus treatment 3 million people received hepatitis C virus treatment	80% of eligible persons with chronic hepatitis B virus infection treated 80% of eligible persons with chronic hepatitis C virus infection treated

Abbreviations

CCDC	Consultant in Communicable Disease Control	MCN	Managed Clinical Network
DHSSPS	Department of Health, Social Services and Public Safety	NI	Northern Ireland
DOB	Date of Birth	NICE	National Institute Clinical Excellence
HBV	Hepatitis B Virus	PHA	Public Health Agency
HCV	Hepatitis C Virus	PCR	Polymerase Chain Reaction
HCV AB	Hepatitis C Virus Antibody	RVH	Royal Victoria Hospital
GUM	Genitourinary Medicine		

Appendix 1: Membership of the Steering Group 2016

Dr	Lucy Jessop	CCDC, PHA	Chairperson of NI Hepatitis B&C MCN
Dr	Neil McDougall	Consultant Hepatologist, Belfast Trust(Clinical Lead)	Clinical lead for the NI Hepatitis B&C MCN
Dr	Ian Cadden	Consultant Hepatologist,	Belfast Trust
Dr	Stephen Bailie	GP Unit	Health Board
Mrs.	Trudi Coyne	Team Leader Substitute Prescribing Team and Prescribed Medication Team	Belfast trust
Ms	Helen Bell	Pharmacist	Health and Social Care Board
Mrs.	Alison Griffiths	Health Protection Nurse	Public Health Agency
Dr	Conall McCaughey	Consultant Virologist,	Belfast Trust
Ms	Seana Murray	Admin Support NI Hepatitis C Clinical Network	Belfast Trust
Mrs.	Annelies McCurley	Regional NI Hepatitis C MCN Manager	Belfast Trust
Mrs.	Orla McCormick	Hepatitis Specialist Nurse,	Belfast Trust
Mrs	Karen Patterson	Hepatitis Specialist Nurse,	Belfast Trust
Dr	Say Quah	GUM consultant	Belfast Trust
Mrs	Roberta Carlisle	Antenatal screening coordinator	Belfast Trust /Public Health Agency
Mrs	Victoria Creasy	Health and Social Wellbeing Improvement Senior Officer	Public Health Agency
Mrs	Tracey Heasley	Clinical Lead for SET Prison Nursing staff,	SE Trust
Ms	Gemma Wasson	Hepatology Pharmacist	Belfast trust

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