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NI Regional Hepatitis B&C Managed Clinical Network Annual Report 2019

FORWARD

We are delighted to present the 2019 report of the Northern Ireland Hepatitis B & C Managed Clinical Network.

This report highlights the ongoing work across Northern Ireland to target those particularly at risk of acquiring hepatitis B and C with access to harm reduction, testing and treatment. We would like to thank everyone who is part of this for their hard work and commitment.

Of particular note in 2018, is the significant increase in treatment initiations for hepatitis C, compared with the previous year.

There is still a long way to go to meet the WHO goals of eliminating viral hepatitis as a public health threat by 2030 but working together we are making real progress which we will build on in the coming years.



Dr. Neil Irvine
Chair of Managed Clinical Network



Dr. Neil McDougall
Clinical Lead

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INTRODUCTION

Viral hepatitis is one of the leading causes of death globally, accounting for 1.34 million deaths per year – that’s more than HIV/AIDS, tuberculosis or malaria. Together, hepatitis B virus and hepatitis C cause two in every three liver cancer deaths across the world.

Globally, 90% of people living with hepatitis B and 80% living with hepatitis C are unaware they are living with the disease, resulting in the real possibility of developing fatal liver disease or liver cancer at some point in their lives and in some cases, unknowingly transmitting the infection to others.

They are silent epidemics, hitting children and marginalized populations the hardest, which includes people who inject drugs (PWID), indigenous populations, men who have sex with men (MSM), migrants and people living with HIV/AIDS (World Hepatitis Alliance, 2019)

HEPATITIS B

Hepatitis B is a viral infection that attacks the liver and can cause both acute and chronic disease. It often does not cause any obvious symptoms in adults, and typically passes in a few months without treatment. However, when acquired in childhood, it often persists for years (chronic hepatitis B) and can cause serious liver disease.

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.

A hepatitis B vaccine is available for people at high risk of the condition. In addition, the hepatitis B vaccine as part of the routine childhood immunisation schedule was introduced in the UK in October 2017. This offers an opportunity for longer term control of hepatitis B infection in the population.

Hepatitis B is most common in sub-Saharan Africa, Asia, South America and southern parts of eastern and central Europe, the Middle East and the Indian subcontinent.

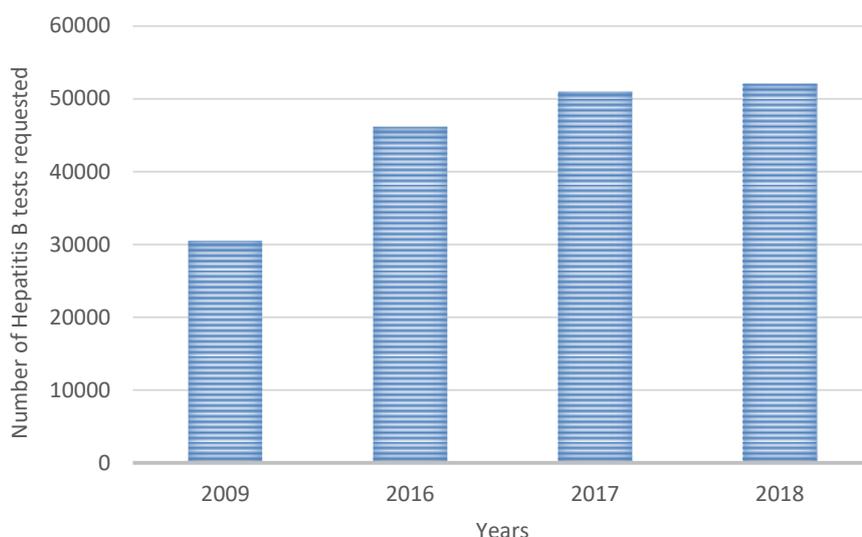
THE EPIDEMIOLOGY OF HEPATITIS B IN NORTHERN IRELAND 2008-2018

Northern Ireland is a very-low prevalence country for HBV with an average of 90 -110 new cases being diagnosed every year.

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.

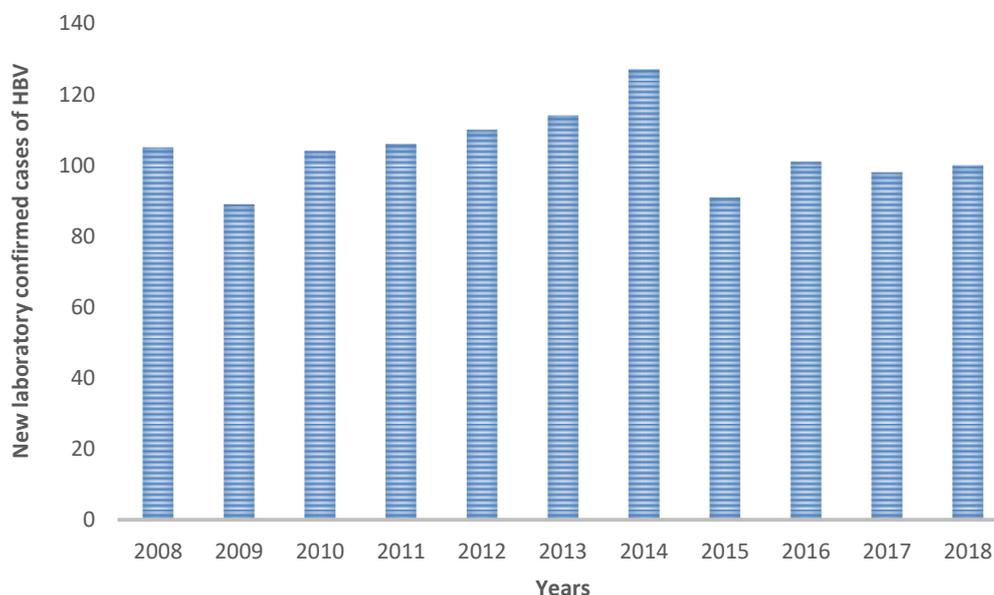
FIGURE 1: ANNUAL HEPATITIS B TEST REQUESTS IN NORTHERN IRELAND, 2009 - 2018



Source: Regional Virology Laboratory/PHA 2019

Hepatitis B test requests have risen from 30500 in 2009 to 50957 in 2018, a 67% increase. Figures for 2018 represent around a 2% rise from the previous year

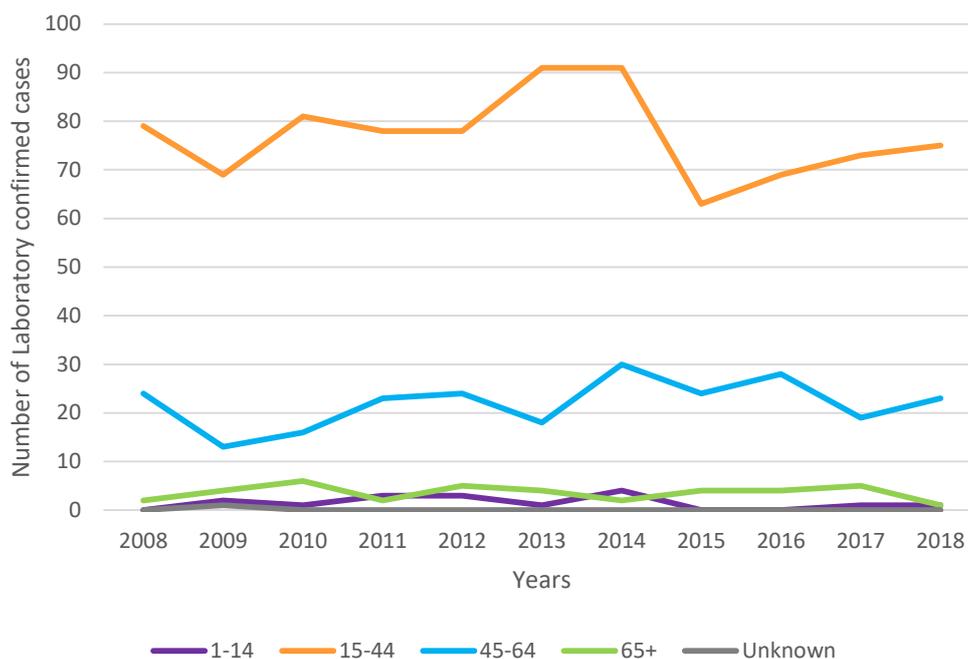
FIGURE 2: LABORATORY CONFIRMED CASES OF HEPATITIS B DIAGNOSED EACH YEAR, NORTHERN IRELAND, 2008-2018



Source: Regional Virology Laboratory/PHA 2019

In Northern Ireland, a total of 100 new hepatitis B infections were reported in 2018. Five were acute infections. The 95 chronic infections included 15 new antenatal cases.

FIGURE 3: LABORATORY CONFIRMED CASES OF HEPATITIS B BY AGE GROUP, NORTHERN IRELAND, 2008-2018



Source: Regional Virology Laboratory/PHA 2019

75% of those newly diagnosed in 2018 were aged between 15 and 44 years of age (figure 3). The number of children diagnosed between the ages of 1-14 years tested, remains very low.

TREATMENTS FOR HEPATITIS B

All treatment of chronic hepatitis B in Northern Ireland is based at the Royal Victoria Hospital Liver Unit. Patients are treated in line with NICE guidelines (NICE CG165) using either Pegylated Interferon 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 NOTIFICATION

Notifications of acute and chronic hepatitis B are reported to 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. All pregnant women who are hepatitis B positive should be referred and seen by a Hepatology consultant within 6 weeks of the referral being received as per local protocol and the National Key Performance Indicator (KPI), to assess the need for any antenatal interventions to reduce the risk of mother to baby transmission of hepatitis B.

ANTENATAL

28 pregnant women were diagnosed with hepatitis B in 2018. 15 of these cases were new diagnoses and the others were long term hepatology review patients. 20/28 (71%) of these women were seen

by Hepatology within the 6 weeks of a positive result being received by maternity services, meeting the nationally agreed performance standards, endorsed by DHSSPSNI.

HEPATITIS B VACCINATION PROGRAMME

Hepatitis B vaccine gives protection against the hepatitis B virus, which is a major cause of serious liver disease, including scarring of the liver (cirrhosis) and liver cancer.

Since October 2017, all babies born on or after 1 August 2017 have been offered a 6 in 1 (hexavalent) vaccine that includes Hepatitis B in the universal childhood vaccination schedule at 2, 3 and 4 months of age (known as the primary immunisations).

Babies born to hepatitis B positive women are also offered additional hepatitis B vaccine doses at birth, 1 and 12 months along with a blood test to check for infection at 12 months.

In 2018-19, vaccine uptake of primary immunisations measured at 12 months of age was 94.5%, which includes infants that received the hepatitis B-containing vaccine for the first time. (Source: 2018-19 PHA Immunisation Report).

During the same financial year (2018-19) 100% babies born to hepatitis B positive mothers received three doses of hepatitis B containing vaccine by 12 months and 92% four doses by 24 months. Due to small birth cohorts the number of babies not receiving four doses by 24 months was very small (<5) and was attributed to families moving out of Northern Ireland. (Source: 2018-19 PHA Immunisation Report. Available at: <https://www.publichealth.hscni.net/sites/default/files/2019-12/Annual%20Immunisation%20Report%20for%20NI%202018-19.pdf>).

Hepatitis B vaccine is also offered to other targeted groups thought to be at increased risk of hepatitis B or its complications.

HEPATITIS C

Hepatitis C is an infectious disease caused by the hepatitis C virus (HCV) that primarily affects the liver. The virus persists in the liver in 75% to 85% of those initially infected. Early on, chronic infection is typically asymptomatic, and symptoms may not appear until the liver is severely damaged. As a consequence, many individuals with chronic HCV infection remain undiagnosed and fail to access treatment. These individuals can then present late with complications of HCV-related end-stage liver disease (ESLD) and cancer, which have poor survival rates (Hepatitis C in UK, 2018).

HCV is spread primarily by blood-to-blood contact associated with intravenous drug use, poorly sterilized medical equipment, needlestick injuries in healthcare, and blood transfusions.

Hepatitis C is found worldwide. The most affected regions are Eastern Mediterranean and European Regions, with the prevalence of 2.3% and 1.5% respectively. Prevalence of hepatitis C infection in other regions varies from 0.5% to 1.0%. Depending on the country, hepatitis C virus infection can be concentrated in certain populations (for example, among people who inject drugs) and/or in general populations.

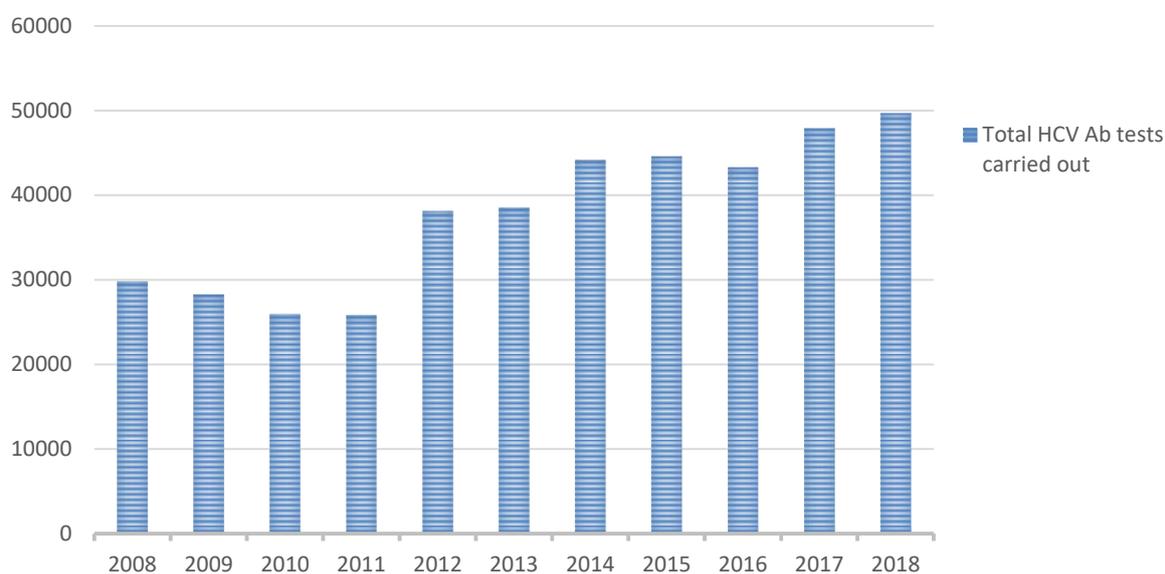
More detailed information on the epidemiology of hepatitis C in the UK is published annually by Public Health England. Available at:

THE EPIDEMIOLOGY OF HEPATITIS C IN THE UK

In the UK, it is estimated that around 210,000 people are living with chronic hepatitis C. 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 (58%) (Hepatitis C in UK Report - 2018).

In 2017, 91% of laboratory reports of positive tests for hepatitis C indicated injecting drugs as an exposure risk. This suggests PWID remain a significant target group for the roll-out of direct acting anti-viral drugs (DAAs) (Hepatitis C in UK report, 2018)

FIGURE 4: HEPATITIS C TEST REQUESTS IN NORTHERN IRELAND, 2008 - 2018



Source: Regional Virology Laboratory 2019

Requests for hepatitis C testing has increased over the years from 28256 HCV antibody tests in 2008 to 49656 HCV antibody tests in 2018 (figure 4). That is a 69% increase in the number of tests requested over this period. Figures for 2018 represent around a 2% rise on the previous year.

THE EPIDEMIOLOGY OF HEPATITIS C IN NORTHERN IRELAND 2008-2018

Northern Ireland is a very-low prevalence country for hepatitis C with an average of 80 -100 new HCV PCR positive cases being diagnosed every year (figure 5).

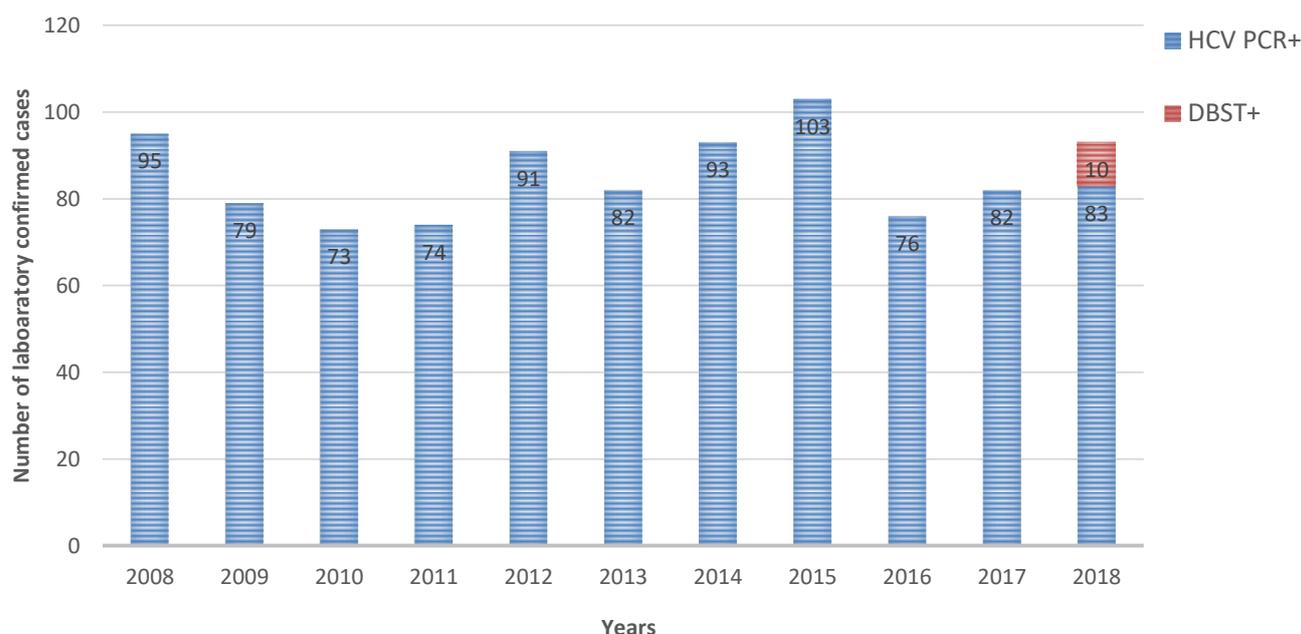
The cumulative total of laboratory confirmed cases of hepatitis C PCR positive in Northern Ireland from 1990 to 2018 is 3132. Of this 10 cases in 2018 were initially diagnosed via dried blood spot testing.

As well as working hard to find those who remain undiagnosed, it is also important to re-engage those who have been diagnosed in the past but have not cleared their infections. To ensure that as many eligible people as possible are treated with the new more effective treatments, the Department

of Health (DOH) have given extra funding to trace and treat patients who were previously diagnosed as Hepatitis C PCR positive and referred but who never attended clinic. These patients will be contacted and will be offered testing to confirm whether they have active infection and then be assessed for the newer more effective treatments.

This call back process was started in February 2019.

FIGURE 5: LABORATORY CONFIRMED HCV PCR POSITIVE CASES, NORTHERN IRELAND, 2008-2018



Source: Regional Virology Laboratory/PHA/Addiction Services 2019

There were 93 hepatitis C PCR positive cases diagnosed in 2018. 10 of the cases were diagnosed via dried blood spot testing kits which were made available to addiction services in 2018.

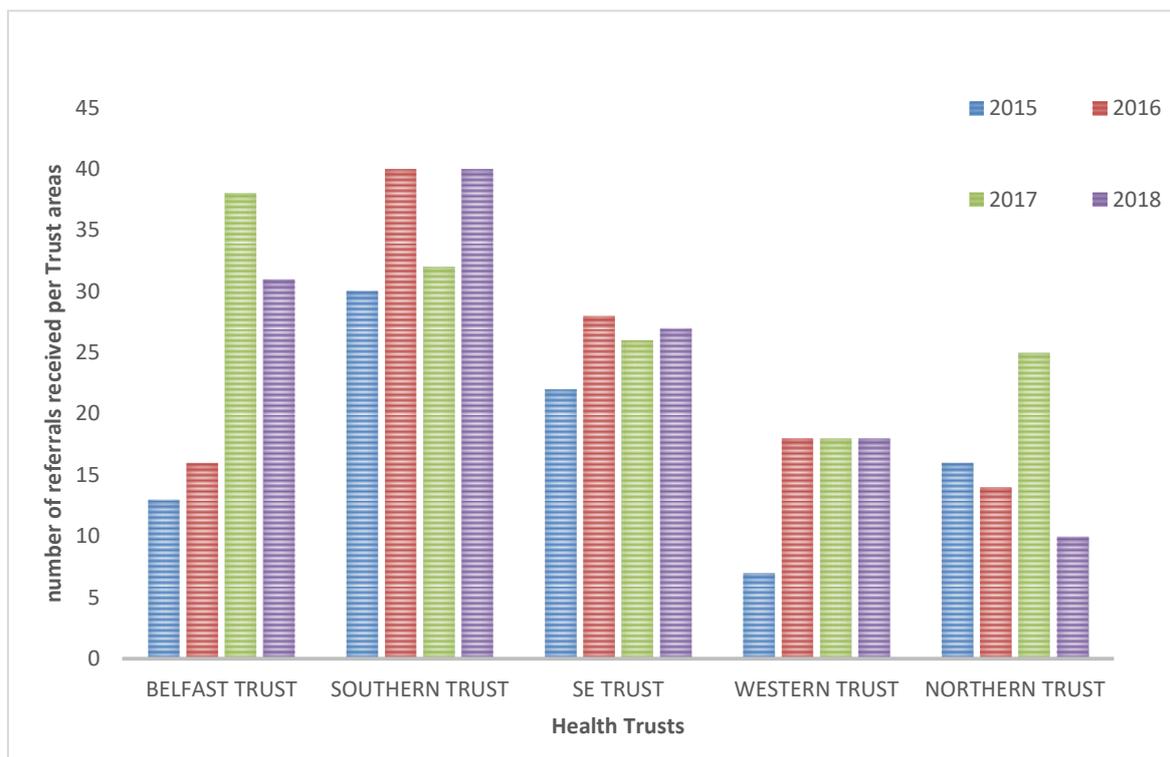
Information supplied by the Regional Virus Laboratory shows that there are approximately twice as many males being diagnosed with Hepatitis C than females. Of the 93 hepatitis C positive cases diagnosed in 2018, 63 (72%) were male and 30 (28%) were female.

The majority of confirmed cases of hepatitis C were detected in persons aged from 15 to 44 years old with 69% of those diagnosed in 2018 falling into this age bracket.

Specialist assessment of patients testing positive for hepatitis C in Northern Ireland is performed at the hepatology clinic in the Royal Victoria Hospital, Belfast. Over 92% of cases diagnosed annually are referred. The Hepatitis Network actively follows up on all positive cases where there is no record of a referral being received. Once referred the Hepatitis Network also actively engages with these patients to encourage attendance at clinic appointments.

All patients referred are sent a letter confirming receipt of referral along with language- specific patient information on hepatitis C.

FIGURE 6: REFERRALS RECEIVED FOR SPECIALIST ASSESSMENT OF HEPATITIS C PER TRUST AREA. NORTHERN IRELAND, 2015 - 2018

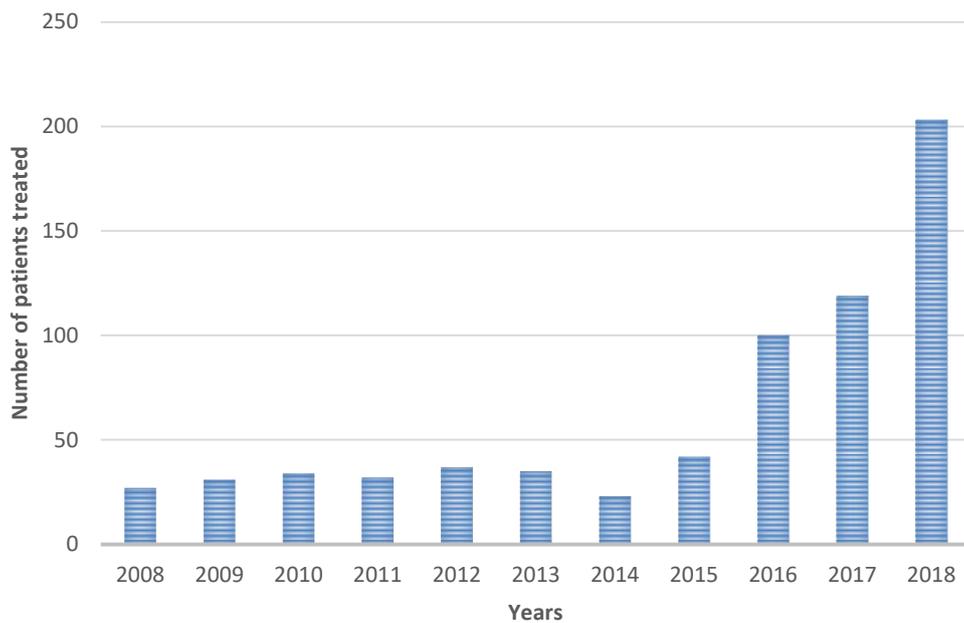


Referrals for specialist assessment of Hepatitis C come from throughout Northern Ireland. 32% of all referrals received in 2018 were received from the Southern Trust (figure 6).

TREATMENTS FOR HEPATITIS C

Treatment of hepatitis C infection has changed dramatically in recent years. Interferon-based treatments have been replaced by all-oral therapies lasting 8 -12 weeks with fewer side effects and cure rates in excess of 95%. The number of patients treated for hepatitis C in Northern Ireland during 2016-2018 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 7).

FIGURE 7: HEPATITIS C TREATMENT INITIATIONS IN NORTHERN IRELAND, 2008-2018



Source: Local RVH database/ Regional Hepatology clinic 2018

A review of all treatments with interferon free all-oral HCV treatment in 2018 demonstrated a success rate (clearance of HCV) of 97%.

TABLE 1: ROUTE OF HCV TRANSMISSION RECORDED BY PATIENTS PRESENTING FOR TREATMENT, NORTHERN IRELAND, 2000-2018

Route (where recorded 2000-2018)	Number (%)
PWID	810(59.6%)
Blood/blood products	128
Sex	82
Needle stick injury	5
Tattoo	76
Overseas healthcare	83
Mother to baby and household	4
Other	21
Unknown/Not recorded	232
TOTAL	1359
Data Source: Regional Hepatology Unit, Belfast Hospital and Social Care Trust 2018	

Source: RVH local HCV database 2019

Of those patients presenting for specialist assessment between 2000 and 2018, who could recall the possible route of infection, the largest proportion of HCV infections (60%) could be attributed to injecting drug use (Table 1).

HCV disproportionately affects populations who are marginalized and underserved and have poorer access to healthcare and health outcomes (Hep C in UK 2016).

NEEDLE EXCHANGE SERVICES IN NORTHERN IRELAND



Harm reduction interventions for People Who Inject Drugs (PWID), including access to sterile injecting equipment and effective drug dependence treatment, can prevent and control HCV among PWID. Optimal access to clean injecting equipment and opioid substitution treatment (OST) is crucial in curbing the spread of HCV, particularly given that it also has the potential to prevent reinfection after treatment.

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 provide advice, information and support to reduce the harms resulting from injecting, and to support clients to access other relevant services, including treatment services.

There are currently 24 static needle exchanges in Northern Ireland: 22 are Community Pharmacy based, and there are two Trust based services, one in Belfast and one 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 2017 and March 2018, there were 30,065 visits to a needle exchange. This was an increase of 3% on the previous year's visits. Of those visits, 64% were by clients reporting injecting opioids as the main drug, 27 % were by clients reporting injecting steroids, 4% reported injecting for tanning and 1% reported injecting steroids and for tanning.

A total of 36,994 packs were given out, an increase of 4% on the previous year.

The provision of effective harm reduction interventions to reduce risk and prevent and treat infections needs to be maintained. These interventions include needle and syringe programmes, opioid substitution treatment and other treatments for drug misuse and dependence (Shooting up, an update November 2018).

INCREASE IN CASES OF HEPATITIS C INFECTIONS IN NORTHERN IRELAND AMONGST PWID

In Northern Ireland, an increase in cases of hepatitis C among PWID was detected in 2016-17. This highlights the ongoing risk of hepatitis C in PWID, particularly in close networks, and the need for ongoing surveillance to detect cases quickly to allow for an appropriate response. Northern Ireland has lower levels of infection with hepatitis C in its PWID population compared with the rest of the UK in the UAM study- anti-HCV prevalence in 2017 Northern Ireland 23%; Wales 50%, and England 66% (UAM, 2018).

In 2016, screening of PWID by the homeless nursing service identified recently acquired cases of hepatitis C, indicating ongoing transmission within this group. The injecting networks of these cases were identified and targeted for screening and harm reduction education. Those at risk were mainly injecting heroin and, despite the availability of clean injecting packs and education on blood-borne virus transmission, were still sharing injecting equipment such as spoons and filters. Enhanced testing is ongoing as more people at risk of acquiring infection are identified.

Ongoing actions include raising awareness of the risks of blood-borne virus transmission among users, and also those working with them such as homeless hostel staff. There has been increased testing of PWID for blood-borne viruses including the introduction of dried blood spot testing and increased availability of clean injecting equipment. New users have been identified through the enhanced screening which has allowed them to be referred to drug addiction services and, where infected, for hepatitis C treatment.

In a significant development it is now planned that these interventions will be integrated with a range of other health and social care services within an "Inclusion Health Service".

BBV AWARENESS TRAINING IN PRISONS IN NORTHERN IRELAND

Blood Borne Viruses (BBV) are a serious public health concern. If undiagnosed and untreated they can cause severe illness and even death, yet they are preventable and treatable diseases. Prisons are not isolated institutions and failing to respond effectively to these BBVs puts everyone at risk; prisoners, their families and the wider community. (NAT, 2017)

Providing education and information on prevention in prisons is important as practices which increase the risk of BBV transmission; sharing injecting equipment, unprotected sex and tattooing - continue to take place in prison (NAT, 2017).

All staff working within Prisons should receive basic BBV training so they can identify transmission risks and know how to prevent them. Advanced training can include additional information about living with BBVs, from treatment to the stigma and discrimination faced by some people.

The risk of BBV transmission from prisoners to staff is extremely low. However all staff should still be made aware of health and safety procedures which includes the use of universal precautions. Proper use of universal precautions, such as wearing disposable gloves when handling anything contaminated with blood, will prevent transmission of BBVs (NAT, 2017) (HSE 2018)

Since Oct 2017 the Hepatitis B&C Network and South Eastern HSC Trust (SET) Health Development Team have been delivering BBV awareness sessions as part of new prison officer's induction

programme, with 212 new recruits attending BBV awareness sessions from Dec 2017 – May 2019. The Network has also delivered several BBV awareness for prisoners across the 3 prisons in NI. To date 185 prisoners have attend blood borne virus awareness sessions.

Currently SET prison healthcare services offer BBV screening and Hepatitis B vaccination to all people committed to prison. BBV screening is offered within an opt-in model of service provision. Prisons in other parts of the UK have introduced an opt-out model for BBV screening.

LOOKING AHEAD TO 2020 AND BEYOND

In May 2016, the UK signed up to the World Health Organization (WHO) Global Health Sector Strategy (GHSS) on Viral Hepatitis which commits participating countries to the elimination of hepatitis C as a major public health threat by 2030. As part of this, the UK has committed to meeting targets of a 80% reduction in incidence of HCV infection and a 65% reduction in mortality from HCV by 2030. For hepatitis C, the global vision is that by implementing the GHSS for viral hepatitis, preventative efforts leading to fewer infections and deaths, as well as treatment efforts resulting in longer survival, together have the potential to prevent 2.1 million HCV-associated deaths worldwide by 2030. (See appendix 1)

In Northern Ireland the upscaling of the new and highly effective hepatitis C treatments and the introduction of hepatitis B vaccine for babies into the routine schedule and a planned update of the Action Plan for the diagnosis, management and treatment of hepatitis C means that this goal is moving a step closer in Northern Ireland.

APPENDIX 1: GLOBAL HEALTH SECTOR STRATEGY FOR VIRAL HEPATITIS²⁴

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 ⁹ among children)	90% reduction (equivalent to 0.1% prevalence of HBsAg among children) ¹⁰
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% ¹¹ 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 ¹²	95% of donations screened in a quality-assured manner	100% of donations are screened in a quality-assured manner
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	30%	90%
Viral hepatitis B and C treatment	<1% receiving treatment	5 million people will be receiving hepatitis B virus treatment 3 million people have received hepatitis C virus treatment (Both targets are cumulative by 2020)	80% of eligible persons with chronic hepatitis B virus infection treated 80% of eligible persons with chronic hepatitis C virus infection treated

⁹ The abbreviation "HBsAg" refers to hepatitis B virus surface antigen. It should be noted that some of WHO's regional committees have already endorsed region-specific targets. 1% is to be taken as the global average.

¹⁰ Documentation of the 0.1% HBsAg will require development of new methods for validation that should be developed in the light of all available efforts to eliminate mother-to-child transmission of the hepatitis B virus, such as the use of the hepatitis B vaccine and anti-viral medicines.

¹¹ WHO/UNICEF coverage estimates 2013 revision, July 2014, see: http://apps.who.int/immunization_monitoring/globalsummary/

APPENDIX 2: MEMBERSHIP OF THE STEERING GROUP 2018

Dr	Neil Irvine	Consultant in Health Protection, PHA	Interim 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 Adviser, Directorate of Integrated Care	Health & Social Care Board
Ms	Helen Creighton	Pharmacist	Health and Social Care Board
Mrs	Kelly McIlroy	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	Position Vacant	Consultant in Genitourinary Medicine	Belfast Trust
Mrs	Lorna Hawe	Regional Antenatal Screening Programme Co-ordinator	Public Health Agency
Mr	Michael Owens	Health and Social Wellbeing Improvement Manager	Public Health Agency
Mr/s	Linda Wylie/Davis Turkington	Senior Health and Social Wellbeing Improvement Officer	Public Health Agency
Mrs	Tracey Heasley	Clinical Nurse Lead for Prison Healthcare	South Eastern Trust
Ms	Gemma Wasson	Hepatology Pharmacist	Belfast Trust
Dr	Helen Toal	Consultant in Addictions Psychiatry	Belfast Trust
Ms	Sonya Johnston	Team lead &Substitute Prescribing Practitioner.	Community Addictions Team. Ards Hospital
Mrs	Susan Semple	Senior nurse for Homeless nursing Service/ The Belfast Inclusion Health Service	PHA Homeless Nursing Service

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