



Public Health  
England

Protecting and improving the nation's health

# Hepatitis C in the UK 2017 report

Working to eliminate hepatitis C as a major public health threat

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## Foreword



**Duncan Selbie**  
Chief Executive

In last year's report data suggested the first fall in deaths from hepatitis C (HCV) in the UK in more than a decade, and it is encouraging that this appears to have been sustained for a second year.

The recent fall in UK deaths looks likely to be the result of increased treatment with new direct acting antiviral (DAA) drugs, with an increase of nearly 50% over the last year, and of nearly 90% when compared to earlier years.

Our ability to sustain this increase in treatment will ultimately be limited by our capacity to find and treat those who remain undiagnosed and to help those who are diagnosed but untreated to engage with accessible treatment services.

In the UK, around 200,000 people have chronic (long-term) infection with HCV. The majority are from marginalised and under-served groups in society, such as people who inject drugs (PWID).

In tackling HCV, we share the World Health Organization (WHO) Global Vision of '*a world where viral hepatitis transmission is halted and everyone living with viral hepatitis has access to safe, affordable and effective care and treatment.*'

There are challenges ahead, locally, nationally and globally. Latest estimates from the WHO show the death toll from viral hepatitis in 2015 to be similar to that of tuberculosis, and higher than that of HIV or malaria. However, unlike TB, HIV, and malaria where scaled-up interventions have led to a decrease in mortality over recent years, global deaths from viral hepatitis are continuing to rise.

More needs to be done to improve prevention, to raise awareness, to increase testing and to get more diagnosed individuals into treatment and care, and we continue to work with our partners to identify practical solutions to these challenges.

PHE's new multi-agency National Strategic Group on Viral Hepatitis (NSGVH) is committed to working towards the WHO goal to eliminate viral hepatitis as a major public health threat and brings together partner organisations to improve health services, minimise the number of new infections and reduce the health consequences of viral hepatitis for people in England.

This is the ninth Hepatitis C in the UK report and follows the WHO Global Health Sector Strategy (GHSS) on Viral Hepatitis 2016-2021 and the draft action plan for the health sector response to viral hepatitis in the WHO European region. Our report is structured to support UK monitoring of the GHSS goals and summarises the impact of UK action plans to drive down mortality from HCV and reduce the number of new infections.

A handwritten signature in black ink, appearing to read 'Dr Sibi'. The signature is fluid and cursive, with a large initial 'D' and 'S'.

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## Executive summary

On 28 May 2016, the World Health Assembly adopted a Global Health Sector Strategy (GHSS) on viral hepatitis for the period 2016-2021.<sup>(1)</sup> This strategy introduced the first-ever global targets for viral hepatitis control.<sup>(1)</sup> This report summarises the scale of the UK hepatitis C (HCV) challenge in 2016, to help support focused action to eliminate hepatitis C as a major public health threat by 2030.

Early estimates suggest that numbers of new cases of HCV-related end-stage liver disease (ESLD) and hepatocellular carcinoma (HCC) in the UK have remained relatively stable, at an average of 1,875 new cases per year between 2011 and 2015. However, mortality data suggest a fall in deaths from these indications of 3% between 2014 and 2015 with data suggesting a further fall of 7% in 2016. While 2016 data are still provisional, it seems likely that the fall observed since 2014 is the result of the increased treatment with new direct acting antiviral (DAA) drugs that has taken place over recent years (an increase of 46% over the last year, and of nearly 90% when compared to earlier years). As such, the World Health Organization (WHO) GHSS target of a reduction in HCV-related mortality of 10% by 2020<sup>(1)</sup> looks likely to be achieved, and a reduction of at least 65% by 2030<sup>(1)</sup> seems achievable. Despite this, only around one half of people who inject drugs (PWID) sampled in UK surveys<sup>(2),(3)</sup> are aware of their HCV antibody positive status, and this figure has remained relatively stable at this level over the last six years. Although the WHO target of 50% of infected people in the WHO European region knowing their status by 2020<sup>(4)</sup> may have already been met in the UK, more work is needed if we are to meet the target of 90% diagnosed by 2030.<sup>(1)</sup>

Data from UK surveys of PWID<sup>(2),(3)</sup> do not suggest any reduction in numbers of new HCV infections over recent years; both estimated rates of infection and prevalence of infection in recent initiates to drug use, were similar in 2016 (16/100 person years and 27% respectively) to those observed in 2011 (7/100 person years) and 2008 (24%). Moreover, the proportion of PWID reporting adequate needle/syringe provision was found to be suboptimal, with only around one half of those surveyed reporting adequate provision for their needs. These findings suggest that the WHO GHSS call to reduce new cases of chronic HCV by 30% by 2020 and 80% by 2030<sup>(1)</sup>, represents a significant challenge for UK health services.

Overall, with the increasing availability of new DAA drugs, the UK is well-placed to meet WHO GHSS goals to reduce HCV-related morbidity and mortality, provided current improvements in numbers accessing treatment can be sustained in future years. Our ability to sustain the current increase in numbers accessing treatment will ultimately be limited by our capacity to find and treat those who remain undiagnosed, and to help those who are diagnosed but untreated to engage with local treatment services; only



then will we be able to build on the current fall in avoidable HCV-related deaths. It will also be important to monitor equity of access to treatment and care services. At the other end of the spectrum, there is little evidence to support a fall in the number of new HCV infections; if GHSS goals to reduce these levels are to be reached, then a radical change in our response to preventing HCV among PWID is required.

We are interested in receiving your feedback on this report and would be grateful if you could take two minutes to complete a short survey:

<https://surveys.phe.org.uk/TakeSurvey.aspx?SurveyID=8842m951>

Thank you!

## Background

The World Health Organization (WHO) estimates that in 2015, viral hepatitis caused 1.34 million deaths, a toll similar to that of tuberculosis (1.37 million deaths) and higher than HIV (1.06 million deaths) or malaria (0.44 million deaths).<sup>(5)</sup> Of these deaths, 96% were the result of complications of chronic hepatitis C (HCV) and hepatitis B (HBV) infection.<sup>(5)</sup> However, unlike TB, HIV, and malaria where scaled-up interventions have led to a decrease in mortality over recent years, deaths from viral hepatitis are continuing to rise.<sup>(5)</sup>

In 2010 and 2014, two World Health Assembly resolutions (WHA63.18<sup>(6)</sup> and WHA67.6<sup>(7)</sup>) focused on viral hepatitis, and a specific action to '*combat viral hepatitis*' was included within the resolution on the 2030 Agenda for Sustainable Development.<sup>(8)</sup> Following on from these, on 28 May 2016, the World Health Assembly adopted a Global Health Sector Strategy (GHSS) on viral hepatitis for the period 2016-2021,<sup>(1)</sup> with its targets aligned with the 2030 Agenda for Sustainable Development and the relevant World Health Assembly resolutions. This strategy introduced the first-ever global targets for viral hepatitis, including a 30% reduction in new cases of hepatitis B and C by 2020 and a 10% reduction in mortality.<sup>(1)</sup>

In 2015, an estimated 71 million people were living with chronic HCV infection (1% of the global population) and an estimated 1.75 million new infections occurred worldwide.<sup>(5)</sup> However, there are major differences in the HCV epidemic both within and between WHO regions. In the WHO European Region it was estimated that more than 14 million people were living with chronic HCV infection in 2015, suggesting a relatively higher prevalence of 1.5% in this region, and an estimated 565,000 new infections.<sup>(5)</sup> Recognising the differences in HCV epidemics between regions, a draft action plan for the health sector response to viral hepatitis in the WHO European region has been published, outlining relatively more ambitious proposals for targets and milestones to tackle the infection (see Appendix 1).<sup>(4)</sup>

Closer to home in the UK, it is thought that around 214,000 people are living with chronic HCV.<sup>(9)</sup> 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%).<sup>(9),(10)</sup> Prevalence of infection varies around the UK, being concentrated in areas with high levels of current/past injecting drug use and high numbers of black and minority ethnic populations who have close links to countries with a high prevalence of HCV infection. HCV disproportionately affects populations who are marginalised and underserved and have poorer access to healthcare and health outcomes.

If we are to tackle HCV infection in the UK, and work towards elimination of HCV as a major public health threat by 2030, it is critical that we continue to work with our partners to improve prevention, raise awareness, increase testing and get more diagnosed individuals into treatment and care.

# Introduction

HCV is a bloodborne virus that is often 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 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. This can be achieved via the collective action of all partner organisations involved in the prevention, diagnosis, treatment and care of those living with, or at risk of acquiring, HCV infection. National action plans to tackle hepatitis C are already in place, and being developed across the UK<sup>(11-14)</sup>, including the *Liver Disease Delivery Plan for NHS Wales and its Partners to 2020*<sup>(11)</sup> and the *Sexual Health and Blood Borne Virus Framework, 2015-2020 Update* in Scotland.<sup>(12)</sup> In England, NHS England continues its approach to progressive roll-out of treatment to patients prioritised by Operational Delivery Networks (ODNs), and PHE is capturing wider public health activities in an annual HCV report for England.<sup>(15)</sup> A cross-agency National Strategic Group on Viral Hepatitis (NSGVH) has also been established with external membership from academia, NHS England, Local Government, Clinical Commissioning Groups (CCGs), and other organisations, to provide strategic direction and advice around viral hepatitis in England. In Northern Ireland, the Hepatitis B and C Managed Clinical Network publishes its annual report containing information on the epidemiology of hepatitis C, as well as public health and clinical activities related to hepatitis C disease prevention and control.<sup>(16)</sup>

Informed by Global Health Sector Strategy (GHSS) goals and targets (see Appendix 1), countries are called upon to develop, as soon as practicable, ambitious national goals and targets for 2020 and beyond. These are intended to take into consideration the country context, including the country-specific nature and dynamics of viral hepatitis, the populations affected, the structure and capacity of the health care and community systems, as well as the resources that can be mobilised.<sup>(1)</sup> Targets also need to be feasible and developed based on country realities, the best possible data, trends and responses, and should be monitored through a set of standard, measurable indicators.<sup>(1)</sup>

This report summarises the scale of the UK problem in 2016, to help support focused action in UK countries, via their national action plans, to eliminate hepatitis C as a major public health threat by 2030. To track our progress, the impact of key interventions in the following two **impact** areas are monitored:

- reducing transmission of HCV

- reducing morbidity and mortality due to HCV and its complications

To support this, it is also important to monitor the coverage of those interventions that are critical in driving down the levels of HCV infection and HCV-related mortality in the UK, namely:

- the adequacy of harm reduction in people who inject drugs (PWID)
- the proportion of infected people who are diagnosed
- the numbers, and ultimately the proportion, of infected people accessing treatment

The preliminary UK indicators (see Appendix 2), reported in the sections that follow, describe our progress so far and set out the scale of the challenge ahead so that meaningful goals can be developed and progress towards achieving them can be monitored.

## Monitoring service coverage

A comprehensive response to hepatitis C requires the implementation of effective, high-impact interventions along the full continuum of hepatitis services, including interventions for prevention, testing, treatment and care. Mathematical modelling<sup>(17),(18)</sup> suggests that HCV could be eliminated as a major public health threat by 2030 if the response reaches the service coverage targets set out in the GHSS on viral hepatitis<sup>(1)</sup> (see Appendix 1).

In the UK, eliminating hepatitis C as a major public health threat by driving down HCV-related mortality and preventing new infections from occurring is potentially feasible with the tools currently available. Investment in three core intervention areas is needed: (i) ensuring adequate harm reduction for PWID, (ii) increasing the proportion of infected individuals who are diagnosed, and (iii) increasing the proportion of infected individuals who access and complete treatment, achieving a sustained virological response (SVR).

### Adequate harm reduction

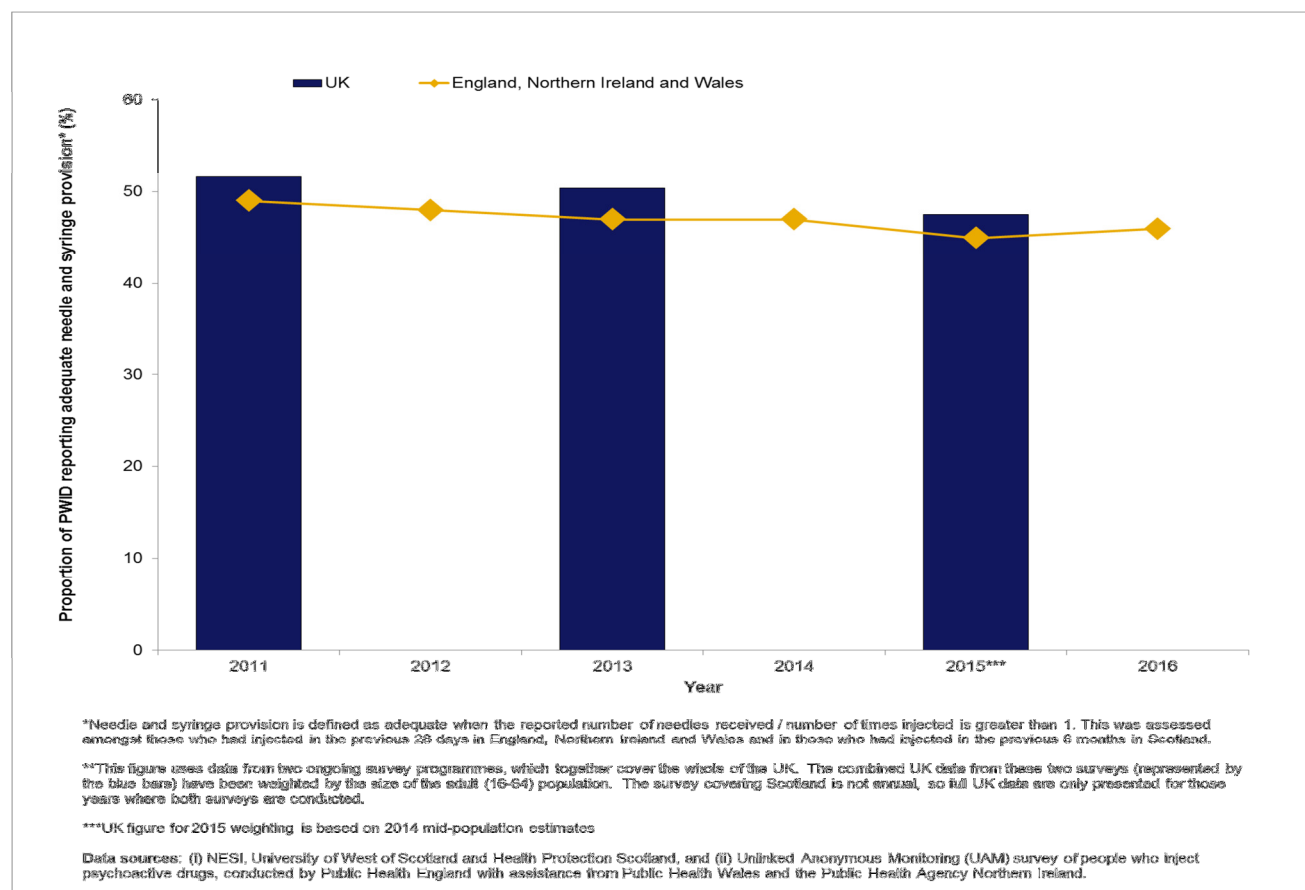
Harm reduction interventions for PWID, including access to sterile injecting equipment and effective drug dependence treatment, can prevent and control HCV among PWID.<sup>(19),(20),(21),(22),(23),(24)</sup> Optimal access to clean injecting equipment and opioid substitution treatment (OST) is crucial in curbing the spread of HCV, particularly given that it also has the potential to prevent reinfection after treatment.

Globally, harm reduction for PWID falls short of the 2030 GHSS target of 300 sterile needles and syringes provided per PWID per year,<sup>(1)</sup> with, on average, only 27 syringe and needle sets distributed per PWID each year.<sup>(5)</sup> However, these inevitably somewhat arbitrary figures, do not make any allowance for individual differences in need. Therefore, in order to better reflect the adequacy of needle/syringe provision, data from UK surveys of PWID (Unlinked Anonymous Monitoring (UAM) Survey<sup>(2)</sup> & Needle Exchange Surveillance Initiative (NESI) Survey<sup>(3)</sup>) are presented here on self-reported adequacy of needle/syringe provision (Figure 1). In this metric, needle/syringe provision is considered 'adequate' when the reported number of needles received, met or exceeded the number of times the individual injected.

Figure 1 shows that the proportion of PWID in the UK reporting adequate needle/syringe provision is sub-optimal, with only around one half of those surveyed in 2016 reporting adequate provision for their needs; the adequacy of provision has also remained stable at this level over recent years (Figure 1). These findings indicate that, while the majority of PWID may be accessing needle and syringe programmes (NSP),<sup>(9)</sup> the amount of equipment provided needs to be increased and provision better targeted.

NSPs can also be an important setting for delivering prevention information to PWID and an important route into drug treatment and recovery.

**Figure 1. Estimated UK-wide proportion of PWID reporting adequate\* needle and syringe provision, 2011-2016\*\***

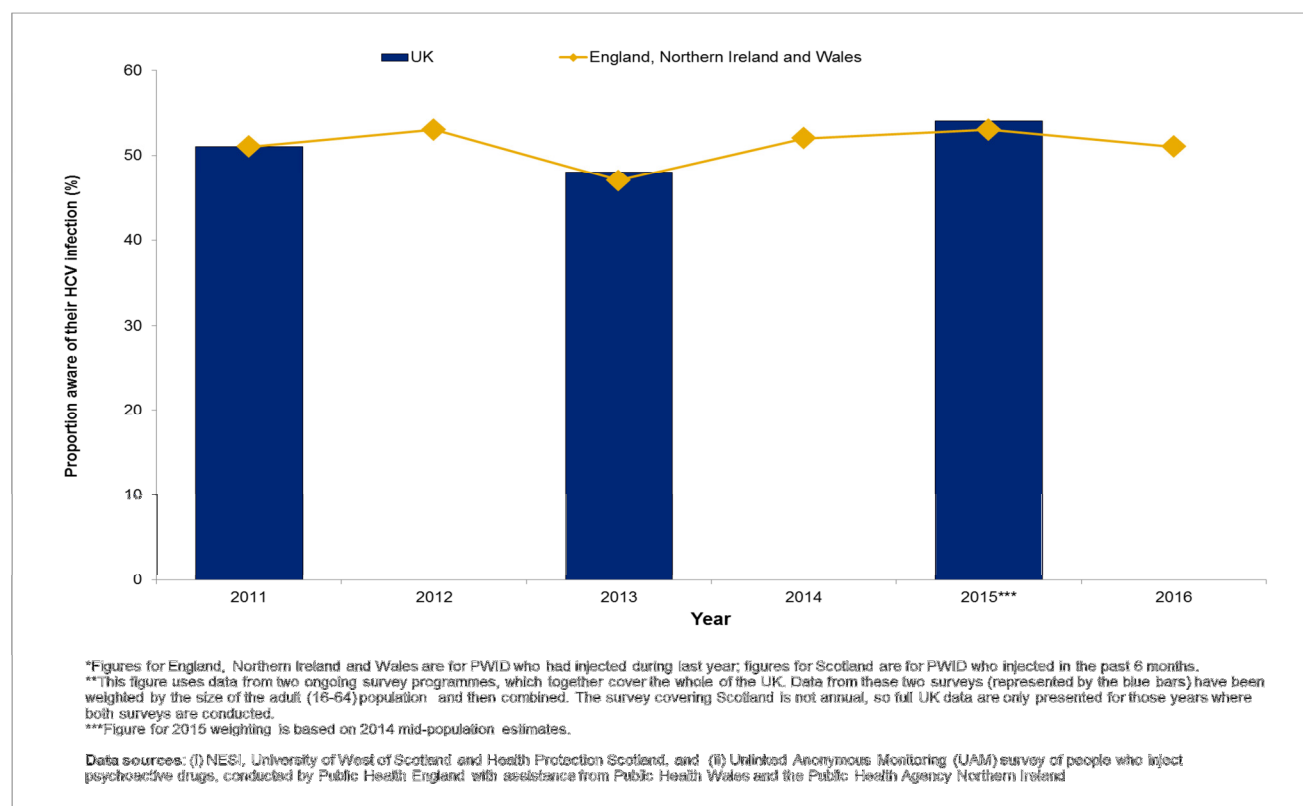


## Increasing the proportion diagnosed

Early diagnosis of HCV infection is important for the most effective treatment and care, yet globally only 20% (14 million) of those infected have been tested and know their status.<sup>(5)</sup> In the UK, levels of awareness of infection are well above the 20% global average, but are still suboptimal with positive results not always successfully linking individuals into treatment and care services.<sup>(9)</sup>

While we work towards developing UK estimates of the proportion of individuals with chronic HCV infection who remain undiagnosed (currently these are unavailable for most UK countries), our best diagnosis monitoring data currently comes from national UK surveys of PWID (UAM & NESI<sup>(2, 3)</sup>). These surveys suggest that only around one half of PWID sampled are aware of their HCV antibody positive status; this figure has remained relatively stable at this level over the last six years (Figure 2).

**Figure 2. Estimated UK-wide proportion of PWID testing positive for HCV antibodies,\* who are aware of their infection, 2011-2016\*\***



The GHSS on viral hepatitis<sup>(1)</sup> and the draft action plan for the health sector response to viral hepatitis in the WHO European region<sup>(4)</sup> call for a major increase in the diagnosis of chronic HCV infection, with 50% of infected people in the WHO European region knowing their status by 2020 and 90% by 2030 (see Appendix 1). While the first target has likely already been reached in the UK, more needs to be done if we are to reach the 90% target by 2030.

To reduce the levels of undiagnosed infection, it is necessary to roll out testing to more individuals at risk of infection, including priority populations like PWID, those in detained/secure settings, and to populations with close links to countries with a high prevalence of HCV infection.<sup>(25)</sup> There are also those who may no longer be in contact with services because they acquired their infections many years earlier, for example following a period of injecting drug use or via blood transfusion before the introduction of screening of the blood supply in 1991. For the most part, HCV disproportionately affects populations who are marginalised and underserved and have poorer access to healthcare, so testing in alternative/community settings, using alternative technologies like dried blood spot (DBS) testing<sup>(26),(9)</sup> and point of care tests, will be key in reducing the levels of undiagnosed infection. If gains in testing are to be translated into cures, it is also important to ensure that we continue to work together to improve key linkages between testing and treatment services so that diagnosed individuals can access treatment and care.



## Increasing the numbers accessing hepatitis C treatment

Among people diagnosed with chronic HCV infection globally, an estimated 7% started treatment in 2015 (1.1 million people).<sup>(5)</sup> As of 2015, a cumulative total of 5.5 million people with chronic HCV had ever received treatment, although the majority of these treatments were older, less effective interferon-based regimens.<sup>(5)</sup> The GHSS on viral hepatitis<sup>(1)</sup> and the draft action plan for the health sector response to viral hepatitis in the WHO European region<sup>(4)</sup> call for treatment coverage of people diagnosed with chronic HCV in the European region, and who are eligible for treatment, to reach 75% in 2020 and 80% by 2030. (see Appendix 1)

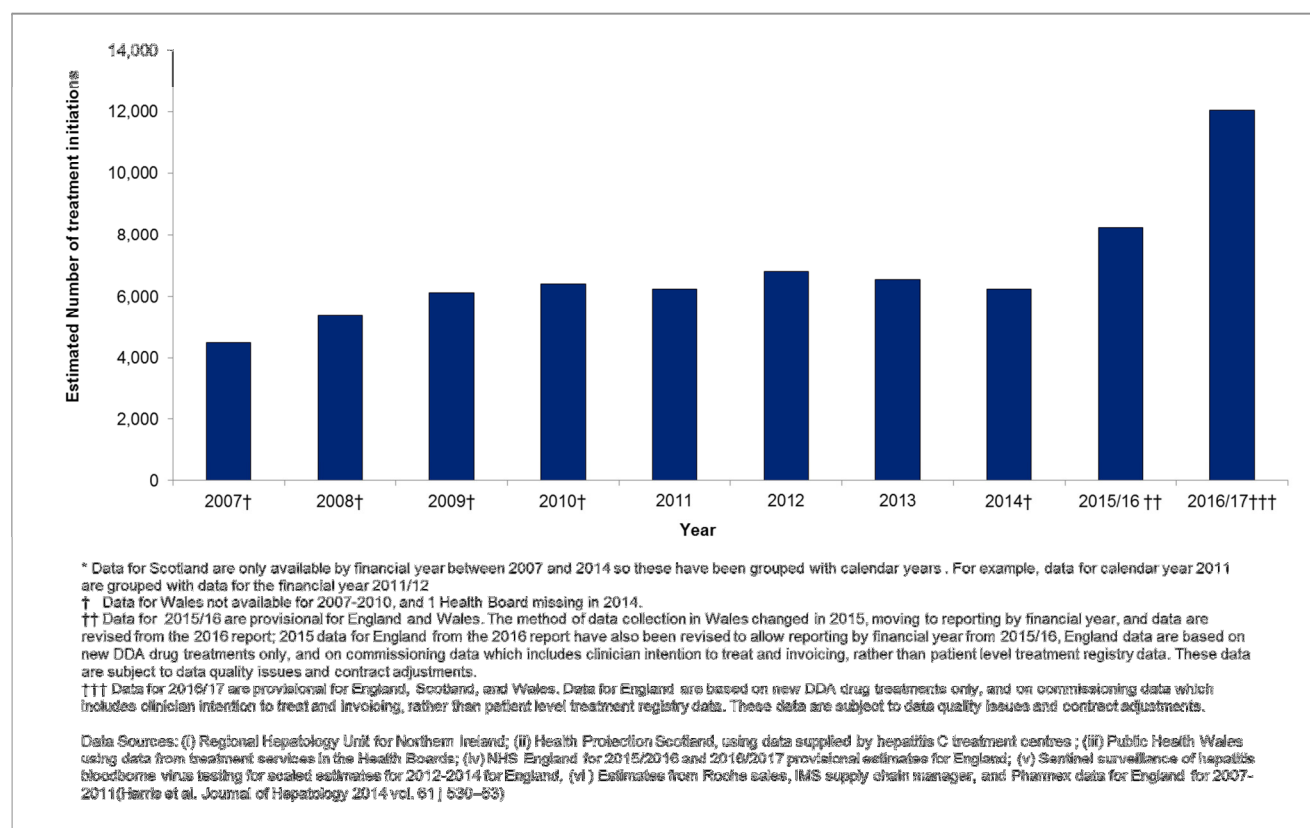
In the UK, new direct acting antiviral (DAA) drugs have the potential to transform the treatment landscape, offering a fast and effective cure to the vast majority who receive them, without many of the complications associated with previous treatments.<sup>(27),(28)</sup>

While prevention activity is absolutely key in reducing the rate of new infections, numbers already infected would remain high for many years without effective HCV treatment, which has the potential to dramatically reduce the number of deaths in the short and medium term.<sup>(27),(28)</sup>

From the public health perspective, the new generation of DAA drugs offer a considerable advantage over previous HCV treatments because their all-oral, shorter treatment durations, and improved side-effect profiles make them easier to roll out in community/outreach settings where it is easiest to reach many of those infected. While the high price of these new drugs represents a major barrier to access in most countries worldwide, these medicines are now being rolled out, in accordance with national recommendations,<sup>(29-34),(35, 36)</sup> in all UK countries.

As we work towards producing UK estimates of the proportion of the chronically infected population who achieve a sustained virological response following treatment, Figure 3 summarises provisional estimates of the numbers initiating HCV treatment in the UK over the last decade. Between 2009 and 2014, provisional estimates suggest that numbers initiating HCV treatment in the UK remained relatively stable at around 6,400 initiations per year (Range: 6,130, 6,812). However in 2016/17, provisional estimates suggest that significantly more people (around 12,060 in total) accessed treatment that year, an increase of 46% on the previous year, and an increase of nearly 90% on earlier years  $((12,060-6,400)/6400*100)$ . (Figure 3) This is likely to be the result of access to new DAA drugs that have been coming online since 2014/15<sup>(32),(31),(29),(30),(33-36)</sup>

**Figure 3. Provisional UK-wide estimates of numbers initiating HCV treatment, calendar years 2007-2014 and financial years 2015/16-2016/17\***



# Monitoring impact

## Reducing HCV-related morbidity and mortality

Up until 2014, morbidity and mortality from HCV have been on the increase in the UK<sup>(37)</sup> as people who acquired their infections decades earlier progress to advanced liver disease and access to suboptimal treatment has been inadequate.<sup>(9),(8),(38)</sup> However, the new DAA drugs that are coming online<sup>(32),(31),(29),(30),(33-36)</sup> offer the potential to significantly reduce the number of individuals progressing to serious HCV-related ESLD/hepatocellular carcinoma (HCC) and to reduce the premature mortality that results.<sup>(27)</sup> As new treatments are rolled-out to those who need them, it should be possible to achieve a rapid reduction in the severe morbidity and mortality that is currently observed<sup>(27),(28)</sup> and has been predicted to continue in the future.<sup>(9)</sup>

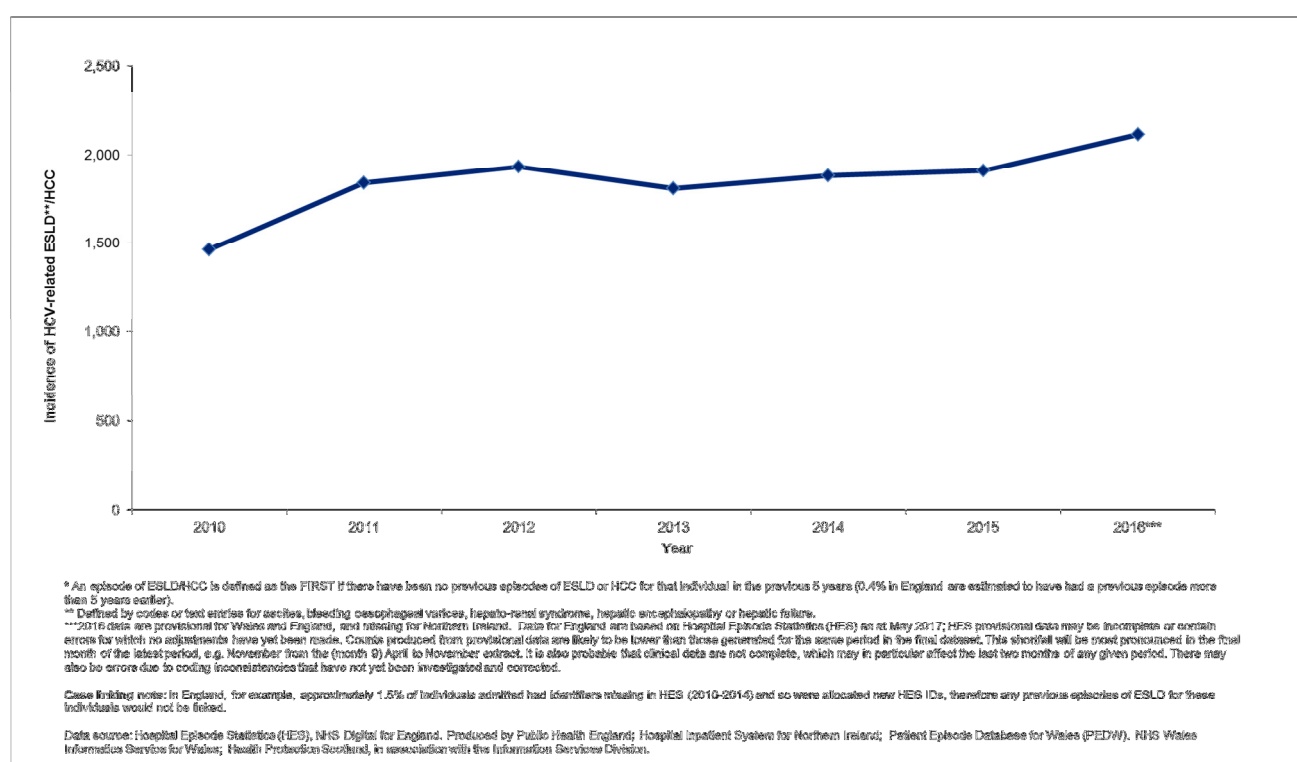
## Morbidity – Reducing the incidence of HCV-related ESLD/HCC

New cases of HCV-related ESLD/HCC are monitored using Hospital Episode Statistics (HES) in England, the Patient Episode Database in Wales (PEDW) and the Hospital Inpatient System (HIS) in Northern Ireland. New cases are identified by first linking all episodes of ESLD or HCC for an individual using their unique patient identifier and then linking these to any diagnosis of HCV since 2004 (since 2000 for Northern Ireland). Once these are linked, a case of HCV-related ESLD or HCC is classified as ‘new’ if no previous episodes of ESLD or HCC for that individual are found in at least the previous five years (In England, less than 1% of ESLD/HCC episodes are estimated to have had a previous episode more than five years earlier). In Scotland, data on new (ie first time) ESLD/HCC hospitalisations are obtained via record-linkage of Scotland’s National Hepatitis C Diagnoses Database to the national database on hospital admissions. Together these analyses have enabled us to produce UK-wide preliminary estimates of new cases (incidence) of HCV-related ESLD/HCC (Figure 4). However, it is important to recognise the limitations of these early estimates since different datasets were utilised in different UK countries, HCV may be unreported in HES, and patient episodes can only successfully be linked when identifiers exist in HES/PEDW/HIS to allow this. For example, in England approximately 1.5% of individuals admitted had identifiers missing in HES (2010-2014) and so were allocated a new HES identifier. Therefore, any previous episodes of ESLD for these individuals would not be linked. As a result these early estimates of incidence remain preliminary but suggest that new cases of HCV-related ESLD/HCC remained relatively stable between 2011 and 2015, averaging 1,875 new cases per year (Range: 1,809 - 1,933; Figure 4).

In 2016, preliminary figures (which exclude cases in Northern Ireland) suggest a potential rise in cases of 12% in England, Wales and Scotland. However, early

investigations revealed that nearly all of this increase occurred in two specific geographic areas in England, and was predominantly in HCV-related HCC. This points strongly toward changes in identification or management practices; due to the long incubation time between infection and severe liver disease, genuine changes in ESLD/HCC incidence will tend to occur over the course of several years rather than abruptly in a single year. Further investigation of this apparent recent increase is therefore warranted. In much of England, the number of new cases of ESLD in those under 50 has remained stable or fallen in the past few years, although new cases have continued to rise in older age groups. In the absence of treatment interventions, modelling predicted a continued increase in ESLD and HCC.<sup>(38)</sup> Further work is required to understand these new data, whether the rising burden in HCV-related disease will be less severe than anticipated, and the estimated impact of new treatment.

**Figure 4. Preliminary estimates of incidence\* of HCV-related ESLD\*\*/HCC in the UK: 2010-2016**



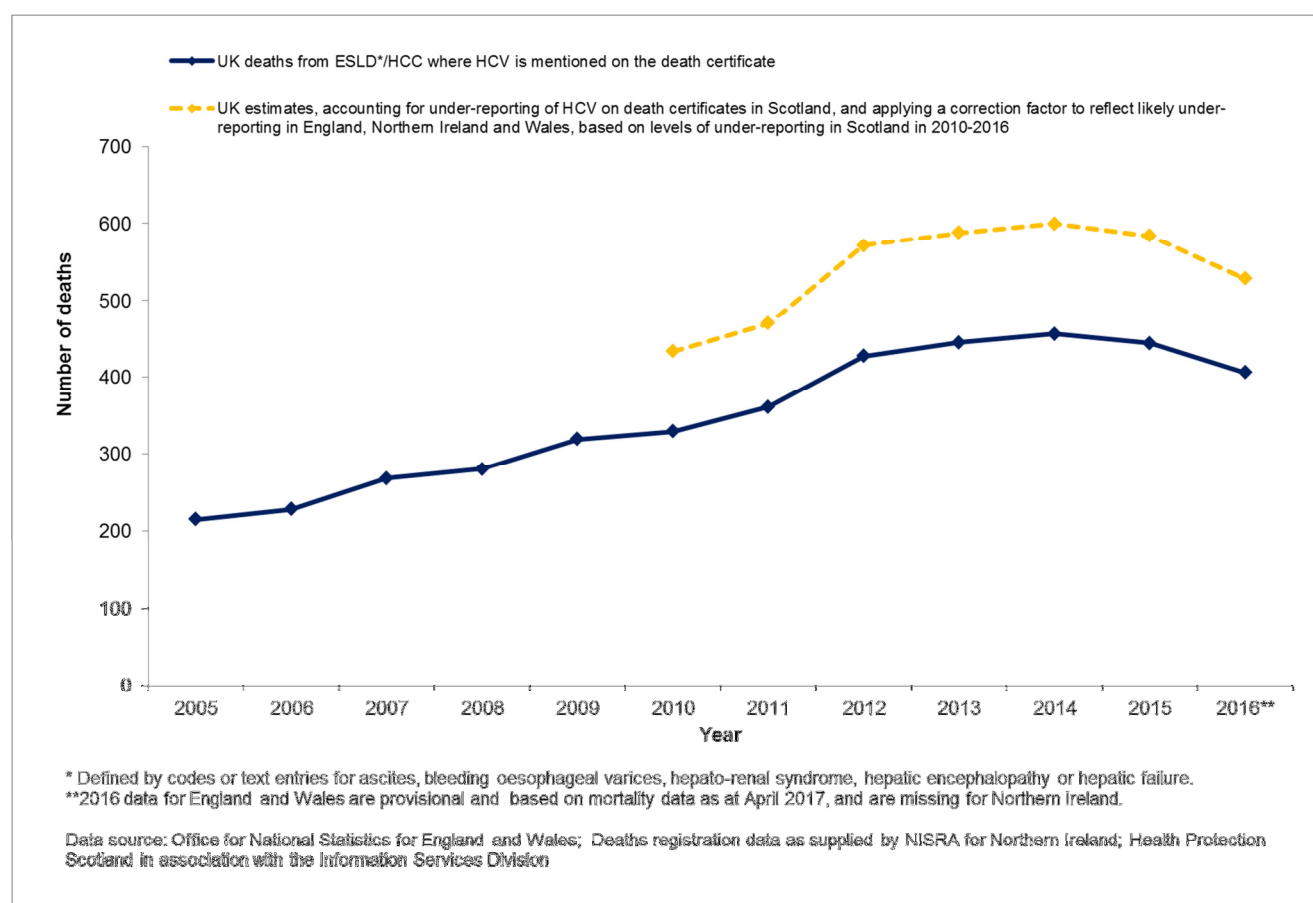
## Mortality – Reducing deaths from HCV-related ESLD/HCC

Between 2005 and 2014, deaths from ESLD and HCC where HCV was mentioned on the death certificate more than doubled in the UK, rising from 215 in 2005 to 456 in 2014. However an annual fall in deaths has been sustained since (Figure 5). The provisional 11% fall between 2014 and 2015 previously reported<sup>(37)</sup> has been reduced by high numbers of late reports of HCV-related ESLD/HCC in 2015 (and there is

potential for further late reports to come in over the coming months); current data now suggest a fall of 3% over this period. Provisional data for 2016 suggest a further fall in deaths of 7% over the last year in England, Wales and Scotland, however as before, these data are provisional and should be interpreted with caution. Nevertheless, it appears that the fall in deaths is being sustained and may be the result of new DAA drugs that were introduced from 2014/2015 (Figure 3), particularly for those individuals with more advanced disease.<sup>(39, 40)</sup> Because HCV is not always reported on the death certificates of those who die with ESLD/HCC and are HCV infected,<sup>(5),(41)</sup> actual numbers of deaths are estimated to be higher (see Figure 5).

As more infected individuals access new therapies (Figure 3), the GHSS on viral hepatitis' call for a 10% reduction in HCV deaths by 2020 seems likely in the UK, and a reduction of 65% by 2030<sup>(1)</sup> (see Appendix 1) within our reach, provided current improvements in numbers accessing treatment can be sustained.

**Figure 5. Deaths from HCV-related ESLD\* or HCC in the UK: 2005 to 2016**

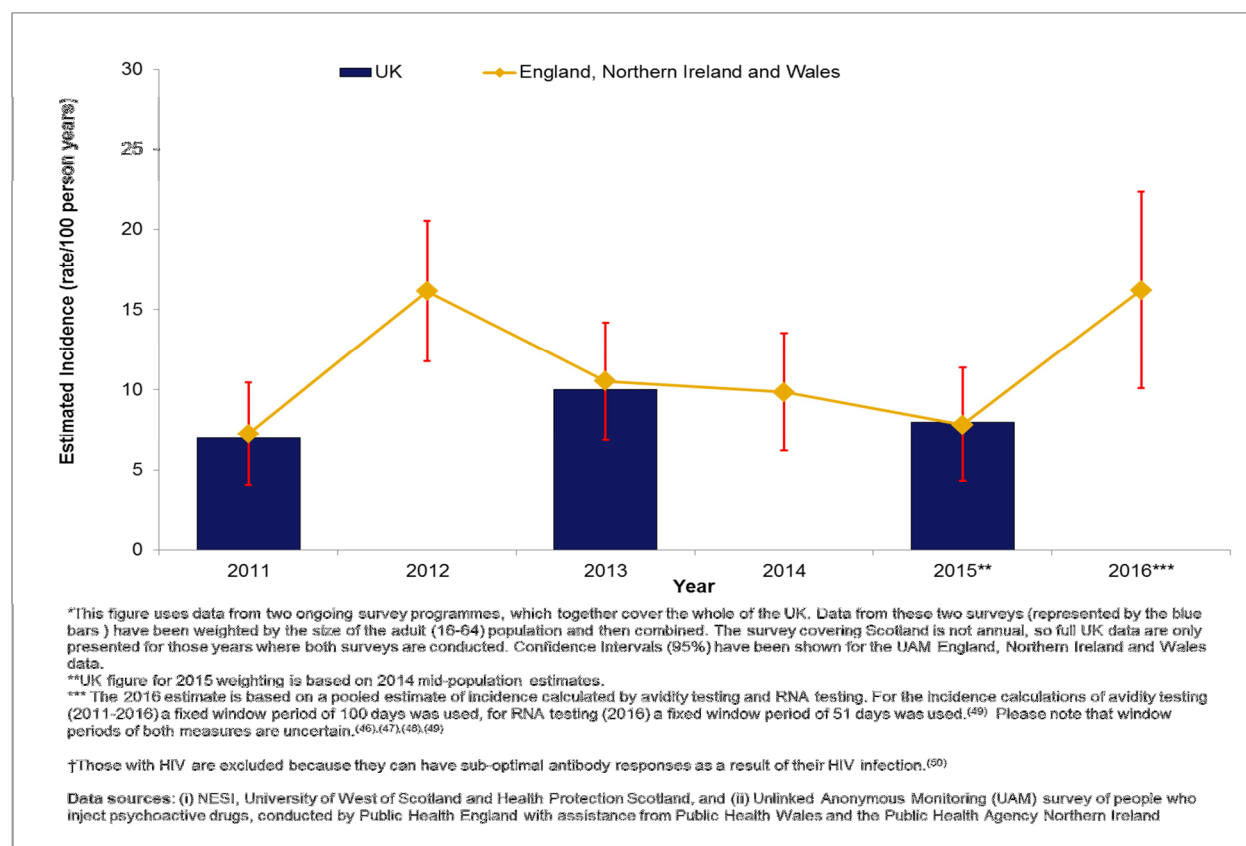


## Reducing the number of new (incident) infections

Monitoring the impact of prevention measures on the incidence of infection remains a challenge as incident infection is difficult to measure directly. Ideally we would monitor the actual or estimated number of new chronic HCV infections that arise annually in PWID as well as any that result from net migration, and monitor this over time. However, the former is difficult to estimate because much of the acute infection is asymptomatic and undiagnosed and there is considerable uncertainty around the number of people in the UK who are injecting drugs.<sup>(42-45)</sup> Added to this, it is also difficult to select a sentinel population of PWID for monitoring that is representative of PWID as a whole. As a result, a number of methods are used in the UK to generate information to provide insight into likely trends in incidence over time.<sup>(9)</sup>

In England, Wales and Northern Ireland, recent transmission of HCV has been explored among the participants in the UAM Survey of PWID<sup>(2)</sup> by looking for those who have recently developed antibodies to HCV. This has been undertaken by testing the HCV antibody positive DBS samples collected in the survey for antibody avidity. Samples from HCV-infected individuals (demonstrated by the detection of HCV RNA), with HCV antibodies whose overall avidity is weak are likely to be from individuals who have recently been infected with the virus. The length of time that samples from recently infected individuals will have antibodies with weak avidity is uncertain, but this state may last from two to six months.<sup>(46-48)</sup> Avidity testing has been used to explore recent transmission among those survey participants who had injected during the preceding year, after excluding those who were anti-HIV positive. In Scotland, recent transmission of HCV has been explored in a similar way among participants in the NESI Survey of PWID<sup>(3)</sup> by looking for those who test positive for HCV RNA, but are negative for HCV antibody. Like those with weak avidity antibody, individuals in this viraemic pre-seroconversion window are likely to have acquired their infections recently. For those years where incidence estimates are available from both surveys, data can be combined after weighting them by the sizes of the adult (16 to 64) populations for the countries they cover (blue bars, Figure 6).

These data suggest that incidence of infection has remained relatively stable over recent years, with the rates observed in 2016 (16/100 person years) not differing significantly from those reported in earlier years (Figure 6).

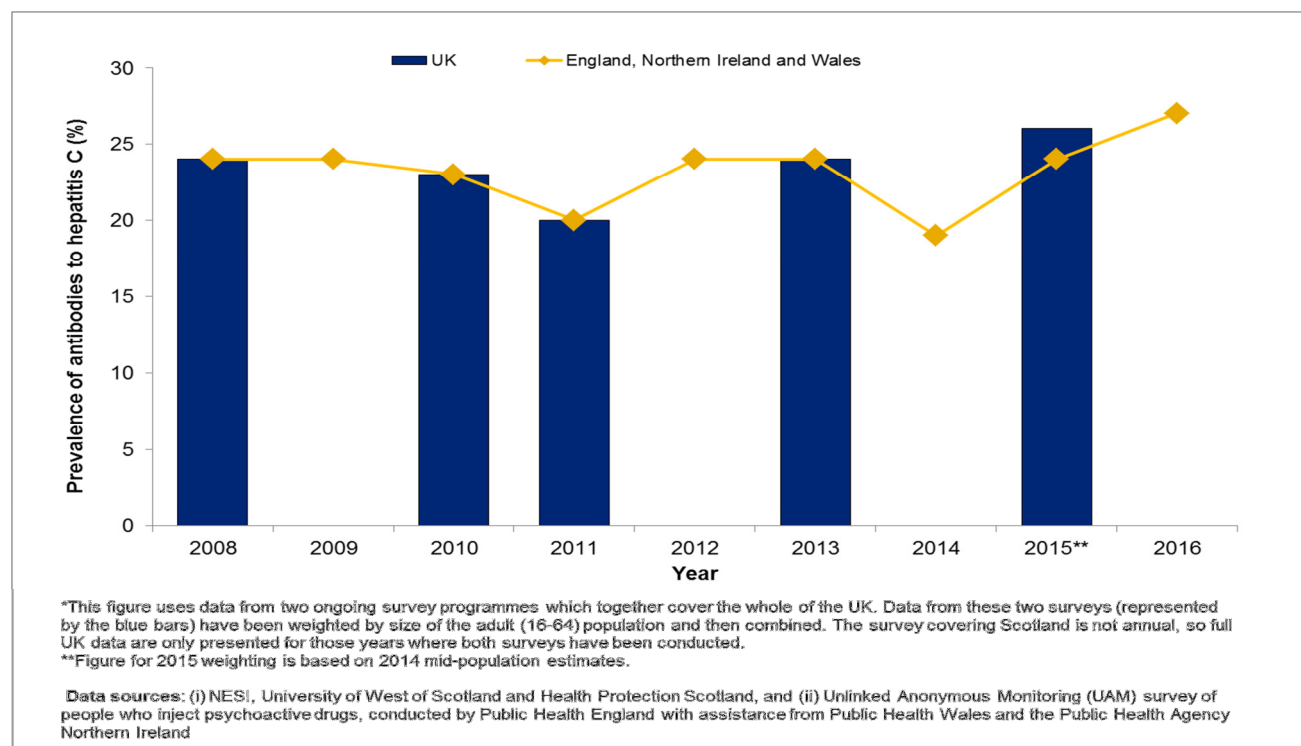
**Figure 6. Estimated UK-wide incidence of HCV among PWID, 2011-2016<sup>\*,†</sup>**

Because most new infections are acquired via injecting drug use, the prevalence of infection among recent initiates to injecting drug use can be used as a proxy measure of incidence. When taken together, data from UK surveys of PWID in contact with services (UAM<sup>(2)</sup> & NESI<sup>(3)</sup>) suggest that incidence of infection has remained relatively stable over recent years, with levels of infection in 2016 (27%) being similar to those observed in 2008 (24%; Figure 7). However, these figures should be interpreted with caution as the proportion of survey participants who first injected in the last three years, has declined over time.

UK estimates of HCV incidence suggest that the call to reduce new cases of chronic HCV by 30% by 2020, and 80% by 2030<sup>(1)</sup> (see Appendix 1), represent a significant challenge for UK health services. If these goals are to be achieved, a radical change in the response to HCV among PWID is required.



**Figure 7. Estimated UK-wide prevalence of antibodies to hepatitis C among people who began injecting drugs in the previous three years, 2008-2016.\***





## Data sources

- Office for National Statistics mortality data:  
<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths>
- Unlinked Anonymous Monitoring survey of PWID in contact with specialist drug services. <https://www.gov.uk/government/statistics/people-who-inject-drugs-hiv-and-viral-hepatitis-monitoring>
- Hospital Episode Statistics, NHS Digital:  
[www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=53](http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=53)
- NHS National Services Scotland (Health Protection Scotland and Information Services Division): <https://nhsnss.org/>
- Needle Exchange Surveillance Initiative in Scotland (University of West of Scotland, Health Protection Scotland, and West of Scotland Specialist Virology Centre):  
<http://www.uws.ac.uk/research/research-institutes/social-sciences/health-behaviours-and-policy/needle-exchange-surveillance-initiative/>
- Patient Episode Database for Wales, NHS Wales Informatics Service:  
<http://www.wales.nhs.uk/nwis/page/52490>
- Public Health Agency: [www.publichealth.hscni.net](http://www.publichealth.hscni.net)
- Northern Ireland Statistics and Research Agency: [www.nisra.gov.uk](http://www.nisra.gov.uk)
- Hospital Inpatient System, Northern Ireland: <https://www.health-ni.gov.uk/topics/dhssps-statistics-and-research/hospital-activity-statistics>
- Public Health Wales: [www.publichealthwales.wales.nhs.uk/](http://www.publichealthwales.wales.nhs.uk/)
- Health Protection Scotland: [www.hps.scot.nhs.uk/](http://www.hps.scot.nhs.uk/)
- Northern Ireland Hepatitis B and C Managed Clinical Network:  
<http://www.hepbandcni.net/>
- NHS England Specialised Commissioning:  
[www.england.nhs.uk/commissioning/spec-services/](http://www.england.nhs.uk/commissioning/spec-services/)

- PHE Sentinel Surveillance of Hepatitis C Testing:  
<https://www.gov.uk/government/publications/sentinel-surveillance-of-blood-borne-virus-testing-in-england-2015>
- Pharmex: <https://www.gov.uk/government/collections/commercial-medicines-unit-cmu>
- Roche: [www.roche.co.uk/](http://www.roche.co.uk/)
- MSD: [www.msd-uk.com](http://www.msd-uk.com)

## Glossary of abbreviations

CCG	Clinical Commissioning Group
DAA	Direct acting antiviral
DBS	Dried blood spot
ESLD	End-stage liver disease
GHSS	Global Health Sector Strategy
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
HES	Hospital Episode Statistics
HIS	Hospital Inpatient System
NSP	Needle and syringe programme
NESI	Needle Exchange Surveillance Initiative
NSGVH	National Strategic Group on Viral Hepatitis
NWIS	NHS Wales Informatics Service
ODN	Operational Delivery Network
ONS	Office for National Statistics
OST	Opioid substitution treatment
PEDW	Patient Episode Database in Wales
PHE	Public Health England
PWID	People who inject drugs
RNA	Ribonucleic acid
SVR	Sustained virological response
UAM	Unlinked Anonymous Monitoring Survey
WHO	World Health Organization

# Appendices

Appendix 1.\* WHO GHSS targets<sup>(1)</sup> for viral hepatitis, relevant to HCV in the UK context, with 2020 targets updated to reflect the draft action plan for the health sector response to viral hepatitis in the WHO European Region.<sup>(4)</sup>

TARGET AREA	2020 TARGETS <sup>(4)</sup>	2030 TARGETS <sup>(1)</sup>
<b>Impact targets</b>		
Incidence: New cases of chronic viral hepatitis C infection	30% reduction	80% reduction
Mortality: Viral hepatitis C deaths	10% reduction	65% reduction
<b>Service coverage targets</b>		
Blood safety:**Proportion of donations screened in a quality-assured manner	100%	100%
Safe injections:*** Percentage of injections administered with safety engineered devices in and out of health facilities	50%	90%
Harm reduction: A comprehensive package of harm reduction services to all PWID <sup>(51)</sup> including:	<p>At least 200 sterile needles and syringes provided per person who injects drugs per year</p> <p>At least 40% of opioid dependent PWID receive OST</p> <p>90% of PWID receiving targeted HCV information, education and communication</p>	At least 300 sterile needles and syringes provided per person who injects drugs per year
Proportion of people with chronic HCV diagnosed and aware of their infection	50% [75% of estimated number of patients at late stage of viral hepatitis-related liver disease (cirrhosis or HCC) diagnosed]	90%
Treatment coverage of people diagnosed with chronic HCV who are eligible for treatment	75% (>90% cured) [90% of diagnosed patients with chronic HCV are linked to care and adequately monitored]	80%

\* Abstracted from the WHO Global Health Sector Strategy for Viral Hepatitis<sup>(1)</sup> and modified to reflect the draft action plan for the health sector response to viral hepatitis in the WHO European Region<sup>(4)</sup>

\*\* In England, 2020 and 2030 targets are already met.<sup>(52)</sup>

\*\*\*In England, 2020 and 2030 targets are already met in the health care setting as the UK follows the EU Directive for the prevention of sharps injuries in the health care setting,<sup>(53)</sup> by using safety engineered devices.

## Appendix 2. Preliminary UK indicators to monitor the impact of key interventions to tackle hepatitis C virus

Impact and Service Coverage Monitoring Areas • Preliminary UK Indicator	
Impact	<b>1. Reducing HCV-related morbidity and mortality</b> <ul style="list-style-type: none"> <li>• Estimated incidence of HCV-related ESLD/HCC</li> <li>• Deaths from HCV-related ESLD/HCC</li> </ul>
	<b>2. Reducing the number of new (incident) infections</b> <ul style="list-style-type: none"> <li>• Estimated incidence of HCV among PWID</li> <li>• Estimated prevalence of anti-HCV among recent initiates to drug use</li> </ul>
Service coverage	<b>1. Adequate harm reduction</b> <ul style="list-style-type: none"> <li>• Estimated proportion of PWID reporting adequate needle/syringe provision</li> </ul>
	<b>2. Increasing the proportion diagnosed</b> <ul style="list-style-type: none"> <li>• Estimated proportion of PWID testing positive for anti-HCV, who are aware of their infection</li> </ul>
	<b>3. Increasing numbers accessing treatment</b> <ul style="list-style-type: none"> <li>• Estimated number initiating HCV treatment</li> </ul>

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