From: Graham Gibbens, Cabinet Member for Adult Social Care and Public Health

Andrew Scott-Clark, Director of Public Health

To: Health Reform and Public Health Cabinet Committee

22 November 2018

Subject: **Tuberculosis and Hepatitis C in Kent**

Classification: Unrestricted

Previous Pathway: This is the first committee to consider this report

Future Pathway: None

Electoral Division: All

Summary: This report provides an overview of Tuberculosis and Hepatitis C in Kent and details the partnership working to address these infections in the Kent population.

Recommendation: The Health Reform and Public Health Cabinet Committee is asked to **NOTE** the current information on Tuberculosis and Hepatitis C and **ENDORSE** the partnership approach taken by KCC Public Health.

1. Introduction

1.1 Tuberculosis (TB), also known as consumption and 'white plague', is caused by a bacterium called *Mycobacterium tuberculosis*. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body and if not treated properly, TB disease can be fatal.

1.2 TB is an ancient disease which has caused great epidemics and there is evidence of TB in the tombs of Ancient Egypt and Peru. It has been reported that TB may have killed more people than any other microbial pathogen in history.

1.3 TB spreads between people through the air. People with active TB disease can distribute the bacteria when they cough, speaks, or sing. If people nearby breathe in these bacteria, they can become infected. TB disease in the throat or lungs can be infectious, but TB in other parts of the body is not usually infectious. People with TB disease are most likely to spread it to people they spend time with every day. This includes family members, friends, and co-workers or schoolmates.

1.4 Not everyone infected with TB bacteria becomes sick. Latent TB infection occurs when someone is infected, but their body can fight the infection. They will have no symptoms and will not be infectious but could develop the disease later if they do not receive treatment, especially if they have or develop a weakened immune system. Overall, about 5 to 10% of infected persons who do not receive treatment for latent TB infection will develop TB disease at some time in their lives.

1.5 Persons at high risk for developing TB disease fall into two categories: Those that have recently been infected with TB and those with medical conditions that weaken the immune system such as HIV, diabetes or cancer treatments. Others at higher risk include people who are homeless or inject drugs and people who work or reside with people at higher risk such as in homeless shelters and prisons.

1.6 An increase in TB in the late 1980s was associated with a change in the epidemiology from a pattern of disease affecting the whole community to affecting specific high-risk groups. Rates of TB are higher in some non-UK born communities, mainly by virtue of their connection to parts of the world where TB is highly prevalent. In 2015, almost three-quarters of UK patients diagnosed with TB were born abroad and cases largely concentrated in urban areas.

2.0 Immunisation of TB (BCG)

2.1 TB immunisation with the Bacillus Calmette-Guérin (BCG) vaccine was introduced for children of school-leaving age (14yrs) 1953. A selective neonatal BCG programme to protect infants born in the UK to parents from high-prevalence countries was also introduced.

2.2 In 2005 it was decided that due to changes in the epidemiology of TB, the adolescent BCG programme should discontinue and be replaced by a risk-based programme that includes a targeted neonatal programme. Details of this programme can be found in Appendix 1.

2.3 In 2015 there were issues with vaccine supply which interrupted the neonatal BCG programme. An alternative vaccine was made available in 2016 and efforts have been made to catch up and ensure that those that missed their immunisations have received them. The vaccine supply issue has now been resolved.

3.0 Tuberculosis Policy

3.1 The rising TB in the 1990s and 2000s led to a comprehensive approach to TB control in England and in January 2015, Public Health England and NHS England jointly launched the ‘Collaborative Tuberculosis Strategy for England 2015-2020’. This strategy aims to achieve a year-on-year decrease in TB incidence, a reduction in health inequalities, and ultimately the elimination of TB as a public health problem in England.

3.2 The NHS is responsible for treating TB. PHE is responsible for the surveillance of TB and Multi-Drug Resistant TB (MDR-TB) and public health actions arising

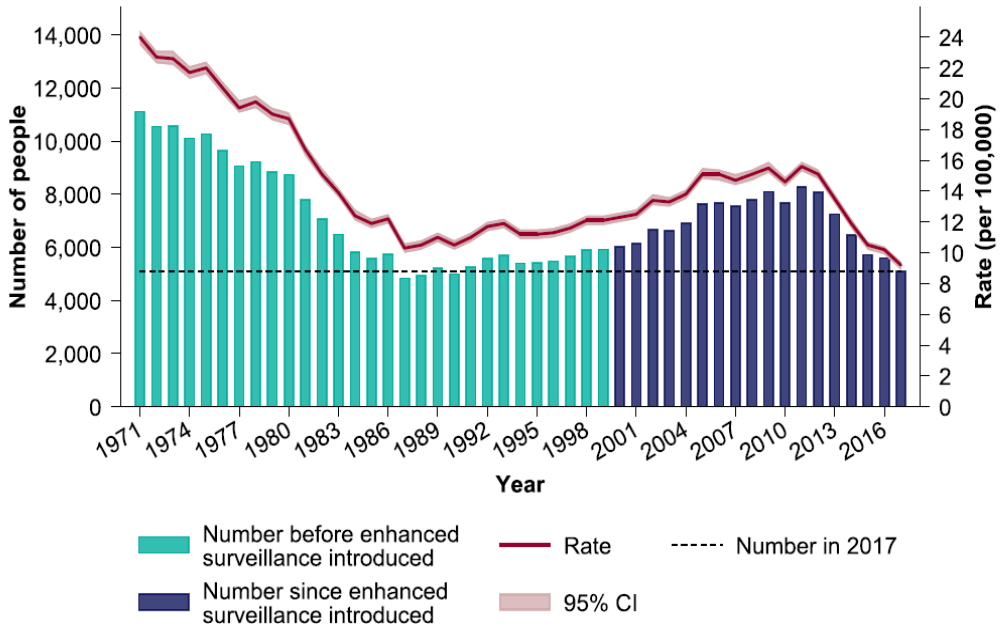
from a case of TB. PHE also works with the NHS to deliver immunisations (BCG) to the population according to national policy.

3.3 Public Health has the statutory responsibility to protect and improve the public's health. This duty is discharged through the local Health Protection Committee which is chaired by KCC (Allison Duggal) and attended by partners from the health protection system including the NHS and PHE.

4.0 National TB Data

4.1 TB is a notifiable disease and over most of the last century notifications of TB declined in the UK (from 117,139 new TB cases in 1913 in England and Wales to a low of 5,086 cases in 1987). In the late 1980s this trend reversed with TB activity rising by 65% with a peak of 8,411 newly reported TB cases in 2011. This increase was associated with a change in the pattern of disease from one affecting the whole community to affecting specific high-risk groups. Between 2001 and 2014 there were still between 387 and 518 TB deaths each year in the UK (data from Public Health England).

4.2 Since 2011 activity has declined, with 5,102 new cases reported in 2017 in England and Wales. In the UK, there has been a year-on-year decline in the number and incidence of TB cases between 2011 and 2017, down to an incidence of <10 per 100,000. This is a 38% decline in TB notifications since 2011 and qualifies the UK as a low incidence country.
Please see Figure 1 below.



4.3 Although levels of drug-resistant and multidrug-resistant (MDR) TB remain low in the UK, the proportion of MDR/rifampicin resistant (RR)-TB increased slightly between 2000 (1.3%) and 2011 (1.8%) but has since decreased to 1.5% in 2015 (Public Health England 2016).

5.0 Local TB Data

5.1 The TB incidence for Kent is significantly better than the England average (Figure 2), but the rates of TB are high in the South East and London (Figure 3).

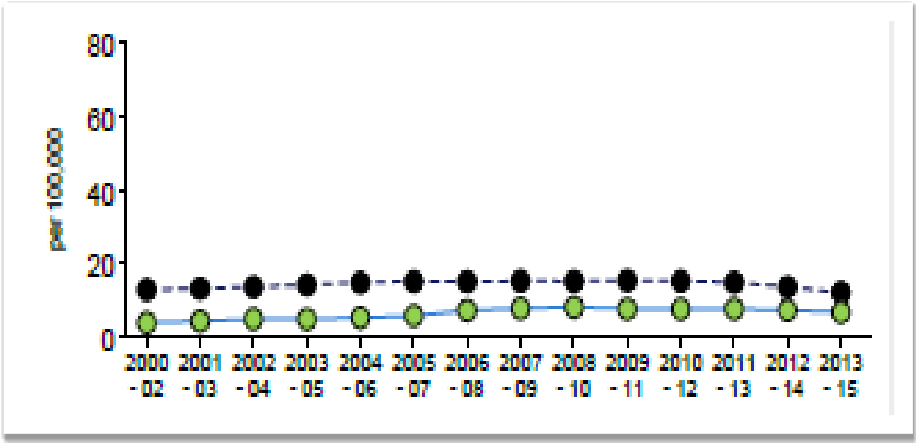


Figure 2: TB Incidence (3 -year average) for Kent 2000-2002 to 2013-2015

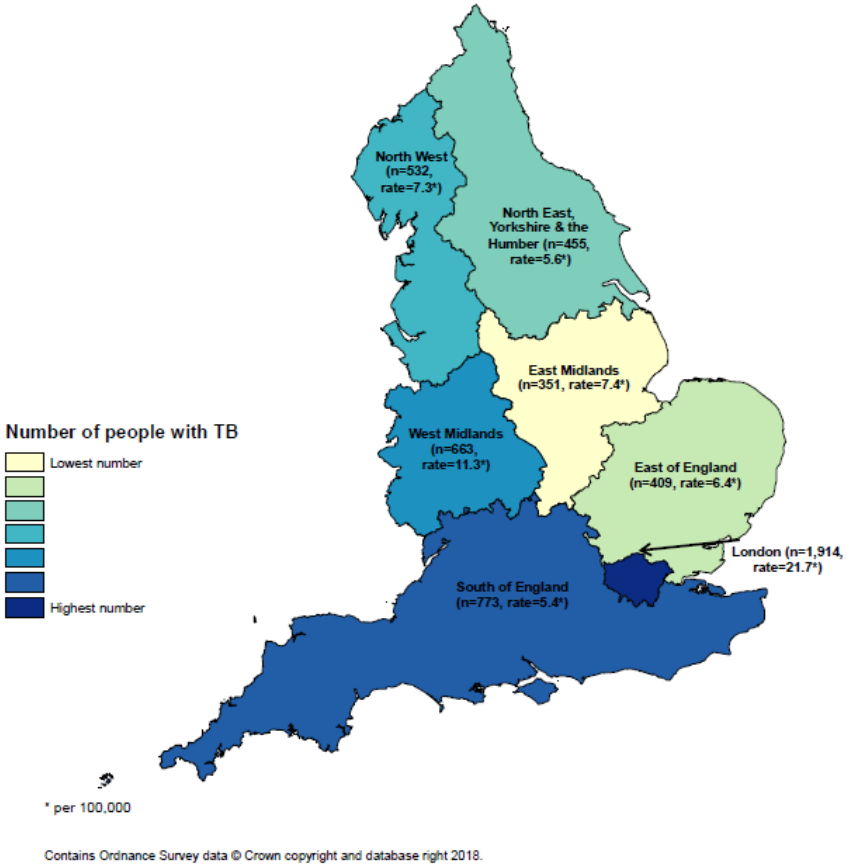


Figure 3. TB notifications and rates by TB Control Board, England 2017

5.2 In 2016, there were 94 cases of TB in Kent residents which is a rate of 6.1 per 100,000. Most of Kent has very low rates of TB, but one or two areas have higher rates. Please see figure 4.

5.3 The median age of TB cases in Kent was 37 years, with the greatest number of cases in the 30-39-year age group and the most common countries of birth for those notified in 2016 were the UK and India. See Figures 5 and 6.

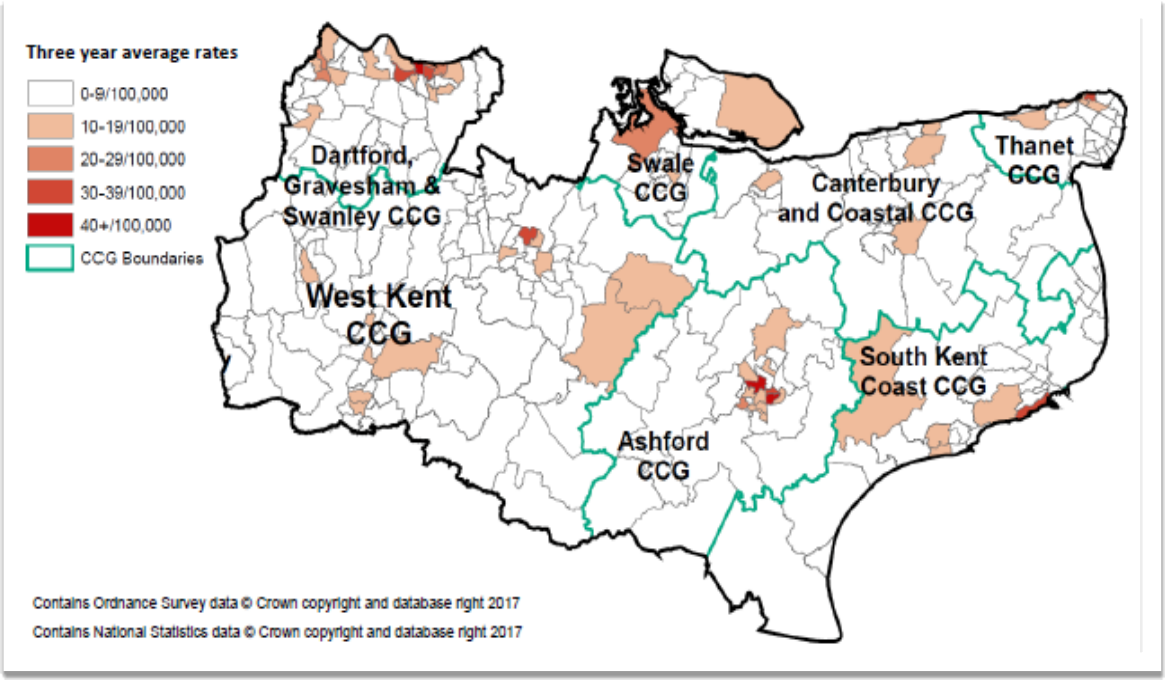


Figure 4. Three-year case numbers and average TB incidence rate by ward, 2014-2016

Country of Birth	TB Patients	
	Number	%
United Kingdom	26	28.6
India	19	20.9
Nepal	7	5.5
Lithuania	5	5.5

Figure 5. TB cases by most common country of birth, Kent 2016

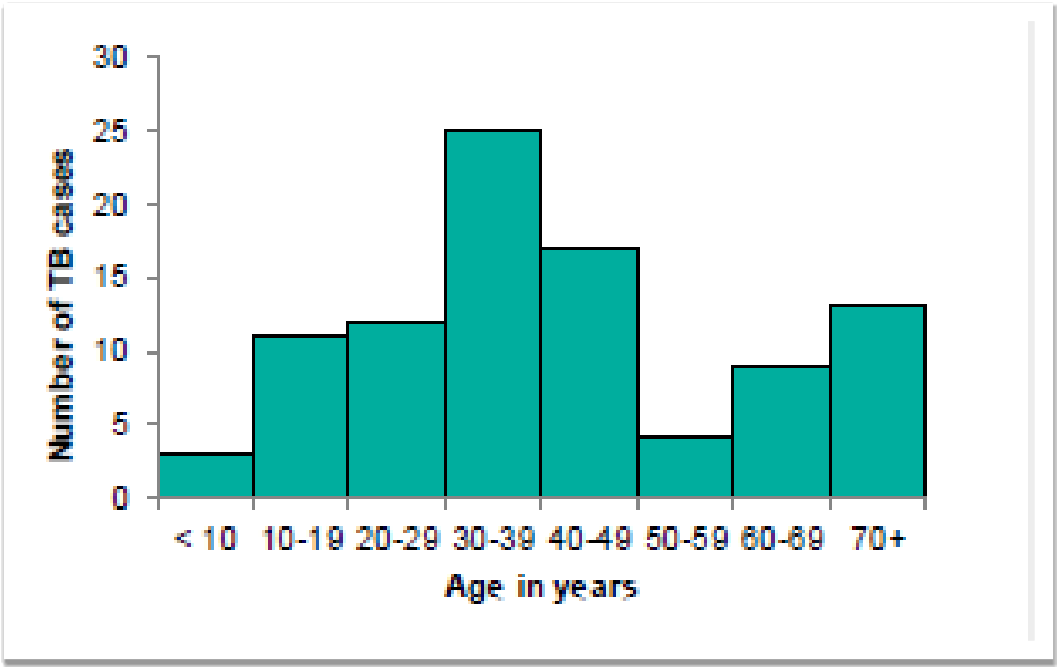


Figure 6. TB Notifications by age group, 2016.

6.0 Current Issues in TB Treatment and Prevention

6.1 There are issues regarding the appropriate discharge of patients from hospital following treatment of TB. This has been escalated to the Kent and Medway Quality and Safety Group and KCC Public Health are working with partners including the NHS and PHE to improve the discharge processes.

6.2 The TB Cohort review which is attended by KCC Public Health, PHE and NHS partners reviews cases to identify issues such as this and to identify actions to address them.

7.0 Introduction to Hepatitis and Hepatitis C

7.1 Hepatitis refers to inflammation of the liver, but the term is usually used to refer to viral hepatitis. There are several types of viral hepatitis, the most common being hepatitis A which is a highly infectious form of food poisoning spread by contaminated food and poor hygiene. Hepatitis B is highly infectious and is a blood-borne virus. It is spread by exposure with contaminated blood such as when sharing needles with an infected person, via infected blood transfusions or by sexual contact. Hepatitis C is another blood borne virus, spread by contact with contaminated blood such as tainted blood and can be spread via sex, but this is very rare.

7.2 Blood stocks in the UK are tested for both hepatitis B and C, but the test for Hepatitis C was introduced in the early 1990's and there is a cohort of individuals that received contaminated blood prior to routine screening.

7.3 Only one in every 3 or 4 people with have symptoms of acute hepatitis C; which include a high temperature, lethargy, loss of appetite, stomach pains and nausea and vomiting. About one in five of these people will also develop

jaundice (yellowing of the skin and eyes).

7.4 In about one quarter of people infected with hepatitis C, their immune system will successfully fight the virus and they will not have any further symptoms unless re-infected. The remaining three quarters of cases will develop chronic hepatitis. If left untreated, hepatitis C can cause potentially life-threatening damage to the liver and is a major risk factor for liver cancer.

7.5 The older hepatitis C treatments used a combination of a weekly injection with a capsule, but this was not well tolerated, and many people failed to keep up with the treatment which could last for several weeks. There are new treatments that can be taken as a tablet, are well-tolerated and do not need to be taken for as long, including simeprevir, sofosbuvir and daclatasvir. Using these new medications, 90% of people with hepatitis can be cured. There is no vaccine to protect against Hepatitis C.

8.0 Hepatitis C Policy

8.1 The UK is currently working to eliminate hepatitis C as a major public health threat by 2030.

8.2 NHS England Operational Delivery Networks (ODNs) have been formed to deliver treatment equitably across the country and the National Strategic Group on Viral Hepatitis, established by Public Health England, is bringing together partner organisations to help find the best ways work together at local, regional and national level to improve health services, minimise the number of new infections and reduce the health consequences of hepatitis infection for people in England.

8.3 PHE has worked with partners to introduce hepatitis C resources in different languages to help raise awareness. There is a poster campaign in GP surgeries and the Hepatitis C Trust hosts a quiz which helps people to find out whether they might have been exposed to the virus. As well as raising awareness of hepatitis C and trying to find people who do not know they have the virus, there is also work to find people who have been diagnosed in the past and ensure that they have cleared the virus and if not, that they have access to the new drugs. PHE and the NHS are working together to identify people on GP lists that have been diagnosed in the past so that they can be assessed.

8.4 The NHS is responsible for treating hepatitis C. Public Health England (PHE) is responsible for the surveillance of hepatitis C and public health actions arising from cases of hepatitis C. Local authorities commission substance misuse services where screening for hepatitis C is performed and hepatitis is discussed at the KCC Health Protection Committee.

9.0 National Hepatitis C Data

9.1 In the UK approximately 166,000 people in the UK have hepatitis C. The main risk factor for hepatitis C infections is injecting drug use and most hepatitis C infections occur in people who inject drugs or have injected them in the past. In 2016 a study showed that 54% of people who had injected drugs and

participated in the Unlinked Anonymous Monitoring (UAM) Survey of people who inject drugs (PWID), tested positive for antibodies to hepatitis C.

9.2 Over the period between 1996 and 2016, there has been a more than fivefold increase in the number of laboratory-confirmed reports of Hepatitis C virus in England, with 10,731 laboratory reports in 2016 (Figure 2). Around two-thirds of these reports were in men and almost one half were in people aged between 25 and 39 years old (Figure 3).

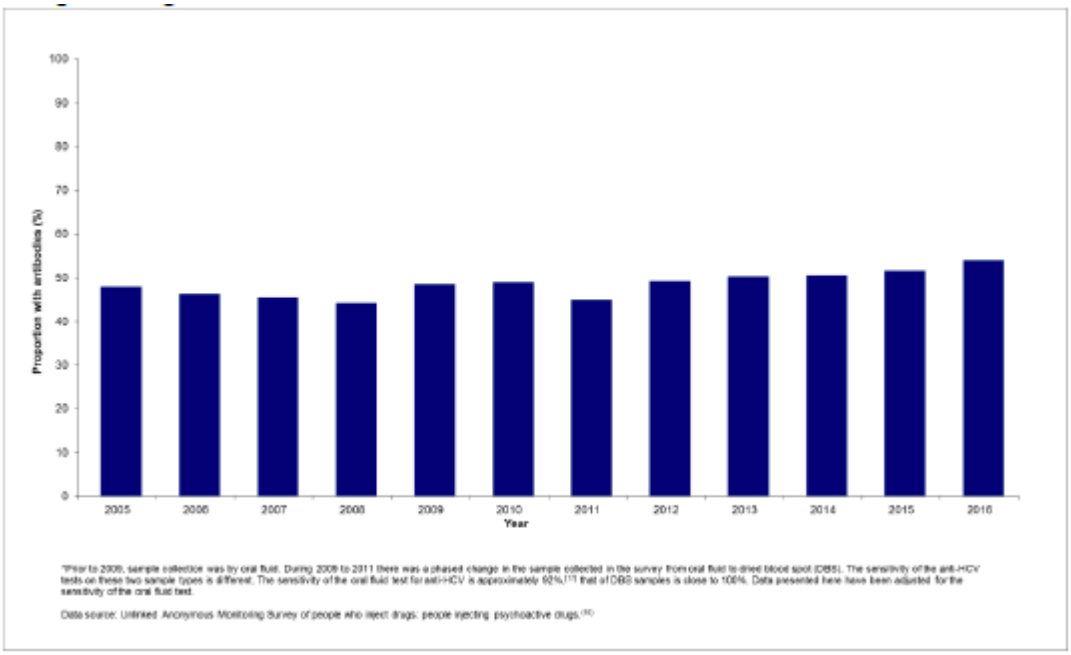


Figure 1. The trend in the presence of hepatitis C virus among people injecting psychoactive drugs in England 2005 to 2016 (PHE)

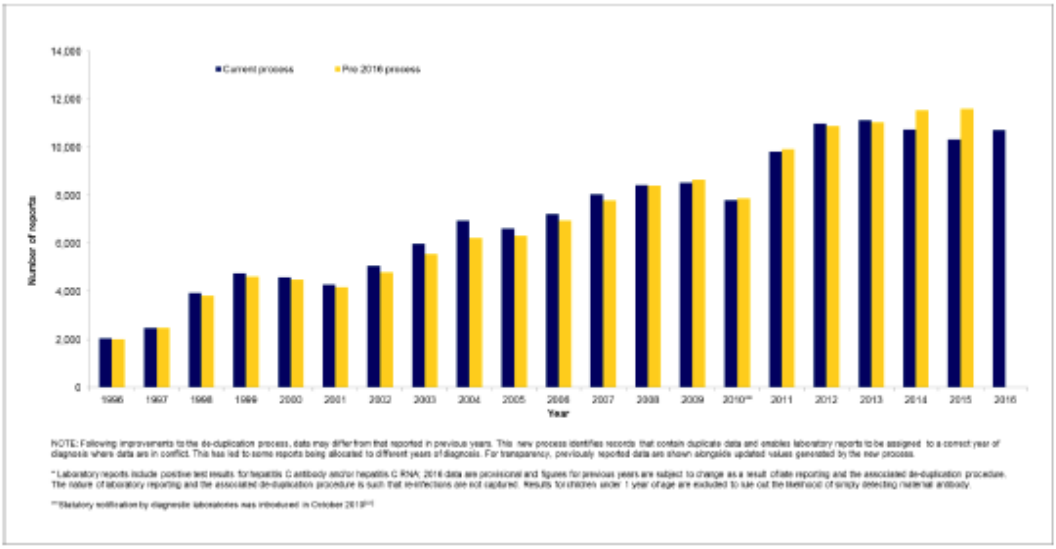


Figure 2. Number of laboratory reports of hepatitis C from England. 1996-2016.

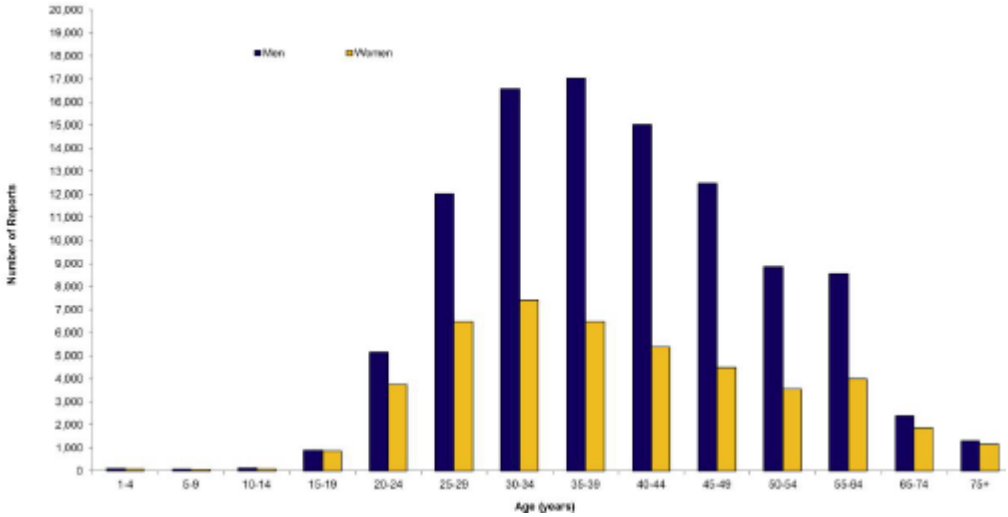


Figure 3. Age and Sex distribution of laboratory reports of hepatitis C from England. 1996-2016. (PHE).

9.3 The number of tests requested from GP surgeries rose by 20.8% between 2012 and 2016 suggesting that awareness of hepatitis C in primary care is increasing.

10.0 Local Hepatitis C Data

10.1 The estimated prevalence of Hepatitis C in Kent, derived from national models, suggests that we should have between 3,900 and 6,620 chronic infections in the county. The majority of these would be in people injecting drugs, or with a history of injecting drugs.
In Kent, our detection rate (10.2 per 100,000) is lower than the England average (19.7 per 100,000) (Figure 4). This probably reflects the complexity of working in such a large geography with a complex health economy and low awareness.

10.2 Laboratory reports show that there was an increase in detection 2007 and 2012 which levelled off in 2016. We are expecting to see an increase in the laboratory reports for 2017 to 2018, to reflect the work of ourselves and partners to increase awareness of hepatitis C and increase referral rates into treatment (Figure 5).

Area	Count	Value
England	10,565	19.7
South East PHE centre	1,179	14.0
Medway	50	18.2
Kent	147	10.2

Source: SGSS data (Second Generation Surveillance System) - Laboratory reporting. CIDSC, National Infection Service, PHE

Figure 4 – Hepatitis C Detection Rate (PHE)

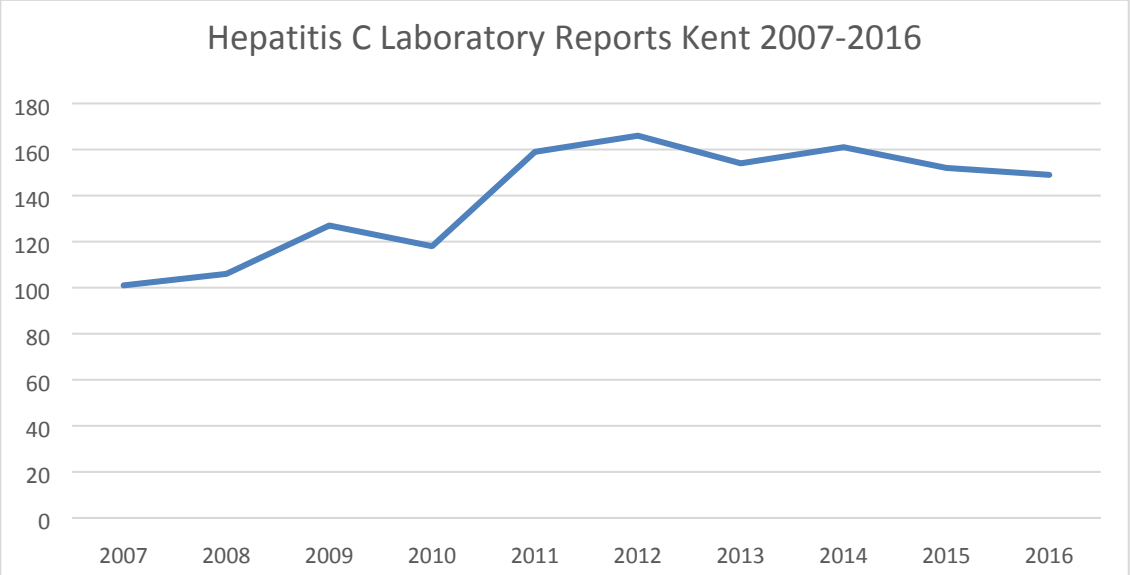


Figure 5 – Hepatitis C laboratory reports from Kent 2007-2016

10.3 The national model also allows us to estimate the disease stages and diagnoses in Kent and Medway and the estimates for the end of 2017 suggest that there would be 3,720 mild cases of hepatitis and 940 moderate cases. Approximately 7.2% of cases of hepatitis C in Kent and Medway would lead to cirrhosis of the liver. If the planned scale-up of services can be achieved in England (and Kent), statistical modelling predicts an 81% fall in hepatitis C-related cirrhosis by 2030.

11.0 Current issues in Hepatitis treatment and prevention

11.1 Less than half of people injecting drugs in England report adequate needle and syringe provision. This is something that is being reviewed by our local service providers, but we are confident that this is not a significant issue in Kent.

11.2 We continue to encourage targeted screening and offer of treatment to our substance misuse clients and work well with our partners. For example, HCV Action and PHE held a roadshow in September 2018 where NHS partners, PHE and KCC Public Health Commissioners presented.

12.0 Partnership working in Tuberculosis and Hepatitis C

12.1 KCC Public Health works with partners to assure the safety and quality of health services in Kent. This includes working with the Quality and Safety Group e.g. on appropriate discharge of TB patients, working the PHE on data and epidemiology of TB and on TB incidents that might require our assistance e.g. TB in educational establishments

12.2 KCC now attends the TB cohort review and this has been well received by our clinical and PHE colleagues. It allows us to help with relationships with other parts of the council such as social care.

12.3 In Kent, KCC Public Health have attended meetings with NHS specialised

commissioning, PHE Health Protection Team and Hepatitis C Operational Delivery Network colleagues to explore how to ensure our Public Health Commissioned Substance Misuse services.

12.4 Another example of partnership working is the roadshow in September 2018 held by HCV Action and PHE where NHS partners, PHE and KCC Public Health Commissioners presented.

13.0 Recommendation

The Health Reform and Public Health Cabinet Committee is asked to **NOTE** the current information on Tuberculosis and Hepatitis C and **ENDORSE** the partnership approach taken by KCC Public Health.

14.0 Background Documents

14.1 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/675492/TB_leaflet.pdf

14.2 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/731848/_Greenbook_chapter_32_Tuberculosis_.pdf

14.3 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/732469/HCV_IN_THE_UK_2018_UK.pdf

14.4 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693917/HCV_in_England_2018.pdf

15.0 Useful Links

15.1 https://www.cdc.gov/tb/topic/basics/default.htm

15.2 https://fingertips.phe.org.uk/profile/tb-monitoring/data#page/9/gid/1938132814/pat/104/par/E45000019/ati/102/are/E10000016

15.3 https://publichealthengland-immunisati.app.box.com/s/ae1wr0ck0jh77vgw5lrp0ukop5srrv9o

16.0 Contact Details

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Appendix 1

Current BCG Policy in England

Currently BCG immunisation is offered to:

- All infants (aged 0 to 12 months) with a parent or grandparent who was born in a country where the annual incidence of TB is 40/100,000 or greater†

- All infants (aged 0 to 12 months) living in areas of the UK where the annual incidence of TB is 40/100,000 or greater e.g. London

- Previously unvaccinated tuberculin-negative individuals under 16 years of age household or equivalent who have been in close contact with a case of sputum smear-positive pulmonary or laryngeal TB

- Previously unvaccinated, tuberculin-negative individuals under 16 years of age who were born in or who have lived for a prolonged period (at least three months) in a country with an annual TB incidence of 40/100,000 or greater.

- Healthcare workers (HCW) or laboratory worker, who have either direct contact with TB patients or with potentially infectious clinical materials or derived isolates.

- Veterinary and staff such as abattoir workers who handle animals or animal materials, which could be infected with TB.

- Under 16-year-olds who are travelling to stay with friends / family or local people for over three months in a country where the annual incidence of TB is 40/100,000 or greater and/or where the risk of Multi-Drug Resistant TB is high

BCG should also be considered for people working with higher risk groups such as the prison population, homeless persons and refugees and asylum seekers.