Infectious disease and human immunodeficiency virus (HIV)

Headlines

- The rates of measles and mumps cases in Kirklees were below the regional and national rates.
- Cases of meningococcal disease reported each year in Kirklees from 2008-2011 remained stable at approximately 12 cases per year, highest in those aged under four years.
- Kirklees achieved the target of 95% in the majority of childhood immunisations; although the first dose of MMR rates in children at two years was 94.3%, slightly below the WHO guidelines of 95%.
- By the age of five, almost all children (96.7%) in Kirklees have had their first dose of MMR and 92% have had both MMR doses.
- Similar to previous years, campylobacter remained the most commonly reported cause of bacterial gastrointestinal infections in Kirklees in 2012.
- TB rates continued to rise in Kirklees and in 2011 the rate of TB notifications was 0.31 per 1,000 in Kirklees compared to 0.14 per 1,000 in England.
- In Kirklees the number of new HIV diagnoses continued to increase since 2000. This may reflect more and better opportunities for testing within the Kirklees area, rather than an increase in the prevalence of HIV in Kirklees.
- Confirmed cases of Hepatitis B in Kirklees exceeded those regionally whilst Hepatitis A and C were similar to or below the regional rate.
- Most infectious diseases are evenly spread across Kirklees with the exception of TB. TB cases in the last decade have been concentrated in deprived parts of Dewsbury and Huddersfield.

Why is this issue important?

Infectious diseases are caused by pathogenic micro-organisms, such as bacteria, viruses, parasites or fungi and they can be spread, directly or indirectly, from one person to another[1]. Spread can be via air, contaminated food, bodily fluids (especially saliva, mucus and blood), as well as via sexual contact.

Infectious diseases in England have been decreasing for several decades but they still account for over 10% of deaths (usually in young children and older adults)[2] and around 1 in 3 GP visits in the UK[3].

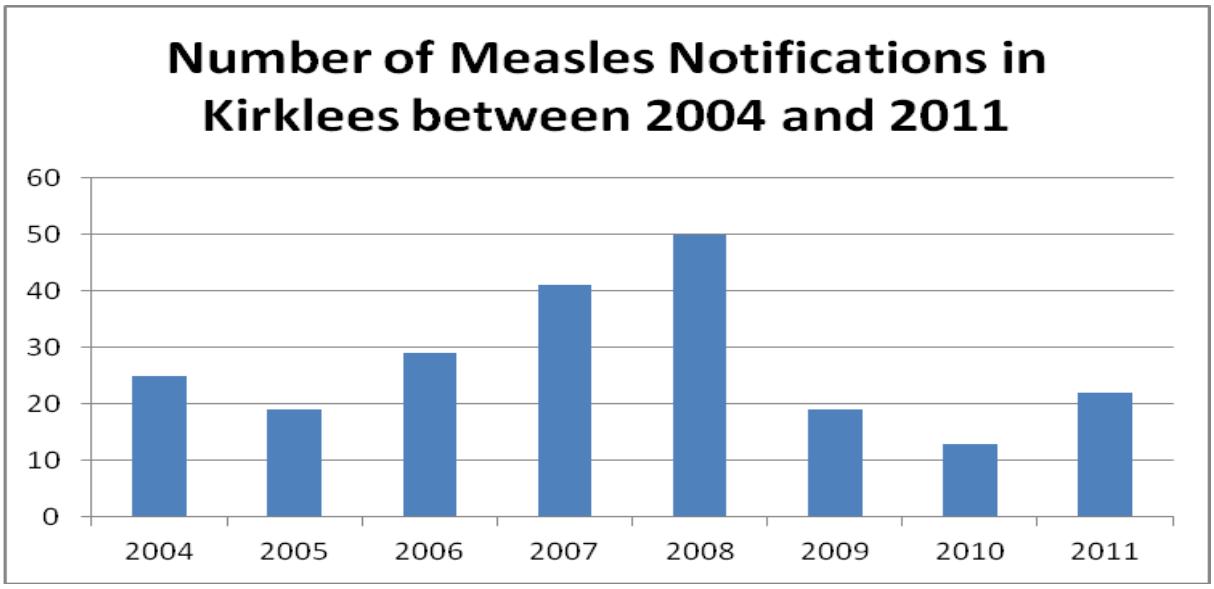
Infectious respiratory disease

Influenza is a highly infectious respiratory disease. Influenza activity in the 2011/12 season was low and the peak was very late in the season. Most deaths attributable to influenza were in the elderly[4]. Admissions to hospitals and intensive care were reported in all age groups although the largest proportion of cases was in those aged over 65 years[5].

Vaccine preventable diseases

Measles

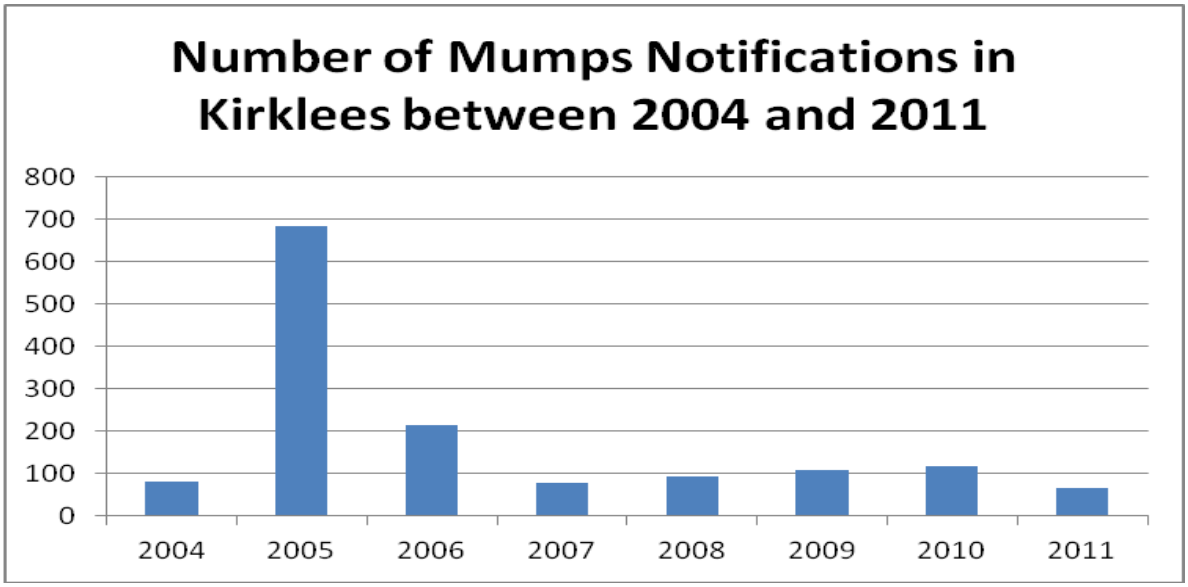
Measles is an acute highly infectious viral illness transmitted via droplet infection. Almost all who are infected develop symptoms. Measles can lead to serious complications, including blindness and even death[6]. The highest rates of measles were in those aged under one year, with a smaller second peak in the 10-14 age group[2]. Nationally, cases of measles and mumps increased during 2011, but Kirklees rates were below both the regional and national rate. Most notified cases of measles reported in Kirklees were in unimmunised individuals.



Mumps

Mumps is a relatively mild short term viral infection of the salivary glands that usually occurs during childhood, but can appear in teenagers and young adults. Local further education colleges and universities are often the places outbreaks occur in. Mumps can lead to viral meningitis. Other complications include swelling of the testicles in males and the ovaries in females who have gone through puberty[7].

Chart 2



Between 2009 and 2011, the rate of mumps cases in Kirklees was lower than the regional and national rate[8].

Meningococcal disease

Meningitis is an infection of the meninges (the protective membranes that surround the brain and spinal cord)[9]. Cases of meningococcal disease reported each year in Kirklees between 2008 and 2011 remained stable at approximately 12 cases per year, highest in those aged under four years[10].

Immunisations

Vaccination programmes protect individuals against infection and, once certain coverage is achieved also bring about "population immunity"[3]. Vaccinations against a variety of infectious diseases are offered free of charge by the NHS to certain population groups, including all babies and children, those aged over 65 years and certain vulnerable groups.

Childhood immunisations uptake has continued to improve in Kirklees children as reported in previous JSNAs. In 2011/2012 Kirklees achieved the target of 95% in the

majority of childhood immunisations, although the first dose of MMR rates in children at 2 years old was 94%. By the age of five, almost all children (97%) in Kirklees have had their first dose of MMR and 92% have had both their MMR doses.

Chart 3

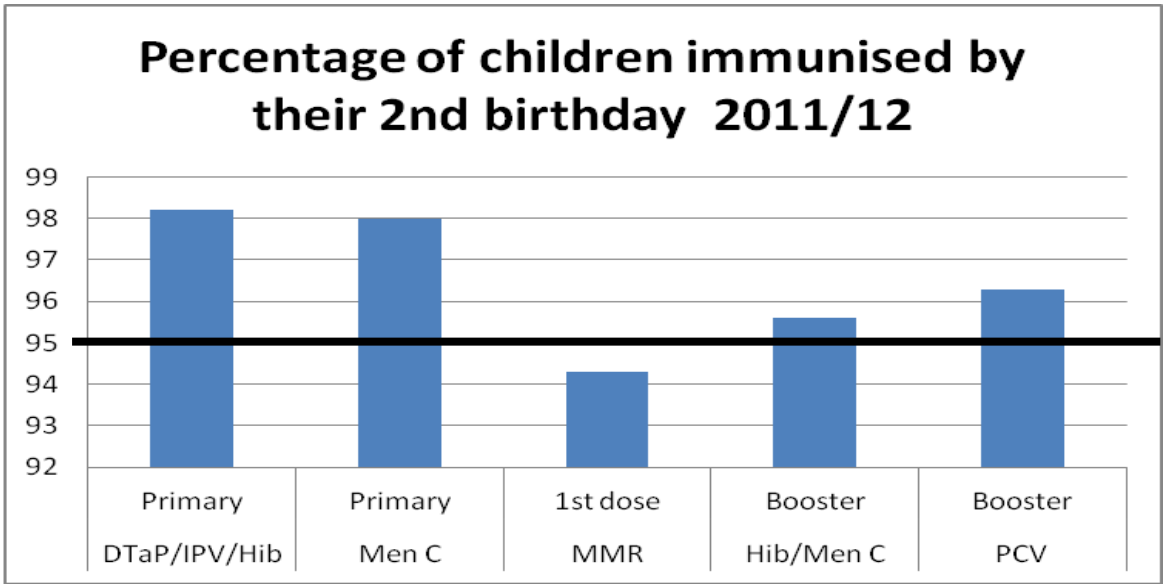
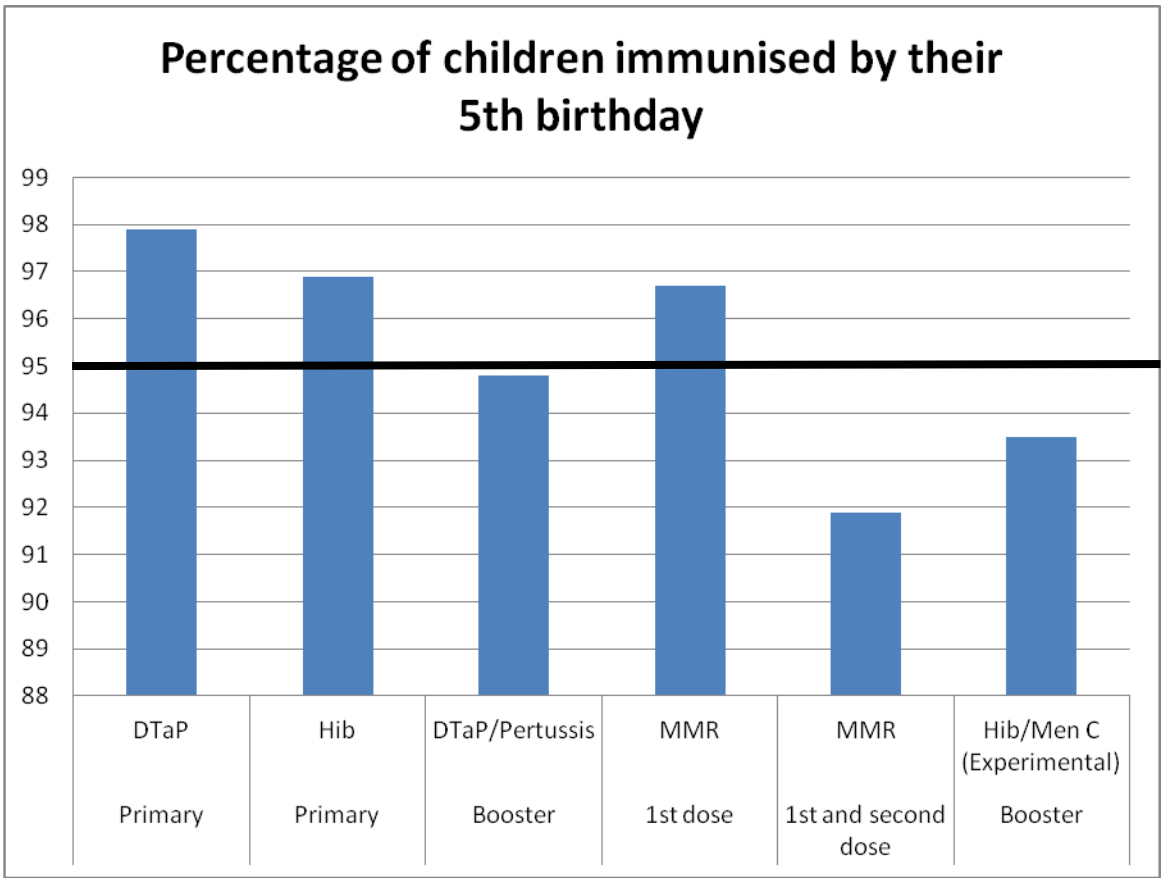


Chart 4



Seasonal flu immunisation is offered to all those aged 65 years and over, people with certain long-term conditions, and frontline healthcare and social care workers. Uptake of seasonal flu immunisation in Kirklees for 2011/2012 was 72% in those aged 65 years and over, 48% in those aged under 65 years in clinical at risk groups, and in pregnant women 21%.

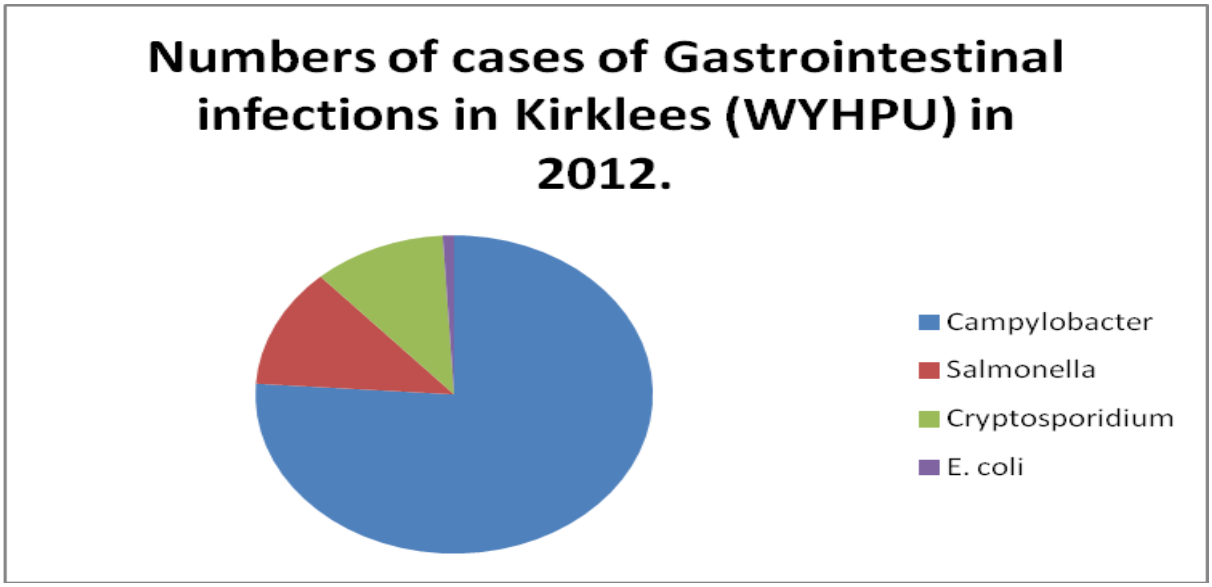
Pertussis (whooping cough) has increased since mid 2011 prompting a temporary immunisation programme with a particular focus on pregnant women in Kirklees.

Gastrointestinal infections

The organisms that cause gastro-intestinal infections include viruses, bacteria and parasites and the identity of the organism can only be confirmed by laboratory testing of a faecal sample[11].

Food poisoning remained the most frequently notified gastrointestinal infection in Kirklees in 2012. This is reflected nationally[2]. The symptoms of food poisoning can range from vomiting, to diarrhoea and stomach cramps. Those who are elderly or have a condition that weakens the immune system, such as HIV or cancer, have an increased risk of developing more serious symptoms. Local figures are laboratory reported cases; the actual incidence in the community will be higher than reported as not all cases are reported. Outbreaks of food poisoning linked to commercial food premises and other public events have declined in recent years reflecting a positive impact from the proactive work led by Kirklees Environmental Health officers.

Chart 5 *(all data derived from the West Yorkshire Health Protection Unit and reproduced with permission)



In 2012, campylobacter remained the most commonly reported cause of bacterial gastrointestinal infections. The source of illness is often difficult to identify. Salmonella (bacterial) and cryptosporodium (parasitic) were the next most frequently identified form of gastrointestinal infection while less than 10 cases of E.Coli 0157 (bacterial) were reported.

Viral gastroenteritis

Norovirus is transmitted by eating contaminated food or water or by contact with contaminated objects. Institutional settings, particularly those with vulnerable people such as care homes, hospitals and schools, continue to be severely affected. In Kirklees in 2012, the majority of norovirus outbreaks occurred in care homes (56%), followed by hospitals (32%), and schools/nurseries (11%). Ongoing education with these settings about infection prevention and control has led to more effective management of outbreaks.

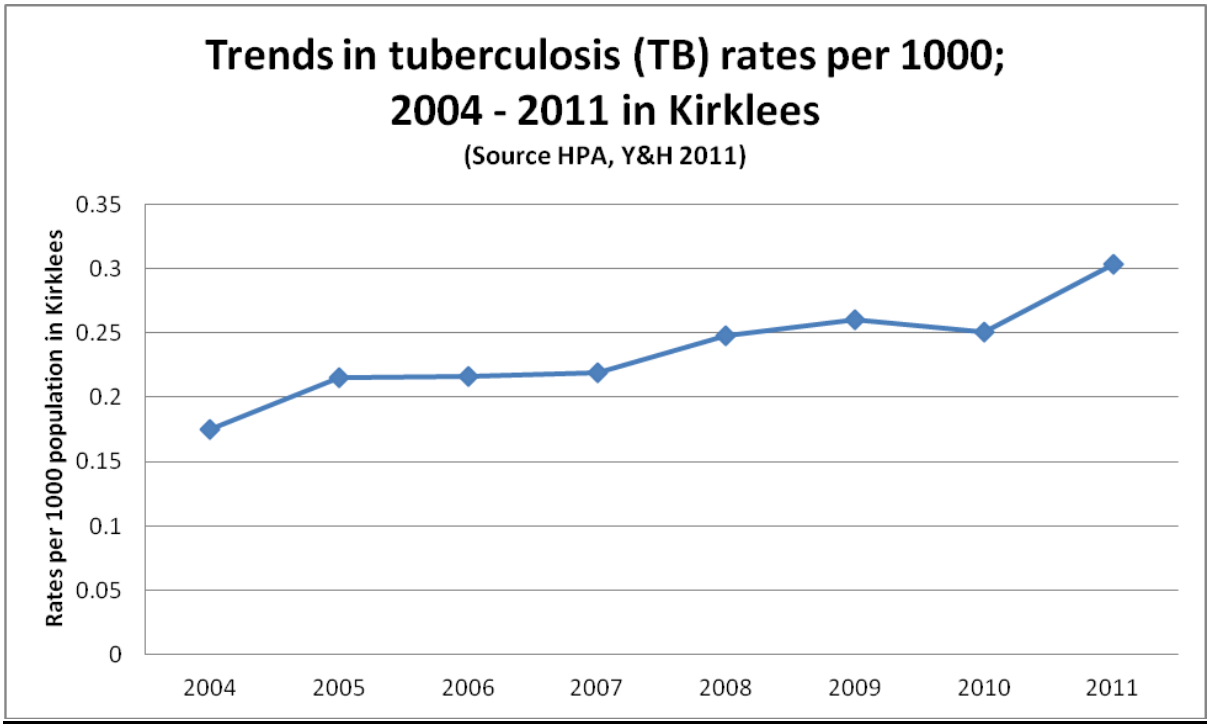
Tuberculosis

Tuberculosis (TB) is an infectious bacterial disease usually causing disease in the lungs (pulmonary), but it can also affect other parts of the body (extra-pulmonary). Only the pulmonary form of TB disease is infectious. Transmission occurs through inhaling infectious droplets. TB is curable with a combination of specific antibiotics, but treatment is lengthy[12]. Resistance to standard anti-TB drugs is increasing. Multidrug-resistant tuberculosis (MDR-TB) is a form of TB caused by bacteria that do not respond to the two most common anti-TB drugs. People who are co-infected

with HIV and TB are 21 to 34 times more likely to become sick with TB. The risk of active TB is also greater in persons suffering from other conditions that impair the immune system[13].

TB notifications and rates have remained relatively stable in the UK and in Yorkshire and the Humber since 2005, but in Kirklees TB rates have continued to rise.

Chart 6



In 2011 the rate of TB notifications was 0.31 per 1,000 in Kirklees compared to 0.14 per 1,000 in England[14]. The majority of TB cases were notified from young adults, those from countries with high rates of TB, and those with social risk factors for TB such as homelessness, drug and alcohol use and previous imprisonment[2].

In Kirklees[14]:

- Between 2009-2011 32% of people with TB were UK-born. The rate of TB in those UK born has increased from 6% to 9% per 100,000 population between 2004-2011.
- In 2011, 54% of cases were of Pakistani origin, followed by white origin (16%) and Indian ethnic origin (14%).
- TB locally is a disease of young adults, especially those aged 25-34 years. The rate of new cases per 1,000 population, in the 25-34 year old age group was 0.37 in 2009 rising to 0.67 in 2011. In those aged 35-44 years in 2009 it

was 0.19, rising to 0.31 in 2011. In those aged over 65 years the rate of new cases rose from 0.3 in 2009 to 0.39 in 2011. Rates in all adult groups have increased, apart from those aged 15-24 years, which have decreased.

- Completed treatment within 12 months has been stable at between 80% and 90% for Kirklees between 2004 and 2010 achieving the CMO target of at least 85% of cases successfully completing their treatment.

*HIV**

**** For other STIs see the sexual health section***

The human immunodeficiency virus (HIV) is a retrovirus that infects cells of the immune system, destroying or impairing their function. As the infection progresses, the person becomes more susceptible to other infections, and gradually becomes immunodeficient. The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS). It can take 10-15 years for an HIV-infected person to develop AIDS; antiretroviral drugs can slow down the process even further[15].

The most common cause of HIV transmission in the UK is through unprotected sexual intercourse. HIV is also transmitted via the transfusion of contaminated blood, sharing of contaminated needles, and between a mother and her infant during pregnancy, childbirth and breastfeeding.

People diagnosed at a late stage of progression of the infection have 10 times greater risk of death within one year than those diagnosed early. Early diagnosis also facilitates risk reduction and prompt treatment (if appropriate), which reduces infectivity.

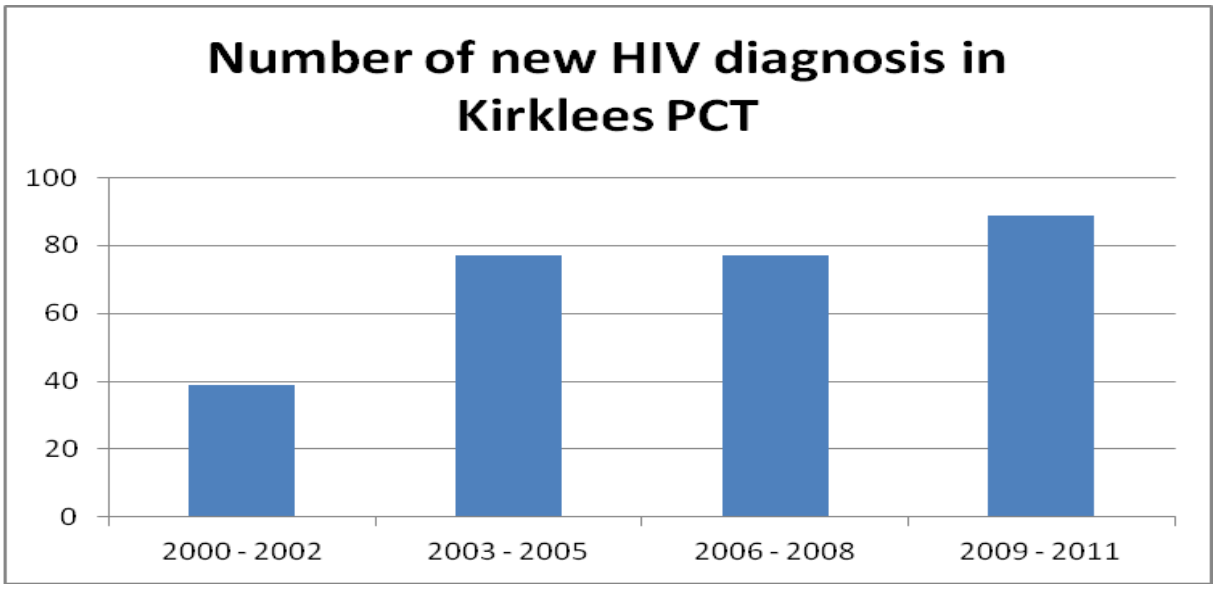
In 2010, an estimated 91,500 people were living with HIV in the UK. By the end of 2012 this rose to over 100,000. HIV remains one of the most important infections in the UK, causing serious long-term ill health and death. A quarter of those living with HIV in the UK are undiagnosed.

In the UK in 2010, there were 5,900 new diagnoses of HIV, of which 50% were “late”. Black Africans, particularly men, are at greater risk of late diagnosis (67% compared to 41% among white men). In 2010, the proportion of pregnant women testing positive for HIV was 0.17%, similar to the 2005 figure[2].

Overall the cost of HIV care in the first year after diagnosis is double for those diagnosed late. Inpatient hospital care costs due to late diagnosis are 15 times higher[16].

In Kirklees during 2011, 9,562 residents were offered a HIV test. Of those offered, 6,426 (86%) were tested. Of those tested, 33 tested positive for HIV (0.5%). New HIV diagnoses have increased since 2000. This may reflect more and better opportunities for testing within the Kirklees area rather than an increase in the prevalence of HIV in Kirklees. During 2010, 266 residents aged 15–59 accessed HIV related care (1.08 per 1,000).

Chart 7



* Values for 2011 could increase slightly due to late reporting
Data source: HIV New Diagnosis (Nov 2012)

Hepatitis

Hepatitis is an infection causing inflammation of the liver.

Hepatitis A is mainly spread through contaminated food and water and remains a serious problem for travellers to parts of the world with poor standards of hygiene.

Hepatitis B ranges in severity from a mild illness, lasting a few weeks (acute), to a serious long-term (chronic) illness that can lead to liver disease or liver cancer. Patients with chronic infection remain infectious and pose a risk to others. Hepatitis B is transmitted through exposure to infectious blood or body fluids and mostly occurs through unprotected sexual contact, blood to blood contact (such as sharing of needles) or through perinatal transmission from mother to child[17]. Overall the UK

has a low prevalence of Hepatitis B, but prevalence of those with persistent chronic infection varies across the country.

Hepatitis C infection can be an acute illness, but most often becomes a chronic condition that can lead to cirrhosis of the liver and liver cancer. Acute Hepatitis C infection is rarely recognised as patients often have mild symptoms or show no symptoms at all. The single most important reported risk factor for acquiring Hepatitis C infection is injecting drug use. It is estimated that around 216,000 individuals in the UK are chronically infected with Hepatitis C[18] but 8 out of 10 do not know they have it because they have no symptoms. Approximately 75% of these people go on to develop a chronic hepatitis.

Table 1: Data related to Kirklees: hepatitis confirmed cases in Yorkshire and the Humber by the Health Protection Unit and Local Authority, 2010.

In 2010	Area	Total cases	Rate per 100,000
Hepatitis A	Kirklees	6	0.7
	Yorkshire and the Humber	44	0.8
Hepatitis B	**Kirklees**	**48**	**11.8**
	Yorkshire and the Humber	**427**	**7.7**
Hepatitis C	Kirklees	51	12.5
	Yorkshire and the Humber	980	18.6

In Kirklees rates of Hepatitis B exceeded that of Yorkshire and the Humber while rates of Hepatitis A and C were similar to or below the Yorkshire and the Humber rate. Cases of Hepatitis A in Kirklees remain below five per year. More males than females had both acute and chronic Hepatitis B in 2010 and 2011 and cases peaked in the 25-34 year old age group.

Which groups are affected most by this issue?

Depending on the type of infectious disease, different sub-groups of the population were more affected. Infectious disease disproportionally affects the most disadvantaged in the population[19].

Table 2

Infectious disease	Population sub-groups affected/more at risk
Infectious respiratory disease	Young children and older adults.
Measles	The majority of confirmed cases of measles in the region occurred in those aged under four years.
Mumps	The majority of cases within the region were in the 15-29 age group with the peak in the 20-24 year old group.
Food poisoning	The very young or elderly or those who have a condition that weakens the immune system, such as HIV or cancer, may develop more serious symptoms.
TB	Locally, mostly those of Pakistani origin and migrants from countries with high rates.
HIV	Locally, HIV mainly affected black Africans and white men who have sex with men.
Hepatitis	More males had both acute and chronic Hepatitis B in 2010 and 2011 particularly those aged 25-34 years. Hepatitis C is more prevalent in males particularly those aged 25-54 years of age.

Where is this causing greatest concern?

Most infectious diseases are evenly spread across Kirklees with the exception of TB. TB cases in the last decade have been concentrated in deprived parts of Dewsbury and Huddersfield[14].

Views of local people

The Current Living in Kirklees (CLiK)[20] survey obtained the views of 55 people who had Hepatitis B/C/HIV or other blood borne viruses. There were more males (56%) and the majority were aged 25-54 years. 77% were white. More than a quarter of those rated their health as very bad or bad. 81% had utilised prescription medicine in the last 12 months.

Of these respondents:

- 20% had used illegal drugs in the last five years compared to 7% overall.
- 80% did not meet recommended physical activity levels compared to 63% overall.
- 44% were not likely to consume 5 a day compared to 36% overall.
- 32% were smokers compared to 19% overall.
- Consuming alcohol at inappropriate levels (as indicated by the Audit C score) was better than overall, 58% had a score of below 5 compared to 31%.

What could commissioners and service planners consider?

Influenza

It is vital that the groups more at risk receive the seasonal flu immunisation each year to help prevent deaths.

Immunisations

Promote the uptake of MMR immunisation at every opportunity in older children and young adults who may have missed the childhood immunisation programme.

Food poisoning

The Food Standards Agency have renewed their food borne disease strategy to 2015. Priorities for action include:

- Continuing to work to improve public awareness.
- Use of messages about good food hygiene practice at home and in catering establishments to reduce levels of campylobacter in the human population.

TB

- Cohort review process to be included in commissioning arrangements. This will systematically review patient outcomes and build/strengthen local multi-disciplinary TB networks.
- West Yorkshire-wide commissioning to discuss the feasibility of commissioning a cluster or West Yorkshire-wide TB nursing service.
- Explore funding for access to IGRA testing in accordance with NICE guidelines.

- Reduce patient and healthcare delay in the diagnosis of TB by working with organisations that represent at risk populations and GPs to improve symptom awareness, targeted screening and swift referral.

HIV

- HIV services must be accessible, acceptable and responsive, in particular, to the needs of men who have sex with men (MSM) and African migrant groups, recognising the internal diversity of these groups.
- Widen the availability of testing to more community-based settings in order to reduce late diagnoses of HIV.
- Preventing deaths through HIV is avoidable if diagnosed early. HIV testing in primary care and general medical admissions needs to be prioritised, specifically for the at risk groups such as black Africans and MSM. Community HIV testing needs to be appropriately targeted with long-term commitment to ensure the success of the testing.

Hepatitis

Continued information and education for the public to avoid high-risk behaviours and increase understanding of the importance of travel vaccination (especially against Hepatitis A).

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Date this section was last reviewed

22/07/2013 (PL)