

Section 4: Burden of ill-health: general health

Communicable disease



a single version of the truth



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Briefing (and hyperlink)	Section
Immunisations	Children and Young People
Sexual health	Health promotion and preventative services
Vaccination	Health promotion and preventative services

Outcome Frameworks Summary

The Public Health Outcomes Framework for England, 2013-2016¹ outlines the overarching vision for public health as “to improve and protect the nation’s health and wellbeing, and improve the health of the poorest fastest”. The NHS Outcomes Framework² set out how the improvement of healthcare outcomes for all will be the primary purpose of the NHS. The following indicators from these frameworks are relevant to this section.

Framework	Reference	Indicator
Public Health	1.9	Sickness absence rate
Public Health	2.15	Successful completion of drug treatment
Public Health	2.21 (i)	% eligible pregnant women tested for HIV
Public Health	2.21 (ii)	% women booked for antenatal care screened for syphilis, hepatitis B and susceptibility to rubella
Public Health	3.2	Chlamydia diagnoses
Public Health	3.3	Population vaccination coverage
Public Health	3.4	People presenting with HIV at a late stage of infection
Public Health	3.5	Treatment completion for tuberculosis (TB)
Public Health	3.7	Comprehensive, agreed inter-agency plans for responding to public health incidents
Public Health	4.8	Mortality from infectious and parasitic diseases
NHS	5.2	Incidence of healthcare associated infection (HCAI) (i) MRSA (ii) C. difficile

Edition

Edition	Version no.	Changes/Comments
2012/13	1	
2013/14	1	

Executive summary

Maintaining effective surveillance, prevention and control of infectious disease is vital for the health of the local population. Healthcare associated infections (for example meticillin-resistant *Staphylococcus aureus* (MRSA), seasonal flu, and outbreaks of other infectious diseases all have the potential to cause severe illness and sometimes death. In Wiltshire rates of healthcare associated infections have declined to a low rate through the implementation of good practice throughout health services. Other infectious diseases have also been successfully managed in the county, with very low numbers of cases recorded.

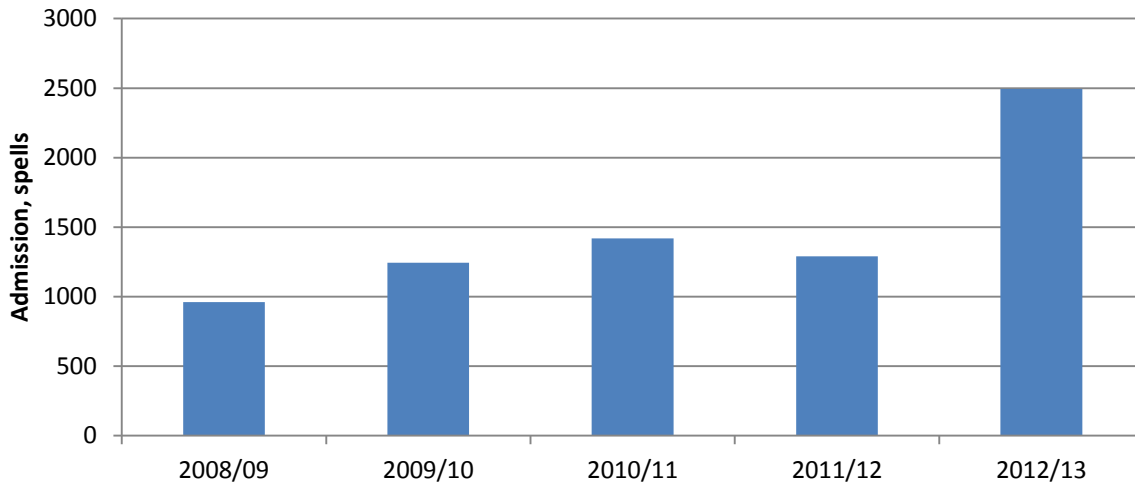
Why this area is important

Each type of communicable disease has its own source, method of transmission and hosts that are susceptible to infection from it. The basic management principle of communicable disease control is to break the transmission of a disease. This is done through disease surveillance, prevention, and the control of infections. These actions can vastly reduce the morbidity and mortality associated with communicable disease.

Communicable disease surveillance is important as it tells us which infections are causing the highest level of morbidity and mortality in a population. It also enables the identification of vulnerable groups within a population, priorities for control and prevention activities, enabling a swift response to contain the spread. Finally it allows the early detection of outbreaks and epidemics, thus limiting their consequential negative health effects.

What are the needs of the population?

In 2012/13 there were 2,495 admissions for patients with a primary diagnosis of an infectious disease.

Figure1: Hospital admissions for infectious disease**Hospital admissions spells for Wiltshire patients with a diagnosis of an infectious disease, 2008/09-2012/13****Healthcare associated infections**

Healthcare associated infections arise as a result of healthcare interventions, either in hospital or in the community. Effective infection control minimises the risk of acquiring an infection, and effective surveillance to monitor occurrences is an important part of infection control. Infections of greatest Public Health importance include, comprising meticillin-resistant *Staphylococcus aureus* (MRSA), meticillin-sensitive *Staphylococcus aureus* (MSSA), *Escherichia coli* (*E.coli*) and *Clostridium difficile* infection (*C. diff*).

Wiltshire produces annual and quarterly reports on healthcare associated infections. The annual report for 2012/13 was presented to the Wiltshire CCG in September 2013³.

MRSA

Staphylococcus aureus is a micro-organism found on the skin and in the nose and throat of approximately 30% of the population. When skin is unbroken, *S. aureus* does not pose a problem, however, it is the most common cause of wound and skin infections. MRSA is a strain of *S.aureus* that is resistant to commonly used antibiotics and so is much harder to treat.

Once considered to be associated with acute hospital interventions, the advent of minor surgery and other invasive procedures within primary care has resulted in the risk of acquiring an MRSA infection becoming a health community wide responsibility.

The Wiltshire population access services from a number of acute hospital trusts, most notably the Royal United Hospital (RUH) in Bath, Great Western Hospital (GWH) in Swindon and Salisbury Hospital Foundation Trust (SFT). Wiltshire Council

and Wiltshire CCG work closely with these acute providers to monitor and manage HCAI in line with national targets. HCAI data is collected by the local acute and community services.

Table 2: MRSA trends for 2009/10 to 2012/13

Trust / area	2009/10	2010/11	2011/12	2012/13
	Cases	Cases	Cases	Cases
RUH, Bath	6	2	1	4
SFT, Salisbury	4	0	4	3
GWH, Swindon	6	3	2	1
South West	89	37	41	35
England	1,004	688	473	398

Source: PHE 2012/13

Every confirmed case of MRSA is investigated and the cause analysed to minimise future risk of infection.

MSSA

The difference between MRSA and MSSA is that MSSA strains respond to the antibiotic meticillin. Mandatory surveillance of MSSA began in January 2011.

Information obtained from PHE in 2011/12 confirms that in general, the number of MSSA bacteraemia cases is far higher than MRSA across the UK. It seems to be more prevalent in the under one year olds and over 75 year old population. The national rate is 7.8 per 100,000 bed days. In Wiltshire the 2012/13 rates for the three acute trusts were RUH Bath 8.1, SFT Salisbury 4.2, GWH Swindon 4.0⁴.

C.difficile

C.difficile is a significant cause of hospital-acquired diarrhoea. It is a bacterium present in the gut of around 3% of adults and 66% of children under the age of 2 years without causing any health issues because it is normally kept in check by the normal bacterial population of the gut. However, when certain medications, such as antibiotics or antacids disturb this bacterial population *C.difficile* may gain the opportunity to multiply and produce toxins that cause illness. *C.difficile* can be spread on the hands of visitors, patients, medical staff or via contaminated surfaces, and so hand washing and high standards of cleaning are of paramount importance to combat spread.

A national target for *C.difficile* in acute trusts was set to deliver a 30% reduction by 2011. All three acute trusts met this target and continue to work on decreasing cases of *C.difficile*.

Table 4 shows the number of acute trust cases, where a patient was presumed to have been infected during their hospital admission. Tests are undertaken after 72 hours following admission.

Table 4: C.difficile infections, 2012/13

Trust / area	2011/12	2012/13
	Actual	Actual
RUH, Bath	46	41
SFT, Salisbury	44	25
GWH, Swindon	17	33
Wiltshire	107	155
South West	738	568
England	7,760	5,974

Source: PHE

Further information on MRSA, MSSA and C.difficile can be found on the Health protection agency (HPA) website of the PHE and the annual rates by Trust are updated every July:

<http://www.hpa.org.uk/web/HPAweb&Page&HPAwebAutoListName/Page/1191942169773>

E-Coli

E. coli is a species of bacteria commonly found in the intestines of humans and animals. Certain types can cause a variety of diseases, most commonly urinary tract infections, intestinal infections and blood poisoning. E-Coli mandatory reporting began in June 2011 following year on year increase in the number of infections nationally.

Rates for 2012/13 have been published and show the RUH, SFT and GWH have a lower rate than England or the South West averages.

Table 5: Rates of E. coli (all cases), June 2011 to March 2012

Trust / area	Rate per 100,000 bed-days April 2012 to March 2013
RUH, Bath	54.7
SFT, Salisbury	37.7
GWH, Swindon	52.9
South West	55.9
England	62.4

Source: PHE

Meningococcal disease

Children under five years and young people aged 15 to 19 years old represent the high risk groups for bacterial meningococcal disease (meningitis). Vaccination does not protect against all forms of this disease so effective surveillance and management is vital.

Public Health England (PHE) enhanced surveillance reported 63 cases of laboratory confirmed meningococcal disease across the South-West in 2012, an incidence rate of 1.4 per 100,000 population, the same as reported in 2011. Wiltshire's 2012 confirmed case rate was 1.5 per 100,000 in line with the South West rate. A full Public Health response to protect close contacts is initiated for every confirmed case of meningococcal disease.

Tuberculosis (TB)

Tuberculosis (TB) is an infectious disease caused by bacteria belonging to the *Mycobacterium tuberculosis* complex. Only the pulmonary form of TB disease is infectious, following prolonged close contact with an infectious case. TB is curable with a combination of specific antibiotics, treated for at least six months.

Enhanced surveillance of tuberculosis by Public Health England (PHE)⁵ confirmed the average number of cases of tuberculosis in Wiltshire between 2010-2012 was 15, a rate of 3.1 per 100,000 population. This compares favourably with the South region rate 7.8 per 100,000 population, and England 15.2 per 100,000 (in 2012)⁶.

Work has been done to map out the services within Wiltshire and develop a Bacillus Calmette–Guérin (BCG) vaccination pathway, giving a clearer picture of available services. This has also included an awareness raising campaign aimed at health professionals and prominent members of hard to reach groups. The implementation of prevention strategies (vaccination of at risk groups) and early detection and diagnosis continues to be addressed by Wiltshire Council in coordination with the wider health community.

For information on TB immunisation see the [Immunisations section](#).

Hepatitis

Hepatitis is an inflammation of the liver, normally as a result of a viral infection. There are five main viruses that can affect the liver and these are referred to as A, B, C, D and E. These types are of particular concern because they can lead to chronic illness and death and have the potential to cause outbreaks.

Hepatitis A and E are caused by ingesting contaminated food or water. Hepatitis B, C and D occur as a result of parenteral exposure to infected blood or body fluids. High risk groups in which transmission frequently occurs include men who have sex with men, intravenous drug users (IVDU) and those born in countries with high incidence rates of Hepatitis. Hepatitis C is mainly seen in IVDU. Persons infected with either Hepatitis B and C may remain clinically asymptomatic with carrier status; this means they remain well but can still transmit the disease to other people.

There were 56 notifications of Hepatitis B or C. Wiltshire's rate for both Hepatitis B and C remains low compared to the regional average.

Back in 2005, the then Health Protection Agency (HPA) estimated⁷ that there were 828 people in Wiltshire infected with Hepatitis C. They also estimated that by 2015,

26 of these people would have a cirrhotic or end stage infection and that 56 people will have died. The estimated cost of treating those already identified with Hepatitis C in Wiltshire is £390,042 and that this could increase by £81,994 if the estimations are correct.

Wiltshire has commissioned a specialist Blood Borne Viruses service for Drug and Alcohol Services users in treatment. Any diagnosed cases are referred into mainstream services and are reported to PHE.

Norovirus

Norovirus is the most common cause of viral gastro-enteritis and is easily transmitted in closed to semi-closed communities including hospitals and care homes. Norovirus outbreaks can disrupt daily work and admissions and discharges in acute trusts and care homes. The Wiltshire public health team closely monitor outbreaks sent out by PHE on diarrhoea and vomiting in the community.

Influenza

A seasonal flu vaccination is offered annually to vulnerable groups within the population, including the elderly, young children, pregnant women and those with certain long-term health problems. For further information and details of vaccine uptake in Wiltshire ([see the vaccination section](#)).

Pandemic Flu remains a risk to Public Health and wellbeing due to its probable likelihood and impact. Commensurate with this, Wiltshire Council has been actively involved in Pandemic Influenza planning and preparation for a number of years. A new health community plan was developed in 2013.

Sexually Transmitted Infections

For information on sexually transmitted infections please refer to the [section on Sexual health](#).

Population at risk

Although anyone is potentially susceptible to infectious diseases, some population groups are more susceptible to infection than others. Vulnerable groups include:

- Those with long-term conditions, such as cardiovascular disease or cancer, are more vulnerable to infection and less able to fight it off.
- Those receiving immune-suppressive drugs, for example chemotherapy.
- Those receiving invasive medical interventions, for example surgery or an artificial ventilator.
- Those, on antibiotics, especially older people, as these can harm the body's normal gut flora and enable other organisms to flourish.

- Those who stay in hospital for a long time, as there is enhanced opportunity for spread, and the widespread use of antibiotics results in an increased likelihood of antibiotic resistance⁸.

People most at-risk of *C.difficile* are those who have been treated with broad spectrum antibiotics and those with serious underlying illnesses. The elderly are at greatest risk - over 80% of *Clostridium difficile* infections reported are in people aged over 65 years⁹.

Most cases of meningococcal disease occur in children under 4, although the disease can occur at any age. The next highest incidence of disease is found in those aged 15-19. Meningitis C immunisation is offered to all infants in the UK ([see the immunisation section](#)).

At risk groups for TB include those not born in the UK (even many years after arrival) and their families, or others who have links to endemic countries. BCG immunisation for TB is offered to children who are identified at high-risk themselves, or who have parents or grandparents born in high-risk countries ([See the immunisation section](#)).

Risk factors for Hepatitis vary by virus, with Hepatitis B and C commonly spread through infected blood, and Hepatitis A and E via faecal-oral transmission.

Current service provision

For information on child immunisation programmes in Wiltshire please refer to the [immunisation section](#), for adult immunisation see the [vaccination section](#).

What works and what resources are there?

Infectious Diseases. For an A-Z and further information on Infectious Diseases see the Health Protection Agency website.

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/>

The Flu Information Programme 2012/13. Details of the 2012/13 Department of Health Flu Immunisation Programme are available here.

<https://www.gov.uk/government/publications/the-flu-immunisation-programme-2012-13>

The UK Influenza Preparedness Strategy 2011. The Government's strategic approach for responding to an influenza pandemic

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_130903

The Green Book provides national policy and guidance on vaccines and vaccination procedures for all the vaccine preventable infectious diseases. It contains resources on all routine immunisation programmes. The Green Book is available to download here: <https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book>

Challenges for consideration

- The importance of maintaining the high standards that have brought HCAI rates down drastically in recent years, especially in the context of the increasing amount of community service provision.
- Maintaining effective surveillance and a health service able to react quickly to disease outbreaks and emerging threats, for example recent global flu pandemics.
- Identifying and managing high risk groups in an appropriate fashion.

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¹ Department of Health

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_132358]

² NHS Outcomes Framework 2012/13, Department of Health, 2011.

³ NHS Wiltshire Annual Infection Control Report for 2012/13, (April 2011 – March 2012)

<http://www.wiltshire.nhs.uk/Downloads/Board-Papers/September12/130912-13Wilts-COI.pdf>

⁴ http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317134949648

⁵ Enhanced Tuberculosis surveillance regional report 2013. Health Protection Agency South West

⁶ Tuberculosis in the UK: Annual report on tuberculosis surveillance in the UK, 2013. London: Health Protection Agency, August 2013. url:

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317139689732

⁷ <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/HepatitisC/EpidemiologicalData/>.

⁸ HPA.

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/HCAI/GeneralInformationOnHCAI/#wh>

⁹

HPA. <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/ClostridiumDifficile/>