#### **Health and Wellbeing Board**

#### 3 December 2019

#### The Annual Report of the Director of Public Health 2019

#### 1. Purpose

The purpose of this report is to: provide information to the Health and Wellbeing Board on the 2019 Annual Report of the Director of Public Health (DPH), which focusses on the topic of "Health Protection" in Walsall to allow the Director of Public Health to provide assurances to the Health and Wellbeing Board, elected members and to the public that the health of Walsall residents is being protected in a proactive and effective way.

#### 2. Recommendations

- 2.1 That the Board note the report and are assured that residents are being protected in a proactive and effective way.
- 2.4 That the recommendations detailed in the action plan of the report are enacted by the relevant partners, and reported on to the Health Protection Forum.

#### 3. Report detail

- 3.1 The 2019 Annual DPH Report for Walsall focusses on the topic of health protection. Health protection work aims to prevent or reduce the harm or impact on the health of the local population caused by infectious diseases or environmental hazards, major incidents and other threats whilst reducing health inequalities.
- 3.2. In Walsall, Health protection services continue to respond, and make improvements to, the health needs of our residents. These services co-ordinate their actions through local and regional networks, the Health Protection Forum and associated working and steering groups to ensure that the function is delivered as efficiently as possible.
- 3.3 The scope of health protection is extremely wide ranging. In this report, each of the partner agencies/organisations that deliver health protection services in Walsall provides a summary of the current situation in their service, presents their achievements over the past year, identifies potential risks to their service delivery and/or performance, makes recommendations to mitigate risks, and details their health protection objectives for the coming year.

3.4 The objectives of each health protection partner agency for the upcoming year have been collated into an action plan, which will be used by the Health Protection Forum, as part of its governance and assurance structure.

#### 4. Implications for Joint Working arrangements:

There are no financial, legal or other resource implications of this report.

#### 5. Health and Wellbeing Priorities:

5.1 The broad scope of Health Protection services means that their contributions to the 3 Priorities of the refreshed Health and Wellbeing Strategy are numerous. Prominent examples of these contributions include:

#### Priority 1: Prevention of Violence

- The substance misuse and social inclusion services work with many people across Walsall who are, or are vulnerable to becoming, victims and/or perpetrators of violence.
- Regulatory services, in particular trading standards and licensing, are key to tackling issues around organised crime, modern day slavery, and child sexual exploitation etc. in Walsall.

#### Priority 2: Improving Wellbeing – focus on getting Walsall 'on the move'

The overarching aim of all Health Protection Services is to improve the health and wellbeing of the population of Walsall. The work conducted by the Pollution Control Team informs and contributes to both the health protection and corporate ambitions of improving air quality in the borough and wider region. Interventions that improve pollution levels in the borough, and thus the general quality of the environment, encourages greater utilisation of green spaces, increased physical activity including active travel.

#### Priority 3: Improving the Environment of our Walsall Town Centre

• Air pollution does not occur in isolation. Pollution can be associated with other environmental hazards that affect health and wellbeing, and it can contribute to health inequalities. However, measures that improve air quality can also offer wider public health and wellbeing co-benefits, including an improvement in overall environmental quality, increased physical

- activity, noise reduction, greater road safety and climate change mitigation.
- Regulatory Services are key to the development and promotion of a vibrant Town Centre, for example ensuring a mixed retail, takeaway and night-time economy offer that supports positive choices.
- The joint work conducted by environmental health and infection prevention teams in the beauty and tattooing sector ensures a robust and good quality offer of these services in Walsall.
- 5.2 In addition, the Health Protection function in Walsall is inextricably aligned to, and key to the achievement of, the strategy's "business as usual" aims and objectives, as detailed below:

#### Maximising people's health, wellbeing and safety.

Many of the objectives that contribute to the delivery of this aim are directly delivered by Health Protection Services, including:

- Improvement of maternal and newborn health through population screening programmes.
- Enabling children and young people to be better protected and safeguard themselves e.g. through immunisation programmes.
- Enabling and empowering individuals to improve their physical and mental health e.g. through promotion and performance monitoring of immunisation and screening programmes, and infection control good practice.
- Removing unwarranted variation in health care and ensure access to services with consistent quality e.g by the regular quality and performance monitoring of health protection services.
- Enabling those at risk of poor health to access appropriate health and care, with informed choice e.g. through population screening programmes.
- Keeping vulnerable people safe through prevention and early intervention e.g through the work of substance misuse, social inclusion and screening and immunisation services.
- Tackling the harm to individuals and communities caused by substance misuse e.g. delivered through the work of the substance misuse and social inclusion team.

#### 5.3 Creating Healthy and Sustainable Places and Communities

In particular, health protection partners contribute to achieving the objectives of:

- Improving Air Quality through the monitoring and surveillance of air quality in Walsall and the ongoing work which links this surveillance data with local health impacts.
- Empowering connected, inclusive and resilient communities through the work of the social inclusion team e.g. establishment of the homeless shelter.

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The 2018/19
Annual Report
of the Director
of Public
Health for
Walsall





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## Foreword



Stephen Gunther

Director of Public Health

Welcome to my first Annual Report as the Director of Public Health for Walsall, I hope that you find it an engaging and reassuring read.

This year, the report focusses on the great work done by Walsall colleagues in the wide-ranging area of Health Protection.

Health protection work aims to prevent or reduce the harm or impact on the health of the local population caused by infectious diseases or environmental hazards, major incidents and other threats whilst also reducing health inequalities.

In Walsall, Health protection services continue to respond, and make improvements to, the health needs of our residents. These services co-ordinate their actions through local and regional networks, the Health Protection Forum and associated working and steering groups to ensure that the function is delivered as efficiently as possible.

The purpose of this document is to:

- provide a clear overview of the current health protection situation within Walsall,
- to celebrate the successes and achievements of the past year,
- to identify on-going challenges or issues, so that remedial solutions can be actioned,
- to ensure that all of the agencies that support and deliver health protection across Walsall are engaged in a process of continuous improvement,
- to provide assurance that there are robust civil contingency mechanisms in place to protect Walsall's residents and ensure business continuity and
- to allow the Director of Public Health to provide assurances to the Health and Wellbeing Board, elected members and the public that the health of Walsall residents is being protected in a proactive and effective way.

The scope of health protection in Walsall is extremely wide-ranging, and I have included in this report examples that highlight some of the innovative and high quality work and good practice that is delivered by the people responsible for health protection on a day-to-day basis.

Thank you to all who have contributed to this report and to those who work tirelessly to protect the health of the people of Walsall.

## Executive Summary

This annual report details the functions and activities of Walsall's Health Protection Forum and wider support system. It aims to showcase the great work that is ongoing in the borough, and also to provide assurance to the Health and Wellbeing Board that the health of Walsall residents are being protected. The report presents the current situation and analysis of health protection issues in Walsall during 2018/19, and identifies future actions.

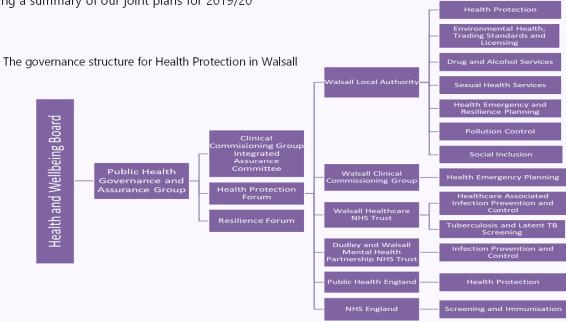
#### What is Health Protection?

- Health Protection is an essential part of achieving and maintaining good public health.
- It seeks to prevent or reduce harm caused by communicable and non-communicable diseases, and minimise the health impact from environmental hazards.
- Health Protection involves:
  - ensuring the safety and quality of food, water, air, products and the general environment
  - ensuring uptake of immunisation and cancer and non-cancer screening programmes
  - having resilience and plans to deal with health protection emergencies such as outbreaks and incidents that threaten the health of the public.

#### The report will achieve this aim by:

- Providing an overview of the current position of health protection challenges and the work undertaken in Walsall by all agencies attending the Health Protection Forum. Each section demonstrates some of the achievements during 2018/19, plans for 2019/20 and any associated risks that could affect the proposed work streams.
- Reviewing the recommendations from 2018/19 and report on the progress made.
- Providing a summary of our joint plans for 2019/20

- The larger health economy wide health protection team meet at the quarterly Health Protection Forum, chaired by the Director of Public Health.
- The forum includes representatives from the partners shown in the governance hierarchy diagram.
- All of these agencies have a legal duty to respond to health protection emergencies. These legal responsibilities are described the Civil Contingencies Act 2004.



## Summary of Key Achievements and Recommendations

#### Summary of key achievements in 2018/19

- A local antimicrobial strategy and steering group in Walsall which feeds into the West Midlands Antimicrobial Resistance network which was established in July 2018. The group meet quarterly and are working to implement good antibiotic management across Walsall to reduce the risk of antibiotic resistance.
- Whole Genome Sequencing was introduced and is now routinely used in TB infections where a sample has been cultured. This is greatly assisting in the identification of outbreaks of TB and its subsequent management.
- There has been an improvement in the blood borne virus screening offer made to clients of the Drugs and Alcohol service. This enables early identification of blood borne virus infections such as HIV, Hepatitis B and C and initiation of subsequent treatments.
- There has been a reduction in the late diagnosis of HIV which enables patients with the infection to access treatment earlier and results in reduced morbidity of this client group.
- The measles campaign has commenced to address poor MMR vaccine uptake focusing a catch up of unvaccinated groups and to address vaccine hesitancy.
- Environmental Health and Health Protection have delivered nationally recognised work which has been developed around infection prevention policies in the beauty industry (see appendix 3).
- A programme of infection prevention and control has been delivered for school to implement with support from school nurses and school improvement staff.
- We have completed an analysis of real time surveillance data of air quality in Walsall (see appendix 4).
- Walsall led on an analysis of pandemic flu preparedness across the West Midlands.

#### Summary of the recommendations for 2019/20

- We will improve links with primary care through the newly created Primary Care Networks particularly with regards to infection prevention and control and flu vaccines.
- To further improve the uptake of Hepatitis B and C screening amongst clients of the Drugs and Alcohol service.
- Working with the Clinical Commissioning Group and Public Health England to improve uptake of Measles, Mumps and Rubella (MMR) vaccine.
- Work will continue to embed Health Education Guidance in schools with regard to hygiene, infections and antibiotics.
- To identify a sustainable model for the on going delivery of the Latent TB Infection screening service.
- Development of an air quality 'early warning' system to serve sufferers of respiratory disease in Walsall.
- Support the establishment of a regional pandemic coordination group to oversee a consistent approach to pandemic flu planning across the West Midlands health economy and voluntary sector.
- To offer domiciliary neonatal Hep B in the whole West Midlands area from September 2020 subject to a successful procurement process.

## Infection Prevention and Control in Primary Care

The Walsall Health Protection Team work closely with each practice to promote high standard of infection prevention and control (IPC) practice by providing:

- ad hoc advice as required
- · an annual IPC audit
- · a dedicated IPC training programme
- · outbreak management advice.

In 2018/19 IPC audits were completed for all 52 GP practices in the borough. Audit scores of each practice are shown in the graph below.





- GP Practices scoring lower than below 90% in their IPC audit are supported to address issues and are subsequently re-audited
- Upon revisit, this programme of support has identified improvements in infection prevention practices.

#### **Issues Identified**

In addition to identifying IPC issues in individual practices, the audit schedule allowed for identification of common IPC challenges across the borough, as well as opportunities for education and training.

For example, it was identified that there was a varied understanding amongst GP practices of the Health and Safety Executive's Legionella Controls and Responsibilities.

This was raised as an issue to the CCG and guidance was circulated.

In addition, tailored training was arranged by the CCG and Legionella control requirements were presented at Walsall Public Health's IPC conference for GP surgeries in June 2019.

#### Risks in 2019/20

- Some General Practices may not recognise the need for infection prevention input and may make it difficult for the team to access the surgery and practice staff.
- It has often been a challenge in General Practice to get staff released for dedicated training.
- Some older surgeries are not purpose-built, which can make effective infection prevention and control more challenging to achieve.

#### Future Plans for 2019/20

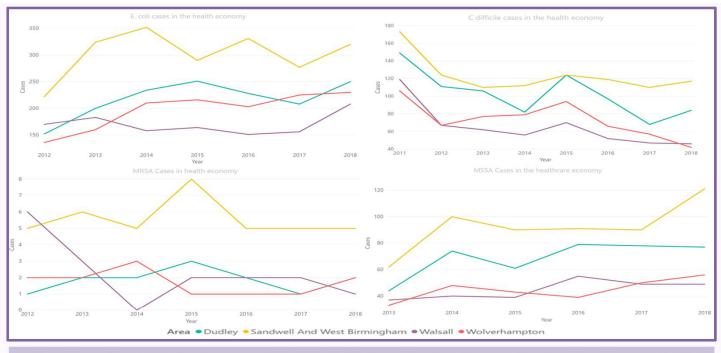
- To address the variation between the IPC policies and guidance used at GP surgeries across Walsall, all GP Practices will be offered access to evidence based infection prevention and control educational workbooks, policies and guidelines, to ensure standardisation of practice in Walsall.
- Practices will undertake self-audit, with follow up visits by the Health Protection Team to allow more time for training.
- Part of the 2019/2020 Annual IPC audit time is going to be used to discuss updates and new guidance with Lead IPC Practice Nurses, who can then disseminate the information to the rest of the practice staff.
- The Walsall Health Protection Team also plan to attend the CCG-led quarterly Practice Nurse Forum meetings to provide IPC updates.
- The Health Protection Team are also working closely with planners and builders to ensure that any new build practices are compliant with infection prevention standards.
- The Health Protection Team are scheduled to speak at Protected Learning Time sessions to reach staff who are unable to attend any other training sessions.

# Infection Prevention and Control in the Community

 Since April 2018, a team of Health Protection specialist nurses working within Public Health have delivered Infection Prevention and Control Services in the community.

#### A summary of the functions of the Community IPC Service.





- Walsall generally and consistently has less MRSA, MSSA *C. difficile* and *E.coli* infections than the other Black Country authorities. The focus on a health economy approach to infection control has been a real strength and this has been enhanced by the joint infection prevention strategy, and the health economy wide HCAI/AMR Steering Group.
- The aim is to tackle problems across the borough to benefit the patient and to manage or reduce the risk of infections in clients of health and social care providers in Walsall.
- Surveillance and monitoring of community isolates at an individual patient level allows identification of root causes of infections, thus allowing targeted support and education.
- Communication at such local level also enables us to ensure that appropriate prescribing of antimicrobials takes place in order to reduce antimicrobial resistance.

#### Risks in 2019/20

Service demand becomes greater than staff capacity.

Potential failure to share data between partner organisations makes it difficult to respond to incidents and outbreaks in a timely manner.

#### Focus for 2019/20

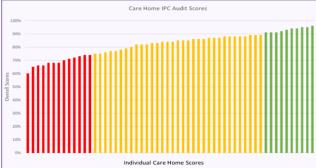
- → Obtain access to ICnet computer system for community IPC team
- Embed Health Education guidance in schools with regard to hygiene, infections and antibiotics.
- Raise IPC awareness with domiciliary care providers
- Introduce new audit tools to GP and care homes.

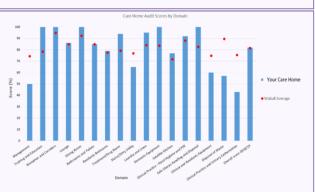
## Infection Prevention and Control in Care Homes

Good infection prevention and cleanliness are essential to ensure that people who use health and social care services receive safe and effective care.

During 2018/19, Health Protection specialist nurses working within the Walsall Public Health Protection Team has delivered the IPC service to Care homes in Walsall.

In 2018/19, 13 nursing homes and 39 residential homes were audited using a tool developed by Walsall Healthcare Trust, which is compliant with the Infection Prevention Society guidelines.





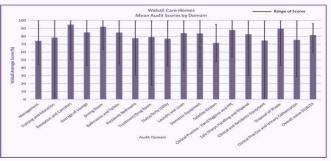


• Following audit, action plans are formulated and sent to the home within 10 working days.

75-89%

≥ 90%

- A completed action plan, with any identified issues addressed is requested back within 4 weeks of receipt.
- Homes with a red score are provided with infection prevention support until the issues have been addressed
- Those scoring amber complete the action plan and are followed up if further concerns are raised.
- Homes receive a tailored chart (see left) following their audit.
- This allows homes to identify both areas of good practice and areas for improvement, as well as see how they compare to other Walsall care homes in each specific audit domain.



Common problems such as equipment cleaning and policies and procedures identified during audits were addressed through education at the quarterly care home link worker meetings, introduction of the Infection Prevention Control workbook and working with other professional bodies such as commissioning and Health Watch to assist in the raising of standards.

In 2018/19 these meetings have used live presentations, D.V.Ds, YouTube videos, practical demonstrations and workshops to cover the following topics:

Standard precautions	Outbreak Management
MRSA decolonisation	E. Coli bacteraemia
Influenza	Group A Streptococcal Infection
Antimicrobial resistance	Scables
Catheter Management	Identification and Management of UTIs
Oral Health and Chest Infections	Tuberculosis





In addition to identifying and addressing IPC issues within individual care homes, scores for each audit domain are aggregated to identify common issues across Walsall, as well as opportunities for targeted education and training.



A regular newsletter is produced by the Walsall Health Protection Team to deliver updates on current IPC issues, guidance and policy and to advertise upcoming training opportunities.



Topic specific leaflets have also been produced and distributed.

An IPC reference workbook has been developed as an education and training resource to address inconsistencies in standards and practices across care homes.

A website has been newly developed to provide up-to-date, 24/7 support and guidance to care homes, GPs and domiciliary care staff: www.healthywalsall.co.uk/healthprotection

### Infection Prevention and Control in Schools and Nurseries

Schools and nurseries are common sites for transmission of infections.

In 2018/19, the Walsall Health Protection team conducted IPC inspections following suspected norovirus outbreaks in a number of Walsall schools.

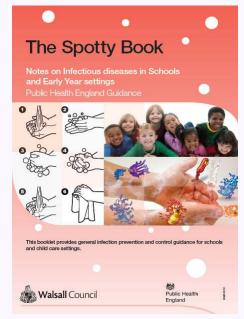
These inspections identified the necessity for improvement of understanding of IPC and to introduce standardised guidelines.

Partnerships have been developed with services integral to schools including school-improvement partners, school nurses and local authority school cleaning services.

These partnerships have ensured a consistent approach to the awareness raising of IPC practices by:

- development of a communication and engagement plan
- · development of the schools website,
- dissemination of key information to schools
- maximising social media reach.





All school/nursery settings have a duty to control the risk of infections. Childcare settings in Walsall will be required to use an Infection Prevention and Control Audit Tool to promote evidence based best practice in infection control and to reduce the potential for cross infection within school/nursery settings, reducing the likelihood of illness in children and staff. The tool allows schools to baseline their current IPC standards and identify areas for improvement.

#### The tool recommends that:

- a person within the school/nursery is designated as the responsible lead for IPC and completes the audit tool.
- The person completing the audit tool should make comments for each question in the box provided.
- As a minimum, the audit tool should be completed annually and any issues identified as requiring
  action should aim to be addressed as soon as practicable, in accordance with the level of risk.



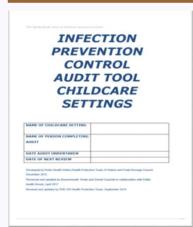
- As part of our whole systems approach to IPC, Walsall have launched a localised version of the PHE Health Protection Team's Spotty Book in all schools and early childcare services.
- This will provide a firm foundation to schools in ensuring they meet the new Relationships, Sex, and Health Education guidance expected in September 2020 including teaching about hygiene, infections and antibiotics.
- Training will also be provided by school nursing service and community engagement officers, using e-Bug resources in all settings.



**e-Bug** is a free educational resource that makes learning about microbes, the spread, treatment and prevention of infection fun and accessible for all.

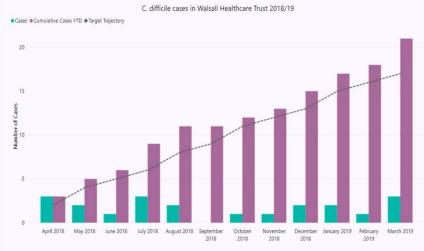




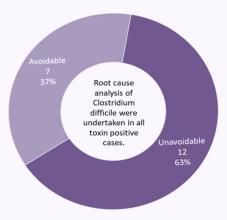


## Walsall Healthcare Trust

Walsall Health Care Trust provides healthcare in the hospital and in the community e.g. District Nursing Services, Midwifery and Health Visiting and community Physiotherapy and occupational therapy.



There were a total of 19 *C. difficile* in the Trust in 2018/19. This exceeded the target tolerance of no more than 17 cases.



In 2018/19, the main root causes of the avoidable cases were:

- a) delay in diagnosis
- b) inappropriate antibiotic treatment.

#### Achievements in 2018/19

- Root-cause analysis of all *Clostridium difficile* cases is undertaken to learn lessons and improve care. The team in charge of the patient discuss the care and decide whether the infection was acquired due to poor care such as the prescribing of inappropriate antibiotics (avoidable infection) or whether the care was correct but the patient developed the infection any way; for example a patient is prescribed antibiotics that have a higher risk of developing *Clostridium difficile* infection but were the correct treatment for the patient's infection (unavoidable). Of the 19 cases during 2018-19, 12 were agreed as unavoidable and 7 avoidable.
- ✓ Completed infection prevention educational programme across the trust which will continue in 2019/20.
- Continued with surgical site programme (hip and knee surgery) and completed two mandatory periods and were found to be within national surgical site infection limits.
- ✓ Infection prevention policies are up to date.
- ✓ Infection prevention audit programme developed and delivered.
- ✓ An action plan has been developed, reviewed and implemented by working with other Health economy organisations to focus interventions to reduce Gram negative bactaeraemias.

#### Risks in 2019/20

- ! Reduced staffing levels within the Facilities and Estates team, leaves potential for inadequate provision.
- ! Infection prevention team have employed some new staff who require further education to fulfil their role.
- ! Need to further develop ownership of infection prevention amongst Trust staff to improve performance against the Hygiene Code.

#### **Future Plans 2019/20**

- © To assist the new leadership of the Trust to be fully aware of and fully engaged with the IPC agenda.
- Section Achieving low rates of Clostridium difficile infection and NO MRSA bacteraemia cases.
- © Deliver a robust education programme for infection prevention across the Trust.
- To increase surveillance of surgical site infections.
- Keep all infection prevention policies up to date.
- Plan and deliver a revised programme of audit across the Trust to enable a full audit cycle to take place.
- © Focus on interventions to reduce Gram negative blood stream infections.

## Dudley and Walsall Mental Health Partnership NHS Trust

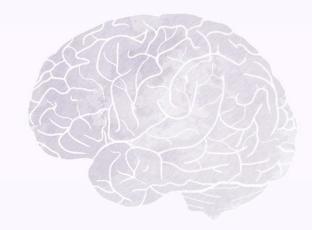
Dudley and Walsall Mental Health Partnership NHS Trust (DWMHT) provides mental health services across Dudley and Walsall in community and in-patient hospital settings. DWMHT have a small Infection prevention team made up of Infection Prevention Lead Nurse, Infection Prevention Nurse and Admin support who provided IPC service across the trust.

#### Summary of IPC at DWMHT in 2018/19

- ☐ There were no outbreaks, bacteraemias or cases of *Clostridium difficile* in the Trust in 2018/19.
- ☐ There was a increased incidence of MRSA acquisition at an older adults inpatients ward, in which 2 patients were colonised. There were no other cases.
- ☐ Resources within the IPCT were strained for most of 2018/19 as the Band 7 Nurse post was vacant until 25<sup>th</sup> February 2019

#### Successes in 2018/19

- ✓ Rates of catheter-associated urinary tract infections have decreased in 2018/19, this is due to implementation of the Urinary Catheter passport across the Trust inpatient services.
- ✓ We successfully recruited to the Band 7 Nurse post.
- ✓ We attained the Flu CQUIN Target 75% Uptake of clinical staff.



#### Risks in 2019/20

- Clinical staff are not meeting the 90% uptake target for mandatory Infection Control training, as non-clinical staff are.
- The condition of the environment within some inpatient settings pose a challenge to effective infection prevention.

#### 2019/20 Plans

- of To have a fully resourced IPCT who have been trained.
- © Commence e-learning only for IPCT mandatory training for clinical staff so that staff can complete the training when it's convenient for them.
- Phased refurbishments of wards continue in 2019/20.
- © Continue to promote the urinary catheter passport, distribution of Hydration resources and development of Hydration educational session, develop an educational session about assessment of Urinary Tract Infections (UTI) and treatment, all this work is to play our part in the reduction of gram negative bacteraemia caused by UTIs.
- © The IPCT are part of the design team to ensure that in-patient Infection Prevention patient risk assessment forms are included in the new Trust electronic patient record system.
- © Continue to work with the Trusts Flu Team, this years Flu CQUIN Target is 80% clinical staff uptake.

## Influenza

The seasonal flu group meets regularly throughout the year to maximise uptake of flu vaccine in vulnerable groups.



#### Summary of the 2018/19 season and current situation

- The flu season of 2018/19 did not see an abnormal amount of cases but there were three outbreaks in Walsall Care homes.
- In 2018/19 a new vaccine was introduced for patients aged over 65. The vaccine was issued to general practices in batches over a three month period leaving some practices without vaccine while they waited for further supplies.
- This caused concern amongst those who were restricted in the numbers they could vaccinate during flu clinics and ad-hoc vaccinations of patients. This resulted in a decrease in vaccine uptake in this age group compared to the previous year.

Vaccine uptake is reviewed at each Flu group meeting and at the end of season, in order to identify opportunities for improvement, and so that plans to increase uptake can be developed and implemented.

#### Summary Table of Vaccine Uptake in 2018/19

					Risk Gr	oup						
Area	65 and	65 and over		65 and over		Inder 65 -risk only) All Pregnant Wo		ant Women	Nomen All Aged 2		All Aged 3	
	Uptake	% Change	Uptake	% Change	Uptake	% Change	Uptake	% Change	Uptake	% Change		
Walsall	69.2%	-1.6%	46.3%	-2.9%	44.5%	-3.1%	34.3%	-7.8%	39.5%	-4.8%		
West Midlands	70.1%	-1.5%	70.1%	-2.4%	42.9%	-2.4%	40.9%	-3.8%	43.7%	-1.6%		
England	70.1%	-1.3%	70.1%	-2.0%	42.9%	-2.2%	40.9%	0.3%	43.7%	1.0%		

During the 2018/19 season, Flu vaccine uptake in target groups was generally below target locally, nationally and regionally. There was also a decrease in uptake compared to the 2017/18 season.

Area	Recept	ion Year	Schoo	l Year 1	Schoo	l Year 2	Schoo	l Year 3	Schoo	l Year 4	Schoo	l Year 5
Area	Uptake	% Change										
Walsall	54.8%	-0.9%	54.2%	2.1%	51.4%	0.0%	51.5%	3.6%	49.7%	0.0%	48.9%	N/A
West Midlands	62.0%	2.3%	61.7%	3.9%	60.2%	2.7%	59.5%	4.3%	57.4%	3.3%	55.1%	N/A
England	63.9%	1.3%	63.4%	2.5%	61.4%	1.1%	60.2%	2.7%	58.0%	2.3%	56.2%	N/A

#### **Vaccination Campaigns**



Vaccine uptake in school-aged children in Walsall was lower than the regional and national average. However, with the exception of reception year, uptake rates were maintained or improved on the previous season.

#### Risks in 2019/20

- A delay in vaccines becoming available could result in the late commencement of the vaccination programme when the flu season has already started.
- GP practices may not have ordered enough vaccines.
- As in previous years, faith groups may continue to have concerns about the porcine gelatin component of the childhood nasal flu vaccine, leading to poor uptake in some communities.

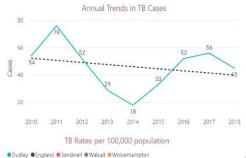
#### Focus for 2019/20

- Reintroduction of antenatal flu vaccination clinics at Walsall Healthcare Trust.
- The Flu Fairies funded by Public Health will continue to work in the antenatal department talking to expectant mothers and encouraging them to have the flu vaccine.
- Provision of comic style booklets for all school age children encouraging them to become "Flu Fighters". This was developed in Wolverhampton for the 2018/19 season, and which saw an increase in uptake of 8%.
- The CCG plan to identify and support general practices with low uptake in previous years.
- Joined up media campaign between the CCG, WHT and LA.

In addition to engagement and participation in national campaigns, Walsall developed several local Flu vaccination initiatives, e.g. "The Flu Fairies" to increase uptake in target groups. In addition, all employees of the Local Authority received a free vaccine.

The Walsall Homeless Shelter service users were also invited to receive a free vaccine, to help protect this vulnerable group.

### Tuberculosis (TB) and Latent TB Infection (LTBI) Screening









- Area Name Time period Value
- 14.72 13.76

#### Achievements in 2018/19

- ✓ The service has transferred from the Infection Prevention and Control Team to long-term conditions, which has allowed for greater alignment with the respiratory service since January 2019. This has resulted in more consultant time for clinics.
- ✓ The nursing workforce has remained stable during this financial year.
- ✓ Completion of an external review of the TB service undertaken by Public Health England in October 2018. Although the report is still awaited the TB service has been working through the internal action plan that was developed at the time of the visit and is now being implemented.
- ✓ The bi-annual cohort review meetings attended by Public Health England. Walsall Public Health and the Walsall TB team have been commended by PHE for being very well organised.
- ✓ Whole Genome sequencing is reported to PHE on a monthly basis. Where Walsall residents are involved in clusters the Walsall team are included in the teleconference to understand the cluster and to bring further information to the meeting about individual patients and how cross infection may have occurred.
- ✓ During 2018/19 just under 200 LTBI screens were completed with a 19% positivity rate. All patients with a positive screen were referred to the TB service for follow up and latent TB treatment as appropriate.

#### TB is an infectious disease caused by Mycobacterium Tuberculosis bacteria. TB generally affects the lungs but can also affect other parts of the body. About 10% of latent TB (person is infected with the germ, but they are not sick) progresses to active disease which if left untreated can kill about half of those infected.

- The number of Tuberculosis (TB) cases seen in Walsall residents is gradually falling in line with the national picture.
- However, the TB cases being managed by the team are very complex cases either due to the number of contacts the patient has; the difficulty in tolerating the anti-tubercular drugs; homelessness; alcohol dependence; unable to speak or understand English; no recourse to public funds.
- In addition, The LTBI screening programme has been introduced into parts of the UK where there is a higher incidence of TB.
- · In the Black Country, Walsall, Wolverhampton and Sandwell are taking part in the programme .
- The NICE quality standard for LTBI screening states that "People aged 16 to 35 years who have arrived in the country within the past 5 years, from countries with a high incidence of tuberculosis, are tested for latent TB infection when they register with a GP".

#### Risks in 2019/20

#### **TB Service**

- The TB team at Walsall Healthcare Trust (WHT) consists of 2 nurses, 2 administrative support officers and 1 part time TB Consultant meaning there is a lack of resilience in the face sickness and annual leave.
- Neighbouring Black Country TB services are advertising for TB nurses and there is concern that staff may take up new posts which offer promotion.
- The complexity of many of the TB cases being seen, means that these cases are very time consuming.

#### LTBI Screening

- Annual delay in funding confirmation by NHS England leads to uncertainty amongst staff and GPs.
- Restricted access to data which helps to identify new arrivals to the UK who have come from high risk countries so that they can be invited for LTBI screening..

#### Focus for 2019/20

#### **TB Service**

- of To further develop the expertise in the team to meet the needs of the patients.
- To ensure the stability of consultant time.
- of To develop the Latent TB Infection screening service within the TB service.

#### LTBI Screening

- To complete 500 tests (Further funding available if target exceeded).
- Focus on South locality GP Practices, Modality Practices: weekly testing.
- Work with WHT to assist TB Nurses to provide screening clinics.
- @ Engagement with all GP Practices.

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## Public Health England



Protecting and improving the nation's health

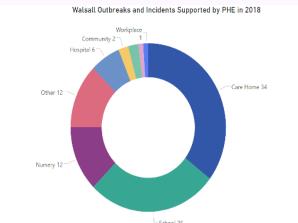
#### PHE Strategy 2020-25

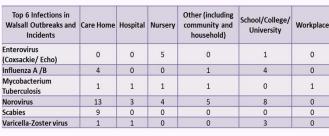
#### Our purpose

Public Health England works 24/7 to protect and improve the nation's health and reduce health inequalities.

We are guided by a number of aims:

- our first duty is to keep people safe. Threats from environmental hazards and infectious disease remain great at home and from overseas. We work to prevent risks from materialising and reduce harm when they do. PHE has the capability to respond to emergencies and incidents round the clock, 365 days a year
- we work to prevent poor health. Our aim is for people to live longer in good health, to rely on the NHS and social care less and later in life, to remain in work for longer and, when unwell, to stay in their own homes for longer
- we work to narrow the health gap. There is still huge disparity in the number of years lived in poor health between the most and least deprived people across the country. Many conditions also take a disproportionate toll on minority communities. Our work aims to reduce these unjust and avoidable inequalities in health outcomes
- we support a strong economy. Good health is an asset to the UK economy, enabling people to live long and productive working lives; securing the health of the people is a UK investment in our economic future.





- Community PHE assisted the local Health Protection Team with a total of 96 infectious disease situations/outbreaks/incidents in 2018.
  - The majority of these occurred in care homes and schools/nurseries.
  - The most common causative organism of outbreaks in Walsall in 2018 was Norovirus.

#### We will promote a healthier nation

- lower smoking rates
- less sugar, calories and salt in the food eaten every day
- · less pollution in the air that we breathe

#### We will work towards a fairer society

- reduced gap in smoking rates between the least and most deprived communities
- lower rates of premature mortality among people with long-term and severe mental health problems
- fewer cases of poor health among vulnerable populations caused by air pollution and outbreaks of infectious disease

#### Our vision for 2025

Setting

School

Nursery

Other

Hospital

Unknown

Household

Workplace

Care Home

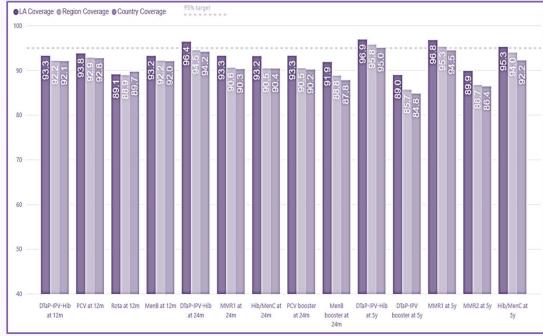
#### We will keep the public safe 24/7

#### We will strengthen the public health system

## **Immunisations**

National vaccine and immunisation programmes are commissioned by NHS England.





- The chart above presents 2018/19 immunisation coverage for Walsall Local Authority compared to the West Midlands regional and the national average for England.
- Immunisation coverage in children aged 12 and 24 months are generally similar to or above regional and national averages, but are below the target coverage of 95%.
- At five years of age, coverage of the Diphtheria/IPV booster immunisation and the MMR2 (preschool measles/mumps/rubella booster) are under the national target.



- In recent years, there has been a general decline in uptake and coverage of childhood immunisations nationally, regionally and locally.
- In particular, booster vaccinations of MMR2 and DTaP-IPV-Hib in 5 year olds have significantly declined.
- This decline in vaccine uptake rates has precipitated a rise in the number of cases of Measles and Mumps in Walsall.



#### Risks in 2019/20

Further decline in immunisation coverage rates in Walsall, resulting in as decrease in herd immunity and the increased risk of outbreaks of vaccine preventable diseases.

#### Focus for 2019/20

- Roll out of the WMs measles elimination strategy and wider work to improve MMR coverage.
- A strategic and joined up approach to address screening and immunisation inequalities and provide for vulnerable groups.



## Population Screening Programmes



The national population screening programmes are commissioned by NHS England.

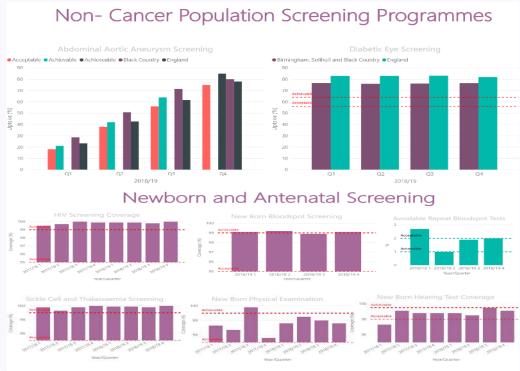


- Coverage of breast screening was higher than the national target and significantly better than for England.
- Bowel cancer and cervical screening coverage were both below national targets, but similar to regional and national averages.



#### Risks in 2019/20

- Further declines in screening rates in Walsall, which could lead a reduction in early diagnosis and an increase in morbidity and mortality from these conditions.
- Workforce impacts of major structural changes to two of the cancer screening programmes.



- Coverage of abdominal aortic aneurysm (AAA) and diabetic eye screening (DES) were both higher than national targets.
- The KPIs around coverage and other areas of quality within the antenatal and newborn screening programmes also exceeded national targets.

#### Focus for 2019/20

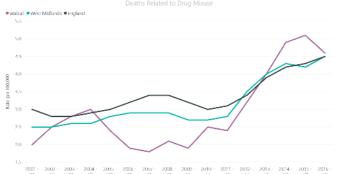
- © Roll out of the West Midlands measles elimination strategy and wider work to improve MMR coverage
- The roll out and embedding of two major changes to national cancer screening programmes, namely faecal occult blood testing within the Black Country Strategic Partnership (BCSP) and Human Papilloma Virus primary testing within the BCSP.
- © A strategic and joined up approach to address screening and immunisation inequalities and provide for vulnerable groups.

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## Drugs and Alcohol

The commissioning of specialist drug and alcohol treatment services is the responsibility of local authorities. Although drug and alcohol treatment is not a mandated service Public Health England stipulate that local authorities must pay regard to the need to improve the take-up, and outcomes from, its drug and alcohol treatment services. Walsall's drug and alcohol treatment service is delivered by national charity "Change, Grow, Live" (CGL) trading locally as The Beacon.





## Risks in 2019/20

- Continued high risk injecting practices (injecting directly into the large femoral or jugular veins) leading to soft tissues injuries, blood borne virus infections, sepsis and hospital admissions.
- Higher rate of drug related death compared to the regional and national data...

#### Achievements in 2018/19

- ✓ Good engagement with the local population of people who ⊚ Introduction of local drug alert use drugs by the treatment service.
- services operating in accordance with NICE guidelines.
- ✓ Lower levels of unmet drugs need compared to national ⊚ Tackling high risk injecting practice. average.
- ✓ Good distribution of Naloxone (a drug which reverses the effects of an opiate overdose)
- ✓ Improved Hepatitis B and C screening testing and treatment uptake.
- ✓ A comprehensive Needs Assessment of Drugs and Alcohol © Re-tendering of drug and alcohol misuse in Walsall was conducted this year, providing detailed local information and data on the topic to inform the retendering of the commissioned services in 2019/20

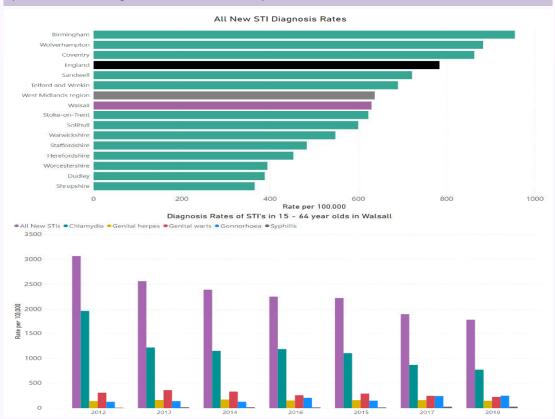
#### Future Plans 2019/20

- system.
- death review process.
- @ Develop Hepatitis C pathway into specialist treatment.
- Improve knowledge of HIV prevalence in drug and alcohol treatment cohort.
- treatment services to deliver a drug and alcohol service with reduced 18 budget.

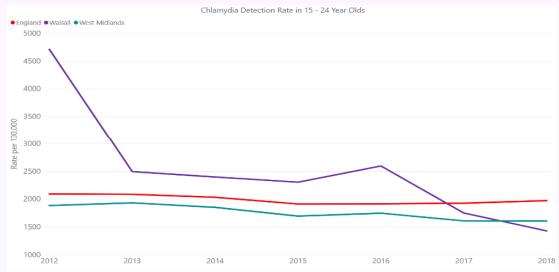
## Sexual Health



The Walsall Integrated Sexual Health Service offers a full range of services including; contraception, prevention, screening and treatment for sexually transmitted diseases.



- In 2018 there were 1,771 new sexually transmitted infections (STIs) diagnosed in residents of Walsall (incidence rate 629.6 per 100,000), a decrease of 7% compared to 2017.
- Chlamydia infections were responsible for half of all new STIs in Walsall in 2018 and were particularly common in individuals aged under 25 years.
- Females and males aged 20 24 years had the highest diagnosis rates for all new STIs. Public Health England aims for higher chlamydia diagnosis rates.



- Public Health England recommends that local areas work towards achieving a chlamydia detection rate of at least 2,300 per 100,000 population aged 15-24 years. In 2018, performance in Walsall was below the recommended rate at 1,486 per 100,000 population aged 15-24 years; this was lower than the overall rate for West Midlands and England (1,975 per 100,000).
- The chlamydia detection rate among under 25 year olds is a measure of chlamydia control
  activity, a monitor of progress to control chlamydia and the delivery of accessible, highvolume chlamydia screening.
- A high diagnostic rate is indicative of a high burden of infection; however a low diagnostic rate compared to neighbouring Local Authorities may be explained by other factors such as reduced access to sexual health services within the locality, and so these rates should be considered within local context.
- Walsall has seen a decline in under 25's chlamydia detection due to the reduction in community screening, becoming reliant on specialist sexual health clinic only diagnoses. Work is ongoing to validate the quality of previous chlamydia data submissions, to better understand what is driving this reduction in detection rates, to reverse the statistical trend demonstrated above.
- In Walsall, the chlamydia positivity rate is 10% (specialist service) and 5.5% (community clinic) and irrespective of whether patients are seen in specialist or community clinics, between 20-25% are found to still be positive when re-tested at 7-14 weeks.

## Sexual Health Continued – HIV



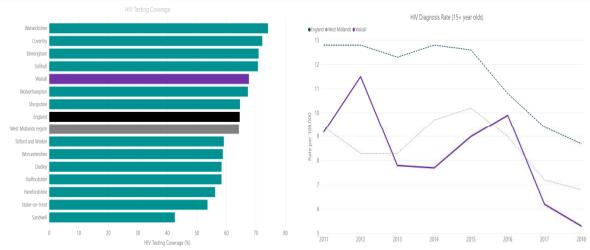
- The Public Health STI testing policy in Walsall includes testing for HIV all attendees with an STI-related need at sexual health services and encouraging regular testing in individuals those at continuing risk.
- This policy aims to encourage the offer and uptake of testing via an 'opt out' mode to all service users at increased risk.

	Walsall 2017	Walsall 2018	% change 2017-18	England 2018
Total	63.9	67.6	5.9%	64.5
Women	58.6	59.3	1.3%	55.2
Men	71.0	78.9	11.2%	78.4
MSM	84.5	82.8	-2.0%	87.8

In 2018 the proportion of eligible new attendees at specialist SHS that were offered and accepted an HIV test increased.

#### This increase in testing activity has been largely driven by:

- Initiatives to reduce late diagnosis and onward transmission of HIV and STIs.
- Access to early testing and detection, treatment including immediate partner notification.
- Promotion of safer sexual and health-care seeking behaviour for the population.
- Promotion of a condom distribution scheme for U25s.
- Sustained local and national prevention activities with a continued focus on groups at highest risk, including young adults, black ethnic minorities and men who have sex with men (Men who have Sex with Men (MSM)
- Increased testing of gay and bisexual men.
- A continuance of the diverse approaches to the prevention of HIV transmission including Opt out testing in Specialist Sexual Health clinics.
- Availability of eHealth care self-management and self testing in community settings.
- Reduction in asymptomatic attendances seen in Specialist Sexual Health clinics.



In 2018, HIV testing coverage (defined as the proportion of eligible new attendees to SHS in whom a HIV test was accepted), was higher in Walsall than in all neighbouring Black Country local authorities, the West Midlands region as a whole and the national average. Similarly, the rate of HIV diagnosis in Walsall in 2018 was lower than regional and national averages.

#### Risks in 2019/20

- The cessation in opportunistic chlamydia testing and condom distribution in community and sex on the premises venues means that there is a potential for increased transmission of sexually transmitted infections at these establishments.
- The centralisation of sexual health services to a single site, has led to increased waiting times for specialist clinical slots and clinicians.
- The availability of online self-management sexual health services offer a new way for residents to access services that adopts new technology and potentially frees up face 2 face appointments for those with the greatest need.
- However there is a recognition that online testing services does not always deliver the quality engagement and meaningful conversation that impacts on young people's behaviour.

#### Focus for 2019/20

- The service will continue to target attention on groups with higher risk and prevalence rates of STI's.
- We will continue to focus on the key achievement of the last 12 months which is the improvement of the offer and uptake of HIV testing. This has resulted in a reduction in late HIV diagnosis, which is the most important predictor of morbidity and short term mortality. Early HIV detection leads to earlier treatment and therefore better outcomes for the patient.

### Health Emergency Planning

The Director of Public Health (DPH) holds the responsible role for the local authority in planning for, and responding to, incidents that present a threat to the public's health. This role entails:

- leading on health protection by ensuring appropriate arrangements are in place, escalating concerns and holding local partners to account.
- where possible preventing threats arising and ensuring appropriate responses when things do go wrong.
- leading the initial response to public health incidents at the local level, in close collaboration with the NHS lead.
- Walsall Health Protection Team includes a Health Emergency Planner who works across Public Health and Walsall Clinical Commissioning Group ensuring plans are in place and exercising them.

#### The role of the Emergency Planner in Walsall



The Health Emergency Planner works closely with Walsall Healthcare Trust and Dudley and Walsall Mental Healthcare Trust to provide assurance in line with the NHS England Core Standards Assurance Process.

This partnership working has extended to the Health Emergency Planner assisting Walsall Hospital Trust to conduct and produce a debrief report following a Norovirus Outbreak which occurred in March 2018.

#### Plans for 2019/20



- Support the establishment of a local influenza pandemic coordination group to oversee a consistent approach to pandemic flu planning across the Walsall Health economy and voluntary sector.
- Integrated working with the Local Authority Resilience Unit.
- Undertake a multi agency table top exercise to test outbreak plans.
- Test the business continuity plans across the Local Authority.

#### **Summary of 2018/19**

- Two Loggist training events were delivered by the Health Emergency Planner to Walsall CCG and Walsall Local Authority staff and this was further extended out to Dudley CCG staff. Further loggist sessions are currently being arranged to take place at Walsall Council.
- ▼ The first Walsall Annual Infection Prevention and Control Conference was held on 19<sup>th</sup> June 2019 with the programme specially tailored to meet the needs of residential care homes, domiciliary care, GP practice and registered nursing home staff. The Health Emergency Planner delivered a presentation on Business Continuity Management in Care and Residential Homes which was very well received. Copies of the presentation and business continuity plan template have been added to Walsall Local Authority's Health Protection Website and they have also been circulated to all residential care home managers.
- ✓ The Health Emergency Planner, as part of her role is committed to support Primary Care in the
  development of Business Continuity Plans within GP practices and has delivered business continuity
  training to the Practice Managers Forum and provided them with a template to produce their business
  continuity plans. This training was well received by those in attendance and will be delivered on an annual
  basis.
- ✓ The Health Emergency Planner worked with Walsall CCG to undertake its yearly self-assessment for 2018/19 against the NHS Core Standards for Emergency Preparedness, Resilience and Response (EPRR) and national requirements standards to determine its level of compliance. The CCG's assessment has resulted in being rated as 'substantially compliant'.
- ✓ In order for the CCG to ensure full compliance a business continuity exercise was carried out at Walsall CCG. The objectives of the exercise were to review procedures regarding a significant/major business continuity incident, both at standby and declaration and the CCG's established business continuity arrangements. An exercise report has been produced and this exercise will be repeated across Walsall LA directorates in liaison with the Resilience Unit to test individual directorates business continuity plans.



#### Risks

There is a risk that the EU exit could have an effect on local government services, NHS providers and commissioners, health and social care system and ultimately patient care. The Health Emergency planner is engaged in Regional and National working groups to mitigate the impact.

## Health Emergency Planning Continued

#### **Pandemic Flu Planning**

- A gap analysis was concluded by the Health Emergency Planner on behalf of the DPH as part of the work programme of the Local Health Resilience Partnership. It was conducted with emergency planning leads across Birmingham, Solihull and the Black Country to identify what their current status is in relation to having a pandemic flu plan for their organisation and also to identify any issues.
- 22 organisations consisting of Acute Trusts, Mental Health Trusts, CCG's and Local Authorities were invited to complete the questionnaire of which 16 were returned. The initial findings are that all organisations have a pandemic flu plan (updated within the last 3 years) and a nominated flu lead. The majority of organisations that responded had business continuity considerations written into their pandemic plans and confirmed their plans also included information in relation to adequate storage and provision of PPE.
- The key issues identified was that there appears to be little strategic direction at a local level for pandemic influenza planning. All organisations highlighted the need for further national guidance regarding antiviral collection points and excess deaths and there does not appear to be any specifics regarding how to support schools during a pandemic flu outbreak. The table below gives a snapshot of the results.

Question	NHS Trusts	LA's	CCGs
Name of the appointed flu-lead in plan?	10/10	3/4	2/2
Identification of core services in plan?	8/10	4/4	1/2
Management of the first few hundred (FF100) in plan?	6/10	3/4	1/2
Adequate storage and provision of PPE in plan?	9/10	1/4	0/2
Participate in any relevant local forum (LHRF)?	10/10	4/4	1/2
Participate in any Influenza Pandemic Coordination Group?	6/10	3/4	0/2
Adequate plans for antiviral collection points?	N/A	N/A	0/2
Buddying up processes for GP practices in plan?	N/A	N/A	1/2
Plan for antiviral prescribers for children?	N/A	N/A	0/2
Plan for staffing and provision of local flu line?	N/A	N/A	0/2
Plan for school outbreak of influenza?	N/A	1/4	N/A

#### **BREXIT Planning**



- <sup>a</sup> The Ministry of Housing, Communities and Local Government (MHCLG) and the Department of Health & Social Care (DHSC) released guidance in the event of a 'no-deal' scenario.
- The guidance outlines the progress that Government has made in their negotiations and identifies that it aims to ensure that local authorities, the NHS and ultimately the patients continue to get the supplies they need in a timely way.
- <sup>a</sup> National returns are being submitted on a daily basis from provider Trusts to DHSC and the Local Resilience Forum (LRF) are reporting weekly to Central Government via MHCLG.
- A 'no-deal' scenario should be seen in the context of the work already being done to update existing business continuity plans in line with the NHS England EPRR Core Standards for acute trusts and providers and other annual assurance processes for local Government. Up to date and wellrehearsed business continuity plans will ensure continuity of supply.

#### **Heatwave Planning**

The Joint Heatwave Plan for Walsall LA and Walsall CCG has been updated and activated on 1st June to run alongside the heat-health watch alert system which operates in England from the 1<sup>st</sup> June to 15<sup>th</sup> September. The Met Office issues heatwave alerts when temperature thresholds are set to be breached. The threshold for the West Midlands region is set at above 30°C during the day and above 15°C during the night for more than 2 consecutive days. These alerts will be circulated to those on the updated severe weather distribution list.

This summer saw prolonged periods of very hot weather which resulted in numerous heat health alerts being sent out and the authority reviewing its responsibilities for the vulnerable population. This included ensuring travelling communities and the homeless were provided with fresh drinking water, reinforcing messages to the public about the dangers of swimming in open waters and ensuring schools, early year's establishments and the general public were reminded of the public health messages about keeping cool in hot weather.



Listen to the weather Look after vourself older Plan shead to avoid

a child loses consciousness, or has a fit, place the child in the recovery position Keep well Protecting children outdoors Drink clenty of water, cut back





During periods of high temperature the following steps should be taken

ctions to protect children suffering from heat illness

he following steps to reduce body temperature should be taken immediately

example, sponge or spray the child with cool (25 to 30°C) water; if available

place cold packs around the neck and armpits, or wrap the child in a cool.

cool water (such as water from a cold tap) cool the child as rapidly as possible, using whatever methods you can. For

- . children should not take part in vigorous physical activity on very hot days such as when temperatures are in excess of 30°C
- . encourage children playing outdoors to stay in the shade as much as possit children should wear loose, light-coloured clothing to help keep cool and
- sunhats with wide brims to avoid sunburn use sunscreen (at least factor 15 with UVA protection) to protect skin if
- children are playing or taking lessons outdoors for more than 20 minutes . provide children with plenty of water (such as water from a cold tap) and encourage them to drink more than usual when conditions are hot

#### Protecting children indoors

During periods of high temperature the following steps should be taken:

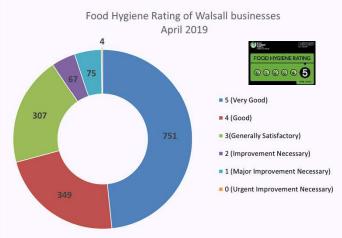
- open windows as early as possible in the morning before children arrive, or preferably overnight to allow stored heat to escape from the building - it is important to check insurance conditions and the need for security if windows are to be left open overnigh
- almost close windows when the outdoor air becomes warmer than the air indoors - this should help keep the heat out while allowing adequate
- use outdoor sun avrinos if available or close indoor blinds/ourtains, but do not let them block window ventilation
- keep the use of electric lighting to a minimu

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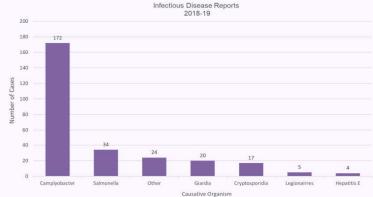
## Environmental Health, Trading Standards and Licensing

Environmental Health, Trading Standards and Licensing make a significant contribution to the protection and improvement of Public Health. The services use the licensing regime, statutory inspection programmes, risk and intelligence based interventions and reactive response to identify and remove hazards from the food chain, environment, workplace or dwelling. All three services continue to improve intelligence and information sharing so that resources can be targeted at those premises posing the greatest risk.

#### **Food Safety and Infectious Disease**



- The chart above represents the ratings of all 1700 premises in the Food Hygiene Rating Scheme in Walsall.
- Levels of compliance are generally increasing, however staffing levels are such that the number of premises visited and time spent at each premises is decreasing.
- Where conditions are not acceptable robust action has been taken with enforcement notices requiring improvement to or prohibition of dangerous practices served on 13 occasions.
- Five businesses were formally closed for posing a risk to health. Four food business operators were served with a simple caution for failing to abide by hygiene regulations and a further 3 businesses prosecuted for unsanitary conditions.



- Campylobacter continues to be the most frequently reported gastrointestinal disease in Walsall.
- Potentially more serious infections such as *E. coli*, Shigella, Dysentery, Paratyphoid fever, *Bacillus cereus* occurred in much smaller numbers and are recorded under the 'other' column.
- Allegations of food poisoning from residents where no causative organism was identified accounted for 73 reports highlighting the massive under reporting of food poisoning illness – these reports however are used to prioritise workload.

#### **Health and Safety**

- Officers visited 161 businesses to ensure they met the minimum legal health and safety requirements.
- In 2018/19, 34 legal notices were issued to bring about safety improvements or to stop particular activities where serious risks to a person's health and safety were found.

- Officers served prohibition notices where the roof of a premises was in danger of collapse.
- Investigations were also conducted around accidents involving severed digits and falls from heights, which resulted in serious workplace injuries.
- Significant resource went into the investigation of a poor water management system at a hotel in Walsall where legionella bacteria were found in large numbers and asbestos within the premises caused additional hazards when dealing with the water system.



#### **Trading Standards**

- The service has been responsible for a number of unsafe product recalls during 2018/19 including toys, electrical goods and skin lightening cream.
- Officers have spent considerable time on the international recall of an unsafe brand of ceiling lights.
- Promotional campaigns have been conducted to raise awareness of the issue of illicit tobacco in the borough. Such initiatives have involved introducing the public to sniffer dogs, as well as promotional literature highlighting the grotesque impact of smoking on health.
- Shared intelligence has enabled joint working between Trading Standards, Walsall Police, Border Control and HMRC raiding shops selling counterfeit and non-duty paid tobacco. Tens of thousands of illicit cigarettes have been seized during raids in 2018/19, and have resulted successful prosecutions.
- As well as disrupting the supply of illicit and harmful products and raising public awareness, illegal workers have also been identified during these raids.

## Environmental Health, Trading Standards and Licensing Continued

## Trading Standards Underage Sales

- A project to investigate the safety and sale to minors of ecigarettes at markets was funded by Walsall Public Health department.
- After the first phase of visits and underage test purchasing all stall holders were brought to compliance with respect to safety and labelling requirements and one sale of e-liquid to a minor was made.
- There have been 3 other test purchasing sales to minors by Walsall retailers relating to alcohol, cigarettes and e-liquids, which has resulted in successful prosecutions.

#### Food Standards

- The food sampling program identified banned food colours in Asian sweets and takeaway meals, peanuts in peanut free takeaway meals, substitution of premium fish species with cheaper alternatives and fraudulent goat meat sold from butchery counters. Follow up samples, business advice and formal investigations are ongoing.
- An allergy advice project has also been undertaken. Letters and information leaflets have gone out to all zero and one rated food catering premises
- Foreign-labelled food inspections were combined with a local project looking at the sale of out of date food. Such foods do not contain the required allergen information in English nor special instructions for use for nutritional products such as infant formula milk.

#### Achievements in 2018/19

- ✓ Walsall Environmental Health and Public Health worked closely with PHE and other neighbouring Councils to develop a training package highlighting infection control issues in relation to micro-blading, which was nominated for a national award.
- Two custodial sentences were imposed upon a food business operator who had allowed poor hygiene practices at two of his food businesses. One of the businesses had been the centre of a salmonella food poisoning outbreak. Custodial sentences are rare, but the evidential value of the samples taken DNA-linked the strain of salmonella found in the victims faeces and the surfaces at the food business.
- Health Switch Awards encourage the provision of a wider variety of healthy foods and food preparation processes at takeaway premises. The reward has now been introduced to 150 takeaway businesses 63 businesses have been issued with Bronze Awards, 34 with Silver Awards and 16 have achieved Gold Awards.

#### Risks in 2019/20

- Maintaining the full range of statutory activities provided by Regulatory Services is a challenge and the Management Team are regularly reviewing and prioritising workloads in order to ensure those matters of highest risk are dealt with.
- There is a small percentage of criminal or criminally negligent persons and companies avoiding safe trading practices and placing customers, residents and staff at serious risk and this requires the services to be vigilant and swift to take action when these become apparent.
- The databases used across the service are in need of an overhaul to ensure they are fit for the future and digitally enabled to ensure the service is efficient for both a staff and customer perspective.

#### Focus for 2019/20

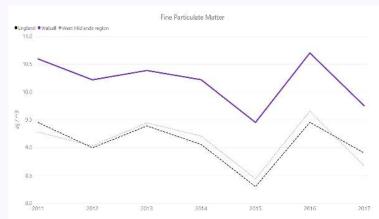
- Continue to ensure intelligence from a variety of sources is used effectively to target our limited resources at high risk sectors and practices.
- © Ensure staff receive adequate support including access to training, CPD and technical or legal expertise to ensure robust cases can prosecuted
- © Continue to work with partners on projects and cases to ensure greater success or to broaden the scope of what the projects are trying to achieve.
- © Continue to work towards using the most up to date and effective software across the Regulatory Services.

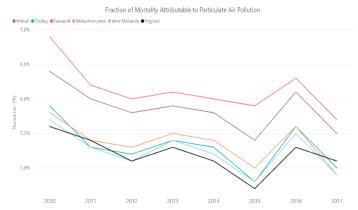
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## Air Quality

Clean air is essential for life, health, the environment and the economy. Poor air quality is the largest environmental health risk in the UK, and has greater adverse effects on vulnerable groups, including the elderly, children and people with pre-existing health conditions. Deprived areas are also generally disproportionately affected.

- The West Midlands has the poorest air quality outside of London, with 6 out of the 7 constituent local authorities having declared whole-borough Air Quality Management Areas due to NO<sub>2</sub> associated with road traffic.
- In Walsall, poor air quality primarily arises due to road traffic.
   There are areas that continue to experience exceedances of the National Air Quality Objective (NAQO) for NO<sub>2</sub>.
- Walsall Council continues to operate a network of air quality monitoring stations across the borough as part of strategic surveillance. These stations run continuously and provide data on the concentrations of NO<sub>2,</sub> O-Zone and Particulate Matter (PM<sub>2.5</sub>).
- The Council's Pollution Control and Public Health departments
  work collaboratively on a joint project to locally monitor the
  impact that air quality has on Public Health in the borough. In
  particular this encompasses the incidence and hospital
  admissions for respiratory and cardio-vascular diseases, with a
  view to prioritising interventions and the allocation of public
  health resources within Walsall.
- This work was selected for presentation nationally at Public Health England's Annual Conference (see Appendix A).
- Walsall's air quality monitoring work also informs new planning development and economic regeneration schemes across the borough in assessing the suitability of proposals and seeking to avoid the introduction of sensitive and relevant receptors to areas of poor air quality. Furthermore, it assists in determining where mitigation needs to be introduced through the planning process.
- Walsall's PM2.5 programme along with its air quality modelling work is being used in WM Air (the West Midlands Air Quality Improvement Programme in which the council is a project partner.





#### Risks in 2019/20

- Retention of key technical / specialist personnel and service functions.
- Failure of hardware. A programme for replacing equipment is being
  put in place to redress this and a review is intended to reduce the
  extent of strategic air quality monitoring post 2021 in light of
  forecast compliance with certain air quality limit values.
- The long term sustainability of this service as a result of resource constraints. This will be evaluated as required as part of service structure reviews from 2020 onwards.
- Changes to local authority statutory functions, reporting requirements and air quality regulations. The intended updating of the monitoring network is designed as a future-proof exercise and to extend its scope to incorporate other pollutants that are likely to become a key focus of concern.

#### Focus 2019/20

- Preparation of a validated PM<sub>2.5</sub> road emissions model for the Walsall Borough, to be updated annually to ensure on-going identification of pollutant 'hot-spots'.
- Data analysis of reported PM<sub>2.5</sub> monitoring data in context of known and/or projected health impacts and incidents of disease to establish sectors of the community where targeted public health resources and interventions are necessary to improve well-being and quality of life.
- Dissemination of air quality and health data with Health Care Commissioners and other parties to assist in health and social care planning.
- Development of an air quality 'early warning' system to serve sufferers of respiratory disease in Walsall.
- Commencement of particulate matter as PM1.0 fraction monitoring in light of emerging public health concerns.

## Appendix 1. Progress on Recommendations and Actions from 2018/2019 Health Protection Annual Report

Responsible Officer/Team/Organisation	Recommendation / Planned Activity	Progress
Public Health England (PHE)	Support the Government's ambition to reduce antimicrobial resistance (AMR) by working with the NHS, in particular on reducing inappropriate prescribing (including through behaviour change); and reducing healthcare associated Gram negative bloodstream infections.	West Midlands Anti-Microbial Resistance Network established and meeting quarterly since July 2018 being co-chaired by NHS England good engagement with Primary Care, Health Education England and NHS Improvement make up the membership.  PHE Health Protection Team respond to all significant health and social care outbreaks an incidents
	To work with other Government departments, Local authorities and the wider health community in support of the Government's ambition to reduce the burden of air pollution on public health, and in support of Government NO2 plan and new Defra Clean Air Strategy.	PHE continued with it programme of work in support of national and local government to reduce health effects of air pollution through developing and interpreting the available scientific evidence of the mortality and morbidity effects associated with both indoor and outdoor air pollution. Advising those who are in a position to take action to improve air quality at local, national and international level to reduce emissions of pollutants to help reduce exposure of the population to these emissions.
	To have responsibility to provide 'systematic support' to those Local Authorities (Las) required to take action under the Department for Environment Food and Rural Affairs (DEFRA) NO <sup>2</sup> reduction plan in the development of their Clean Air Zone action plans which focus on bringing NO <sup>2</sup> air pollution levels within statutory limits in the shortest time possible.	PHE has continued to support DEFRA's Joint Air Quality Unit and local authorities in reviewing NO <sup>2</sup> plans for those required to take action under the DEFRA NO <sup>2</sup> reduction plan.
	To support the delivery of the wider air quality agenda with LAs or LA networks working to reduce exposure to air pollution within existing or future Local Air Quality Management	In addition, PHE has produced a host of resources for Public Health teams on the topic of Air Quality including:
	Areas.	•Improving outdoor air quality and health: review of interventions
		•Air pollution: a tool to estimate healthcare costs
		<ul> <li>Health matters: air pollution</li> </ul>
		PHE Air Quality and Public Health Group on Knowledge Hub
		National Clean Air Day     Outdoor Air Ouglitus A recourse for Directors of Public Health
1	Horizon scanning of new technologies e.g. TB cluster investigation and Whole Genome	<ul> <li>Outdoor Air Quality: A resource for Directors of Public Health</li> <li>WGS is now being used routinely for culture positive TB cases and increased use of PCR</li> </ul>
	Sequencing (WGS) response, increase use of Polymerase Chain Reaction (PCR) testing.	testing in both TB and gastrointestinal outbreaks.
	Develop tools and prioritisation frameworks for managing workload and review	testing in both 15 and gustionitestinal outsieurs.
	implications of staffing across West Midlands as a result of the new technology.	
	To maintain the generic response to Health Protection incidents and outbreaks	PHE West Midlands continue to lead and support the management of health protection incidents and outbreaks through the Acute Response Centre and local health protection

team based in Kidderminster.

	Identify further opportunities to work with the Walsall Manor Hospital Gastroenteritis Team.	Care pathways are now established with the specialist Hepatitis C nurse holding weekly clinics in the Drugs and Alcohol Misuse service.
	Actively contribute to the PHE West Midlands Viral Hepatitis work.	Commissioners have promoted PHE regional viral hepatitis plan by agreeing to fund single laboratory genotype testing to avoid additional attrition in the care pathway.
Public Health Drugs and Alcohol	Utilise the medical room at the Glebe Centre to increase screening and vaccination coverage for Blood Borne Viruses and TB if clinical resources allow.	Opportunities are still being considered but additional clinical resource has not yet been identified.
Team	Explore possibilities to train pharmacists to deliver BBV screening and vaccinations.	Opportunities to implement are under consideration with PH specialist pharmacy support officer.
	Identify opportunities to engage and train current and ex-service users to promote	Specialist injecting project in operation since April 2019 with early signs of success at engaging the
	safer injecting practice amongst street-based injectors as a secondary service to improve pathways into specialist treatment.	most vulnerable into treatment.
	Explore further options to introduce contingency management.	No longer under consideration.
	Maintaining low rates of <i>Clostridium difficile</i> infection and NO MRSA bacteraemia cases.	Root Cause Analysis (RCA) of all <i>Clostridium difficile</i> cases was undertaken. Toxin positive cases were all then reviewed quarterly to determine if avoidable/unavoidable. Of the 19 cases during 2018-19, 12 were agreed as unavoidable and 7 avoidable.
	Deliver a robust education programme for infection prevention across the Trust.	Completed educational programme and to continue into 2019/2020.
Health Care Acquired Infection	Continue surveillance of surgical site infections.	Continued with surgical site programme (hip and knee surgery) and completed two mandatory periods and were found to be within national surgical site infection limits.
(HCAI)	Keep all infection prevention policies up to date.	Infection prevention policies are up to date.
Walsall Healthcare NHS Trust	Plan and deliver a programme of audit across the Trust.	Delivered in accordance to plan.
	Focus on interventions to reduce Gram negative blood stream infections.	Action plan reviewed and actions being implemented working with other health economy organisations.
	Implementation of actions from the Healthcare Associated Infection (HCAI) and Antimicrobial Resistance (AMR) strategies.	HCAI and AMR Steering group meet quarterly to deliver the strategies.
	Review the current Heatwave plan.	The Heatwave plan has been updated and circulated following consultation.
	Deliver training on hot and cold weather plans and peoples roles.	A questionnaire was sent to recipients on the severe weather distribution list with roles and responsibilities in relation to hot and cold weather alerts. The analysis of the questionnaire confirmed no additional training was required.
Health Emergency Planner	A joint multi-agency exercise will be arranged.	This is under discussion and will be carried out in liaison with the Resilience Unit who are working with the Wider Walsall Resilience Group and Walsall health economy to deliver a joint exercise.
neath Emergency Planner	Walsall will be leading on regional work to develop a pandemic Flu plan.	A review of Pandemic Influenza planning was being led by the previous Director of Public Health (DPH) on behalf of the Local Health Resilience Partnership (LHRP) and a gap analysis of the current position across Birmingham and the Black Country was undertaken. It was agreed that where possible local authorities will continue to undertake their own exercises and this item will remain live on the LHRP action tracker and picked up once handover of the replacement DPH has taken place.
	Improve Flu uptake in 2 and 3 year olds by sending personalised invite letters via the GP scheme.	Letters were sent by Child Health Information System (CHIS) to all 2 and 3 year olds.
Immunication and Sergering	GP engagement: produce practice level performance data, improve GP communications (newsletter, website), training audit.	Data on practice level performance now available for 2018/19.
Immunisation and Screening	Review neonatal Hepatitis B immunisation service delivery models across West Midlands.	Completed. The aim is to offer domiciliary neonatal Hep B in the whole West Midlands area from September 2020 subject to a successful procurement process.
	Improve Measles Mumps and Rubella (MMR Vaccine) uptake – GP scheme, CHIS	The measles campaign has commenced to address poor MMR vaccine uptake focusing a catch up of

## Appendix 2. Recommendations and Action Plan for 2019/20

Programme Area	Responsible Officer/Team/Organisation	Recommendation / Planned Activity
		All GP Practices offered access to evidence based infection prevention and control educational workbooks, policies and guidelines, to ensure standardisation of practice in Walsall.
		Walsall Health Protection Team to improve links with primary care through the newly created Primary Care Networks particularly with regards to infection prevention and control and flu vaccines.
Infection Prevention and Control		Practices undertake self-audit, with follow up visits by the Health Protection Team
in Primary Care	Walsall Health Protection Team	Development and updates and new guidance with Lead IPC Practice Nurses, who can then disseminate the information to the rest of the practice staff.
iii Fiiiilai y Care		The Walsall Health Protection Team to attend the CCG-led quarterly Practice Nurse Forum meetings to provide IPC updates.
		The Health Protection Team to work with planners and builders to ensure that any new build practices are compliant with infection prevention standards.
		The Health Protection Team are scheduled to speak at Protected Learning Time sessions to reach staff who are unable to attend any other training sessions.
		Obtain access to ICnet for community IPC team
Infection Prevention and Control	Wolcell Health Destantion Torus	Embed Health Education Guidance in schools with regard to hygiene, infections and antibiotics
in the Community	Walsall Health Protection Team	Raise IPC awareness with domiciliary care providers
		Introduce new audit tools to GPs and care homes
	Walsall Healthcare NHS Trust Infection Control	Achieving low rates of Clostridium difficile infection and NO MRSA bacteraemia cases.
		Develop and deliver a robust education programme for infection prevention across the Trust.
Infection Prevention and Control		To increase surveillance of surgical site infections.
in the Acute Healthcare Trust		Keep all infection prevention policies up to date.
		Plan and deliver a revised programme of audit across the Trust to enable a full audit cycle to take place.
		Focus on interventions to reduce Gram negative blood stream infections.
		To have a fully resourced IPCT who have been trained.
		Commence e-learning only for IPCT mandatory training for clinical staff so that staff can complete the training when it's convenient for them.
		Phased refurbishments of wards continue in 2019/20.
Infection Prevention and Control	Dudley and Walsall Mental Health	Continue to promote the urinary catheter passport, distribution of Hydration resources and development of Hydration educational session, develop an
in Mental Health Trust	Partnership NHS Trust	educational session about assessment of Urinary Tract Infections (UTI) and treatment, all this work is to play our part in the reduction of gram
	r dicticising Wils Trust	negative bacteraemia caused by UTIs.
		Be part of the design team for Trust electronic patient records, to ensure correct patient assessment forms are included
		Continue to work with the Trusts Flu Team, this years Flu CQUIN Target is 80% clinical staff uptake.
		Reintroduction of antenatal flu vaccination clinics at Walsall Healthcare Trust
		The Flu Fairies funded by Public Health will continue to work in the antenatal department talking to expectant mothers and encouraging them to have the flu vaccine
Influenza	Walsall Health Economy Flu Group	Provision of comic style booklets for all school age children encouraging them to become "Flu Fighters". This was developed in Wolverhampton for the
		2018/19 season, and which saw an increase in uptake of 8%.
		The CCG plan to identify and support general practices with low uptake in previous years

Drogramma Araa	Responsible	Recommendation / Planned Activity
Programme Area	Officer/Team/Organisation	Recommendation / Planned Activity
		Continued work to verify the borough PM <sub>2.5</sub> road emissions model.
		Continued surveillance of the association between local air quality and respiratory disease.
Air Quality	Walsall Pollution Control	Dissemination of air quality and health data with Health Care Commissioners and other parties to assist in health and social cand allocation of resources.
		Development of an air quality 'early warning' system to serve sufferers of respiratory disease in Walsall.
		To continue to monitor and report on NO <sub>2</sub> levels to ensure that these emission do not exceed recommended limits.
		Consideration of surveillance of particulate matter as PM <sub>1.0</sub> fraction.
		TB Service
		To further develop the expertise in the team to meet the needs of the patients.
		To ensure the stability of consultant time.
		To develop the Latent TB Infection screening service within the TB service.
Tulesconlecte	TD and LTDI Cananaina Camina	LTBI Screening
Tuberculosis	TB and LTBI Screening Service	Aim to complete 500 tests (Further funding available if target exceeded).
		Focus on South locality GP Practices, Modality Practices: weekly testing .
		Work with WHT to assist TB Nurses to provide screening clinics.
		Engagement with all GP Practices.
		To identify a sustainable model for the on going delivery of the Latent TB Infection screening service.
	NHS England	Roll out of the WMs measles elimination strategy and wider work to improve MMR coverage
Population Screening Programmes		The roll out and embedding of two major changes to national cancer screening programmes, namely faecal occult blood testing BCSP and HPV primary testing within the CSP.
		A strategic and joined up approach to address screening and immunisation inequalities and provide for vulnerable groups.
	NHS England	Roll out of the West Midlands measles elimination strategy and wider work to improve MMR coverage.
Immunisations		To offer domiciliary neonatal Hep B in the whole West Midlands area from September 2020 subject to a successful procurement
		A strategic and joined up approach to address screening and immunisation inequalities and provide for vulnerable groups.
		Introduction of local drug alert system.
		Introduction of local drug related death review process.
		Tackling high risk injecting practice.
Drugs and Alcohol	Walsall Public Health	Develop Hep C pathway into specialist treatment.
		Improve knowledge of HIV prevalence in drug and alcohol treatment cohort.
		Re-tendering of drug and alcohol treatment services with a reduced budget.
		To further improve the uptake of Hepatitis B and C screening amongst clients of the Drugs and Alcohol service.
Sexual Health	Walsall Public Health	Targeted screening of high risk groups, to increase the offer and uptake of HIV testing.
Health Emergency Planning	Walsall Public Health	Support the establishment of a local influenza pandemic coordination group to oversee a consistent approach to pandemic flu across the Walsall health economy and voluntary sector.
		Support the establishment of a local influenza pandemic coordination group to oversee a consistent approach to pandemic across the Walsall Health economy and voluntary sector.
		Integrated working with the Local Authority Resilience Unit.

## Appendix 3. Infection Prevention and Control in the Beauty Industry

- The beauty industry conjures an image of pampering, wellbeing and looking good.
- As well as more traditional practices such as tattooing and piercing, microbladed eyebrows have quickly become the 'must-have' look, with businesses growing across the West Midlands to accommodate this public demand.
- Few customers are aware of potential risk of skin infections and blood borne virus risk associated with microblading, tattooing and piercing.



Like tattooing, microblading involves puncturing the skin and inserting a pigment. If microblading equipment is re-used between clients, it will become contaminated and can result in localised infection at the site of puncture or the transmission of bloodborne viruses, e.g. Hepatitis B and C and HIV.

As well as infections, allergic reactions to the pigment, numbing cream and ointments used as well as scarring from repeated procedures are also associated risks of such procedures.

Inspections carried out by Environmental Health Inspectors from Walsall, Wolverhampton, Birmingham and Councils identified the following issues in Beauty Industry establishments:

Re – use of hand tools with no or lack of sterilisation

As a result a number of **Prohibition Notices** were served.

- Lack of general IPC knowledge
- Lack of in-depth training
- No knowledge or awareness of the Tattoo Toolkit or other readily available guidance
- The use of unlicensed topical numbing creams
- Lack of general facilities
- Poor Consultation
- Lack of documentation



ing providers in 2018 to tackle these issues in t

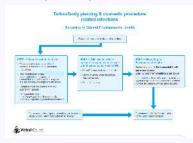
Tattooing and

body piercing

guidance

Toolkit

The three Local authorities joined forces with West Midlands PHE and training providers in 2018 to tackle these issues in the Beauty Industry.





An Environmental Health referral pathway has been developed to inform GP's and hospital clinician's the process for reporting cosmetic/tattoo related infections. This pathway has been presented to doctors at Walsall Manor Hospital and a session has been booked to deliver to GPs in Walsall.

We have created and delivered bespoke awareness events, known as Train the Trainer: Risks Associated with Microblading. The aim of these events is to educate and raise awareness on the risks associated with Microblading, inclusive of Legal Compliance, and they have been very well attended.

We also produced a Public Health information leaflet which was launched across the UK in January 2019. This resource highlighting risks of microblading and provides infection prevention essentials.

A training day was organised to present our work and invited PHE experts to present relevant topics to Environmental Health teams across West Midlands.



## Real-Time Local Surveillance of Air Quality In Walsall, West Midlands: Correlation with Chronic Obstructive Pulmonary Disease Admissions



Dr. Claire J. Heath<sup>1</sup>, Lee Harley<sup>1</sup>, John Grant<sup>2</sup>, Curtis Dean<sup>2</sup>, Julie Hewitt<sup>3</sup>, Mandy Beaumont<sup>1</sup>, Dr. Uma Viswanathan<sup>1</sup>, Dr. Barbara Watt<sup>1</sup>, Hamira Sultan<sup>1</sup>.

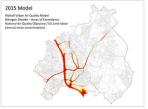
(1) Department of Public Health, Walsall Metropolitan Borough Council, Walsall, West Midlands, WS1 1TP (2) Pollution Control, Walsall Metropolitan Borough Council (3) Walsall Clinical Commissioning Group, Jubilee House, Walsall, WS2 7JL

#### **Background**

- Poor air quality remains the largest environmental risk to public health in the UK (DEFRA, 2017), and has more severe effects on vulnerable groups, for example the elderly, children and people already suffering from preexisting health conditions.
- In addition, deprived areas of the UK are disproportionately affected by the impacts of poor air quality.
- The estimated impact of Nitrogen Oxide (NO<sub>2</sub>) gas pollution on mortality is approximately 23,500 deaths annually in the UK.
- Many of the sources of nitrogen oxides are also sources of small particulate matter (PM<sub>2.5</sub>).



- Walsall is an unitary local authority within the West Midlands urban conurbation.
- The West Midlands has the poorest air quality outside of London, with high pollutant levels associated mainly with road traffic.



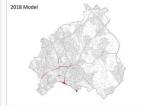
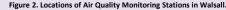


Figure 1. Modelled NO<sub>2</sub> Exceedances in Walsall Borough in 2015 (a) and 2018 (b).

 Notwithstanding NO<sub>2</sub> reductions in recent years, poor air quality in Walsall due to road traffic continues to cause exceedances of the National Air Quality Objective for NO<sub>2</sub> (Figure 1).

#### Methods





- Walsall Council has implemented a system of continuous local surveillance of air quality, with monitoring stations distributed across the borough.
- These stations provide data daily on concentrations of  $\,NO_2$  and  $PM_{2.5}$ , which is thus more dynamic than in modelled systems.
- Admissions into acute care for Chronic Obstructive Pulmonary Disease (COPD) in Walsall were recorded by Walsall Clinical Commissioning Group.
- Data were normalised and mapped to allow for analysis of correlations.

#### Results

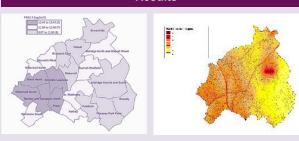


Figure 3. Particulate Matter (PM<sub>2.5</sub>) Concentrations in Walsall.

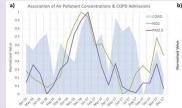
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#### Figure 4. Deprivation Map of Walsall.

- Areas of high PM<sub>2.5</sub> levels are concentrated in the centre and west of the borough Fig.
   3a), which is typified by arterial road networks and heavy manufacturing (Fig. 3b).
- Areas with high air pollutant levels are highly associated with levels of deprivation in Walsall (Fig. 4).

#### Figure 5. Geographical Distribution of COPD cases.

 The geographical distribution of admissions to acute care for COPD, was closely correlated with PM<sub>2.5</sub> concentrations, with the west of the borough having the highest burden of disease (Fig. 5).



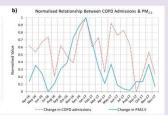


Figure 6. Association of Air Pollutant Concentrations and COPD Admissions.

- Concentrations of NO<sub>2</sub> and PM<sub>2.5</sub> are positively correlated with each other (Fig. 6a) and with COPD admission rates (Fig. 6b).
- From April 2016 to December 2017, monthly average  $PM_{2.5}$  levels ranged from 6.09-18.36  $\mu g/m^3$ .
- Peak pollutant levels, observed in January 2017, precipitated an excess of 54 admissions that month compared to the baseline, representing an 11.4% increase.
- The estimated cost to the local NHS economy of these excess admissions during this single month was £123,483, non-inclusive of the wider social and economic costs.

#### **Conclusions and Discussion**

- Most of the highest levels of pollutants were observed in areas of high deprivation, which also accounted disproportionately for COPD admissions.
- Improvement of air quality and the resulting prevention of COPD admissions, will result in significant economic benefit to the healthcare economy.
- In addition, the link between clean air and better emotional and mental well-being is well-evidenced. Therefore, reducing air pollution is imperative to achieving a healthier and fairer society, and promoting health equality.
- · These data are currently shaping research into proactively alerting COPD patients during episodes of poor air quality.

