BRISTOL HEALTH PROTECTION ANNUAL REPORT 2015/16

Bristol Clinical Commissioning Group

NHS

BRISTOL CITY COUNCIL

Contents

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EXECUTIVE SUMMARY

This report summarises the significant progress that has been made in securing effective partnerships that have strengthened health protection arrangements in Bristol.

Bristol sees more than its share of outbreaks and health protection events compared to neighbouring local authority areas. Bristol is a vibrant and culturally diverse city where people choose to live, learn, work and socialise. Many of its health protection issues reflect this vibrancy and diversity. Bristolians are resilient but we need to remain vigilant if we are to avoid damaging that resilience. Every day people in Bristol work hard together to keep the city resilient and safe from harm. These include Bristol's cleaners, refuse collectors, environmental health officers, health protection specialists, police, fire, ambulance, GPs, nurses, pharmacists, allied healthcare professionals, planners, councillors, carers, volunteers and communities. This is becoming increasingly difficult when resources are limited.

Through a series of appendices the report outlines how specific health protection issues are being addressed in Bristol.

Influenza and antimicrobial resistance (resistance to antibiotics) remain urgent health protection risks for Bristol residents and these also appear on the national risk register of civil emergencies. Tackling tuberculosis (TB), increasing immunisation rates and reducing variation in health outcomes are also pressing issues in Bristol that are being systematically addressed.

GLOSSARY

AGW	Avon, Gloucestershire, and Wiltshire
AMR	Antimicrobial Resistance
AQMA	Air Quality Management Area
ASLRF	Avon and Somerset Local Resilience Forum
BCG	Bacillus Calmette-Guerin
BNSSG	Bristol, North Somerset and Gloucestershire
BSI	Bloodstream infections
CBRN	Chemical Biological Radiological Nuclear
CCG	Clinical Commissioning Group
CDI	Clostridium difficile (C.diff) infection
COMAH	Control of Major Accident Hazards
CPE	Carbapenemase-producing Enterobacteriaceae
DTaP	Diphtheria, Tetanus and Polio
EPPR	Emergency preparedness, resilience and response
EVD	Ebola Virus Disease
GI	Gastro Intestinal
H&WB	Health and Wellbeing Board
HCAI	Healthcare associated infections
HIB	Haemophilus influenzae type b
HIV	Human Immunodeficiency Virus
HNA	Health Needs Assessment
HPC	Health Protection Committee
HPV	Human Papilloma Virus
IPC	Infection, Prevention and Control
IPV	Inactivated Polio Vaccine
LHRP	Local Health Resilience Partnership
LTBI	Latent Tuberculosis Infection
MMR	Measles Mumps and Rubella
MRSA	Methicillin Resistant Staphylococcus Aureus
NHS E	NHS England
NICE	National Institute for Health and Care Excellence
NOIDs	Notifiable Infectious Diseases
PCV	Pneumococcal conjugate vaccine
PHE	Public Health England
PIR	Post-infection review
QP	Quality premium
RCA	Root cause analysis
STI	Sexually Transmitted Infections
TB	Tuberculosis
Td	Tetanus and diphtheria
WHO	World Health Organisation

INTRODUCTION

This is the second annual report to be presented to the Health and Wellbeing Board (H&WB). A summary of the recommendations made in the first annual report are listed in appendix 1. It is part of a locally agreed assurance process that was put in place following the 2012 Health and Social Care Act (section 6C regulations). Health protection arrangements are governed by a range of statutory regulation which applies to a number of organisations, including Bristol City Council (BCC). Appendix 2 outlines the different responsibilities for partner organisations.

Bristol City Council (BCC) has a critical role in protecting the health of its population. BCC's Director of Public Health has set up a local Health Protection Committee (HPC) whose role is to ensure, on behalf of the H&WB, that adequate arrangements are in place for the surveillance, prevention, planning and response required to protect the public's health.

Health protection seeks to prevent or reduce the harm caused by communicable and non-communicable diseases, and minimise the health impact from environmental hazards.

Achieving success in health protection relies on strong working relationships at a local level. The Health Protection Committee (HPC) helps facilitate this relationship, ensuring that clearly defined roles and responsibilities are in place that underpin the local response to public health threats, outbreaks and major incidents. This report has been written to a framework that was agreed by the HPC and appendix 3 outlines progress to date against the following health protection areas:

- Infectious and communicable diseases
- Screening and immunisation
- Emergency preparedness, resilience and response (EPPR)
- Environmental hazards to health, safety and pollution control

ASSURANCE STATEMENT

The Director of Public Health has examined arrangements for health protection in Bristol and has provided this report to the Health and Wellbeing Board in line with their statutory responsibility to ensure that adequate arrangements are in place for the surveillance, prevention, planning and response required to protect the public's health.

In the inaugural Health Protection Annual Report for 2014-15, the Director of Public Health provided an overview of the Health Protection arrangements within Bristol, primarily focusing on the set-up of the Health Protection Committee (HPC).This annual report provides updates on progress made and identifies areas to focus on for 2016/17.

RECOMMENDATIONS

To note the significant progress that has been made in 2015/16 to ensure that sustainable and effective local systems are in place for protecting the health of Bristol residents and their neighbours.

Appendix 1: Recommended actions in the 2014/15 Bristol (First) Health Protection Annual Report

Tuberculosis (TB)

- Establishment of a TB Control Board (building on the BNSSG Prevention and Control Strategy Group) with agreed Terms of Reference and membership to oversee the local implementation of priorities outlined in the National Collaborative Strategy for England. This will be led by Public Health England and the Health Protection Committee will oversee and support its development through existing assurance arrangements.
- Led by Public Health England in collaboration with Bristol City Council, a Comprehensive Tuberculosis Health Needs Assessment will be undertaken that will further inform local priorities for action to reduce TB incidence and identify opportunities to further improve local TB services.
  The production of a local Collaborative TB Strategy to ensure delivery of both national objectives and local priorities as outlined by the Health Needs Assessment.

Healthcare associated infections

- Investigate the reasons behind the high levels of MRSA (Methicillin Resistant Staphylococcus Aureus) within the intravenous drug user population.
- Reduce the number of pre-48 hour MRSA (MRSA developed within 48 hours of admission).

Sexual health

- Improving sexual health information systems.
- Chlamydia partner notification pilot in primary care.
- HIV Screening and reducing late diagnosis; introducing appropriate screening in primary care.
- Consideration of re-commissioning all sexual health services across Bristol and surrounding areas.
- Carrying out a sexual health needs assessment and developing a new strategy for Bristol.

Foodborne disease

- Inspection of highest risk rated premises and new businesses.
- Review of foodborne disease in Bristol: undertake a service review to identify optimum structure.

Immunisations

- Maintain and improve current performance across all programmes.

- Reduce variability in coverage within and between programmes, with a focus on the Inner City Bristol locality.
- Implement the extension of the Childhood Flu programme to primary school aged children (Years 1 & 2).
- Implement the Meningitis B programme for children (this will be dependent on successful national negotiations on vaccine costs).

Screening

- The Screening and Immunisation Team, Bristol City Council Public Health Team and CCG locality chairs to work together to review uptake data by practice and by provider and develop action plans to target areas of poor uptake and coverage for each of the screening programmes.
- Develop effective pathways for Hep B diagnosis, treatment and follow up of babies born to Hep B mothers.
- Improve the performance of the UHB neonatal hearing screening programme.

Emergency Preparedness, Resilience and Response (EPPR)

- Through the Health Protection Committee, the Director of Public Health for Bristol City Council will ensure that plans are in place and tested with regards to the management of a suspected case/cases of Ebola Virus Disease (EVD) identified in Bristol.
- The Director of Public Health for Bristol City Council will continue to work alongside Public Health England to oversee the management of EVD related incidents and to engage with Local Resilience Forum members as required in response to the management of a suspected case / cases in the area served by the Local Authority.

Environmental hazards to health, safety and pollution control

- Bristol City Council to extend the period of monitoring air quality to ensure that at least 12 months data can be analysed.
- Bristol City Council to further investigate further potential exposure of the local community to nuisance dust.
- Public Health England to work collaboratively with Bristol City Council and community members to produce a localised report on the health outcomes of residents in closest proximity to the industries operating at the docks. This report will be used to inform any additional action required to reduce identified inequalities in health outcomes compared to Bristol as a whole.

Appendix 2: Primary organisational roles and responsibilities in the prevention and control of infectious disease outbreaks or health protection incidents in Bristol

PHE Centre (AGW) The Centre Director will ensure that PHE, through the health protection team will lead the epidemiological investigation and provide the specialist health protection response to public health outbreaks / incidents. They or their designate (Deputy Director of Health Protection / Consultant in Communicable Disease Control / Health Protection Consultant) have the responsibility to declare a health protection incident, major or otherwise.	**Preparation** • Providing advice (through the Local Health Resilience Partnership) to local NHS providers and commissioners regarding any preparation that they might need to undertake to ensure an effective and timely response when a public health outbreak / incident occurs; • supporting local authorities to understand and respond to potential threats; • collection, analysis, interpretation of surveillance data; • providing expert advice on hazards that pose a risk to the public's health and effective interventions to prevent and respond accordingly; • coordinating an out of hours rota for the delivery of specialist health protection advice by qualified personnel; • participating in arrangements for exercising and testing plans to respond to outbreaks / incidents; • providing access to regional and national PHE expertise as required; • advising on the requirement for prophylactic treatment and immunisation for all health protection incidents; • keeping the DPH informed about significant health protection issues and actions being taken to overcome them; • providing the local authority with information to support the Joint Strategic Needs Assessment and Joint Health and Wellbeing Board strategies as required; • supporting local authorities to develop a trained and knowledgeable workforce in the area of health protection. **Response** • Leading the Public Health response to declared Major Incidents; receiving and investigating notifications (with partners); • initiating immediate control measures when required; providing expert epidemiological advice through field epidemiology teams to support incident / outbreak investigation (both in the response and recovery phases); • sharing information concerning incidents / outbreaks with the local authority through the Director of Public Health; • chairing the 'Outbreak/Incident Management Team' and keeping health protection risks under review throughout the incident; communicating to partners when an

	Outbreak/Incident Management Team is established; • providing updates until the outbreak/incident is declared over; • coordinating public communications / media response in collaboration with the local authority, CCG and NHS England.
BCC Public Health Through the Director of Public Health, the Local Authority has overall responsibility for the strategic oversight of an incident / outbreak impacting on their population's health. They should ensure that an appropriate response is put in place by NHS England South West and PHE supported by the CCG. In addition, they must be assured that the local health protection system is robust enough to respond appropriately in order to protect the local population's health and that risks have been identified, are mitigated against and adequately controlled.	**Preparation** • Preparing for and leading the local authority's response to incidents that present a threat to the public's health; providing information, advice, challenge and advocacy; • chairing the Bristol Health Protection Committee to ensure that the health protection system is meeting the needs of its local authority population and that risks identified are adequately mitigated against and control arrangements are in place; • coordinating the Joint Strategic Needs Assessment to support the understanding of local health protection risks; • reporting local health protection arrangements and escalating health protection risks to the Health and Wellbeing Board; • ensuring that relevant commissioned services (including providers of sexual health services, drug and alcohol services and school health services) can provide an appropriate response to any incident that threatens the public's health and that business continuity plans are in place; • participating in arrangements for exercising and testing plans to respond to outbreaks / incidents. **Response** • Collaborating with PHE to lead the PH response to a major incident; • participating (as required) in Outbreak/Incident Management Teams, to help inform decision about the appropriate level of NHS response from providers AND working alongside PHE and the CCG to agree and source through agreed plans the resources needed to be released; • briefing Local Authority colleagues and elected members regarding health protection incidents/outbreaks; • mobilising local authority resources required to support an incident (e.g. Scientific Services and Animal Health and Welfare & Trading Standards).
BCC Environmental Health	**Preparation** • Ensure that relevant services and providers have effective health protection and business continuity arrangements in place to guarantee an appropriate response to any incident

Local authorities have defined health protection functions and statutory powers in respect of environmental health and health and safety.	that threatens the public's health; • exercising powers under the health protection regulations to prevent or limit the spread of an infectious disease; • prosecuting environmental and public health offenders; • informing the Drinking Water Inspectorate of an outbreak of illness associated with, or suspected to be associated with, a private water supply; • participating in arrangements for exercising and testing plans to respond to outbreaks / incidents. **Response** • With the Public Health England Centre, supporting local leadership in responding to communicable disease incidents and outbreaks; • inform Director of Public Health / Public Health England Centre of any emerging outbreaks/incidents; • with the Public Health England Centre, investigating clusters and outbreaks of foodborne infectious diseases; • participating (as required) in Outbreak/Incident Management Teams to help inform decisions about the appropriate level of Environmental Health (specialist and administrative) resources required to support the incident response; • provide specialist help and advice on the environmental aspects of the outbreak; • when required, undertake inspections, collection of specimens and investigations of implicated premises; • as an Health and Safety enforcement authority, execute the statutory duty to investigate infectious disease linked to workplace settings, undertake inspections, regulate; • as a Port Authority, responding to any outbreak of infectious or gastrointestinal disease at Bristol Seaports (Avonmouth and Royal Portbury Dock).
Bristol CCG The primary role of the CCG is to ensure through contractual arrangements with provider organisations that healthcare resources are made available to respond to health protection incidents or outbreaks (including screening/diagnostic and treatment	**Preparation** • Ensuring provider organisations commissioned by the CCG are able to respond adequately to health protection incidents / outbreaks where screening, diagnosis, treatment or vaccination might be required; • disseminating information as required by PHE or the local authority regarding the prevention of / response to, health protection incidents/ outbreaks across the local system of health care; • with regards to planning and preparedness, obtain appropriate advice from persons with the professional expertise in the protection or improvement of public health; • participating in arrangements for exercising and testing plans to respond to outbreaks / incidents.

services).	**Response** • Participating (as required) in Outbreak/Incident Management Teams to help inform decisions about the appropriate level of NHS response from providers and any CCG resources needed to be released; • Providing (if requested by NHS England South West), clinical support for the prescribing and administration of medication.
NHS England Has responsibility for managing/overseeing the NHS response to the incident, ensuring that relevant NHS resources are mobilised and commanding / directing NHS resources as necessary. Additionally NHS England South West is responsible for ensuring that their contracted providers will deliver an appropriate clinical response to any incident that threatens the public's health.	**Preparation** • Planning and securing the health services needed to protect the public's health; • with regards to planning and preparedness, obtaining appropriate advice including from persons with a broad range of professional expertise in the protection or improvement of public health. • participating in arrangements for exercising and testing plans to respond to outbreaks / incidents. **Response** • Mobilising NHS resources in response to incidents and outbreaks; • participating (as required) in Outbreak/Incident Management Teams to help inform decisions about the appropriate level of NHS response from providers and working alongside the CCG to agree the resources needed to be released; • co-ordinating the primary care response to the incident with the Area Team Pharmacy Advisor (as required); • Supporting CCGs to coordinate any response required by Community Trusts and/or Acute Trusts.

Appendix 3: Progress made on areas of health protection

1. Infectious and communicable disease

1.1 Tuberculosis (TB)

TB is a priority issue for Bristol as identified by the Health Protection Committee. TB is caused by the bacterium *Mycobacterium tuberculosis.* It is a notifiable disease in the UK.

UK TB incidence is higher than most other Western European countries and the US[1] (14.0 per 100,000 population UK, 8.8 per 100,000 France, 5.8 per 100,000 Germany and 3.0 per 100,000 US). England has not seen the consistent reductions that have been achieved in some comparable countries and if current trends are not reversed then within two years England could expect to have more TB cases than the whole of the US. In England TB has now been identified as a public health priority due to current trends and the health, social and economic burden of the disease. The rates of TB and the risks of delayed diagnosis, drug resistance, onward transmission and poor treatment outcomes are greatest among socially marginalised, under-served populations such as illicit drug users and the homeless.

Globally, the Millennium Development Goal of halting and reversing the TB epidemic by 2015 has been met[2] (WHO 2016).

The Collaborative Tuberculosis Strategy for England 2015 – 2020 was published in January 2015 following extensive consultation. The strategy was jointly launched by PHE and NHS England in response to concerns that overall rates of the disease have not shown a sustained reduction in recent years with an aim to achieve a year-on-year decrease in incidence, a reduction in health inequalities and ultimately the elimination of TB as a public health problem in England.

Figure 1 shows how the rate of TB in Bristol during 2014 was 22.4/100,000. This is the highest value in 13 years and is part of an increasing trend. In contrast the national rate has seen a year on year decrease since 2011. The rate in Bristol is considerably higher than for the rest of the South West (4.5/100,000). In 2014 from culture confirmed pulmonary cases that underwent antibiotic sensitivity testing a higher proportion of Bristol's notifications (18.2%) were found to have infections with resistance to at least one first line drug compared to the rest of the South West (3.0%). Furthermore 2.3% of 2014 infections were multidrug resistant compared to 0.8% for the rest of the South West.

[1] PHE (2013). Tuberculosis rates by country in 2014 (worldwide table). Last updated 2016. London: Public Health England.

[2] WHO (2016). *Tuberculosis. Factsheet N 104.* http://www.who.int/mediacentre/factsheets/fs104/en/ [accessed 24/05/2016]

Figure 1. Annual TB incidence rates, 2002-2014

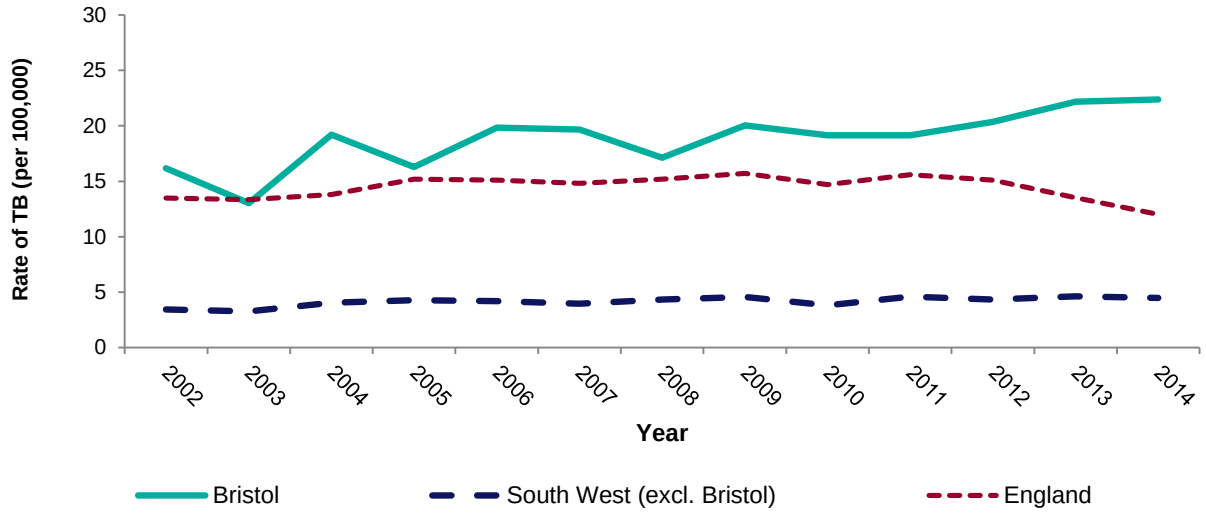


Table 1 shows that a lower proportion of Bristol's notifications, 5.8% (95% CI: 2.4% to 13.3%), reported at least one social risk factor compared to 10.9% (95% CI: 7.1% to 16.4%) in the rest of the South West. However overlapping 95% confidence intervals suggest that the difference is not statistically significant. A higher treatment completion rate in cases with drug sensitive and non-Central Nervous System, spinal, miliary or cryptic disseminated disease was found for Bristol (74.7%, 95% CI: 63.2% to 83.5%) compared to the rest of the South West (70.2%, 95% CI: 63.6% to 76.1%). However overlapping 95% confidence intervals suggest that the difference is not statistically significant.

Table 1. TB epidemiology: Bristol and South West (excl. Bristol) residents, 2014

TB INCIDENCE	**Bristol**	**South West***
Number of TB notifications (proportion pulmonary TB)	99 (62.6%)	222 (60.8%)
Rate per 100,000 population	22.4	4.5
DRUG RESISTANCE		
Proportion of culture confirmed notifications with any first line resistance	18.2%	3.0%
Proportion of culture confirmed notifications with multi-drug resistance**	2.3%	0.8%
SOCIAL RISK FACTORS (history of past or current homelessness, imprisonment, drug and/or alcohol misuse)		
Proportion of notifications with any social risk factor	5.8%	10.9%
TREATMENT COMPLETED within 12 months ***		
Number completing treatment in 2013 (Proportion completing)	53 (74.7%)	146 (70.2%)

Successes/Progress

TB Control Board

As outlined in the Collaborative TB Strategy, a significant step towards achieving the reverse of TB incidence is the establishment of TB control boards. The TB Control Board for the South of England covers Bristol and has been operational since September 2015. The Board's intent is to focus on high incidence areas (>20 per 100,000 population) whilst also liaising, guiding, sharing work and expertise with low incidence areas. Bristol is the only high incidence area in the South West of England.

Health Needs Assessment (HNA) for Tuberculosis in Bristol, North Somerset, Somerset and South Gloucestershire (BNSSG)[3]

A comprehensive TB health needs assessment (HNA) has been completed for BNSSG. The aim was to help understand the epidemiology of TB for the area, identify any unmet health needs of the affected population, including barriers to accessing community services. The report will inform and support the development of a local TB strategy and action plan in line with the 'Collaborative TB Strategy for England 2015 – 2020'.

Key initial findings from the local TB health needs assessment report identified a gap in service provision for active case finding and TB screening amongst under-served populations (i.e. migrants, homeless, substance misusers etc.), a lack of funded paediatric services and barriers to BCG access.

Tuberculosis Cohort Review

Much of the work by the TB Control Board is informed by a quarterly TB Cohort Review meeting of patients being treated within their geographical boundaries. Cohort reviews aim to strengthen the prevention and control of TB through a review of case management and assessment of outcomes compared to local and national TB targets, also providing an opportunity to identify unmet health and social care needs of cases and highlight system-issues in the TB control pathway at case-level. Cohort review meetings are multidisciplinary and multi-agency with representation from nurses, doctors, and public health practitioners from the NHS, local councils, and Public Health England. This ensures that TB control is joined up at all levels. In 2015/16 Bristol has had several cohort review meetings and these have used enhanced local data collection to identify local issues for action.

Pathway to accommodate TB patients with no recourse to public funds

Bristol CCG, Local Authority Public Health and PHE Health Protection Unit have drafted a patient pathway for those exceptional circumstances where homeless TB patients have no permanent secure accommodation and no recourse to public funds. Individuals with TB who are homeless in Bristol undergo housing, social care and asylum assessments as necessary and if it is deemed that they are not eligible for support from these streams then a case conference is held to discuss the patient pathway and public health implications of their

[3] Tuberculosis (TB) Health Needs Assessment. Bristol, North Somerset and South Gloucestershire working draft. March 2016.

situation. This patient pathway includes a tripartite agreement between the CCG, Local Authority Public Health and PHE Health Protection team to fund prompt housing for the individual in question for the duration of their TB treatment. While housed and on treatment, the City Council Tenant Support Services and Asylum services (if appropriate) will work with the individual to facilitate longer term support. The pathway went live on 1st April 2016 following consultation from the TB Strategy Group.

Latent TB screening programme for migrants

The majority of active TB cases diagnosed in England are a result of reactivation of Latent TB infection (LTBI). Systematic screening and treatment of LTBI in new entrants should significantly reduce the incidence of TB. This is one of the key interventions supported in the 'Collaborative Tuberculosis Strategy for England[4]' and is supported by NICE[5] as being a cost-effective intervention. In January 2015, as a high incidence area in the South West, Bristol received funding from the TB Control Board to establish new migrant LTBI testing and treatment services in areas with high incidence (>20 per 100,000 population). Phase one of the Bristol LTBI testing and treatment service was launched in January 2016. As a result a majority of GP surgeries (including the Haven) with the highest incidence of active TB in Bristol are offering IGRA blood tests to migrants who have moved to the UK in the previous 5 years.

Key current risks

- TB prevalence rates in Bristol are not reducing as they are in other parts of England.
- **Under-served populations:** TB is not only a serious infectious disease but it also has major social impacts for those affected. TB is associated with marked inequalities in health; with deprived populations more likely to get TB and suffer worst outcomes. The local health needs assessment (HNA) indicated that TB incidence in Bristol is related to deprivation, with the highest incidence rates observed in the most deprived groups. Sixty six percent of TB cases notified were among individuals who live in the two most deprived quintiles. Of TB cases where occupation status is recorded, 20.0% were unemployed.

  In addition, a substantial proportion of notified TB cases possess at least one social risk factor. Under-served and vulnerable populations are continuously highlighted in the qualitative findings of the HNA as well as in literature as groups requiring more support to engage with health services and complete treatment.

[4] PHE & NHS England (2015) *Collaborative Tuberculosis Strategy for England 2015 to 2020.* (Jan 2015).

[5] NICE (2015). NG33: Tuberculosis. Jan 2015. https://www.nice.org.uk/guidance/ng33/chapter/Recommendations [accessed 24/05/2016] PHE (2016).

A working group (with membership involving Local Authority Public Health (Health Protection), PHE, CCG and Bristol TB Nursing Service) has been established to look at various options for active case finding in under-served populations. An options paper has been written and the group are currently exploring funding for hire of a mobile chest x ray service.

- **Paediatrics:** There is no dedicated paediatric TB nurse to undertake outreach work with children who have TB. This is done by the paediatric immunology nurses alongside their other work, but they have limited capacity to meet the needs of children with TB and their families.
- **Prison TB healthcare**: A lack of X-ray machines (and trained technicians) on site at HMP Horfield prison can prove a challenge for clinicians in the diagnosis of TB. This means that if a prisoner requires a chest x-ray staff need to be available to escort them to and from a hospital. In the event of a large screening exercise or an outbreak, this would be difficult.
- **Outbreak management**: The funding arrangements for TB incidents and outbreaks need further local clarity. This has been added onto both Bristol City Council Public Health and PHE SW Risk Registers. A financial plan to underpin the communicable disease framework is needed.
- **BCG immunisation:** There is a global, national and local shortage of BCG vaccination supply which has resulted in interruptions to targeted immunisation programmes in high risk groups.

Areas for focus in 2016-17

- Continue to explore options and opportunities to provide TB screening and active case finding among migrants and other under-served populations.
- Review commissioning arrangements for paediatric TB patients.
- Explore the potential for use of mobile x-ray units (MXUs) for use in prison.
- Clearly agree and outline local sustainable funding arrangements for TB incidents and outbreaks.

1.2 Infection Prevention and Control (IPC)

Preventing healthcare associated infections (HCAI) is an important component of infection prevention and control and patient safety. NICE (National Institute for Health and Care Excellence)[6] estimated that 300,000 patients a year in England acquire a healthcare associated infection as a result of care in the NHS. In 2007, methicillin-resistant Staphylococcus aureus (MRSA) bloodstream infections and Clostridium difficile infections were recorded as the underlying cause of or a contributory factor in, approximately 9000 deaths in hospital and primary care in England. Healthcare associated infections are estimated to cost the NHS approximately £1 billion a year and £56 million of this is estimated to be incurred after patients are discharged from hospital.

All patients identified with MRSA BSI are subject to a comprehensive post-infection review (PIR) which, upon completion, is submitted to Public Health England. The purpose of the PIR is to identify how each case occurred and to agree actions to prevent the same circumstances recurring.

Similarly all cases of Clostridium difficile are subject to a root cause analysis (RCA) investigation to identify learning and share best practice to reduce the incidence of infections.

Succeses/progress

Healthcare associated infections

A healthcare associated infection (HCAI) Group meeting is held each month hosted by Bristol Clinical Commissioning Group (CCG). Membership is drawn from commissioners (CCG and NHS England) hospital and community providers, local authority and public health across Bristol and South Gloucestershire. The aim of the group is to ensure that the appropriate governance systems and processes are in place to prevent avoidable healthcare associated infections. The group provides regular updates and assurances on performance, antimicrobial stewardship, identified trends and associated work for improvement including sharing best practice and lessons learned from post infection reviews.

MRSA Steering Group/ Report into MRSA in people who inject drugs

During 2015-16, Bristol CCG led a review of processes to manage MRSA and supported the implementation of a robust action plan with providers that focused on targeted interventions and education for intravenous drug users (IVDU). These interventions included alternatives to injecting, safer injecting, skin and injecting site care, skin preparation prior to injecting, signs and symptoms of infection and signposting for prompt clinical intervention. These interventions are being taken forward by the Bristol Drugs Project.

[6] NICE (2012) Healthcare-associated infections: prevention and control in primary and community care Healthcare-associated infections: prevention and control in primary and community care. CG139.

Although the national zero tolerance target for MRSA was not achieved in 2015/16, Bristol CCG had established a local ambition to only have 3.70 cases per 100,000. Through the concerted work of the Healthcare associated infection group in partnership with communities in Bristol, the number of CCG assigned pre 48 hour MRSA cases was reduced significantly to three cases. The national average in England is 0.70 per 100,000 population. Tackling such preventable healthcare associated infections will continue to be a key priority for the health community in 2016-17 to meet the zero tolerance target.

Clostridium difficile (C. diff) review meetings

A monthly post infection review (PIR) meeting that includes public health infection control specialists and Bristol CCG medicines management representation is held each month with acute trust providers. The purpose of the post infection review meeting is to review every case of post 48 hour Clostridium difficile and identify any learning that can be addressed and shared to improve practice. In 2015/16 NHS England assigned a local ambition for Bristol CCG to have no more than 131 cases of C.diff. This figure takes into account Bristol acute hospital trust apportioned cases and community apportioned cases. The total number of C.diff cases in 2015/16 was 134 which meant the local ambition was not achieved.

During 2015-16 Bristol CCG through the efforts of its Infection Prevention and Control Nurse and a Medicines Management team, developed a root cause analysis (RCA) tool for primary care (GP practices and community pharmacies) to support the review of pre 48 hour C.diff cases. This has been well received. All the pre-48 hour C.diff community cases were reviewed during the year.

In January 2016 the CCG developed and implemented an action plan that focuses on interventions to ensure that C.diff infections are maintained within the annual threshold set by NHS England. The plan includes objectives to share best practice across providers, reduce broad spectrum antibiotic prescribing in primary care, develop key messages for patients, GPs and staff and develop an electronic survey tool to gather and analyse data for community C.diff infection cases.

Antimicrobial Resistance (AMR)

The Medicines Management team at Bristol CCG work with colleagues and partners across Bristol to address antimicrobial resistance. AMR is of global, national and local concern.The World Health Organisation (WHO) cites the issue as a great threat to human health. The government published a UK 5 Year Antimicrobial Resistance Strategy 2013 to 2018 (DH, 2013) which sets out actions to slow the development and spread of antimicrobial resistance.

In February 2015, a national framework was introduced to the NHS to benchmark performance and to be able to compare primary care prescribing rates. Data is now systematically collected on prescribing rates of three classes of broad spectrum antibiotic use (co-amoxiclav, cephalosporins, and quinolones), as a proportion of overall antibiotic use. Public Health England published the English surveillance programme for antimicrobial

utilisation and resistance (ESPAUR) 2010 to 2014: report 2015 which shows national and local performance.

In 2015-16, a new national quality premium (QP) target was introduced for primary care to reduce the overall prescribing of antibiotics by 1% and to reduce the prescribing of cephalosporin, quinolone and co-amoxiclav by 10% (due to broad spectrum antibiotics being associated with an increased risk of Clostridium difficile infection and antimicrobial resistance). The quality premium target for 2016/17 is to reduce overall prescribing of antibiotics by 4% and reduce the prescribing of cephalosporin, quinolone and co-amoxiclav by 20%.

In addition to this clinicians across Bristol have access to locally endorsed evidence based guidance on the use of antibiotics in primary care settings[7]. Such guidance helps prescribers to choose the most appropriate antibiotic for the infection they are treating, and to prescribe it for the most appropriate duration. These guidelines encourage the use of narrow-spectrum antibiotics rather than broad-spectrum antibiotics where appropriate and are updated every two years or more frequently if there are significant changes to recommendations. In 2015/16 a smartphone app was introduced for healthcare professionals to improve access to best practice guidelines.

A project was undertaken by the Medicines Optimisation pharmacists to retrospectively review broad spectrum antibiotic prescribing over a one week period at each of the Bristol GP practices in Quarter 1 2015/16. Results of this project were fed back to individual clinicians in Quarter 2 with the aim of improving prescribing practice of antibiotics and facilitating compliance with the BNSSG antimicrobial resistance guidelines. This project has significantly contributed to Bristol GP Practices achieving a 27% reduction in broad-spectrum antibiotic prescribing (compared to the same period in 2014/15) and ensuring both QPs were achieved in 2015/16. The AMR QPs remain for 2016/17 although targets are more stringent. The project is to be repeated in Quarter 1 2016/17 to further improve practice.

A South West Antimicrobial Pharmacist network continues to meet biannually to share clinical audit, best practice and to provide support to healthcare professionals. It offers a reliable communication cascade system and an opportunity to collaborate on the delivery of the AMR QPs and CQUINs.

Key current risks

- Infection prevention and control is fundamental to stop the spread of infectious and communicable disease. Performance in Bristol has not been optimal in reducing the number of healthcare associated infections.
- Arrangements for oversight of infection prevention and control outside hospital settings. Primary care trusts used to have this oversight but since the change in commissioning arrangements in April 2013 this oversight role has been split between

[7] NHS Bristol, North Somerset and Gloucestershire (BNSSG) (2015) Antimicrobial Prescribing Guidelines for BNSSG Health Community 2015.

different commissioning bodies including the local authority, CCD, NHS England and Public Health England.

- We need to avoid situations where Bristol residents continue to demand antibiotics when they do not need them and prescribers continue to prescribe when there are alternative courses of action. Improved prescribing practice of antibiotics including broad spectrum antibiotics needs to be maintained so that the right people receive the right antibiotics at the right time.

Areas for focus in 2016-17

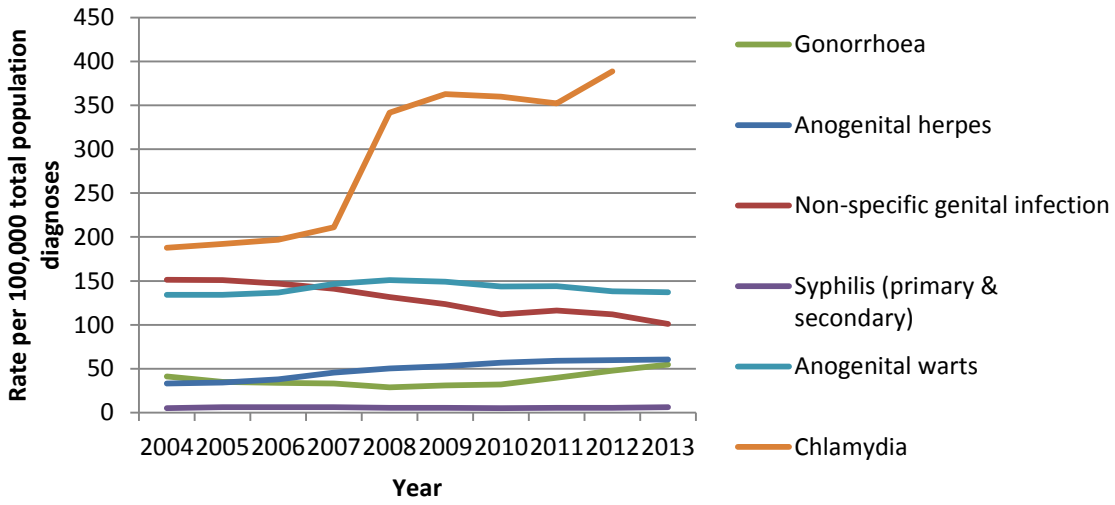
- Achieve the zero target for pre 48 hour MRSA blood stream infections
- Reduce the number of Clostridium Difficile pre 48 hour community cases
- Reduce overall prescribing of antibiotics in primary care by 1%
- Reduce prescribing of cephalosporin, quinolone and co-amoxiclav by 20%.
- Review arrangements for oversight of infection prevention and control outside hospital settings.

1.3 Sexually Transmitted Infections

Sexually Transmitted Infections (STIs) is a term used to describe a variety of infections passed from person to person through unprotected sexual contact. STIs can have lasting long term and costly complications if not treated and are entirely preventable.

Over the last decade the rates of all STIs diagnosed in genitourinary medicine (GUM) clinics have risen across England as a whole, and these increases have been reflected in Bristol. This is partly explained by increased testing through the National Chlamydia Screening Programme (NCSP) and improvements in diagnostic tests, however also reflects ongoing unsafe sexual behaviours. In Bristol sharp rises have been observed for syphilis and gonorrhoea in particular. **Figure 2** shows the trends in STI diagnoses between 2004 and 2013. Bristol's rate of new STI diagnoses in 2014 was 989 per 100,000 (excluding chlamydia in the under 25s). The Bristol rate was higher than the national average of 829 per 100,000.

Figure 2. Rate per 100,000 population of STI diagnoses in England (2004 to 2013) (PHE, 2014[8])



There is variation in the distribution of the most commonly diagnosed STIs by age, gender, sexual orientation and ethnicity as outlined below.

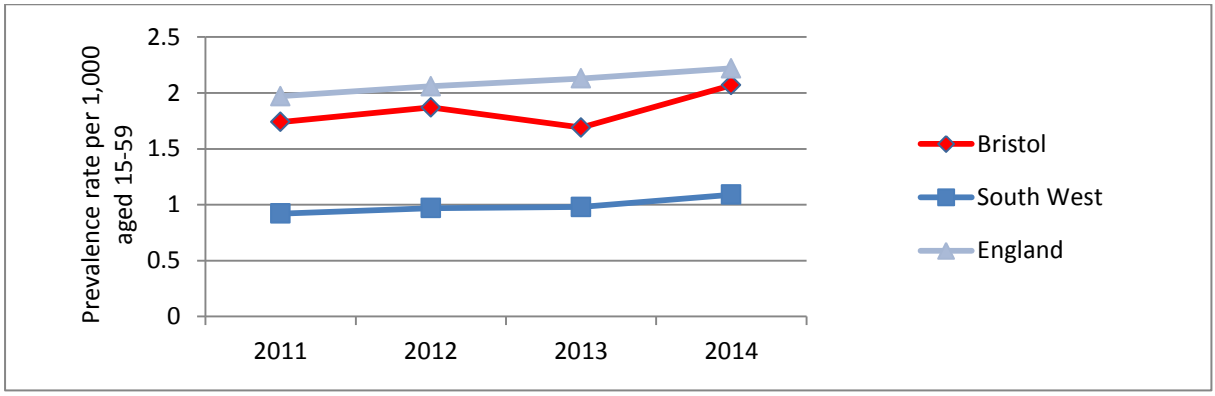
- Young people (15-24 year olds) continue to experience the greatest burden of STI diagnoses.
- There has been a rise in STI diagnoses amongst the population of men who have sex with men (MSM). High levels of condomless sex probably account for most of this rise, although better detection of STIs may have contributed.
- Diagnoses of syphilis and gonorrhoea are more likely to be reported in men who have sex with men than other groups.

[8] Public Health England (2014c) Table1: STI diagnoses & rates in England by Gender, 2004-2013, London, https://www.gov.uk/government/statistics/sexually-transmitted-infections-stis-annual-data-tables (accessed 19.2.15)

- There is wide variation in the rates of STIs diagnosed within different ethnic groups. The highest rates of STI diagnoses are found among persons of black ethnicity, and the majority of these cases were among persons living in areas of high deprivation, especially in urban areas.

HIV is associated with considerable morbidity and mortality and requires significant long-term care and treatment. Drug therapies have reduced the incidence of HIV-related deaths but it remains a life-threatening infection. The overall prevalence of HIV for Bristol increased in 2014 to 2.07 per 1,000 residents aged 15-59 year which means Bristol is now considered to be over the threshold for expanded HIV testing (see **figure 3**). The prevalence rate is slightly below the national average. Some groups in society are affected disproportionately by HIV, including MSM and black African communities. Late diagnosis of HIV remains a concern, with 44.7% of people in Bristol presenting at a late stage of infection, which is slightly higher than the national rate of 42.2%.

Figure 3. HIV prevalence rate per 1,000 population (2011-2014)



Successes/Progress

Sexual health needs assessment

A comprehensive sexual health needs assessment for Bristol has been conducted in order to inform the recommissioning of sexual health services. The needs assessment provides a detailed overview of sexual health need and current service provision. It identifies key sub-groups of the population at greater risk of poor sexual health and draws out potential areas of unmet need and recommendations for commissioners. The summary is available at www.sexualhealthconsultation.co.uk.

Recommissioning sexual health services

A procurement of sexual health services across Bristol, North Somerset and South Gloucestershire is currently underway in order to comply with EU procurement law. This has provided an opportunity to address some of the gaps in the current sexual health system. The aim of this exercise is to achieve better outcomes for Bristol residents and those who use the sexual health services in Bristol by commissioning more joined up services to

achieve more equitable outcomes, and with an improved focus on the needs of vulnerable and high risk groups. Additionally, it is an opportunity to increase the focus on prevention and address the wider determinants that impact on people's sexual health in Bristol. It is anticipated that the new contract will be awarded in 2016/17 and the new service will be in place from April 2017. Services delivered through primary care were out of scope for this procurement.

Strengthening HIV testing

An audit of cases of very late HIV diagnosis found evidence that there were missed opportunities to test for HIV in Bristol's general practices. As a result 20 high prevalence practices have received free training in order to strengthen their approach to HIV testing. The training takes the form of a one hour interactive workshop delivered at each practice, based on the MEDFASH HIV TIPs (Testing in Practice) online educational tool. The effectiveness of the training is currently being evaluated by the University of Bristol. The next phase of the intervention will be a pilot to offer HIV screening in the six highest prevalence practices. This will include offering tests to newly registering patients or opportunistically offering tests to patients from high risk groups.

Chlamydia partner notification pilot in primary care

A new approach to the management of cases of chlamydia and gonorrhoea diagnosed in the community was piloted in 11 south Bristol practices. During the evaluation both practice staff and patients reported positively on the alternative care pathway which provided the option for telephone-based management by a centralised team of specialist nurses for any test taken in the practice. An application for a larger, definitive cost-effectiveness evaluation was submitted to the NIHR (National Institute for Health Research) in April 2016.

Sexual Health Population and Patients Health Integration Team (SHIPP HIT)

The mission of the Sexual Health Improvement HIT is to transform services to improve sexual health for the people of Bristol, North Somerset and South Gloucestershire. The team tackles a range of local sexual health challenges, including increasing rates of HIV infection, higher than national average rates of chlamydia, high teenage pregnancy rates in some disadvantaged communities and a rise in abortions amongst women over 25.

Key current risks

- There has been a reduction in the government grants to local authorities including an in year reduction in the ring-fenced public health grant. This has meant that funding available for services such as sexual health services is reduced. This is of concern given that there is increasing demand for the service and an increasing population in Bristol. The ability to procure a service that can meet this rising demand within the financial envelop available is a challenge.
- There has been a large increase in STI diagnoses amongst the MSM (men who have sex with men) population.

Areas for focus in 2016-17

- Ensure a successful mobilisation of the new sexual health service
- Develop a new sexual health strategy for Bristol, to include a strategic action plan on HIV prevention and testing
- Review the work programme of the sexual health HIT (SHIPP) to ensure it aligns with the delivery of the new sexual health service and the priorities identified in the needs assessment
- Evaluate the interventions to strengthen HIV testing in primary care
- Explore the opportunities to utilise new technologies to offer increased access to STI testing.

1.4 Foodborne illness

Foodborne illness (more commonly referred to as food poisoning) is any illness that results from eating contaminated food. Foodborne illness can originate from a variety of different foods and be caused by many different pathogenic organisms at some point in the food chain, between farm and fork. Although the majority of cases in the UK are mild they are unpleasant, result in absences from education or the workplace and place a significant demand on healthcare services. Occasionally foodborne illness can lead to complications or even death.

Access to safe food and water is one of the most fundamental human needs. Latest figures from the Food Standards Agency state that there are over 500,000 cases of food poisoning per year across the UK from identified causes and if the unidentified causes were to be included this figure would more than double. In Bristol, there were 1260 cases of gastrointestinal infection reported between April 2015 and March 2016 (see **Table 1**).

Table 1. Cases living in Bristol Local Authority April 2015 to March 2016

Infection	**Total Cases on HPZone living in City of Bristol Local Authority April 2015 to March 2016**
Campylobacter	500
Cryptosporidium	83
E coli VTEC	<5
Giardia	151
Shigella	27
Salmonella	63
Parathyphoid Fever	<5
Typhoid Fever	<5
Norovirus	343 (SGSS lab imports rather than HPZone records))
Rotavirus	83 (SGSS lab imports rather than HPZone records)

Source: Public Health England HPZone record system or SGSS electronic lab reports (where indicated)

Bristol City Council is required to register or approve food businesses by inspecting them within 28 days of the commencement of food operations to give them a rating. This rating then informs a rolling programme of inspection.

Bristol City Council currently has around 4800 premises on the food premises register. These give rise to an inspection programme of approximately 4000 for the year 2016-17.

Limited resources are targeted to the highest risk and non-compliant food businesses. These are carried out by environmental health officers who are authorised to exercise appropriate enforcement powers, such as issue of legal notices requiring improvements and in the most serious cases prosecution. Due to the large number of food businesses in Bristol, many of those in the medium risk category are out-sourced to a specialised Environmental Health contractor.

A Food Standards Agency Audit of the Food Service flagged the low numbers of Authorised Officers and the need to adequately resource the service to address this and clear the backlog of over 2500 inspections. The service is only able to complete 39% of the required interventions.

Successes/Progress

Food Standards Agency Audit Report

The food service was recently audited by the Food Standards Agency, and as a result an action plan has been agreed with the agency. A key action included identifying additional funding from the public health ring fenced budget in order to act as a catalyst to address barriers to the food businesses inspection programme and to develop a new Healthy Eating Award for the city with public health.

Key current risks

The key risks relate to the ability to clear the backlogs, this will be affected if Environmental Health are unable to recruit suitably qualified Authorised Officers to undertake this work and the availability of Environmental Health Contractors. Now funding has been secured Environmental Health will look at all options to try and reduce the risk.

Areas for focus in 2016-17

- To develop a healthy eating award for the city.
- To clear the backlog of Food Safety Inspections prioritising the highest risk rated premises and new businesses.

1.5 Communicable Disease Management

Through close partnership working, Public Health England South West (North) Health Protection Team (PHE) aims to provide 'assurance that infection prevention and control measures are in place to ensure the protection of those members of the Bristol Community that may be vulnerable to acquiring an infection both in the general population and whilst in a Health or Social care setting'.

The PHE Health Protection Team responds to any Notifiable Infectious Diseases (NOIDs) in Bristol as well as the rest of England. In 2015/16 the team managed a range of enquiries, cases and outbreaks in Bristol. The majority of outbreaks the team managed in Bristol were Norovirus and Gastroenteritis in care homes and school settings.

Health Protection Team incidents of note

National increase in Cryptosporidium

An increase in Cryptosporidium was seen in all regions of England, Wales and Scotland in Quarter 4 2015/16. The increase was seen from November 2015 onwards and confirmed by the reference laboratory to be Cryptosporidium Parvum. In the South West, cases were higher in the reported quarter than for the equivalent quarter the previous year. However it must be noted that increases may not be directly attributable to the national increase.

Increase in Influenza-like illness (ILI)

The 2015/16 Flu season was later than usual with the circulation of Influenza A and Influenza B viruses continuing to be high in March 2016 within Bristol and nationally. Laboratory reports of Influenza A and Influenza B were higher during the 2015/16 season than in the previous winter season 2014/15.

The peak in reports of laboratory confirmed influenza coincided with a peak in GP consultation rates locally and at a national level. In the South West, seven out of ten local authority areas, including Bristol, saw their consultation rates amongst the highest in England.

During the peak of ILI activity, the vast majority of outbreaks were in nursery and school settings.

National outbreak of Salmonella Braenderup

A national outbreak of Salmonella Braenderup was identified, with cases occurring from March 2016. Whole genome sequencing showed the cases were genetically matched and in total there were 8 cases across the PHE South West centre. The outbreak is still being investigated at a national level but information regarding the potential cause of this outbreak is not yet available.

Increase in Scarlet Fever

The Health Protection Teams in the PHE South West Centre observed increased notifications of scarlet fever (primarily school-aged children) during March 2016. Reported

cases were higher than the comparable period in the previous year and above seasonal expected levels in Bristol.

PHE and Bristol City Council Public Health took the opportunity to write to all head teachers to raise the awareness of the signs, symptoms and the actions to be taken should they become aware of an outbreak in their school.

Notifications of TB

See also section 1.1 in this report. Cases of TB continue to be managed in Bristol. Outbreak control teams have been convened, where needed. For example to manage contact tracing and screening within the local prison. Of the contacts screened to date, there has been no evidence of transmission from index cases to other prisoners or to staff who work in prisons.

Any failure to comply with TB treatment is followed up and where there have been concerns teleconferences with appropriate parties have been convened to improve compliance.

Any cases in healthcare professionals have been followed up promptly and multiagency teleconferences convened as appropriate and follow up of workplace contacts was conducted to identify those who needed screening at the Bristol Royal Infirmary.

Successes/Progress

Scenario Testing and Development of an operational Communicable Disease plan for Bristol

An exercise was conducted in the first quarter of 2016 to run through potential outbreak scenarios and to discuss the role and responsibilities of local health partners, and to determine how resources can be accessed for possible outbreak responses in Bristol. This identified the need for a localised mass response framework to sit underneath the Avon, Wiltshire and Gloucestershire (AGW) Communicable Disease Framework. Bristol City Council Public Health and PHE are currently working to draft this guidance. The plan will include guidance on how to coordinate mass incidents requiring prophylaxis, vaccination, screening and phlebotomy, as well as linking into existing guidance and plans such as the Health Protection Part 2A orders.

Strengthened partnership Working

A Consultant in Public Health post was created and joint funding for this post was agreed between Bristol City Council and PHE.

Communicable Disease Port Health Arrangements

As a Port Health Authority (PHA), Bristol City Council enforces a range of international, European and domestic legislation at Royal Portbury Dock and Avonmouth Dock and aboard vessels carrying passengers and freight to protect the public, animal and environmental health of the UK and Europe.

The Port Health Authority is responsible for preventing the spread of infectious disease from seafarers and passengers into Britain. One of the ways they achieve this is to monitor ships that have visited “high risk” ports over a three week period prior to arrival into Bristol.

The procedures for handling infectious diseases at Bristol seaports has been extensively reviewed in 2015, and several training exercises have been undertaken to validate the plan.

Key current risks

- **Funding Arrangements for Health Protection Incidents**: There is a lack of clarity from stakeholders that confounds the management of communicable disease regarding which organisation is responsible for funding which part of the incident response.
- **Infection Prevention and Control:** See section 1.2.

Areas for focus in 2016-17

- **Funding**: Clearly agree and outline funding arrangements for incidents and outbreaks.
- **Infection Prevention and Control**: Review arrangements for oversight of infection prevention and control outside hospital settings (same area has been identified in section 1.2 of this report).

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2. Immunisations and Screening

2.1 Immunisations

Immunisation is one of the most effective ways of protecting against serious infectious diseases. Immunisations are given at various points across a person's lifetime, at times when they are vulnerable to disease. Performance across the range of immunisation programmes is improving, however, coverage is variable and this requires attention to ensure that the local population is protected and does not become susceptible to outbreaks of these diseases.

In Bristol, there were 261 cases of vaccine preventable diseases notified between April 2015 and March 2016 (See Table 2).

Table 2. Total cases of vaccine preventable infections in Bristol local authority area between April 2015 to March 2016

Infection	Total Cases on HPZone living in City of Bristol Local Authority April 2015 to March 2016
Measles	15 (1 confirmed)
Mumps	75 (3 confirmed)
Rubella	<5 (not laboratory confirmed)
Diphtheria	<5 (confirmed)
Tetanus	0
Pertussis	157 (125 confirmed)
Polio	0
Meningococcal	12 (8 confirmed cases of which 4 were Group B)
HiB	0

Source: Public Health England HPZone record system

Successes/Progress

Influenza Vaccine Uptake 2015/16

Bristol achieves uptakes in line with the national average for seasonal flu, with the exception of those with existing medical conditions. Improving uptake in the under 65 at risk group, amongst pregnant women, Health Care Workers and amongst children were identified as key priorities for the 2014/15 Seasonal Flu Plan. During 2015/16 Bristol saw a small

increase in flu uptake for pregnant women, which was higher than the national picture, which saw a small decrease.

Childhood flu immunisations for Years 1 and 2 were implemented in Bristol in 2015/16. Following a national procurement a pharmacy model was commissioned late in Bristol through Boots and offered to all eligible children. Uptake was lower than in school based programmes, but mirrored uptake levels achieved in the national pharmacy pilots. For 2016/17 it is hoped to commission a school based model much earlier in the year. The delivery model should see much higher levels of uptake because plans will be in place to achieve a national and locally agreed threshold for Years 1, 2 and 3 across every school in Bristol.

Maintaining uptake for routine immunisations

Childhood immunisations

For uptake of Hib/MenC (meningitis strain C) at 2 and 5 years, PCV booster at 2 years, MMR at 2 (one dose) and 5 years (two doses) coverage remains similar to 2014/15 levels and Bristol is now consistently meeting the 95% target for MMR at 5 years (one dose).

During 2014/15, uptake for the DTaP/IPV booster at 5 years appeared to be lower than expected. An investigation of this data found that coverage for this immunisation was higher than reported and this was due to an error in the call/recall from the Child Health Information Service. This resulted in children being invited and receiving immunisation before 3 years 4 months, which would not have been included in the COVER data reporting specifications. By taking this into account and including children vaccinated earlier than 3 years 4 months showed that there was an uptake increase to over 90%. The Child Health Information Service team have corrected the call/recall so that children are being vaccinated at the correct time and national and local discussions are underway to discuss data reporting for this immunisation.

School age immunisations

HPV and MenC uptake for 2014/15 (academic year) was recognised as being poor and immediate action was undertaken to review the service during 2015/16 (academic year). This has resulted in the implementation of monthly meetings with the provider and more frequent data reporting. 2015 saw the implementation of MenACWY (meningitis strains A, C, W and Y) immunisation programme in response to the national MenW outbreak. In Bristol MenC vaccine was replaced with MenACWY vaccine for year 9 students, with an additional mop up for year 11 students. Available data at the time of writing this report suggested there was a positive improvement in uptake during 2015/16 and the providers have worked hard to deliver additional catch-up clinics through the summer holidays. Td/IPV booster vaccinations continue to be delivered through primary care (GP practices).

Adult immunisations

The uptake of pertussis vaccine in pregnancy during 2014/15 has remained similar to 2013/14 uptake at ~60%. Estimates[9] for 2015/16 show monthly uptake in the Bristol, North Somerset and Gloucestershire NHS England Area team ranged between 53.9 and 67.8% over the year.

Uptake of pneumococcal vaccine was 71.4% in 2014/15 and is 71.3% in 2015/16. The shingles (varicella zoster) vaccine has an annual cohort and for the last cohort (vaccinated between 01.09.2014 – 01.09.2015) uptake was 53.8% for 70 year olds, and 56.3% for 78 year olds (catch up cohort).

Reducing health inequalities

During 2015/16 the screening and immunisations team have been focusing on improving uptake for school aged children in Bristol, with a focus on improving uptake at schools with low uptake last year. A needs assessment of 0-5 immunisations is underway which will also inform future work streams to target reducing inequalities in uptake.

Implementation of MenB and MenACWY programmes

See also school age immunisation section. MenB and MenACWY have now been successfully implemented within Bristol according to the national immunisation schedule. This implementation was supported by the provision of training sessions, held via Webex across the South West. This has continued to be supported following feedback from practice nurses in Bristol particularly in relation to implementing the MenB booster at 12 months, which sees 12 month olds receiving four immunisations in one session.

Development of targeted neonatal hepatitis B immunisation pathways

Neonatal HepB immunisation pathways have been developed and successfully implemented. This means that babies born to mothers who are hepatitis B positive are offered a course of immunisation and their immunity is tested through a serology test at 12 months of age. This is an important intervention in protecting those babies from contracting hepatitis B.

Key immunisation groups

The organisation and governance of processes to ensure the effectiveness of local immunisation programmes is now well-established. This governance process reports to the Health Protection Committee and comprises of:

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9 PHE (2016). Prenatal pertussis coverage estimates by area team and clinical commissioning group: England, April 2015 to March 2016. London: PHE

- **Bristol Immunisations Group**

  2015/16 saw the implementation of the Bristol Immunisations Group (May 2015). The group provides an operational forum for key stakeholders involved in the delivery of immunisations in Bristol. It is well attended and has clear action plans in place to improve immunisation uptake and reduce inequalities.

- **Bristol Immunisation Group Health partners Integration Team (BIG HIT)**

  The BIG HIT is a collaboration of key senior stakeholders formed as part of the CLARHC and allows key stakeholders from clinical practice and academia to work together to steer clinical and research development priorities for immunisation in Bristol. The group has a work plan and has prioritised support to improve the accuracy of data held by the Bristol CHIS, particularly in relation to data for school age children; improvement of uptake for HPV and Men ACWY.

- **Vaccine Preventable Diseases Group**

  The Vaccine Preventable Diseases Group is the high level strategic oversight and governance group for immunisations. It sets the strategic direction for the overarching work plan for programme delivery and provides strategic response to issues raised by the previous two groups.

Key current risks

- **Meningococcal disease:** Incidence of meningococcal disease (W) continues to increase nationally and atypical presentations of both strain B and strain W have occurred, particularly in teenagers. GPs and hospital clinicians have been alerted to this via Bulletins and national Briefing Notes. It is important that uptakes of ACWY vaccine for school leavers and university students 'Freshers' aged under 25 are improved to minimise the potential for cases and outbreaks.
- **Pertussis:** Incidence continues to increase nationally with cases across all ages, but with higher incidence in younger children resulting in neonatal deaths. New public health guidelines for the management of pertussis are being developed nationally and the priority remains the promotion of the maternal immunisation programme.
- **Measles and MMR:** Cases of measles continue to arise and a large outbreak has recently occurred in London with transmission to local areas. There remain pockets of under-immunised populations within the Bristol locality who remain susceptible to measles. Targeted immunisation plans for specific groups need to be developed to provide an effective response
- **BCG supply:** See section 1.2 of this report. An international shortage has occurred following problems associated with the manufacturing of BCG vaccine. This situation is being managed by the national immunisation team and alternative supplies are being sourced but in the interim supply is restricted, with priority being given to the neonatal programme for infants of high risk mothers. Records are being kept of those who would normally be eligible but not able to be prioritised and these individuals will be recalled when further vaccine supplies become available.

Areas for focus in 2016-17

- Maintain and improve current performance across all programmes.
- Reduce variability in coverage within and between programmes, with a focus on the Inner City Bristol locality.
- Implement the extension of the Childhood Flu programme to Year 3 primary school aged children and improve uptake for all eligible children.
- Improve uptake of seasonal flu vaccines by clinical ‘at risk’ groups.
- Improve uptake of flu and pertussis vaccines by pregnant women.
- The Screening and Immunisation Team, Bristol City Council Public Health Team and CCG locality chairs to work together to review uptake data by practice and by provider and develop action plans to target areas of poor uptake and coverage for each of the screening and immunisation programmes.

2.2 Screening

The UK National Screening Committee defines screening as “The process of identifying apparently healthy people who may be at increased risk of a disease or a condition so that they can be offered information, further tests and appropriate treatment to reduce their risk and/or complications arising from the disease or condition.”

There are currently three national cancer screening programmes: breast, bowel and cervical; and eight non-cancer screening programmes: six antenatal and new-born (Fetal Anomaly, Infectious Diseases in Pregnancy, Sickle Cell and Thalassaemia, New-born and Infant Physical Examination, New-born Blood Spot and New-born Hearing) and two young person and adult (Abdominal Aortic Aneurysm and Diabetic Eye).

Successes/Progress

Cancer screening

The Screening and Immunisation Team have worked with colleagues in the local authority and the CCG to collaboratively address health inequalities in relation to these programmes. Service reviews and equity audits have been completed for each of the three cancer screening programmes and actions identified to improve uptake and coverage. Specific activity has included the production of a DVD for women with learning difficulties to provide accessible information for them on what to expect when attending for a cervical screening test (‘smear test’). This resource received a national award and can now be accessed via The Jo’s Trust and NHS Choices national websites.

Focus groups were also convened in collaboration with community groups and leaders in inner city Bristol to look at potential barriers to accessing bowel cancer screening amongst minority ethnic and other under-represented groups. A work plan has been developed to implement the actions arising from this piece of work which continues to be led by the provider (UHB) and informed by local community representatives. The Bristol and Weston Bowel Cancer Screening Programme had a very successful Quality Assurance visit in 2015/16 and has continued to improve.

Antenatal Screening

University Hospitals Bristol performs at the higher achievable level for all indicators within the Antenatal screening programmes, with the exception of timely referral of hepatitis B positive women for specialist assessment, which is not achieved within acceptable timescales, and timeliness of the Antenatal sickle cell and thalassaemia test which is achieved but at the lower acceptable level. Hepatitis B pathways have been reviewed and these standards continue to be closely monitored. The Antenatal and Newborn Screening Service (including the Newborn Hearing Screening Service) had a PHE Quality Assurance visit during 2015/16 and a comprehensive action plan has been developed to ensure continuous service improvement going forward.

Newborn Bloodspot Screening

Screening tests for four additional inherited metabolic disorders were added to the newborn bloodspot screening programme in 2015 / 16. The six disorders now screened for include:

- phenylketonuria (PKU)
- medium-chain acyl-CoA dehydrogenase deficiency (MCADD)
- maple syrup urine disease (MSUD)
- isovaleric acidaemia (IVA)
- glutaric aciduria type 1 (GA1)
- homocystinuria (pyridoxine unresponsive) (HCU)

About 1 in 10,000 babies born in the UK has PKU or MCADD. The other conditions are rarer, occurring in 1 in 100,000 to 150,000 babies. Without treatment, babies with inherited metabolic diseases can become suddenly and seriously ill. The diseases all have different symptoms. Depending on which one affects their baby, the condition may be life threatening or cause severe developmental problems. They can all be treated with a carefully managed diet and, in some cases, medicines as well.

Adult screening programmes

In relation to the adult screening programmes, the Bristol Diabetic Eye Screening programme has had a successful Quality Assurance visit and has achieved all three key performance targets and the Abdominal Aortic Aneurysm Screening programme also continues to perform well.

Key current risks

There has been an increase in demand on the symptomatic / treatment end of the service. This is having an impact on the screening services, resulting in increased waiting times for patients at points during 2015/16. There are a number of reasons for the increase in demand, including demographic change resulting in more eligible people within the population, a greater focus on prevention and early diagnosis, and a number of successful, high profile awareness raising ‘Be clear on Cancer’ campaigns, and other activities to improve uptake of these services. The increase in demand has occurred at a time of reduced staffing capacity which has compounded the problem. There is a national shortage of specialist staff, especially specialist clinical staff, radiographers, radiologists and pathologists and recruitment to vacancies within the programme teams has proved challenging. This issue has been escalated nationally.

Areas for focus in 2016-17

- Continue to strengthen collaborative multi-agency action plans to target areas of poor uptake and coverage for each of the screening programmes.
- Implement the actions arising from each of the Quality Assurance visits to programmes to ensure compliance with national standards and continuous service improvement.
- Closely monitor demand and capacity, and care pathways within the cancer screening programmes, escalating concerns promptly and reviewing pathways of care, as required, to maintain service effectiveness, to ensure waiting times remain within acceptable standards, and to meet any increase in demand.

3. Emergency Preparedness, Resilience and Response (EPRR)

The local health economy needs to plan for and respond to a wide range of incidents and emergencies that could affect health or patient care. These could be anything from extreme weather conditions to an outbreak of an infectious disease or a major transport accident.

The Civil Contingencies Act 2004 (CCA2004) requires health organisations to show that they can deal with such incidents while maintaining services. Organisations must have effective, well-practiced emergency plans in place in order to protect the population of Bristol.

In Bristol, EPRR is facilitated by two fora; The Local Health Resilience Partnership and the Local Resilience Forum.

3.1 The Local Health Resilience Partnership

The Local Health Resilience Partnership (LHRP) is a strategic forum for organisations in the local health sector. The LHRP facilitates the production of local sector-wide health plans to respond to emergencies and contribute to multi-agency emergency planning.

Each constituent organisation remains responsible and accountable for their effective response to emergencies in line with their statutory duties and obligations. This includes maintaining plans detailing organisational capability to support the response to a major incident, including pandemic flu, mass casualty and chemical, biological, radiological and nuclear (CBRN) incidents.

3.2 The Avon and Somerset Local Resilience Forum

The Avon and Somerset Local Resilience Forum (ASLRF) is one of a number of Local Resilience Forums (LRFs) across England set up to align with the local police area. The LRF is not a legal organisation in itself, but a partnership made up of a number of organisations and agencies.

The overall aim of the Avon and Somerset Local Resilience Forum is to ensure that agencies and organisations plan and work together, to ensure a co-ordinated response to emergencies that could have a significant impact on communities in Avon and Somerset.

Successes/Progress

LHRP Assurance Process Outcomes

The LHRP Annual EPRR assurance review in October 2015 highlighted high levels of preparedness for Bristol Community Health and Avon and Wiltshire Mental Health Partnership NHS Trust with both being assessed as substantially compliant against the emergency preparedness, resilience and response core standards set out by NHS England.

Bristol CCG had shown progress from 2014 and was considered partially compliant, however areas of concern were identified with regards to levels of preparedness being achieved and maintained by the University Hospital Bristol NHS Foundation Trust (UHB) whose status at the end of the review was considered to be non – compliant.
Since October 2015 UHB has worked hard to improve and in May 2016 at their quarterly review meeting with Bristol CCG demonstrated that they had made positive progress in addressing a number of areas. Progress continues to be closely monitored by the CCG with Accountable Emergency Officer (AEO) quarterly review meetings continuing to take place.

LHRP Pandemic Flu Framework

A framework has been produced on behalf of Avon and Somerset Local Health Resilience Partnership (LHRP) to support the delivery of an effective response in the event of an Influenza Pandemic. It is not intended to fully replicate national strategy and guidance; however it does include some key information for ease of reference.
The aim of this framework is to enable Avon and Somerset LHRP to develop and deliver a co-ordinated and joint response to influenza pandemic that threatens the health of, or the delivery of health services to, the population of Avon and Somerset.
The framework builds upon existing arrangements for escalation and winter planning, and is intended to be proportionate, flexible and able to manage a range of scenarios that may present different attack rates and patterns of disease spread across Avon and Somerset and which may impact on the health of the population or carry severe adverse effects for health service provision.

Response to Ebola Virus Disease (EVD)

The outbreak of the Ebola virus in 2014 primarily affected 3 countries in West Africa: Guinea, Liberia and Sierra Leone. In total, more than 28,600 cases and 11,300 deaths have been reported by the World Health Organization

In response to this threat, an Avon and Somerset LRF (ASLRF) and Local Health Resilience Partnership (LHRP) exercise was held to review local preparedness and response arrangements to an importation of a suspected Ebola case at a UK port of entry.

Following a request by the Director of Public Health, a further local level exercise was developed to test the preparedness of Bristol City council if an outbreak of Ebola Virus Disease occurred in the city. The aim of the exercise was to consider both the role Bristol City Council will play should a case of Ebola be identified in Bristol and the wider impact on Bristol and its communities.
In addition, Bristol City Council Public Protection Team and Public Health England worked together to develop an exercise for the seaport. This was the first one of its kind in the UK. The aim of the exercise was to review local preparedness and response arrangements to an importation of a suspected Ebola case at Bristol Seaport. Acting on recommendations from this exercise, the port arrangements policy for dealing with infectious diseases was reviewed and Port Health staff are now on-call and provide cover at the port 24 hours a day, 365 days a year.

The Ebola pandemic in West Africa has now been declared over. Should a similar threat occur in the future, it is extremely unlikely to result in a sizeable outbreak in the UK, or Bristol specifically, given the robust plans that have been put into place.

Key current risks

- **Emerging infectious diseases:** An emerging disease is one that has appeared in a population for the first time, or that may have existed previously but is rapidly increasing in incidence or geographic range. Many of these emergent diseases are zoonotic, meaning there can be transmission between animals and humans, such as Ebola Virus Disease (EVD) or Zika Virus. The Ebola pandemic in West Africa is now over, and the risk to the population of the UK was low.

  There is an ongoing outbreak of Zika virus infection, mostly focussed in South and Central America and the Caribbean. Based on a growing body of research, there is scientific consensus that Zika virus is a cause of microcephaly and other congenital anomalies. Symptomatic Zika virus infection is typically mild and short-lived in most individuals, but particular attention is required for women who are pregnant or who are planning a pregnancy due to the risks of Zika virus to the developing foetus. A very rapid spread of a pandemic due to an emerging infectious disease could have a considerable impact on the health economy in Bristol.

- **Pandemic Influenza:** The impact of a new pandemic on health and social care services will vary according to the nature of the virus and its effects, as well as the underlying status of the health economy and the context such as severe weather.

  A short but severe pandemic may place a greater strain on health and social care services than the same number of people becoming ill over a more prolonged period. Critical care services may be at risk of being overwhelmed in a short severe pandemic, whereas primary care may shoulder the greater part of the burden during a mild, extended pandemic wave.

- **Excess Deaths**: Significant events can occur that are detrimental to the health of the population and can result in an excess of deaths locally. These events challenge the delivery of the routine death management process, and can be health-related (e.g. due to a communicable disease outbreak) or environmentally related (e.g. heatwave or cold weather).

  An estimated 43,900 excess winter deaths occurred in England and Wales in 2014/15; the highest number since 1999/00, with 27% more people dying in the winter months compared with the non-winter months. Excess deaths due to premature winter mortality in Bristol are lower than the UK average (7.2% of deaths compared to 11.1% nationally), but a catastrophic event such as an Influenza Pandemic could put added pressure on the local health system.

The demand on local body holding capacity has been highlighted as a risk at both the LHRP and the LRF since the loss of Frenchay hospital and its mortuary in 2014.

Areas for focus in 2016-17

- To validate existing plans and procedures, ensuring plans are effective and well-practised.
- To review local level arrangements for mass fatalities and excess deaths.

4. Environmental hazards to health, safety and pollution control

Poor air quality can have an impact on health at all stages of life, from being associated with low birth weight, impacts on lung function development in children, an increased risk of chronic disease and acute respiratory exacerbations, to acute and chronic premature death. Latest evidence is linking air pollution with impacts on cognitive function. All these health impacts can impact upon a person's quality of life. The most vulnerable are the young and old.

Air quality in Bristol is sufficiently poor in many locations for the health impacts described in the previous paragraph to be experienced by citizens in Bristol. Monitoring data shows continued exceedances of the annual and hourly nitrogen dioxide (NO_2) air quality objective close to roadside locations in the city centre and along the main arterial routes.

A report commissioned by BCC[10] calculated that 188 deaths of Bristol residents can be attributed to air pollution in 2010, with a proportion (24 deaths) attributed to pollution from local road transport emissions in Bristol. These deaths attributed to air pollution compare, on average, to 9 people killed in road traffic collisions in Bristol each year. In addition to deaths, 52 additional hospital admissions for breathing difficulties and 42 for heart problems can be attributed to air pollution in 2010.

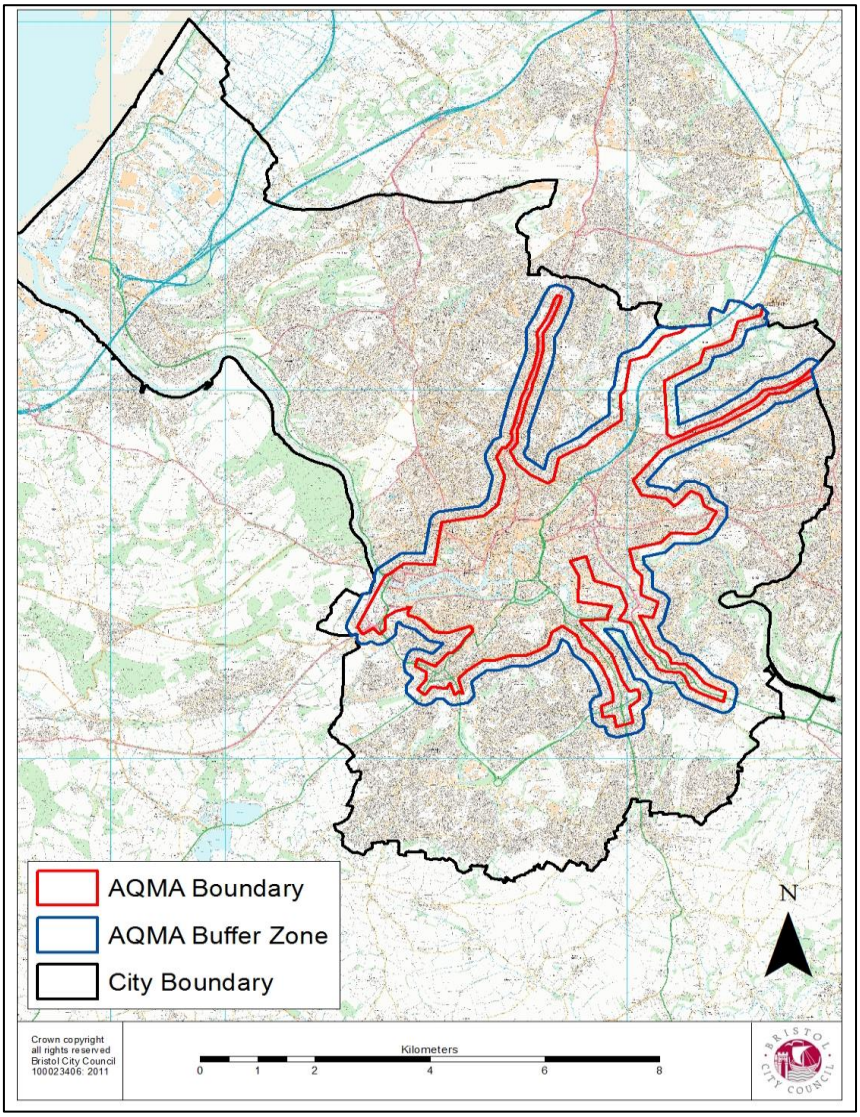
Since this report was published, the weight of evidence of health impacts associated with nitrogen dioxide (NO_2) has grown. This evidence puts the health impacts of this pollutant on a par with those associated with particulate matter. The figures quoted in the Bristol health report are likely to significantly underestimate the health impacts of air pollution as they do not take into account the latest evidence on the impacts of NO_2.

Local authorities are required to declare an Air Quality Management Area (AQMA) (**see figure 5**) where exceedances of air quality objectives occur and people are present for the relevant averaging period. The current air quality management area for Bristol is shown in Figure 3 and covers those locations where exceedance of objectives for NO_2 has been measured and relevant exposure to this pollution occurs. Once an air quality management are has been declared, an air quality action plan is required in order to identify measures aimed at achieving compliance with the air quality objectives.

Monitoring of NO_2 concentrations in the Avonmouth and Lawrence Weston areas showed one location exceeding the annual objective for this pollutant. This is a location close to the M5 where no relevant exposure occurs. Monitoring at 12 other locations showed compliance with the objective and no requirement for an AQMA to be declared. The situation will continue to be monitored closely.

[10] Air Quality Consultants (2014). Health Impacts of Air Pollution in Bristol. London: Air Quality Consultants

Figure 5. Bristol Air Quality Management Area



Successes/Progress

Avonmouth Air Quality and Dust Nuisance

The Environment Agency and Bristol City Council carried out monitoring of Air Quality in Avonmouth from August 2014 until September 2015 in response to resident concerns about air quality. The Bristol City Council monitoring station measured the very small particles in the air which can't be seen, finer than the kind of dust which people see on car window screens or window sills. These small particles can get past the body's natural filters and into people's lungs. They are measured at 10 microns ('PM10') and 2.5 microns ('PM2.5').

The results after 12 months of monitoring showed that all the measurements were well under the European Union Air Quality limits. The dust monitoring also analysed the heavy metal content in the Avonmouth samples. Four key metals in terms of their impact on human health have been measured: lead; arsenic; cadmium and nickel all were within European Air Quality standards.

Avonmouth 2nd Phase Nuisance Dust Monitoring

A second phase of monitoring will focus on larger particles; this is dust which can be seen, typically appearing on cars windscreens and other locations. This nuisance dust has also been of concern to the community. Monitoring measures have been proposed including having a number of dust deposition monitors located around Avonmouth with one control site. The public have been asked to help identify locations, (officers have already suggested several sites) and to report issues when problems arise. The dust deposition monitoring is planned to run for 6 months and results reported back to the community. A private contractor has been procured to undertake the monitoring and they will use accredited laboratories to analyse any samples as necessary. Environmental Health Officers from the Pollution Control Team will then review the findings to establish if a statutory nuisance exists and if so where the potential sources of any dust are located.

Key current risks

- Maintaining an effective dialogue with Bristol residents about environmental hazards to health.

Areas for focus in 2016-17

- Initiate a Liaison Group to bring together Community members and representatives from the Avonmouth Industrial companies to discuss improvements in community impacts and improve the working relationship/good neighbours culture. Work to create this Liaison group has been started by the Neighbourhood Partnership with local residents and will be put in place in 2016/17.

- Implement phase 2 of the Nuisance dust monitoring and report back analysis and results to the community after the six months of monitoring.

- Work with the BCC Sustainable City and Climate Change Service and Strategic Transport to develop a new air quality action plan for the Bristol AQMA. Aim to implement measures to achieve compliance with air quality objectives in shortest time possible.