LOTHIAN

JOINT HEALTH PROTECTION PLAN

April 2014 – March 2016

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Foreword

This is the third Lothian Joint Health Protection Plan, produced as a requirement under the Public Health etc (Scotland) Act 2008[1]. This plan has been prepared in close collaboration between NHS Lothian and the four Local Authorities of the City of Edinburgh, East Lothian, Midlothian and West Lothian.

The partners have realised some benefits from the first and second plan which include better relationships and working arrangements which have resulted in improved joint incident and outbreak management, joint training and continuing professional development (CPD) sessions.

The first plan provided guidance for the introduction of systems, identified resources that are required for delivery of health protection in Lothian and mapped out key components for implementing the Public Health Act. Both the second and the third plan, in addition, identify joint areas of working between NHS Lothian and the four local authorities and key priorities to be implemented over the two year period.

NHS Lothian Public Health and Health Policy Directorate, of which the Health Protection Team (HPT) is a part, already work closely with colleagues in Environmental Health at Lothian Councils in the investigation and management of cases involving communicable diseases and environmental hazards**.** The Public Health etc. (Scotland) Act 2008 (The Act) which came about as a response to the International Health Regulation (IHL), the human rights act and emerging issues such as new infectious diseases and terrorism has been helpful in clarifying roles and responsibilities in this existing arrangement.

Scotland's goals in reducing mortality and morbidity from communicable disease, reducing exposure to environmental hazards, improving health, wellbeing, the quality and sustainability of the environment are set out in the national and international policy documents[1,2,11,26,36,38]. These are echoed in the key objectives of the communicable disease and environmental health functions of NHS Lothian and Local Authorities which are:

- To reduce preventable illness and death from communicable disease and environmental hazards
- To identify potential outbreaks of communicable disease at an early stage so that effective control measures can be put in place as soon as possible
- To improve the ability to prevent further outbreaks, and
- To work with partner agencies to put in place measures for effective management of non-communicable disease public health incidents and health improvement measures to mitigate health impact of environmental hazards.

The Act has also provided an opportunity to develop our planning process, linking not only local departmental plans but also ensuring that our objectives match closely those of the wider NHS and Lothian Councils' planning systems.

Over the next two years we will continue to work towards meeting these objectives, reporting progress on an annual basis through the existing planning processes.

The collaborative approach between NHS and local authorities has been re-emphasised in the 2011 Scottish Government guidance on managing public health incidents[35]. The guidance clarifies the role of NHS Boards in sharing statutory responsibility for improving and protecting public health with Local Authorities and other partner agencies. Critical in this role is the joint formation of incident management teams, the provision of the necessary resources for management of incidents on a 24 hour basis and the continuous improvement of the quality of incident management.

Over the last two years, some key national health protection priorities have been restated in policy documents. These include the publication of the fourth edition of the Approved Code of Practice (ACOP) for the control of Legionella Bacteria in Water System[43], the VTEC/E coli O157 Action Plan for Scotland 2013-2017[42] which aims to reduce the incidence of this infection by setting strategic direction for key partners and emphasising collaborative roles. Additionally, NHSScotland Resilience Guidance requires chief executives to ensure adequate preparedness for major incidents and emergencies.

This plan also supports key priorities identified in the Single Outcome Agreements[2] (SOA) for each of the local authority areas[30-33] between the Councils, NHS Lothian and their other community planning partners, particularly in relation to the Scottish Government national outcomes for health improvement, reducing health inequalities and delivering quality public services.

We wish to continue to improve our knowledge and the quality of the service we provide for the population of Lothian and welcome comments on this plan – please send these to health.protection@nhslothian.scot.nhs.uk

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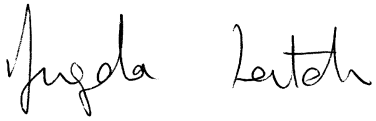

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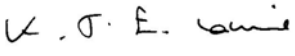

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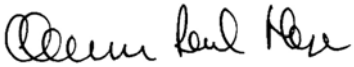


1. Preface

This joint plan for NHS Lothian and Local Authorities has been produced in accordance with the Part 1 guidance for the new Public Health etc. (Scotland) Act 2008[1]. This aims to:

- Provide clarity about which agency and persons have overall responsibility in protecting the public health, for example ensuring lessons learned from the fatal accident inquiry into the Central Scotland E. coli O157 outbreak[3].

- Ensure preparedness and enhance co-operation among agencies in combating major emergencies, for example bioterrorism and lessons from SARS.

- Resolve gaps and uncertainties in the adequacy of statutory powers that might be required for communicable disease control, particularly for emerging hazards, for example early interventions in avian or pandemic flu.

- Update the principles and concepts underpinning public health legislation for the twenty-first century to reflect changes in public health ethics and values, new scientific developments and the response to globalisation.

Purpose of the plan

The purpose of the plan is to provide an overview of health protection (communicable disease and environmental health) priorities, provision and preparedness and to support the collaborative arrangements that exist between NHS Lothian and Local Authorities. A joint overall steering group will continue to oversee the plan's implementation.

Geographical extent of the plan

This plan covers the NHS Lothian Health Board area, which includes the City of Edinburgh, East Lothian, Midlothian and West Lothian Councils.

Statutory responsibility

NHS Lothian has the statutory responsibility to produce this plan in consultation with the City of Edinburgh, East Lothian, Midlothian and West Lothian Councils.

Authors

The plan has been written through a consultative process by a working group comprising NHS Lothian's Director of Public Health and Health Policy, a Consultant in Public Health Medicine and other staff members and the Chief Officers of Environmental Health of the City of Edinburgh, East Lothian, Midlothian and West Lothian Councils. The agency representatives at the steering group which developed the plan were:

Name	Designation
Mr Andrew Blake	Environmental Health and Trading Standards Manager, West Lothian Council
Mr David Evans	Senior Environmental and Consumer Services Manager, East Lothian Council
Professor Alison McCallum	Director of Public Health and Health Policy, NHS Lothian
Dr Richard Othieno	Consultant in Public Health Medicine, NHS Lothian – Chair
Mrs Edel Ryan	Partnership Manager, Environmental Health, East and Midlothian Councils
Mr Colin Sibbald	Food, Health and Safety Manager, City of Edinburgh Council

Governance arrangements

This plan has been approved by the Board and Corporate Management Team of NHS Lothian, each of the Councils and the relevant elected member forum of each Local Authority. It has been adopted by NHS Lothian's Lothian Infection Control Advisory Committee (LICAC) and Healthcare Governance Committee (HCG).

Status

This plan is a public document and can be accessed by the public from NHS Lothian and Local Authorities' websites. Variations of this plan will be subject to consultation with the partner local authorities. This plan covers the period 2014-2016. This plan will be formally reviewed every two years.

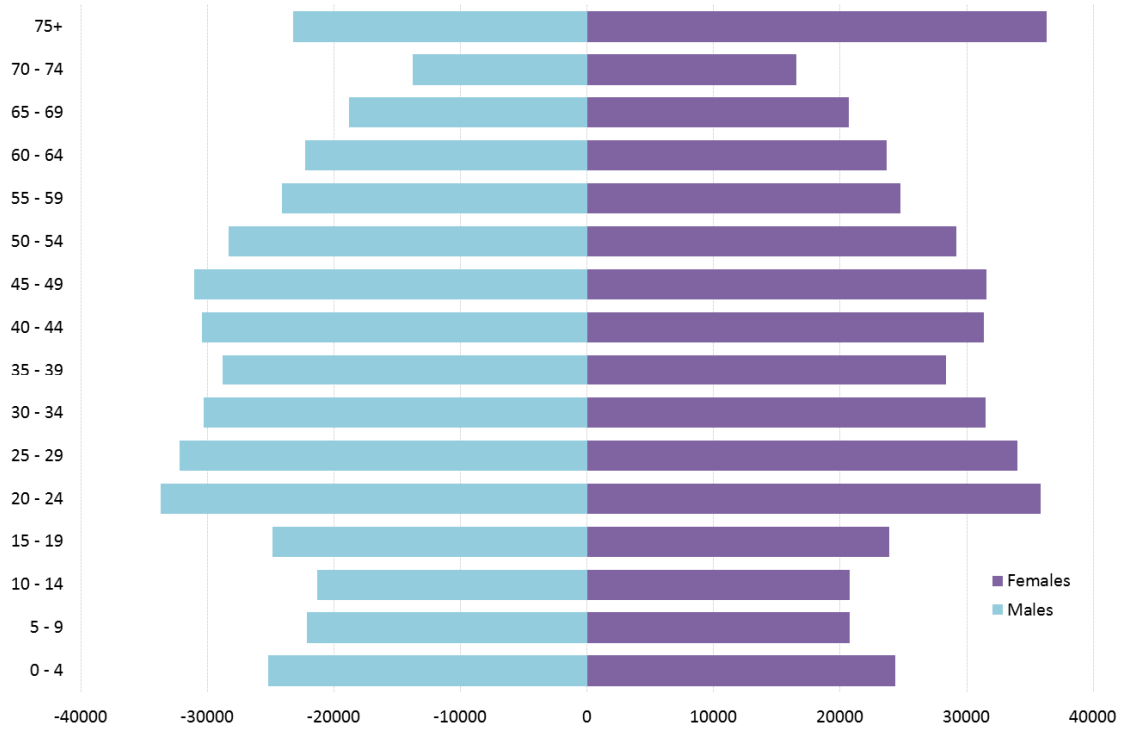
2. Overview of the Lothians

2.1Population

Lothian is a geographically diverse area covering approximately 700 square miles, with a population of 843,700. The largest population centre is the City of Edinburgh (population 482,600). The remaining area is split into East Lothian (100,900), Midlothian (84,200) and West Lothian (176,000). The gender ratio is 48% male to 52% female[4].

The age profile shows that 16% of the Lothian population is 20-29 years old, as compared to the Scottish average of 13.5%. This difference is attributed to the large numbers of students attending higher education institutions across Lothian. **Figure 1** illustrates the current population profile by age and sex of Lothian.

Figure 1: Lothian estimated population by age and sex: June 2012



Source: National Records Scotland (NRS)[5]

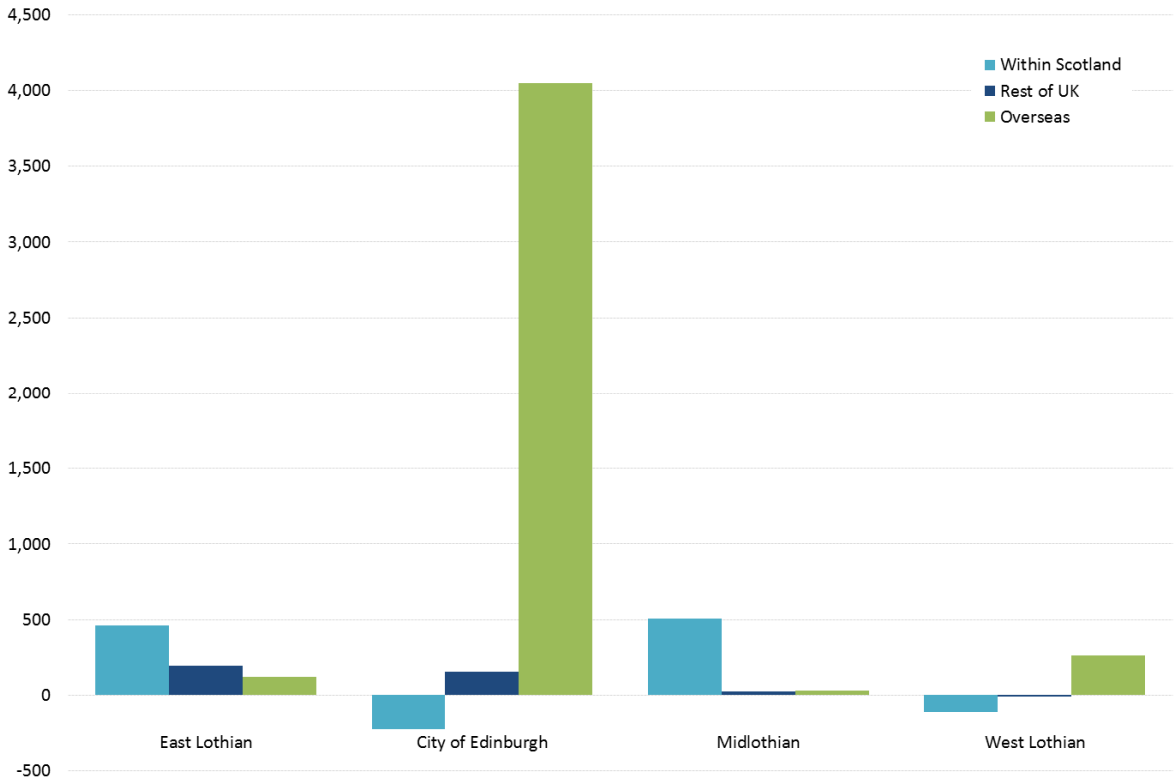
The population growth rate in Lothian is higher than any other Scottish Health Board.. By 2035, the population of Lothian is expected to have increased by 24% from 2010 base population, compared to a national rate of 10%. The population of East Lothian is expected to increase the most, with a 33% increase projected by 2035[5], from 97,500 in 2010 to 129,729. The population of older adults in Lothian is also expected to grow significantly in the next ten to fifteen years as people are living longer due to improvements in health.

The population of residents aged 65 years or older in Lothian is expected to rise by 36% by 2035, from 124,000 in 2010 to 220,000. This rise will be most noticeable in West Lothian, which has traditionally had a younger demographic than other areas in Lothian but whose population of residents aged 65 years or older, is expected to increase by 52% from 23,500 in 2010 to 47,600[4, 5]

Migration and ethnicity

The most recent data available for the ethnic make-up of Lothian is from the 2011 National Census. In 2011, the population of the Lothians was made up of predominantly 'White Scottish' (77.8%), 'Other White British' (9.6%), White Polish (2%) and 'Other White' (4.9%). The remaining groups made up 5.6%[6]. There has been a significant rise in the migrant population over the last ten years, with the highest increase reported in the City of Edinburgh Council area (**Figure 2**).

Figure 2: Net Migration to Lothian by Local Authority Area: 2011/12



Source: National Records Scotland (NRS)[41]

Net migration figures have fluctuated over the past five years. East and West Lothian saw an increase up to 2008/09 but figures have generally since been decreasing. The migration rate increased steadily up to 2008/09 but has since decreased. On average between 2010-12 there was a net inflow of 6,631 people into City of Edinburgh per year, meaning that more people entered City of Edinburgh (30,137 per year) than left (23, 506 per year) (**Figure 2**).

The Department of Work and Pensions collects information on the number of National Insurance Number allocations to overseas nationals. **Table 1** shows the five most common countries of origin associated with National Insurance numbers issued to overseas nationals in 2007 by council area. This highlights G8 countries, Australia, India and the Republic of Ireland. It should be noted that these figures do not include dependants or adults who are not economically active.

Table 1: Countries of origin of persons seeking a National Insurance Number allocation in 2007.

Council Area	Number of countries of origin	Top five most common countries of origin
City of Edinburgh	79	Poland, Australia, India, Spain, Republic of Ireland, France
West Lothian	20	Poland, Slovakia, India, Hungary, Latvia
East Lothian	19	Poland, Lithuania, India, Republic of Ireland, Bulgaria
Midlothian	7	Poland, Latvia, Spain, Romania, Australia

Source: National Records Scotland (NRS)

Culture

Lothian is a host to major cultural, educational and political establishments and events, which can present challenging health protection and emergency planning issues. These include:

- Edinburgh is the capital city, with the Scottish Parliament and Executive, Holyrood Palace and Edinburgh Castle.
- Higher education institutions – Edinburgh has four universities and several colleges, with a total student population of 35,000.
- There are five teaching hospitals, with a staffing population of 28,000.
- There are twelve annual international festivals, including the Edinburgh Festival, which bring many thousands of visitors to the city.
- There are major sporting events, such as rugby internationals, football matches and open golf championships.
- On occasion, Edinburgh and East Lothian hosts major world events such as the G8 Summit, the Commonwealth Games, open golf championships and Royal events.

Transport

Lothian has a complex transport network linking it to major cities in the rest of Scotland and United Kingdom. These include:

- Major trunk roads include A1, A720 (city bypass), M8, M9, A68 and A7.
- Edinburgh airport, Waverley and Haymarket railway stations and St Andrews bus station. These are destinations and connection points for many local and international travellers.

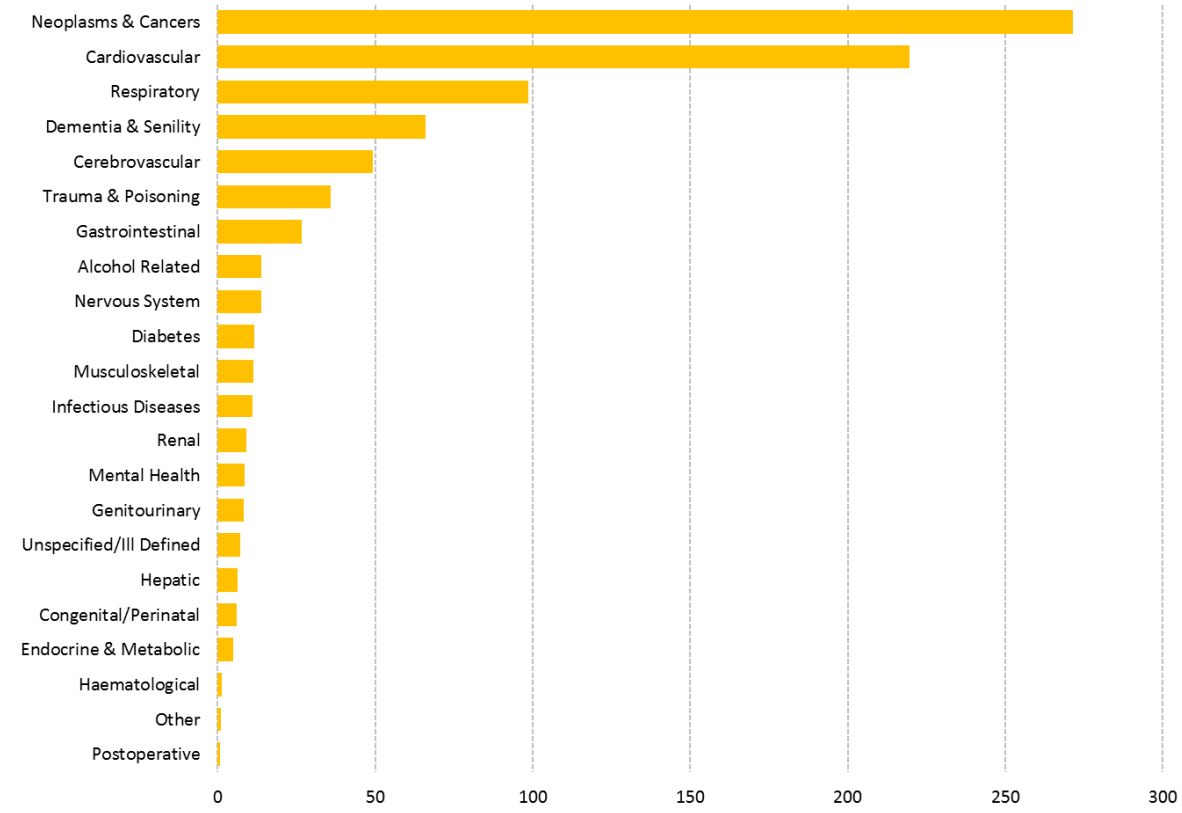
- Water transport – Lothian hosts the Leith Docks and Hound Point where many international vessels berth. It also has proximity to the Rosyth European Ferry Terminal.
- Lothian also has a canal that links Edinburgh and Glasgow. The canal is now largely used for recreational purposes.
- The development of the new tram system for the City of Edinburgh is nearing completion. It is anticipated that once commissioned the trams will contribute to better air quality in Edinburgh.
- Traffic pollution contributes to poor air quality. Air quality is monitored in all Lothian Local Authorities. There are three air quality management areas (AQMA) in Edinburgh (the city centre, Leith and Corstorphine); one in Midlothian (Pathhead – primarily due to particulate matter, influenced by fossil fuel burning) and one in West Lothian (Broxburn). It is likely further areas will be added to or extended in the foreseeable future...
- There were almost 370,000 licensed vehicles in Lothian in 2008. Car ownership patterns reflect the provision of public transport. In 2008, there were 0.32 cars per head of population in the City of Edinburgh, whereas in East Lothian, Midlothian and West Lothian there were more than 0.42 cars per head of population[25].
- Cycling – the city has a significant length of safe, off-road, cycle routes but there are gaps in the network between paths. The Council is delivering a city-wide, Active Travel Action Plan, to plug these gaps and to increase walking and cycling levels substantially by 2020 through other, complementary, measures. They are established in some locations and are in development in others. Considerable effort is being devoted to promote walking and cycling to school for children to address traffic congestion, in conjunction with work on preventing obesity and reducing the proportion of people who are inactive.

2.2 Disease Burden

The most common causes of death among the people of Lothian in the period 2011/2012 are listed in

Figure 3. The physical environment plays a significant role in the causation of the top ten diseases which contribute to death in Lothian. Infectious disease processes feature as one of the top twenty causes of death in Lothian.

Figure 3: Causes of death (crude rates) in the Lothian during the financial year 2011/2012



Source: GROS, NHS Lothian Health Intelligence Unit

Communicable Diseases

The number of cases of notifiable diseases reported to the NHS Lothian HPT between 2010 and 2012 is shown in **Table 2**. Gastrointestinal diseases are the most common notifiable infectious disease conditions. Each case requires follow up by the HPT operation team and colleagues in Environmental Health, to ensure appropriate control measures are in place and to investigate the source of the infection.

The number of tuberculosis (TB) cases in Lothian has risen since 2003. In 2012 there were 79 notifications* compared with 74 (a three-year average from 2004 to 2006) and 57 between 2000-2003. The average incidence rate is now 10.6 per 100,000 (average from 2008 to 2010) in Lothian up from 9.4 per 100,000 (average from 2005 to 2007).

The average TB incidence rate across NHS Lothian between 2010-2012 was 9.9 per 100,000*, (95% confidence intervals 9.0 to 10.8) compared with 10.8 per 100,000* between 2009-2011, 10.6 per 100,000 between 2008-2010 and 9.4 per 100,000 between 2005-2007.

Between 2010-2012 the City of Edinburgh has higher rates of TB (13.3 per 100,000*) than Lothian overall with the highest average annual rate again seen in the north east of the city (21.2 per 100,000*) and the south east of the city (18.7 per 100,000*).

Between 1999 to 2000 31% of TB cases in Lothian were born outside the UK, this proportion had risen by 2004 to nearly 50% and by 2010 57% (63/110) of cases were born outside the UK. This proportion continues to rise; by 2011 68% of cases were born outside the UK.

Within Lothian, in addition to being born outside the UK, homelessness, social deprivation and alcohol misuse are important risk factors for tuberculosis. The steps required in the prevention and treatment of TB are set out in the national action plan and the international agreement to eliminate TB from Europe.

Although only a small proportion of the total public health notifications are for TB, each TB case requires a large input of nursing and public health time including specialist nursing, to ensure that people are able to continue taking their medicines reliably throughout the six months treatment period. Many patients require daily direct observation of treatment and a small number are detained in hospital each year. The nurses also identify contacts and screen those at increased risk of infection..

The complex nature of TB requires a multidisciplinary approach and regular case review with TB nurses, clinical teams in primary and secondary care, microbiology and public health. Over recent years the TB nursing service has expanded from one to two members of staff to cope with the larger number of TB cases being seen in NHS Lothian.

*(NB uses SIDSSv2 notifications and the population data is taken from CHI September 2012 populations)

Table 2: Number of cases of notifiable diseases in NHS Lothian, 2010 – 2012

Notifiable Diseases/Organisms	Year		
	2010	2011	2012
Campylobacter	1234	934	969
Mumps	132	94	103
Salmonella	132	94	97
Cryptosporidium	177	106	117
Giardia	63	55	63
TB (respiratory)	66	47	44
TB (non respiratory)	44	30	35
Bacillary Dysentery	34	34	15
E. coli O157	15	21	21
Pertussis	8	27	312
Meningococcal	13	18	14
Rubella	6	<5	8
Measles	6	20	11
Meningitis - other	<5	<5	0
Legionellosis	<5	<5	108*
Vibrio Cholera	<5	<5	<5
Listeria Monocytogenes	<5	0	<5
E. coli non O157 VTEC	0	<5	<5
Haemophillius influenzae type B	0	<5	<5
Total	**2001**	**1455**	**1809**

Source: SIDSS V2
NB notifiable diseases are based on clinical notifications.
**Includes cases from Southwest Edinburgh outbreak*

Vaccine preventable diseases (for example, whooping cough (pertussis), measles, mumps and rubella) account for a small but significant proportion of notifications in Lothian. Each notification and laboratory confirmed case is followed up by the HPT to reduce the likelihood of further cases and offer vaccination if required.

The countries in the European Region of the WHO, including Scotland, are committed to the elimination of measles and rubella by 2015 through increased rates of vaccine uptake[38]. Childhood immunisation rates in NHS Lothian are amongst the highest in the UK for an urban population and close to the Scottish national average (Figure 4**,** Figure 5). By 2013, MMR uptake rates by five years of age in Lothian reached >95% uptake first dose and >90% second dose.

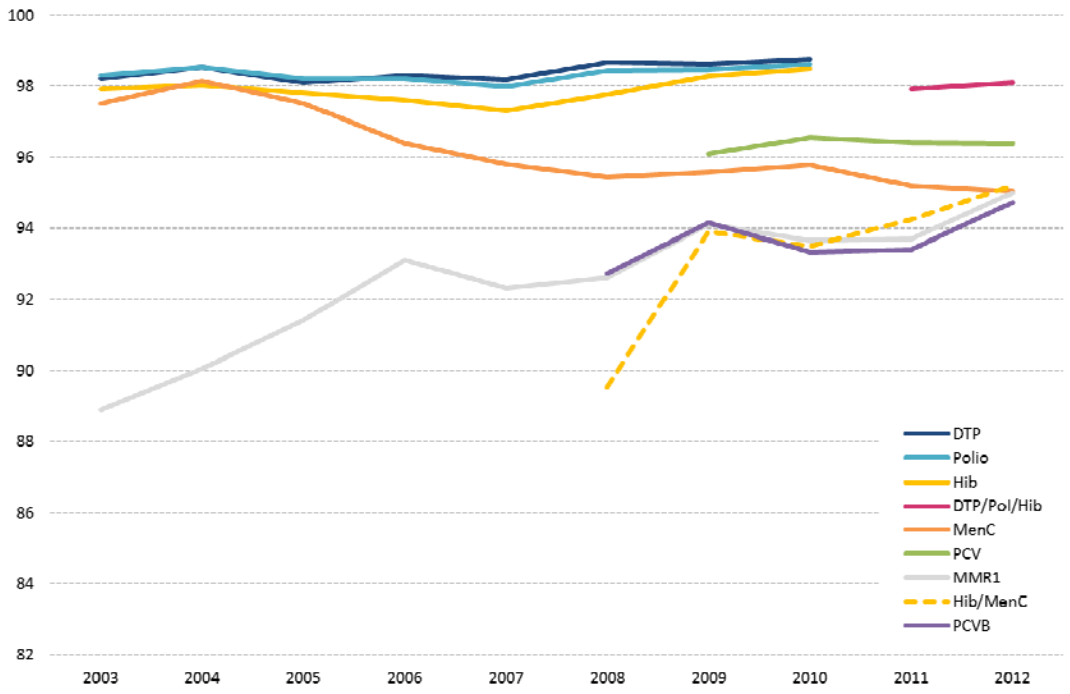
Although current uptake of MMR in infants is high, young people aged 10-17 who were infants when MMR dipped may be underimmunised and susceptible to measles[45]. Accordingly a short catch up campaign was run in early summer 2013.

In Lothian 8029 children aged 10-17 were identified as still due one or two doses of MMR. They were invited during June 2013 for vaccination at GP or community clinics. As a result 1974 (24%) received at least one dose of MMR.

Ongoing work is still investigating differences in the uptake of immunisation between localities in NHS Lothian, aiming to increase immunisation uptake among children and young people in groups and settings where immunisation coverage is low.

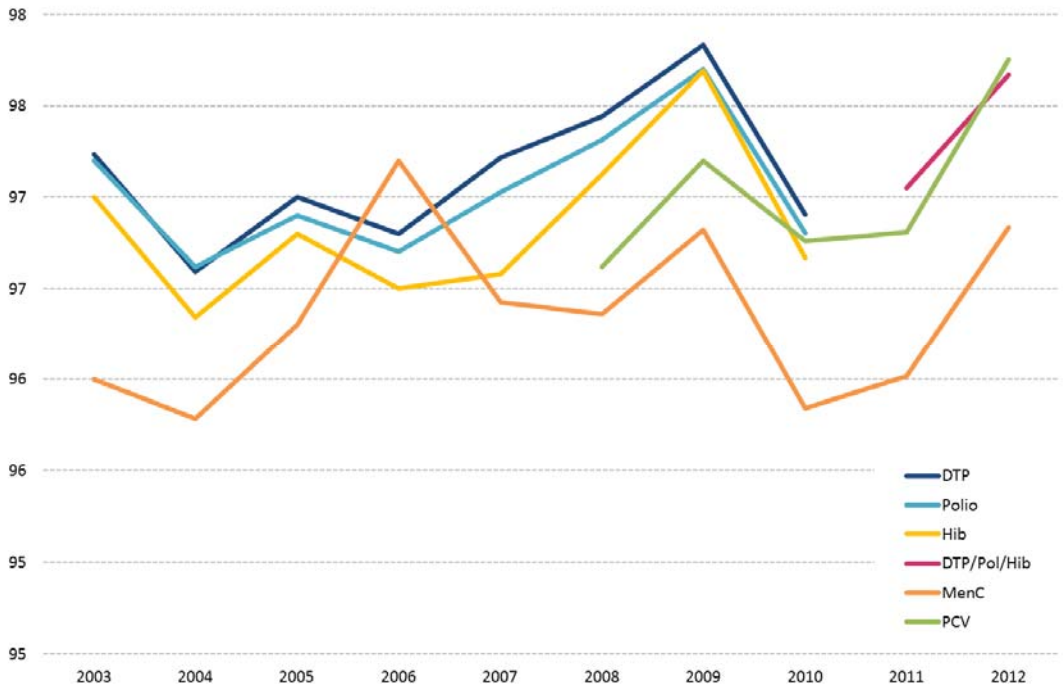
Even so, the measles and rubella elimination target remains a particular challenge given the widespread recent outbreaks of measles in many countries of the world including Pakistan, many countries in the EU and in England. A very large outbreak in Wales during 2013 resulted in 1,200 cases, 88 hospital admissions and one death. The first two cases spread infection to a further 29[44]. Significant outbreaks of rubella also occurred in Poland, Turkey and Japan during 2013.

Figure 4: Rates of Childhood Immunisation Coverage at 24 Months for Lothian, 2003 to 2012



Source: SIRS Immunisation System, Information and Statistics Division (ISD) Scotland

Figure 5: Rates of Childhood Immunisation Coverage at 12 Months for Lothian, 2003 to 2012



Source: SIRS Immunisation System, Information and Statistics Division (ISD) Scotland

Environment and Health

The European Public Health Association, in its 2011 report[39], noted that the environment is increasingly more complex and the link between health and environment has become so evident that it recommends immediate action by all governments and public health communities. According to a recent WHO study[36], about 24% of the global burden of disease and 23% of deaths are attributable to environmental risk factors. In a country like Scotland, WHO estimates that the proportion of the total burden of disease attributable to environmental risk factors is about 14%. Of the total global burden of disease, WHO estimates that 5.7% was attributable to environmental exposure to chemicals, the largest contributors being indoor smoke from second-hand tobacco smoke, solid fuel use and outdoor air pollution. The greatest impacts on health are on rates of cancers, cardiovascular disease, injuries and neuropsychiatric disorders[36].

There is substantial evidence that climate change is affecting many aspects of the world around us[46]. Weather patterns are shifting, extreme weather is becoming more commonplace and temperatures in most parts of the world are rising. Some of the health effect of climate change includes earlier seasonal appearance of respiratory symptoms and longer duration of exposure to aeroallergens. Climate change may exacerbate health risks and inequalities associated with building overheating, indoor air pollution, flooding damage, and water and biological contamination in the indoor environment, if adequate adaptation measures are not taken[47].

In defining the role of health professionals, WHO identifies health institutions as highly visible, high-energy-use centres which can serve as models by reducing their own carbon emissions, improving health and saving money[48]. It recommends energy management, transport, procurement (including food and water), waste disposal, buildings and landscape, employment and skills, and community engagement as good practice areas which have been shown to improve staff health and morale, create healthier local populations, stimulate faster patient recovery rates and save money.

Evidence that poor air quality due to air pollution has both short- and long-term adverse effects on health continues to accumulate[49]. WHO defines air pollution as contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution. Exposure to air pollutants is largely beyond the control of individuals and requires action by agencies at the national, regional and international levels[49]. A multi-agency approach, engaging such relevant sectors as transport, housing, energy production and industry, is needed to develop and effectively implement long-term policies that reduce the risks of air pollution to health.

Creating safe and positive environments for health requires us to think, plan and deliver in new and more effective ways. The quality of the environment can vary between different areas and communities. There is evidence that people who are socially and economically disadvantaged often live in the worst environments[28, 29]. Poor environment can affect people's health and wellbeing and can add to the burden of social and economic deprivation[29]. The causes of these inequalities are often complex and long-standing. Some of the environmental problems are due to the historical location of industry and communities; others are the result of the impacts of new developments such as traffic, urban planning that has not prioritised healthy built environments. Tackling environmental inequalities and ensuring that all people have access to a good quality environment in the future is a continuing challenge. The responsibilities of health and local authorities are outlined in *Good Places, Better Health*[10].

The contribution of physical surroundings to the health of those living in our most deprived areas of society is significant, a view increasingly supported by the flow of evidence. There are indications that there is no significant socioeconomic gradient in the level of known, direct environmental hazards to human health. Frequently though, less affluent communities are untidy, damaged and lacking in amenities. These factors create neighbourhoods which are often alienating and even threatening. This creates indirect environmental hazards to human health that act through a more complex causal pathway. This produces an unhealthy built environment that contributes to a cocktail of disadvantage inconsistent with health and wellbeing for adults and children[10].

Health outcomes are consistently poorer in communities with poor neighbourhood environments[21-24]. In *Equally Well*[11], the Health Inequalities Task Force highlighted the need to work to reduce further exposure to factors in the physical and social environments that cause stress, damage health and wellbeing and contribute to health inequalities. Action to improve housing, increasing physical activity or reducing traffic pollution can only happen by working with local authority partners to identify opportunities for health improvement in areas such as land use planning, transport, housing and environment.

The responsibilities of environmental and public health professionals for protecting and improving the environment include responding to current incidents, events and situations and preventing avoidable hazards and the consequent risks to public health by intervening before exposure has occurred.

The environmental protection functions undertaken by environmental health professionals complement those undertaken by the NHS. Health Boards and Local Authorities have a duty to co-operate in pursuit of protecting and improving the health and wellbeing of the local population. Environmental Health professionals advise on the development of laws, regulations and policies at local, national and international level and carry the major responsibility for local implementation and enforcement in the following areas:

- Air quality
- Contaminated land sites
- Noise and other statutory nuisances
- Recreational water quality
- Drinking water quality – particularly private supplies
- Food safety
- Living and working conditions
- Intentional and unintentional injuries at home and at work
- Public safety - exposure to hazardous substances
- Skin piercing and sunbed regulation

The NHS role is complementary and focuses on prevention, assessment, protection and mitigation of human exposure to environmental hazards and their health effects. In addition to food and water, these include:

- Chemicals, toxins, and poisons
- Ionising and non-ionising radiation – Electromagnetic Frequencies (EMF)
- Physical hazards – particulates, fibres and other factors related to the physical environment including climate change, extremes of heat, cold, flooding
- Accidental or deliberate or malicious release scenarios including Chemical Biological, Radiological and Nuclear (CBRN) warfare agents

Systematic approaches are used to assess the potential positive and negative impact of developments on those who will be affected. The tools employed include: Health Impact Assessment, Strategic Environmental Assessment, Environmental Impact Assessment, screening of Pollution, Prevention and Control applications, assessment of planning applications and investigating the health issues associated with contaminated land. These are essential elements of this work programme.

In a major incident, joint working is essential to ensure that the Scientific and Technical Advice to the Regional Resilience Partnership reflects the complementary expertise of public health and environmental health professionals.

3. Health protection planning infrastructure

NHS Lothian and the Local Authority Environmental Health Department(s) have shared health protection plans and standard operating procedures (SOPs), some of which are developed jointly between the agencies, while others are produced nationally (**Appendix III**). The plans are normally developed and reviewed every three years.

4. National and local priorities

4.1 National Priorities

Scottish Government long term goals and priorities are aligned with those of the UK and Europe for protecting and improving health. The World Health Organisation (WHO) European Region is pursuing health in all policies as a key objective of policy making. This also includes a commitment to reducing disease inequalities in health outcomes across societies. In its Health 2020 vision, WHO European Region, sets out four priority area of action which include, investing in health through a life-course approach and empowering citizens; tackling Europe's major disease burdens of non-communicable and communicable diseases; strengthen people-centred health systems and public health capacity, including preparedness and response capacity for dealing with emergencies; and creating supportive environments and resilient communities[26]. In 2007, the WHO's Commission on the Social Determinants of Health set out the evidence for change and objectives for action, as did the recent Fair Society, Healthier Lives *Strategic Review of Health Inequalities in England post 2010*[34]. *Equally Well*[11] and *Good Places, Better Health*[10] have already established Scottish priorities in terms of tackling health inequalities and the importance of the links between environment and health.

The Scottish Government now operates under a National Outcomes Framework with a commitment to 'focus government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.'

In addition, the *Government Economic Strategy*[27] includes population growth as a key component of future sustainable economic development. Among the Scottish Government's five strategic objectives are commitments to a Scotland that is healthier, wealthier, fairer, safer, stronger and greener[27]. These objectives are linked to a series of outcomes and associated indicators. A concordat, agreed by Convention of Scottish Local Authorities (COSLA), set the terms of a new relationship between the Scottish Government and local government. The development of a Single Outcome Agreement (SOA) formed an important part of this relationship. The SOAs produced for each Local Authority area[30-33] contain an overview of how the local community planning partners (including the Local Authority and NHS Lothian) will promote the Scottish Government's fifteen National Outcomes[12] and how these link to local outcomes. Health Boards and Local Authorities commit to delivering these outcomes jointly:

- Our children have the best start in life and are ready to succeed.
- We live longer, healthier lives.
- We have tackled the significant inequalities in Scottish society.
- We have improved the life chances for children, young people and families at risk.
- We live our lives safe from crime, disorder and danger.
- We live in well-designed, sustainable places where we are able to access the amenities and services we need.
- We have strong, resilient and supportive communities where people take responsibility for their own actions and how they affect others.
- We value and enjoy our built and natural environment and protect it and enhance it for future generations.
- We reduce the local and global environmental impact of our consumption and production.
- Our public services are high quality, continually improving, efficient and responsive to local people's needs.

The delivery of these activities aligns with a wide range of national and local strategies, including:

- *Good Places, Better Health. A New Approach to Environment and Health in Scotland* (Scottish Government 2008)[10]: this is an implementation plan looking at how the physical environment influences health. The Environmental Health contribution will be in protecting these environments.

- *A Children's Environment and Health Strategy for the UK* (Health Protection Agency)[15]: this is a strategy for protecting children's health, including ensuring that they are free from food and water based infection, noise, heavy metals and breathe clean air, all of which are core Environmental Health activities.

- *The Food Standards Agency (FSA) Strategic Plan* (2010)[16]: this has three key targets: food safety; eating for health; choice. These are addressed through routine enforcement work, and developing work with the Community Health [Care] Partnerships (CHP/CHCP) in promoting healthy eating choices in local catering establishments.

- All councils have their own Anti-Social Behaviour Strategy documents[17]. These recognise and value the importance of partnership working at various levels to tackle behavioural factors that impact on the health and resilience of local communities. Through their public health teams, Local Authorities contribute to tackling many of the environmental health issues impacting on people's wellbeing. This helps Local Authorities to fulfil their duty to improve quality of life including ensuring community safety, reducing injury, violence and self harm as set out in the Local Government in Scotland Act 2003.

Health and Safety Executive (HSE) Five-Year Strategy (2009)[18]: Local authorities operate in partnership with HSE to ensure that duty holders manage their workplaces with due regard to the health and safety of their workforce and those affected by their work activities. To achieve this, local authorities provide advice and guidance on what the law requires, conduct inspections and investigations and take enforcement action where appropriate. In November 2013 a revised fourth edition of The Approved Code of Practice (ACOP) "The Control of Legionella Bacteria in Water Systems[44] also known as L8 was published by the Health and Safety Executive. This revised edition seeks to both simplify and clarify the text; this is in part achieved by separating management responsibilities from the technical guidance which is now published separately. In particular the ACOP now requires duty holders to:

(1) Carry out and document suitable and sufficient risk assessments
(2) Implement a written Control Scheme
(3) Appoint a competent person to manage the control of the risk system (Known as the responsible person)
(4) Carry out periodic reviews of control measures
(5) Specify the duties and responsibilities of those involved in the design, manufacture, import, supply or installation of water systems.

In 2001, the joint Scottish Executive/Food Standards Agency (Scotland) Task Force reported on E. coli O157 and made 104 recommendations to reduce the incidence and severity of verotoxin producing Escherichia coli (VTEC) infections in Scotland. Despite these recommendations incidence rates of E. coli O157 infection have remained largely unchanged since 2001 and are consistently higher in Scotland than in other UK countries.

The VTEC/E coli O157 Action Plan for Scotland 2013-2017[43] aims to reduce the incidence of such infections by setting strategic direction for key partners each of whose collaborative roles in implementing a total of 86 recommendations are clearly identified. For Scottish local authorities this means addressing key transmission pathways with a particular focus on (1) Issues connected to private water supplies and their potential to pose a health risk if they are not correctly installed maintained and protected from sources of contamination such as animal faeces. (2) Food sources which may pose a risk by focussing on the protection of ready to eat foods from raw, untreated or treated products which may contain E coli O157. By implementing guidance aimed at controlling the risk of cross contamination.

Whilst ensuring that consumers can make informed choices e.g. by the provision of point of sale information for unpasteurised cheeses sold loose and (3) by controlling contamination of the environment from animal faecal material at e.g. zoos, farm attractions and agricultural shows including ensuring that pasture is cleared of animal faeces both before and after recreational events involving animals. The role for NHS Lothian, though not explicit in the plan, involves collaborating with local authorities in identifying possible sources of VTEC and instituting measures for control during management of cases and incidents.

Table 3 shows health protection priority activities undertaken by local authorities in the Lothians. This list is not exhaustive but illustrates the range of services within the four authorities.

Table 3: Local authority priority activities

Local authority priority activities	
Corporate and Business Advice – advising on local environmental health and public safety matters	Supporting Business through advice and training to meet Environmental Health Standards Civic government licensing Advisor to Licensing Board
Emergency Planning – training for and responding to emergencies	Flood management Emergency planning preparedness Scientific services advice
Food safety - securing the hygienic standards of premises, and the compositional standards of food and water	Food Hygiene Inspections (cleanliness) Food Standards Inspections (composition) Food Sampling – Bacteriological Food Sampling – Chemical Food Alerts
Hazards – securing consumer and public safety issues	Petroleum Licensing Explosive Safety/Licensing Consumer/product Safety Anti-counterfeiting Chemical incidents
Housing – securing residential accommodation meets minimum standards	Housing Support Services Rough Sleeping Initiatives Housing Standards Issues Houses in multiple occupation Caravan Site Licensing
Public Health & Nuisance – investigation and enforcement of public health nuisances and concerns	General Public Health/nuisance Communicable Disease Investigation Pest control Port Health control Mortuaries and Crematoria National assistance Act burials etc Smoking in public places
Occupational Health & Safety – securing health, safety and welfare standards in local workplaces	Accident Investigation Health and Safety Inspections & other interventions Register of cooling towers (Legionella) Sun bed regulation Regulation of tattooing and skin piercing
Pollution and contamination – environmental monitoring and investigation of incidents and concerns	Noise Control Contaminated Land Chemicals and oil spills Radiation Monitoring Air Quality Monitoring Vehicle emission testing Consultee on Planning Applications (Fumes, dust, noise impact of developments on health, contaminated land remediation) Environmental impact assessment
Water Quality – monitoring of drinking water and recreational water quality	Water Sampling – Private and Public supplies Swimming Pool Sampling Recreational water quality – coastal and inland waters
Animal Health investigation & enforcement of animal health and welfare standards	Animal Health and Welfare Animal Feed Stuffs Animal breeding and boarding Dog controls

4.2 Local health protection priorities

4.2.1 NHS Lothian

Health protection priorities in Lothian are determined by international, national and locally identified potential hazards. The national priorities are set by the Scottish Government. Local priorities are determined as part of the annual planning process during which hazards and potential hazards are identified. Prevention and mitigation are then allocated appropriate resources. The Chief Medical Officer for Scotland identified the 2008-2010 national health protection priorities listed below. These remain as key national health protection priorities.

- Healthcare Associated Infections (HAI) and antimicrobial resistance
- Vaccine preventable diseases and their impact on current and planned immunisation programmes.
- A potential pandemic of influenza.
- Environmental exposures which have an adverse impact on health.
- Gastro-intestinal and zoonotic infections.
- Hepatitis C and other blood borne viruses.
- Tuberculosis
- Integrated Pollution Prevention and Control (IPPC)
- Strengthening surveillance
- Prevention of injuries

4.2.2 Health Improvement, Efficiency, Access to services and Treatment (HEAT) targets13

HEAT targets are a core set of national objectives, targets and measures for the NHS. The targets are set for a three year period and progress towards them is measured through the Local Delivery Plan (LDP) process. Two of the targets relate to reduction in Healthcare Associated Infection and improvement in childhood immunisations. Under these targets NHS Lothian will focus its efforts towards:

- Further reducing healthcare associated infections so that by March 2014/15 NHS Boards' staphylococcus aureus bacteraemia (including MRSA) cases are 0.24 or less per 1000 acute occupied bed days; and the rate of Clostridium difficile infections in patients aged 15 and over is 0.25 cases or less per 1000 total occupied bed days.
- Improving childhood immunisations and vaccine uptake to 95% for all childhood primary and booster vaccinations by analysing uptake by practice regions and identify localised actions for improving uptake.

Specific programme priorities include:

- Eradicating measles and rubella by 2015
- Viral hepatitis: To reduce the avoidable burden of ill-health and premature death, including liver failure. NHS Lothian will implement actions on hepatitis B and C outlined in the Scottish Government Sexual Health and Blood Borne Virus Framework through the NHS Lothian Hepatitis Managed Care Network (MCN).
- Pandemic Flu Plan: NHS Lothian continues to maintain robust plans in conjunction with partner agencies involved with health and social care, including business continuity arrangements. NHS Lothian also actively targets at risk and occupational group with seasonal flu vaccination.
- Influenza: To contribute to the reduction in the burden of disease from respiratory infections and their complications, ongoing surveillance of influenza continues and NHS Lothian will ensure arrangements are in place to offer vaccination to the Lothian population against this virus as appropriate.
- HPV vaccine programme: To reduce the burden of HPV related disease, specifically avoidable death from cervical cancer, NHS Lothian continues to implement the HPV programme for girls (born on or after September 1993) in school.
- Tuberculosis (TB) control and prevention: To prevent the spread of TB, and to reduce the burden of disease, particularly among people who have other illnesses, NHS Lothian is implementing the national TB action plan priorities including, high risk groups; exploring local ways of identifying new entrants, implementing local systems of case-finding for latent TB infection in these entrants; working with statutory and voluntary organisations and groups who regularly come into contact with new entrants to support GP registration;, and engaging with primary care teams to highlight the increased risk of TB amongst problem alcohol users, homeless and drug users.
- HIV action plan: To reduce the burden of avoidable infection and illness, NHS Lothian will develop an integrated care pathway that includes prevention, early diagnosis, effective care and treatment provision to implement HIV standards produced by Healthcare Improvement Scotland in 2011.

4.2.3 Emergency Planning and Business Continuity

NHS Lothian is required to ensure emergency planning preparedness and business continuity in accordance with the Civil Contingencies Act of 2004. NHS Lothian has experience of effectively managing serious incident and working with partner agencies. It continues to implement a rolling programme of plan development, training and capability improvement. NHS Lothian has recently established and executive level Resilience Committee to implement the Scottish Government's Preparing for Emergencies Guidance (2013), which brings together Emergency Preparedness and Business Continuity.

4.3 Health protection risks/challenges unique to the Lothians and how they are managed

While there are shared health protection risks nation wide, Lothian also has its own unique ones. The Public Health etc. (Scotland) Act 2008 and other legislation provide a statutory basis for interventions and there is a shared risk assessment process with stakeholders. These stakeholders include Environmental Health and other appropriate local authority services, the police and fire services, the Scottish Ambulance Services (SAS), Scottish Water (SW) and the Scottish Environment Protection Agency (SEPA). The risks and challenges unique to Lothian and how they are managed are detailed in **Table 4**. In addition, Appendix II lists key health protection plans to manage incidents.

Table 4: Health protection risks/challenges unique to the Lothians

Unique Situation/Position	Risk/Challenges	Mitigation Measures
Host to several universities with large numbers of students in Halls of residence, flats and houses, for example, the University of Edinburgh has 16,000 students.	Increased opportunity for introduction and spread of infection. Increased use of houses in multiple occupation (HMO).	NHS Lothian works closely with universities regards monitoring and control of infection such as mumps and meningitis. Local authorities regulate HMOs.
University centres for research including veterinary schools, nuclear medicine, biohazards and life sciences research and bio-research facilities, for example Pentland Science Park.	Bio-hazards, use of radio-active materials.	National arrangements are in place for the regulation and control of nuclear medicine and biohazards in the universities and hospitals.
Host to Scotland's Capital City, Holyrood Palace, and the Scottish Parliament and associated VIPs.	Increased potential for terrorist incidents.	Lothian and Borders has emergency plans for CBRN[20] incidents and major incidents. City of Edinburgh Council is developing an evacuation plan.
Centre of culture which hosts annual festivals, Hogmanay /New Year celebrations, international events such as the G8 and major international sporting events (for example World Cup Sevens rugby), as well as associated VIPs.	Brings together populations from different parts of the world with a risk of new infection coming into the areas. There is potential risk of terrorism in large crowds.	Annual multi-agency plans are in place for such events. The Hogmanay plan is tested prior to the season starting. Appropriate plans are put in place for international events.
Port Health - Major local and international transport hubs in the local area including: Edinburgh Airport, Leith Harbour, South Queensferry terminal,	There is a risk of imported infectious diseases from other countries.	NHS Lothian and City of Edinburgh Council have a port health response plan developed in collaboration with the airport authorities. Plans are underway for the development of other port

Unique Situation/Position	Risk/Challenges	Mitigation Measures
Waverly/Haymarket Train Stations. St Andrews Bus Station.		health plans. International Health Regulations exist in the event of a serious infectious disease emerging locally.
Sites of potential flooding, for example River Esk, Almond, Water of Leith, Braid Burn, Burdiehouse Burn, Figgate Burn, River Tyne, Biel water, Brocks Burn and Linlithgow Mains.	Climate change is presenting a potential risk of Increased opportunity for displacement of individuals due to flooding, plus disease risk after any flooding incident.	Emergency flood response plans are in place. Flood Prevention Act duties are undertaken by local authorities.
Host to Torness Nuclear Power Station.	Risk of nuclear incident. Public concern.	Emergency plans are in place with partnership agencies.
Host to Addiewell (West Lothian) and Edinburgh prisons – includes vulnerable populations.	Prison population known to be at higher risk of hepatitis B. As a closed communal setting it is also at risk of communicable disease outbreaks. This population also has an increased burden of non-communicable disease.	NHS Lothian has close working relationship with prison staff for the provision of appropriate preventive measures and early intervention in incidents and outbreaks.
Old reservoirs and water treatment plants in need of development.	Potential risk of contamination of drinking water supply.	Scottish Water has long term plan for replacement of the installations. Regular sampling and monitoring of supply and distribution system
Private water supplies in more remote rural communities across the area.	Risk of contamination with infection and chemicals.	Routine sampling and monitoring by Environmental Health with grant aid available to improve the quality of the water supply.
Coastal water quality along the Firth of Forth is critical to the high quality environment for residents and visitors.	These waters have a potential of flooding or being contaminated by agents such as oil spillage which could be a risk to public health. Breakdown of sewage infrastructure resulting in coastal water contamination. Major oil spill from tanker traffic in Firth of Forth	Multi agency emergency plans, including the Waste Water Incident Plan. Local monitoring by LAs and SEPA.
Tourism is a major contributor to local economy	Loss of reputation if major public health incident	Incident management plans Food and water safety controls.
Potential emissions and incidents relating to industrial processes in the area including: distilling and brewing; electricity generation; open cast	Risk of major incidents and release of toxic chemicals. Increase air pollution from routine emissions. Legionella in cooling towers.	All the agencies have major incident plans which are regularly exercised. Local authorities maintain cooling towers registers.

Unique Situation/Position	Risk/Challenges	Mitigation Measures
mining and quarrying; cement manufacture.		
Legacy of an industrial history and the associated issues of contaminated land including ex-mining areas and former landfill sites.	Potential chemical environmental pollution. Complaints from communities with assertions of health risk.	Contaminated land issues are addressed either by enforcing conditions attached to planning consents or invoking the powers contained in part IIA of the Environmental Protection Act (EPA) 1990. Monitoring by the local authorities and investigation and control of incidents where there is potential human exposure.
West Lothian hosts the second largest poultry flock in Scotland, arable beef and dairy farming and an operational slaughterhouse.	Potential animal health risks (for example bird flu and other zoonoses).	Disease contingency plans are in place with relevant partner agencies (East Lothian, SG, Police, Animal Health)
Substance misuse.	Substance misuse is a common cause of ill health, death and drug related crimes.	Most people with substance misuse problems are cared for by General Practitioners. Comprehensive range of multi-agency, evidence based prevention, treatment and care services in place coordinated through Alcohol and Drug Partnerships, Hepatitis action plans.
Air quality issues.	Increased risk of respiratory and cardiovascular diseases.	Local authorities monitor air quality declaring Air Quality Management Areas (AQMAs) and developing action plans as appropriate.

4.4 Dealing with Public health incidents or outbreaks

Across the Lothians a number of health protection incidents and outbreaks of communicable diseases are dealt with each year. As reported in the Director of Public Health Annual Reports, there were 56 incidents in 2012 and 48 in 2013. About a quarter of these incidents are related to healthcare associated infections. Where necessary, these incidents and outbreaks have been managed within joint multi-agency and multi-disciplinary frameworks involving NHS Lothian and one or more of the four Local authorities. Larger or more complex incidents may involve the Regional Resilience Partnership (RRP), Local Resilience Partnership (LRP) or the Scottish Government (SG), for example, the Southwest Edinburgh legionella outbreak in 2012, the Dalmeny Tank Farm incident of 2011 and the Pandemic Influenza outbreak in 2009. Some of the other incidents managed in the same period have been smaller in scale but have required specialist expertise and a considerable amount of resources to manage.

As part of the continuous improvement of incident and outbreak management, NHS Lothian, the Local Authorities and other partner agencies are revising and amending policies and practice. Lessons learned are disseminated actively to spread learning, including by debriefing meetings, final reports and review of the implementation of recommendations.

5. Resources and operational arrangements

NHS Lothian and the four local authorities in Lothian are committed to complying with the requirements stipulated in the 2011 Scottish Government guidance, on Management of public health incidents[35], the VTEC/E. coli Action Plan[43], NHS Scotland Resilience Guidance and the revised Code of Practice (ACOP) for the control of Legionella Bacteria in Water System[44] as priority areas. This will include providing staff trained to the agreed standard that are able to participate in Incident Management Teams (IMTs). These documents require that partner agencies maintain a level of resources regarded as adequate for and the support required to prevent and manage public health incidents.

5.1 Staffing

NHS Lothian and the four Local Authorities have each appointed competent persons and share competent persons lists, in accordance with the Public Health etc (Scotland) Act 2008. **Table 5** shows the numbers of competent persons appointed by each agency. Each of the agencies will maintain sufficient numbers of competent persons and update the lists as appropriate. The next formal review of competent persons will be carried out in 2016.

Table 5: Designated Competent Persons as designated under the Public Health etc (Scotland) Act 2008

Agency	NHS Lothian	City of Edinburgh	East Lothian	Midlothian	West Lothian
Designated competent persons	13	41	7	3	5

In addition to the designated competent persons, local authorities and NHS Lothian can call upon a number of other staff who work within the overall remit of their services to assist in the investigation of incidents if necessary and appropriate.

5.2 IT and communications technology

Information and Communications technologies are available to NHS Lothian and local authorities to facilitate health protection and environmental health work, including the management of incidents and outbreaks are set out below.

5.2.1 NHS Lothian Electronic Guidance and guidelines:

- NHS Lothian staff have access on the web e-library – the NHS electronic health library.
- NHS Lothian Public Health Staff who work out of hours are provided with a set of local guidance and guidelines for reference.
- NHS Lothian Health Protection Team (HPT) keeps a database of on-call guidance.
- SHPIR, the Scottish Health Protection Information Resource (Health Protection Scotland [HPS]) provides a suit of key nationally updated guidance.
- On-call staff have access to international travel advice and guidance via TRAVAX website.

Information Technology:

- Mobile phones and bleeps are issued to out of hours staff.
- Encrypted laptops and encrypted memory sticks are available for staff to take home when on-call.
- A standard operating procedure for establishing a telephone helpline within NHS Lothian is currently being developed by the HPT and Telecommunication Department is nearing completion. This will ensure that a helpline can be set up rapidly, where it is considered appropriate to have an additional point of contact for the public during a an incident, to supplement NHS24.
- TRAK, the patient management system, is used for accessing laboratory results and information relating to hospital patients.
- NHS Lothian SCI-store e-results, the Scottish Care Information System are used by GPs for notification to the board and storage of laboratory results used for managing patients.
- Scottish Environmental Incident Surveillance System (SEISS) is a database of environmental health incidents in Scotland.
- Toxbase, a database that provides information on toxin and poisons for managing cases and incidents.
- The Scottish Infectious Disease Surveillance System (version 2) (SIDSS 2,) for infectious diseases is used for notification by Boards to HPS.
- The Scottish Immune Recall System (SIRS) is a database used as a call and re-call system immunisation programmes.
- Community Health Index (CHI) provides authorised members of staff patient identifier information which is used for tracing patients. Access is controlled by the Director of Public Health and Health Policy as Guardian of the CHI.
- The Electronic Communication of Surveillance in Scotland (ECOSS) is used for laboratory services notification to NHS Lothian Public Health Directorate and from the Directorate to HPS.

- The Airwave encrypted digital radio system was installed within NHS Lothian, in March 2011 with base sets, provided by Scottish Ambulance Service, located in our Emergency Departments. Two hand-held radios were issued by Scottish Government to Emergency Planning for use during a major incident.
- NHS Lothian is part of MTPAS, the Mobile Telecommunications Privileged Access Scheme. Under this scheme a Network Service Provider (NSP) a single special privileged access SIM cards (MTPAS SIMs) to Category 1 (including NHS Lothian) and 2 responders, as defined in the Civil Contingencies Act (CCA) 2004, to allow continued communication when there is a network congestion or shutdown.
- NHS Lothian is joining other Scotland health boards in introducing HPZone-Scotland – a secure web-based decision support system for the control, surveillance and management of cases and incidents of infectious diseases and environmental hazards.

5.2.2 Local Authorities

Local authorities have databases with addresses and contact details for all food businesses. These systems are capable of interrogation and can be used to produce specific premises lists subject to the coding structures used. Edinburgh and West Lothian use Authority Public Protection (APP) by Civica; East and Midlothian use the Uniform system by IDOX technology.

- The Airwave encrypted digital radio system has been adopted by the Local Authorities Emergency Planning and Business Continuity Services. Two hand-held radios were issued by Scottish Government to each LA for Emergency Planning for use during a major incident. Additional handsets may be accessed in the event of an emergency
- A number of the Lothian Local Authorities have key personnel who are also part of MTPAS, the Mobile Telecommunications Privileged Access Scheme to allow continued communication when there is a network congestion or shutdown.

5.3 Scientific and Laboratory Services

The scientific and laboratory services which NHS Lothian and local authorities require for surveillance and management of public health incidents, which are currently available include:

- NHS microbiological and biological laboratories based at the Royal Infirmary of Edinburgh and the national reference laboratories.
- Edinburgh Scientific Services
- Scottish water laboratories
- Scottish Environment Protection Agency (SEPA) Laboratories

- Foods Standards Agencies (FSA) Food Control Laboratory
- Health Protection Scotland analytical and epidemiological support
- Scottish Poisons Unit
- Privately Contracted Laboratories

5.4 Collaborative arrangements

NHS Lothian has collaborative arrangements and links with national organisations and groups and at international level through Health Protection Scotland (HPS) and the Scottish Government (SG) for dealing with communicable diseases and environmental Hazards. Locally, organisational arrangements are in place to facilitate good collaborative working between NHS Lothian, Local Authorities and other health protection partners, including Animal Health Services, Scottish Water and other utility companies, the FSA and SEPA. As part of emergency planning arrangements, these agencies are represented at the Strategic Co-ordinating Group (SCG) bi-monthly tactical group meeting and may attend quarterly meetings. Lothian Infection Control Advisory Committee also meets on a bi-monthly basis to review policies and infection control issues. Health protection incident review activities also take place in a number of committees and groups. These include:

- The NHS Health Protection Joint Liaison Group Meeting which includes Animal Health and Local Authorities is held quarterly. This group implements most of the planned joint activities of this Joint Health Protection Plan.
- Hepatitis Managed Care Network holds regular event.
- Immunisation incidents are reviewed at the Local Immunisation Co-ordinating Group (LICOG) meetings.
- The Avian and Pandemic Influenza Planning Group (AIPG) meets two to three times a year.
- Research and teaching programmes between NHS Lothian and Edinburgh universities.

Over the last two years arrangements have been made for joint working and learning from cases and incidents between the Health Protection Team, Medical Microbiology, Virology and Occupational health. Joint CPD sessions have been held with local authority colleagues. Sharing experience and learning has also been established with the poisons unit at the Royal Infirmary of Edinburgh.

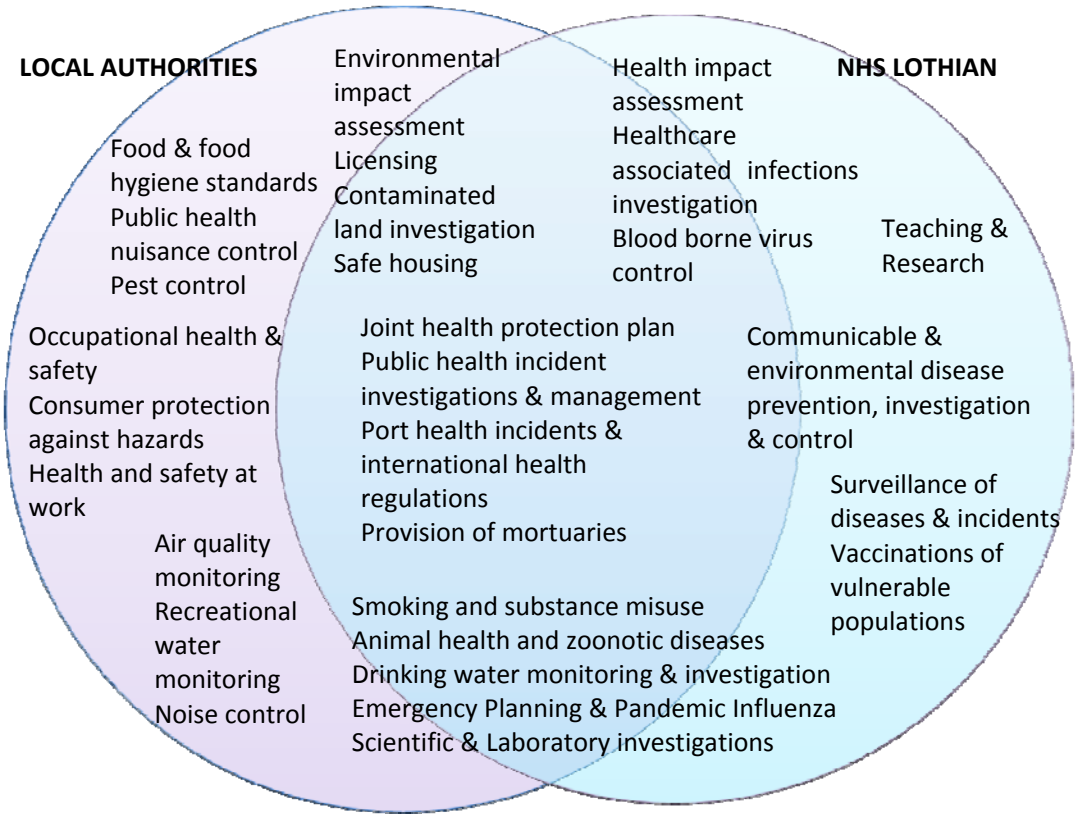
As part of the Scottish annual influenza vaccination policy, NHS Lothian has offered immunisation to social care staff at the same time as their own staff. During 2014-16, efforts will continue to increase uptake among staff.

The UK Joint Committee on Vaccination and Immunisation (JCVI) recommended extension of the seasonal flu vaccination programme to all children aged 2-17. During 2013 -14, the first phase has been undertaken with immunisation offered to all 2-3 year olds via general practice and a pilot of vaccination using nasal spray in around 20% primary schools in Lothian.

This pilot project was a collaboration between NHS Lothian, Local Authority Departments of Education and head teachers in the pilot schools. Immunisation was offered to all children in more than 60 primary schools across Lothian from 1 October 2013. Around 11,000 children were immunised – an uptake of about 72%. The pilot allowed significant lessons to be learned as to the best model to use from 2014 onwards but in general evaluated very well. The high uptake rate and good evaluation was very much as a result of the excellent cooperation between the NHS and local authorities.

Figure 6 is an illustrative summary of the joint working and areas of collaboration between NHS Lothian and the four Lothian Local Authorities. The details on specific areas of joint working are in Appendix I.

Figure 6: **Joint health protection activities between NHS Lothian and Lothian Local Authorities. (Illustrative rather than comprehensive)**



5.4 Out of hours response arrangements

5.4.1 NHS Lothian

NHS Lothian out of hours arrangement involves the provision of on call staff. Public Health and Health Policy provides a 24/7 response and there is a contacts directory and a call-out process from the Royal Infirmary Edinburgh (RIE) switchboard in the event of an emergency. In the case of major incidents and outbreaks such as a flu pandemic situation, support from other parts of the organisation, for example, scientific and analytical staff in Lothian Analytical Services, for weekend reporting as and when required. NHS Lothian has a service level agreement with Public Health Intelligence at National Services Scotland for the provision of public health intelligence and analytical services. From 2014 this responsibility will be set out explicitly in the service level agreement. The on call team can be contacted out of hours on **0131 242 1000**.

5.4.2 Local Authorities

The four Local Authorities have emergency out-of-hours procedures in place. These are accessed through call centres within each authority. The FSA has lists of nominated contact officers for each authority in case of emergency food borne incidents. Contact centre details are:

- City of Edinburgh **0131 200 2000**
- East Lothian Council **01875 612 818**
- Midlothian Council **0131 663 7211**
- West Lothian Council **01506 282 000**

5.5 Reviewing Health Protection Standard Operating Procedures (SOP) or guidance

The Directorate of Public Health and Health Policy has standard operating procedures for significant infectious diseases other hazards, outbreaks and major incidents. The Health Protection Team workplan includes reviewing standard operating procedures with partners. Those requiring review are identified based on their review date or the emergence of new national guidance.

Debriefs for significant incidents or major outbreaks are held to learn lessons from how they have been managed. These debriefs can be multi-agency and multi-disciplinary within the Directorate as appropriate.

The Local Authorities have standard operating procedures for a wide range of environmental health functions, including food safety and health and safety incidents. The two standard operating procedures, which are developed jointly between the Directorate of Public Health and the Local Authorities, are the sporadic food borne disease and gastrointestinal illness and the major outbreak plans.

NHS Lothian and the Local Authorities will continue to review operating procedures, including those that relate to the Public Health etc. (Scotland) Act 2008 duties (Appendix III).

5.6 Staff knowledge, skills and training

The following arrangements are in place for ensuring the maintenance of knowledge, skills and competencies for staff with health protection duties.

5.6.1 NHS Lothian

The Director of Public Health and Health Policy issues a weekly professional update that includes training opportunities, courses and conferences as well as updates on policy, evidence and key meetings.

Audit and peer review sessions on on-going public health projects and activities are part of the weekly information exchange meetings and CPD sessions held in the Directorate.

The HPT organises, as a minimum, twice yearly on-call updates as part of regular continuing professional development (CPD) sessions within NHS Lothian's Directorate of Public Health and Health Policy. Additional related sessions, providing training and exercising for Emergency Planning, are also provided.
HPT will informs on-call staff of other training day courses and conferences organised regionally or nationally and all staff on-call are required to participate in an Emergency Planning exercise on an annual basis. All on-call staff are required to spend a full week with HPT at least every two years. This is arranged with the operational team at mutually convenient times. Ideally staff will be offered the opportunity to attend the HPS on call course once every two years. There are limited places available each year for Health Protection Scotland (HPS) on call and Scientific and Technical Advice Cell (STAC) training. NHS Lothian supports CPD requirements for registered medical and other public health and the knowledge and skills framework requirements for professional, scientific and support staff for whom formal registration requirements are not yet in place.

5.6.2 Lothian Local Authorities

All Local Authorities have procedures in place for annual review of staff development needs, including support for meeting professional CPD requirements where appropriate. All environmental health staff are encouraged to attend training or update events organised by NHS Lothian, HPS, the Royal Environmental Health Institute of Scotland (REHIS) and Food Standards Agency, for example. All local authority staff working in food safety and food standards are required to meet minimum competency and the ongoing professional development requirements of the Food Law Code of Practice. Similar formal requirements have been developed in relation to staff working in relation to occupational health and safety.

NHS Lothian and the Local Authorities will keep training requirements under review, including developing joint training opportunities, particularly in relation to the Public Health etc (Scotland) Act 2008 duties (**Appendix II**).

6. Capacity and resilience

6.1 NHS Lothian

NHS Lothian, in conjunction with Local Authorities and HPS, last assessed the capacity and resilience of local health protection services in the spring of 2009. The assessment put a set of criteria into place and these were used to assess the status of health protection services. These criteria covered a number of areas, including: team composition; resources and education; communication mechanisms and technology; information management and facilities standards; policies; procedures; joint working and governance; on call and surveillance arrangements.

In the early part of 2011, NHS Scotland Resilience, following a review of emergency preparedness as part of a national audit of Health Boards, noted that there continues to be a proactive attitude towards emergency planning in NHS Lothian, which reaches through to the wider organisation.

NHS Lothian is developing more extensive mutual aid arrangement with neighbouring Health Boards and reciprocal appointment of Competent Persons as required by the new Public Health etc. (Scotland) Act 2008.

NHS Lothian led the review of the capacity and competence of the public health function in Scotland by the Association of Schools of Public Health in the European Region in January 2013. This was a positive visit. During the first quarter of 2014 there will be a rapid review of the capacity and resilience of the public health function in Lothian. This will attempt to marry the requirements of reduced budgets with Scottish Government's commitment to strengthen public health capacity.

6.2 Local Authorities

Each of the Local Authorities provides a core level of trained and competent staff to deliver a wide range of statutory environmental health duties. Local authorities undertake their own service reviews on a regular basis. In addition they are subject to external scrutiny by the FSA audit branch in relation to meeting the requirements of food safety legislation. Historically, all of the Local Authorities have been able to provide health protection related services.

The 2013 Audit Scotland Report - *Protecting Consumers*, raised concerns about the longer term sustainability of Trading Standards (TS) Services particularly at smaller Councils (classed as those with less than 8 TS staff) and also looked at food safety services.

The report acknowledged that Food Services were, on the whole, currently better resourced than Trading Standards but raised concerns for both services about loss of experience and expertise and ensuring core competencies and training for the future.

The report recommended more formal joint working arrangements and shared service options as possible solutions. While the report did not address wider environmental health functions, (e.g., public health work, environmental monitoring & investigations, nuisance and housing standards work, health & safety enforcement etc), there are similar concerns about these service areas too.

East and Midlothian Councils have agreed to the two Councils developing a partnering approach to delivering Environmental Health and Trading Standards Services. This entails Midlothian leading on Environmental Health and East Lothian on Trading Standards and as such a twelve month pilot commenced on 4 November 2013.
The potential benefits for developing a partnership approach include:

- Continuity of service delivery
- Long term / future service resilience
- Service efficiencies
- Improved service flexibility and quality through sharing specialist expertise.

6.3 Approach to regulation

We will develop a work programme to introduce new ways of working designed to minimise the adverse impact of deregulation on the ability of the Health Board and Local Authorities to comply with their duties to protect and improve the health and wellbeing of the population. In developing our priorities for action we will examine the population impact of potential adverse events against the level of risk they pose and the likelihood of occurrence. Used appropriately, regulation is an efficient, effective and equitable tool for improvement. We will introduce new interventions designed to improve performance and new tools to measure our achievements.

7. Public involvement and feedback

7.1 NHS Lothian

7.1.1 Patient and Public Involvement

In NHS Lothian, involving patients and the public means involving them in how health services are designed and delivered[40]. This is achieved by working in partnership with local authorities, the voluntary sector and other community groups when planning health services and health policies.

Patient and public involvement in NHS Lothian health protection activities takes place largely during individual interaction with cases and contact of cases, general educational messages sent out as a preventive measure during incidents and outbreaks. Public involvement during these incidents and outbreaks takes place via proactive media releases and response to media queries and a public helpline, if established. In addition, feedback is obtained during a variety of conferences and working groups. For example, the Hepatitis C Action Plan sub-groups and Lothian Infection Control Advisory Committee have public representatives.

In October/November 2013, an audit of the patient experience with the HPT during exclusion/restriction was carried out. In general most participants were satisfied with the communication, levels of contact and advice give to them by the HPT over exclusion and felt that little needed to be improved. Areas that some interviewees felt were important and had room for improvement include letters being sent to employers earlier, clearer information on re-imbursement for loss of earnings, more proactive follow up of samples and results with the labs, clarity on the number of samples required, information on the process of lifting exclusions and providing them with the source of infection.

7.1.2 Staff and Partnership

The NHS Lothian Partnership Forum has been established as part of an area-wide employee relations framework that allows staff to influence how NHS Lothian works[37]. In health protection terms this forum provides the opportunity of early involvement and the ability to influence decision making on health protection issues which affect staff. Partnership involvement is considered essential when any incident moves from being a Problem Assessment Group (PAG) which is a professional assessment of a potential incident to an incident being declared and a formal Incident Management Team being established. One of the most obvious roles for Partnership is providing advice and helping to ensure high levels of understanding and uptake when staff screening is necessary as part of incident management.

7.2 Lothian Local Authorities

Local authorities carry out a variety of client and community consultation and feedback activities, using the results to improve the efficiency and effectiveness of service delivery. However, for the purposes of the Joint Health Protection Plan, the main area of cross-client contact by environmental health staff is the investigation of incidences of gastrointestinal infections out-with a hospital setting.

8. Monitoring and review

An action plan has been developed (**Appendix II**) to ensure that this Joint Health Protection Plan is implemented effectively. The plan will be kept under strategic review by the steering group comprising the Director of Public Health and Health Policy, NHS Lothian and the Chief Officer(s) of Environmental Health of City of Edinburgh, East Lothian, Midlothian and West Lothian Councils.

The detailed implementation of the plan (see action plan **Appendix II**) including review of incidents, procedures, staff training will continue to be the responsibility of the NHS Health Protection Joint Liaison Group, which meets quarterly in Lothian.

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Appendix I : Joint Health Protection Activities

Priorities: We have specified what are the current deliverables for completion in 2012-14, what are for delivery in two to three years time or, for further in the future. These can be listed as:

- **Deliverables** - for the coming year with expected outcomes and milestones;
- **Developmental** - for a specific timescale beyond the coming year with expected outcomes and/or milestones listed and;
- **Directional** – Horizon scanning for future public health issues;
- **Sustainability** - We ensure that once targets are reached we can maintain that level.

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
Emergency Planning					
Public health incidents	Ensuring the most effective protection of public through NHS and Local Authorities co-operation in investigation and control of outbreaks	Perform duties and functions defined under the Public Health (S) Act. Assign appropriate staff and contribute resources required for the investigation and control of incidents and outbreaks. Exclude workers in high-risk occupations confirmed as having relevant infectious disease.	Perform duties and functions defined under the new Public Health (S) Act. Provide leadership for investigation of public health incidents and outbreaks. Pay for exclusion of high risk workers.	Draw up joint plans for the investigation and control of incidents and outbreaks. Participate in incident and outbreak investigation, review and audits Participate in multiagency exercises and planning events.	Deliverable
Port Health	Potential risk of importation of exotic infection from other countries. Increased potential for drug use. Lothian has major local and international transport hubs in the local area including:	Inspection of ships for hygiene and vermin/pests Monitoring of water supplies. Enforcement of international health regulations, a designated port authority for the purpose of issuing ship sanitation etc. certificates.	Imposing appropriate Controls on ships and passengers when disease reported or suspected. Liaison with other agencies and health authorities.	Development of Joint operational plans. Response to airport call outs. Reducing risk of disease entering country via ports Ship Sanitation. Vermin control.	Deliverable

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
	Edinburgh Airport, Leith Docks South Queensferry Hound Point terminal, Waverley /Haymarket Train Stations.				
Mass Gatherings	Lothian is a centre of culture which hosts annual festivals, Hogmanay /New Year celebrations, international events such as the G8 and major international sporting events (e.g. World Cup Sevens rugby), as well as associated VIPs. This brings together populations from different parts of the world with a risk of new infection coming into the areas. There is potential risk of terrorism in large crowds.	Work with the police to ensure safety at venues. Various licensing activities for entertainment, civic government, alcohol.	Ensure that Accident and Emergency department in hospitals have emergency plans to receive casualties. Work with other agencies to ensure adequate presence of first aiders.	Develop and test Hogmanay plans prior to the season starting. Monitor upcoming events and put in place appropriate plans for international and other large size events. Identify and plan mitigation measures for public health issues that the Commonwealth Games in Glasgow (2014) may impact on Lothian.	Deliverable
Climate change.	Climate change presents a potential risk of Increased displacement of individuals due to flooding, plus disease risk after any flooding. Incident sites of potential flooding include River Esk, Almond, Water of Leith, Braid Burn, Burdiehouse Burn, Figgate Burn, River Tyne, Biel water, Brocks Burn and	Put in place emergency flood response plans dealing with displacement and remediation. Implement Flood Prevention Act duties.	Provide advice on potential health risk in the event of flooding. Ensure healthcare provision for vulnerable populations during flood incidents. Provide healthcare to the affected individuals Contribute to the local authority flood plans.	Participate in multiagency exercises and flood planning events. Participate in multiagency flood incident management. Develop plans in line with Scottish Govt Climate Change Adaptation framework 2012	Sustainable

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
	Linlithgow Mains.		Identify NHS Lothian sites that are vulnerable to flood risk and establish plans to mitigate the risk and ensure business continuity. Implement NHS Lothian Strategic Development strategy with actions to reduce carbon emissions		
Radiation - Ionising and non-ionising	Potential risk to public from radiation sources. Risk of nuclear incident. Risk of malicious release (terrorism). Sunbed use increasing cancer risk Radon accumulations increasing cancer risks.	Draw up a multi-agency off-site nuclear incident plan. Inspection and appropriate licensing of sun-bed operators. Monitor of radon gas in public building owned by the local authority and support families to monitor homes in potentially affected areas	Contribute to a multiagency off-site plan. Monitor of radon gas in public building owned by the NHS and support families to monitor homes in potentially affected areas.	Participate in multiagency radiation exercises and planning events. Participate in multiagency radiation incident management.	Deliverable
Good Places Better Health[10] (National Health Policy) issues					
Prison accommodation.	Lothian hosts two prisons – includes vulnerable populations. Increased risk of disease outbreaks such as hepatitis B, HIV and tuberculosis among prisoners.	Inspection of Prison kitchens under food safety and food standards legislation.	Develop close working relationship with prison staff for the provision of appropriate preventive measures and early intervention in incidents and outbreaks.	Participate in incident and disease outbreak investigation and control.	Deliverable
University accommodation	Lothian hosts several universities with large	Regulation of HMOs. Investigation of housing	Put in place plans to work with university authorities in	Investigate and manage incident of infections and	

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
.	numbers of students for example the university of Edinburgh has 16,000 students. Increased opportunity for introduction and spread of infection. Increase use of Houses in Multiple Occupation (HMO).	standards issues. Protection of Private tenants through registration of private landlords. Promote Landlord Accreditation to increase standards above the statutory minimum	monitoring and control of infection such as mumps and meningitis.	outbreaks when they occur.	
Air quality.	Potential emissions and incidents relating to industrial processes in the area including : distilling and brewing, electricity generation, open cast mining and quarrying, cement manufacture etc. Risk of major incidents and release of toxic chemicals. Increase air pollution from routine emissions. Increased risk of respiratory and cardiovascular diseases.	Monitor air quality compliance with legislative standards. Declaration of Air Quality Management areas as appropriate and formulation of action plans. Respond to planning applications where air quality may be impacted Participate in the vehicle emissions and vehicle idling partnership	Contribute to the development of the national Air Quality Monitoring during major incidents. Ad hoc and advice on analyses of health impacts of air quality.	Participate in multiagency air quality exercises and planning events. Participate in multiagency air quality incident management. Consultation on air quality action plans.	
Home Safety	Carbon monoxide poisoning. Fire risk. Safety of appliances. Risk from goods bought	Advice and complaint investigation about the safety of goods sold. Potential for surveys and test purchasing to check the	Possibility of being asked for advice on potential risk to humans from products (e.g. those containing specific substances)	Health Impact Assessments of housing development and regeneration schemes.	Developmental

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
		safety of good sold. Powers to seize unsafe goods.	Proactively offer advice to vulnerable populations in contact with clinical services e.g. children under 5. NHS Lothian also funds a range of child safety projects. Monitoring of accidents via routine data Health Impact Assessments of housing development and regeneration schemes. Ad hoc advice and support relating to health impacts of housing.		
Housing	Poor quality, energy inefficient housing is associated with respiratory ill health and winter mortality and fuel poverty. Overcrowding is associated with poor health. Housing design features may affect mental health, accessibility and risk of domestic injury.	Work in partnership with housing services to assess quality of housing with regard to the Tolerable Standard and to use statutory powers to secure improvement where funding permits or is of significant public health risk. Conduct the registration of Private Landlords scheme Develop and deliver the Local Housing strategy Deliver the Statement of	Support for health impact assessments of housing developments.	Health Impact Assessments of housing development and regeneration schemes.	Deliverable

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
		Assistance in terms of housing improvements			
Contaminated Land	Lothian has a legacy of an industrial history and the associated issues of contaminated land including ex mining areas, former landfill sites etc. Potential chemical environmental pollution. Complaints from communities with assertions of health risk.	Identification of contaminated land and addressing problems found in accordance with national guidance contained in part IIA of EPA 1990.(guidance is not contained in statute also most issues of contamination are dealt with as part of the Planning process as part of redevelopment Monitoring of sites and investigation and control of incidents where there is potential human exposure. Use a phased, risk based approach to the identification, investigation and remediation of contaminated land sites.	Statutory consultee advising on risk to human from a wide variety of contaminants.	Investigation of assertions of risk and assessment of impact of remediation measures. Investigate contaminated land and take action to ensure health risks are eliminated or adequately reduced.	Developmental
Greenspace	High quality accessible green space is associated with better mental health and increased physical activity.	Open space strategy	Ad hoc advice on benefits of green space. Build into work on physical activity. Support for community gardening projects and greening of NHS estate.	Health impact assessments of green pace proposals	Developmental
Transport	Transport can affect air quality, physical activity, injuries, access to health-promoting facilities, noise,	Local Transport Strategy	Advice on health issues arising from transport policies and proposals	Health impact assessments of transport policy and strategy	Developmental

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
	community severance etc				
Quality of public realm	Design of public spaces may affect levels of physical activity, mental wellbeing, social cohesion etc.	Planning policies – formulation, implantation and monitoring	Advice on health issues arising from planning proposals	Health impact assessment of planning policies	Developmental
Strategic Environmental Assessment	SEA includes consideration of Human Health		Offer ad hoc advice and support on health issues in SEAs	Joint work on scope of SEAs	Developmental
Equally Well[11] (joint work to tackle the social determinants of health inequalities) – National health policy					
Infectious and Communicable Disease control	Food poisoning. Legionella.	Investigation of potential sources, contacts and causes in partnership with NHS. Taking appropriate formal and informal action to ensure potential source is adequately dealt with. Hold register of cooling towers etc. Exclude high-risk persons. Sampling of swimming pools to ensure no risk to users.	Addressing medical needs of affected persons. Investigation of potential sources, contacts and causes with assistance of Local Authorities. Advising on potential control options. Exclude high-risk persons.	Developing SOPs, planning for incident management, managing and controlling outbreaks and incidents and surveillance. Review of incident management and learning lessons. Exclude high-risk persons.	Deliverable
Animal Health and zoonotic	Procedures supporting the control of BSE, bird flu,	Monitoring of controls on animal health.	Working with Animal health to monitor the occurrence of	Investigation and control of incidents and outbreaks of	Deliverable

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
diseases	rabies, bovine tuberculosis etc.	Appropriate formal and informal action to deal with problems found. Monitoring of controls imposed as part of animal diseases, such as animal movement orders.	zoonotic disease in livestock and domestic animals. Advice on potential risk to human arising from animal health activities including outbreaks of animal diseases. Advice on vaccination to population at risk including travel abroad.	zoonotic diseases.	
Smoking, alcohol and substance misuse	Smoking is the single largest preventable cause of premature mortality. Substance misuse is a preventable cause of ill health, death and drug related crimes.	Responsibility for ensuring goods are not sold to those under 18. Age Related Sales Tobacco, Cigarette, Lighter Refills Fireworks. No-smoking legislation implementation regarding smoking in public places. Licensing standards officer's interventions regarding age verification policy and responsible drinking.	Follow up of individual cases of infection connected with substance misuse. Assess alerts about contaminated alcohol and new drugs causing potential ill health. Advise on appropriate measures to prevent and treat HIV, Hepatitis B and C. Develop and implement action plans through the HCV MCN.	Participate in disease incident and outbreaks related to substance misuse Underlying and long term issues addressed through planning and delivery of services in partnership through the Smoking & Health, Alcohol and Drug Partnerships (ADPs) and Community Safety Partnerships.	Developmental
Noise Control	Anti social behaviour. Exposure to occupational noise. Exposure to nuisance noise which may affect health.	Powers to issue fixed penalty notices for anti-social activities. Powers to investigate and control noise nuisance generally through statutory nuisance legislation of	Advice on health effects on humans arising from noise producing activity.	Provide public health advice on incidents	Sustainable

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
		licensing regime. Powers of H&S enforcement where excessive noise may be encountered in the workplace			
Licensing	Activities Including: Alcohol, Street Trading Tattooing & Skin Piercing Petroleum. Alcohol related health harm and community safety linked to availability. Spread of infection such as hepatitis B and C and sexually transmitted diseases.	Monitoring of alcohol licensing via licensing standards officers Licensing monitoring and inspection of street traders, tattooists, skin piercers and petroleum storage. Dealing with complaints and taking appropriate informal or formal action.	Advice on health risks of activities, the impact of alcohol on population health and the link with outlet density. Advice on implementing the public health principle in alcohol licensing including on licensing conditions and/or options to control problems and arising from incidents	Underlying and long term issues around alcohol misuse addressed through planning and delivery of services in partnership through the Alcohol and Drug Partnerships (ADPs) and Community Safety Partnerships.	Developmental
Pest Control	Vermin — potential to spread disease. Insects — disease spread potential, can arise from unhygienic conditions with human health risk.	Inspection of area for vermin and pests taking appropriate informal or formal action to address problems found. Treating of vermin and insects (discretionary).	Advice on potential risk to humans from a variety of pests.	Investigation and control of pest related diseases.	Developmental
Dog Control	Stray dogs — safety and potential for disease spread Dog fouling — potential to spread disease. Dangerous dog threat or attack. Noise nuisance from	Uplift of stray dogs Enforcement of fouling and dangerous dog Legislation Promote responsible dog ownership to minimise Barking, fouling and poor control.	Advice on potential risk to humans from dog fouling Linkages to promotional work on best practice and other dog related issues	Investigation and control of zoonotic disease related to dogs.	Developmental

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
	excessive barking				
Public Health Nuisances	Variety of statutory nuisance conditions affecting local residents / community.	Monitor area and respond to complaints with regard to statutory nuisance issues such as dirty houses, unhygienic living conditions, drainage problems, odour problems, etc.	Advice on risks and effects on the health of occupants and other relevant persons.	Follow up complaints and investigate nuisance that affect public health.	Developmental
Houses in Multiple Occupation and Private sector rental accommodation	Nuisance and health effects on occupants from poor living conditions and disrepair Overcrowding, fire, safety.	Licensing of HMOs and registration of Private Landlords. Monitor local housing for defects and respond to complaints. Inspect for compliance Enforce against unlicensed/unregistered Premises.	Advice on risks and effects on the health of occupants and other relevant persons Advice on risks to health of Occupants.	Joint investigation as appropriate for HMO related public health incident	Developmental
Health & Safety at Work.	Illness or injury to persons.	Enforcement of Health and Safety legislation: to reduce the incidence of accidents and ill health at work in partnership with the HSE. This involves adherence to inspection/sampling programme, participation in national campaigns and other interventions as directed by HSE and investigation of accidents and complaints.	Advice on health risks (Healthy Working Lives)	Explore the link between LA health and safety investigations/ intervention planning to NHS accident/ emergency data.	Developmental

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
Water Supplies	Old reservoirs and water treatment plants in need of development. Risk from consumption of contaminated water supplies. Lead in Water Guidance relating to WHO standards 2012.	Regulation and monitoring of private water supplies and ensuring national standards are met. Administer grant assistance scheme for improvement of private water supply quality.	Work with Scottish Water to ensure regular sampling and monitoring of supply and distribution system Advice on medical aspects of risk to individuals and groups.	Investigation of water related infections and contaminants of drinking water supply. A Health Protection Joint Liaison Subgroup on private water supply.	Deliverable
Food Safety	Reduction in food poisoning Ensure food ingredients are safe and food appropriately labelled to ensure vulnerable people are protected (e.g. — allergens)	Inspection of food premises Inspection of production facilities for hygiene and composition. Sampling of food to check for compliance with standards. Promotion of good hygienic practice. Promotion and information on labelling/composition	Advice on medical aspects on request. Linkages to promotional work on hygienic practices and other food related issues. Expert advice on potential health effects arising from conditions found.	Investigation and control of foodborne infectious disease incidents and outbreaks	
Food hygiene and food standards	Food is a potential vehicle for transmission of infectious diseases.	Implement an effective inspection programme based on a risk based approach including adherence to inspection/sampling/ audit programmes, provision of food hygiene and food safety training to business community, There is adoptive not required participation in national campaigns as promoted by FSA, investigation of food-	Promote hand washing practice and food hygiene to members of the general public during incidents.	Participate in investigation of incidents and outbreaks of food borne and gastrointestinal infections.	

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
		borne illnesses, investigation of complaints and provision of information to the public on good food hygiene practice via local publicity campaigns e.g. Food Safety Week.			
TB services	Increasing numbers of TB cases, drug resistance, poor compliance amongst vulnerable groups such as people who are homeless, or with problematic alcohol and/or drug use.	Provision of housing to vulnerable groups Investigation of accommodation standards	Identify, investigate and treat cases and contacts, offer BCG vaccination. NHS Lothian is currently implementing Scotland TB plan and the piloting and evaluating of a web based TB surveillance system for Scotland.	Investigation and management of TB incidents.	Deliverable
Sexual Health and HIV services	Preventing spread of sexually transmitted infections	Licensing of sex shops / establishments Teaching about sexual health and relationships.	Diagnosis, counselling and treatment of cases.	Joint planning for sexual health and HIV – strategy development HIV treatment and care – joint agreement for Milestone House.	Deliverable
Care Settings and Health Improvement, Efficiency, Access Treatment (HEAT) Targets					
Healthcare associated	There is a risk of patients who are free from infection	Food hygiene inspections of hospital catering. Expert	NHS Lothian has plans to achieve a reduction of the	Investigation of incidents/ outbreaks	Deliverable

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
infections	acquiring it from care institutions when they get admitted for other reasons.	support and advice for healthcare associated infections	rate of *Clostridium difficile* infections in patients aged 15 and over to 0.25 cases or less per 1,000 total occupied bed days by 2014/15. To further reduce healthcare associated infections so that by 2014/15 NHS Lothian's *staphylococcus aureus* bacteraemia (including MRSA) cases are 0.24 or less per 1,000 acute occupied bed days.		
Childhood Vaccinations	There is a risk of vaccine preventable diseases to re-emerge or cause outbreaks when the population vaccination coverage is low. Recent examples have been outbreak of measles and mumps.	Education – school and further employment, work with local businesses	NHS Lothian has a childhood immunisation programme that aims to vaccinate at least 95% of children according to national schedules (2011 uptake of MMR at 24 months was 93.5%).	Reservoirs of infection	Deliverable
Human papilloma virus (HPV) vaccine programme:	HPV infection is responsible for the development of almost all cases (90+%) of cervical cancer. effective against the two strains. HPV vaccines are s of the virus. The HPV vaccine for girls aged 12 to 13 years is aimed at protection against 70% of cervical cancers.		NHS Lothian continues to implement the HPV programme with catch up for S4, S5 and girls who are out of school.		Deliverable
Viral hepatitis	Prevention of BBV in drug	Regulation of tattooing and	NHS Lothian actions outlined	Social worker involvement in	Deliverable

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
	users, increasing testing in high risk groups, ensuring immunisation policies in place for hepatitis B in at risk groups, collaborative working to ensure patients supported through assessment and treatment for hepatitis C	other high risk activities	in the Scottish Government Sexual Health and Blood Borne Virus framework are being implemented through the NHS Lothian Viral Hepatitis Managed Care Network (MCN).	hepatitis MCN Joint working via alcohol and drug action teams	
Pandemic Influenza	A pandemic is one of the most severe national challenges likely to affect Scotland and Lothian. Proportionate planning and drawing on lessons learnt from H1N1 is essential for mitigation of the potential impact of a pandemic.	Develop local plans for response and recovery from a pandemic.	NHS Lothian continues to identify, treat and monitor cases of influenza A(H1N1) and will ensure arrangements are in place to offer vaccination to the Lothian population against this virus as appropriate.	Participate in Local and Regional Resilience Partnership pandemic planning process.	Sustainable
Public Health (S) Act 2008					
Information sharing (NHS & local authorities) and joint analysis	Sharing information is essential for effective implementation of health protection interventions.		NHS Lothian has arrangement for ensuring that Health professionals employed or contracted have the training and support necessary to allow them to balance their responsibilities for patient confidentiality, with public safety and health protection when sharing information.	Regularly review effectiveness of arrangement for information sharing between NHS Lothian and local authorities.	Deliverable
Provision of	Improper or delayed disposal	Arrangement for disposal of	Advice on health risks in	Joint investigations as	Developmental

Subject	Health Protection Issues	Local Authority Role	NHS Health Protection Role	Joint NHS/Local Authority role	Priority level
Mortuaries	of dead bodies can result in spread of infection	dead under National Assistance Act provisions. Provision of mortuary facilities	relation to contaminated/ infected bodies.	necessary	

Appendix II: Joint Health Protection Action Plan

Reference Section	Action	Responsibility	Timescale	Outcome	Priority Level
1	The steering group will continue to oversee the implementation of the plan.	DPH/Chief EHO and Lead CPHM	On-going	Regular review of planned activities	Deliverable
1	Ensure implementation and compliance with all the requirements within the act	DPH/Chief EHO and Lead CPHM and respective teams	Annual	Implement all aspects of the new act according to the law.	Deliverable
2.2	Investigate of assertions of risk and assessment of impact of remediation measures.	DPH/Chief EHO and Lead CPHM	On-going	Adequate risk assessment and risk management carried out	Deliverable
2.2	Investigate contaminated land and take action to ensure health risks are eliminated or adequately reduced.	DPH/Chief EHO and Lead CPHM	Annual	Adequate risk assessment and risk management carried out	Deliverable
2.2	Carry out health impact assessments of greenspace, transport policy and strategy proposals, planning policies and joint work on scope of SEAs	DPH/Chief EHO and Lead CPHM	On-going	HIA reports available to inform policy and planning	Developmental
4.1	Health Impact Assessments of housing development and regeneration schemes.	DPH/Chief EHO and Lead CPHM	Annual	HIA reports available to inform housing policy	Developmental
4.1	Address underlying and long term issues through planning and delivery of services in partnership through the Smoking & Health, Alcohol and Drug Partnerships (ADPs) and Community Safety Partnerships.	DPH/Chief EHO and Lead CPHM	Annual	Declining substance misuse rates and associated long term issues	Sustainable
4.1	Investigation and control of pest related diseases zoonotic disease related to dogs.	DPH/Chief EHO and Lead CPHM	Annual	Reduced pest incidents and zoonotic diseases	Deliverable

Reference Section	Action	Responsibility	Timescale	Outcome	Priority Level
4.1	Follow up complaints and investigate nuisance that affect public health.	DPH/Chief EHO and Lead CPHM	Annual	Reduced complaints associated with nuisances.	Deliverable
4.3	Reduce risk of disease entering country via ports by responding to airport call outs, ship sanitation inspection and vermin control.	DPH/Chief EHO and Lead CPHM	On-going	Prompt response to port health call out	Sustainable
4.3	Develop and test emergency plans for mass gathering including national and international events such as games and sports and the Hogmanay plans prior to the season starting.	DPH/Chief EHO and Lead CPHM	On-going	Event health emergencies adequately handled	Sustainable
4.3	Participate in multiagency climate change mitigation emergency plans such as flood plans. Develop plans in line with Scottish Govt Climate Change Adaptation framework 2012	DPH/Chief EHO and Lead CPHM	On-going	Continuous mitigation of environment impact arising from climate change	Deliverable
4.3	Participate in multiagency radiation exercises and planning events.	DPH/Chief EHO and Lead CPHM	Two-yearly	Staff capacity and resilience for response to radiation incidents improved	Deliverable
4.3	Participate in multiagency air quality exercises and planning events and consultations on air quality action plans.	DPH/Chief EHO and Lead CPHM	Annual	Effective response to air quality incidents	Deliverable
4.4	Ensure that lessons learnt from incidents and outbreak informs the development and review of plans.	DPH/Chief EHO and Lead CPHM and respective teams	Annual	Plans and SOPs are suited to local needs.	Deliverable
4.2.2	Joint planning for sexual health and HIV – strategy development HIV treatment and care – joint agreement for	DPH/Chief EHO and Lead CPHM	Annual	Joint sexual health and HIV strategy in place and used.	Deliverable

Reference Section	Action	Responsibility	Timescale	Outcome	Priority Level
	Milestone House.				
4.2.2	Involve social workers in hepatitis Managed Clinical Networks. Joint working via alcohol and drug action teams	DPH/Chief EHO and Lead CPHM	Annual	Social workers participate in Hepatitis MCN	Deliverable
4.2.3	Participate in multiagency exercises and planning events.	DPH/Chief EHO and Lead CPHM	Annual	Continuous improvement of staff capacity and resilience	Deliverable
5	Draw up joint plans for the investigation and control of incidents and outbreaks. and audits	DPH/Chief EHO and Lead CPHM	Dec 2014	Plans in place and applied	Deliverable
5.1	Share lists of competent persons as required by the act	DPH/Chief EHO and Lead CPHM	Annual	Agencies have up-to-date lists of competent persons for Lothian	Deliverable
5.1	Appoint and review competent persons list.	DPH/Chief EHO and Lead CPHM	Annual	Sufficient numbers of competent persons within agencies	Deliverable
5.5	Hold major incident plan exercise (joint LA/ NHS Lothian) Regularly exercise key health protection plans including GI and food incidents and the major incident plan.	PH/EHO/Med/Vet/ SW liaison group	Annual	Update of plans based on exercises. Staff trained during exercises.	Deliverable
5.5	NHS Lothian and the Local Authorities will keep Standard Operating Procedures (SOPs) under review, including developing and reviewing procedures up-to-date in relation to the Public Health etc (Scotland) Act 2008 duties.	Health Protection Joint Liaison group	Annual	Staff working with updated SOPs	Deliverable
5.5	Review Lothian Joint Health Protection Plan (2014-16)	DPH/Chief EHO and Lead CPHMNHS	April 2016	Revised plan in place and up-to-date.	Sustainable
5.6	Developing joint training opportunities, particularly in relation to the Public Health etc (Scotland) Act	DPH/Chief EHO and Lead CPHM Health Protection	Annual	Joint training taking place.	Deliverable

Reference Section	Action	Responsibility	Timescale	Outcome	Priority Level
	2008 duties.	Joint Liaison group			
5.6.2	NHS Lothian and the Local Authorities will keep training requirements under review, including for competent persons and investigator knowledge and skills, developing joint training opportunities, particularly in relation to the Public Health etc (Scotland) Act 2008 duties.	Health Protection Joint Liaison group	Annual	List of training requirement in place and shared with staff	
6	Assess capacity and resilience to provide health protection services in Lothian	DPH/Chief EHO and Lead CPHM NHS Lothian and LA s	Annual	NHS Lothian and Lothian Local Authorities have sufficient numbers of competent persons and investigators for both in and out of hours interventions	
6.3	Explore and identify new ways of working in response to revised approach to regulation.	DPH/Chief EHO and Lead CPHM NHS Lothian and LA s	Annual	New ways of working identified and applied.	
7	Develop and implement public involvement activities and how their contribution can be used for improving health protection in all agencies.	Health Protection Joint Liaison group	Annual	Review of plans with consideration of public in-put.	
5.2, 5.3	Ensure the acquisition and use of appropriate information technology for the investigation and management of outbreaks and incidents	DPH/Chief EHO and Lead CPHM and respective teams	Annual	Accurate recording and reporting of incidents and outbreaks. Timely availability of epidemiological information.	

Appendix III : Key health protection plans for the Lothian area

Shared Plans	Last Review Date	Next Review Date
Police Scotland Major Incident Plan	N/A	Under development
East of Scotland Regional Resilience Partnership Generic Emergency Plan (maintained by SCG Co-ordinator)	05/2011	05/2012
East of Scotland Regional Resilience Partnership Pandemic Influenza (maintained by SCG Co-ordinator)	05/2010	Under review
East of Scotland Regional Resilience Partnership Community Risk Register	04/2011	Under review
East of Scotland Regional Resilience Partnership Public Communications Plan	05/2011	05/2012
East of Scotland Regional Resilience Partnership Animal Health Plan	05/2010	Under review
The City of Edinburgh Council Emergency Plan (General Plan for the Council's response to Serious Emergencies or Major Incidents).	02/2010	Under review
The City of Edinburgh Council Pipelines Emergency Plan (Statutory Requirement under the Pipelines Safety Regulations)	01/2009	Under review
Edinburgh Major Incident Evacuation Plan the City of Edinburgh Council and Police Scotland	11/2011	11/2014
Edinburgh Site Specific Response Plan (maintained by Police Scotland on behalf of East of Scotland Regional Resilience Partnership)	03/2012	05/2013
NHS Borders Pandemic Influenza Plan	02/2009	Under review
The City of Edinburgh Council BP Dalmeny Installation Off Site Plan (Statutory Requirement under the Control of Major Accident Hazards Regulations)	12/2011	12/2014
Joint Port Health Plan	2009	2012
Police Scotland Severe Weather plan	07/2011	06/2012
Scottish Waterborne Hazard Plan	07/2010	02/2012
The City of Edinburgh Council Emergency Flooding Plan (To be replaced by a joint Police Scotland /City of Edinburgh Council Flooding Emergency Plan in next few months.)	11/2011	11/2012
Sporadic food and gastrointestinal infection incidents plans	2009	2012
Blue Green Algae in Inland Waters Assessment and Control etc. Plan	2009	2010
Shared Waste Water Incident Plan	2009	07/2012

NHS Lothian	Last Review Date	Next Review Date
NHS Lothian Major Outbreak Plan for Lothian	2009	Under review
NHS Lothian Major Incident Strategic Response Plan	2012	Under review
Contingency Plan for Pandemic Influenza: Strategic Policy		March 2012
NHS Lothian and Port Health Authority Procedure for cases of illness in vessels arriving at Leith and other anchorages in Lothian.		Under review
NHS Lothian and Port Health Authority Procedure for cases of illness in aircraft arriving in Edinburgh	09/2010	Under review
Drug and Alcohol Plan		
The Sexual Health and Blood Borne Virus Framework	2011	2015
A TB Action Plan for Scotland	2011	2014
NHS Lothian Standard Operating procedures for specific diseases including meningitis, E.coli O157.		

City of Edinburgh Council	Last Review Date	Next Review Date
The City of Edinburgh Council Emergency Plan (General Plan for the Council's response to Serious Emergencies or Major Incidents).	03/2012	Under review
The City of Edinburgh Council Pipelines Emergency Plan (Statutory Requirement under the Pipelines Safety Regulations)	04/2012	Under review
The City of Edinburgh Council BP Dalmeny Installation Off Site Plan (Statutory Requirement under the Control of Major Accident Hazards Regulations)	12/2011	12/2014
Edinburgh Flooding Emergency Plan (The City of Edinburgh Council)	11/2011	11/2012
Corporate Business Continuity Plan	10/2010	Under Review
Business Continuity Pandemic Flu Plan	07/2009	Under Review
Severe Winter Weather Business Continuity Plan	12/2012	

West Lothian Council	Last Review Date	Next Review Date
West Lothian Major Incident Plan	2013	2016
Severe Weather Plan	2011	2014
Major Accident Hazard Pipelines Emergency Plan	2013	2016
Control of Major Accident Hazard Off Site Emergency Plan	2013	2016
Livingston Shopping Centre Emergency Plan	2009	2014

East Lothian Council	Last Review Date	Next Review Date
Business Continuity Plan	2012	2014
Torness Off Site Emergency Plan	2012	2014
Corporate Emergency Plan	2012	2014
Chemical Incident Response	2009	
Oil Pollution Plan	2009	2014
Severe weather response plan	2013	2014
Pipeline Plan		
Rabies Emergency Plan	2009	2014

Midlothian Council	Last Review Date	Next Review Date
Midlothian Registered Care Homes Stage 2 Plan	2012	2013
Midlothian Council Business Continuity Plans (Midlothian Council Services)	2012	2014
Recovery Plan*	2012	2014
Midlothian Council Emergency Plan(* now incorporating Recovery Plan)	2012	2014
Midlothian Council's Registrars Emergency Plan	2012	2013
Fuel Plan	2012	2013
LBSCG Pandemic Influenza guidelines	???	???
Midlothian Council Avian Flu Plan	20??	20??
Midlothian Council Severe Weather Plan	2012	2013
Pipeline plan	2013 review current	2015(tbc)
Midlothian Council Food Service Plan	2012	2013
LBSCG Disease of Animals Plan	2010	2013
Rabies Outbreak Contingency Plan	2010	2013

Appendix IV : Significant public health incidents or outbreaks 2012-2013

NHS Lothian

Business Continuity:

Incident/Outbreak	Improvement to plans
Pandemic Flu	
Chemical / radiological and biological	
Chemical Incident at Pallet Factory near hospital – Denatonium Benzoate	
Tyre Fire in quarry – SEPA investigation in to black deposits landing on cars, children, cats and dogs etc.	
Cyrptosporidium – cases had all attended city farm to pet baby lambs.	
Legionnaires' Disease outbreak – cooling towers investigated	
Cyanide contaminated body	
Chemical suicide in city hotel	
Chemical spill at hospital	
Food	
Outbreak of Scombroid Fish Poisoning in Lothian	
Cases of Salmonella branderup linked to Malysian Restaurant	
Salmonella Singapore investigated	
Specific Diseases	
Outbreak of influenza A in nursing home	
Confirmed case of anthrax in Intravenous drug user (IDU)	
Legionella Longbeachae cases relating to compost/topsoil.	
Health Care Acquired Infections (HAI)	
Clostridium difficile (CDI) positive, Orthopaedics, RIE	

Incident/Outbreak	Improvement to plans
Pertussis HDU RHSC	
MRSA within ITU at St Johns Hospital	
Norovirus at Liberton Hospital	
Information and advice for contacts of confirmed Carbapenem Resistant Enterobacteriaceae (CRE) and Meropenem Resistant Acinetobacter (MRA) case. Information and advice for contacts of confirmed Carbapenem Resistant Enterobacteriaceae (CRE) and Meropenem Resistant Acinetobacter (MRA) case. Acinetobacter baumanii, ward 108, RIE	

Blood Borne Viruses	
Lookback exercise due to lapse in Infection Control procedures in dental practice.	
Tuberculosis	
Increase in TB cases and incidents – 26 incident/outbreaks investigated in two years	
Vaccine Related	

City of Edinburgh Council:

Incident/Outbreak	Improvement to plans
Environmental (EIA)	
Outbreak of Legionellosis in South West Edinburgh	enhanced joint working, revision of national guidance, partner agencies have reviewed their response and resilience capability

West Lothian Council:

Incident/Outbreak	Improvement to plans
Environmental (EIA)	
Redevelopment of former Polkemmet Colliery, Whitburn	
Redevelopment of former Riddochhill Colliery, Blackburn	
Upgrading of Newbridge Junction to Bathgate railway	Heavy overnight engineering works in densely populated areas
Conversion of abandoned railway course / cycle path to operational railway	
Demolition of asbestos clad former 'Edgar Allen' Foundry, Bathgate	
Major Fire at Campbell's Prime Meat, Brock's Way, Broxburn (May 2009)	
Water	
Major Flooding in Broxburn incident	
Food	
Salmonella Outbreak in Chinese Restaurants (2008)	
Sudan dye incidents	
Specific Diseases	

East Lothian Council:

Incident/Outbreak	Improvement to plans
Chemical / radiological and biological	
Unexploded WW2 grenades Incident at Macmeery school(2013)	Review of procedures undertaken
Investigation of Legionella in garden compost (2013)	
Environmental (EIA)	
Various localised oil pollution incidents 2012-13	Review of local harbour oil spill response arrangements

Midlothian Council:

Incident/Outbreak	Improvement to plans
Leak of grouting material into the water – Linked to work being carried out on railway	

LIST OF ACRONYMS		Approved Cod
ACOP	Approved Code of Practice	
AIPG	Avian & Influenza Pandemic Group	
APP	Authority Public Protection	
AQMA	Air Quality Management Area	
BBV	Blood Bourne Viruses	
CBRN	Chemical Biological, Radiological & Nuclear	
CEC	City of Edinburgh Council	
CHI	Community Health Index	
CNS	Central Nervous System	
COSLA	Convention of Scottish Local Authorities	
CPD	Continuing Professional Development	
CPHM	Consultant in Public Health Medicine	
DPH	Director of Public Health	
EC	European Commission	
ECOSS	Electronic Communication of Surveillance in Scotland	
EHO	Environmental Health Officer	
ELC	East Lothian Council	
EMF	Electromagnetic Field	
EPA	Environmental Protection Act	
EU	European Union	
FSA	Food Standards Agency	
GROS	General Register Office for Scotland	
HAI	Healthcare Associated Infection	
HCG	Healthcare Governance Committee	
HEAT	Health Improvement, Efficiency, Access Treatment	
HIV	Human immunodeficiency virus	
HMO	House in Multiple Occupation	
HPS	Health Protection Scotland	
HPT	Health Protection Team	
HPV	Human Papiloma Virus	
HSE	Health and Safety Executive	
IHP	International Health Regulation	
IMT	Incident Management Team	
JCVI	Joint Committee on Vaccination and Immunisation	
LBSCG	Lothian and Borders Scottish Co-ordinating Group	
LDP	Local Delivery Plan	
LICAC	Lothian Infection Control Advisory Committee	
LRP	Local Resilience Partnership	
MC	Midlothian Council	
MCN	Managed Clinical Network	
MMR	Measles, Mumps Rubella	
MRSA	Methicillin Resistant Staphylococcus Aureus	
MTPAS	Mobile Telecommunications Privileged Access Scheme	
NHS	National Health Service	
NSP	Network Service Provider	
PAG	Problem Assessment Group	
REHIS	Royal Environmental Health Institute of Scotland	
RIE	Royal Infirmary of Edinburgh	

LIST OF ACRONYMS		Approved Cod
RRP	Regional Resilience Partnership	
SARS	Severe Acute Respiratory Syndrome	
SAS	Scottish Ambulance Service	
SEISS	Scottish Epidemiology Infection Surveillance System	
SEPA	Scottish Environment Protection Agency	
SG	Scottish Government	
SHPIMS	Scottish Health Protection Information Management System	
SHPIR	Scottish Health Protection Information Resource	
SIDNEY	Scottish Infectious Diseases Notification Electronic eYe	
SIDSS	Scottish Infectious Disease Surveillance System	
SIRS	Scottish Immunisation Recall System	
SOA	Single Outcome Agreement	
STAC	Science and Technical Cell Course	
STI	Sexually transmitted infections	
SW	Scottish Water	
TB	Tuberculosis	
TS	Trading Standards	
VIP	Very important person	
WHIP	Worcestershire Health Informatics Programme	
WHO	World Health Organisation	