Return of Public Health to Local Authorities

• Healthy Lives, Healthy People white paper. Published November 2010 to set out a new approach to public health.

• Responsibility for local health improvement returned to local authorities from 1 April 2013.

• Directors of Public Health and Health and Wellbeing Boards are now located in single and upper tier authorities.

• DsPH are responsible for exercising the LA’s new public health functions and lead on driving health improvement locally.
Local Engagement

- HWB have been established to increase the influence of local people. There is no requirement for district councils to have a seat.

- The range and contribution of public health functions carried out at lower tier level can be invisible at upper tier level.

- Some two-tier local authorities benefit from strong links - but others are in need further development.

- A common pattern appears to be the degree of involvement of district councils on the HWB arrangements. Strong representation equals stronger relationships.
“To protect and improve the nation’s health and to address inequalities, working with national and local government, the NHS, industry, academia, the public and the voluntary and community sector.”
PHE East Midlands

- PHE East Midlands is committed to serve the public health needs of the people in the East Midlands.

- As part of this commitment we are keen to develop further our understanding of the opportunities of working between upper and lower-tier local authorities and how PHE might be able to add value.
The PHOF sets out key indicators of public health from the wider determinants of public health through to those that are aimed at reducing premature mortality.

Focuses on two high level outcomes:

- Increased healthy life expectancy
- Reduced differences in life expectancy and healthy life expectancy between communities
Outcome indicators

• Public health is measured against a framework which sets out 66 health measures covering the full spectrum of public health
• Focusses on outcomes not targets
• Designed to address the causes of the causes of ill health
• LAs and Central Government will be able to see improvements being made and take any action needed
• Indicators help focus understanding of progress year by year nationally and locally on what matters for public health
Air Quality

Andy McParland
Air Pollution

• Air pollution in our towns and cities is a much more serious risk to health than was previously thought, exceeding many other public health priority areas.

• The main health outcomes are cardiovascular diseases and respiratory diseases including cancers.

• The main pollutants of concern are particulates and nitrogen dioxide. Other pollutants exist in our environment – such as ozone, environmental lead, polycyclic aromatic hydrocarbons etc – but are already well controlled or, in the case of ozone, are mainly determined by weather conditions.
Particulate Matter

- PM comes from combustion, friction of engine components and brakes, tyres on road surfaces, and other sources like construction and agriculture. It comprises soot, part burnt diesel and petrol compounds that form benzene-based carcinogens, heavy metals, silica, bitumen, rubber and organic and other waste matter ground up on road surfaces.

- PM is so fine that the particles float in air to form an aerosol which can be inhaled deep into lungs, and many of the particles pass through the lungs into the blood. They have been found in the central nervous system, heart, kidneys, liver and in unborn babies.

- $\text{PM}_{10}$ are particles smaller than 10$\mu$m. The $\text{PM}_{10}$ larger than 2.5$\mu$m are known as coarse PM. $\text{PM}_{2.5}$ are smaller than 2.5$\mu$m in aerodynamic diameter, and are called fine PM.

- Ultrafine PM are smaller than 0.1$\mu$m.
Nitrogen Dioxide

- Combustion processes (e.g. inside motor vehicles or in furnaces or boilers) emit a mixture of nitrogen oxides, primarily nitric oxide which is quickly oxidised in the atmosphere to NO$_2$, a brown gas.

- NO$_2$ has a variety of health impacts. It is a respiratory irritant which leads to bronchitic symptoms, increasing mortality rates in the population.

- In the presence of sunlight, it reacts with hydrocarbons to produce photochemical pollutants such as ozone. NO$_2$ can be further oxidised in air to form acidic gases, which contribute towards the generation of acid rain.
Air pollution is the environmental factor with the greatest impact on health in Europe and is responsible for the largest burden of environment-related disease
How has understanding changed in recent years?

In 2005
When EU limits were set

**PM$_{10}$ particles**
From lab and epidemiological studies **thought** to cause respiratory and cardiovascular (CVD) problems. Well measured.

**PM$_{2.5}$ particles**
Thought to be the best way of quantifying the impacts of the air pollution. An epidemiological study suggested it **could cause 800-8,000 premature deaths in London** per year. Not measured widely.

**PM$_{0.1}$ particles**
Lab evidence suggests it might be very poisonous to humans. Not measured at all.

**NO$_x$ & O$_3$ gas**
O$_3$ peaks induce asthma. NO$_x$ possibly harmful, but unclear if it’s a separate issue to PM.

In 2013

**PM$_{10}$ particles**
Certain to cause lung cancer, asthma, bronchitis symptoms especially in the young.

**PM$_{2.5}$ particles**
Certain to cause CVD, stroke, lung cancer, respiratory disease. PHE estimate it causes **3,300 premature deaths in London** each year. Poor, children, women affected more. Associated with cognitive impairment, Parkinsons, Alzheimers, Type II diabetes, adverse birth outcomes.

**PM$_{0.1}$ particles**
Probable evidence this is the main cause of harm, passing throughout the body and driving system inflammation.

**Vehicle Air Pollution**
Officially listed as a Class 1 carcinogen. Traffic count alone has quantifiable health outcomes.

**Vehicle motion & PM**
Now thought to cause as much as 75% of all PM fractions.

**NO$_x$ & O$_3$ gas**
Causes respiratory disease at levels found in London and most UK and EU cities. CVD, COPD, diabetes patients more vulnerable.
The indicator relates to the mortality effect of man made particulate air pollution expressed as the percentage mortality fraction attributable to particulate matter (PM$_{2.5}$).

• COMEAP 2010 – long term exposure to PM2.5 equated to an effect equivalent to 29,000 UK deaths in 2008, at typical ages

• 2,222 people killed in UK road traffic collisions in 2009

• 15,479 deaths attributable to alcohol in England in 2010$^1$

• 81,700 deaths wholly or partially attributable to smoking in England in 2010$^2$.

1. Department of Health - Health Committee Written evidence July 2012
## Fatalities resulting from road accidents in Great Britain

<table>
<thead>
<tr>
<th>Year</th>
<th>Pedestrian</th>
<th>Pedal cyclist</th>
<th>Motorcyclist/ rider/passenger</th>
<th>Car occupant</th>
<th>Other road user</th>
<th>All road user groups</th>
<th>Percentage change from previous year</th>
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<tbody>
<tr>
<td>2000</td>
<td>857</td>
<td>127</td>
<td>605</td>
<td>1,665</td>
<td>155</td>
<td>3,409</td>
<td>-0.4</td>
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<td>2001</td>
<td>826</td>
<td>138</td>
<td>583</td>
<td>1,749</td>
<td>154</td>
<td>3,450</td>
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<td>2002</td>
<td>775</td>
<td>130</td>
<td>609</td>
<td>1,747</td>
<td>170</td>
<td>3,431</td>
<td>-0.6</td>
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<td>2003</td>
<td>774</td>
<td>114</td>
<td>693</td>
<td>1,769</td>
<td>158</td>
<td>3,508</td>
<td>2.2</td>
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<td>2004</td>
<td>671</td>
<td>134</td>
<td>585</td>
<td>1,671</td>
<td>160</td>
<td>3,221</td>
<td>-8.2</td>
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<tr>
<td>2005</td>
<td>671</td>
<td>148</td>
<td>569</td>
<td>1,675</td>
<td>138</td>
<td>3,201</td>
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<td>2006</td>
<td>675</td>
<td>146</td>
<td>599</td>
<td>1,612</td>
<td>140</td>
<td>3,172</td>
<td>-0.9</td>
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<td>2007</td>
<td>646</td>
<td>136</td>
<td>588</td>
<td>1,432</td>
<td>144</td>
<td>2,946</td>
<td>-7.1</td>
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<tr>
<td>2008</td>
<td>572</td>
<td>115</td>
<td>493</td>
<td>1,257</td>
<td>101</td>
<td>2,538</td>
<td>-13.8</td>
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<tr>
<td>2009</td>
<td>500</td>
<td>104</td>
<td>472</td>
<td>1,059</td>
<td>87</td>
<td>2,222</td>
<td>-12.5</td>
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<tr>
<td>2010</td>
<td>405</td>
<td>111</td>
<td>403</td>
<td>835</td>
<td>96</td>
<td>1,850</td>
<td>-16.7</td>
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<tr>
<td>2011</td>
<td>453</td>
<td>107</td>
<td>362</td>
<td>883</td>
<td>96</td>
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<tr>
<td>2012</td>
<td>420</td>
<td>118</td>
<td>328</td>
<td>801</td>
<td>87</td>
<td>1,754</td>
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<tr>
<td>2013</td>
<td>398</td>
<td>109</td>
<td>331</td>
<td>785</td>
<td>90</td>
<td>1,713</td>
<td>-2.3</td>
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</table>

PHOF Tool

Public Health England

Overarching indicators | Wider determinants of health | Health improvement | Health protection | Healthcare and premature mortality

Overview | Compare indicators | Map | Trends | Compare areas | Area profiles | Definitions | Inequalities | Download

Area type: County & UA | Areas grouped by: Region | Benchmark: Region
Area: Nottingham | Region: East Midlands

Search for an area

Compared with benchmark: Better | Similar | Worse | Lower | Similar | Higher | Not compared

* a note is attached to the value, hover over to see more details

Download table image

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Period</th>
<th>England</th>
<th>East Midlands region</th>
<th>Derby</th>
<th>Derbyshire</th>
<th>Leicester</th>
<th>Leicestershire</th>
<th>Lincolnshire</th>
<th>Northamptonshire</th>
<th>Nottingham</th>
<th>Rutland</th>
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<tbody>
<tr>
<td>3.01 - Fraction of mortality attributable to particulate air pollution</td>
<td>2012</td>
<td>5.1</td>
<td>5.2</td>
<td>5.5</td>
<td>4.8</td>
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<td>5.2</td>
<td>5.1</td>
<td>5.3</td>
<td>5.8</td>
<td>5.2</td>
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<tr>
<td>3.02 - Chlamydia detection rate (15-24 year olds)</td>
<td>2013</td>
<td>2072</td>
<td>2172</td>
<td>2304</td>
<td>2225</td>
<td>1878</td>
<td>1718</td>
<td>1992</td>
<td>2174</td>
<td>2916</td>
<td>2251</td>
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</table>
### Estimating Local Mortality Burdens

<table>
<thead>
<tr>
<th>Area</th>
<th>Population age 25+</th>
<th>Deaths age 25+</th>
<th>Mean anthropogenic PM$_{2.5}$ (µg m$^{-3}$)$^1$</th>
<th>Attributable fraction$^2$ %</th>
<th>Attributable deaths$^3$ age 25+</th>
<th>Associated life-years lost$^4$</th>
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<tbody>
<tr>
<td>Leicester UA</td>
<td>189467</td>
<td>2448</td>
<td>11.7</td>
<td>6.6</td>
<td>162</td>
<td>1736</td>
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<tr>
<td>Nottingham UA</td>
<td>183233</td>
<td>2332</td>
<td>11.4</td>
<td>6.4</td>
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<td>1559</td>
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<tr>
<td>Rutland UA</td>
<td>26500</td>
<td>333</td>
<td>9.1</td>
<td>5.1</td>
<td>17</td>
<td>183</td>
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<tr>
<td>Leicestershire CC</td>
<td>450333</td>
<td>5499</td>
<td>10.1</td>
<td>5.7</td>
<td>313</td>
<td>3322</td>
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<tr>
<td>Blaby</td>
<td>66933</td>
<td>759</td>
<td>10.5</td>
<td>5.9</td>
<td>45</td>
<td>517</td>
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<td>Charnwood</td>
<td>108833</td>
<td>1332</td>
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<td>5.9</td>
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<td>681</td>
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<td>5.4</td>
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<td>403</td>
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<td>Hinckley and Bosworth</td>
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<td>51</td>
<td>529</td>
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<td>425</td>
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<td>5.3</td>
<td>23</td>
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<td>North West Leicestershire</td>
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<td>846</td>
<td>9.9</td>
<td>5.6</td>
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<td>487</td>
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<td>Oadby and Wigston</td>
<td>38300</td>
<td>550</td>
<td>10.5</td>
<td>5.9</td>
<td>33</td>
<td>316</td>
</tr>
</tbody>
</table>
Impact at the local level of the PHOF

- The air pollution indicator is beginning to be of real value in promoting air quality at local level.

- DsPH are able to prioritise action on air quality in their local area to help reduce the health burden from air pollution.

- Efficient air quality management requires strong multidisciplinary co-operation and DsPH will be looking for solutions and a joined up approach.
Public Health England’s Air Pollution Objective

Develop a programme in support of national and local government to reduce 25,000 deaths each year in England attributable to air pollution.

Public Health England is keen to ensure that the design and development of action on air pollution occurs at all appropriate levels, local, regional and national, including creating opportunities for actions to be co-ordinated by all stakeholders.
DsPH have the potential to become key local champions of air quality improvement.

EHPs are uniquely placed to actively contribute to a partnership approach to secure meaningful interventions to reduce exposure to air pollution. We must:

• recognise and understand the DPH role and ensure effective communications.

• embrace the wider public health agenda and seek to raise awareness and influence cross cutting issues at every opportunity.

• consider impacts to health in addition to compliance with regulatory requirements.
DEFRA Resource for DsPH on local air quality and health impact information

- Represents the outputs from the project ‘Developing communication methods for localised air quality and health impact information - AQ1010’ include: a toolkit of resources and two research reports which informed the development of these resources.

- They were produced in collaboration with the Department of Health, Department for Transport, Public Health England, the Local Government Association and the Healthy Air Campaign.
• The latest evidence and techniques on air pollution - Includes the role of public health and techniques to get a better understanding of local issues.

• Communicating with the public - Describes a set of principles for communicating the nature, causes, and consequences of air pollution and engagement on action.

• Engaging local decision-makers - Identifies the key stakeholders, their potential roles and how to encourage action.

• Understanding local air pollution - Sets out simple steps required to understand the health impacts in their localities.
There is a wealth of air quality knowledge and experience at local authority district levels.

Innovative work is being undertaken in EM, the sharing of good practice and mutual support across county boundaries is patchy.

Directors of Public Health are in many cases very remote from air quality functions with many carried out at the district tier for 2 tier LAs.
East Midlands Air Quality Network Update

Stuart Aldridge

Environmental Hazards and Emergencies Department - Centre for Radiation, Chemical and Environmental Hazards, PHE

CIEH East Midlands 5+1 July 2015
PHE Network Aims

• To nurture a placed based approach in the East Midlands by working alongside our partners to develop a good understanding of local priorities and tailor our support accordingly.

• Foster working relationships across authorities and begin thinking about the problem at a regional scale and ways to share good practise and collective working.

• Explore gaps in the existing guidance and intervention support in order to prioritise future PHE locality working and also to inform the development of the PHE national work plan.
Network Update

- Group membership established

- Inaugural meeting to be arranged. PHE to provide (initial) chairing, venue and secretariat.

- Structure, Terms of Reference and workplan to be agreed at the inaugural meeting.
Questions?

Stuart.Aldridge@PHE.gov.uk

0115 9627039
Defra (2015) Developing communication methods for localised air quality and health impact information - AQ1010


Public Health England Outcomes Framework data tool: http://www.phoutcomes.info/ (including indicator 3.01 – Fraction of mortality attributable to particulate air pollution)

Committee on the Medical Effects of Air Pollutants (COMEAP) webpage: https://www.gov.uk/government/groups/committee-on-the-medical-effects-of-air-pollutants-comeap