An introduction to the London Health Observatory and the Health Inequalities Intervention Tool

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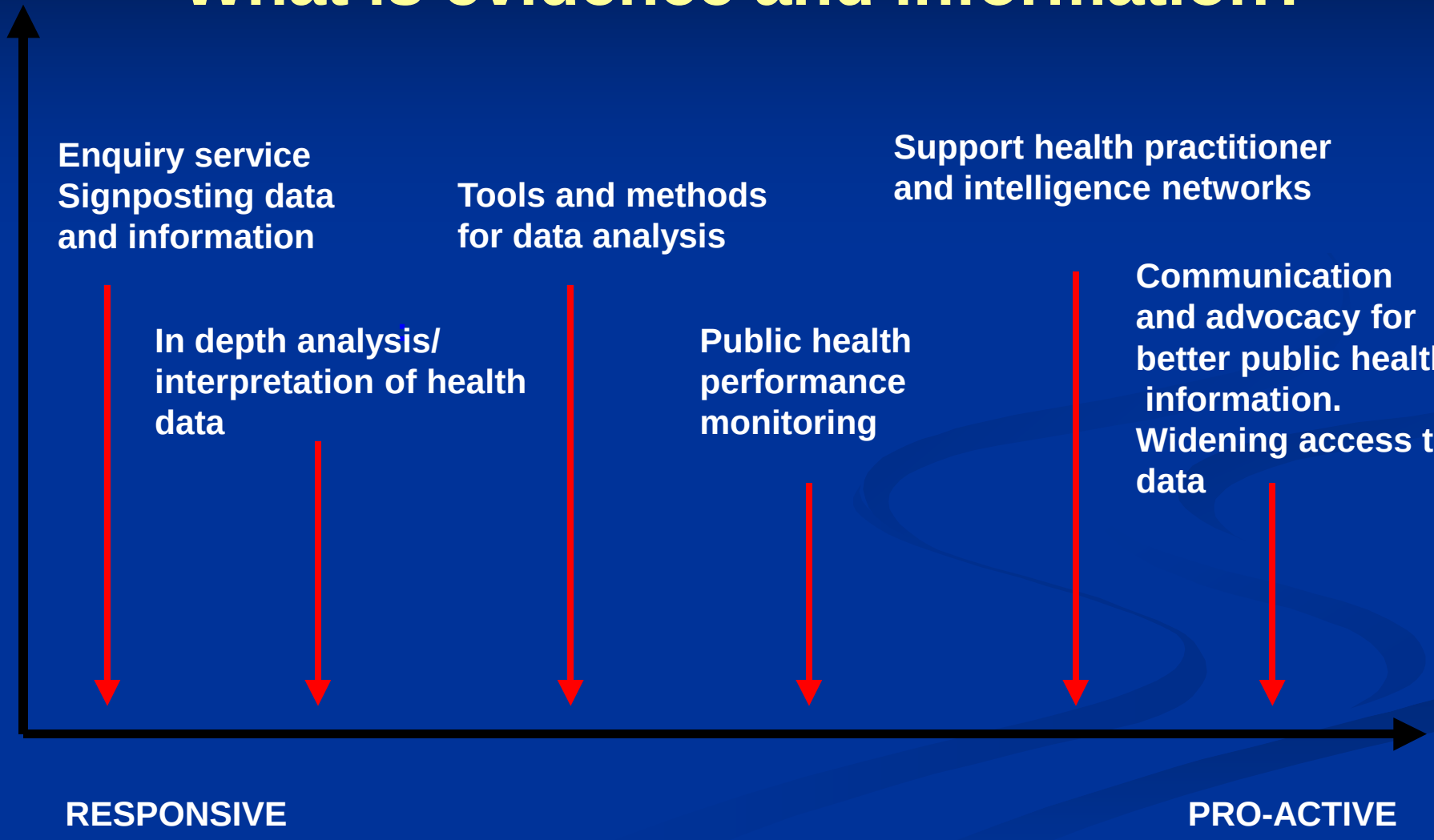
Structure of the presentation

- What is a public health observatory (PHO)?
- The role and functions of UK PHOs
- Overview of the London Health Observatory
- Overview of the Health Inequalities Intervention Tool

What is a public health observatory?

- Provide evidence and information on
  - Health of the population
  - Health determinants
  - Health inequalities
- For
  - Public health practitioners
  - Policy makers
  - Community representatives
- To use to
  - Prevent disease
  - Promote health
  - Prolong life

What is evidence and information?



History of PHOs in the UK

- English PHOs were established in 2000 following a Government White Paper.
- They were:
  - Established by the Government using national money.
  - Established in each of the 9 regions of England.
  - Required to work in collaboration and formed the Association of Public Health Observatories (APHO).
- PHOs were later established in Scotland, Wales and Ireland. These PHOs are now part of APHO.
- The APHO Executive Board contains representatives from all PHOs in the UK.

The UK Public Health Observatories

There is one PHO in each region of England, and one in each of Scotland, Wales and Ireland

The core functions of PHOs in England

To work in partnership with researchers, regional and local health policy makers and practitioners to:

- Monitor trends in health and its determinants, highlighting areas for action
- Highlight future health problems
- Assess the health impact of potential and past policies
- Draw together information from different sources and to identify gaps in information
- Provide standard sets of community health information at local government and regional level
- To support the development of skills in public health practitioners and NHS staff, for example in equity audits and health impact assessments, and build capacity in public health intelligence.

Adapted from “Saving Lives - Our Healthier Nation” a “Choosing Health – Making Healthier Choices Easier”

Advantages of the APHO Network

- **A large concentration of expertise**: over 150 public health intelligence professionals.
- **A wide range of partners**: ensures relevance of outputs and range of inputs.
- **Quality assurance**: a mechanism for quality control and peer review.
- **Increased outputs**: one PHO can undertake work on behalf of all others.
- **Specialized knowledge**: Each PHO has a number of ‘lead areas’ and therefore develops specialized skills.

What is a ‘Lead Area’?

- PHOs generally undertake regional analysis, with comparisons to the national average.
- For lead areas they undertake national analysis on behalf of all other PHOs in England (and sometimes the UK).
- PHOs link and liaise with the national Department of Health and other national organizations on their lead areas.
- Topics were chosen because they are:
  1) a national priority area
  2) a significant health burden.
- Topics were allocated to individual PHOs on the basis of:
  1) specific skills and interests in the PHO or
  2) specific health issues in the regions.

English PHO lead areas

North East	Mental health Offender health Europe and International Learning disabilities	**East Midlands**	Food and nutrition Renal disease Teenage pregnancy Cancer
North West	Drug misuse Alcohol Crime and violence Dental health	**London**	Ethnic minorities Health inequalities Tobacco
West Midlands	Environment Older people Social care	**Eastern**	Primary care Sustainable development Chronic obstructive pulmonary disease
South West	Sexual health Injuries End of life	**South East**	Physical activity and obesity Transport Coronary heart disease Stroke
Yorkshire and Humber	Children and young people Diabetes Health economics		

Diversity

- Hosting arrangements – primary care trusts, hospital trusts, universities
- Funding
- Regional stakeholders – public health, commissioning, local government, national government
- Sub-units - national drug treatment monitoring systems, quality observatories, cancer registries, specialist observatories
- Skill sets – analytical, web development, social marketing, communications, training
- Regional health priorities

LONDON'S POPULATION AND DIVERSITY
Key Facts

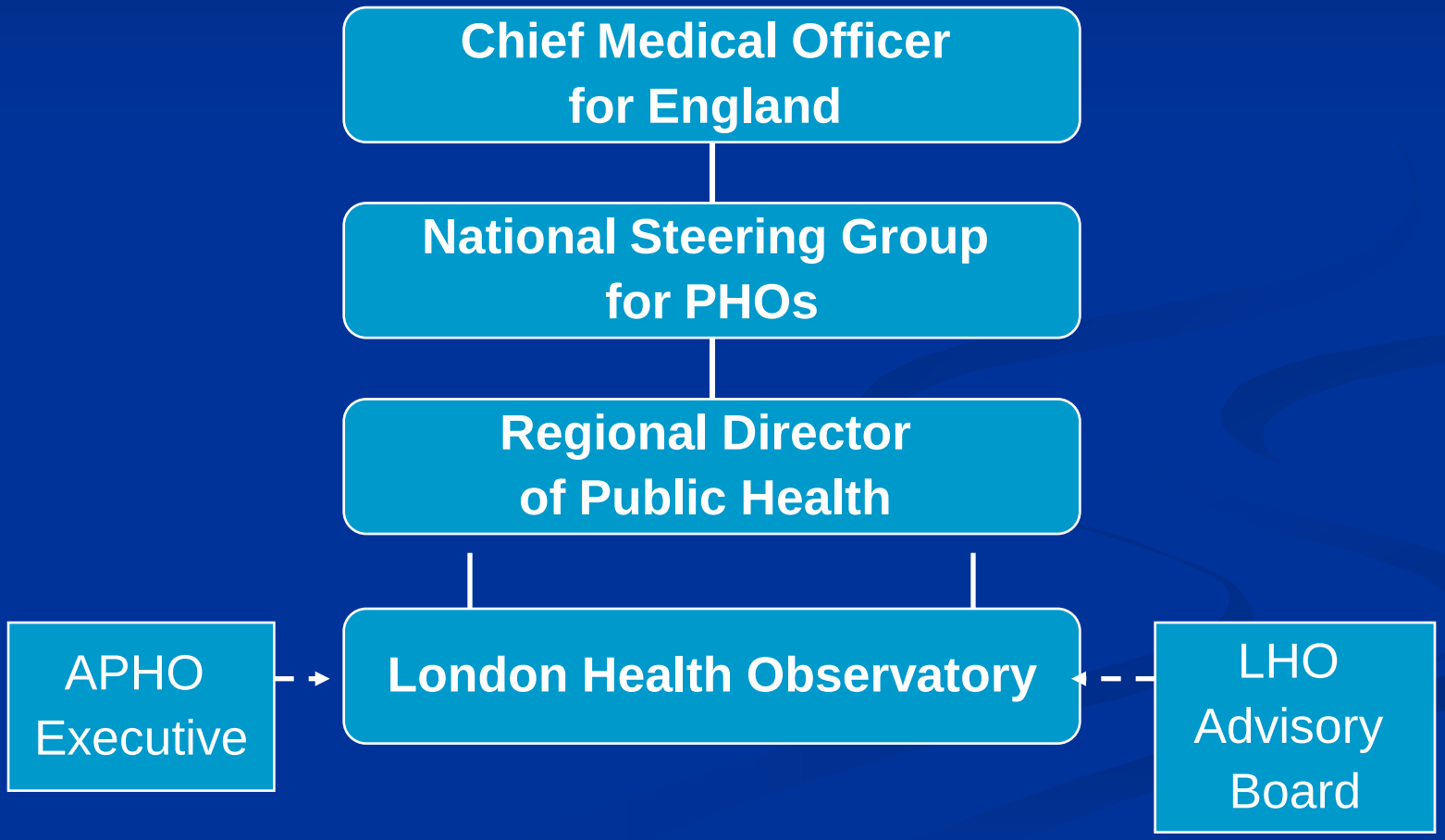
- 7.55 million resident population in Greater London
- Highly ethnically diverse with 42% from an ethnic minority group
- More than 90 different ethnic groups and 300 different languages spoken
- Home to many refugees and asylum seekers
- Highly mobile population
- 1.1 million daily commuters
- Approximately 15 million visits to London by overseas residents every year

LONDON'S GEOGRAPHY
London boroughs (local authorities) and acute hospital trusts

1 - Royal Free Hampstead
2 - Royal National Orthopaedic Hospital
3 - North Middlesex University Hospital
4 - The Hillingdon Hospital
5 - Kingston Hospital
6 - Ealing Hospital
7 - Barking, Havering And Redbridge Hospitals
8 - West Middlesex University
9 - Queen Elizabeth Hospital
10 - Bromley Hospitals
11 - Whipps Cross University Hospital
12 - Queen Mary's Sidcup
13 - Guy's And St Thomas'
14 - The Lewisham Hospital
15 - St Mary's
16 - Mayday Healthcare
17 - St George's Healthcare
18 - King's College Hospital
19 - The Whittington Hospital
20 - Newham Healthcare
21 - Barts And The London
22 - Tavistock And Portman
23 - Great Ormond Street Hospital
24 - Moorfields Eye Hospital
25 - The Royal Marsden
26 - Chelsea And Westminster Healthcare
27 - Hammersmith Hospitals
28 - Homerton University Hospital
29 - University College London Hosp
30 - Royal Brompton And Harefield
31 - North West London Hospitals
32 - Barnet And Chase Farm Hospitals
33 - Epsom And St Helier University Hospitals

- There are 33 main acute hospitals in London
- There are 31 Primary Care Trusts (PCTs) coterminous with all 32 London Boroughs (local authorities). PCTs commission acute services, provide community services and manage/commission primary healthcare for Londoners.

LHO Governance



Summary of lead area activity 2010

Topic	Activity	Web address
Health Inequalities	The health inequalities intervention toolkit (March 2010)	http://www.lho.org.uk/LHO_Topics/Analytic_Tools/HealthInequalitiesInterventionToolkit.aspx
	Further updates to the local basket of inequalities indicators (until April only)	http://www.lho.org.uk/LHO_Topics/Analytic_Tools/BasketOfIndicatorsDataTool.aspx
	The London Regional Health profile	http://www.apho.org.uk/resource/view.aspx?RID=95272
	Development of indicators related to Marmot Review indicator framework	http://www.marmotreview.org/AssetLibrary/pdfs/targets%20and%20measurements/framework%20of%20indicators.pdf
	London analysis of indicators related to the Marmot review national indicators	Coming soon
Tobacco	The local tobacco control profiles for England	http://www.lho.org.uk/LHO_Topics/Analytic_Tools/TobaccoControlProfiles/
Ethnicity	A paper summarising possibilities for the ethnicity indicator in Health Profiles 2011	Coming soon

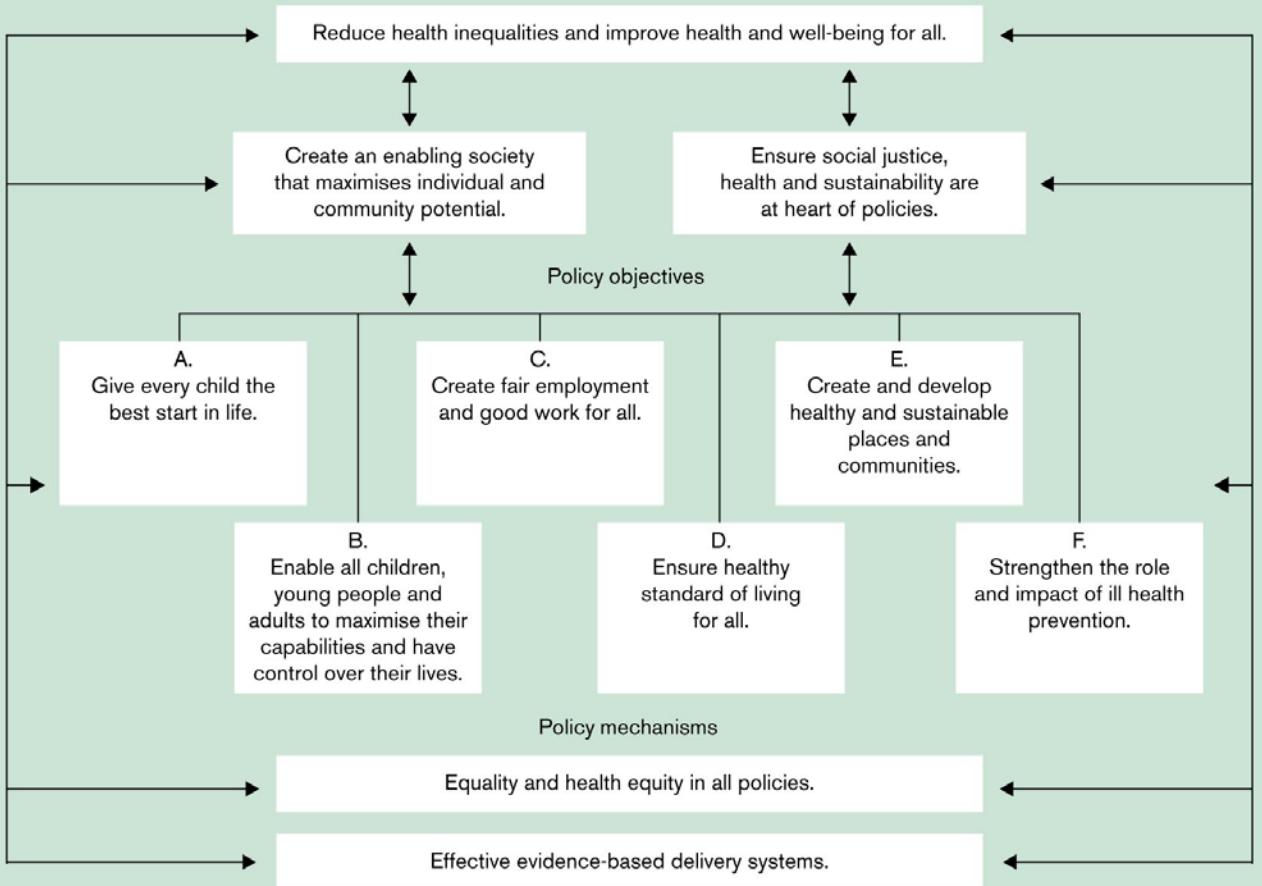
London health profile – Health determinants in London compared to England average

Indicator	England	South East	East of England	South West	East Midlands	London	North East	Yorkshire and The Humber	West Midlands	North West
1 Deprivation	19.9	5.9	6.2	9.2	16.6	28.5	33.6	27.2	27.4	31.7
2 Children in poverty *	22.4	15.4	16.9	16.9	19.5	33.9	26.0	23.0	24.8	25.0
3 Statutory homelessness	4.4	2.8	3.5	3.6	3.7	6.8	5.2	4.2	5.8	4.4
4 GCSE achievement (5 A*-C) *	60.1	62.0	61.2	59.5	57.9	60.9	60.5	57.8	59.3	60.3
5 Violent crime	19.3	18.6	14.6	17.2	18.3	24.3	18.8	20.8	19.7	19.7

- Deprivation is a lot higher than average.
- Over 33.9% of London's children are living in poverty, much greater than average.
- Homelessness and violent crime are high.
- Exam (GCSE) achievement is close to the England average.

Strategic Review of Health Inequalities (Marmot Review) – Conceptual framework

Figure 4 The Conceptual framework

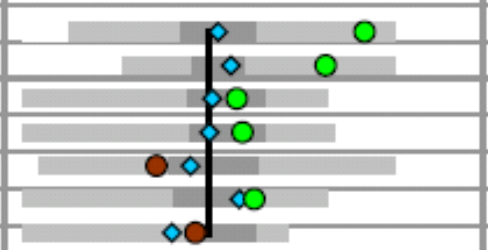


National indicators proposed by the Strategic Review of Health Inequalities (Marmot Review)

- Life expectancy (to capture years of life)
- Health expectancy (to capture the quality of those years)
- Readiness for school (to early years development)
- Young people not in education, employment of training (to capture skill development during the school years and the control that school has over lives)
- Household income (to capture the proportion of households that have an income sufficient for healthy living)
- The Review also proposed an indicator of wellbeing, once one is developed that is suitable for large-scale implementation.

London borough inequality profiles

Westminster

	Indicator	Borough Value	London Avg	England Avg	England Worst	Range	England Best
1	Life expectancy - male	83.4	78.6	78.3	73.7		84.4
2	Life expectancy - female	86.5	83.1	82.3	79.1		89.0
3	Disability-free life expectancy - male	63.4	61.9	61.7	50.5		68.8
4	Disability-free life expectancy - female	65.9	64.2	64.2	54.7		70.5
5	Good level of development - children	46.0	49.7	51.7	33.0		72.0
6	Young people who are NEET	5.3	5.8	7.0	13.8		2.6
7	Income deprivation	17.4	20.6	15.6	41.1		4.6

Indicator Notes

1 & 2 Life expectancy at birth (years), 2007-2009

3 & 4 Disability-free life expectancy at birth (years), 2001

5 Percentage of children with a teacher asessment of a 'good level of development' in the year they turn five

6 Percentage of young people aged 16-19 who are not in education, employment or training

7 Percentage of people in income deprived households (as defined by receipt of selected benefits in the Income Domain of the Index of Mutiple Deprivation 2007)

The former national health inequalities targets in England

- By 2010 to reduce by at least 10% the gap in infant mortality between “routine and manual groups” and the population as a whole.

- By 2010 to reduce by at least 10% the gap between the fifth of local authorities with the lowest life expectancy at birth (Spearhead local authorities) and the population as a whole.

Index of multiple deprivation (IMD)

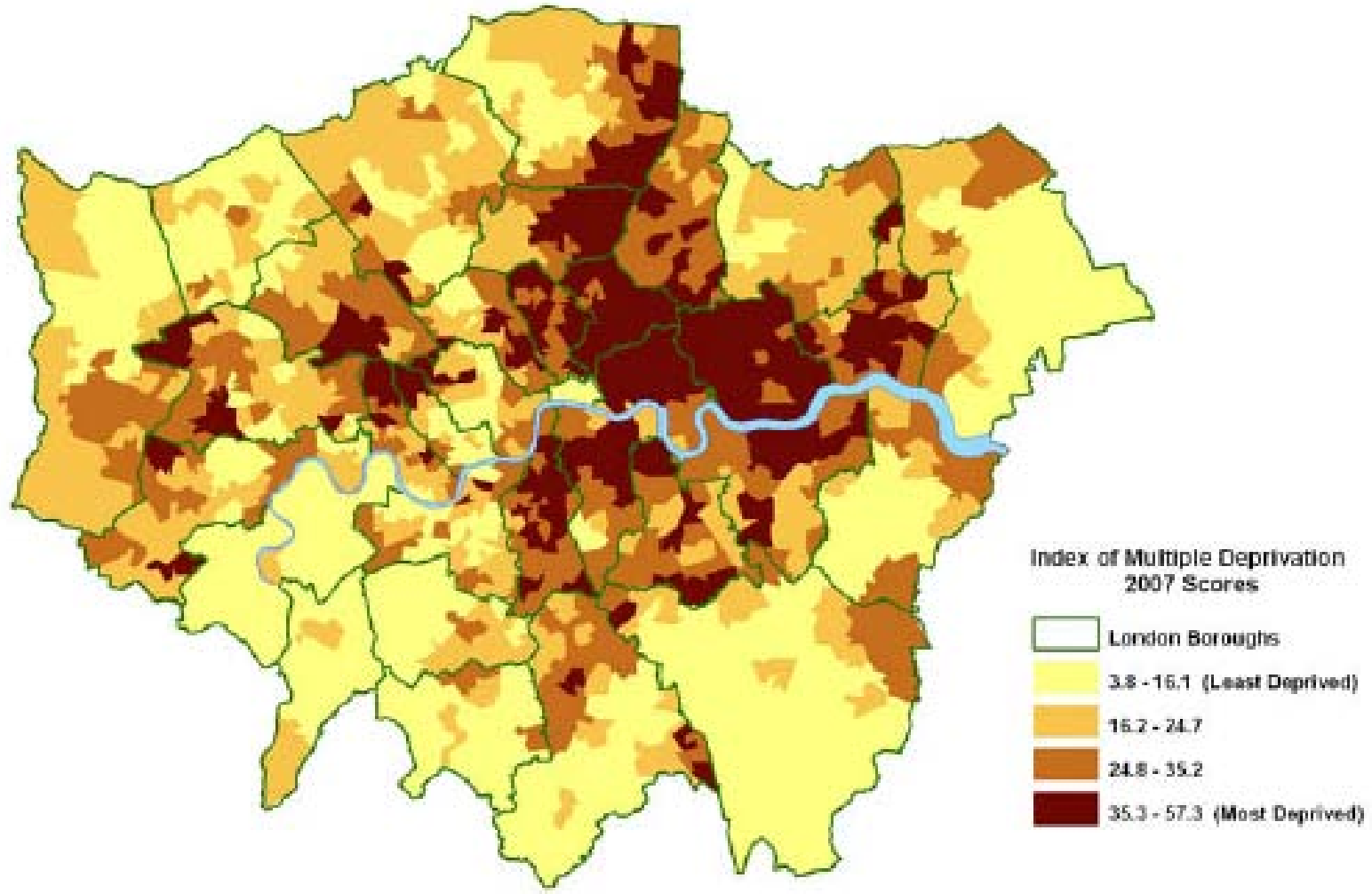
- Lower layer super output area (LSOA) measure of multiple deprivation
- Local authority figures are weighted averages of the LSOAs
- Comprised from information on people living in the area
- Seven domains:
  - Income deprivation
  - Employment deprivation
  - Health deprivation and disability
  - Education, skills and training deprivation
  - Barriers to housing and services
  - Living environment deprivation
  - Crime
- A weighted area level aggregate of these specific dimensions

IMD – weighting of the domains

Domain	Weighting
Income deprivation	22.5%
Employment deprivation	22.5%
Health deprivation and disability	13.5%
Education, skills and training deprivation	13.5%
Barriers to housing and services	9.3%
Crime	9.3%
Living environment deprivation	9.3%

http://www.communities.gov.uk/publications/communities/indicesdeprivation07

IMD by LSOA in London



Spearhead local authorities in London

Health Inequalities Intervention Toolkit

1. Spearhead Tool – Life expectancy gaps
2. Spearhead Tool – Commissioning interventions
3. Infant Mortality Tool
4. Intervention Tool for All Areas – Life expectancy gaps and commissioning interventions for all areas (not just spearheads)

1. Spearhead Tool – Life expectancy gaps

- Provides information on current life expectancy in spearhead local authorities
- Quantifies the current life expectancy gap at birth between individual spearhead local authorities and England
- Quantifies the diseases and age groups contributing to the life expectancy gap between spearhead local authorities and England
- Models the effect of five high impact interventions on closing the life expectancy gap

Current life expectancy and gaps (2006-08) - examples

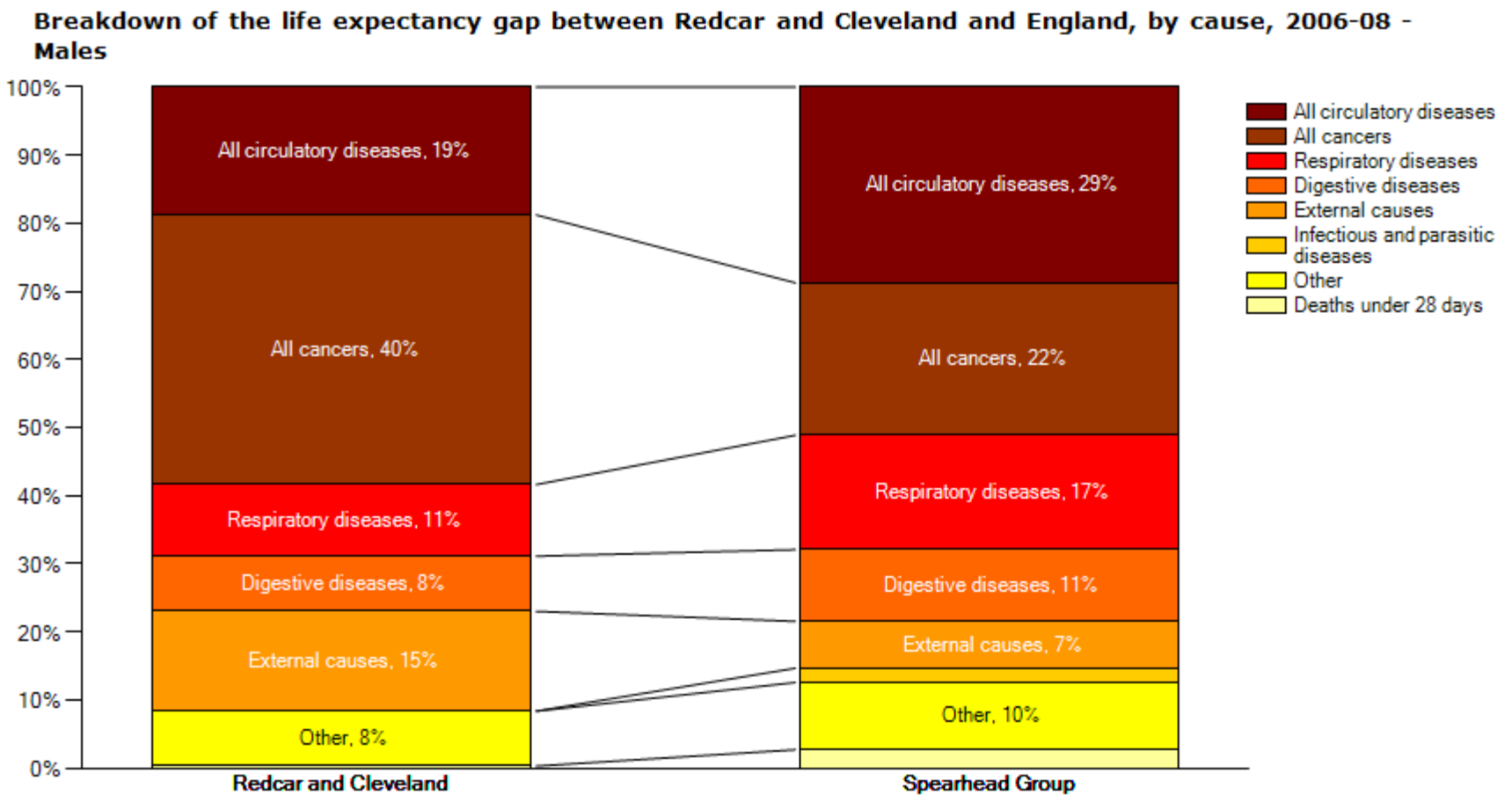
Greenwich local authority

Current life expectancy status:

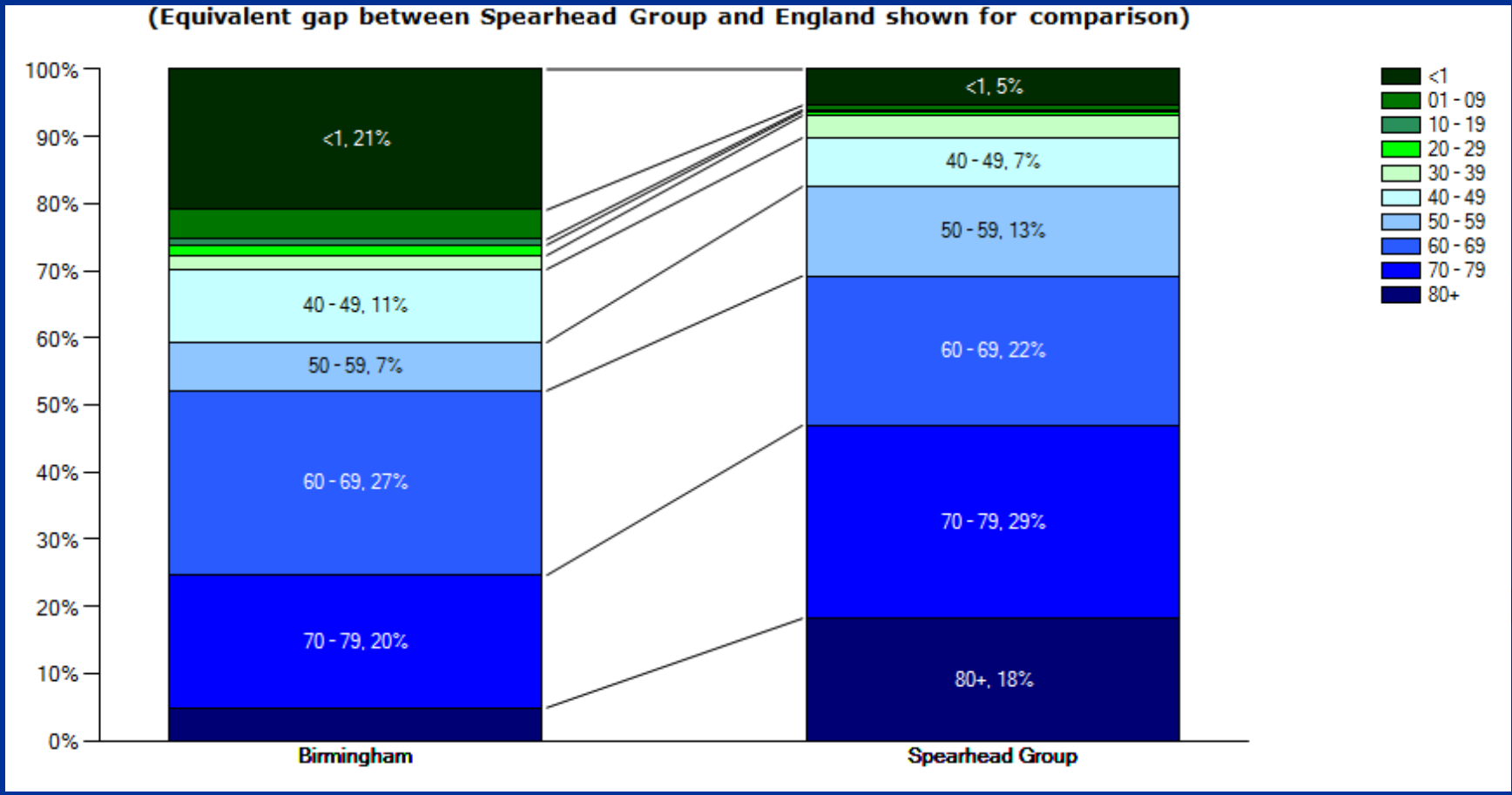
Males Off Track Females On Track

Spearhead local authority	Male life expectancy (years)	Relative gap with England
England	**77.9**	
Spearhead Group	75.8	2.7%
Greenwich	75.4	3.2%

Life expectancy gap - by cause of death Redcar and Cleveland



Life expectancy gap - by age group Birmingham



2. Spearhead tool – Commissioning interventions

- Number of smokers quitting through NHS stop smoking services
- Number of people treated for high blood sugar
- Reduce the number of infant deaths
- Number treated for uncontrolled or undiagnosed hypertension (in those without coronary heart disease or stroke)
  - Number treated for high blood cholesterol among those already being treated for hypertension

Why were these interventions chosen?

- They can be directly influenced by local primary care trusts and local authorities
- Data and information on these interventions are readily available
- Work at the Department of Health determined the effect of these interventions on health inequalities nationally. LHO applied this work to local data
- Inclusion of infant mortality links the spearhead tool with the infant mortality tool

Commissioning interventions – an example Redcar and Cleveland, current levels

1,150 smoking quitters

(29,500 smokers)

16,000 males with hypertension

Current male life expectancy **77.2 years**

Commissioning interventions – an example Redcar and Cleveland, interventions

Increase to

1,150 smoking quitters →→→→ 3,000

Treat

16,000 male hypertensives →→→ 5,000

Commissioning interventions – an example Redcar and Cleveland, interventions

1,150 smoking quitters →→→→ 3,000

16,000 male hypertensives →→→ 5,000

If planned interventions are achieved:

Male life expectancy **77.2** →→→ **77.4** years

Percentage narrowing in life expectancy gap with England →→→ 17%

Achieved

Interpretation of commissioning intervention results

- It is a static model
  - It assumes no change in life expectancy in England
  - It assumes no change in life expectancy in the local area due to anything else
- Estimates what life expectancy would be if the interventions had an effect, assuming everything else is constant
  - The impact of smoking cessation is approximately 5+ years
  - The impact of all other interventions more immediate
- The effect of interventions is additive

The former national health inequalities targets in England

- By 2010 to reduce by at least 10% the gap in infant mortality between “routine and manual groups” and the population as a whole.

- By 2010 to reduce by at least 10% the gap between the fifth of local authorities with the lowest life expectancy at birth (Spearhead local authorities) and the population as a whole.

3. Infant mortality tool

- Shows recent trends in infant mortality rates by socio-economic group
- Provides background data on factors that may be associated with deaths in infancy
- Quantifies the gap in infant mortality rates and the contribution of six potentially modifiable factors to the current infant mortality gap
- Allows users to specify modifications to these factors in order to assess the impact of such changes on the infant mortality gap

Infant mortality tool - trends

LHO : Health Inequalities Intervention - Infant Mortality - Microsoft Internet Explorer provided by UKN Group for NHS London

http://www.lho.org.uk/NHII/InfantMortality/Trends_SHA.aspx?sha=q36#ToolStart

File Edit View Favorites Tools Help

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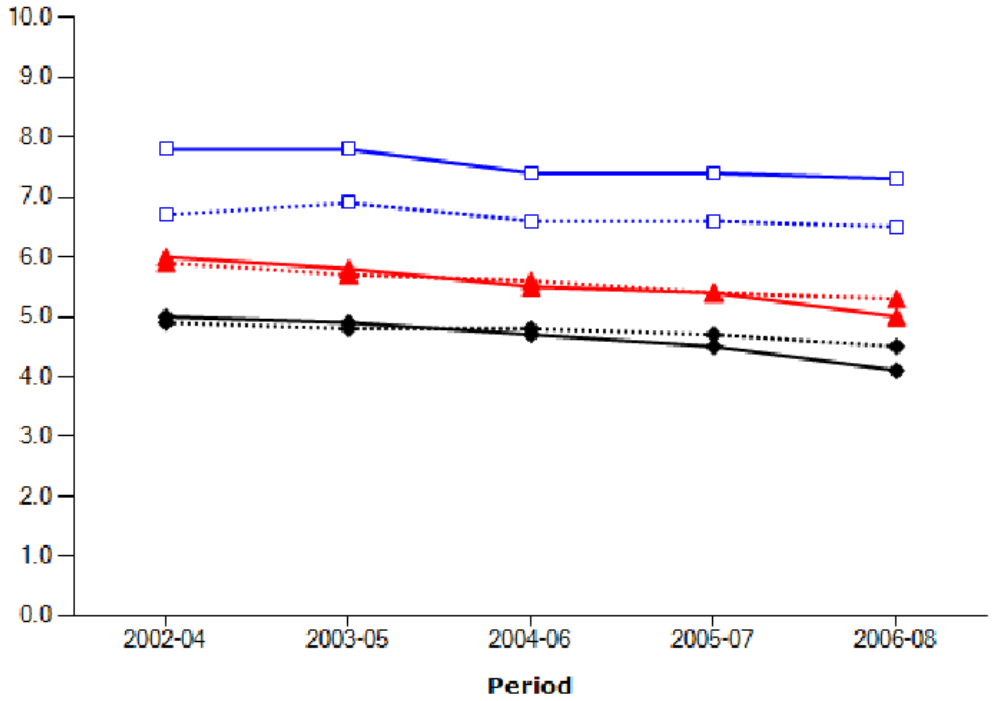
London

View chart data

Three-year average infant mortality rates, 2002-04 to 2006-08

Rate per 1,000 live births



All births within marriage and joint registrations:

- London
- England and Wales

Of which routine and manual:

- London
- England and Wales

Sole registrations:

- London
- England and Wales

Infant mortality tool - background data

- Infant mortality rates by ethnic group
- Low birth weight live births
- Children living in poverty
- Mothers smoking during pregnancy
- Mothers initiating breastfeeding
- Children immunised by their 1st birthday

Infant mortality tool - factors contributing to the infant mortality gap

- Teenage conceptions
- Sudden unexplained death in infancy
- Smoking in pregnancy
- Obesity in women of reproductive age
- Poverty
- Not initiating breastfeeding

Why were these interventions chosen?

- They can be directly influenced by local primary care trusts and local authorities
- Data and information on these interventions are readily available
- Work at the Department of Health determined that these interventions account for a large proportion of the infant mortality gap in England as a whole. LHO applied this work to local data.

Infant mortality tool – factors contributing to the gap

LHO : Health Inequalities Intervention - Infant Mortality - Microsoft Internet Explorer provided by UKN Group for NHS London

http://www.lho.org.uk/NHII/InfantMortality/GapFactors_SHA.aspx?sha=Q36#ToolStart

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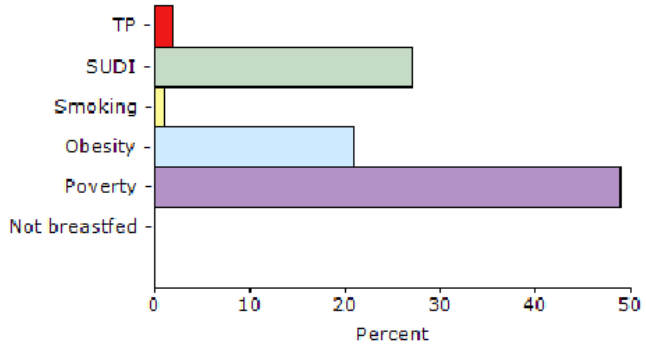
London

Infant mortality in the routine and manual group in the London SHA is higher than for all births within marriage and joint registrations in England and Wales

		Infant deaths per 1,000 live births 2006-08
London	- Routine and manual group	5.0
England and Wales	- All births within marriage and joint registrations	4.5
Gap		0.41

The factors that contribute to the gap* are:

Teenage pregnancy	**2%**
SUDI - sudden unexplained death in infancy	**27%**
Smoking in pregnancy	**1%**
Obesity	**21%**
Poverty	**49%**
Not breastfed	**0%**
Other (factors not modelled)	**0%**



Infant mortality tool – modify interventions Yorkshire and Humber

		Reduce to
30% women smoking in pregnancy	→→→→	25%

If planned interventions are achieved:

Reduction in infant mortality gap →→→ 7.3%

Not enough

Feedback

- Tool looks very nice, although now so many different components it is sometimes hard to follow.
- The information on the breakdown of the gaps is more useful than the modelling of interventions.
- Users would prefer more interventions, even if the methodology is not as robust.
- Users would like even more local information and would like to be able to download their own data.
- It is important to keep the tool up to date.

Conclusions from post project review

- Tool was very well received by the commissioner (Department of Health)
- Tool took longer than expected to produce:
  - Scope changed over time
  - Many dependencies – DH and IT company
- Introduce more formal user testing in future
- Undertake more extensive communications to promote use in future

Further information

Further information on the London Health Observatory www.lho.org.uk

Further information on PHOs in the UK www.apho.org.uk