

Air Quality and Health

Developing an approach for Gloucestershire: The journey so far,
and the role of Health and Wellbeing Board

Dave Mc Conalogue, Consultant in Public Health

Phillip Williams, Lead Commissioner

Overview

- The drivers for air quality and health programme in Gloucestershire
- Health and system impact assessment: describing the issue, and informing a way forward
- Recommendations from the Members' Task Group
- Developing an air quality and health strategy for Gloucestershire
- Governance for the development and implementation of the strategy



Air Quality and Health

- Gloucestershire environment and scrutiny committee
- Member task group on air quality and health
- Health and system impact assessment
 - Relationship between air quality and health
 - The situation in Gloucestershire: What does the data tell us?
 - What interventions work to improve air quality/reduce impact?
 - Local ownership and involvement: understanding the issues and taking control locally – The multi-stakeholder workshop
 - Recommendations for improving air quality and health in Gloucestershire



Review of Air Quality and Health in Gloucestershire

Authors: Dave Mc Conalogue, Phillip Williams, Katherine Martin, Katie Long, Rebecca McKenna

- Scope and introduction: focus on particulate matter and NOx
- Relationship between air quality and health
- Air quality and health in Gloucestershire
- Interventions to improve air quality/mitigate its impact

What do we mean by Air Quality?

- Definition of air quality: “Air quality is a measure of the degree to which the surrounding air in a given location is pollution free from any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere”.
- Sources of poor air quality?
 - Nitrogen Dioxide
 - Particulate Matter (PM_{2.5} and PM₁₀)
 - Carbon Monoxide
 - Carbon Dioxide
 - Sulphur Dioxide
 - O₃



Air Quality and Health

- **Impact from poor air quality:**
 - High burden of disease: 340,000 years of lost life annually (UK)
 - Strong association with health and social care use (£16bn – healthcare, £2.7bn lost productivity)
 - No ‘safe/recommended’ level - dose response effect
 - Short and long term exposures
 - Source of inequality: those who pollute the least have highest exposure
 - PM_{2.5} best understood



Air Quality and Health

Particulate matter:

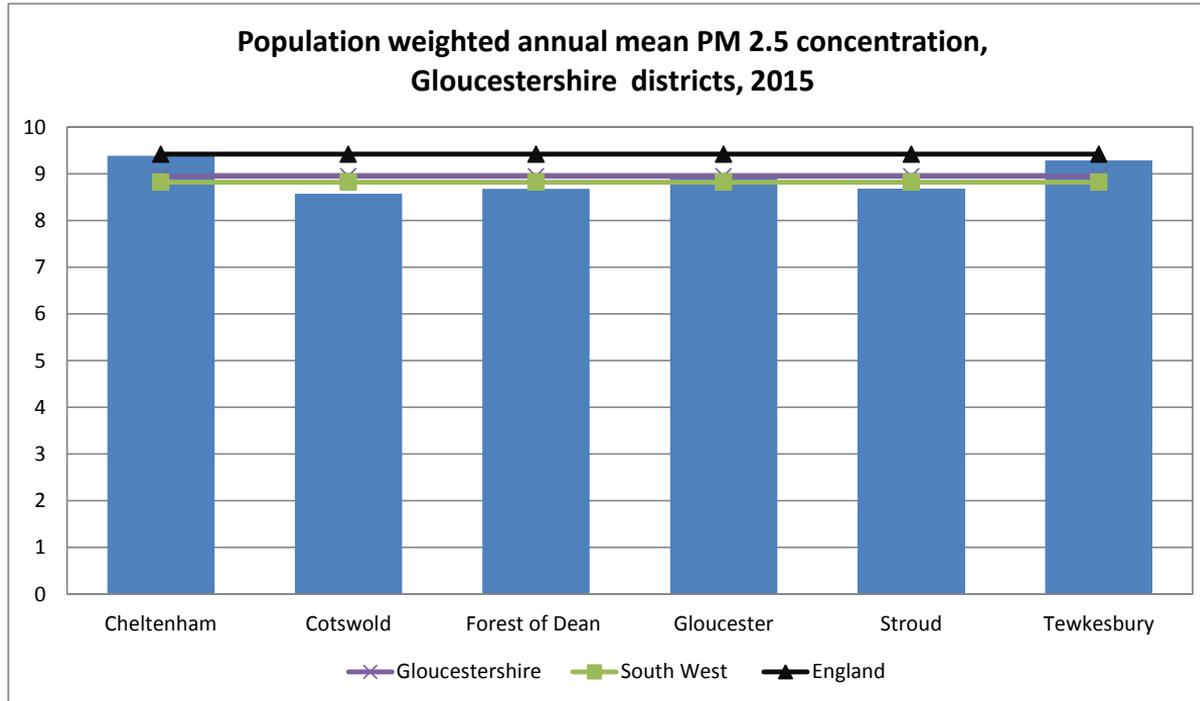
- Short term exposure: myocardial infarction, myocardial ischemia, stroke, arrhythmia, exacerbation of pre-existing pulmonary conditions.
- Longer term exposure: Poorer cardiovascular outcomes (myocardial infarction and angina); development of pulmonary disease (asthma, COPD).
- Developing evidence base: child development, conditions of central nervous system

Nitrogen dioxide:

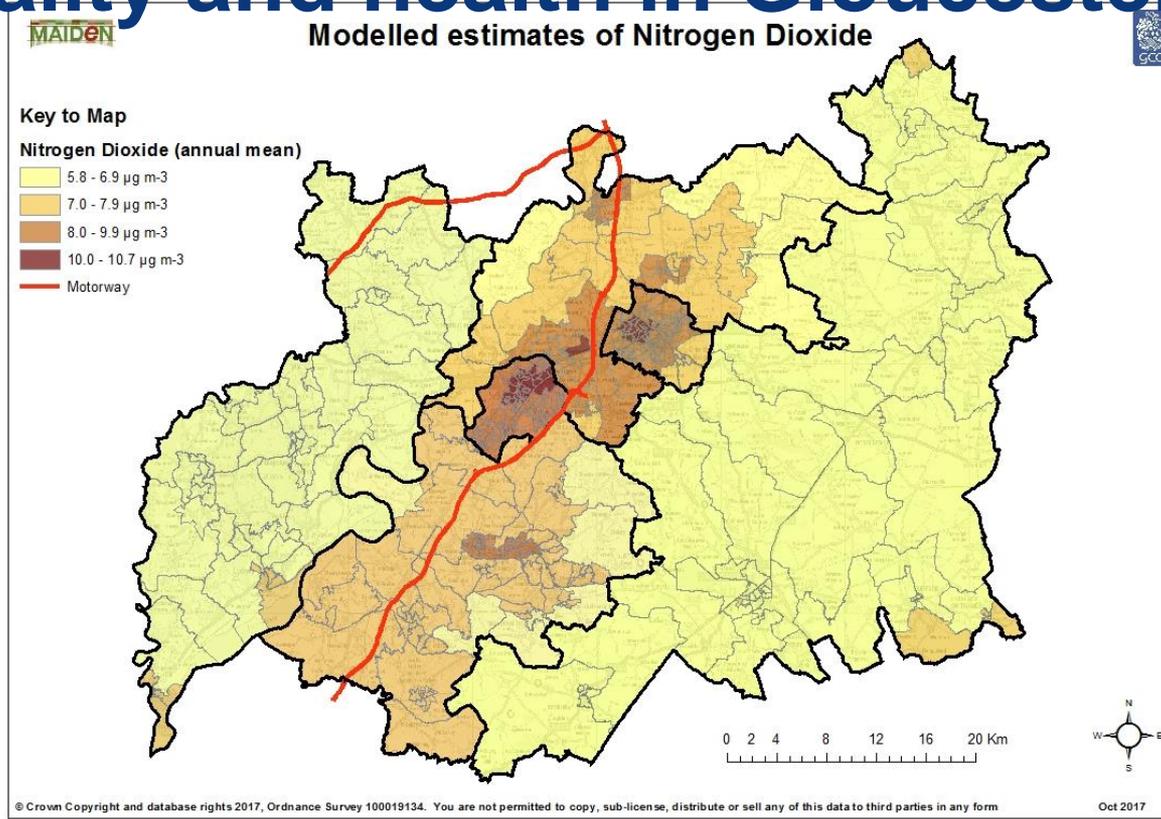
- Short term exposure: Development of asthma in children, exacerbation of pulmonary conditions, cardiovascular disease (weaker evidence base)
- Longer term exposure: Development of pulmonary disease, cardiovascular disease (weaker evidence base)



Air quality and health in Gloucestershire



Air quality and health in Gloucestershire



Air quality and health in Gloucestershire

	Attributable deaths	Associated life years lost
Cheltenham	55	579
Cotswold	42	405
Forest of Dean	37	368
Gloucester	52	575
Stroud	53	497
Tewkesbury	39	424
Gloucestershire	278	2,848
England	25,002	264,749



Inequalities in Air Quality and health

- Most deprived areas bear the heaviest load
- Younger population have higher exposure
- Higher levels of exposure in areas with social care need
- Highest car ownership = lowest exposure



Air Quality and health interventions

Evidence review: interventions focusing on road traffic pollution

1. Planning: Integration into planning stages (+++); street vegetation (+); roadside barriers; bypass construction
2. Clean air and congestion charging zones: low emission zones/congestion charging (+); fuel efficient driving (+)
3. Reducing emissions from public sector transport and vehicle fleets: Changing to emission-controlled diesel or compressed natural gas (+); driver training (+); procuring public sector vehicles (+); amending bus routes to reduce stop-starting
4. Smooth driving and speed reduction: Traffic flow is the key determinant of air quality improvement (+); speed reduction without traffic calming measures (+)
5. Active travel (++) : choice of cycle routes; routes avoiding high exposure; space/separation between cyclist and traffic; reduce time in high pollution spots; dedicated off-road cycle routes (++) .
6. Awareness raising: Uncertain but developing field



Findings from the HSlA workshop

Key areas highlighted for action:

- Leadership and vision
- Partnership and collaboration
- Clean and accessible public (and taxi) transport
- Public awareness and engagement
- Active travel (walking and cycling)
- Support for electric vehicle use
- Monitoring of air quality in Gloucestershire
- Public sector fleet/contractor fleets



Member task group recommendations

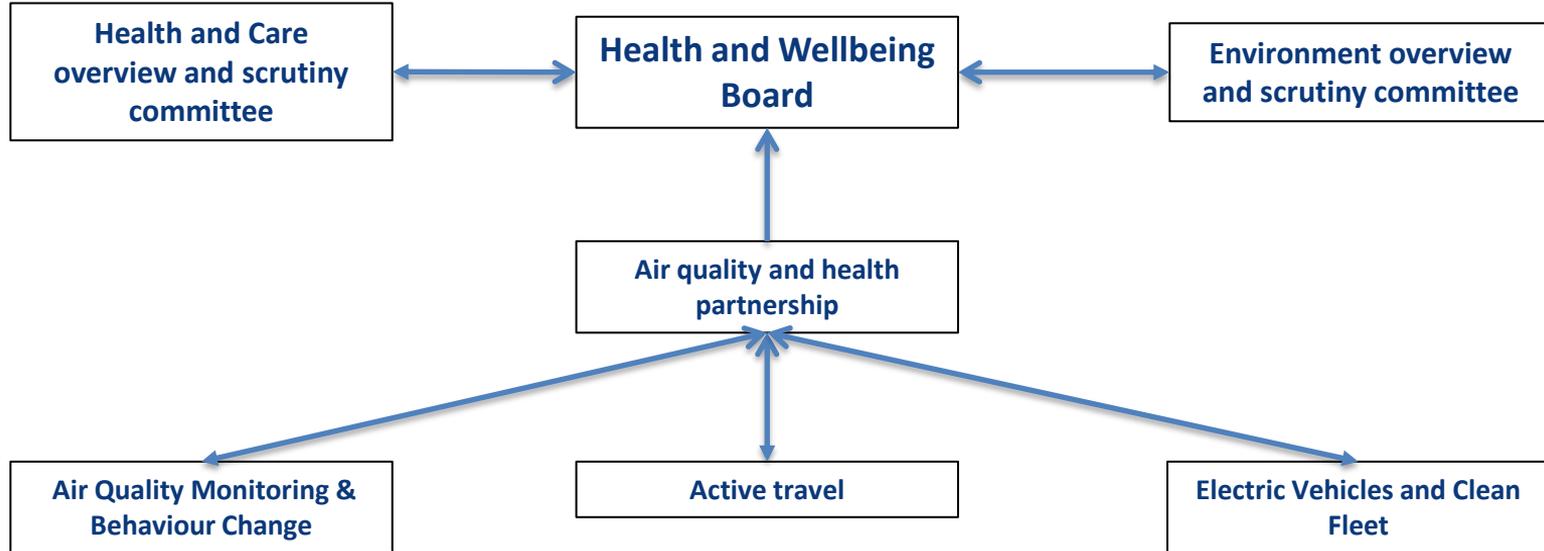
- Members task group: discussing the information from the HSIA and developing recommendations:
 - Gloucestershire Air Quality and Health Partnership
 - Reporting and governance recommendations
 - Gloucestershire air quality and health strategy
 - **Air Quality Monitoring Group**
 - **Giving the public access to information on air quality and health**
 - Electric vehicle uptake
 - **Cleaner public transport and public sector fleets**
 - Promotion of active travel
 - **Consideration and integration of air quality and health into policy and planning**



Moving the recommendations forward

- Environment and communities OSC
- Cabinet approval of recommendations
- Agreement on proposed governance process
- Establishing the partnership
- Air quality and health strategy for Gloucestershire:
Workshop

Governance overview



The role of Health and Wellbeing Board

- The health leadership recognising air quality as a health issue in Gloucestershire
- Leadership for health organisations: recognising the role of public sector organisations
- Leading the governance for strategy development and implementation

