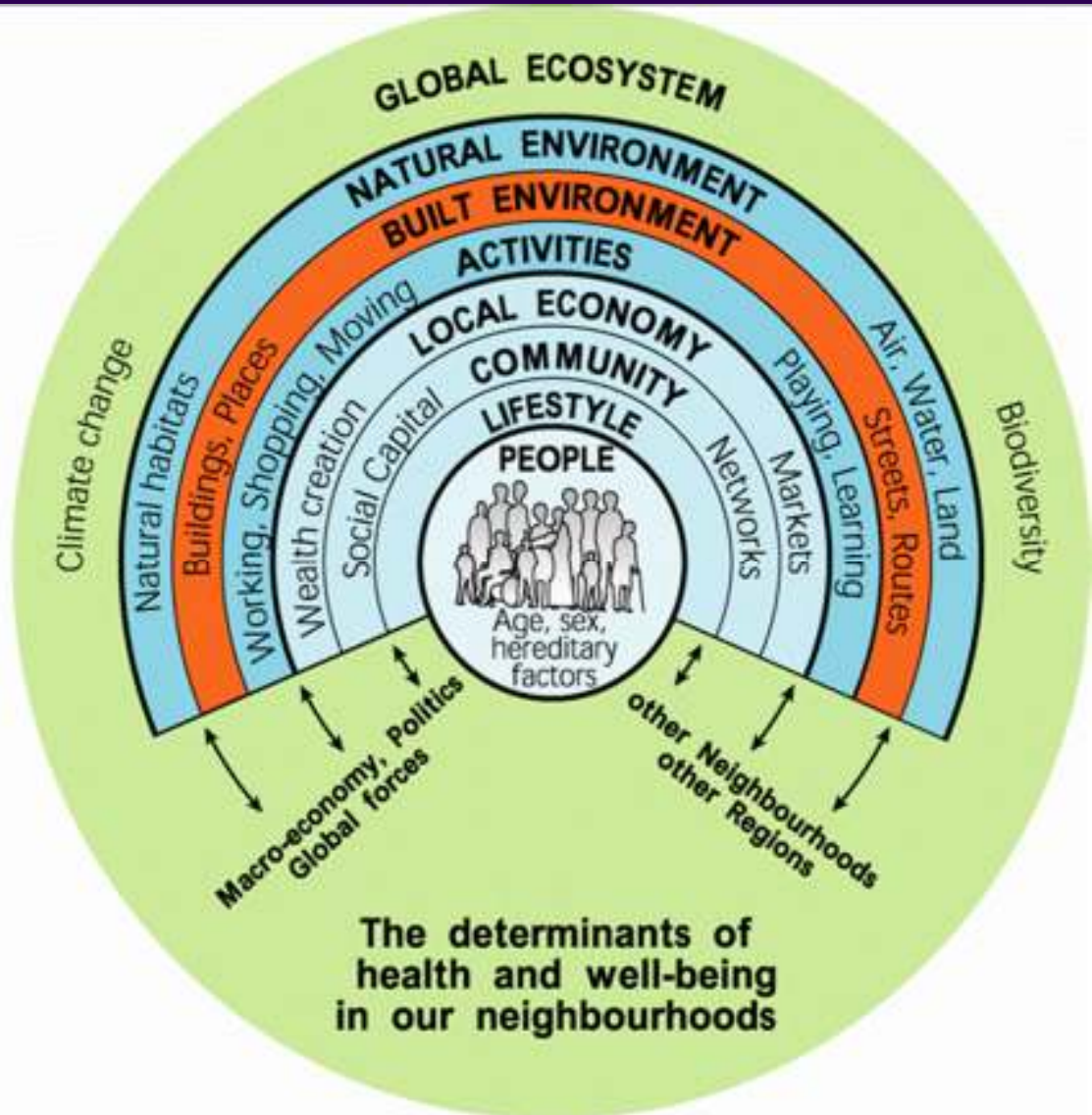


Wellbeing and community resilience in health protection



Dr Richard Jarvis
Consultant in health protection

Determinants of health – Barton and Grant



The Health Map.
Barton & Grant
2006
Based on a public health concept by
Whitehead & Dahlgren.

drivers



- Climate change
- Credit crunch, recession, deficit reduction
- The big society
- Health inequalities – Marmott
- Environmental protection
- Civil contingencies act
- Public health to local authorities

Climate change effects -UK



Direct impacts:

- heatwaves
- floods and storms
- poor air quality
- increased pollens
- reduced food safety
- Increased UV exposure

Indirect impacts:

increased cancers and poisonings

widening inequalities and social inequity

increased risk of vector borne disease

extreme weather events in other parts of the world

risk due to conflict or migration in other parts of the world

Climate change – Global effects



Air quality

Water Security

Food security

Shelter and location

Energy security

Income security

Conflict

Widening inequalities

The Health Co-benefits of action



Mitigation and adaptation

Contraction and convergence of per capita emissions

Reducing inequalities

Human nutrition

Human travel

Human fertility

Mental health



Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs

WCED 1987

Sustainable development



Who gets to say
what's fair?

From the blog "New Zeal, shining the
torch for liberty"
Trevor Loudon



Carbon Monoxide and Community Engagement



- **George Kowalczyk**
- **Regional Toxicologist**
- **CRCE Manchester**

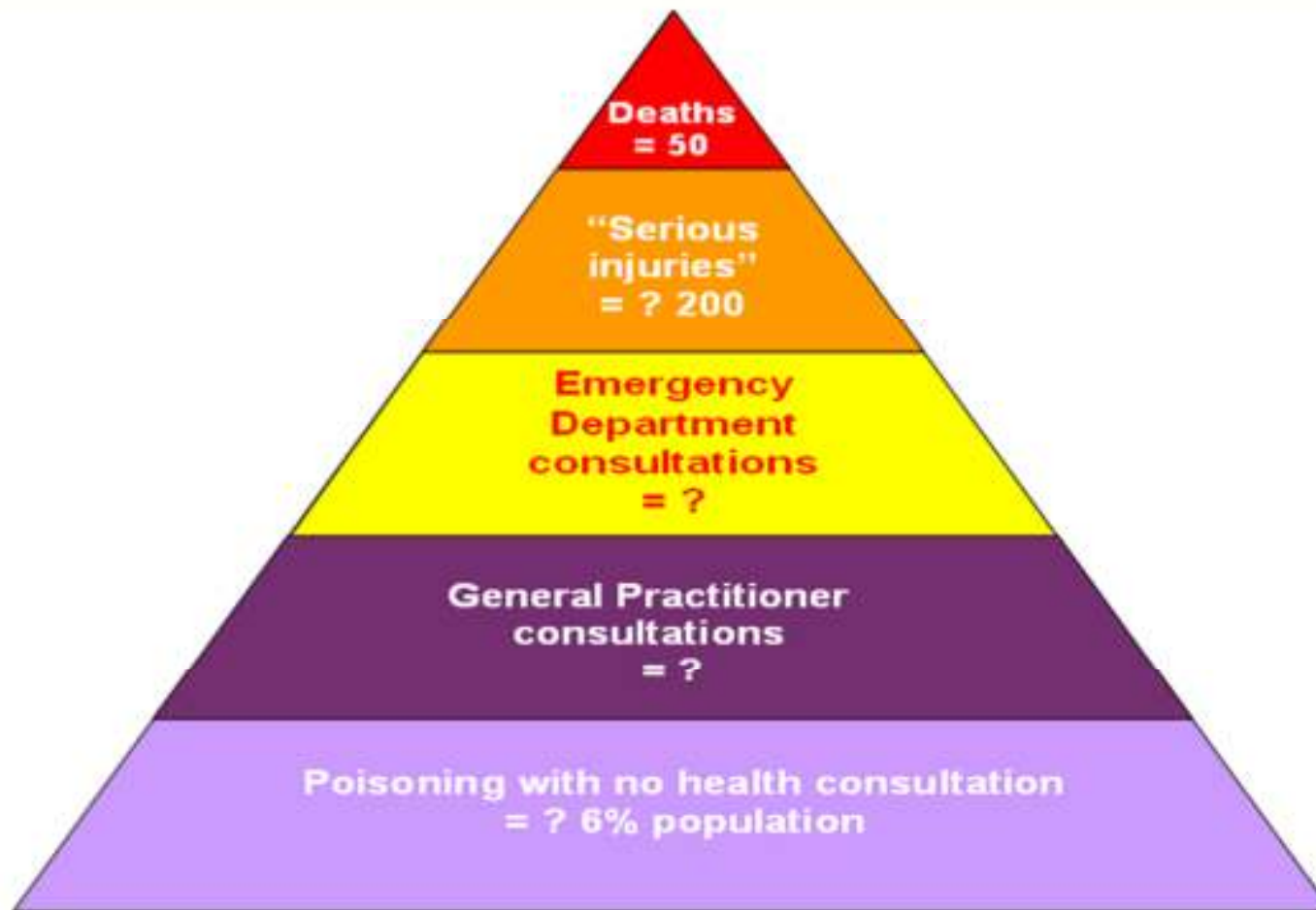
Aims



- What's the issue with CO?
- What have we done?
- What can we do better to improve wellbeing and community resilience?

•

Health effects on the population



Community awareness



- Lack of awareness of hazards
- Lack of awareness of sources
- Lack of awareness of effects
- Lack of awareness of help and advice available

Sources



- Cooking and heating devices

- Faulty
- Incorrectly installed
- Poorly maintained or ventilated

- Smoking

- Vehicle exhausts

- Buses

- Go-Carts

- Other sources

- Barbeques (indoor!!)
- Petrol driven generators (flooding)
- Shisa smoking
- Tandori ovens (flats above restuarants)
- Wood burning stoves
- Solid fuel appliances



HPA Role



- No statutory role (apart from HPA Act to protect population)
- Publicise CO hazards (web)
- Co-ordinate responders/investigations
- Fire
- Local Authority (Residential Inspection Aid)
-

Residential Inspection Aid Carbon Monoxide (CO)

You are:

- Inspecting a privately rented/owner occupier/social housing property
- Following up reported exposure to CO
- Following up a reported odour complaint

COULD THE PREMISES YOU ARE INSPECTING CONTAIN A LOW LEVEL SOURCE OF CO WHICH IS MAKING THE OCCUPANTS ILL?

1

Be aware that you could be entering a contaminated environment and that you should take appropriate precautions. Do not put yourself at risk.

If you suspect high levels of CO in the property and/or serious occupant exposure dial:

999 – Fire and Ambulance
0800 111 999 – National Gas Emergency Service

2

Look for:

- Presence of gas (flued or unflued), oil or solid fuel burning appliances (including cookers).
- Presence of sooty stains/deposits around the fuel burning appliance.
- Sufficient means of ventilation for combustion appliances to work properly (see Notes).
- Sufficient means of ventilation for the room – extract fan, trickle vents, openable windows.
- Flames to gas appliances burning yellow instead of mostly blue.
- Flues and appliances sited safely and well maintained by registered engineer (see Notes).
- A properly sited and working carbon monoxide alarm (test it and take a reading if possible).
- An integral garage.

TAKE READINGS IF YOU HAVE A DEVICE TO MEASURE CO

3

Ask the occupant:

- Do you ever use your oven or gas stove for heating purposes as well as cooking?
- Has the double glazing been recently fitted? (if present) (see Notes).
- Do you feel in better health at home or at your place of work? (see Notes).
- Do you or any other occupants suffer from headache, flu like symptoms, drowsiness, nausea?
- Do you notice odours coming from adjacent properties?
- Have you started using appliances after a long break?

COULD THE PROBLEM ORIGINATE FROM AN ADJOINING PROPERTY?

4

Stopping further exposure:

- Make sure appliances are turned off and windows are opened.
- Make sure the relevant safety service is contacted.
- Advise the occupant to have all appliances checked by a registered engineer before using again.
- Notify the local Health Protection Unit (HPU).

5

Recommend that the occupant:

- Installs a CO alarm (EN 50291 compliant).
- Contacts other agencies for assistance, eg. Social Services.
- Contacts their GP or attend A&E immediately, especially if they have young children or babies.

Follow-up actions to take:

- Check adjoining properties under the appropriate legislation.
- Consider serving a notice on the landlord of a rented property (see Notes).

6

See over for Notes on Boxes 1 - 6

Notes

Box 1 Property inspections and carbon monoxide referrals leading to the inspection of a property can be from a number of different sources: ICT, HPU, health visitor, social services, housing association, complaint from the occupier or a neighbour. NB. CO poisoning is not limited to those from lower income groups.

Box 2 Carbon monoxide is a lethal gas at high levels. CO is a colourless, odourless, tasteless gas. Remember, malfunctioning ventilation equipment may cause the presence of an odour as well as cause CO to accumulate. If you suspect high levels of CO are present call the emergency services. Every employee has a duty to take reasonable care for the health and safety of himself and other persons (Section 7, HSW 74).

Box 3 Identification of carbon monoxide sources in premises. Gas, oil, coal, coke and wood heating appliances are the commonest sources in the home. Visual inspections are important. Flames to malfunctioning appliances may burn yellow/orange instead of mostly blue (if it is not a decorative fire) and you may see soot stains on radiators or the wall adjacent to the appliance. Some properties containing malfunctioning appliances may suffer from permanent condensation during the winter months if ventilation is inadequate. Powerful extract fans are capable of drawing fumes back into properties. Remember, there may be more than one source of CO. Ask to see safety certificates for appliances in rented accommodation. Ask when chimneys and flues were last swept.

Use the HHSKS to assist you in identification of possible sources and causes of CO leakage.

Box 4 Occupant behaviour. Inappropriate appliance use, particularly flueless ones such as gas ovens and stoves, can lead to a build up of CO, so questioning the occupant on their use of the appliance is important. The recent fitting of double glazing or blocking vents will suddenly reduce ventilation rates in a previously well ventilated or 'leaky' house. The reduced ventilation rate will cause CO to build up in the property. It is also important to ascertain if heating appliances have started being used due to a sudden change in the weather, or if an appliance has been newly installed.

Asking the occupier in which environment they feel better is important as exposure to CO could be linked to their job which might involve exposure to smoke, fumes or motor vehicle exhaust. CO exposure can be linked to leaking car exhaust systems, inappropriate use of generators or BBQs and to activities such as go-karting or shisha smoking.

Box 5 Stopping further exposure. Preventing further exposure is essential. If you strongly suspect a CO leak, make sure that fossil fuelled appliances are turned off, that windows are opened and the correct emergency service is called. If the occupiers have been exposed and have experienced any of the symptoms listed in Box 4, advise them to seek medical attention immediately. This is especially important if the occupants include children, babies or pregnant women. If occupants experience more severe symptoms such as vomiting, chest pains or loss of consciousness, call an ambulance.

Box 6 Recommendations and follow up requirements. Recommend the purchase of an audible carbon monoxide alarm for installation in the home, but stress that an alarm is not a substitute for regular maintenance of appliances using an appropriately registered engineer. If you are suspicious that the problem could be from an adjoining property, carry out an investigation under the appropriate legislation. Consider serving a notice on the landlord of rented accommodation where appliances are found to be a source of CO or are poorly maintained.

Useful contact numbers	999	- Ambulance/Police	0800 408 5500	- Gas Safe Register enquiries (gas)
	0844 892 0555	- Local HPU (24h hotline)	0845 658 5080	- OFTEC enquiries (oil)
	0800 111 999	- Gas Emergency	0845 634 5626	- HETAS enquiries (solid fuel)
	0800 300 363	- HSE Gas Safety line	0845 4647	- NHS Direct

Further copies available from COfeedback@hpa.org.uk or www.cieh.org
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HPA Role



- No statutory role (apart from HPA Act to protect population)
- Publicise CO hazards (web)
- Co-ordinate responders/investigations
- Fire
- Local Authority (Residential Inspection Aid)
- HSE (GasSafe Register)
- Ambulance/A&E/GP (diagnosing CO algorithm)
-

Diagnosing Poisoning: Carbon Monoxide (CO)



Patient presenting with:
Headache, nausea/vomiting, drowsiness, dizziness, dyspnoea, chest pain
COULD THIS BE A CASE OF CO POISONING?

Ask the patient:

- Do you feel better away from your house or place of work?
- Is anybody else in your family or house experiencing the same symptoms as you?
- Have you recently had a heating or cooking appliance installed?
- Have all gas, coke/coal, wood or oil fired appliances, eg. cookers, fires, boilers at your home been serviced within the last year?
- Do you ever use your oven or gas stove for heating purposes as well as for cooking?
- Has there been any change in ventilation in your home recently, eg. fitting double glazing?
- Have you noticed any sooty stains around appliances or an increase in condensation?
- Does your work involve possible exposure to smoke, fumes or motor vehicle exhaust?
- Is your home detached, semi-detached, terraced, flat, bedsit or hostel?

You are **Could this be a case suspicious:** of CO poisoning?

You are **This is NOT a case confident:** of CO poisoning?

Action to take: CP - General Practice ED - Emergency Department

- 1 Test for CO**
CP - breath test for exhaled CO if device is available. (Note: Only indicates recent exposure; interpretation difficult in smokers. For interpretation of results see TOXBASE).
ED - heparinized venous blood sample for COHb estimation. For interpretation of results see TOXBASE and contact the National Poisons Information Service (NPI).
2 Management - Commence oxygen therapy
CP - follow advice on TOXBASE; refer to ED if required.
ED - follow advice on TOXBASE. Contact NPI for severe poisoning. (See OMO/OVO letter November 2008: www.dh.gov.uk/cmo).
- 3 Protect your patient and others** - Contact your local Health Protection Unit (HPU). They will co-ordinate services for your patient and provide further CO guidance. Telephone gas, oil or solid fuel helpline (see Notes).
- 4 DO NOT** allow patient home without a warning NOT to use the suspect appliances.
- 5 Follow up**
CP - note that symptoms may persist or develop later.
ED - advise patient to see GP for follow-up. Note this advice in discharge letter.

If patient does not improve

- Contact NPI for advice.
- Contact local HPU for advice.
- Reconsider diagnosis.

See over for Notes on Boxes 1 - 4

Notes

Box 1 Carbon monoxide is a mimic
Carbon monoxide poisoning is notorious for simulating other more common conditions, including flu-like illnesses, migraine, food-poisoning, tension headaches and depression.

Headache is the commonest symptom - think CO!

Box 2 Carbon monoxide sources are multiple

The source of CO may be in the home, in the car due to a leaking exhaust system, or in the workplace. Gas, oil, coal, coke and wood heating appliances are the commonest sources in the home. Malfunctioning heating appliances may be indicated by there being yellow rather than blue flames (if it is not a 'decorative flame' fire) and by the deposition of soot on radiators or on the wall adjacent to the fire. There may be more than one source of carbon monoxide.

Poisoning is not limited to those from lower income groups. Carbon monoxide can leak into a semi-detached or terraced house/flat from neighbouring premises. It is unlikely that a patient will know about servicing of appliances at his/her workplace, but it is worth asking about the sort of heating devices in use.

It is also worth asking: "Have you recently started to re-use heating appliances/boilers after the summer break/during an unexpected cold spell?"

Box 3 Stopping further exposure is essential

Preventing further exposure is the most important thing you can do. Breath tests and blood samples may prove inconclusive some hours after exposure has ended: CO levels in the blood decline with a half-life of about 6 hours. Note that a normal concentration of carboxynaemoglobin (COHb) does not disprove CO poisoning unless the sample has been taken soon after exposure ended. A heparinized venous blood sample should however, always be taken and sent to the local Clinical Chemistry Laboratory for analysis. For interpretation of results and detailed advice on CO poisoning see TOXBASE and call NPI.

If you strongly suspect CO poisoning do not wait for the result of the analysis before taking the other steps listed in Box 3. Contacting the gas (0800 111999), oil (0845 6585000) or solid fuel (0845 8014406) safety services is essential. Contacting your local HPU is essential as they will co-ordinate Environmental Health, Safety, Social and other services to protect your patient and others. Follow-up is important as further consequences of chronic exposure to CO may be delayed, or mild symptoms may persist, multiply or intensify. Recommend the purchase of an audible carbon monoxide alarm for installation in the home.

Box 4 Links and contact details for information on carbon monoxide

- TOXBASE: www.toxbase.org.
- National Poisons Information Service (NPI) 24 h hotline: 0844 592 0111
- Health Protection Agency: www.hpa.org.uk/chemicals/compendium/carbon_monoxide/default.htm
- NHS Direct: www.nhsdirect.nhs.uk
- Department of Health: www.direct.gov.uk/keepwarmkeepwell
- Carbon monoxide - Are you at risk?: www.dh.gov.uk
- Information in joint OMO/OVO letter of November 2008: www.dh.gov.uk/cmo
- Local HPU contacts: www.hpa.org.uk/hpucontactdetails. 24 h Chemicals hotline: 0844 592 0555

Copies can be downloaded from the HPA website at www.hpa.org.uk/carbonmonoxide.

Further hard copies can be obtained from
Department of Health Publications Orderline, PO Box 777, London SE1 6NH
Tel: 08701 555 455 fax: 01623 724 524 email: dh@prolog.uk.com



Working in partnership with the Department of Health



Go Safe Register™. The new hallmark for gas safety in Great Britain from April 2005.

© Health Protection Agency 2009



Gateway ref. number: 01367

Engaging/building resilience



- CO-Awareness campaign (CO week 21-25 November)
- Gas-Safe Register campaign (1st this year in Sep)
- Fire and Rescue Services (home visits)



Vulnerable Groups



- All members of the public are at risk of exposure
- Particular vulnerable groups can include:-
 - Elderly
 - Those living in the private rented sector (students, elderly)
 - Non English speaking communities

Conclusions



- Made great in-roads with responders (esp fire and ambulance)
- Supported workshops
- Produced guidance (for professionals)

- But We need to improve links with communities and susceptible groups

Improving community partnerships



- More publicity of CO hazards to communities - a HPA role
- Messages through health promotion (smoking cessation clinics)
- Working with responders who have community links

Carbon monoxide (CO)



- Toxic gas produced during incomplete combustion of fossil fuels (gas, coal, oil and wood)
- CO gas is odourless, colourless and tasteless

Health effects



- Acute exposure to high CO concentrations
- Headaches
- Unconsciousness
- Coma
- Death
- Chronic exposure to low CO concentrations
- Tiredness
- Nausea
- Confusion
- 'flu-like or food poisoning type symptoms'
- Other effects??



Environmental Public Health: effective partnerships?



Lessons from incineration & leukaemia

Alex Stewart

Cheshire & Merseyside Health Protection Unit

NW PH Conference Liverpool
13/10/11

Relationships



- Trust



- Clear, shared vision



Chronic ≠ Acute



Acute

- Agency engagement already agreed
- Clear focus
- Unified vision



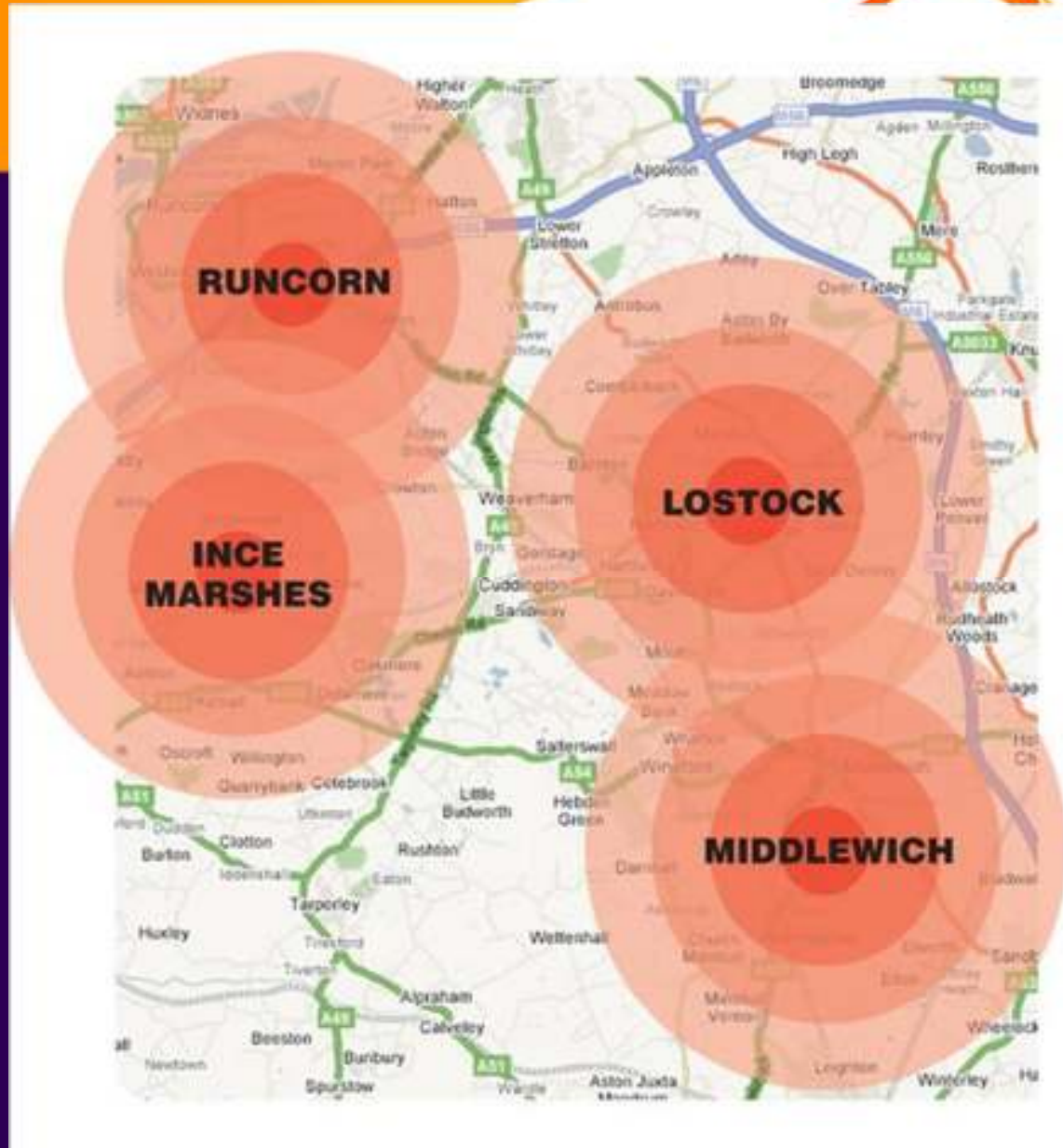
Chronic

- Agency engagement variable
- Focus can be muddy
- Multiple visions



Incineration

- Planning issues
- Bad for health?
- Emissions
- Multiple sites
- Traffic



Incineration



Planning process



Incineration



Planning process



Ask good questions
Ask bad questions

Pressure groups



Incineration



Planning process



Health advice?

Aims to be objective
Seen as uninvolved

Pressure groups



Corporate engagement?



Limited by

- History
- Organisational boundaries
- Expectations
- Misunderstanding / lack of trust



Corporate engagement?



Limited by

- History
- Organisational boundaries
- Expectations
- Misunderstanding / lack of trust



Corporate statements:
seen as defence not advance

Engagement misread

Leukaemia



- 2 children
- 26 houses
- Who next?

Leukaemia



- Shared vision
- Public focus similar to Public Health focus



Leukaemia



- Trust through engagement
- Listening & responding
- Turned fear to security



Health Advisory Group

Trust



- Openness – give & take feedback; meet & review
- Reliability – do what say: no hidden agenda
- Congruence – say what mean
- Acceptance – differences OK



Building effective partnerships



- Give time
- Identify joint issues
- Persevere
- Enthuse
- Take risks
- Be accurate



Leadership role of health