

A Sense of Place - An Atlas for Health in Dudley

Annual Report of the Director of Public Health-2007

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Annual Report of the Director of Public Health 2007

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Primary Care Trust



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Contributors

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They were assisted in this task by Bal Kaur and Soo-fon Lim, Specialist Public Health Trainees.

Many other organisations and departments of partner agencies have contributed data to this report and these are listed in Annex 2. Without their cooperation and patience this document would not have been such a comprehensive reference source for the Health of Dudley.

I remain responsible for the report's contents, any errors or omissions, the introduction, commentaries and recommendations.

Valerie A Little

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*We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time*

Little Gidding
TS Elliot

Maps enable exploration. They are powerful tools for telling the 'story of the place' (Dept. Communities & Local Government 2007). The following 5 maps of Dudley through the ages, prepared by John Hemmingway and Dudley's Historic Environment Team, demonstrate vividly the evolution of the Borough from medieval times through to the mid-1980s.

Maps 2 and 3 show the rapid economic development based on coal between 1750 and 1835 and, again, further rapid development in the following 50 years. Seeing maps 3 and 4 it is small wonder that William Lee, Superintending Inspector for the General Board of Health in London, observed on his 1852 inspection of Dudley that:

'The district is now disfigured by offensive accumulations of liquid and solid filth, by chasms which have resulted from mining operations, by houses and other buildings everywhere cracked, broken, sinking, and out of perpendicular so as to be fearful to look at and dangerous to live in; by mountainous accumulations of mine refuse and slagg and cinders from the iron works, and by a canopy of dense smoke covering incessantly many miles of surface' (p.11 Lee 1852).

The built environment in Dudley has been transformed since then (see Chapter 4) but air pollution in the Borough remains an issue to

be tackled, with road traffic rather than ironworks as its source (see maps on pages 20 and 21 of Chapter 3).

Maps 3, 4 and 5 illustrate the extremely rapid population expansion in 19c Dudley. In the 50 years between 1835 and 1885 the increase of 108,000 exceeded that in the subsequent 100 years between 1885 and 1985 (68,000), though the expansion of settlement areas and urbanisation was greater in the latter period. In recent decades there has been relatively little change in overall population numbers, though substantial change in composition, reflecting both a change in the age distribution and migration. (The maps in Chapter 9 show how the composition of the population varies across the Borough).

The economic base of the Borough has changed dramatically too, since William Lee's visit, with only 16% of the workforce now employed in manufacturing (see p. 51 in Chapter 6).

The historical maps also illustrate, the way in which settlements have developed linearly along transport routes; for example, map 3 clearly shows a linear corridor settlement from Oldswinford via Stourbridge to Wordsley in the South West of the Borough. Transport modes and routes remain key to the healthy functioning of the Borough and its continued economic development (see maps on p. 24 in Chapter 4 for travel routes). The current balance of use of transport modes is neither healthy, nor in the long term interests of a sustainable Dudley (see maps in Chapter 2 for discussion of climate change implications for health in Dudley).



Introduction & Recommendations



Map 1

Circa 1300

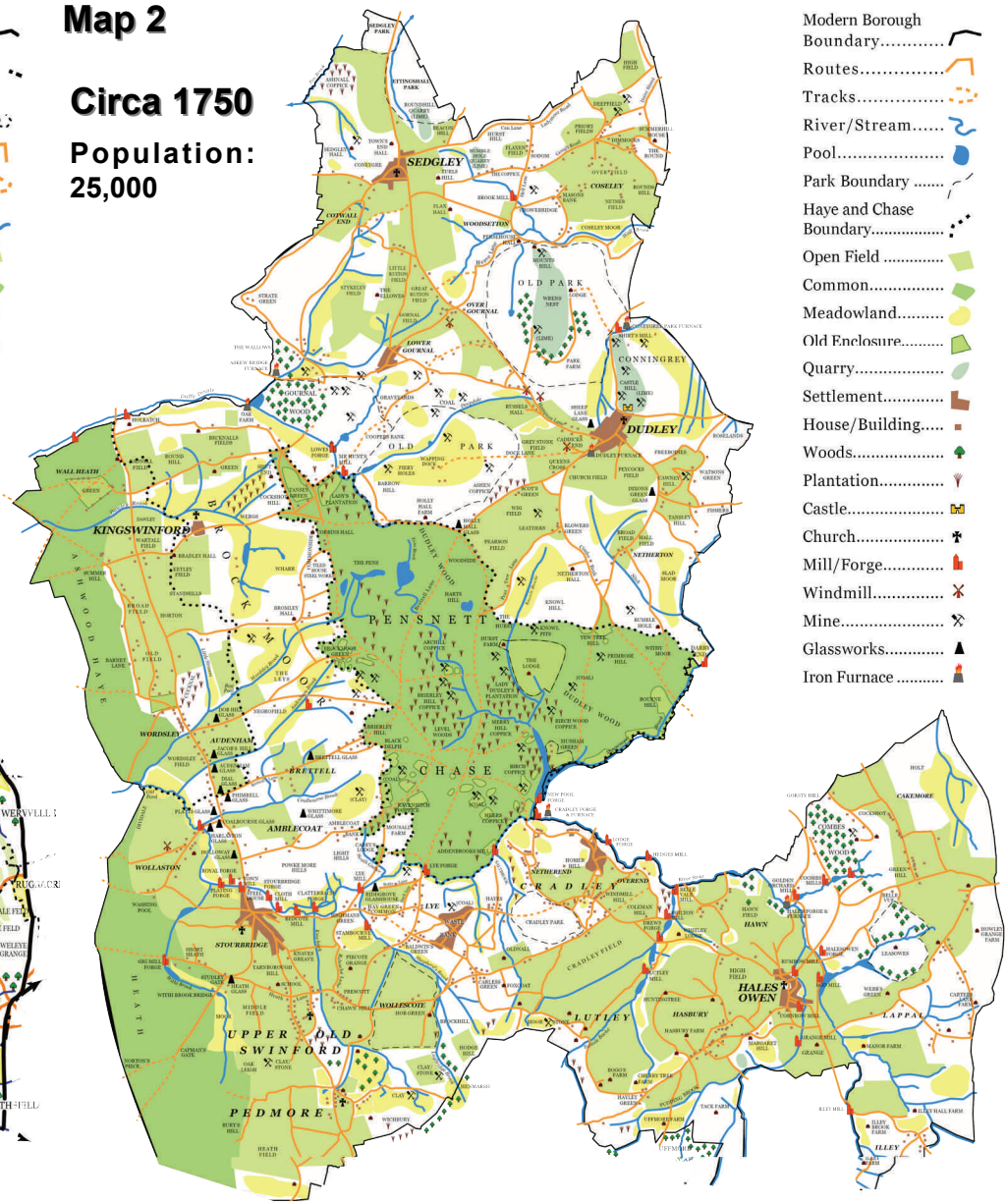


- Modern Borough Boundary.....
- Parish Boundaries.....
- Township Boundaries.....
- Routes.....
- Tracks.....
- River/Stream.....
- Open Field.....
- Common.....
- Meadowland.....
- Park.....
- Quarry.....
- Borough.....
- Settlement.....
- Woods.....
- Abbey.....
- Castle.....
- Church.....
- Mill/Forge.....
- Windmill.....
- Mine.....

Map 2

Circa 1750

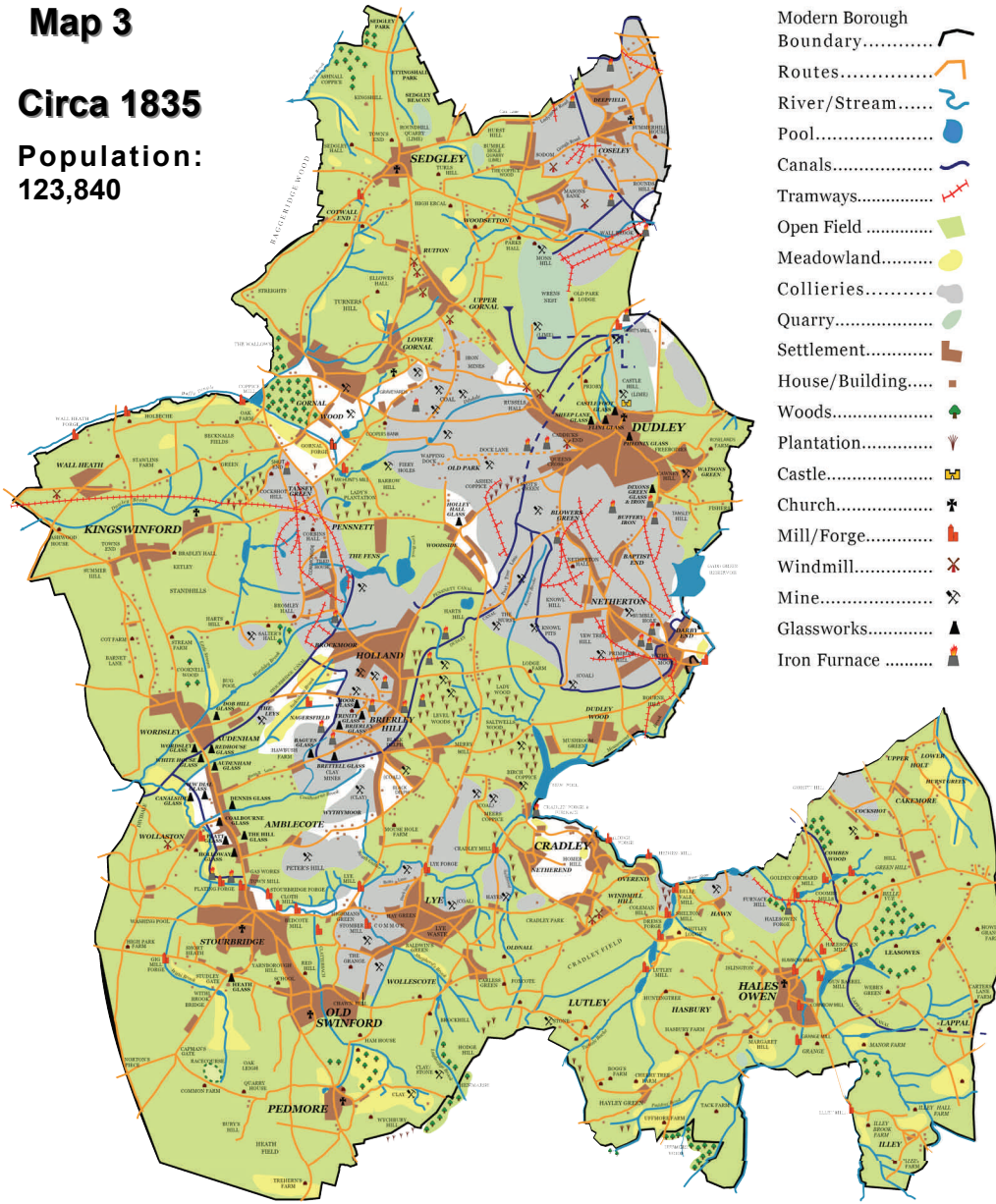
**Population:
25,000**



- Modern Borough Boundary.....
- Routes.....
- Tracks.....
- River/Stream.....
- Pool.....
- Park Boundary.....
- Hay and Chase Boundary.....
- Open Field.....
- Common.....
- Meadowland.....
- Old Enclosure.....
- Quarry.....
- Settlement.....
- House/Building.....
- Woods.....
- Plantation.....
- Castle.....
- Church.....
- Mill/Forge.....
- Windmill.....
- Mine.....
- Glassworks.....
- Iron Furnace.....

Map 3

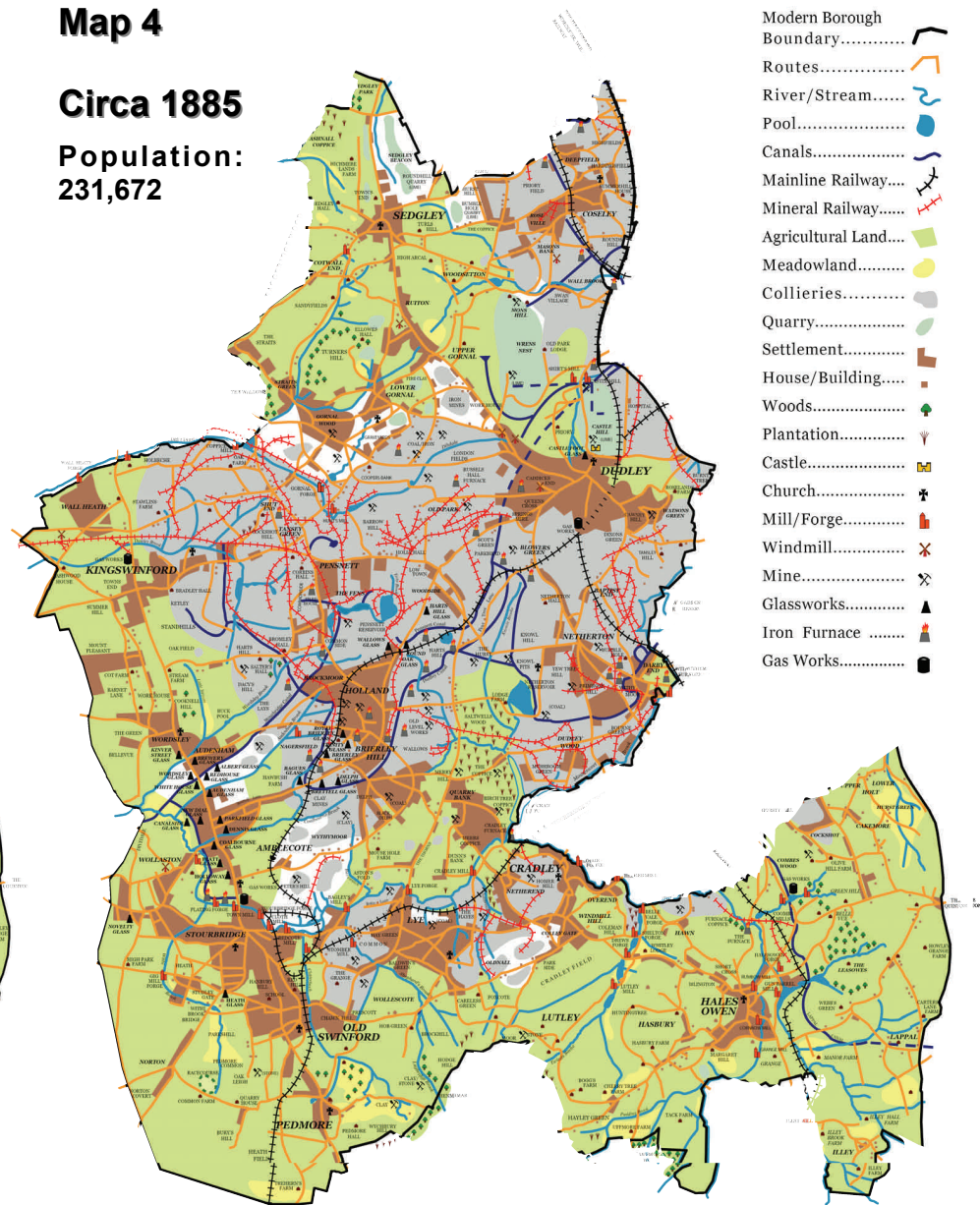
Circa 1835
Population:
123,840



- Modern Borough Boundary.....
- Routes.....
- River/Stream.....
- Pool.....
- Canals.....
- Tramways.....
- Open Field.....
- Meadowland.....
- Collieries.....
- Quarry.....
- Settlement.....
- House/Building.....
- Woods.....
- Plantation.....
- Castle.....
- Church.....
- Mill/Forge.....
- Windmill.....
- Mine.....
- Glassworks.....
- Iron Furnace.....

Map 4

Circa 1885
Population:
231,672



- Modern Borough Boundary.....
- Routes.....
- River/Stream.....
- Pool.....
- Canals.....
- Mainline Railway.....
- Mineral Railway.....
- Agricultural Land.....
- Meadowland.....
- Collieries.....
- Quarry.....
- Settlement.....
- House/Building.....
- Woods.....
- Plantation.....
- Castle.....
- Church.....
- Mill/Forge.....
- Windmill.....
- Mine.....
- Glassworks.....
- Iron Furnace.....
- Gas Works.....



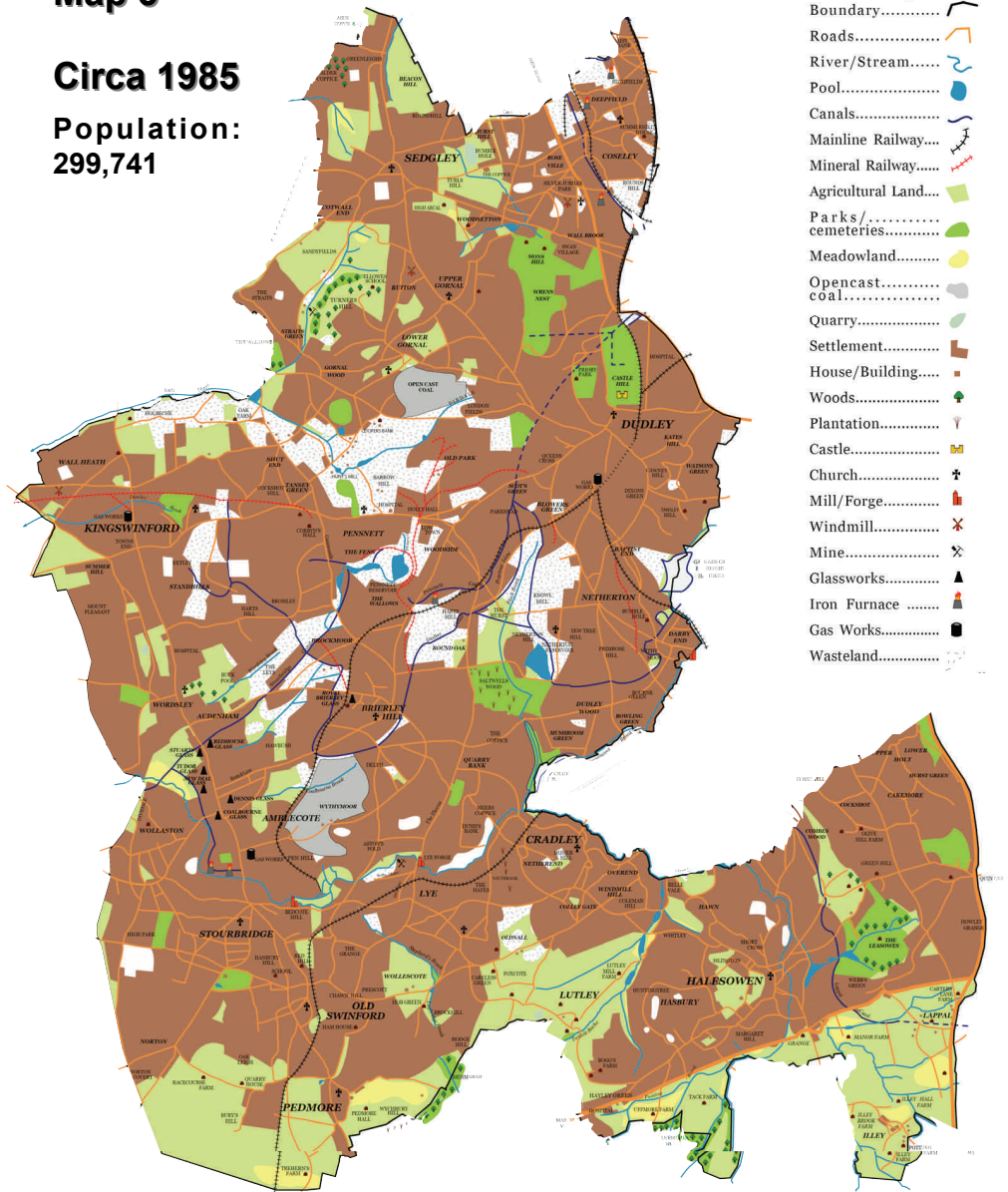
Introduction & Recommendations



Map 5

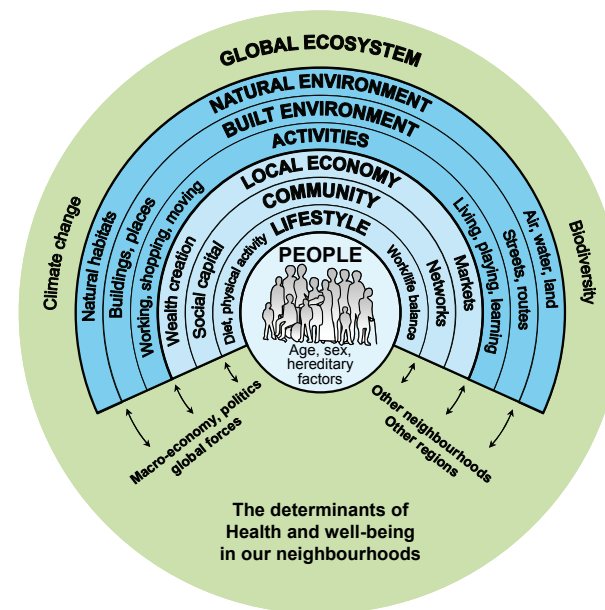
Circa 1985

Population:
299,741



Maps are not reality; they are a representation of reality. They are often socially and culturally constructed and can be used to 'exercise and enforce relations of power' (Monmorniere 1996). Equally, they can be used to illustrate territorial injustice and 'landscapes of health inequality' (Curtis 2004). (Maps in Chapter 10 and on p. 82 in Chapter 9 demonstrate the spatial inequality in health outcomes in Dudley).

Dudley as a human settlement is a complex open system 'with living and non-living elements, cyclic processes and complicated networks of relationships' (Barton 2005). In this Annual Public Health Report I have chosen to produce an atlas to explore these aspects of Dudley as an eco-system. The approach links urban planning and public health and can be depicted visually by using Barton's development of Dahlgren and Whitehead's (1991) seminal model of the determinants of health.





People are at the centre of human settlements but their health is determined not only by their inherent age, sex and hereditary characteristics, but also by the spatial interaction of social, economic and environmental variables.

If we are to act to improve health in Dudley, we need to understand its spatial dimension. An understanding of 'place' is essential to an understanding of those interventions which will improve health and wellbeing. Here, we are not simply considering the physical place, *'but the people that live there, their activities, their social networks, the economy they depend on and the broader base of environmental capital that supports them'* (Barton 2005).

It is this concept of place which underpins the drive towards sustainable community strategies and Joint Strategic Needs Assessments now mandated by legislation (Local Government and Public Involvement in Health Act 2007).

This atlas is presented as a contribution to Joint Strategic Needs Assessment. It is designed to develop an understanding of Dudley as a place, to act through our urban planning to improve health for all of the people living and working in Dudley.

Valerie A Little

Director of Public Health

Recommendations

The Atlas is a start point for exploration. My recommendations, therefore, concentrate on some broad principles for future urban planning in Dudley, rather than the detailed issues arising from individual maps and their comparison. (Users of the Atlas are encouraged to examine and compare).

Accordingly, I recommend that:

1. The model linking determinants of health with sustainability should be adopted as an underlying principle for the forthcoming re-write of Dudley's Sustainable Community Strategy, paying regard to the dynamic interactions between the different spheres of the model (Local Strategic Partnership, Dudley MBC and partner agencies).
2. The analyses presented here should form the spatial dimension of Dudley's Joint Strategic Needs Analysis (Local Strategic Partnership, Dudley MBC and Dudley PCT).
3. Dudley's urban planning, through the Core Spatial Strategy and Local Development Frameworks, should give expression to evidence-based policies which promote health improvement in the Borough (Dudley MBC).
4. Health Impact Assessments should be integrated into the Borough's Sustainable Environmental Assessments (Dudley MBC).



Introduction

The annual average temperature rose by 0.6°C in the West Midlands during the 20th Century, the growing season lengthened by 30 days, summer rainfall decreased and winter rainfall increased. Scientists believe that this climate change is due in part to the greenhouse gases emitted by human activity (Sustainability West Midlands, 2004). Computer models indicate that if the concentration of greenhouse gases emitted continue to rise then there will be a continued effect on the climate. We could experience more extreme events such as intense rainfall, hot summers and storms.

Climate change has particular implications for health (DoH, 2008). Warmer winters may lead to a fall in cold-related deaths and ill-health; however wetter winters may increase levels of dampness which could lead to an increase in respiratory problems.

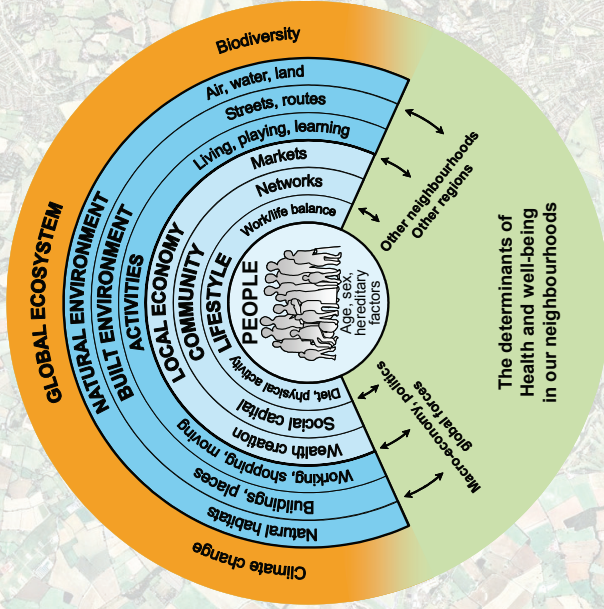
Reduced ozone in the stratosphere and ultraviolet penetration from the sun could contribute to increases in the number of cases of skin cancer.

More extreme storm events could lead to an increase in attributed deaths and serious injuries e.g. people swept away by floodwater, struck by flying debris or crushed by falling trees or collapsing buildings.

Increased risk of flooding could lead to further damage to water treatment centres, water supplies being cut-off and implications for the whole water infrastructure.

Action to mitigate future climate change could have positive impacts on people's health e.g. reduced traffic speeds have been shown to reduce accidents while a modal shift from motor transport to walking or cycling will improve health through increasing physical activity and improving air quality.

This Chapter considers the changing climate and flood risk areas within the borough of Dudley.

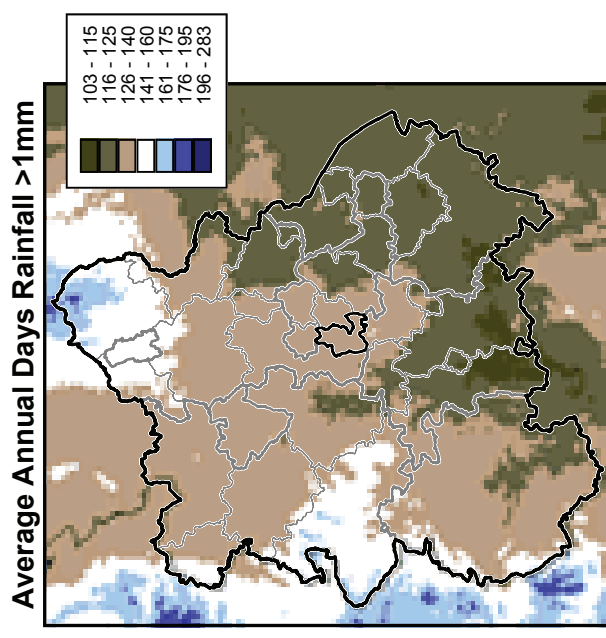
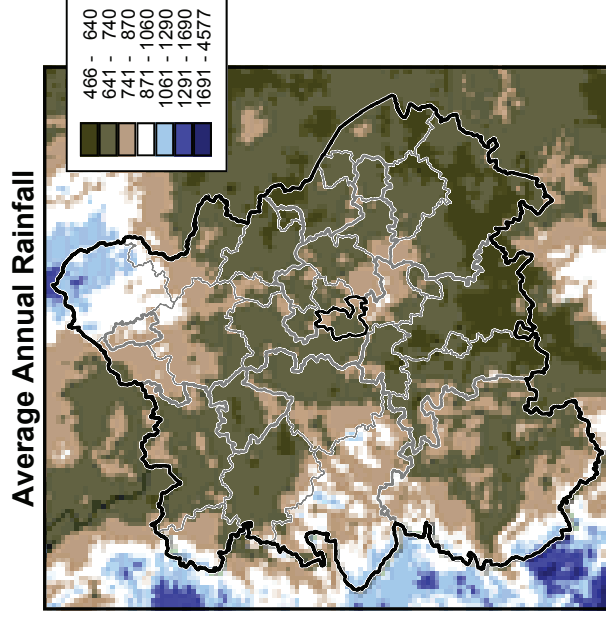
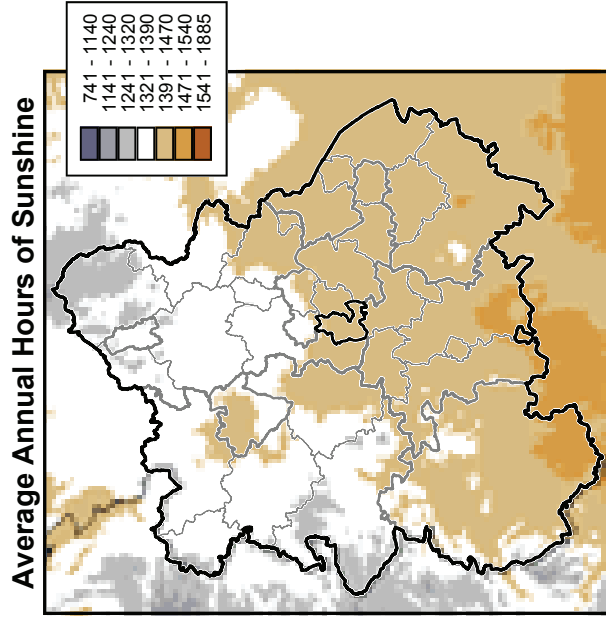
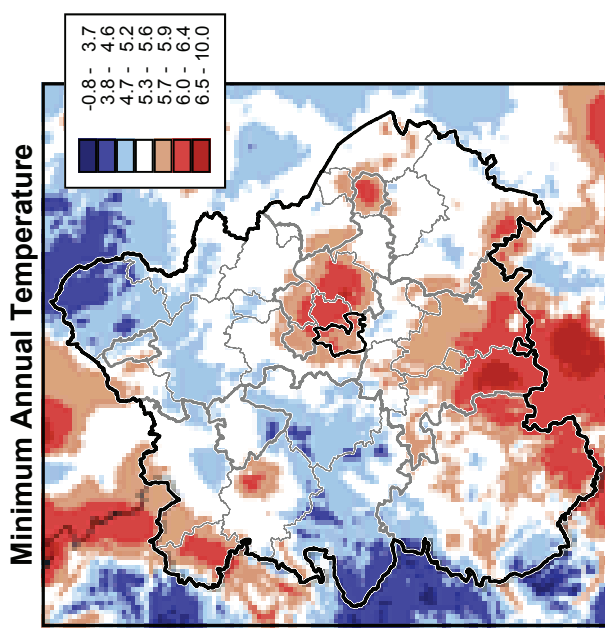
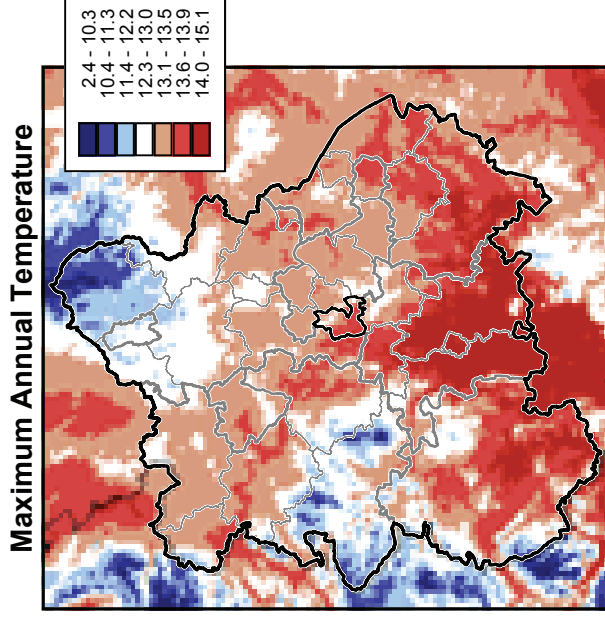
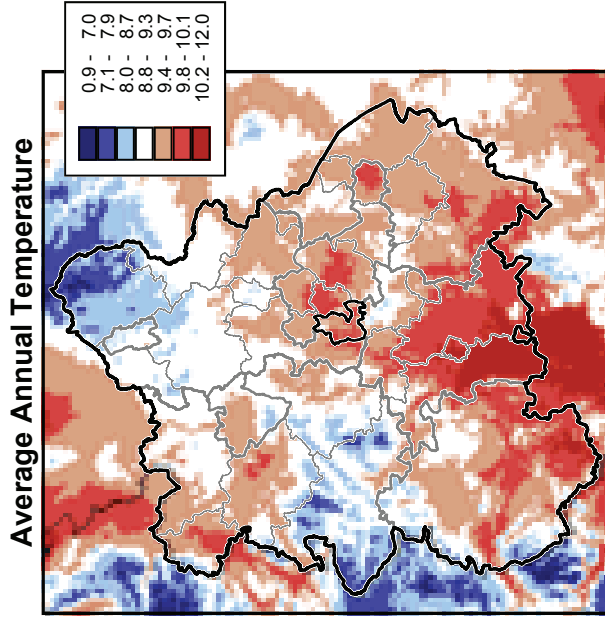


Contents

Introduction

Climate & Climate Change

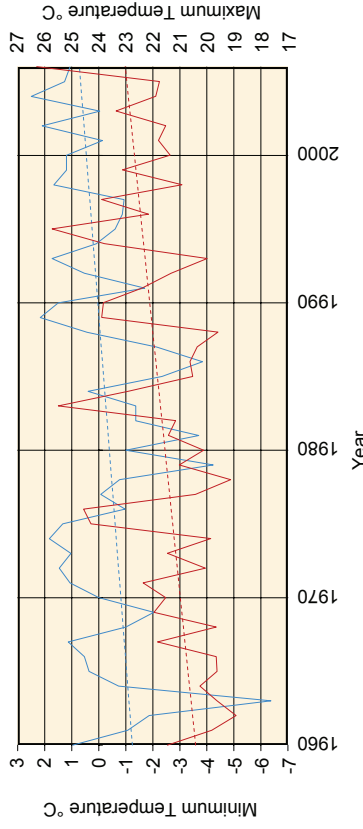
Flood Risk



Source: Met Office Climate Averages 1971 - 2000 (<http://www.metoffice.gov.uk/climate/uk/averages/index.html>)



Average Annual Minimum & Maximum Temperature Shawbury, Ross-on-Wye & Sutton Bonnington Weather Stations



Temperature

One of the most important global factors that can impact directly on health outcomes is climate. Much has been made in the media of the change in global climate in recent years and in particular of global warming.

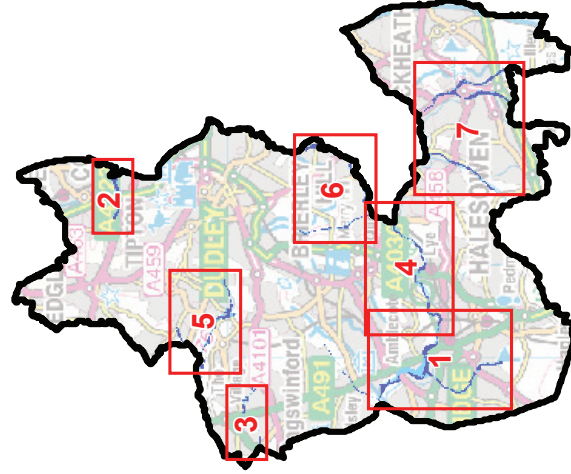
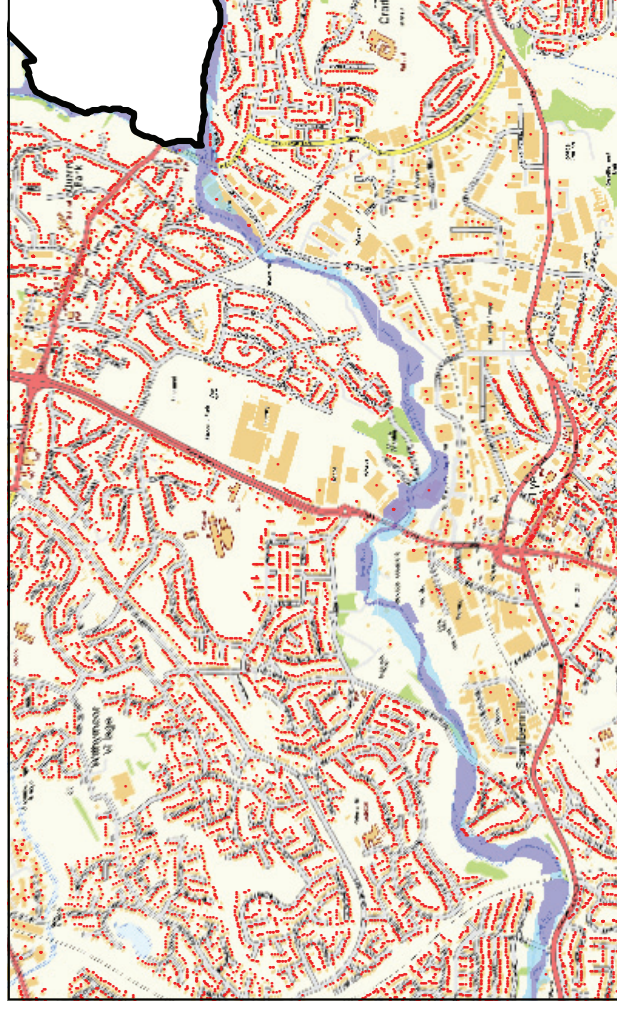
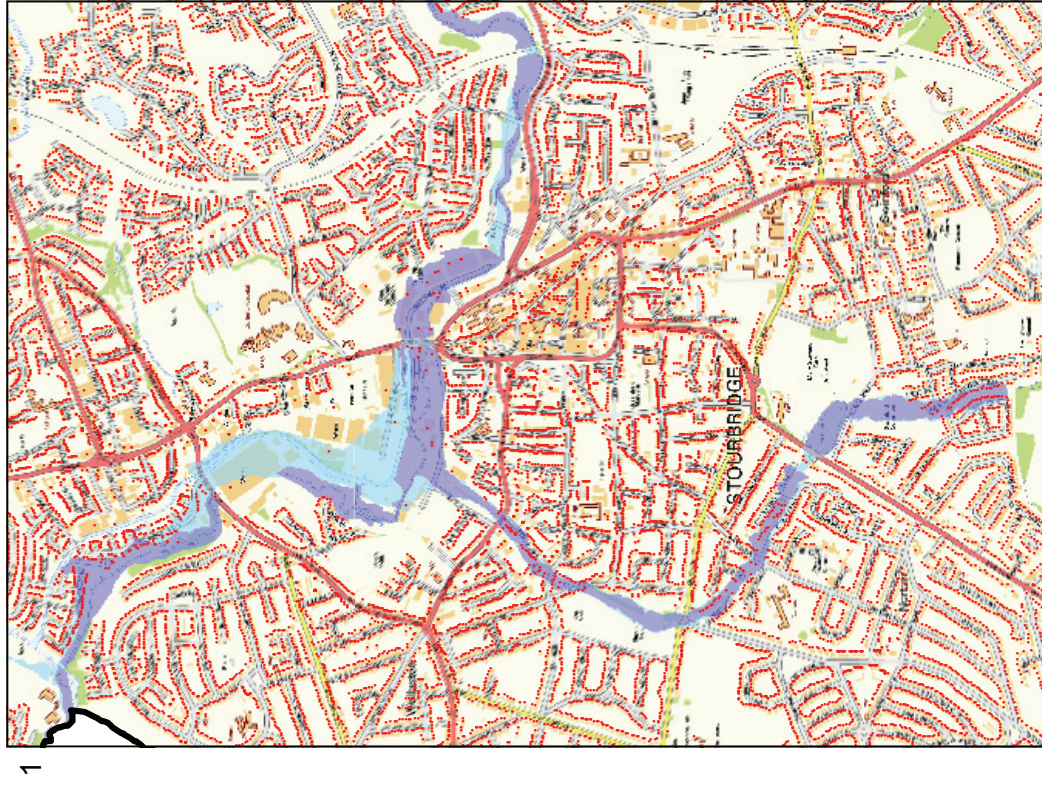
- The chart shows average annual minimum and maximum temperatures from the three weather stations nearest Dudley from 1960 to 2006.
- It is clear that although there is obviously some random variation year-on-year, the long-term trend for the past half-century has been of increasing temperatures at both extremes.
- The temperature maps opposite show that Dudley experiences average, maximum and minimum temperatures above the UK average, but not at the extremes for the region.
- The south of the borough tends to have marginally higher maximum temperatures and slightly lower minimum temperatures compared to the north.
- This change of warmer winters and hotter summers is likely to have an impact on health outcomes.

- The phenomenon of excess winter deaths should become slightly less of a problem as we experience fewer cold winters, but we may in time come to talk more about excess summer deaths as heat waves take their toll more frequently and to greater extremes. (A map of excess winter mortality can be seen in chapter 10)

Sun & Rain

- Dudley experiences a moderately high amount of sunshine compared to the rest of the UK, with little variation across the borough.
- Average rainfall is moderately low, with the north and east of the borough having slightly more rain than the rest. This relates fairly closely to the higher parts of the borough having more rain.
- However the number of days on which there is rainfall greater than 1mm is similar across the whole borough and is moderately low compared to the rest of the UK.
- Sunlight and rainfall can have an impact on health, although in a less direct way than temperature.
- Too much sun has been shown to increase the risk of skin cancer.
- The amount of sunlight obviously affects the temperature, but it has also been shown to affect mental health in certain people.
- The most important effect of rainfall is that of flood risk, which has increased nationally over recent years.
- Extreme flooding can affect health in a number of ways, from drowning and hypothermia of people getting caught in the actual flood water to problems associated with overflowing sewers and contamination of public space and peoples homes.
- The topology of Dudley interacts with weather systems, with the high ridge in the north of the borough leading to lower temperatures and more rainfall

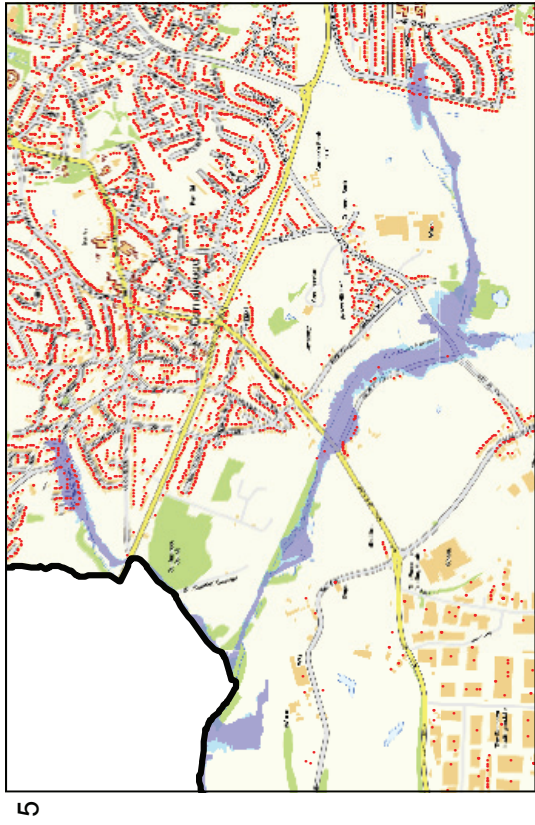
Source: Met Office



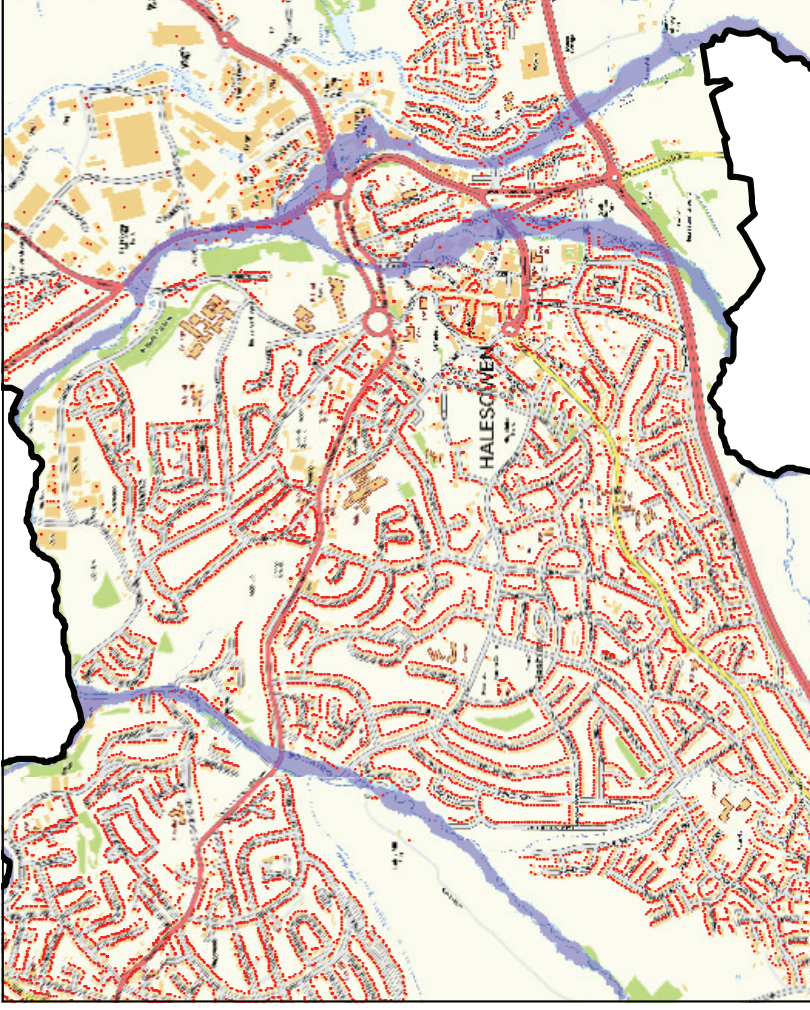
■ 1 in 100 Flood Risk
■ 1 in 1000 Flood Risk

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Source: Environment Agency



5



7



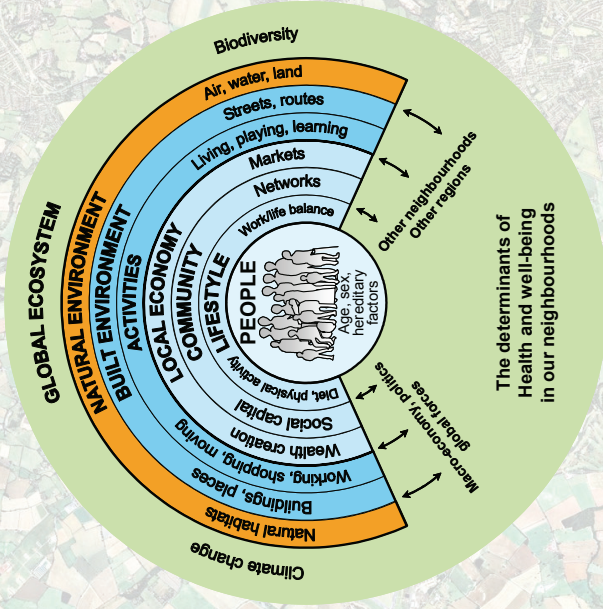
6

Flood Risk Areas

- The maps on these pages show the main areas of flood risk in Dudley.
- Clearly most flood risk is in areas adjacent to rivers and streams, with the River Stour in particular highlighted.
- Although Dudley does not have high levels of risk from flooding compared to some parts of the country, there are still over 1,000 addresses located in areas of the highest risk, with a further 300 in areas of raised risk.

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Natural Environment



Contents

- Introduction
- Natural Habitats
- Geology
- Topography
- Water Quality
- Air Quality

Introduction

Dudley has a diverse natural environment within its built up area with a rich urban and built heritage which provides a strong link with the past and important contributions to townscape and sense of place. The borough's countryside is highly accessible and provides a valuable resource for recreation and conservation. Dudley MBC works closely with many agencies such as English Nature and the Urban Wildlife Trust to designate and manage its nature reserves.

Wildlife and history are prominent within Dudley borough and despite a long history of industrialisation and urban growth, the Dudley landscape retains and preserves many historical, archaeological and natural features.

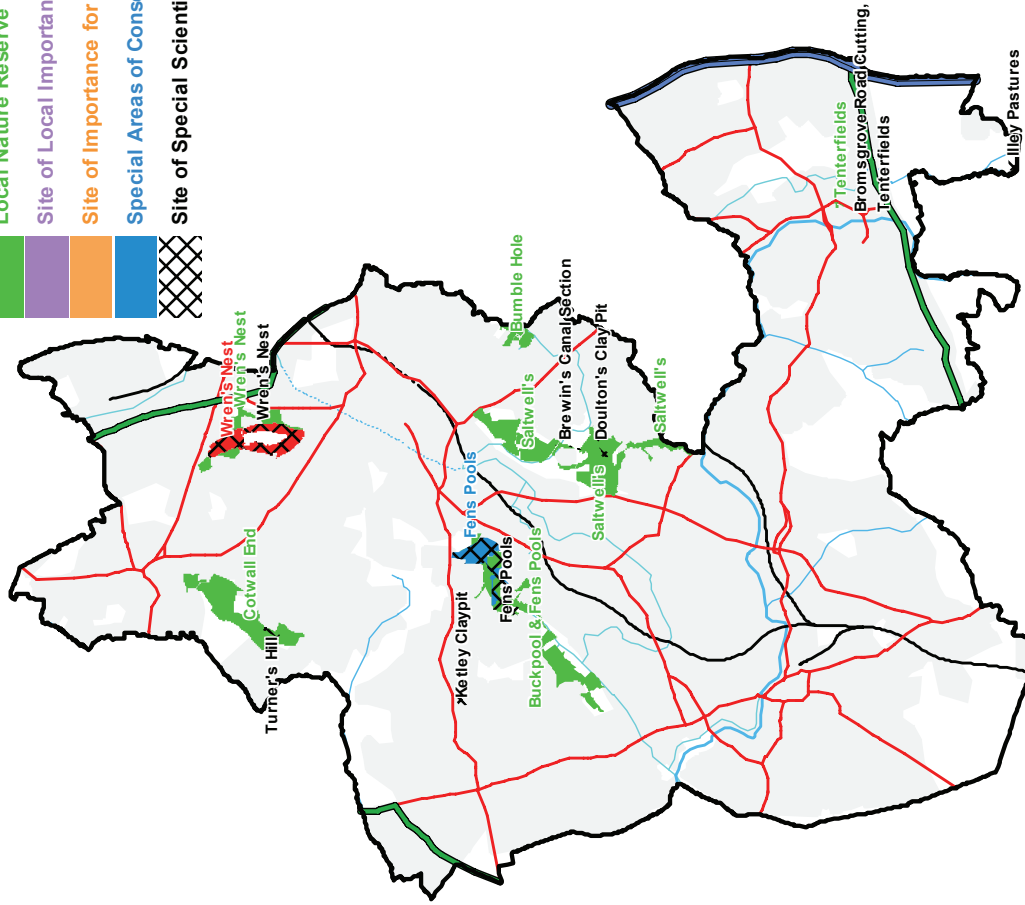
Disused quarries, mines and clay pits provide habitats for all forms of wildlife and protected species such as otters, bats and kingfishers. Once polluted canals and rivers are regaining their wildlife, while the green network of open spaces is not only home to a variety of birds, butterflies and wildflowers, it also enhances the quality of life of local residents.

The historic environment also plays an important role, telling the story of the borough from its early medieval days, through the industrial age to land reclamation and reuse of historic buildings.

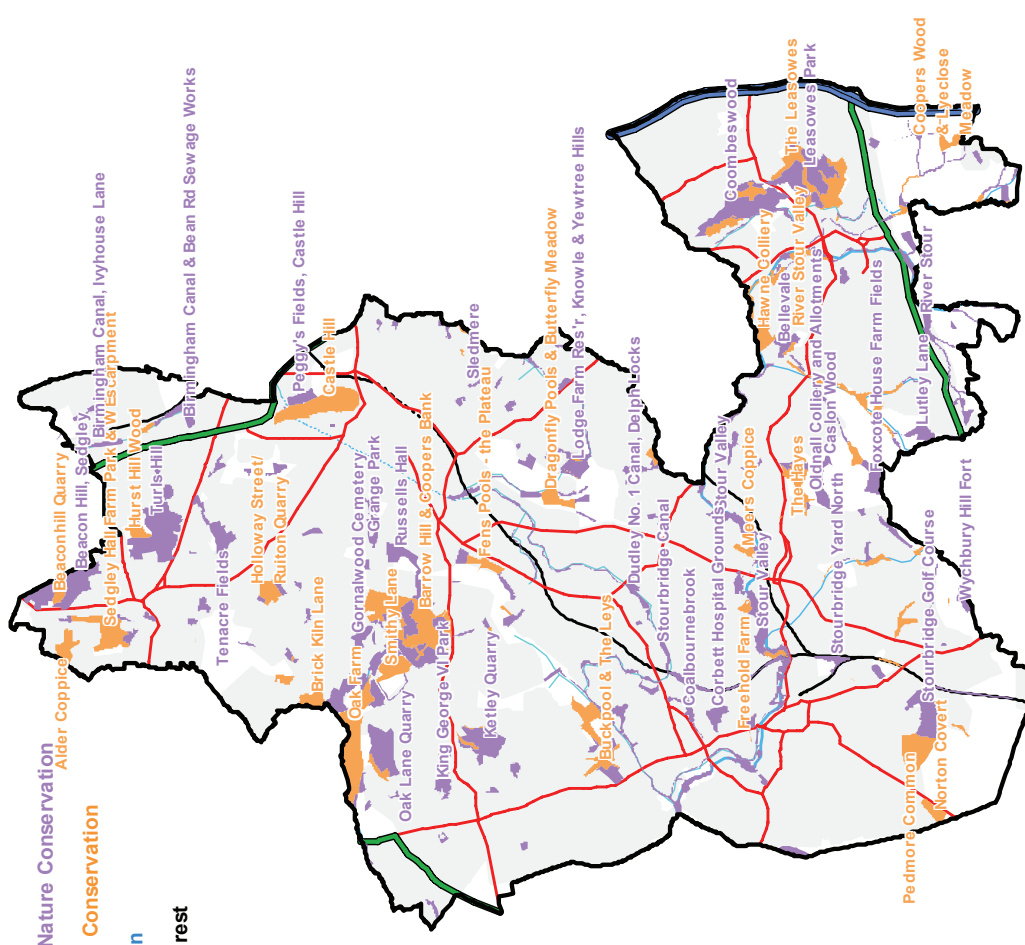
This Chapter considers the natural habitats, geology, topography, water and air quality of Dudley borough.



Nature Reserves and Sites of Special Scientific Interest



Nature Conservation Sites

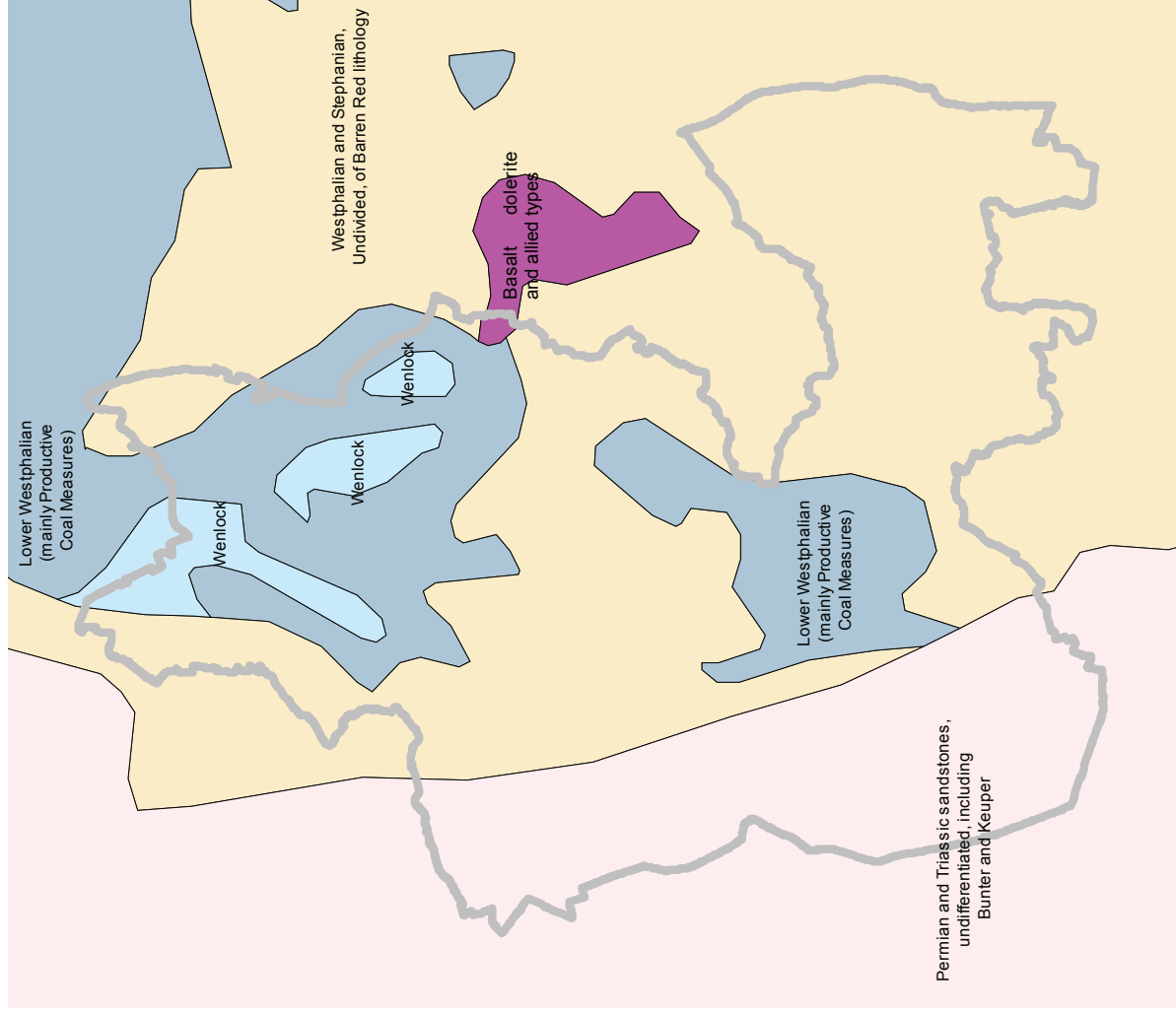


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Source: Dudley MBC, GMIS Unit, 2007



Bedrock Geology

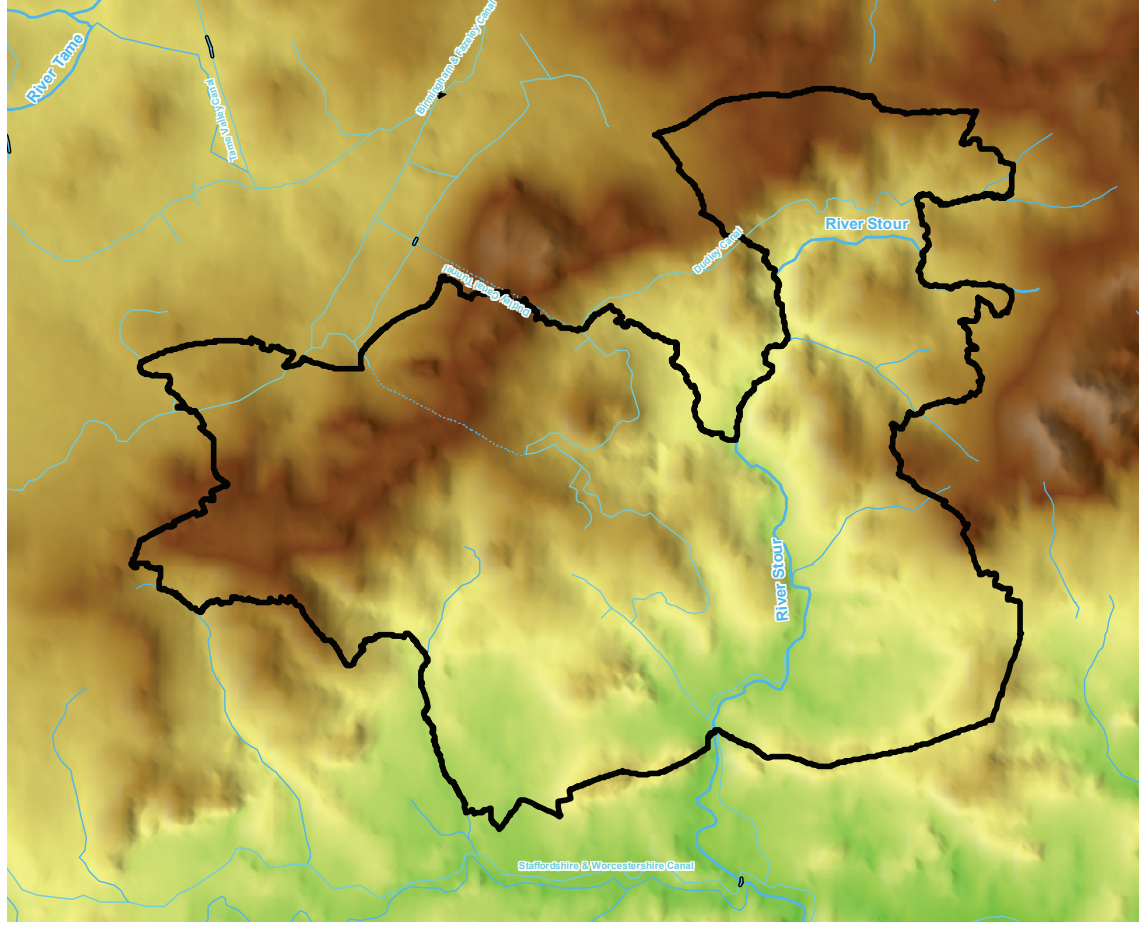


‘In no part of England are more geological features brought together in a small compass than in the environs of Dudley’ - Sir Roderick Murchison, President of the Royal Geological Society, at a lecture given in Dark Cavern, beneath Castle Hill, Dudley in September 1849.

- 420 million years ago, the area of Dudley lay in the middle of a tropical sea.
- This sea was populated with millions of corals and other sea creatures, which when died turned into limestone.
- 120 million years ago the sea bed rose, turning the area into a swamp. Trees died from the wet conditions and under pressure were eventually converted to coal.
- The clashing of the tectonic plates caused a buckling of the bedrock
- The geological features of Dudley played an important part in the development of the Black Country.
- For centuries the limestone was quarried for building stone, agricultural fertiliser and to act as a blast furnace flux for the iron and steel industry.
- This has left the area honeycombed with great quarries and caverns.
- Wren’s Nest and Castle Hill were declared a Scheduled Ancient Monument in 2004 in recognition of having the best surviving remains of the limestone quarrying, mining and processing industry in Dudley.
- Additionally Wren’s Nest is a Nature Conservation Reserve and Site of Special Scientific Interest.



Topography and Waterways

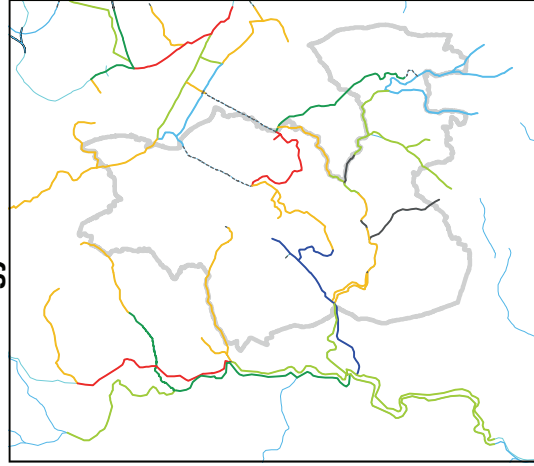


- The Sedgley, Dudley and Rowley Regis Ridge has to the west the River Stour and tributaries which drain into the River Severn to Bristol. To the East, the River Tame and tributaries eventually drain into the River Trent to the North Sea. Thus, the main drainage divide of England passes through Dudley Borough.
- Dudley has 16 miles of navigable canals, comprising Stourbridge Canal and Dudley No. 1 and Dudley No.2 canals.
- The main river running through Dudley Borough is the River Stour
- The River Stour is approximately 25 miles from its source at St. Kennelms to where it finally flows into the UK's largest river, the River Severn.
- The banks of the River Stour supported heavy industry throughout the industrial revolution and into the 20th century and was a major waste disposal outlet for factories.
- The decline of heavy industry and the increasing awareness of the impact of waste on the environment has led to improved water quality.
- Poor water quality can be detrimental to public well-being, the economy and the environment.
- Today the development of areas should consider the potential increase in surface water run-off and associated flooding together with water quality problems by increasing impermeable surfaces.

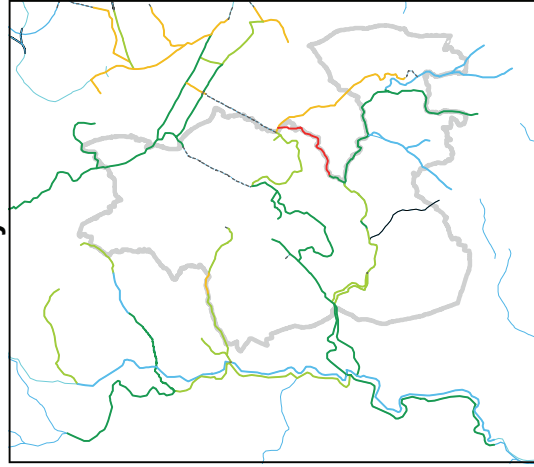
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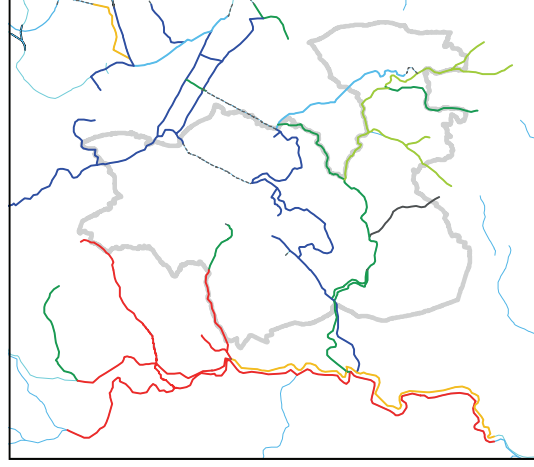
Water Biology 2006



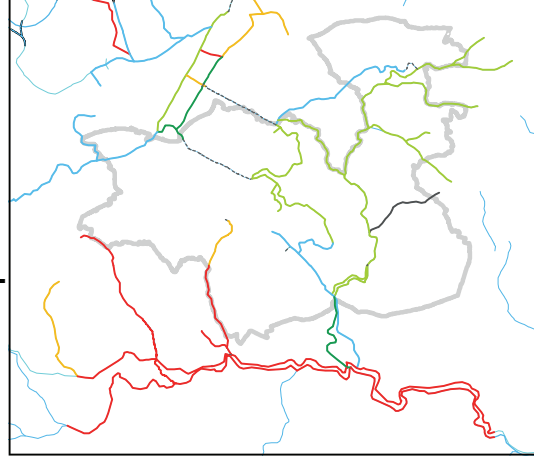
Water Chemistry 2006



Water Nitrates 2006



Water Phosphates 2006



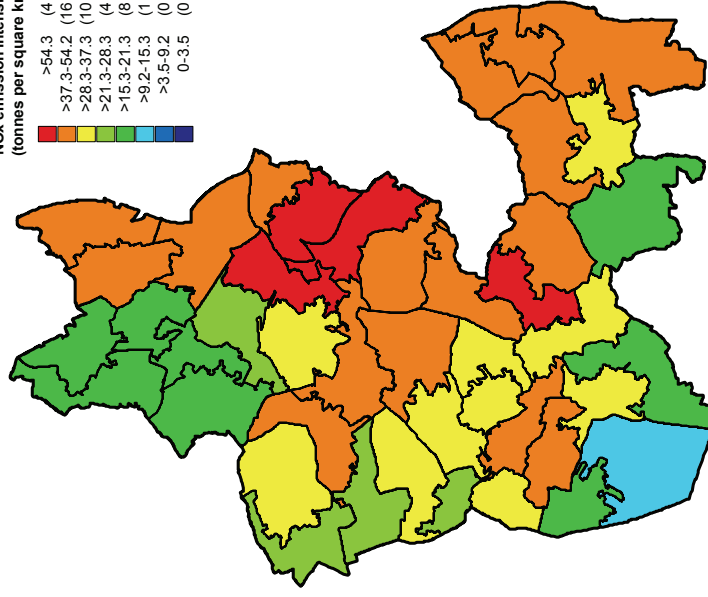
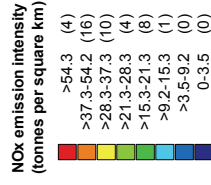
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- Tunnels
- Very Good
- Good
- Fairly Good
- Fair
- Poor
- Bad
- Unclassified

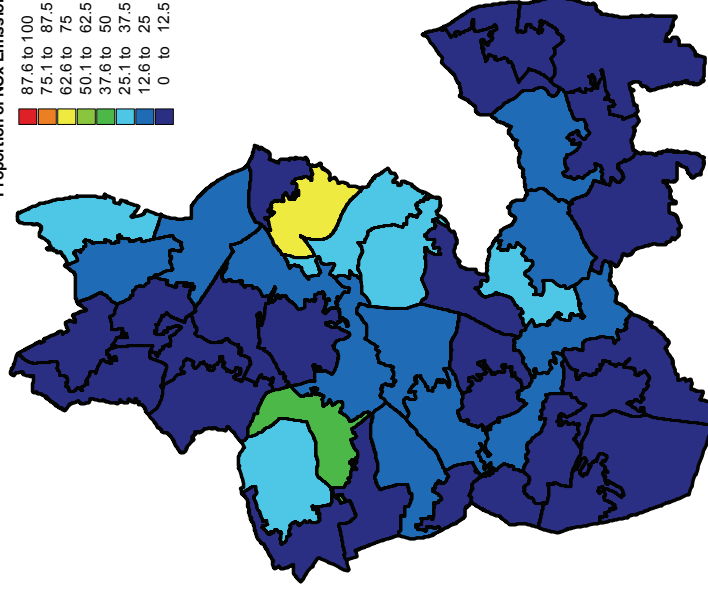
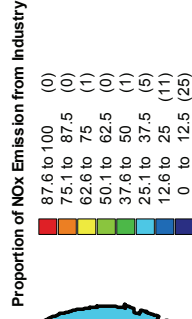
- River water quality is affected by two main factors: point sources (e.g. domestic and industrial waste water) and diffuse sources (e.g. polluted water and sediment washing off fields, recreational areas, roads and pavements).
- There have been big improvements in waste water discharges over recent years, but pollution from diffuse sources is becoming an increasing threat.
- The quality of water in different watercourse stretches is compared using the General Quality Assessment (GQA) scheme, in which quality grades are assigned according to the water chemistry, biology and nutrient levels.
- River Quality Objectives are set for each river stretch based on the current state and intended use of the water. There were a few significant failures on water stretches within Dudley including Merryhill Brook, Mousesweet Brook and sections of the Dudley Canal.
- 54.4% of Dudley water stretches were poor or bad for Biological quality in 2006 and 16.8% were poor or bad quality for phosphate levels.



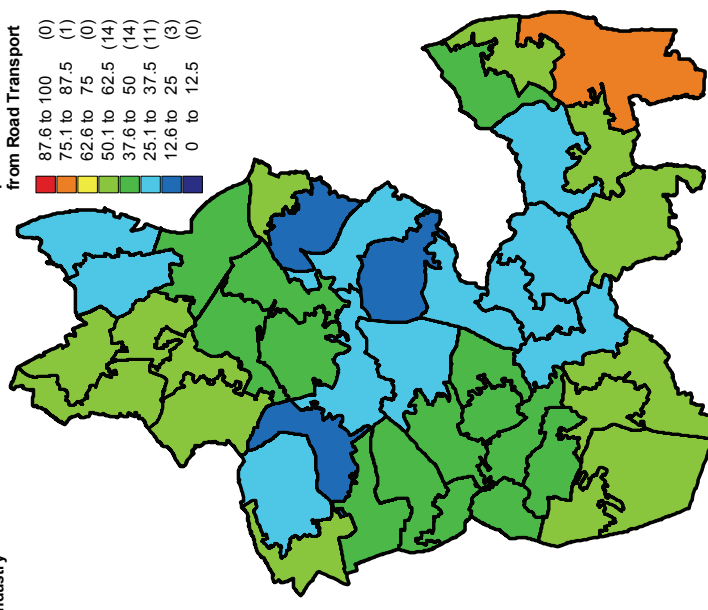
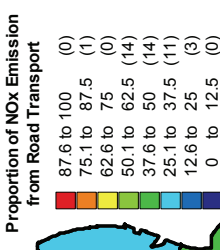
Air Emissions: Nitrogen Oxide (NO_x) emission intensity at middle super output area in 2005



Air Emissions: Proportion of Nitrogen Oxide (NO_x) emission from Industry at middle super output area in 2005

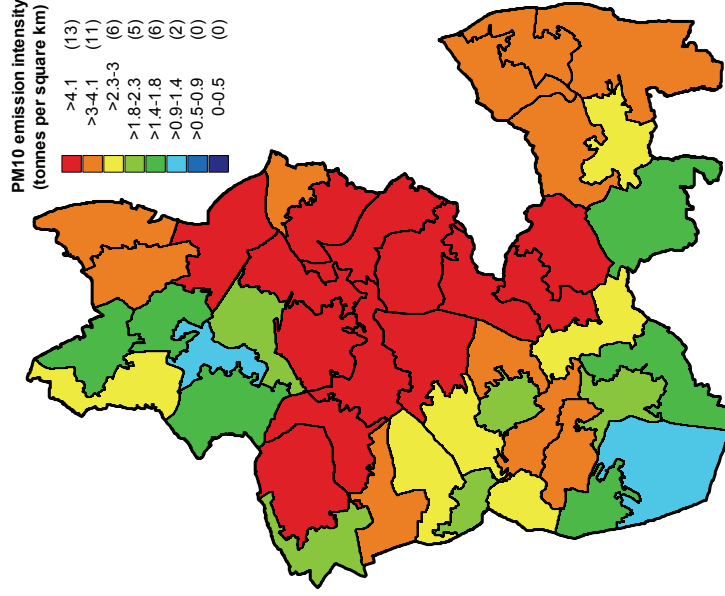


Air Emissions: Proportion of Nitrogen Oxide (NO_x) emission from Road Transport at middle super output area in 2005

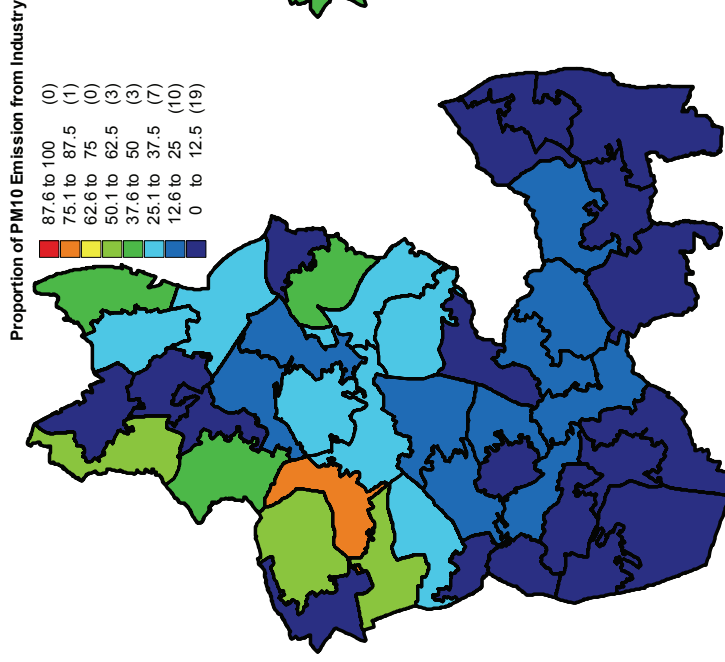


- Air pollution is a serious issue for health in the UK and the Government has made commitments to improve air quality.
- Air pollution hits hardest the most vulnerable in society. The old and young, in particular those suffering from asthma and heart and lung diseases.
- NO_x is thought to have both acute and chronic effects on airways and lung function, particularly in people with asthma.
- The mean level of emissions of NO_x is 31 tonnes per km², with almost half of the MSOAs in the borough having a concentration above the mean.

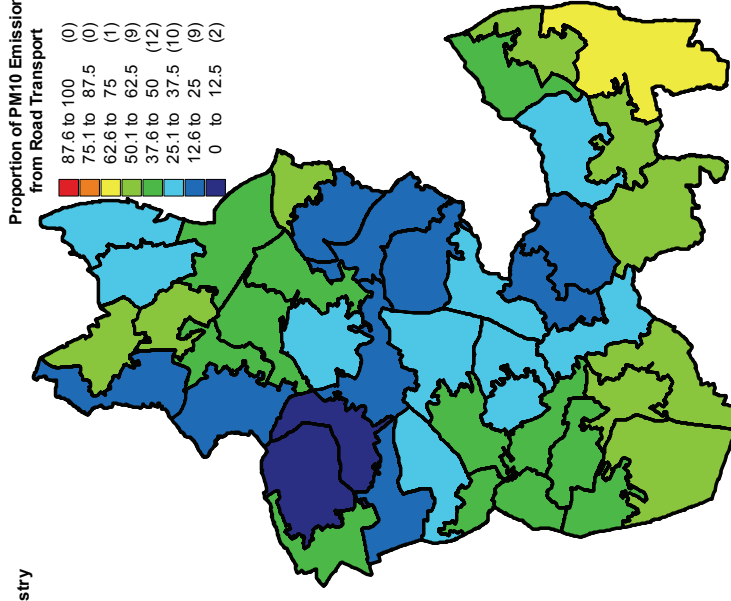
Air Emissions: Particulate Matter <10µm (PM₁₀) emission intensity at middle super output area in 2005



Air Emissions: Proportion of Particulate Matter <10µm (PM₁₀) emission from Industry at middle super output area in 2005

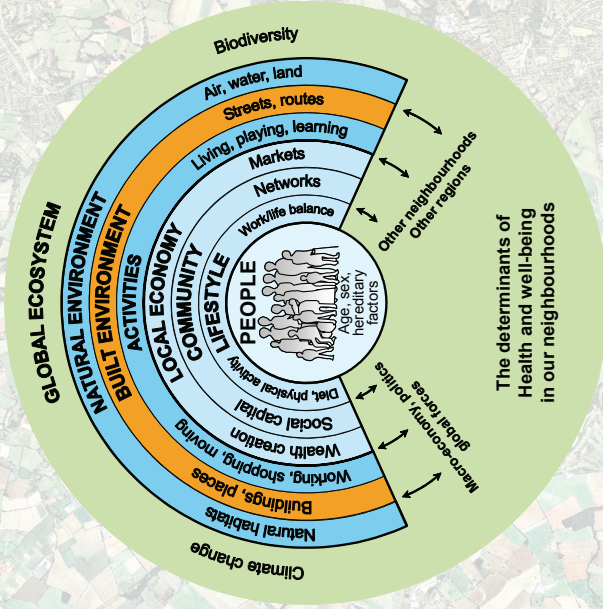


Air Emissions: Proportion of Particulate Matter <10µm (PM₁₀) emission from Road Transport at middle super output area in 2005



- PM₁₀ means particulate matter smaller than 10µm diameter. Particulate matter air pollution is associated with a range of effects on health including affects on the respiratory and cardiovascular systems. The Expert Panel on Air Quality Standards concluded that particulate matter air pollution episodes are responsible for causing excess deaths among those with pre-existing lung and heart disease.
- Concentrations of PM₁₀ comprise of primary particles from combustion sources; secondary particles mainly sulphate and nitrate; and coarse particles suspended soils, biological particles and particles from construction work
- The mean level of emissions of PM₁₀ is 2.4 tonnes per km² and Dudley has many areas which exceed this. The area with the highest proportion of PM₁₀ from industry is the Pensnett Trading Estate and the area with the highest proportion coming from road transport corresponds to the section of the M5 motorway.

Built Environment



Contents

- Introduction
- Built Environment
- Travel Routes
- Services
- Housing Type
- Housing Tenure
- Housing & Renewal
- Arc of Opportunity
- Green Space

Introduction

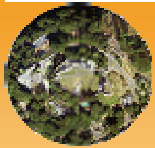
Dudley has an extremely diverse and rich source of historical buildings. The Borough has 251 buildings on the Statutory List of Buildings of Special Architectural or Historic Interest' and this is made up of buildings or structures which are considered to be of national importance because of their architectural or historic features. It has a further 364 buildings on the Local Listed Buildings register which do not meet the national requirements but are still worthy of protection and conservation. Consideration of these buildings is incorporated into the local planning policy.

There has always been a link between the built environment and health with many of our homes, cities and suburbs being designed to combat health problems. From slum clearances, to garden cities and the urban parks movement, architects, planners and civic leaders have striven to create places which help keep people healthy.

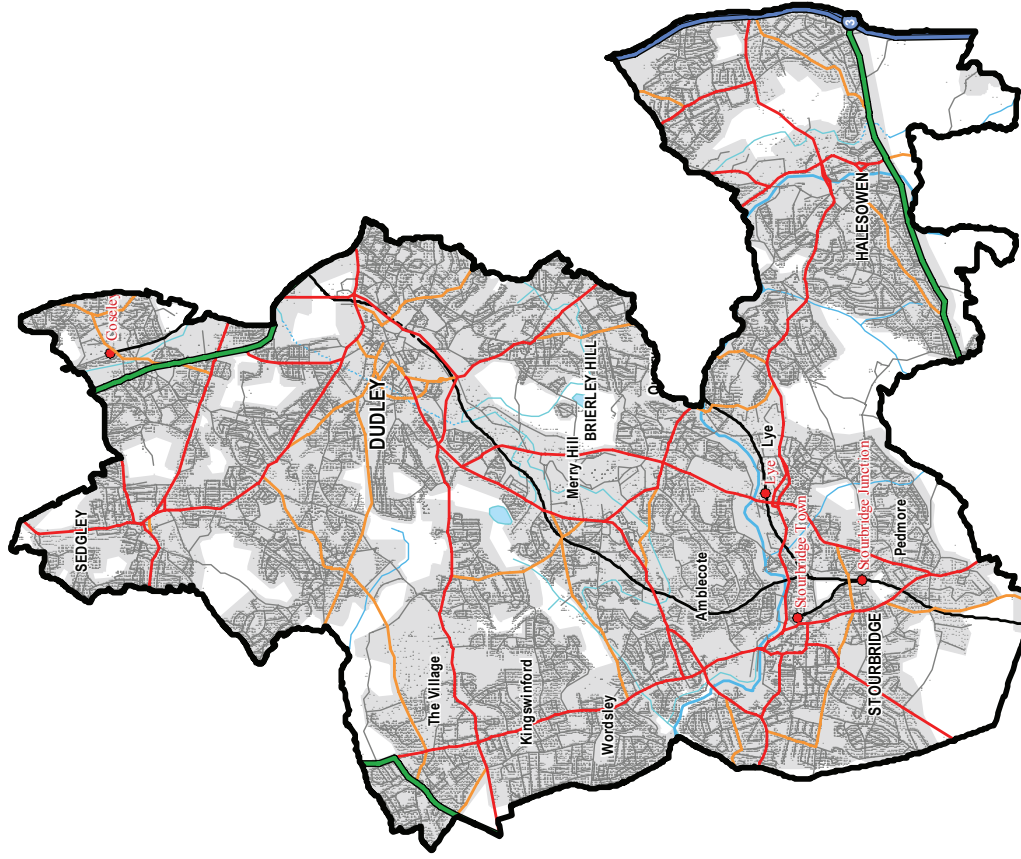
The built environment has a real effect on the way we live our lives and our physical and mental well-being. The quality of buildings and places around us, including proximity, accessibility and safety can make a big difference to how active we are, and how much noise, pollution and stress we have to deal with. The location of services should allow for good accessibility for local people and be well connected by public transport.

Planning and regeneration policies can have profound effects on the extent to which the built environment is one which promotes health.

This chapter covers all aspects of the built environment in terms of housing type, services, accessibility and future development of the built environment.

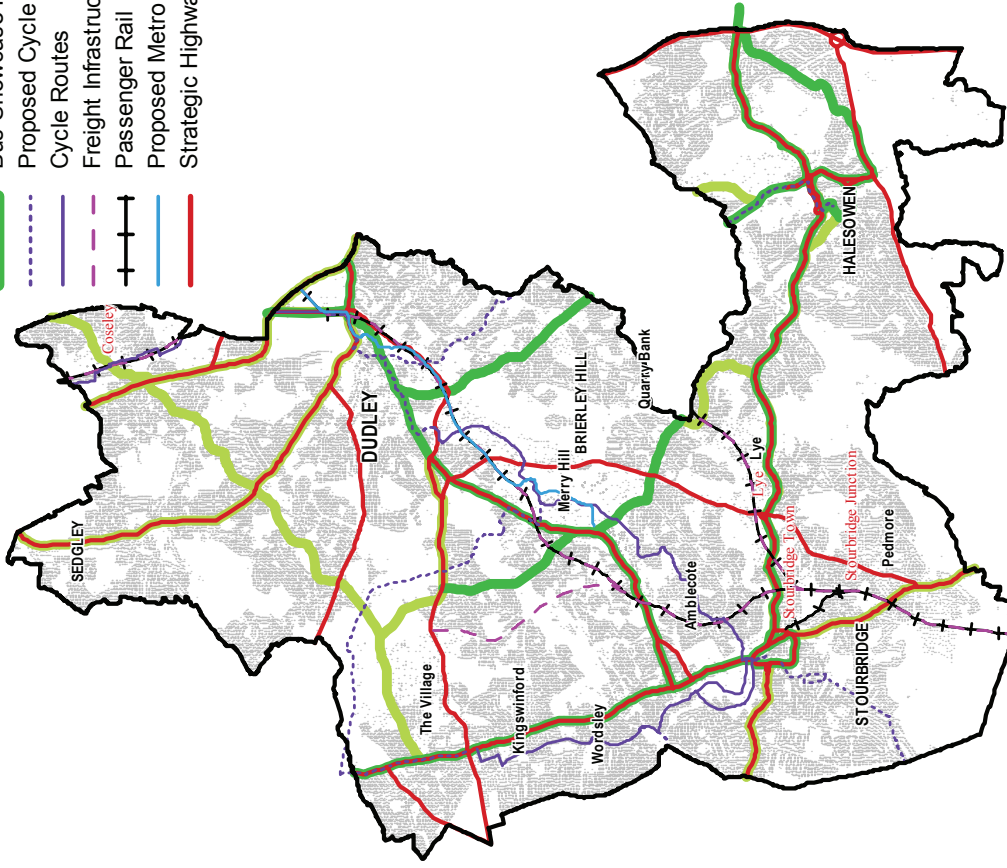


Dudley Built Environment



Dudley Travel Routes

- Other Bus Infrastructure Routes
- Bus Showcase Routes
- Proposed Cycle Routes
- Cycle Routes
- Freight Infrastructure
- Passenger Rail
- Proposed Metro
- Strategic Highway Network



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Source: Dudley MBC, GMIS Unit



- The map showing the built environment for Dudley highlights the fact that there are limited rural areas remaining and that the borough is predominantly urban. There is however good access from most of the borough to rural areas or green space.
- The 5 key public transport corridors for Dudley are:
 - Stourbridge - Halesowen- Birmingham
 - Birmingham - Coseley - Wolverhampton
 - Dudley- Kingswinford – Wombourne
 - Stourbridge - Brierley Hill - Dudley - Walsall
 - Hagley - Stourbridge - Kingswinford
- Some of these have already had extensive improvement work carried out. The Local Transport Plan available from Dudley Council has detailed plans of investment and improvements in the bus infrastructure, and other public transport routes.
- Existing and proposed routes are shown on the Map. Dudley MBC are proposing to develop and protect a network of segregated or dual cycle/pedestrian routes which link residential areas, employment areas, transport interchanges, and shopping centres, and provide access to the regional and national cycle network, while ensuring pedestrian safety. There are currently approximately 18 km of cycle routes in Dudley with a further 19 km proposed.



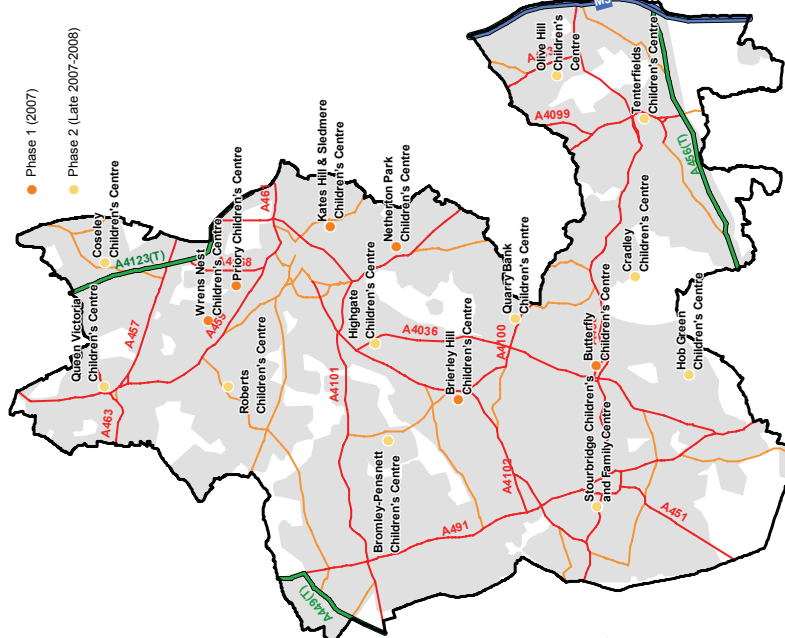
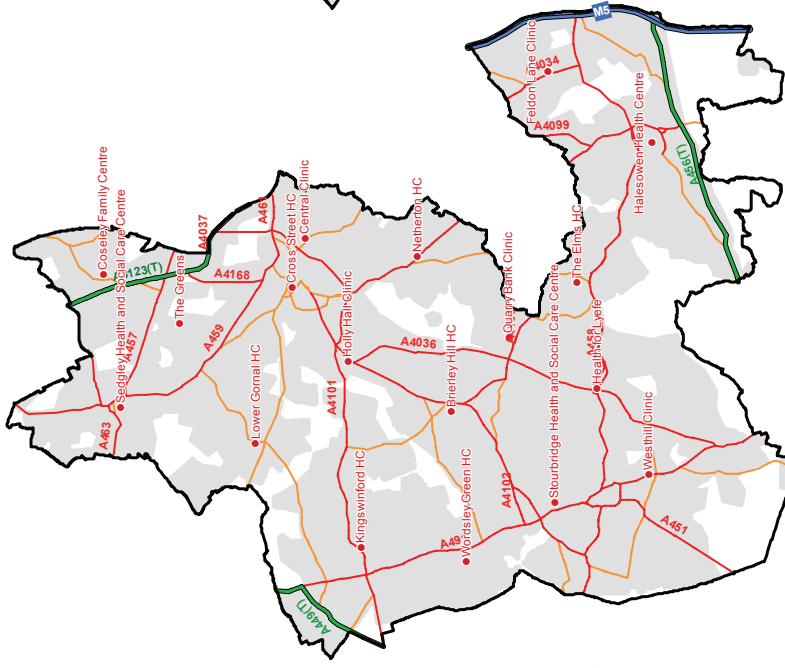
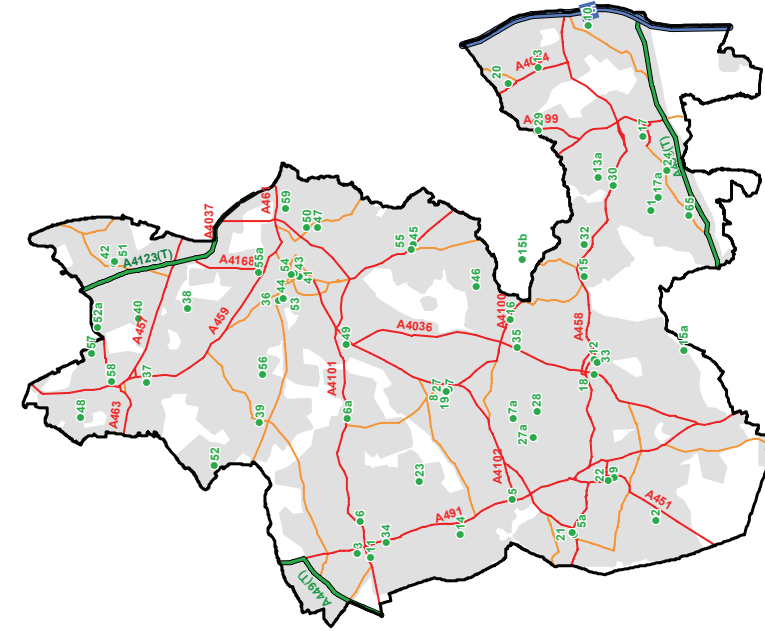
GP Surgeries

Health Centres

Children's Centres

Childrens Centres Phase 1 & 2

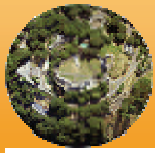
- Phase 1 (2007)
- Phase 2 (Late 2007-2008)



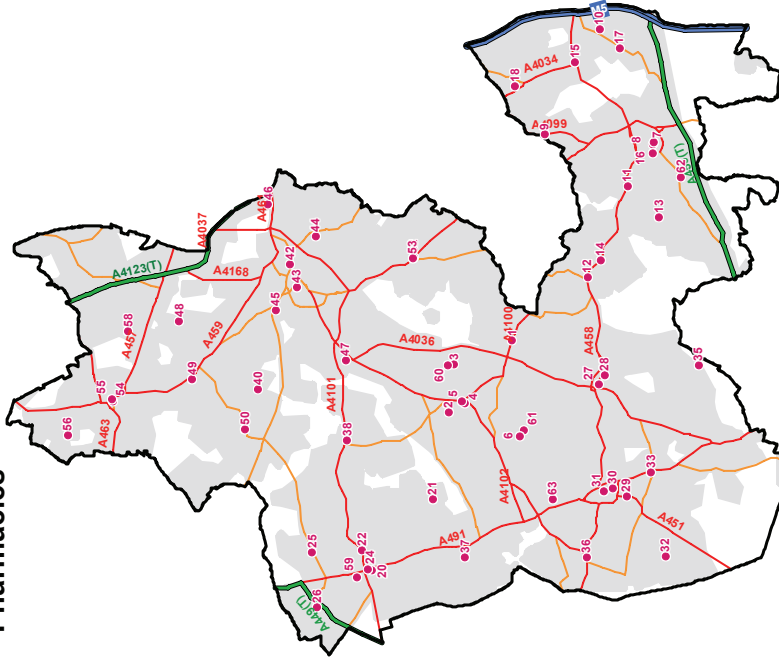
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|----|----------------|-----|---------------------|-----|--------------------|----|------------------|-----|---------------|
| 1 | Cooke, M.J. | 13 | Bamford, C.S. | 23 | Bloor, J.A. | 38 | Smith, M.H. | 52 | Jain, S.K. |
| 2 | Powell, D.J.S. | 13a | Bamford, C.S. | 24 | Love, G.M. | 39 | Gee, R.W. | 52a | Jain, S.K. |
| 3 | Parnell, S.J. | 14 | Oliver, R. | 25 | Love, G.M. | 40 | Al-Rabbani, S.F. | 53 | Porter, W.A. |
| 5 | Issitt, J.S. | 15 | Yarwood-Smith, C.H. | 27 | Mary, J.S.G. | 41 | Welch, N.C.C. | 54 | Pall, J. |
| 5a | Issitt, J.S. | 15a | Yarwood-Smith, C.H. | 27a | Mary, J.S.G. | 42 | Paramanathan, S. | 55 | Gupta, P.D. |
| 6 | Skilbeck, A.B. | 15b | Yarwood-Smith, C.H. | 28 | Merotra, S.K. | 43 | Parry, D.G. | 55a | Gupta P.D. |
| 6a | Skilbeck, A.B. | 16 | Karim, M.R. | 29 | Akufo-Tetteh, H.N. | 44 | White, N.C. | 56 | Rathore, J.S. |
| 7 | Bundred, M.A. | 17 | Johnson, R.A. | 30 | Shameem, N.A. | 45 | Conlon, D.M. | 57 | Sarkar, P.K. |
| 7a | Bundred, M.A. | 17a | Johnson, R.A. | 32 | Mittal, V.K. | 46 | Ingle, P.R. | 58 | Shather, N. |
| 8 | Sumaria, M.M. | 18 | Killin, W.P. | 33 | Prashara, B.K. | 47 | Das Gupta, S. | 59 | Basu, S. |
| 9 | Watt, A.J.M. | 19 | Sahni, H.S. | 34 | Chisholm, I.T. | 48 | Hampson, W.T. | | |
| 10 | Lewis, R.A. | 20 | Vamadevan, T. | 35 | Shah, R.M. | 49 | Cartwright, S.T. | | |
| 11 | Plant, N.A. | 21 | Firth, J. | 36 | Smart V.M. | 50 | Brettell, P.B.V. | | |
| 12 | Price, M. | 22 | Dingwall, I.M. | 37 | Irani, S. | 51 | Arsiwala, I. | | |

| | | | |
|----|------------------|-----|---------------|
| 38 | Smith, M.H. | 52 | Jain, S.K. |
| 39 | Gee, R.W. | 52a | Jain, S.K. |
| 40 | Al-Rabbani, S.F. | 53 | Porter, W.A. |
| 41 | Welch, N.C.C. | 54 | Pall, J. |
| 42 | Paramanathan, S. | 55 | Gupta, P.D. |
| 43 | Parry, D.G. | 55a | Gupta P.D. |
| 44 | White, N.C. | 56 | Rathore, J.S. |
| 45 | Conlon, D.M. | 57 | Sarkar, P.K. |
| 46 | Ingle, P.R. | 58 | Shather, N. |
| 47 | Das Gupta, S. | 59 | Basu, S. |
| 48 | Hampson, W.T. | | |
| 49 | Cartwright, S.T. | | |
| 50 | Brettell, P.B.V. | | |
| 51 | Arsiwala, I. | | |

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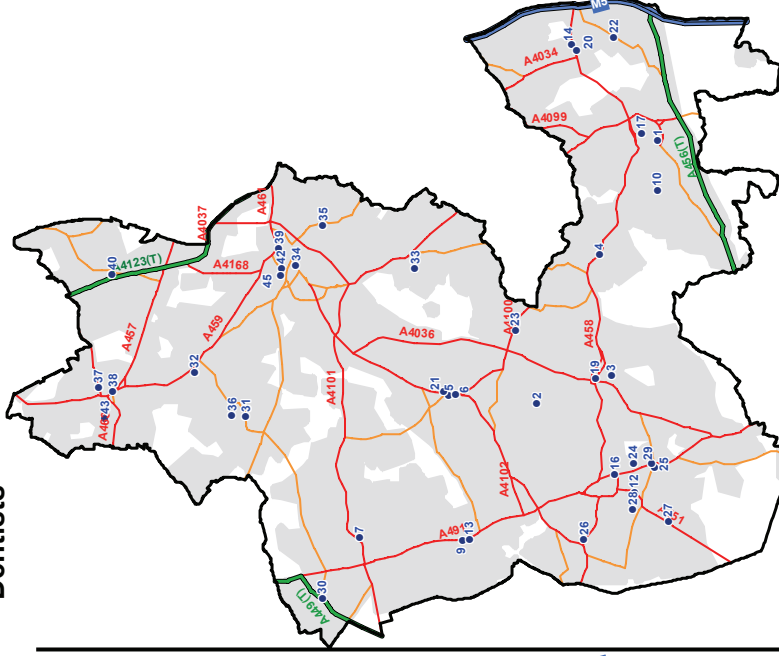


Pharmacies



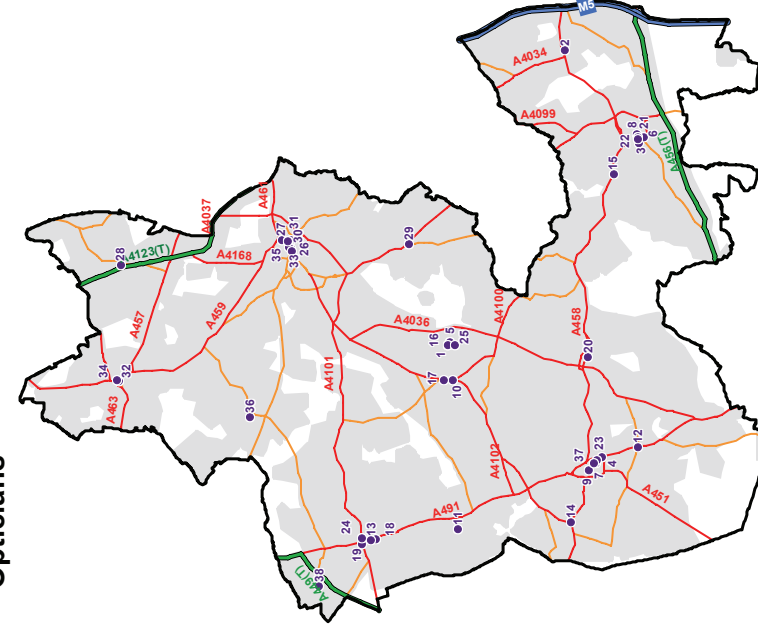
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| 1,13,24,45 | C G Murray & Son Ltd | 31 | Stourbridge Pharmacy |
| 2,7,22,27-29, 35, | Lloyds Pharmacy | 32 | The Broadway Pharmacy |
| 52,54-55,59,62 | | 33 | Swinford Pharmacy |
| 3,4,8,20,30,42,43 | | 36 | Moss Chemist |
| 5 | Boots the Chemist | 37 | County Pharmacy |
| 6 | McArdle I Ltd | 38 | The Pharmacy Galleria |
| 9 | Witthmoor Pharmacy | 39 | Mullard & Bullock |
| 10 | Gibbs Chemist | 40 | Jhoots Pharmacy |
| 11 | Grange Pharmacy | 44 | Dispharma |
| 12 | Hawne Chemist | 46 | Tesco Instore Pharmacy |
| 14 | Cradley Chemist | 47 | Holly Hall Pharmacy |
| 15 | National Co-operative Chemist Ltd | 48,51,58 | The Co-operative Pharmacy |
| 16 | Murray's Healthcare | 49 | The Arcade Pharmacy |
| 17 | Murray's Pharmacy | 50 | J T Egginton Ltd |
| 18 | Turners Pharmacy | 53 | Milan Chemist |
| 21 | Rajja Chemist | 56 | Northway Pharmacy |
| 25 | LAD Chemist | 60,61 | Sainsburys Supermarkets |
| 26 | Morrisons Pharmacy | 63 | Amblecote Pharmacy |
| | Wall Health Pharmacy | | |

Dentists



- | | | | |
|--------------|-----------------------------------|----|--------------------------------|
| 1 | Williams Dental Surgery | 27 | Norton Dental Practice |
| 2 | Amblecote Dental Care | 28 | The Dental Practice |
| 3 | Andrew Hargreaves Dental Practice | 29 | The Hollies |
| 4-6, 10, 19, | Bhandal Dental Practice | 30 | Wall Health Practice |
| 21,25,31-34, | | 35 | Complete Dental |
| 7 | Cockram, Westwood & Cockram | 36 | Kemberton Dental Practice |
| 9 | Dr Annette Southall | 37 | Dr R S Kudthail Dental Surgery |
| 12 | I R Dale | 38 | Highview Dental Practice |
| 13 | Peirre Tucker Dental Surgery | 39 | Castleview Dental Practice |
| 14 | J M Robinson | 40 | J A Holden |
| 16 | M J Warren | 42 | P L Mole & Associates |
| 17 | Morgan Dental Practice | 43 | Langland Dental Practice |
| 20 | Mr N J Waller & Associate | 45 | The Briars Dental Practice |
| 22 | Oakleigh Dental Practice | | |
| 23 | Quarry Bank Dental Surgery | | |
| 24 | Red Hill Dental Practice | | |
| 26 | St James Dental Centre | | |

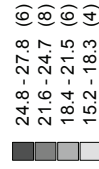
Opticians



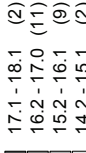
- | | | | |
|--------|--------------------------------|----------|-----------------------------|
| 1 | Boots Opticians & Hearing Care | 18 | Pinder & Moore Optometrists |
| 2 | C Cacoullis | 19 | RA Lawley Ltd |
| 3 | Chapman & Myers Opticians | 20 | Robert Hill Opticians |
| 4 | Docker & Wilson Opticians | 21 | Scrivens Ltd |
| 5-7,30 | Dollond & Aitchison | 22,23,35 | Specsavers |
| 8 | Eye Society Opticians | 24,36 | The Eyecare Centre Ltd |
| 9 | Eyewise Opticians | 25 | Vision Express (UK) Ltd |
| 10,31 | JS Edmunds | 26 | 4 Sight |
| 11 | John Hamer Opticians | 27 | AJ Moore |
| 12 | Julian Hill Opticians | 28 | Chapman Opticians Ltd |
| 13 | Krystal Vision | 29 | David Wright Opticians |
| 14 | LA Wayne | 32 | Knight Opticians |
| 15 | LG Ellis | 33 | Peter Bainbridge Opticians |
| 16 | Optical Express Southern Ltd | 34 | Specs Direct |
| 17 | Pickford Opticians | 37,38 | Special Look's Opticians |



Percentage of Detached Houses by 2004 Electoral Wards

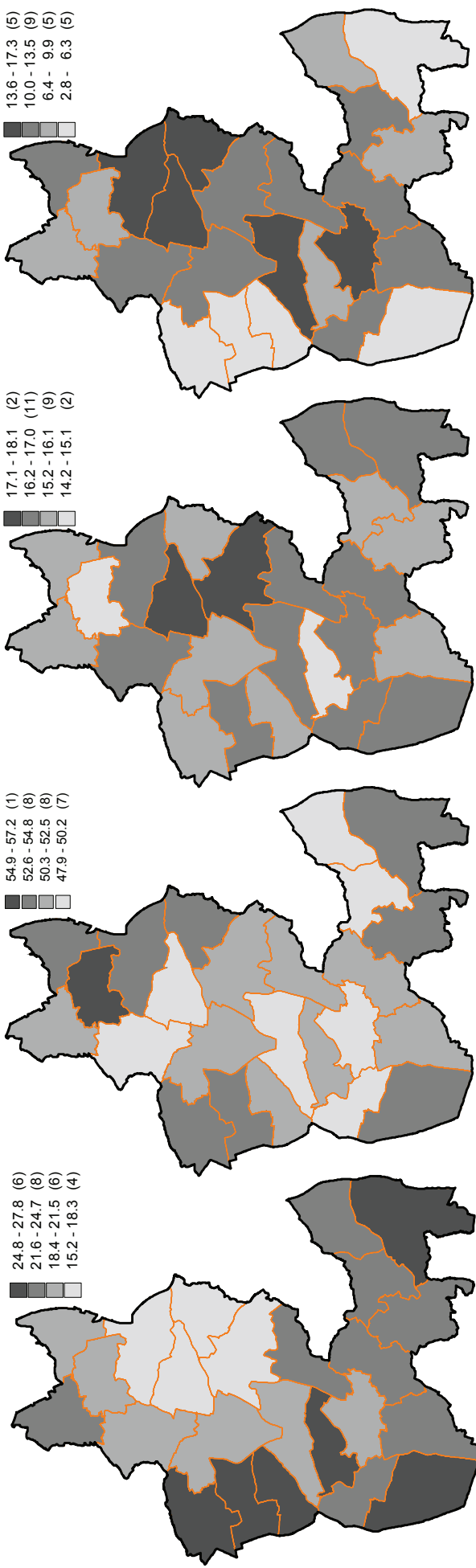
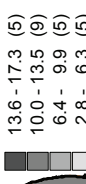


Percentage of Semi-Detached Houses by 2004 Electoral Wards

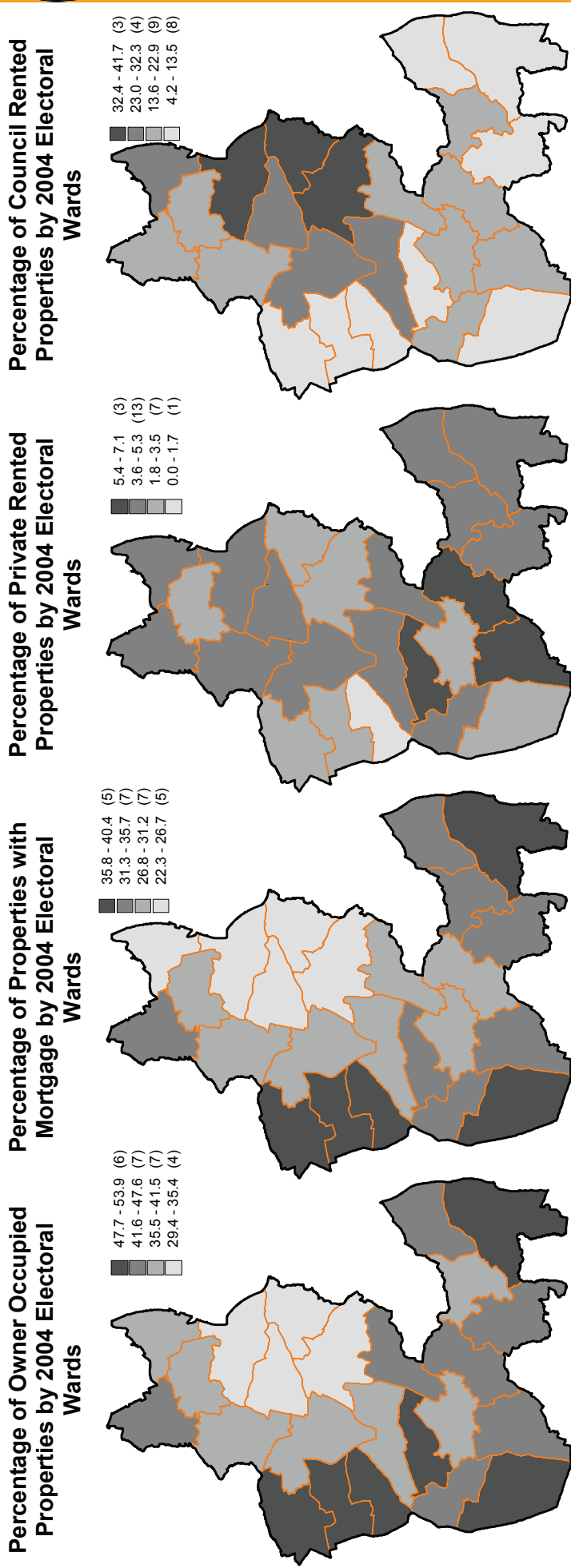


Percentage of Terraced Houses by 2004 Electoral Wards

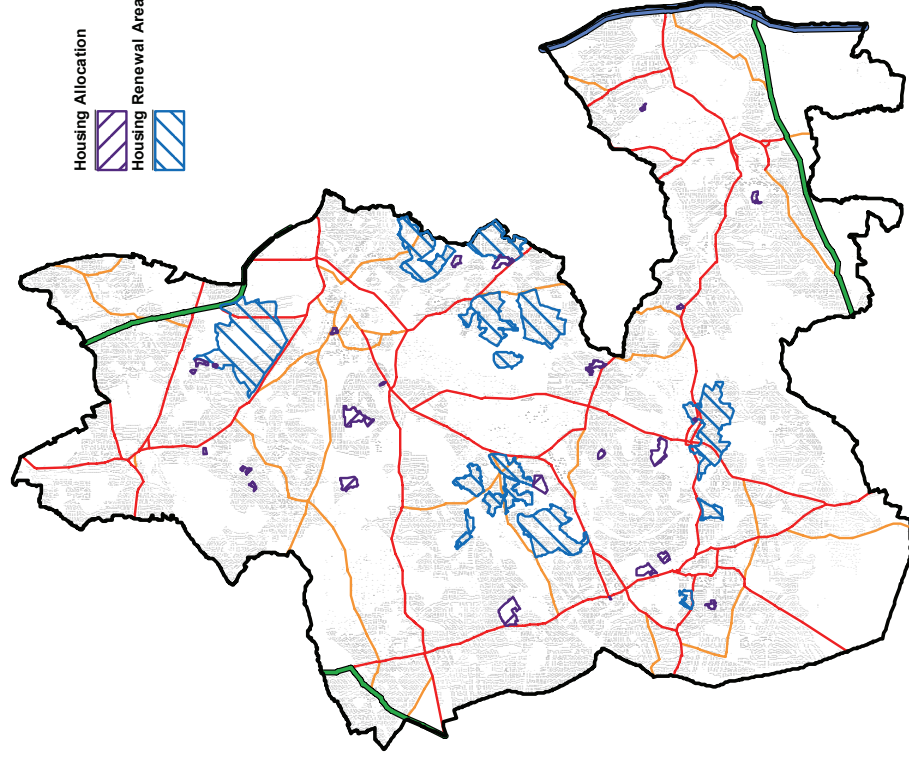
Percentage of Flats/Maisonettes/ Bedsits by 2004 Electoral Wards



- Dudley Metropolitan Borough Council formally commissioned David Coultie Associates (DCA) in July 2005 to carry out a Borough-wide Housing Needs and Demand Study. The survey data are based on 2,614 responses with 2.1% of all households in the Borough having taken part in the Survey.
- Overall in Dudley the properties comprise 22.0% detached, 51.6% semi-detached, 16.2% terraced and 10.2% flat/maisonette/bedsit.
- The proportion of semi detached and detached houses and bungalows at 73.6% is higher than the national level of 54%.
- Flats /maisonettes and bedsits represent only 10.2% of the existing stock, but the analysis of concealed households (living within a household wanting to move to their own accommodation and form a separate household) found 42.0% of expressed need to be for flats, maisonettes and bedsits.
- Detached properties are found across the borough but tend to be in the highest concentration in Kingswinford North & Wall Heath, Kingswinford South and Wordsley



- Overall in Dudley the properties comprise 42% owner occupied (without mortgage), 31% owner occupied (with mortgage), 4% private rented, 19% council rented, 3% housing association rented, 0.1% shared ownership, 0.2% tied accommodation, 0.7% living rent free and 0.1% other.
- The wards with the highest percentage of owner occupied properties are similar regardless of their mortgage status.
- The private rented sector is small and is concentrated in Amblecote, Pensnett & Stourbridge East and Cradley & Foxcote.
- Council rented sector accounting for a fifth of properties is concentrated in Castle & Priory, St. Thomas's and Netherton, Woodside & St. Andrews
- The Housing Association rented sector is small and concentrated in St James, Upper Gornal & Woodseton, Lye & Wollescote and St. Thomas's
- The majority of the owner occupied sector relates to houses and bungalows, while the rented sector is focused more on flats / maisonettes.
- 31% cannot afford private rental and home ownership is beyond the reach of 43% of concealed households.
- There is a need to develop a more balanced housing stock in both social and private rented sectors with a need for more flats and terraced houses

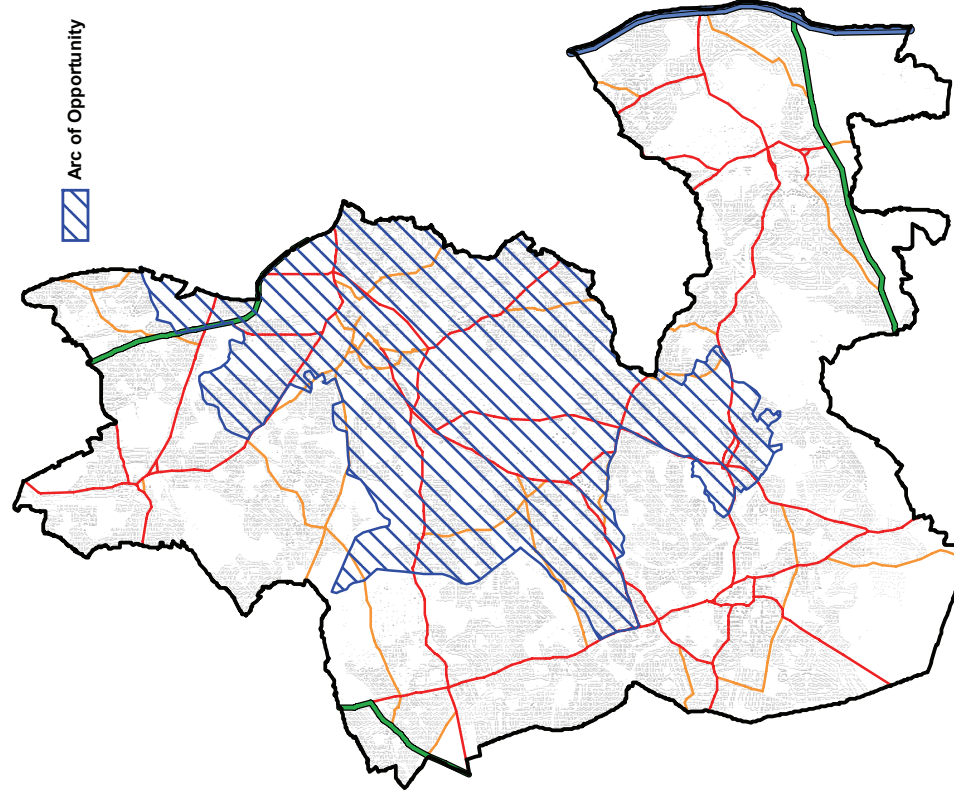


- The net requirement for new housing in Dudley between 2001–2015 has been estimated at 11,875 dwellings, which over a fifteen year period averages out at 792 dwellings per annum. Net completions from 2001 to 2007 have averaged out at 442 per annum leaving an outstanding requirement for 8780 net completions up to 2015 (equal to 1089 dwellings per annum) (Annual Monitoring Report 2007, Dudley MBC).
- Dudley MBC has been meeting its housing requirement and at this stage it is considered that the housing policies are being implemented successfully
- Dudley's Housing Requirement is currently being considered at the Black Country level through the Phase 2 Revision of the West Midlands Regional Spatial Strategy

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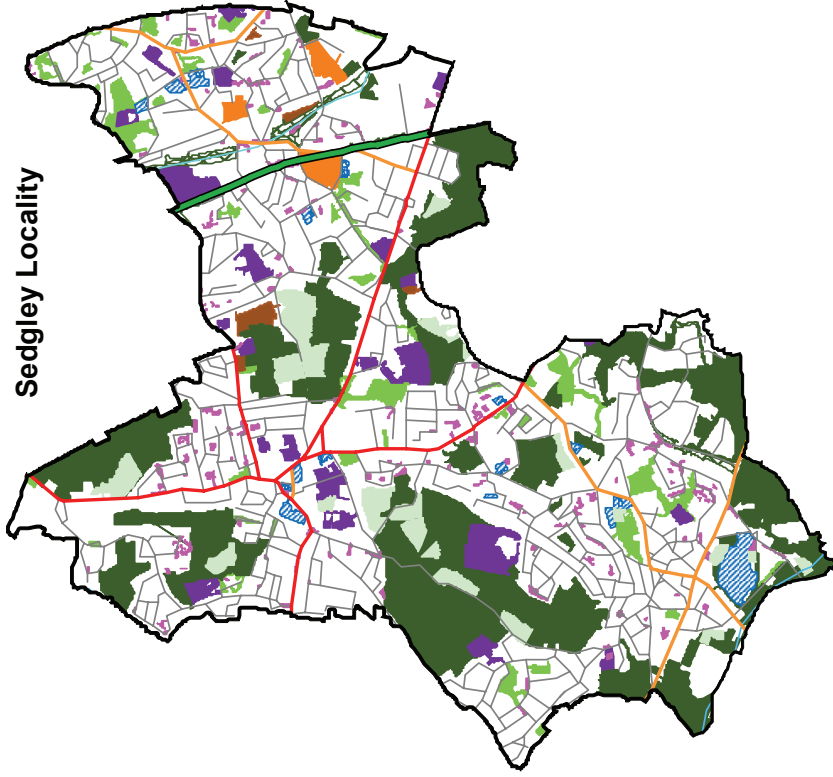


- The Arc of Opportunity is one of six Regeneration Zones established through Advantage West Midlands (AWM), targeted at sustainable economic, environmental and social development within the West Midlands Region. Each Zone has a 10-15 year life span.

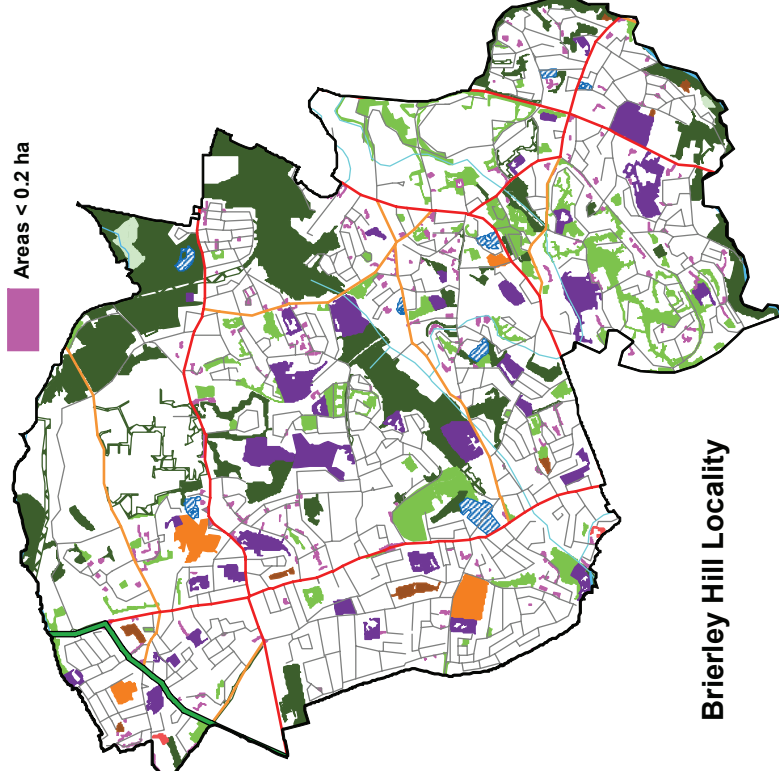
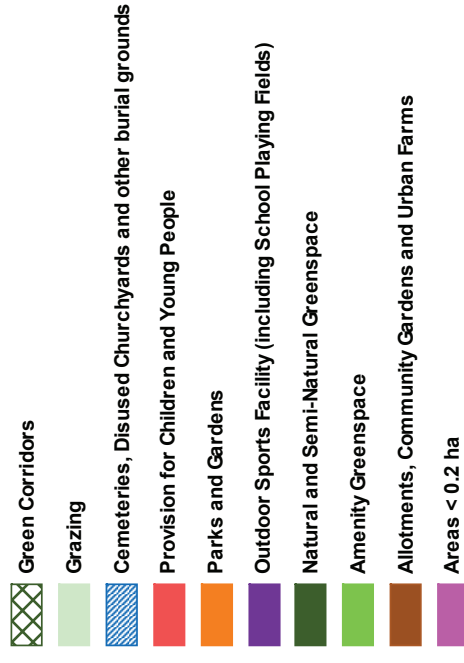


- Geographically, the Arc stretches from Brierley Hill Town Centre in the west, through Sandwell and into Birmingham City Centre in the east. In total, the Arc covers an area of some 12,709 hectares and contains a resident population of nearly half a million people (476,855).
- The Regeneration Zones' activities centre on three Strategic Aims - Enterprise, Employment and Environment.
- Projects include: Building essential skills for the construction industry; Brierley Hill Regen Partnership; Dudley & Sandwell Business Park Network; Netherton & Woodside community based training infrastructure; Priory Street Opportunity Area; Castle Hill; Tower Street; Brierley Hill High Street Framework; Dudley Town Centre Regen Partnership; Dudley Town Centre Heritage.

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Sedgley Locality

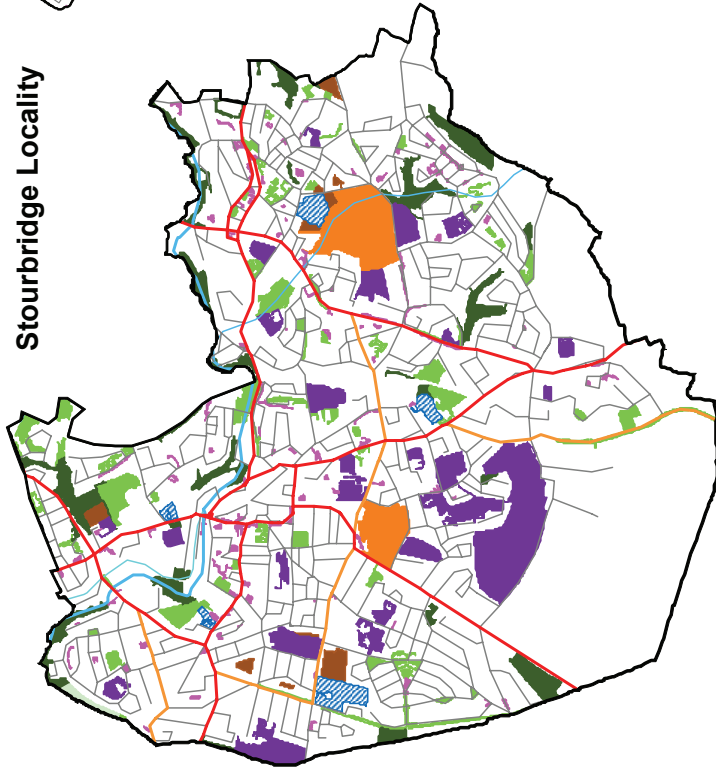
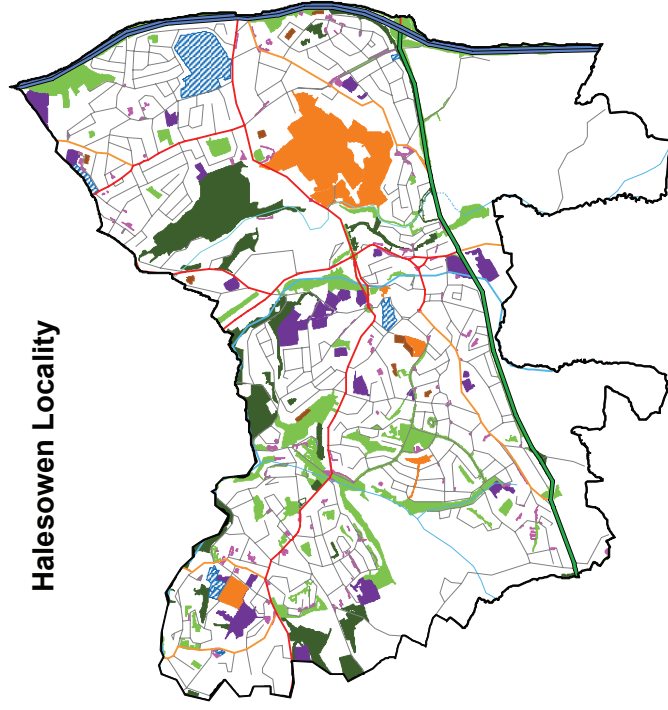
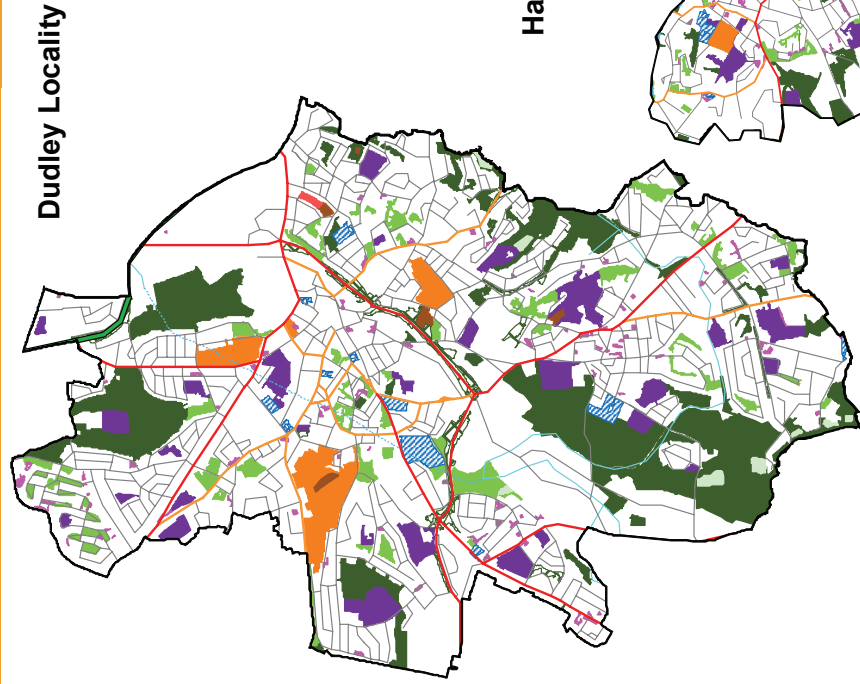


Brierley Hill Locality

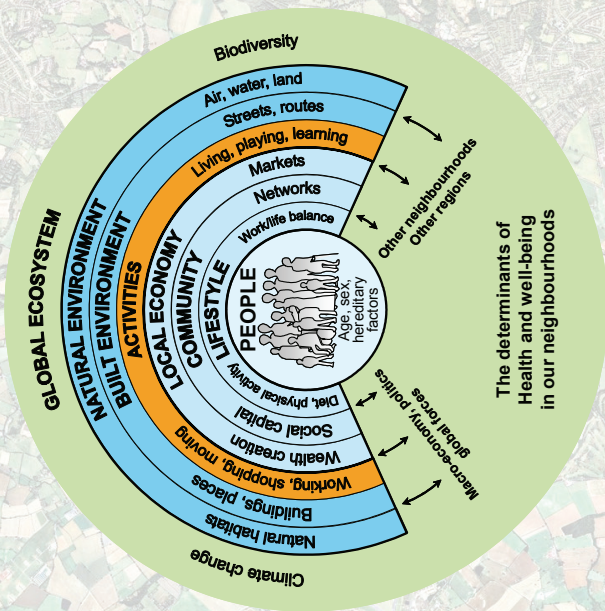
All the localities within the Dudley Borough have a wide number and variety of Green Spaces.

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Source: Dudley MBC, GMIS Unit



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Introduction

This chapter is concerned with human activities and related service activities that occupy space. The activities include those that involve residing, working, shopping, socializing and schooling. These activities are the lifeblood of any neighbourhood and health is affected directly by them. Individual well-being, social cohesion and economic development depend on activities' quality, accessibility and viability.

The percentage of Knowledge workers (people working in professional, managerial, scientific and technical occupations) in Dudley-based businesses/organisations is 36.9%, below the England average of 41.9%. There is a clear need for more knowledge based workers to drive forward the Borough's economy. There is also a requirement to reduce the numbers of people claiming job-seekers allowance, increase the total number of full-time jobs in the local economy and to drive forward an increase in the average/median wage.

From the planning that has and is currently being put into place, Dudley has a strong Retail sector and good accessibility to the major health services.

Contents

Introduction

Occupation

Benefits

Retail Centres

Travel Times

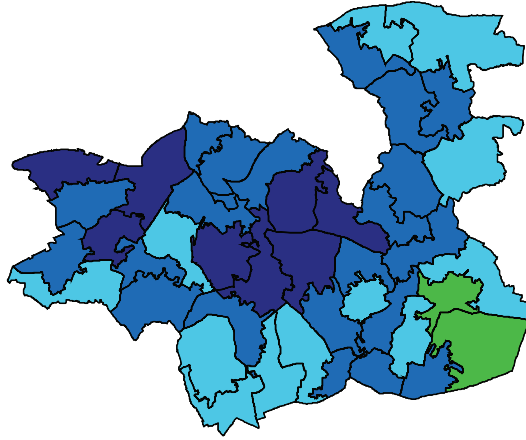
Play Areas

Schools & Colleges

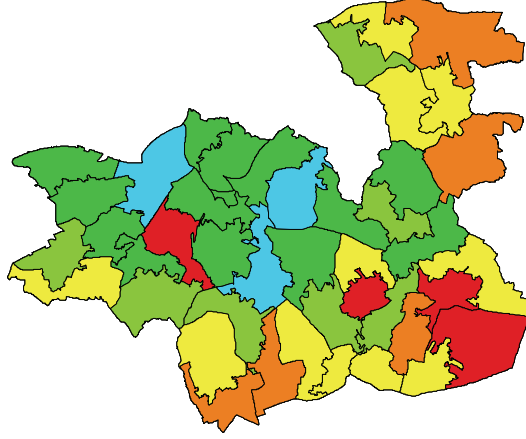
School Performance



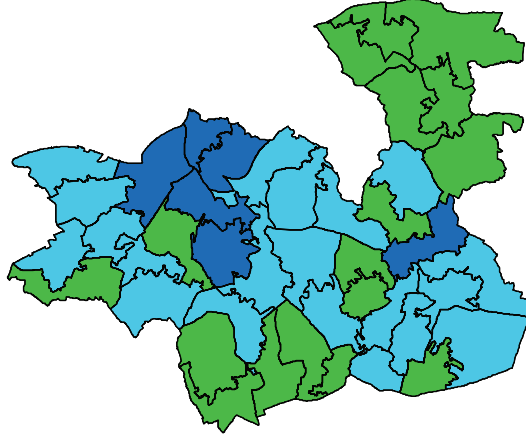
Higher managerial and professional occupations



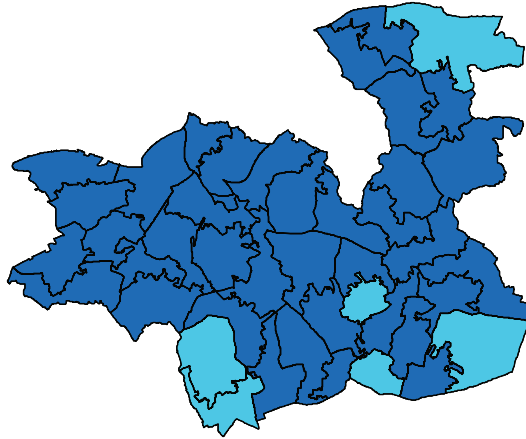
Lower managerial and professional occupations



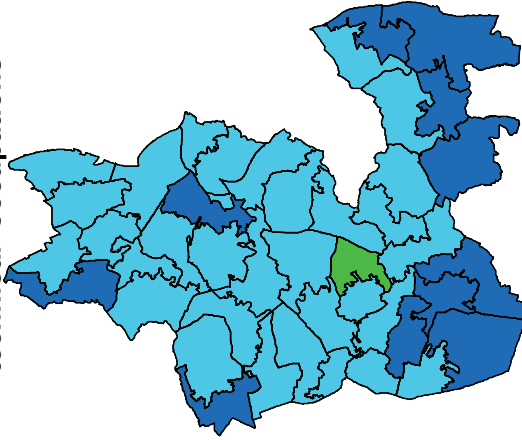
Intermediate occupations



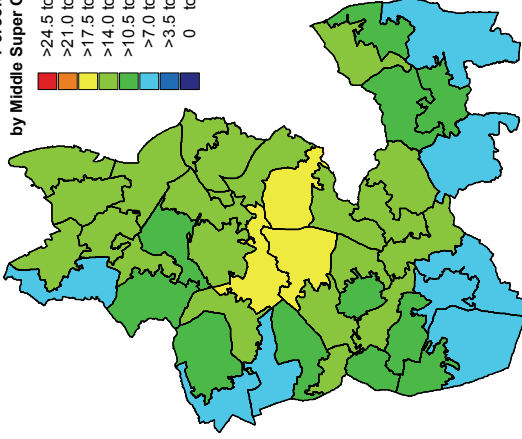
Small employers and own account workers



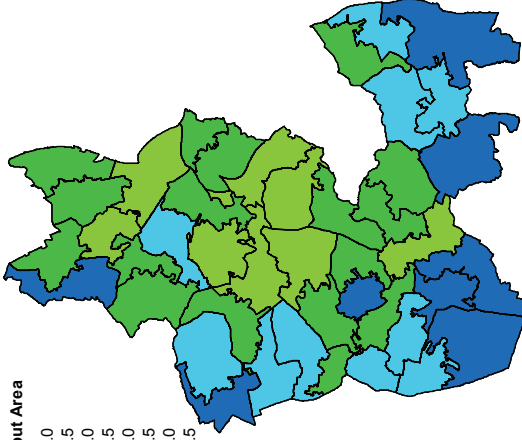
Lower supervisory and technical occupations



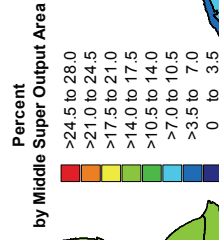
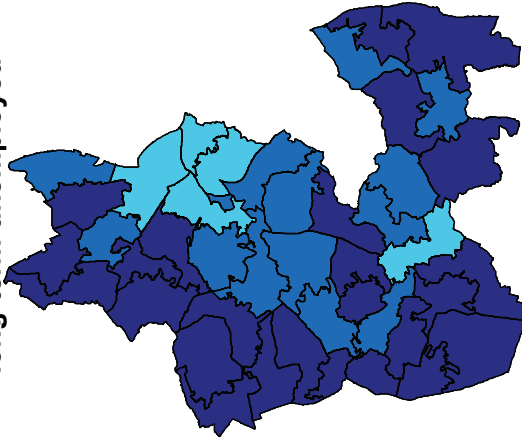
Semi-routine occupations



Routine occupations

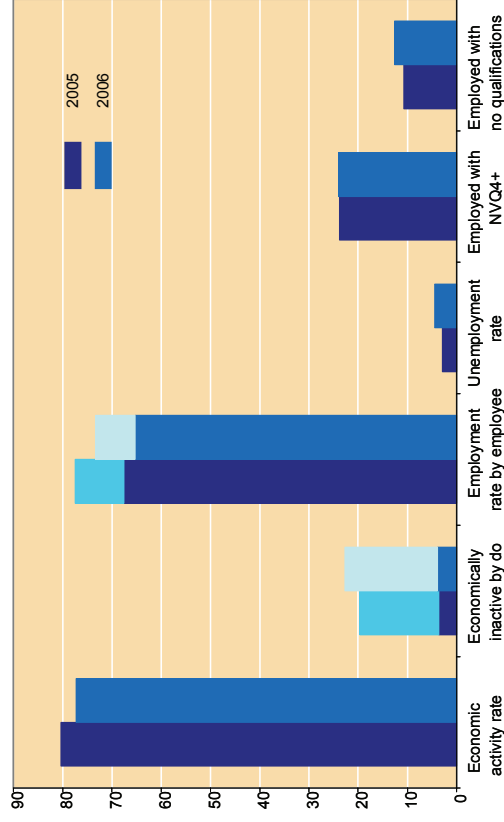


Never worked and long-term unemployed



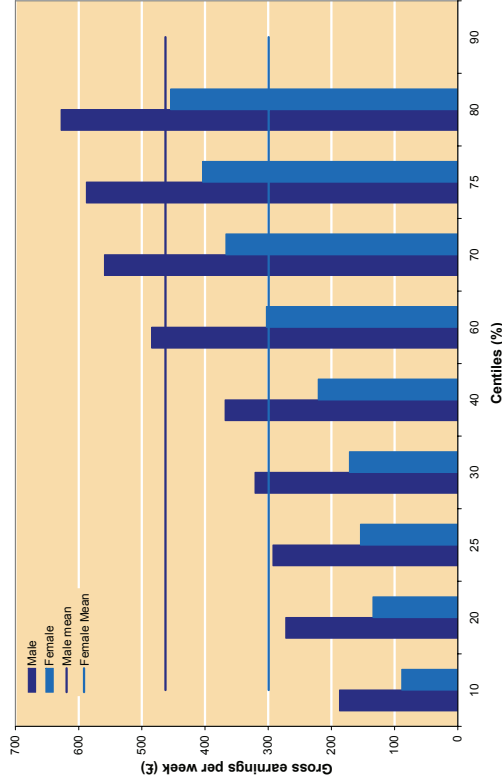


Proportion of working age economically active and knowledge based workers for Dudley in 2005 and 2006



Source: www.Nomisweb.co.uk, Annual Population Survey 2005 and 2006

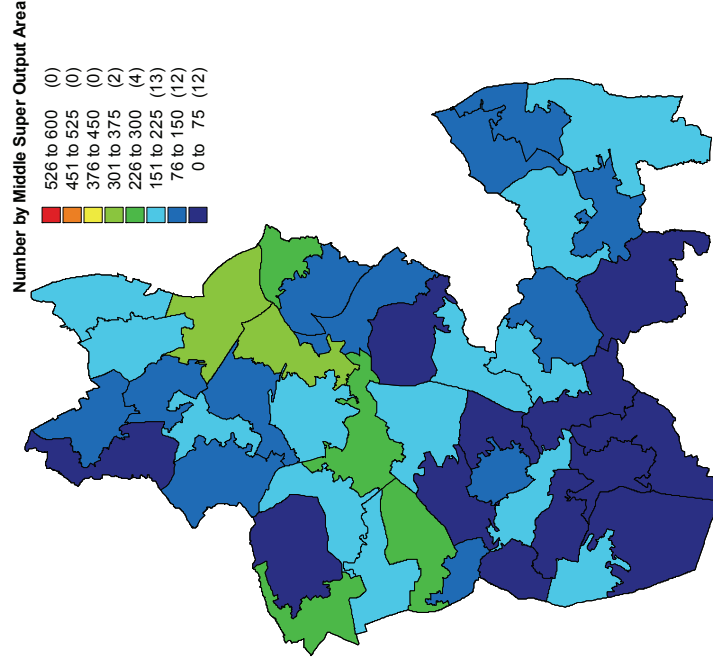
Centiles for gross weekly pay by gender, 2007



Source: www.Nomisweb.co.uk, Annual Survey of hours and earnings 2007

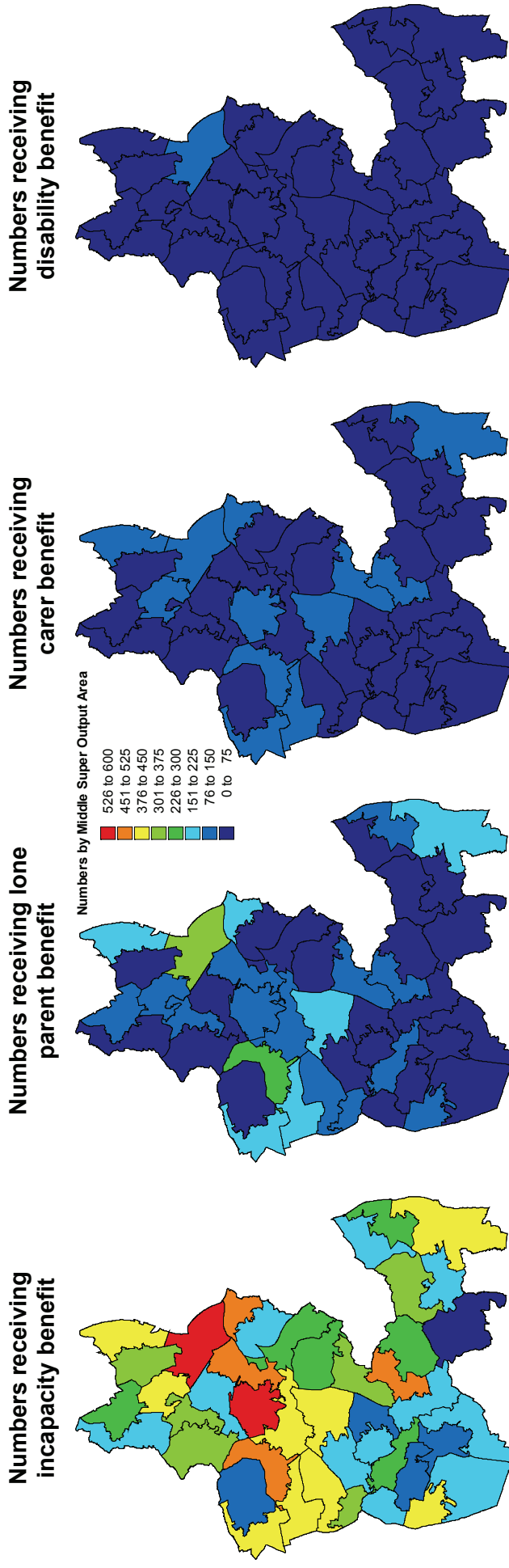
Annual Report of the Director of Public Health - 2007

Number of claimants of job seekers allowance in Dudley May 2007



Source: www.Nomisweb.co.uk, Work and Pensions Longitudinal Study May 2007

- The economic activity rate of the working age population declined in 2006 to 77%
- A large proportion of the economically inactive population do not want to work and this is increasing.
- 5940 working age people were claiming job seekers allowance in May 2007, equivalent to 3.2% of the working age population.

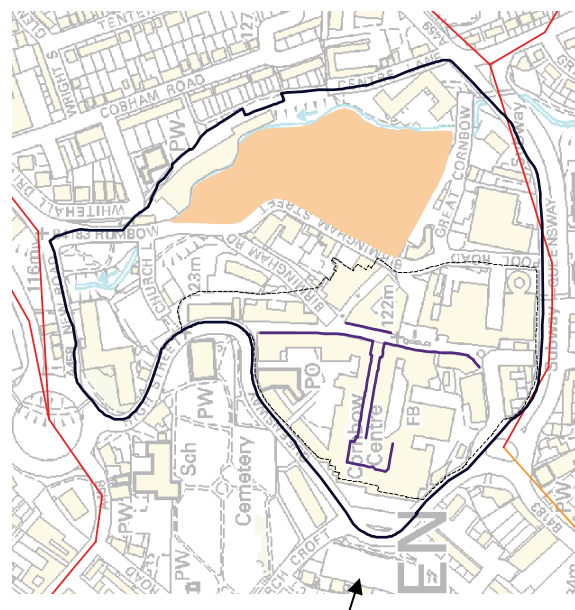
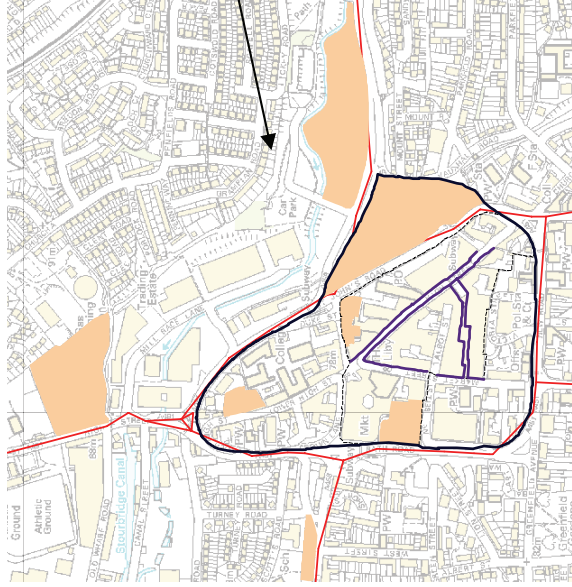
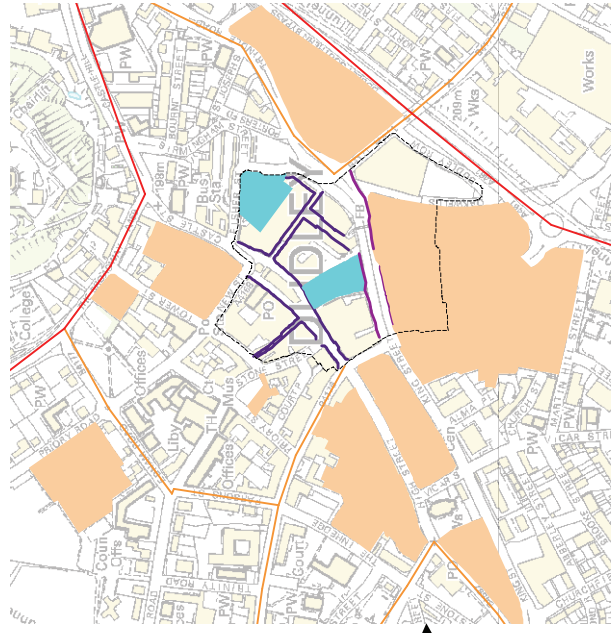
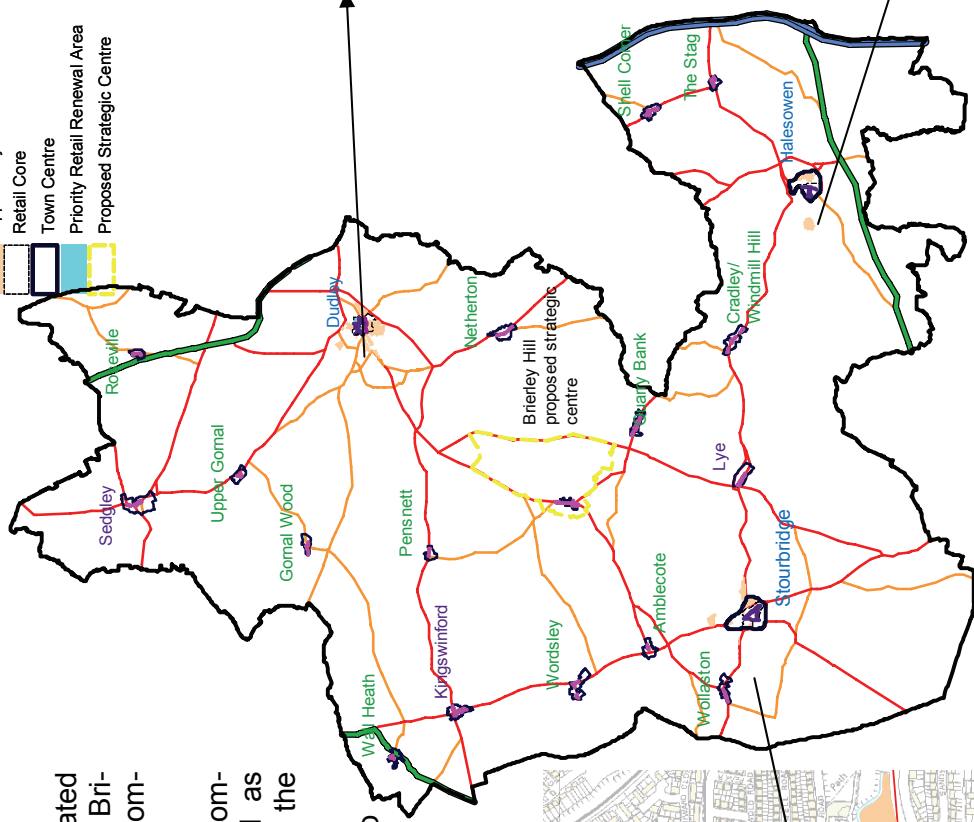


- 29,120 working age people claimed income related benefits in Dudley in May 2007, the highest proportion of these being for incapacity and job seekers benefit.
- The proportion of working age people claiming income related benefit (using ONS 2006 mid-year population estimate) for Dudley is 15.5% and this is used as an estimate of worklessness.
- 15,500 residents of Dudley receive disability living allowance.
- 63% of those receiving disability living allowance receive the higher component, meaning a higher proportion have severe disability. The proportion on the higher component is higher than both regional and national average.
- 3,910 receive lone parent benefits, with the highest numbers being mainly in Castle & Priory and Brockmoor & Pensnett wards.
- Carers benefit is awarded to 2,495 carers.

Hierarchy of Town Centres

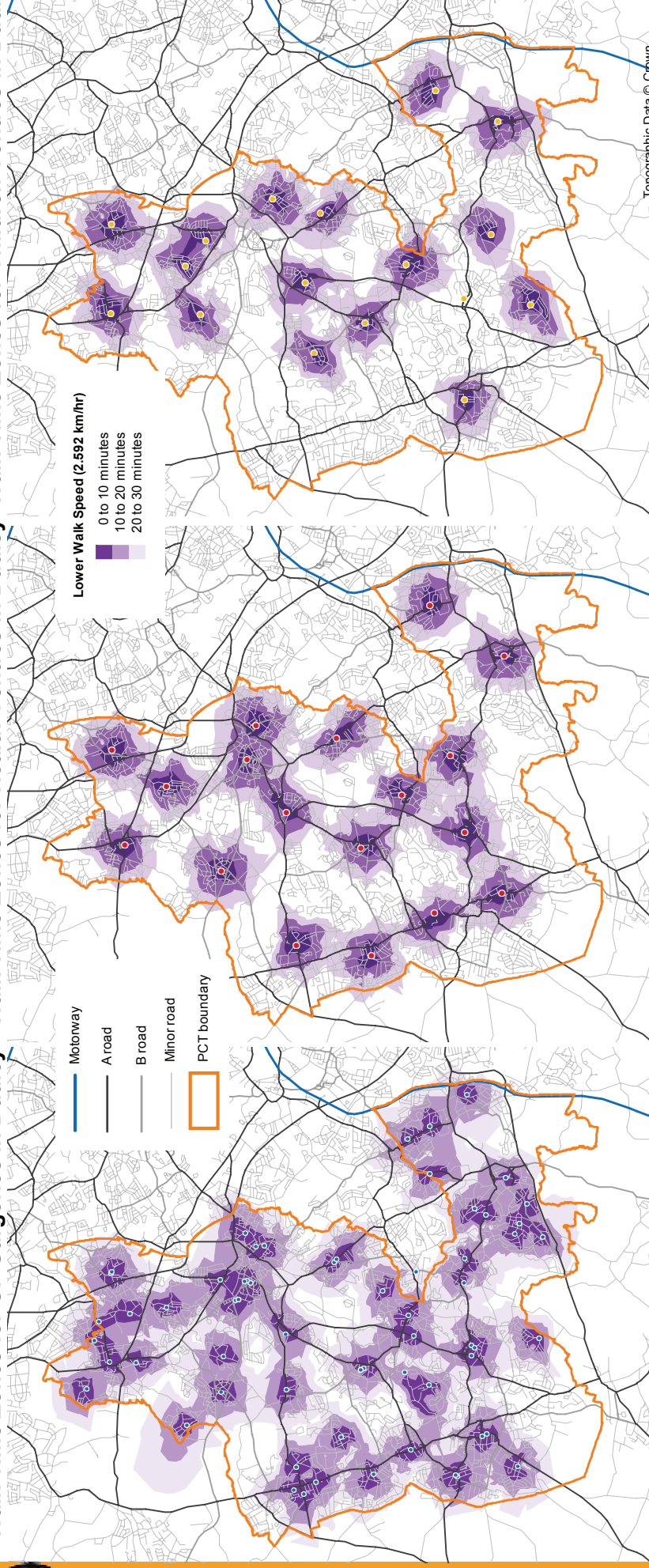
- The hierarchy of town centres was laid out in the Unitary Development Plan but excluded Merry Hill.
- The Black Country Study investigated the complementary development of Brierley Hill and Merry Hill and recommended this as the Strategic Centre
- The Regional Spatial Strategy recommended Brierley Hill and Merry Hill as the Strategic Centre for Dudley and the Secretary of State has agreed this.
- This is now to be incorporated into the UDP and the proposed area for the Strategic Centre is shown on the map.

Hierarchy of Town Centres
 Protected Frontages
 Potential Prime Retail Frontage
 Hierarchy of Town Centres
 Opportunity Area
 Retail Core
 Town Centre
 Priority Retail Renewal Area
 Proposed Strategic Centre



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Walk Time Zones for GP Surgeries in Dudley **Walk Time Zones for Health Centres in Dudley** **Walk Time Zones for Children Centres in Dudley**



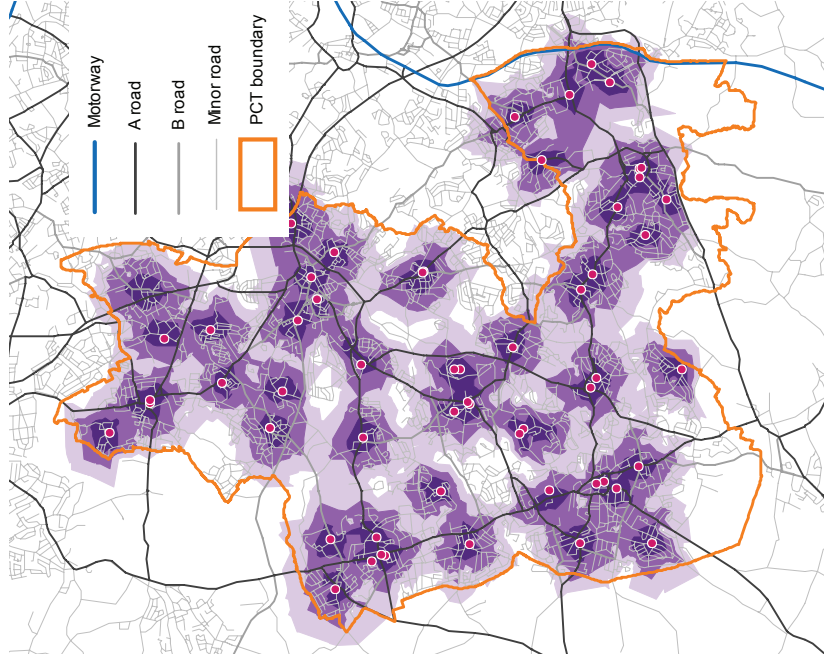
Source: Health Geographical Information Systems Service, West Midlands Cancer Intelligence Unit

The walk speeds were derived from Social Services specification for disability allowance, based on Research on Road Safety Traffic (HMSO, 1965). The Lower Walk Speed used here is the average speed for a woman with small child.

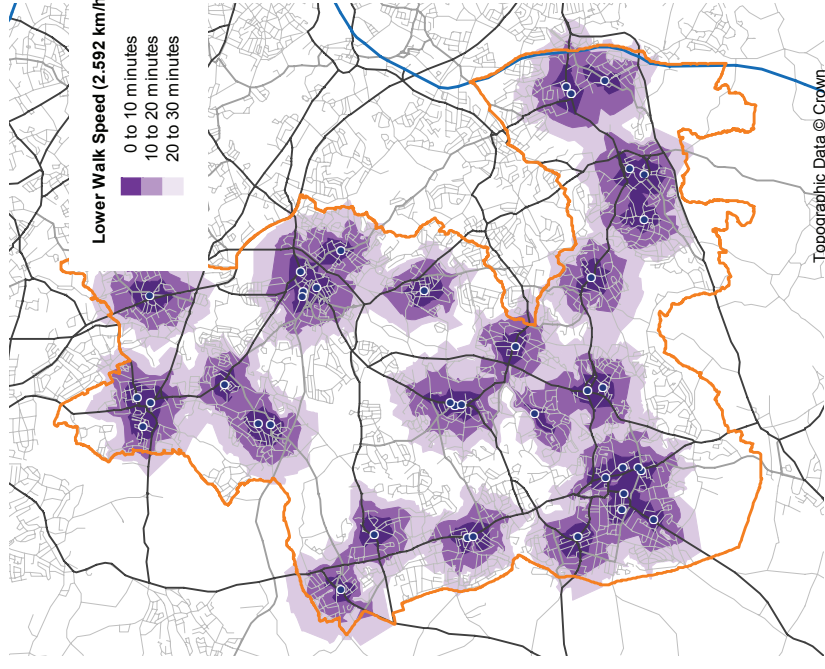
- Many areas are within a 30 minute walk zone of GP surgeries and Pharmacies, particularly the areas where there are low levels of car ownership.
- There are areas of Dudley that do not have easy access on foot to Dentists and Opticians and these areas correspond with areas of low car ownership.
- The number and location of pharmacies makes them the type of health facility most readily accessible on foot.



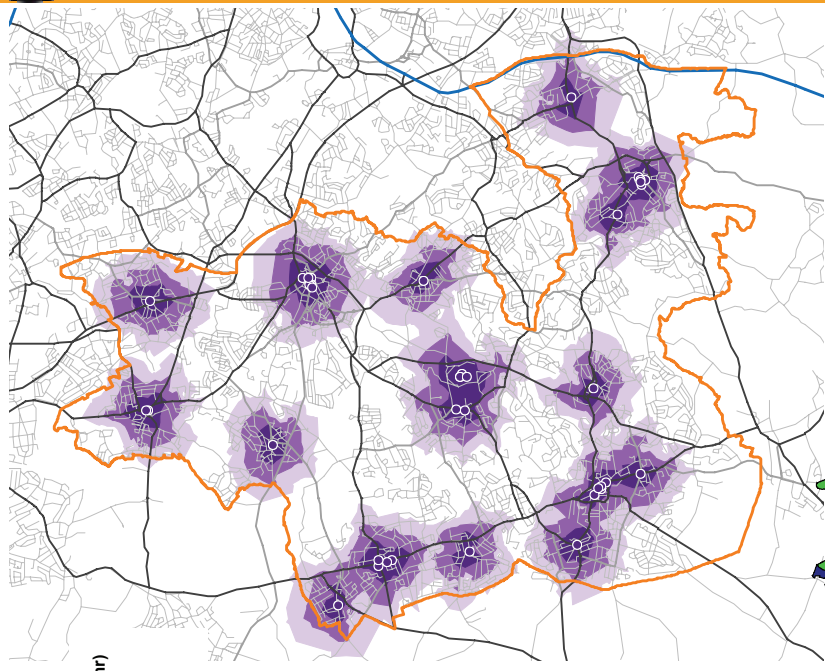
Walk Time Zones for Pharmacies in Dudley



Walk Time Zones for Dentists in Dudley

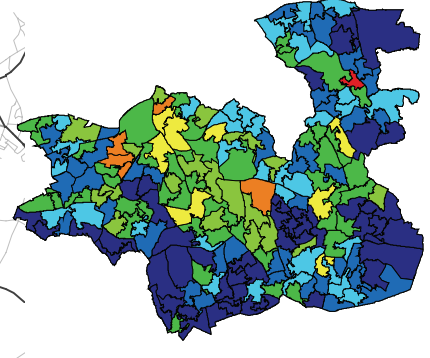
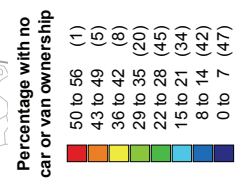


Walk Time Zones for Opticians in Dudley



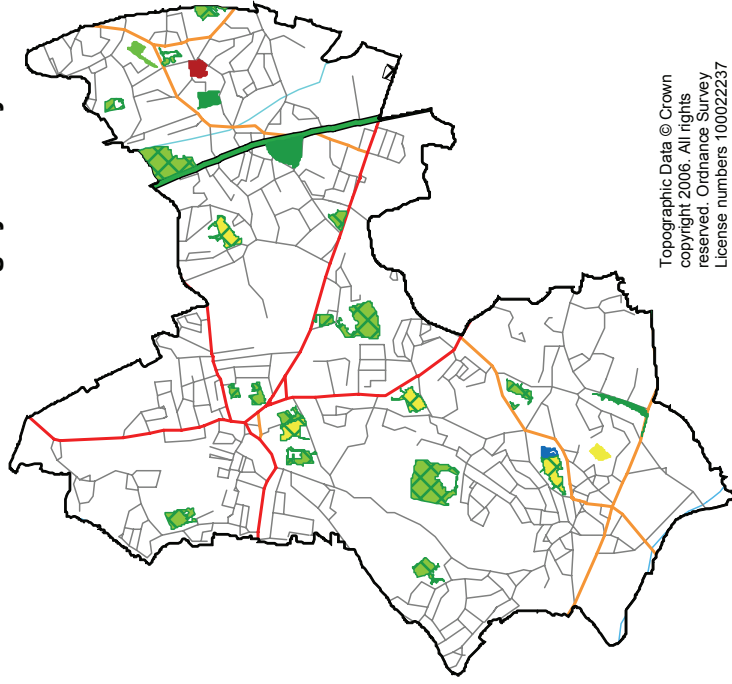
Source: Health Geographical Information Systems Service, West Midlands Cancer Intelligence Unit

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Sedgley Locality



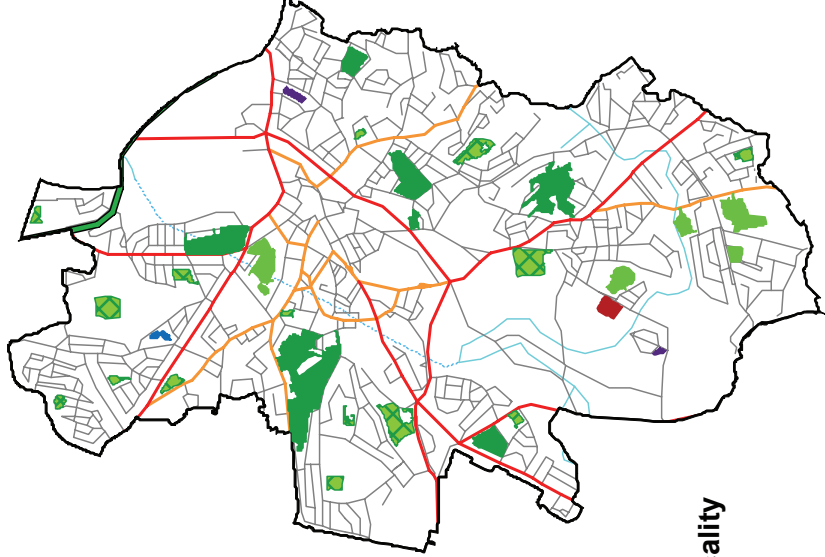
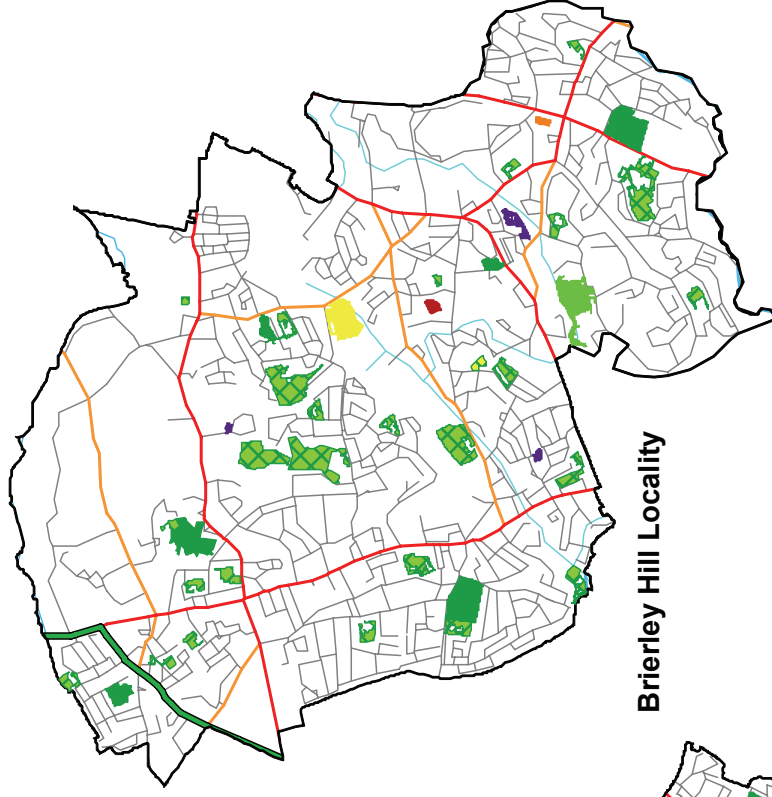
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Play Facilities

| | | |
|--|----------------------|------|
| | Cricket Club | (7) |
| | Football Club | (4) |
| | Golf Club | (1) |
| | Play Area | (5) |
| | Parks | (26) |
| | Playing Fields | (13) |
| | Recreation Grounds | (11) |
| | Sports Ground | (4) |
| | School Playing Field | (95) |
| | Tennis Club | (1) |
| | Youth Club | (3) |

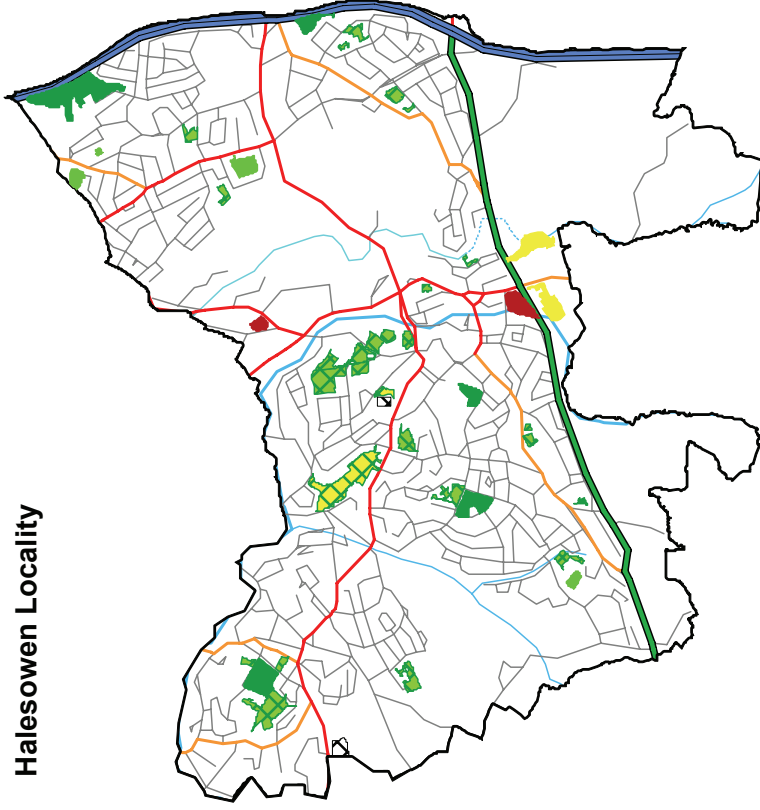
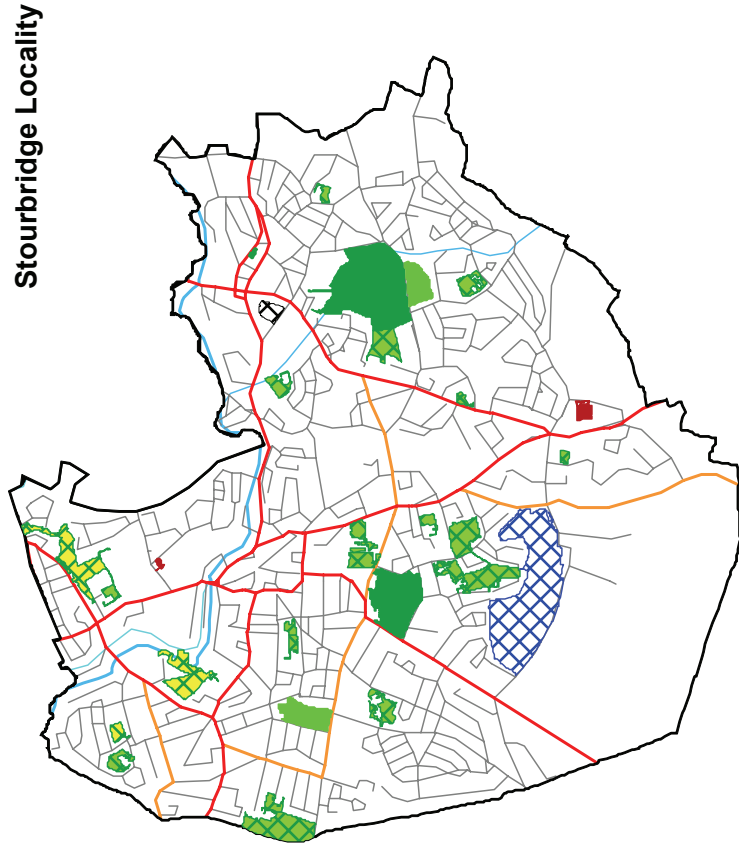
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Brierley Hill Locality



Dudley Locality

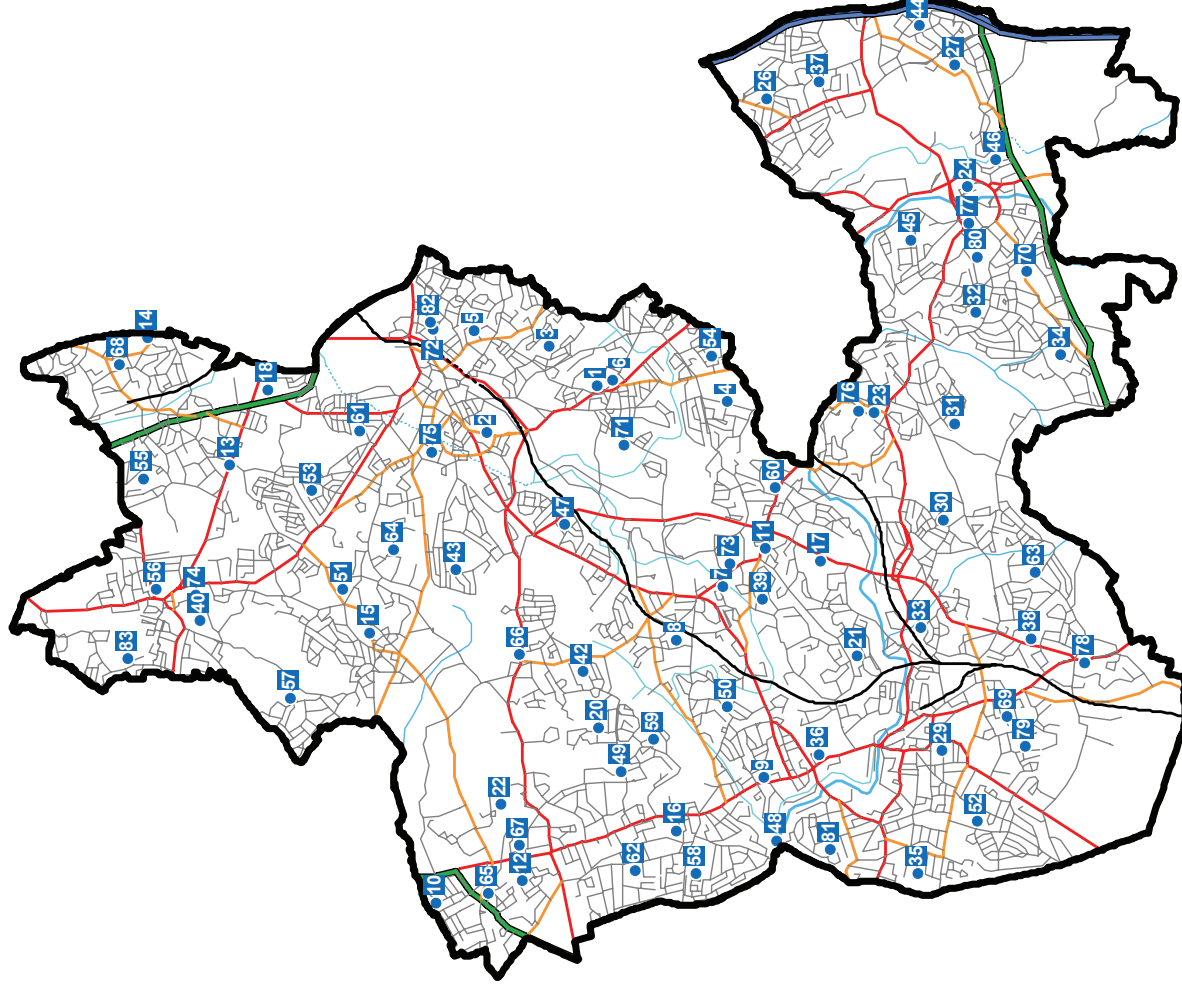
- Dudley and Stourbridge localities do not have any sports ground facilities.
- All localities have at least one cricket club.
- There are few areas designated as Play Areas and these are all located in the Dudley and Brierley Hill Localities. All the localities have parks which are likely to include play areas.
- The majority of the playing fields are within schools and hence not necessarily available for community use.
- Recreation grounds are located mainly in Sedgley, Stourbridge and Halesowen localities.



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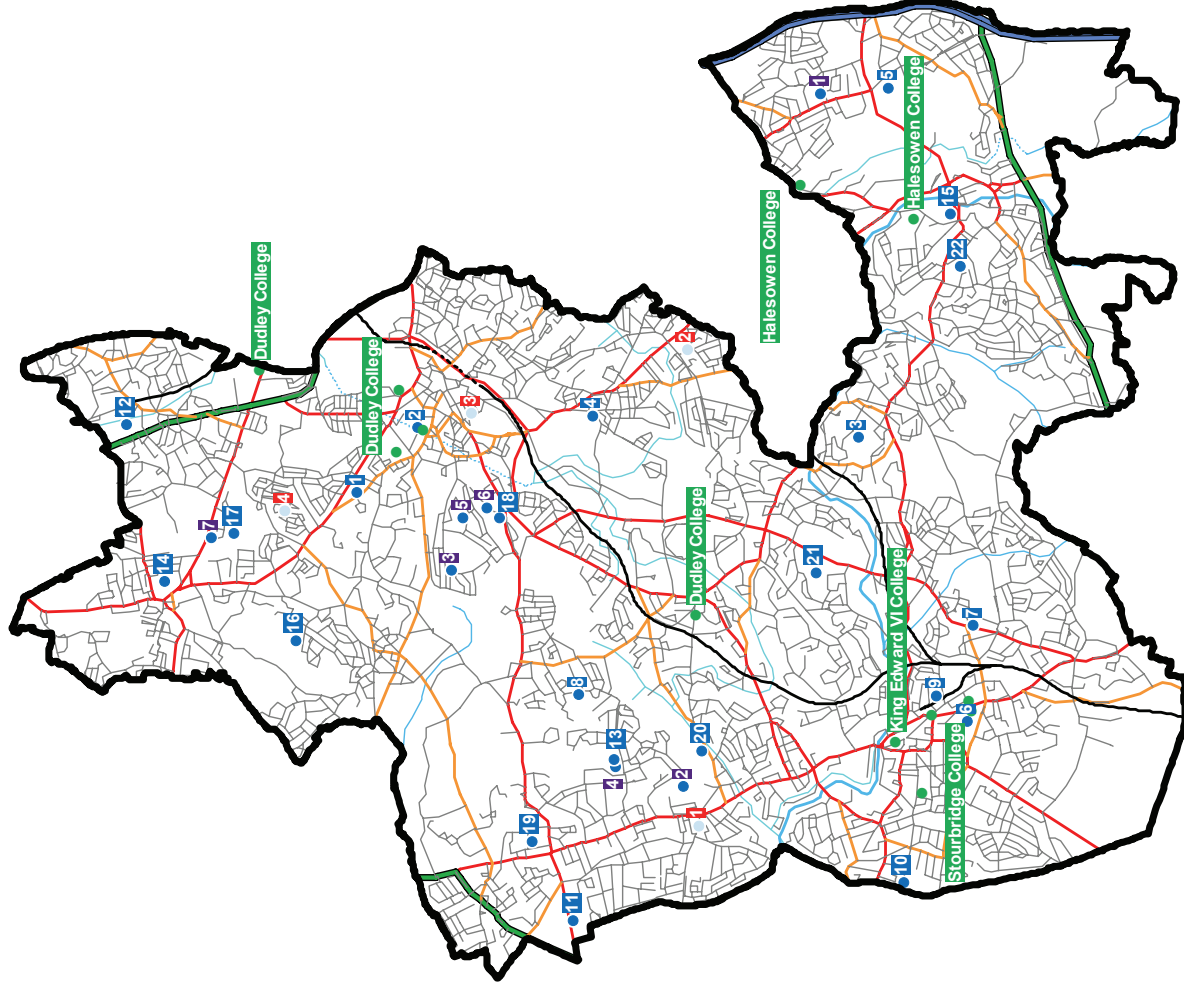
Primary Schools

| | | | |
|----|----------------------------------|----|---|
| 1 | Netherton Park Children's Centre | 45 | Newfield Park Primary |
| 2 | Blowers Green Primary | 46 | Manor Way Primary |
| 3 | Sledmere Primary | 47 | Hightgate Primary |
| 4 | Dudley Wood Primary | 48 | Ashwood Park Primary and Unit for the Deaf |
| 5 | Kate's Hill Community Primary | 49 | Bromley Hills Primary |
| 6 | Northfield Road Primary | 50 | Hawbush Primary |
| 7 | Brierley Hill Primary | 51 | Roberts Primary |
| 8 | Brockmoor Primary | 52 | Gig Mill Primary |
| 9 | Brook Primary | 53 | Wren's Nest Primary |
| 10 | Maidensbridge Primary | 54 | Netherbrook Primary |
| 11 | Mount Pleasant Primary | 55 | Hurst Hill Primary |
| 12 | Dawley Brook Primary | 56 | Queen Victoria Primary |
| 13 | Bramford Primary | 57 | Straits Primary |
| 14 | Wallbrook Primary | 58 | Belle Vue Primary |
| 15 | Red Hall Primary | 59 | Dingle Community |
| 16 | Fairhaven Primary | 60 | Quarry Bank Primary |
| 17 | Thorns Primary | 61 | Priory Primary |
| 18 | Foxyards Primary | 62 | Glynn Primary |
| 20 | Crestwood Park Primary | 63 | Hob Green Primary |
| 21 | Peter's Hill Primary | 64 | Milking Bank Primary |
| 22 | Blanford Mere Primary | 65 | Church of the Ascension Primary |
| 23 | Colley Lane Community Primary | 66 | St Mark's CE Primary |
| 24 | Tenterfields Primary | 67 | St Mary's CE Primary |
| 26 | Olive Hill Primary | 68 | Christ Church CE |
| 27 | Lapal Primary | 69 | Oldswinford CE Primary |
| 29 | Greenfield Primary | 70 | Hasbury CE Primary |
| 30 | Wollescote Primary | 71 | Netherton CE Primary |
| 31 | Caslon Primary | 72 | St Joseph's Catholic Primary |
| 32 | Huntingtree Primary | 73 | St Mary's Catholic Primary |
| 33 | Rufford Primary | 74 | St Chad's RC Primary |
| 34 | Lutley Primary | 75 | Jesson's CE Primary |
| 35 | The Ridge Primary | 76 | Cradley CE Primary |
| 36 | Amblecote Primary | 77 | Halesowen CE Primary |
| 37 | Hurst Green Primary | 78 | Pedmore CE Primary |
| 38 | Ham Dingle Primary | 79 | St Joseph's RC Primary |
| 39 | Withymoor Primary | 80 | Our Lady & St Kenelm RC Primary |
| 40 | Cotwall End Primary | 81 | St James's CE Primary |
| 42 | The Bromley-Pensnett Primary | 82 | The Church of England Primary School of St Edmund & St John |
| 43 | Russells Hall Primary | 83 | The Alder Coppice |
| 44 | Howley Grange Primary | | |



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Secondary, Special, PRU Schools & Colleges



Secondary Schools

- 1 Bishop Milner Catholic School
- 2 Castle High (V.A.) School
- 3 Cradley High School (Closing)
- 4 Hillcrest School and Community College
- 5 Leasowes Community College
- 6 Old Swinford Hospital
- 7 Pedmore Technology College and Community School
- 8 Persnett School of Technology
- 9 Redhill School
- 10 Ridgewood High School
- 11 Summerhill School
- 12 The Coseley School and Sports College
- 13 The Crestwood School
- 14 The Dormston School
- 15 The Earls High School
- 16 The Ellowes Hall School
- 17 The High Arcal School
- 18 The Holly Hall Maths and Computing College
- 19 The Kingswinford School
- 20 The Wordsley School
- 21 Thorns Community College
- 22 Windsor High School
- 23 Emfield Rudolf Steiner School

Special Schools

- 1 Halesbury
- 2 Pens Meadow
- 3 Rosewood
- 4 The Brier
- 5 The Old Park
- 6 The Sutton
- 7 The Woodsetton

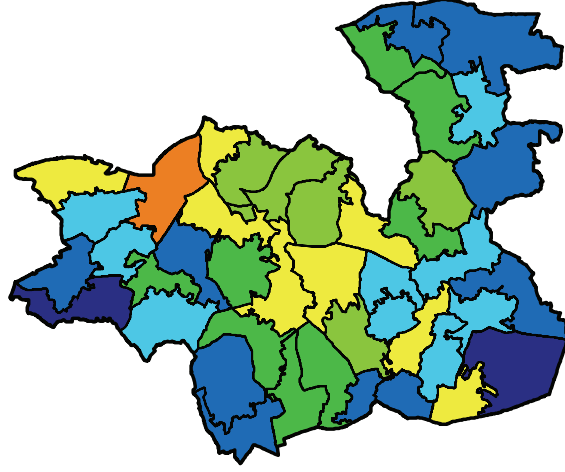
Pupil Referral Units

- 1 The Mere Education Centre
- 2 Home and Hospital Tuition Service
- 3 Pupil Support Unit
- 4 Sycamore Centre

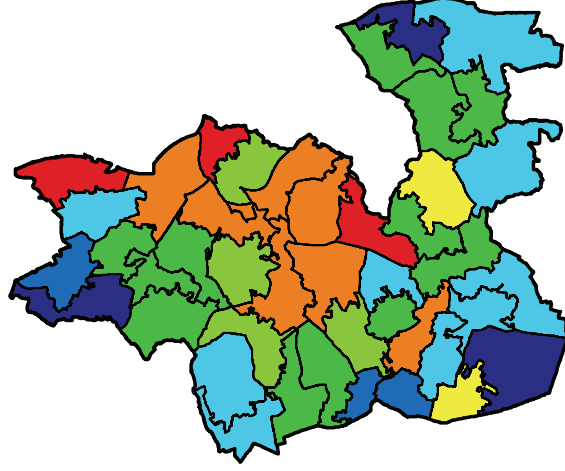




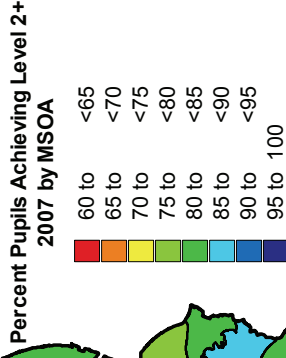
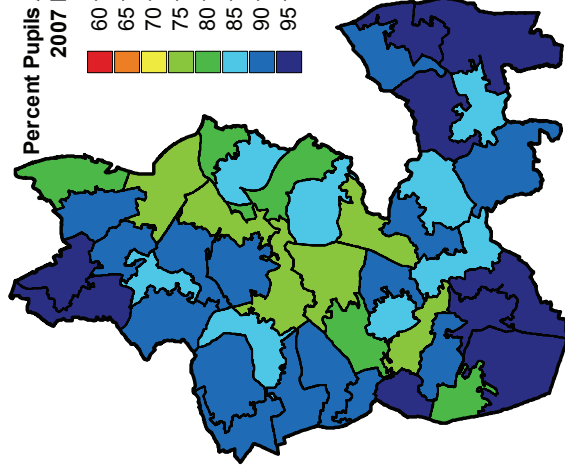
KS1 Reading



KS1 Writing

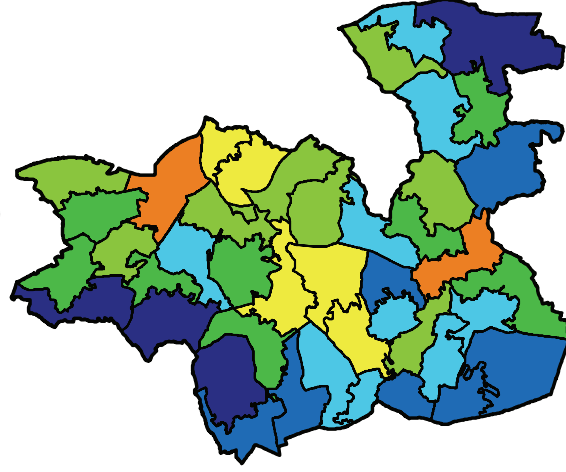


KS1 Maths

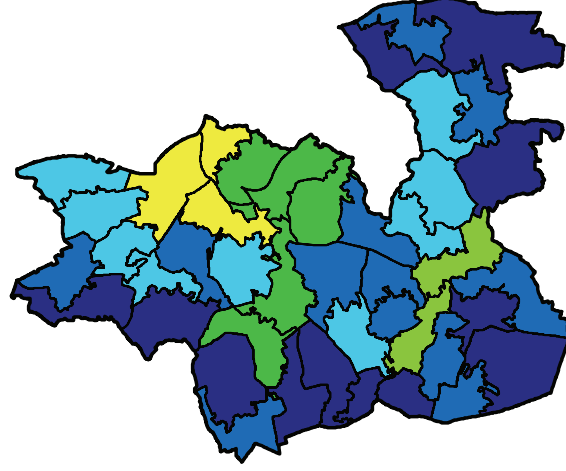


- For KS1 the proportion of pupils achieving Level 2+ in Reading and Writing is lower than the Dudley average in more MSOA than for Maths.
- At KS2 in Science the majority of the borough is achieving at or above the Dudley average proportion. Ten of the MSOAs are not achieving the 86.3% at level 4+.

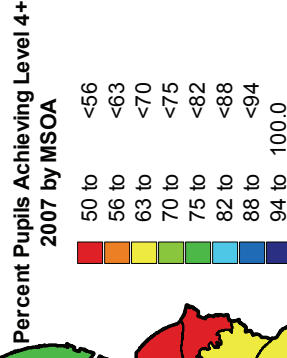
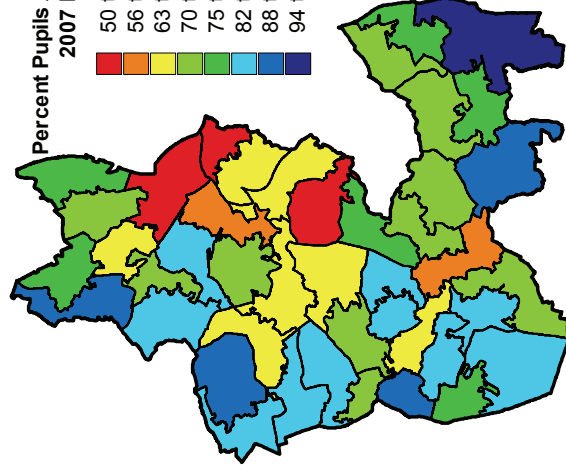
KS2 English



KS2 Science



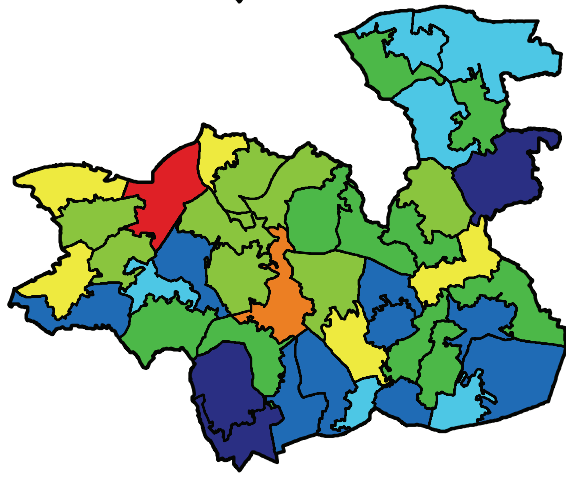
KS2 Maths



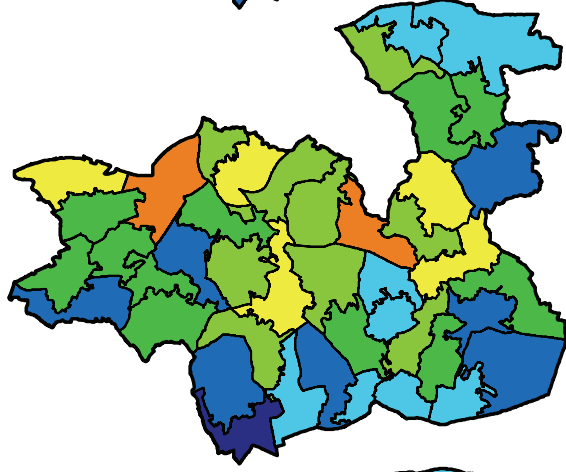
- The proportion of pupils achieving above the national average level for Maths has declined between KS1 and KS2 and the number of areas where the Dudley average performance has not been achieved has increased.
- At KS3 the proportion of pupils achieving the National average standard is maintained for maths but declines for English and Science.



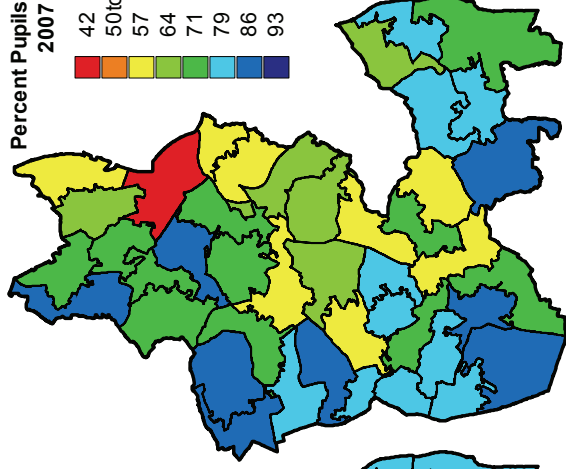
KS3 English



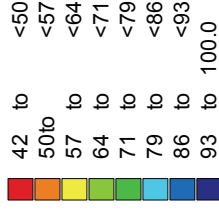
KS3 Science



KS3 Maths



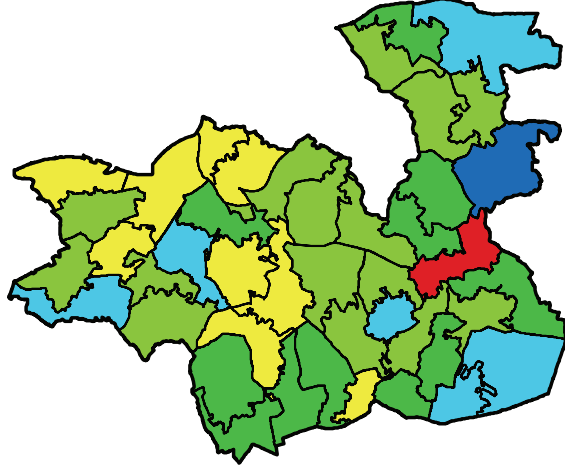
Percent Pupils Achieving Level 5+
2007 by MSOA



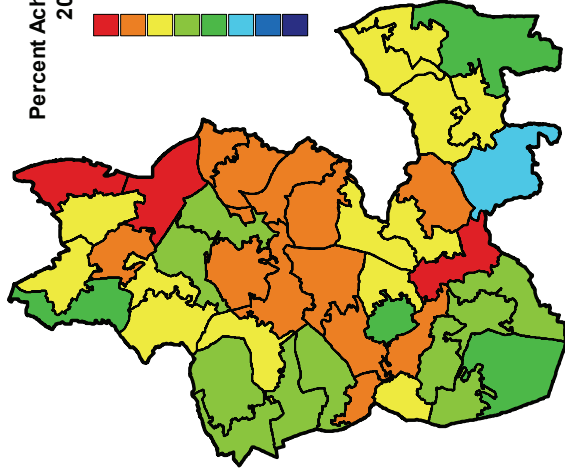
- 56.9% of pupils achieve 5+ A*-C GCSEs and this declines to 44.1% when maths and English are included.

- Sixteen MSOA did not achieve added value from KS2 to KS4

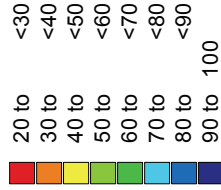
KS4 5+ A*-C Grade GCSEs



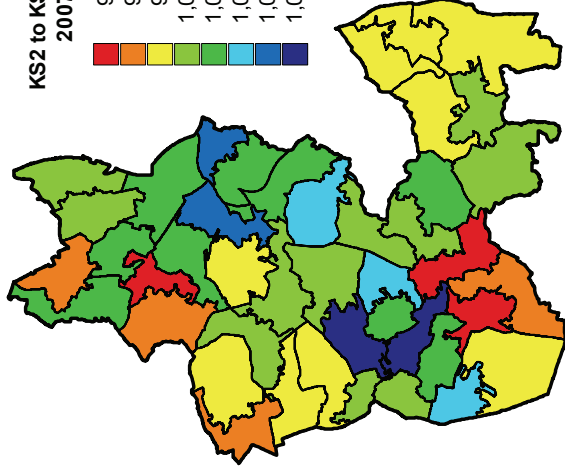
KS4 5+ A*-C Grade GCSEs (including Maths & English)



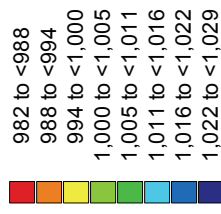
Percent Achieving 5+ A* - C GCSEs
2007 by MSOA



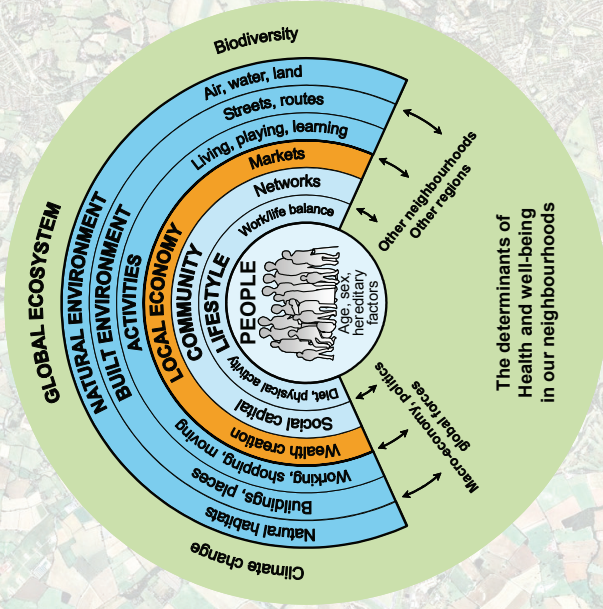
KS2 to KS4 Added Value



KS2 to KS4 Added Value
2007 by MSOA



Local Economy



Contents

Introduction

Area Classification

Employers

Introduction

This chapter covers the local economy with the important issues for Dudley being to encourage enterprise, business innovation and attracting inward investment to create higher value added employment opportunities and raise income levels.

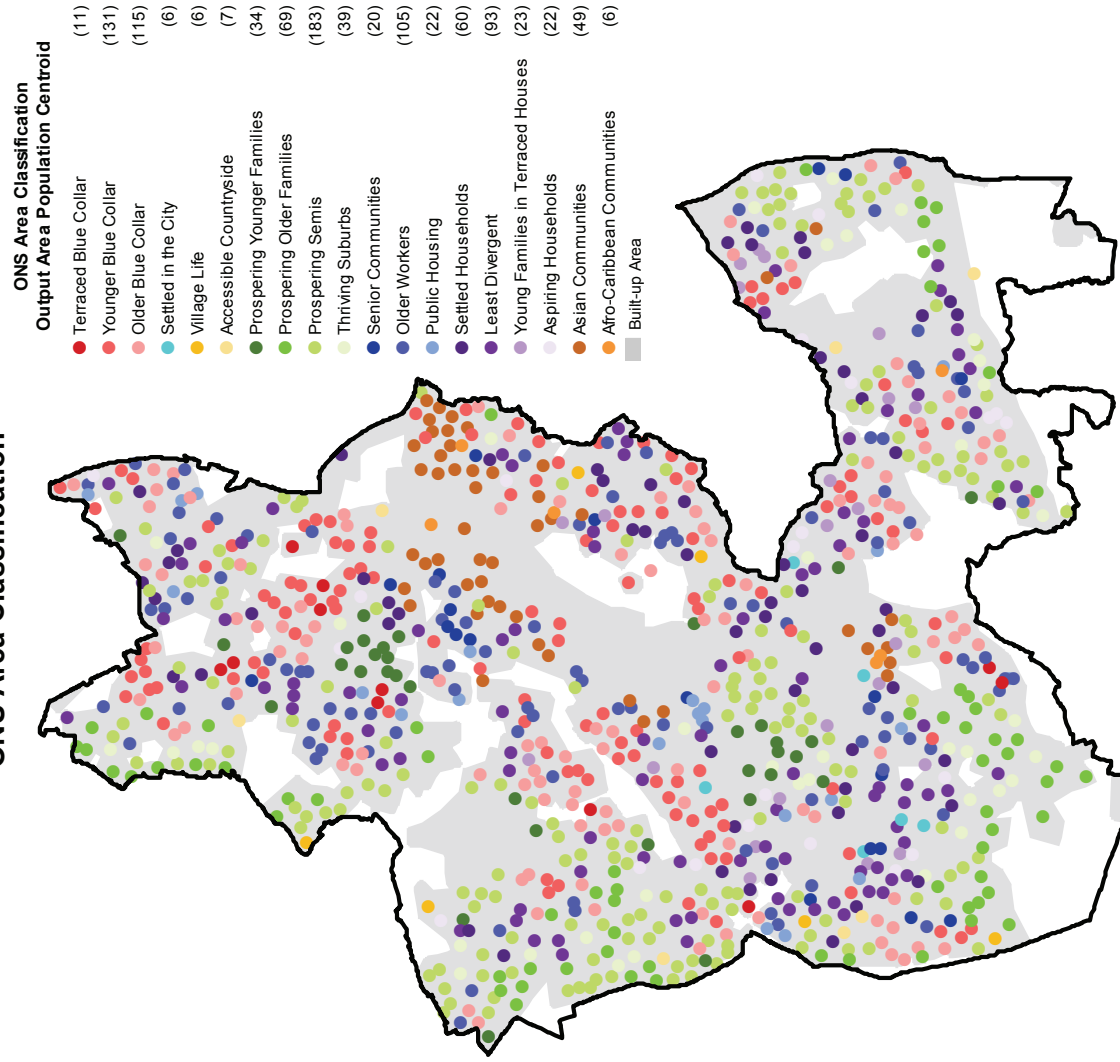
The number of businesses registering for VAT is the best official indicator of the number of business start-ups, the level of entrepreneurship and health of the business population. Dudley has a positive increase year on year of businesses registering for VAT, but this is still below (25 VAT registrations per 10,000 population) that required to match the business formation rate for England (31 VAT registrations per 10,000 population).

Small firms are a crucial part of the economy. Dudley has a large proportion of its businesses employing between 0 and 9 people (78.5%) and 96% of businesses employ 0 to 49 people. Businesses designated as large, employing 250+ people account for only 0.5% of all businesses.

A comprehensive reference to the local economy of Dudley can be found in "The Dudley Borough Economic Strategy 2007/08".



ONS Area Classification



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The 2001 Area Classifications place each geographic area into a group according to key characteristics of the people who live in each area. The groups are created using a statistical technique known as cluster analysis. This classification of output areas (OA) fits into the ONS suite of area classifications and follows the publication of classifications at local authority, health board and ward levels (ONS 2004). Clustering more than two hundred thousand output areas into 7, 21 and 52 clusters, using 41 attributes achieves a massive simplification of the original data. This simplification aids the recognition of patterns and relationships in many ways, which can be explained in more detail.

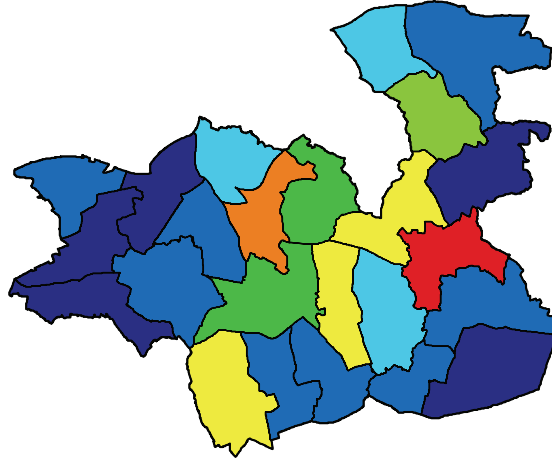
Dudley has most OAs in the Prospering Suburbs cluster (people whose children have left home and mainly self-employed) and the Blue Collar Communities cluster (young families with much routine/semi-routine employment).

There are few OAs in the City Living (students) and Countryside (agricultural employment) clusters.

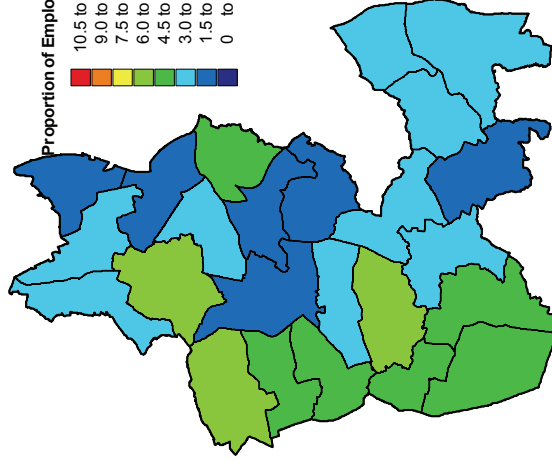
The majority of the remaining OAs fall into the Constrained by Circumstances and Typical Traits clusters. These are defined as single pensioner and lone parent families in routine and semi-routine employment

Annual Business Inquiry Workplace Analysis by Business Type & 2001 Ward, 2006

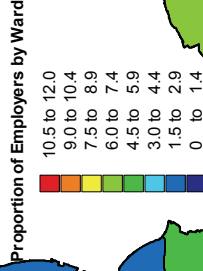
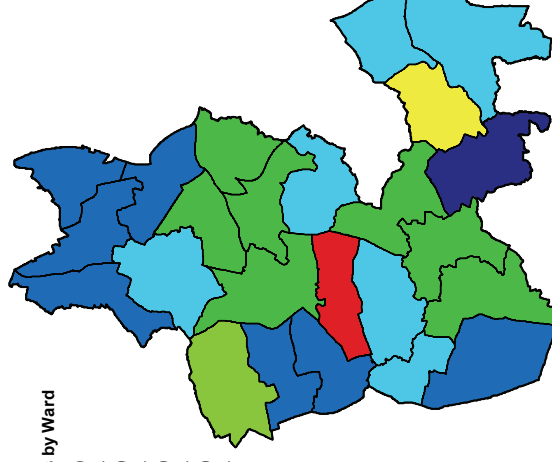
Manufacturing



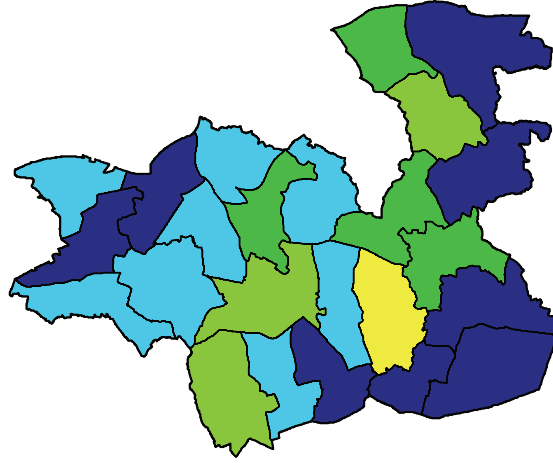
Construction



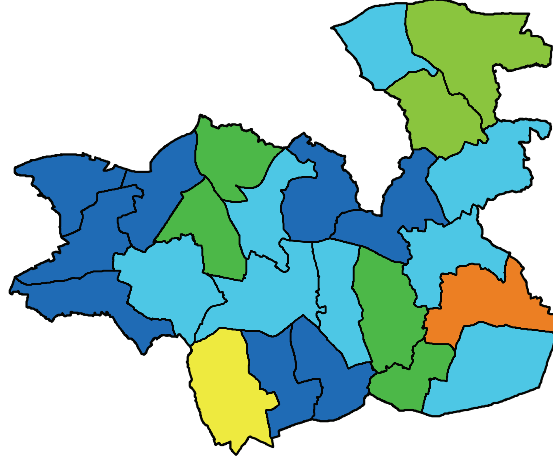
Distribution, hotels and restaurants



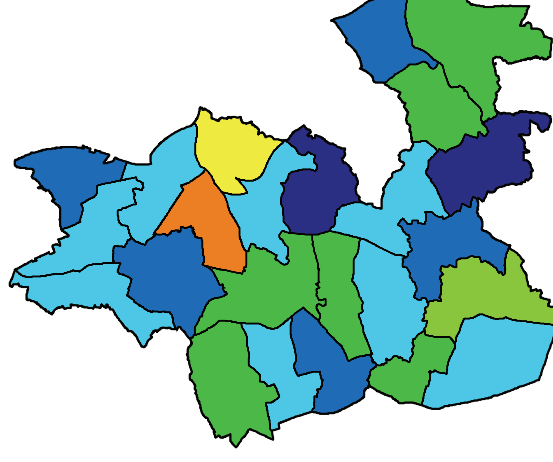
Transport and communications



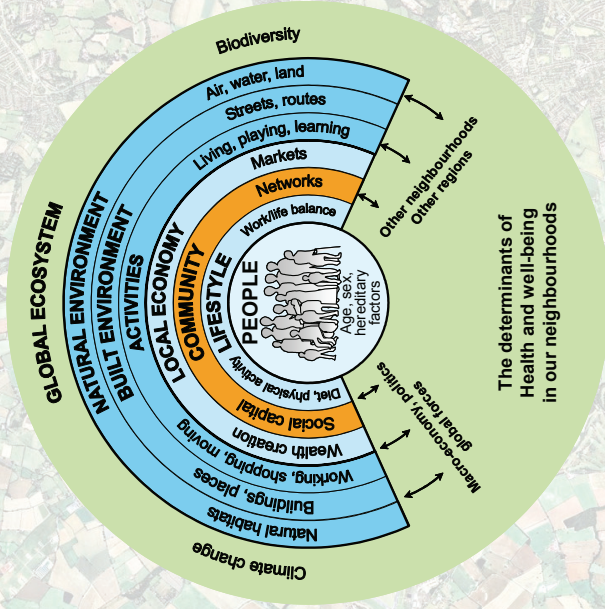
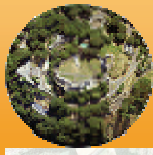
Banking, finance and insurance, etc



Public administration, education & health



- The Annual Business Inquiry, a survey providing the most accurate figure of employers.
- There are approximately 10,700 businesses in Dudley Borough and the majority of employers are from the distribution, hotels and restaurants (~3,300) and banking, finance and insurance etc. (~2,700) sectors.
- There are ~1300 employers in both manufacturing and construction.
- The Public Sector has ~780 employers, but they employ 26% of the Dudley workforce.
- Distribution, hotels, restaurants also employ 26% of the workforce; banking and finance employ 18% and manufacturing employ 16%.
- There has been a positive trend in stock of VAT registered enterprises recently.
- Manufacturing and Financial Intermediation are showing a negative trend.
- Both 'Construction' and 'Real estate' are showing the largest positive trend, while all the other industries are showing a modest increase.



Introduction

Community is a complicated concept, involving many aspects of culture as well as geography. The influence of community on health is based on social capital and social networks. The former influences the way people feel about themselves and on the way in which they make choices and feel enabled to make certain choices. The latter can have effects both in people looking out for one another and seeing that they are well and in giving people incentive to stay healthy.

Of course community can also have a negative effect on health. If one is unhappy in the community in which one lives or if people living in a community demonstrate unhealthy lifestyle that others are influenced to follow, then this could lead to unhealthy lifestyle choices and poor mental health.

Contents

- Introduction
- Community Localities
- Deprivation
- Mosaic Classification
- Social Capital



| Community | Population | | MOSAIC Cluster Groups | | Community | Population | | MOSAIC Cluster Groups | | | | | | | |
|--------------------------------|------------|-----|-----------------------|---------------------------------|-----------|--------------------------------|-------|---|-------|---------------------------------|--------------------------------|------------------------|-----|------------------------|-----|
| | Total | <15 | 65+ | Biggest Cluster % of Households | | Second Cluster % of Households | Total | <15 | 65+ | Biggest Cluster % of Households | Second Cluster % of Households | | | | |
| Abbeysfields | 1,350 | 16% | 13% | Symbols of Success | 43% | Suburban Comfort | 22% | Kingswinford South | 6,850 | 15% | 22% | Suburban Comfort | 67% | Symbols of Success | 19% |
| Ashwood Park | 4,000 | 18% | 11% | Happy Families | 34% | Ties of Community | 34% | Lapal | 1,850 | 15% | 22% | Symbols of Success | 80% | Suburban Comfort | 20% |
| Audnam | 4,700 | 17% | 16% | Ties of Community | 35% | Blue Collar Enterprise | 25% | Leasowes | 2,300 | 15% | 25% | Suburban Comfort | 55% | Grey Perspectives | 22% |
| Baptist & Bumble | 5,000 | 20% | 15% | Ties of Community | 43% | Blue Collar Enterprise | 27% | London Heights/ Richborough Drive/Eart's | 6,250 | 21% | 12% | Happy Families | 50% | Ties of Community | 22% |
| Belle Vale | 2,300 | 21% | 13% | Blue Collar Enterprise | 33% | Ties of Community | 26% | Lutley | 3,350 | 16% | 13% | Symbols of Success | 43% | Suburban Comfort | 20% |
| Bowling Green/Darby End | 5,000 | 18% | 18% | Ties of Community | 42% | Blue Collar Enterprise | 33% | Lye & Stambermill | 5,400 | 21% | 15% | Ties of Community | 41% | Blue Collar Enterprise | 19% |
| Brierley Hill | 1,800 | 18% | 16% | Ties of Community | 39% | Twilight Subsistence | 34% | Milking Bank | 3,250 | 25% | 5% | Happy Families | 74% | Ties of Community | 10% |
| Brockmoor/The Wallows | 3,550 | 21% | 14% | Blue Collar Enterprise | 40% | Municipal Dependency | 27% | Netherby & Beacon | 4,850 | 18% | 21% | Happy Families | 57% | Suburban Comfort | 20% |
| Bromley | 2,250 | 24% | 16% | Blue Collar Enterprise | 64% | Municipal Dependency | 36% | Netherend | 3,550 | 17% | 12% | Happy Families | 44% | Ties of Community | 42% |
| Brownswall & Cotwall End | 2,350 | 13% | 28% | Suburban Comfort | 74% | Symbols of Success | 21% | Netherton | 5,000 | 19% | 15% | Blue Collar Enterprise | 41% | Ties of Community | 21% |
| Caledonia | 3,600 | 18% | 14% | Ties of Community | 43% | Happy Families | 29% | Northway | 4,050 | 13% | 22% | Suburban Comfort | 79% | Grey Perspectives | 6% |
| Charterfields & Blandford Mere | 3,600 | 17% | 12% | Happy Families | 42% | Suburban Comfort | 40% | Norton | 5,050 | 15% | 21% | Suburban Comfort | 44% | Symbols of Success | 38% |
| Clockfields | 2,100 | 20% | 8% | Happy Families | 71% | Blue Collar Enterprise | 17% | Old Amblecote | 2,150 | 14% | 19% | Happy Families | 36% | Ties of Community | 30% |
| Cockshot | 3,900 | 19% | 16% | Ties of Community | 35% | Suburban Comfort | 28% | Old Park Farm & Wren's Nest | 6,150 | 25% | 15% | Municipal Dependency | 58% | Blue Collar Enterprise | 28% |
| Corbett | 2,600 | 19% | 10% | Ties of Community | 29% | Municipal Dependency | 29% | Oldswinford | 3,600 | 13% | 24% | Symbols of Success | 36% | Grey Perspectives | 26% |
| Corbys & Tansey Green | 2,850 | 17% | 19% | Ties of Community | 37% | Blue Collar Enterprise | 23% | Pedmore | 4,350 | 15% | 23% | Symbols of Success | 83% | Grey Perspectives | 9% |
| Coseley | 5,300 | 20% | 14% | Ties of Community | 32% | Blue Collar Enterprise | 23% | Pensnett | 3,450 | 19% | 17% | Municipal Dependency | 41% | Blue Collar Enterprise | 30% |
| Cradley & Fatherless Barn | 6,700 | 19% | 17% | Blue Collar Enterprise | 43% | Ties of Community | 41% | Peter's Hill | 2,800 | 19% | 9% | Happy Families | 59% | Suburban Comfort | 23% |
| Crestwood Park | 2,100 | 21% | 9% | Happy Families | 63% | Suburban Comfort | 15% | Priority | 3,950 | 24% | 13% | Blue Collar Enterprise | 47% | Municipal Dependency | 40% |
| Delph | 2,750 | 14% | 14% | Welfare Borderline | 42% | Ties of Community | 29% | Quarry Bank | 6,250 | 18% | 18% | Ties of Community | 43% | Municipal Dependency | 24% |
| Dudley Town | 2,300 | 14% | 22% | Welfare Borderline | 43% | Ties of Community | 24% | Russell's Hall | 4,400 | 17% | 25% | Municipal Dependency | 38% | Blue Collar Enterprise | 36% |
| Dudley Wood | 3,100 | 18% | 17% | Ties of Community | 41% | Municipal Dependency | 33% | Shell Corner | 3,150 | 18% | 16% | Ties of Community | 45% | Blue Collar Enterprise | 19% |
| Foxyards | 1,550 | 15% | 19% | Ties of Community | 66% | Suburban Comfort | 34% | Sledmere & Tansley | 3,750 | 20% | 18% | Municipal Dependency | 35% | Ties of Community | 24% |
| Gornalwood | 3,450 | 13% | 25% | Suburban Comfort | 37% | Ties of Community | 31% | St. Thomas's | 6,600 | 22% | 13% | Suburban Comfort | 41% | Ties of Community | 23% |
| Grange | 3,200 | 15% | 17% | Suburban Comfort | 46% | Municipal Dependency | 11% | Swan Village | 2,400 | 18% | 19% | Blue Collar Enterprise | 62% | Ties of Community | 12% |
| Grosvenor | 2,400 | 18% | 14% | Blue Collar Enterprise | 29% | Welfare Borderline | 25% | The Ellowes | 4,350 | 17% | 17% | Suburban Comfort | 30% | Ties of Community | 29% |
| Halesmere & Tenterfields | 1,450 | 17% | 16% | Suburban Comfort | 64% | Happy Families | 14% | The Lakes & Portway | 4,650 | 16% | 22% | Suburban Comfort | 34% | Blue Collar Enterprise | 31% |
| Halesowen West | 3,650 | 17% | 18% | Ties of Community | 33% | Twilight Subsistence | 19% | The Old Quarter | 5,700 | 18% | 15% | Suburban Comfort | 27% | Ties of Community | 26% |
| Harts Hill | 850 | 18% | 15% | Blue Collar Enterprise | 35% | Happy Families | 31% | The Straits | 3,050 | 13% | 26% | Suburban Comfort | 81% | Ties of Community | 11% |
| Hasbury | 6,350 | 16% | 24% | Suburban Comfort | 54% | Blue Collar Enterprise | 21% | Upper Gornal | 4,400 | 20% | 17% | Blue Collar Enterprise | 26% | Ties of Community | 24% |
| Hawbush East | 3,500 | 23% | 10% | Municipal Dependency | 50% | Blue Collar Enterprise | 27% | Vauxhall & Steppingstones | 1,000 | 17% | 18% | Suburban Comfort | 24% | Welfare Borderline | 22% |
| Hawne | 4,600 | 16% | 18% | Suburban Comfort | 36% | Ties of Community | 21% | Wall Health | 5,150 | 16% | 22% | Suburban Comfort | 66% | Ties of Community | 11% |
| High Acres | 3,300 | 15% | 17% | Blue Collar Enterprise | 26% | Suburban Comfort | 25% | Waxland | 3,300 | 19% | 21% | Municipal Dependency | 35% | Blue Collar Enterprise | 34% |
| High Park | 4,450 | 17% | 22% | Blue Collar Enterprise | 32% | Suburban Comfort | 28% | Withymoor | 3,600 | 14% | 21% | Suburban Comfort | 72% | Ties of Community | 15% |
| Hob Green | 3,750 | 17% | 25% | Symbols of Success | 37% | Blue Collar Enterprise | 33% | Wollaton | 5,850 | 19% | 7% | Happy Families | 66% | Symbols of Success | 31% |
| Holly Hall/Blower's Green | 2,700 | 23% | 16% | Ties of Community | 28% | Ties of Community | 28% | Wollaston | 4,900 | 13% | 22% | Suburban Comfort | 64% | Blue Collar Enterprise | 10% |
| Howley Grange | 2,500 | 16% | 21% | Suburban Comfort | 50% | Blue Collar Enterprise | 14% | Wollescote | 5,050 | 20% | 13% | Blue Collar Enterprise | 50% | Ties of Community | 29% |
| Hurst Green | 4,800 | 16% | 22% | Suburban Comfort | 58% | Ties of Community | 15% | Woodsetton & Dormston | 4,000 | 19% | 20% | Suburban Comfort | 27% | Ties of Community | 22% |
| Hurst Hill & Roseville | 6,100 | 16% | 20% | Ties of Community | 38% | Suburban Comfort | 22% | Woodside | 3,350 | 22% | 16% | Blue Collar Enterprise | 46% | Municipal Dependency | 23% |
| Kingsway | 2,100 | 17% | 25% | Blue Collar Enterprise | 37% | Ties of Community | 14% | Wordsley & Rectory Fields | 2,850 | 15% | 17% | Suburban Comfort | 43% | Happy Families | 27% |
| Kingswinford North | 4,150 | 13% | 25% | Suburban Comfort | 49% | Grey Perspectives | 28% | Wordsley Green | 1,400 | 18% | 21% | Blue Collar Enterprise | 76% | Ties of Community | 24% |

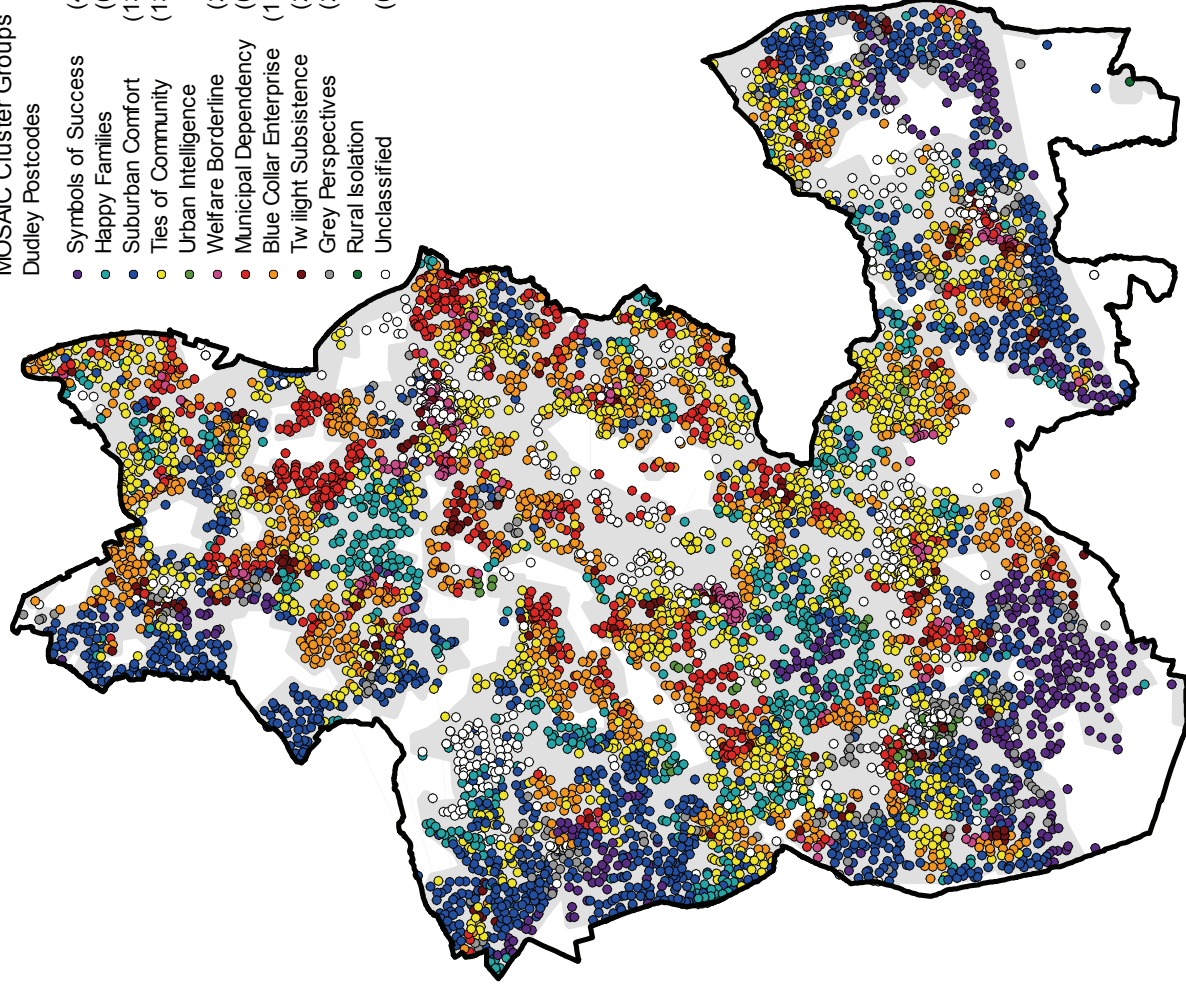
Annual Report of the Director of Public Health - 2007

Source: Population figures based on ONS mid-year Population estimates 2006
Experian Ltd MOSAIC Public Sector



MOSAIC Cluster Groups
Dudley Postcodes

| | |
|--------------------------|--------|
| • Symbols of Success | (410) |
| • Happy Families | (632) |
| • Suburban Comfort | (1350) |
| • Ties of Community | (1386) |
| • Urban Intelligence | (48) |
| • Welfare Borderline | (206) |
| • Municipal Dependency | (600) |
| • Blue Collar Enterprise | (1108) |
| • Twilight Subsistence | (205) |
| • Grey Perspectives | (271) |
| • Rural Isolation | (1) |
| ○ Unclassified | (699) |



MOSAIC is a typing method that takes information from numerous sources, including Census, benefits, income, housing and lifestyle data for areas and individuals and produces a grouping of postcodes into similar types (see annex 2 for more detail). The maps on these pages show the MOSAIC cluster groups, which are the top level classification into just 11 different types.

The map on the left has all of the postcodes for Dudley shown with their cluster group indicated, whilst on the right each cluster group is shown separately.

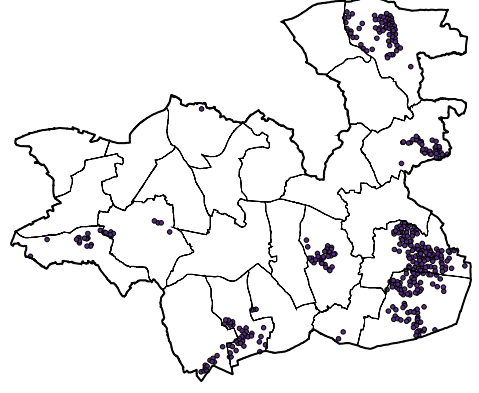
- The most dominant cluster groups are 'Suburban Comfort' 'Ties of Community' and 'Blue Collar Enterprise'
- 'Symbols of Success', dominate around the west and south, with relatively few of these in the central and northern parts of the Borough
- 'Ties of Community' and 'Blue Collar Enterprise' dominate the rest of the borough
- 'Municipal Dependency' has three clusters, in Castle and Priory, St Thomas and Brierley Hill, with a scattering elsewhere
- 'Happy Families' is strongly clustered in Gornal Wood and Amblecote
- The majority of 'Symbols of Success' postcodes are found in Stourbridge and Halesowen

Community

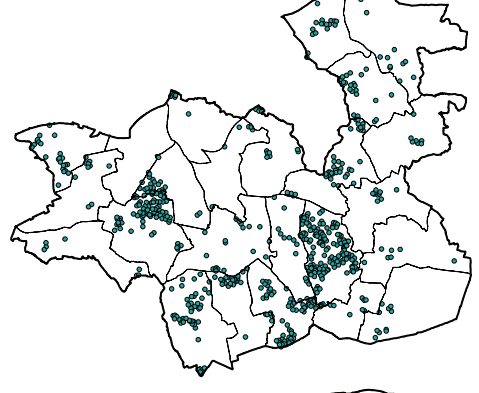


MOSAIC Classification

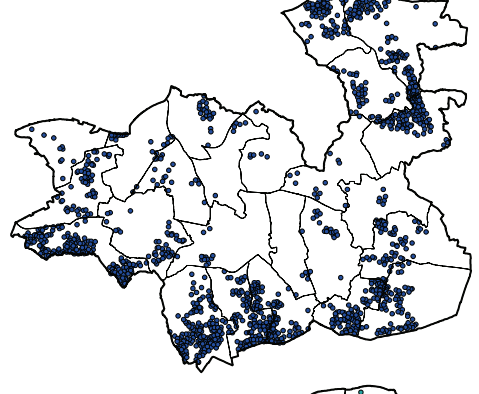
Symbols of Success



Happy Families



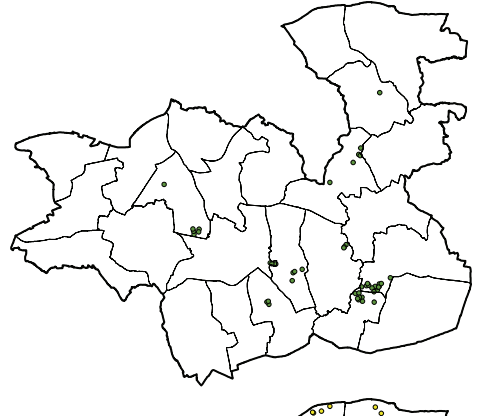
Suburban Comfort



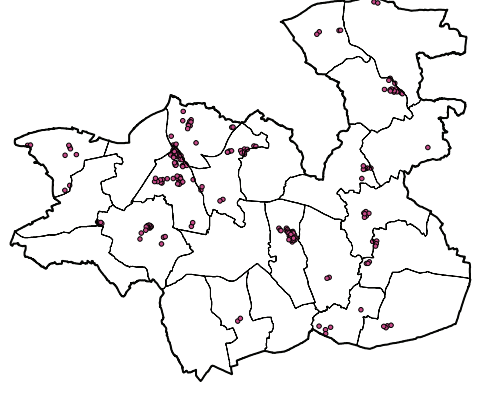
Ties of Community



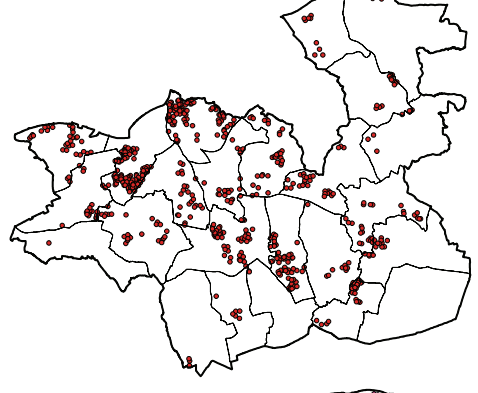
Urban Intelligence



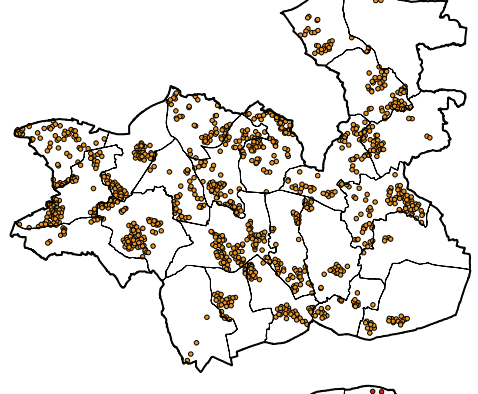
Welfare Borderline



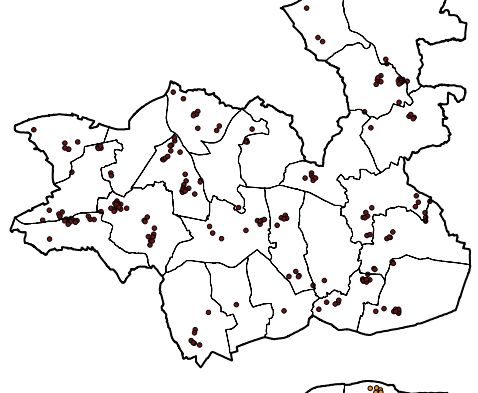
Municipal Dependency



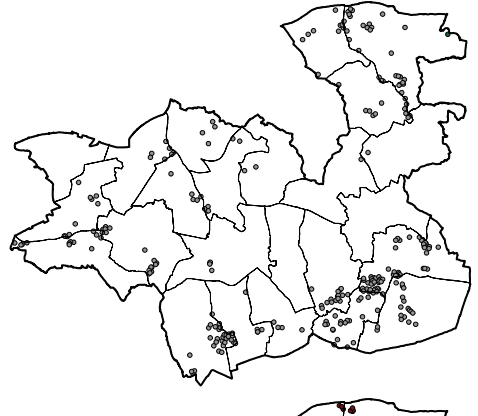
Blue Collar Enterprise



Twilight Subsistence

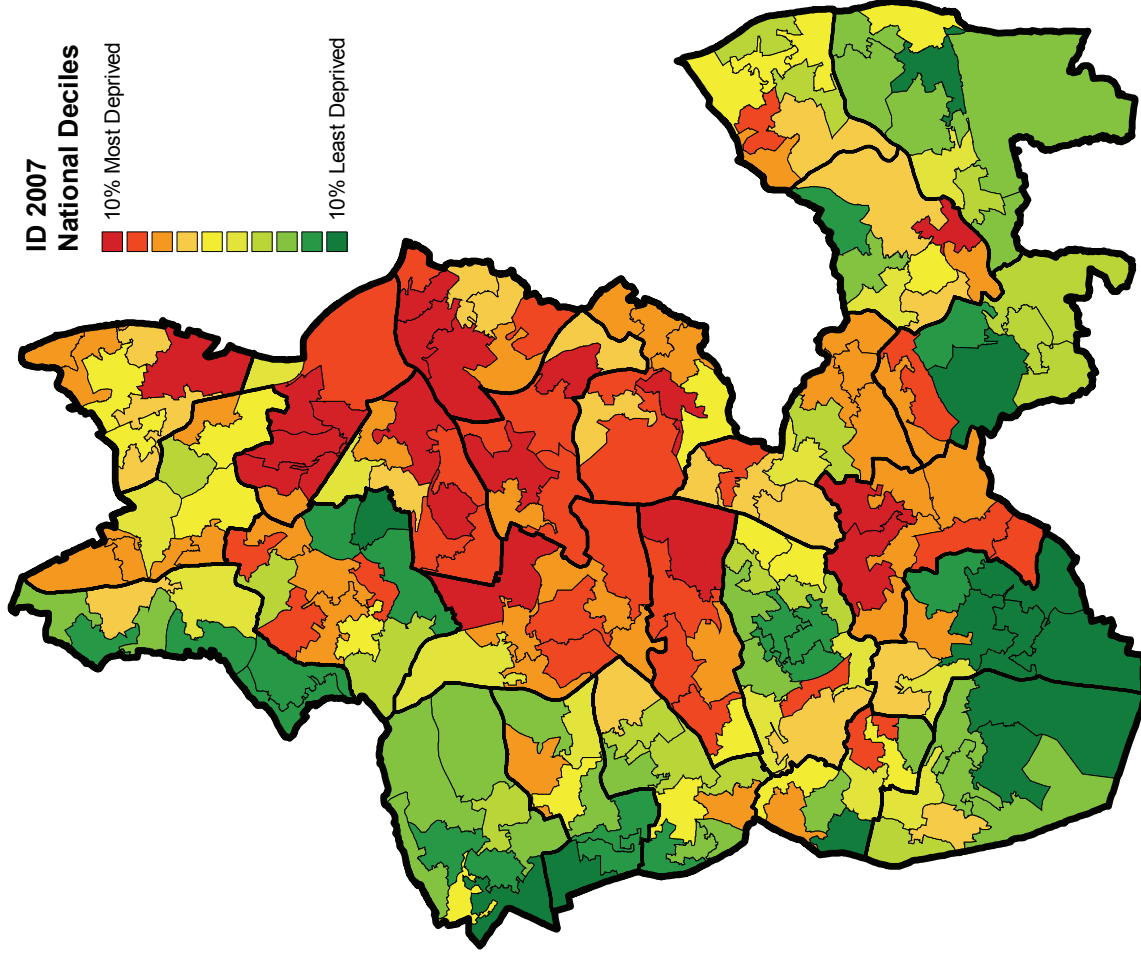


Grey Perspective & Rural Isolation





Index of Multiple Deprivation 2007



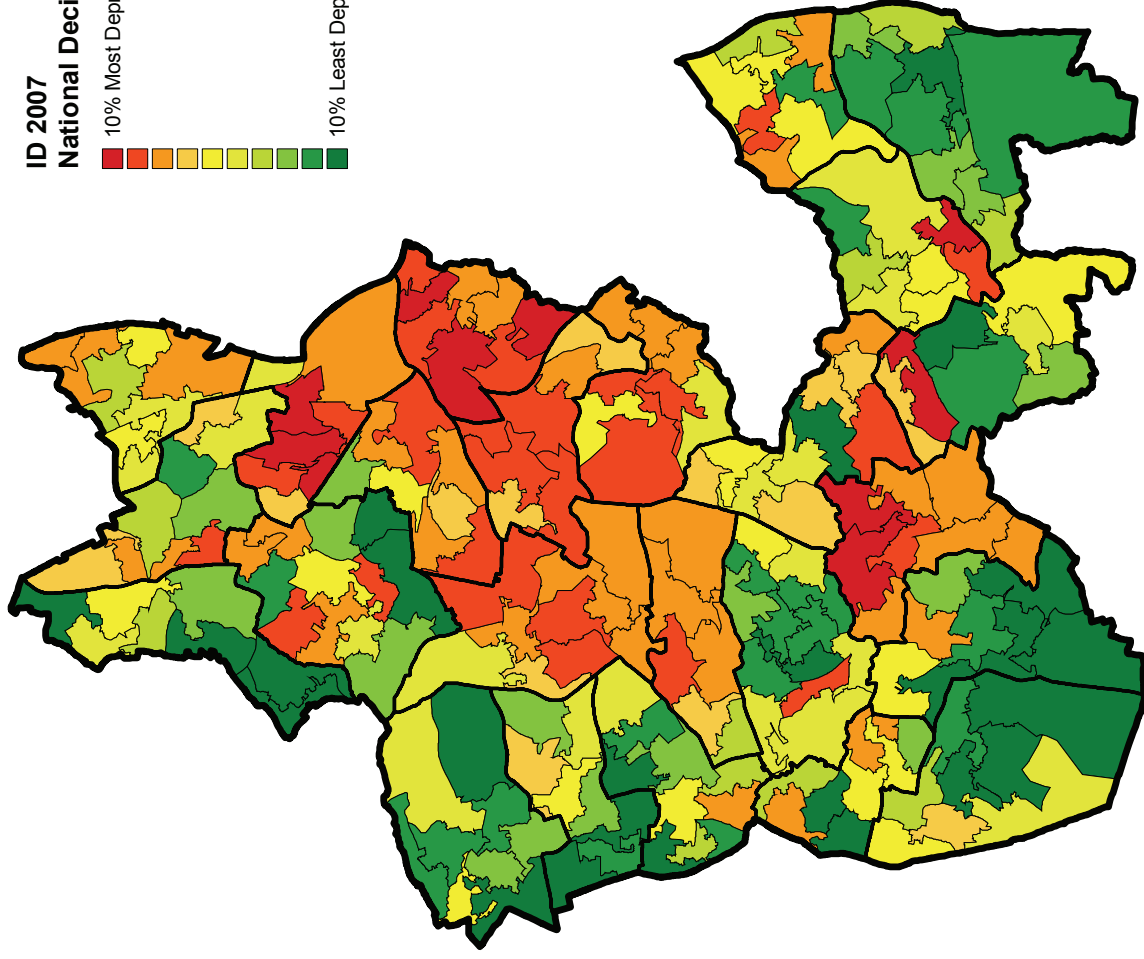
The maps on these pages show information from the national indices of deprivation for 2007. They show Super Output Areas ranked nationally.

The map on the left shows the index of multiple deprivation, which is made up of a number of domains (income, employment, health, education, housing, living environment and crime). These are developed from specific variables and then combined into a single index.

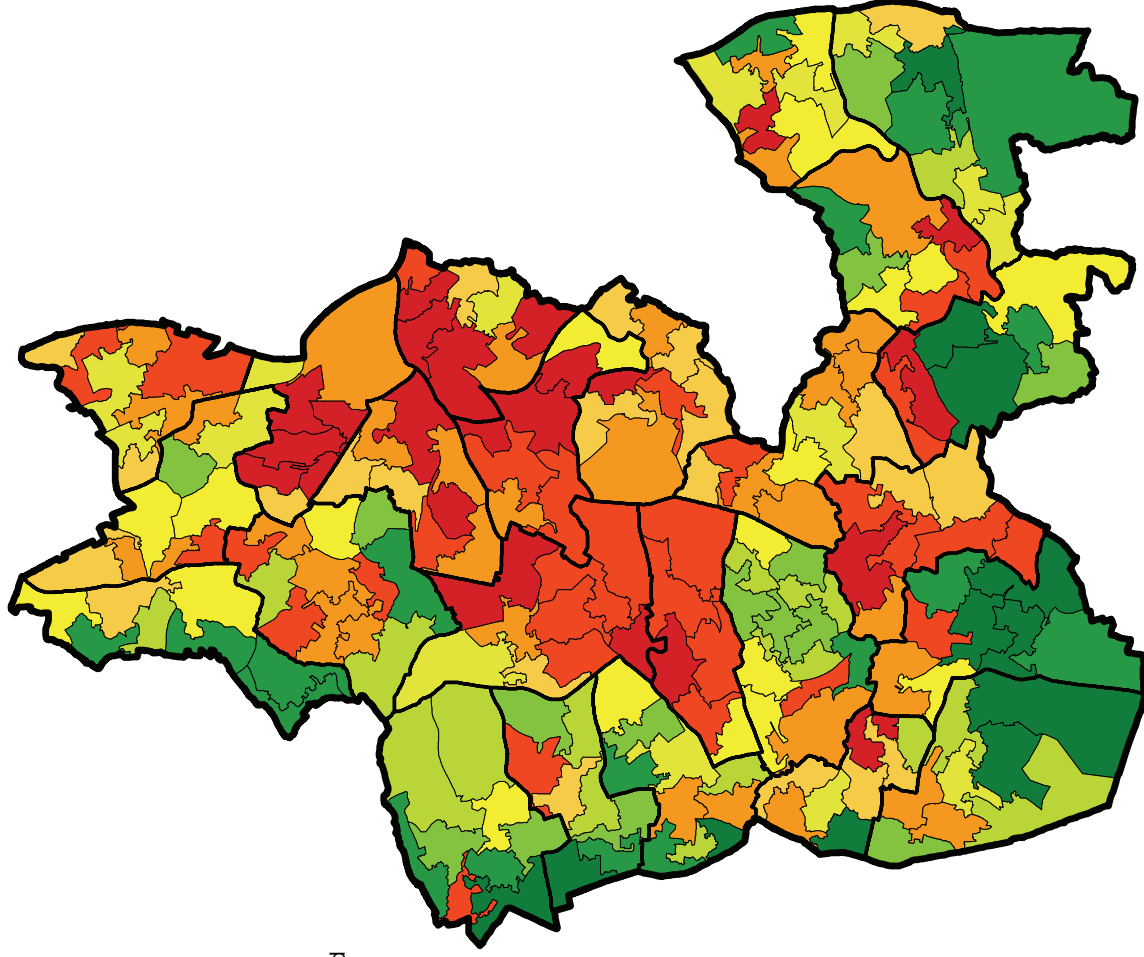
The two maps on the facing page show income deprivation as it affects children and older people. The index is the proportion of children or older people who are income deprived in an area, ranked nationally.

- As can be seen all three maps are very similar, although the child poverty map has fewer areas in the most deprived 10% than the other two.
- In general the child poverty map presents a slightly better picture than the other two with fewer areas amongst the most deprived nationally and more areas amongst the least deprived.
- The deprived areas on all three maps are mainly found in an area running from Castle & Priory in the northern part of the borough through Netherton, St James, St Thomas and St Andrews to Brockmoor & Pensnett and Brierley Hill in the central part of the borough.
- There is also a cluster of deprived SOAs in Lye, with a further few scattered about the borough.
- Comparisons can be drawn against the IMD 2004 figures for the same areas and on all three indices Dudley has got worse, with more areas now falling into the more deprived areas and fewer in the least deprived nationally. Again this is less marked for the child poverty index.

Income Deprivation Affecting Children Index

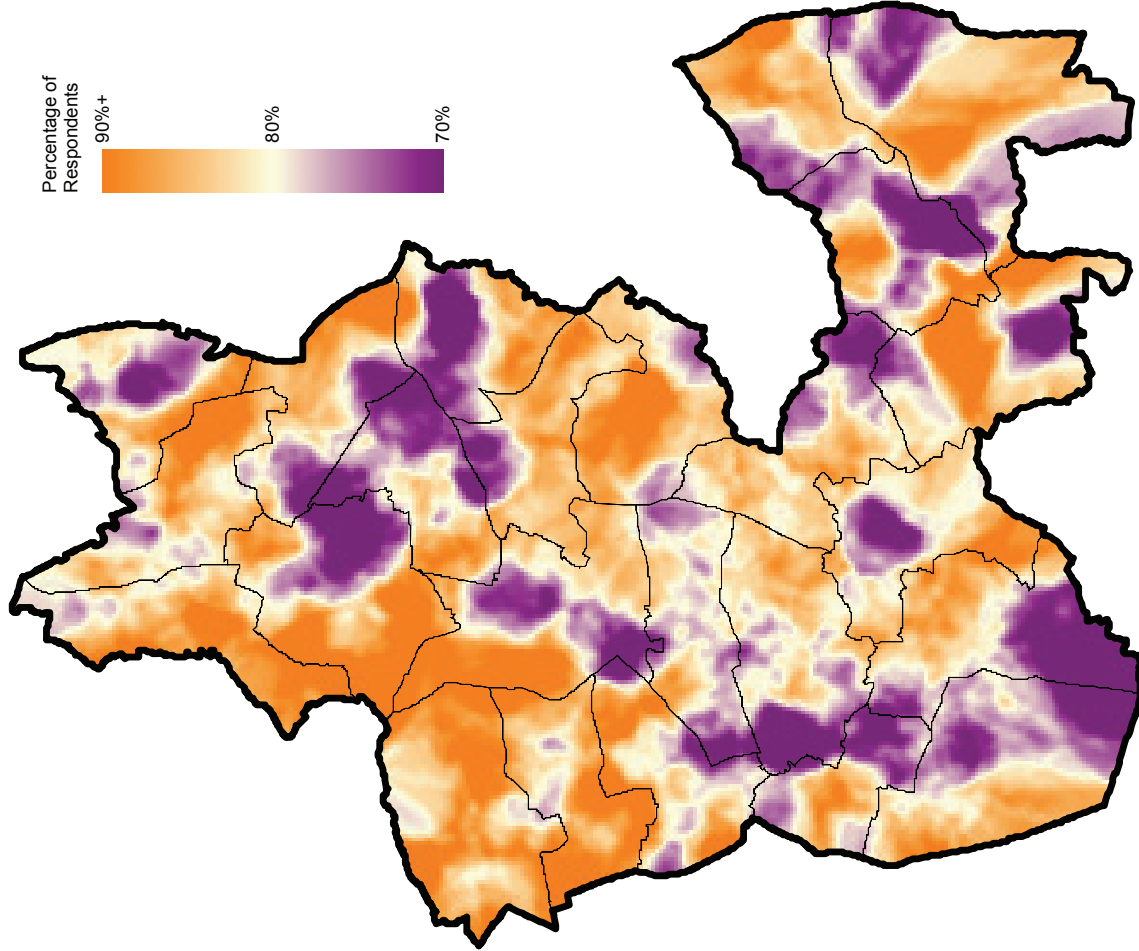


Income Deprivation Affecting Older People Index

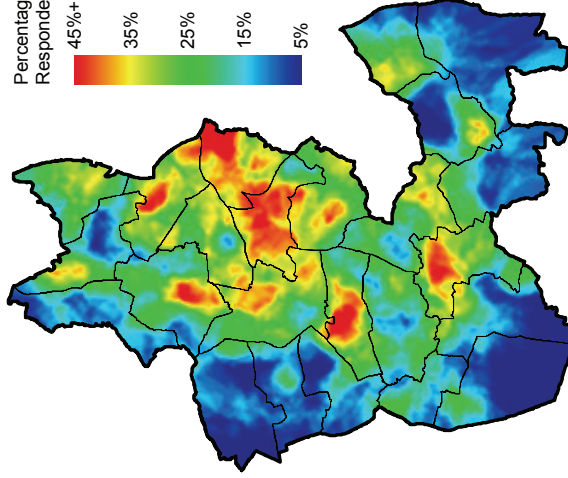




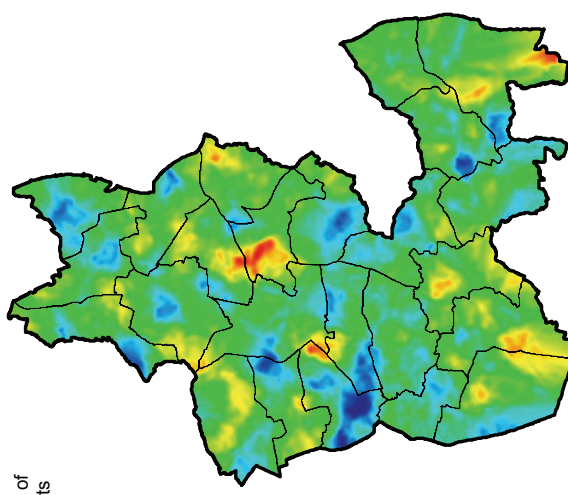
Lived in the area 10 or more years



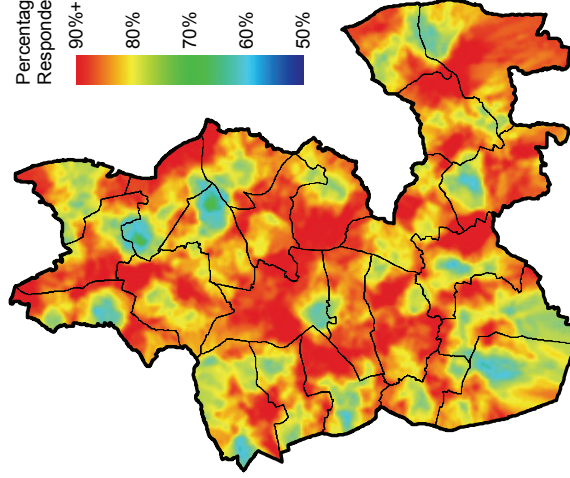
Not Satisfied with the area



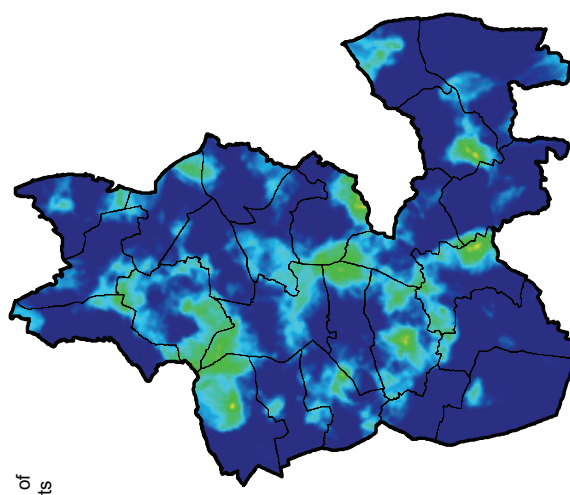
Local papers are not reliable



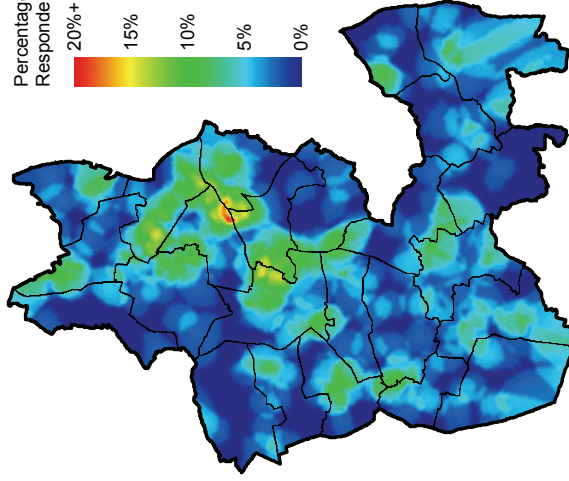
I cannot influence decisions affecting my local area



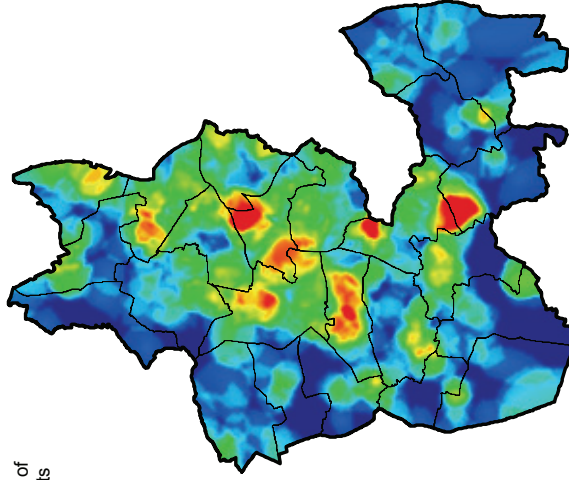
Working together people in my area cannot influence decisions affecting my local area



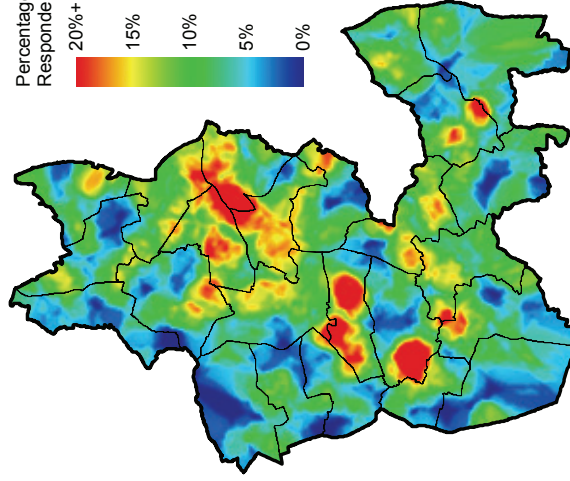
Don't know people in neighbourhood



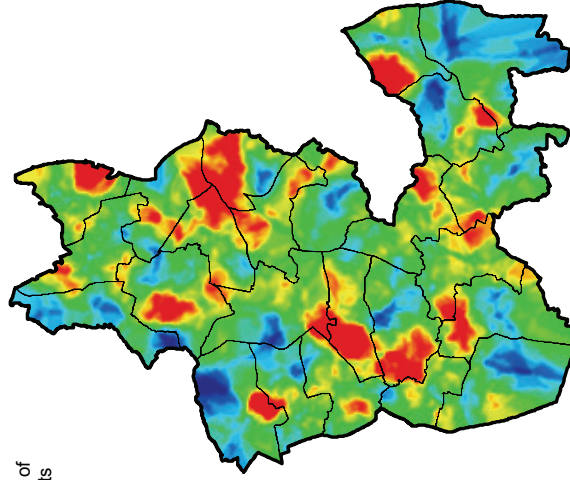
Don't trust people in neighbourhood



Have no-one to ask for a lift urgently



Have no-one to ask for help if ill



Social Capital

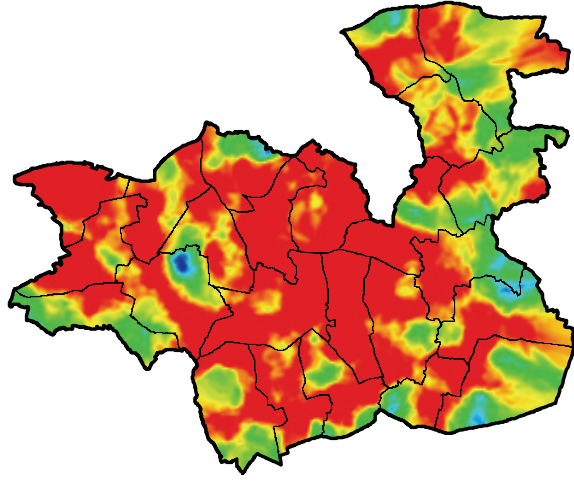
The data on these pages are from the Dudley Health Survey 2004. The first map shows the proportion of people who have lived in the area they live in for 10 years or more. The other maps all show questions relating in some way to social capital and how people feel about the area in which they live.

- Dudley has a relatively stable population. Nowhere in the borough is there fewer than half who have lived there 10 or more years.
- Areas with the lowest proportion living there for 10 or more years generally come out worse in the social capital measures shown.
- Most people think they have little influence on their own on decisions taken that affect them, but many feel that they have influence by working together
- People in areas with low satisfaction and trust are more likely to have no-one to turn to when they need help
- Some areas, particularly around Netherton, St Thomas and Brierley Hill, have more than a fifth of the population with no-one to turn to if they need a lift or help when they are ill
- These same areas have more than a fifth who say they do not trust people in their neighbourhood
- In general people think the local papers are reliable, but in most areas around a quarter do not think so and in some this is nearly half

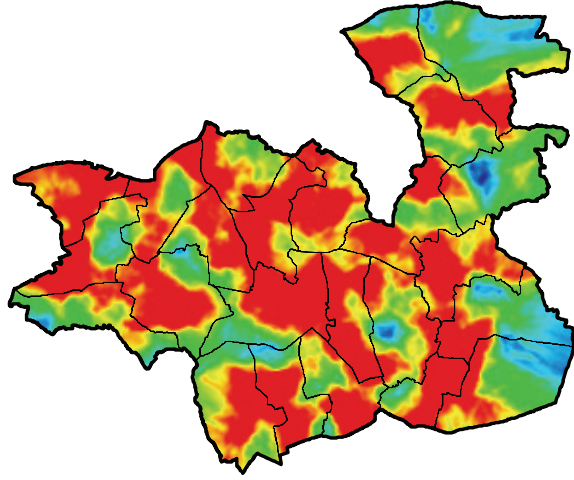




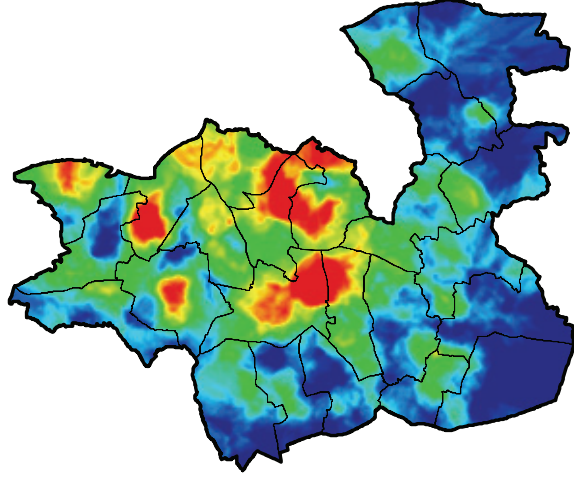
Speed or volume of road traffic



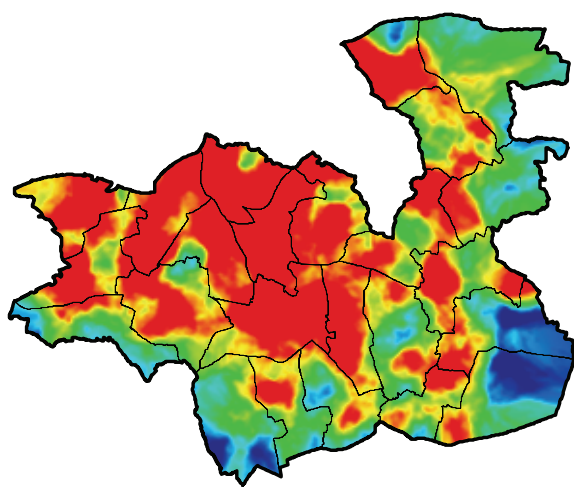
Parking in residential streets



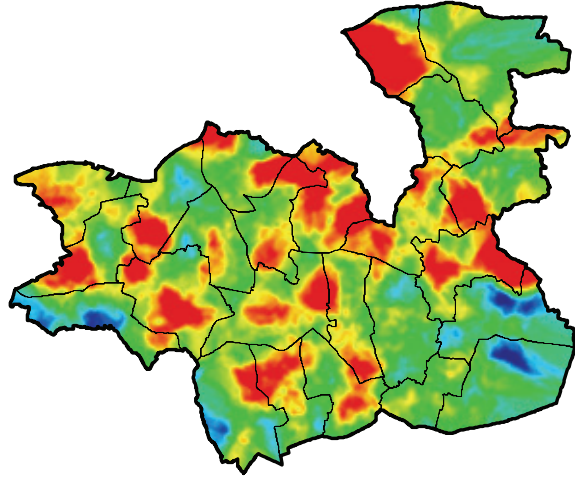
Car theft and joy riding



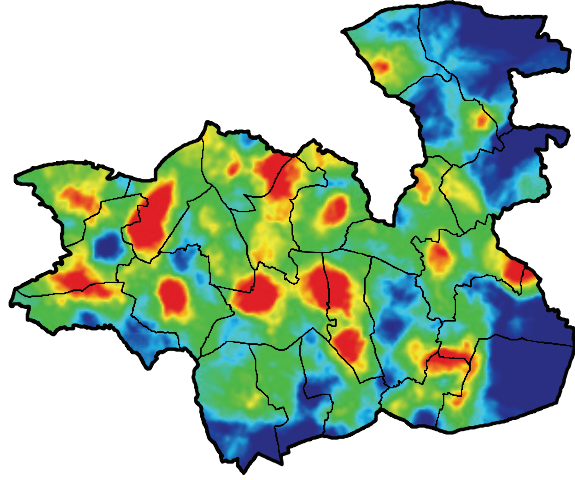
Rubbish or litter lying around



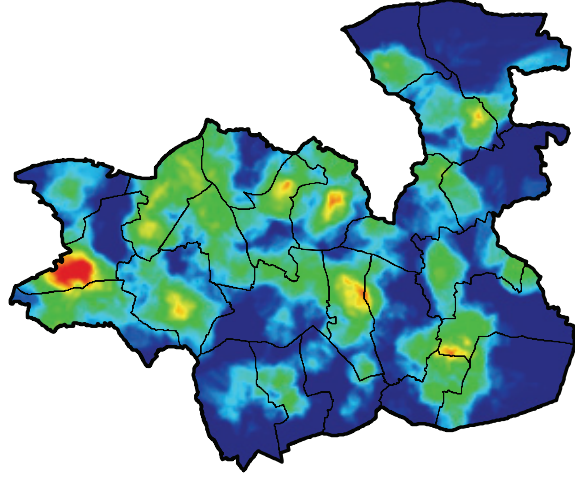
Dog mess



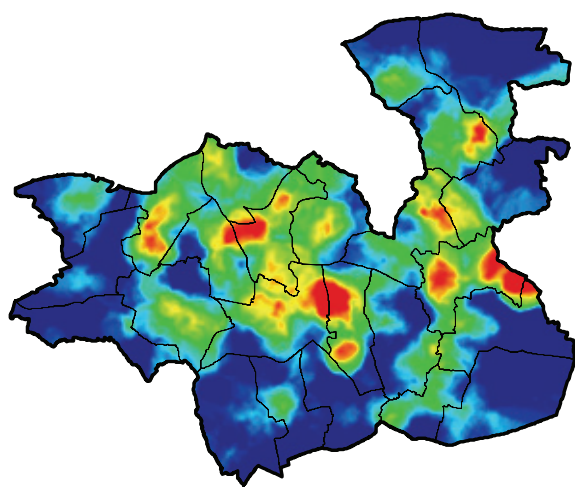
Vandalism, graffiti and other deliberate damage to property or vehicles



People being drunk or rowdy in public



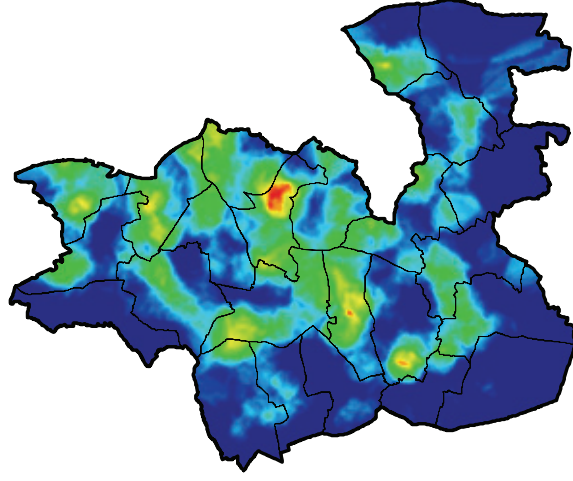
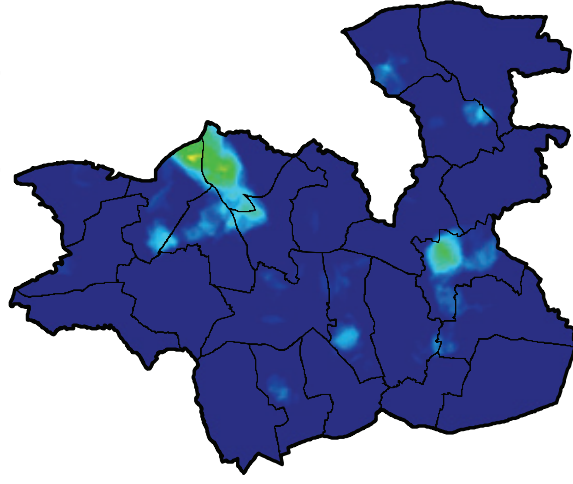
People using or dealing drugs



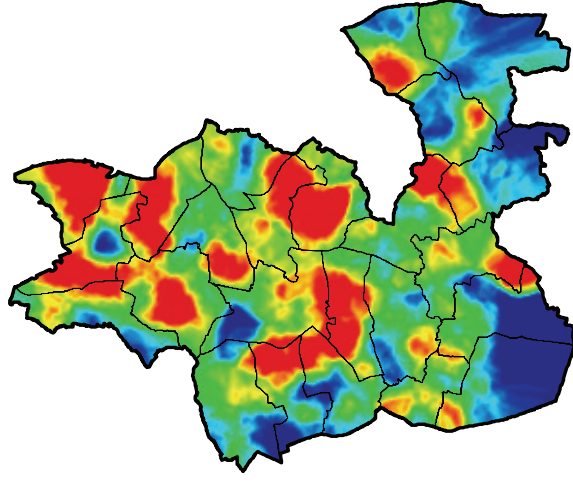
Source: Dudley Health Survey 2004

People being attacked or harassed because of their skin colour, ethnic origin or religion

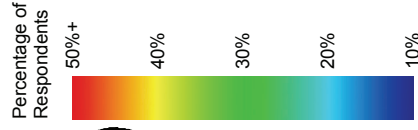
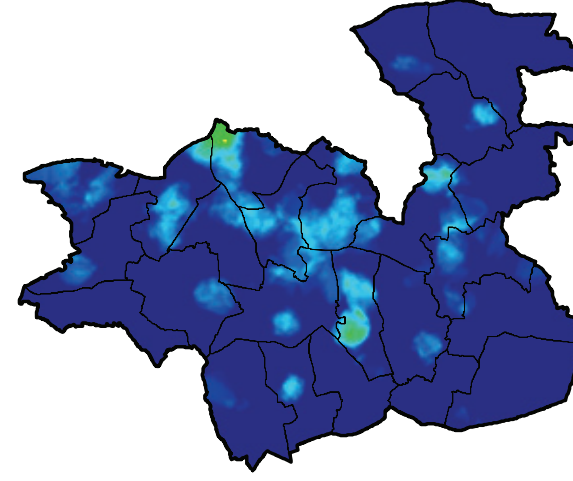
Level of noise



Teenagers hanging around on the street



Troublesome neighbours

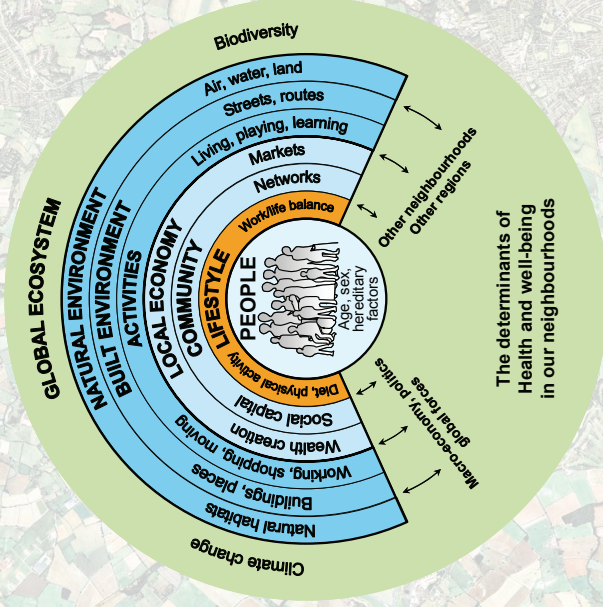


Problems in the neighbourhood

The data on these pages are from the Dudley Health Survey 2004 where participants were asked to say whether they considered each of the issues shown to be a problem in their neighbourhood. The maps show the proportion that said the issue was either a fairly big or a very big problem in their area. All the maps are shown to the same scale, with dark blue areas those where fewer than 10% thought there was a problem and the red areas those where more than half thought there was a problem.

- The issues which seem to present problems to the most people are traffic, parking and litter, all of which are identified as a problem by more than 40% overall.
- Dog mess and teenagers hanging around, were both identified as problems by about 35% overall.
- Some problems, car crime, vandalism, drug use and dealing, showed hot-spot areas of high rates with the rest being slightly low.
- Troublesome neighbours and people suffering racist harassment were not considered to be a big problem by most. However in the latter case there is a high rate in the St. Thomas area which is where the most people from ethnic minorities live. There is a lesser peak in Lye, which is the other area in Dudley with significant ethnic minorities.
- Most of the maps show the highest rates in similar areas. For example there are high rates for almost every question in Brierley Hill, Coseley, Castle & Priory, Netherton and Lye.





Introduction

This chapter covers the lifestyles of the people of Dudley. Lifestyle choices made by individuals have a strong influence on their health. Lifestyle choices are mainly controlled by the individual but can be influenced to a greater or lesser extent by our environment whether physical or social.

There is strong evidence indicating that lifestyles such as smoking, low intakes of fruit and vegetables, low physical activity levels and high alcohol intake combine to have a major influence on all cause mortality with four times the mortality risk for those with four compared to zero of these health behaviours (Khaw et. al., 2008). The lifestyle behaviours across Dudley vary considerably and give a good indication of where lifestyle interventions are required most urgently.

Contents

- Introduction
- Lifestyle
- Adult Smoking Rate
- Adult Obesity Rate
- Adult Exercise
- Adult Diet
- Adult Heavy Drinking
- Adult Binge Drinking
- Adult Multiple Risk Factors
- Childhood Obesity



Lifestyle surface maps

The following section gives surface maps of lifestyle risk factors for adults taken from the Dudley Health Survey 2004 and obesity for children taken from the data submitted to the National Childhood Obesity Monitoring programme. The maps show rates that have been calculated from point data as described in Annex 1. Each lifestyle factor has maps for males and females with both shaded to the same scale. The legend bar is shown between the two. For the multiple risk factor maps and the childhood obesity maps for each age group, the scales are the same on each facing page.

Adult smoking rates

Smoking rates vary from below 8% to more than 32% across the whole of Dudley, with rates for males being generally slightly higher, with more of the area towards the red end of the spectrum and less towards the blue end. However both sexes show some patches of very high rates. The top 1% of the area for males has rates over 40% and for females over 34%.

The highest rates for males are in bands running from Castle & Priory ward through St Thomas, Netherton & Woodside and St Andrews wards and from Brockmoor & Pensnett, through Brierley Hill to Amblecote. There are also smaller patches of high rates in other parts of the borough. For females the high rates are more spread, in small patches throughout the borough with the largest patch in Brierley Hill and into Wordsley.

Adult Obesity

Obesity rates vary from below 6% to over 30%, with average levels being similar for both sexes. The very highest rates for men are 40% and for women 44%. Both sexes have high rates in the Coseley area and high rates in Brockmoor & Pensnett and Brierley Hill. However, the high rates for women are slightly more

concentrated in a central area, whereas those for men are more patchy.

Exercise and Diet

It is clear from the exercise and diet maps that the obesity problem whilst of a similar scale for both sexes is slightly different in cause. The proportion of men not doing enough exercise is much lower on average than the proportion of women. However the proportion of men not eating the recommended 5 portions of fruit or vegetables each day is much higher than that for women. This is indicative of general diet and suggests that the obesity problem amongst men is more attributable to poor diet than lack of exercise whereas the problem is the reverse for women.

This is borne out by the fact that the pattern for obesity for men follows closely the pattern for poor diet, whereas the pattern of obesity in women follows much more closely that for lack of exercise than that for poor diet.

However both are still important for both sexes as even the areas with the lowest rates still have around 40% of people not doing enough exercise and more than half of the population not eating 5-a-day. The areas with the highest rates have more than 80% not doing enough exercise and most (95%) not eating the recommended 5 portions of fruit or vegetables a day.

Alcohol

The lifestyle survey looked at two measures of alcohol consumption. The first asked about the total amount of alcohol drunk in the past week and the number of days on which alcohol was drunk at all. The second asked how much people had drunk in the single biggest session last week. The first gives us a measure of weekly alcohol consumption and the proportion who exceed recommended levels and the second allows us to measure binge drinking as the



proportion who exceeded double the recommended levels on at least one occasion.

The most immediately obvious observation on both measures is the difference between men and women. The maps for men both have large red areas and the rest mostly green, whereas for women they are mostly blue to green. This means that almost everywhere in Dudley at least 1/3 of men drink too much and more than 1 in 5 are binge drinking each week. In addition there are large areas where around half or more of all men are drinking too much and 1/3 are binge drinking. For women the figures are lower, but there are still 1 in 5 drinking too much and 10% binge drinking each week with some areas as high as 1/3 and 1/5. There is high correlation between the two sets of maps with those areas with high rates of heavy drinking also, not surprisingly, having high rates of binge drinking.

Multiple Risk Factors

The maps of multiple risk factors combine information from all the previous measures. People are classified according to how many of the six lifestyle risk factors they have and the two sets of map show the proportions with 3 or more and 4 or more of the 6 factors. The scale on the maps shows areas where more than half have multiple risk factors in red, with blue representing areas with fewer than 10% doing so.

Both pairs of maps show that men are more likely to have a high number of risk factors than women. In fact across virtually the entire Dudley area at least a third of men have 3 or more risk factors, with the majority of the area having more than half of men with 3 or more factors. There are also large areas where a third of men have 4 or more risk factors.

For women hardly any of Dudley has more than around 10% of women with 4 or more risk factors, but most areas have a third of women with 3 or more factors.

Childhood Obesity

The childhood obesity maps are based on data from the new national childhood obesity surveillance programme for 2006-07. In Dudley a response rate of 97% for reception year and 89% for year 6 was achieved, therefore the results are very robust. The maps are created from point data based on the postcode of residence. Maps for both years are shown to the same scale, with blue representing a figure of 5% or less and red a quarter or more of children classified as obese.

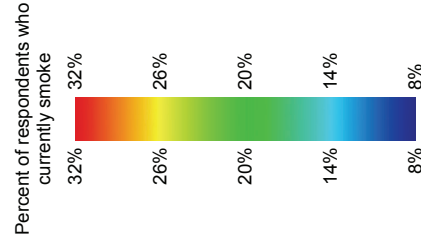
It is immediately obvious that far more year 6 children are obese, with large parts of Dudley having a quarter or more of both boys and girls who are obese. In reception year there are still a few areas with as many as a quarter obese, suggesting that many of the problems start before school age.

It is interesting to compare these to the maps of adult obesity, with the pattern for reception year children seeming to match those for adults fairly closely. This matches with what is known that children are more likely to be obese if their parents are themselves obese. Coseley in particular shows high rates in both adults and children, as do the Brockmoor and Pensnett and Brierley Hill areas.

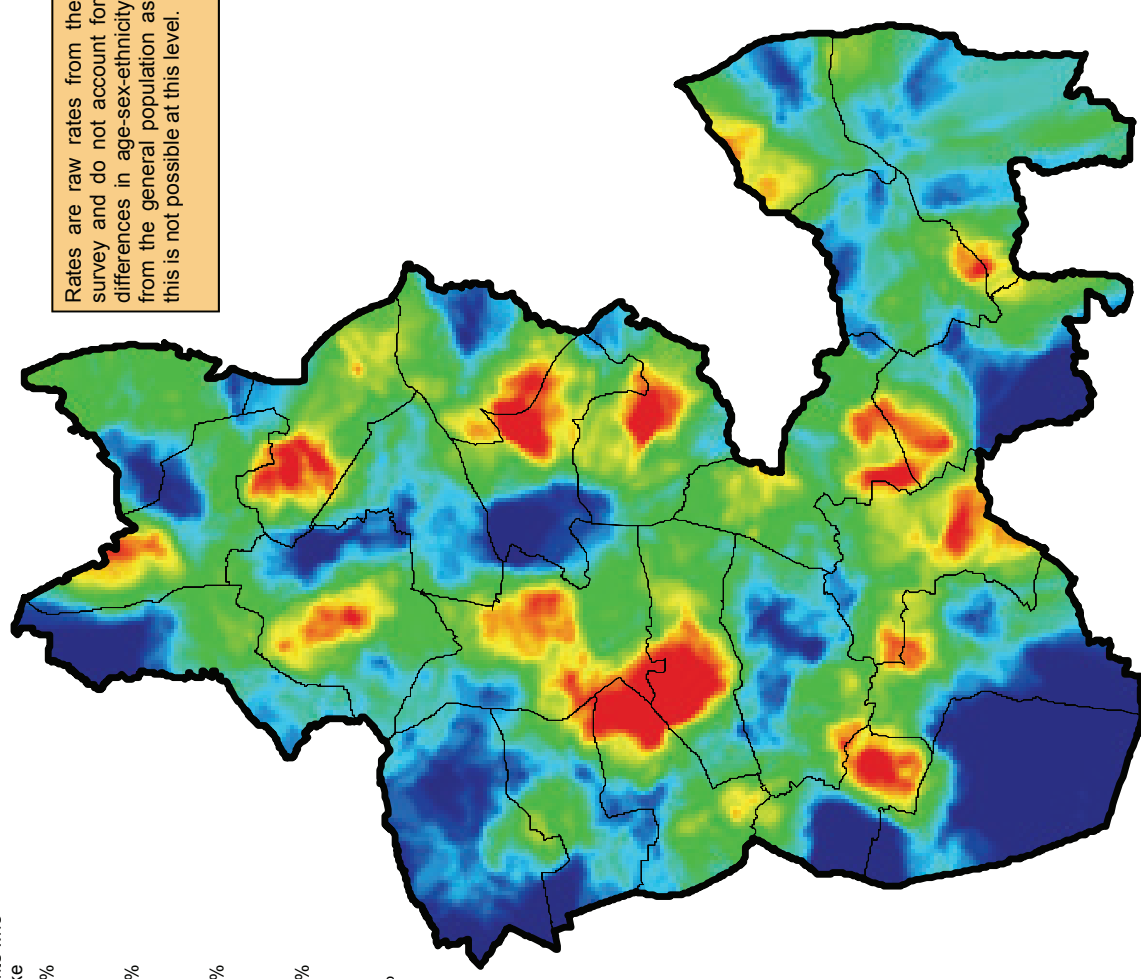
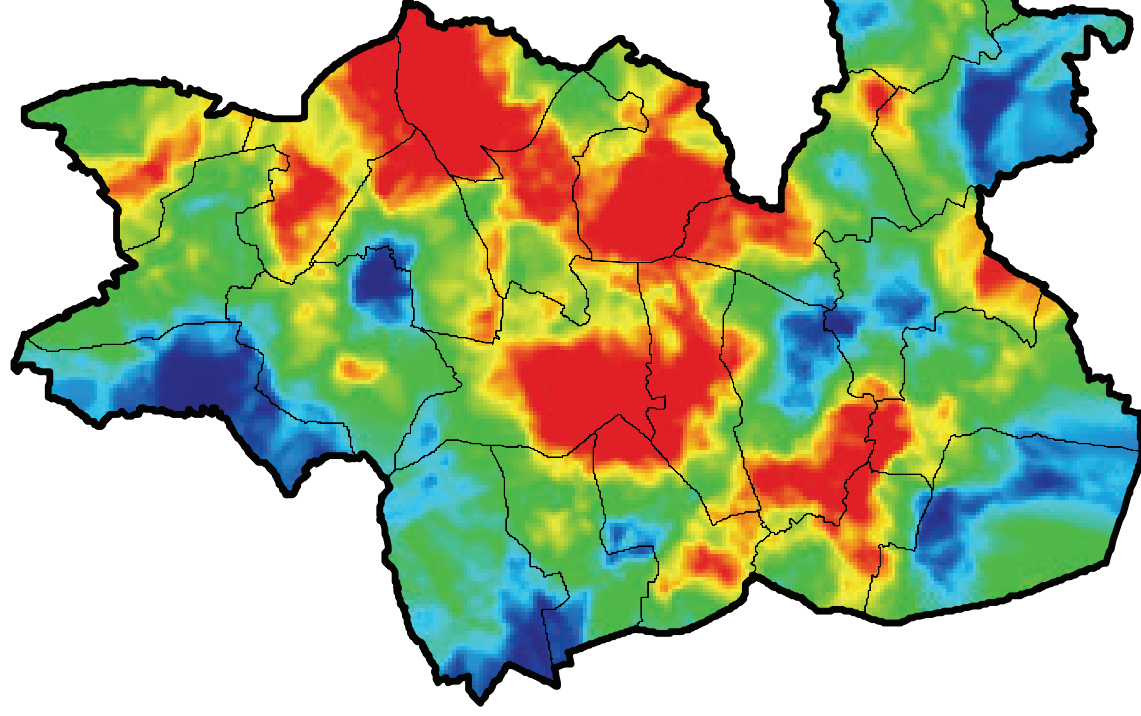
Year 6 rates are more universally high. There is a band of lower rates in the Brockmoor area which is high for reception year and would be expected perhaps to be higher for year 6. The highest rates for both sexes, where more than a third are obese, are found in Castle and Priory and the western part of the Amblecote ward.



Males



Females



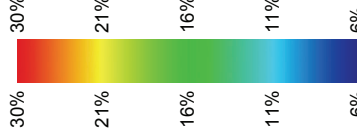
Rates are raw rates from the survey and do not account for differences in age-sex-ethnicity from the general population as this is not possible at this level.



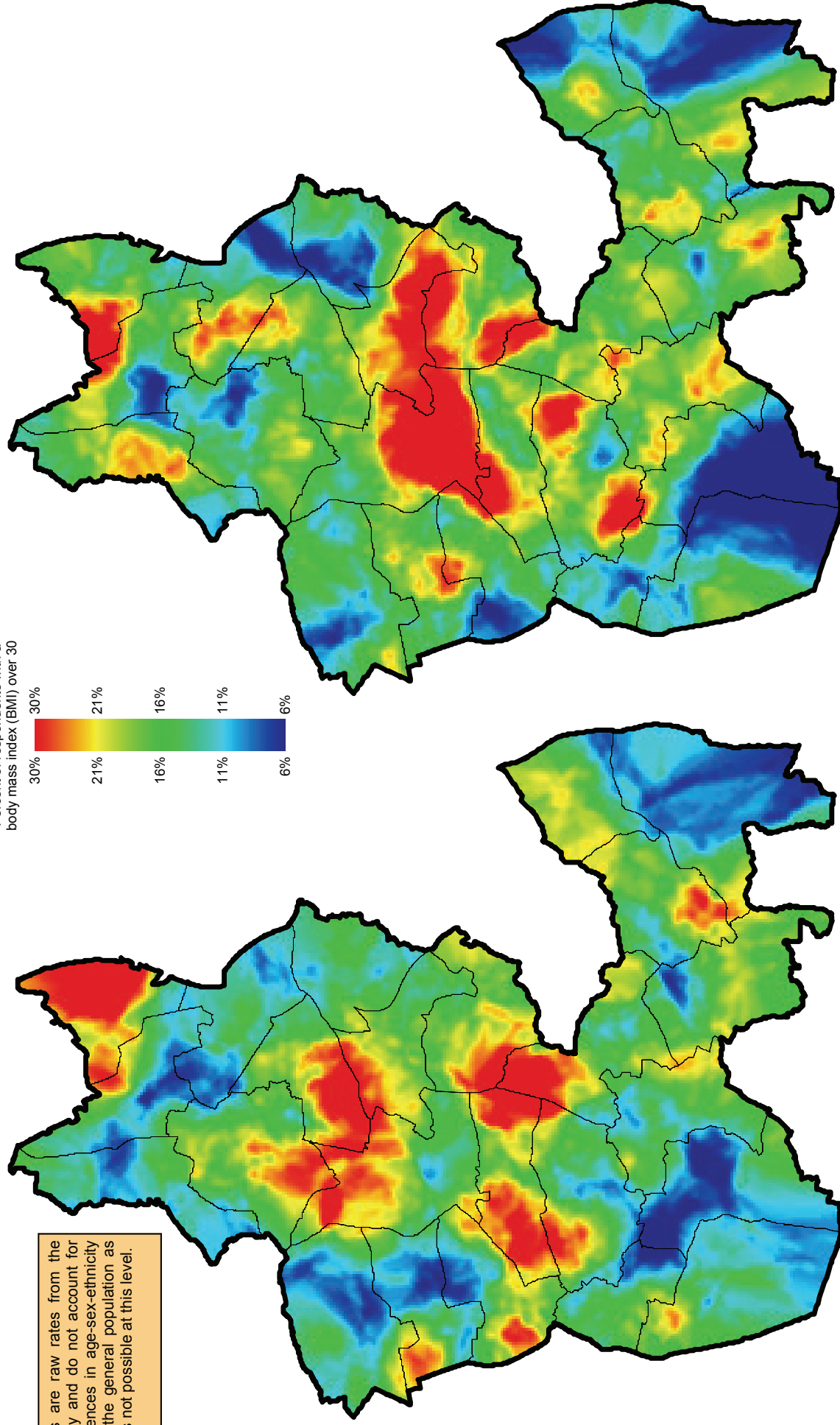
Males

Rates are raw rates from the survey and do not account for differences in age-sex-ethnicity from the general population as this is not possible at this level.

Percent of respondents with a body mass index (BMI) over 30



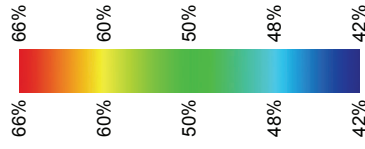
Females



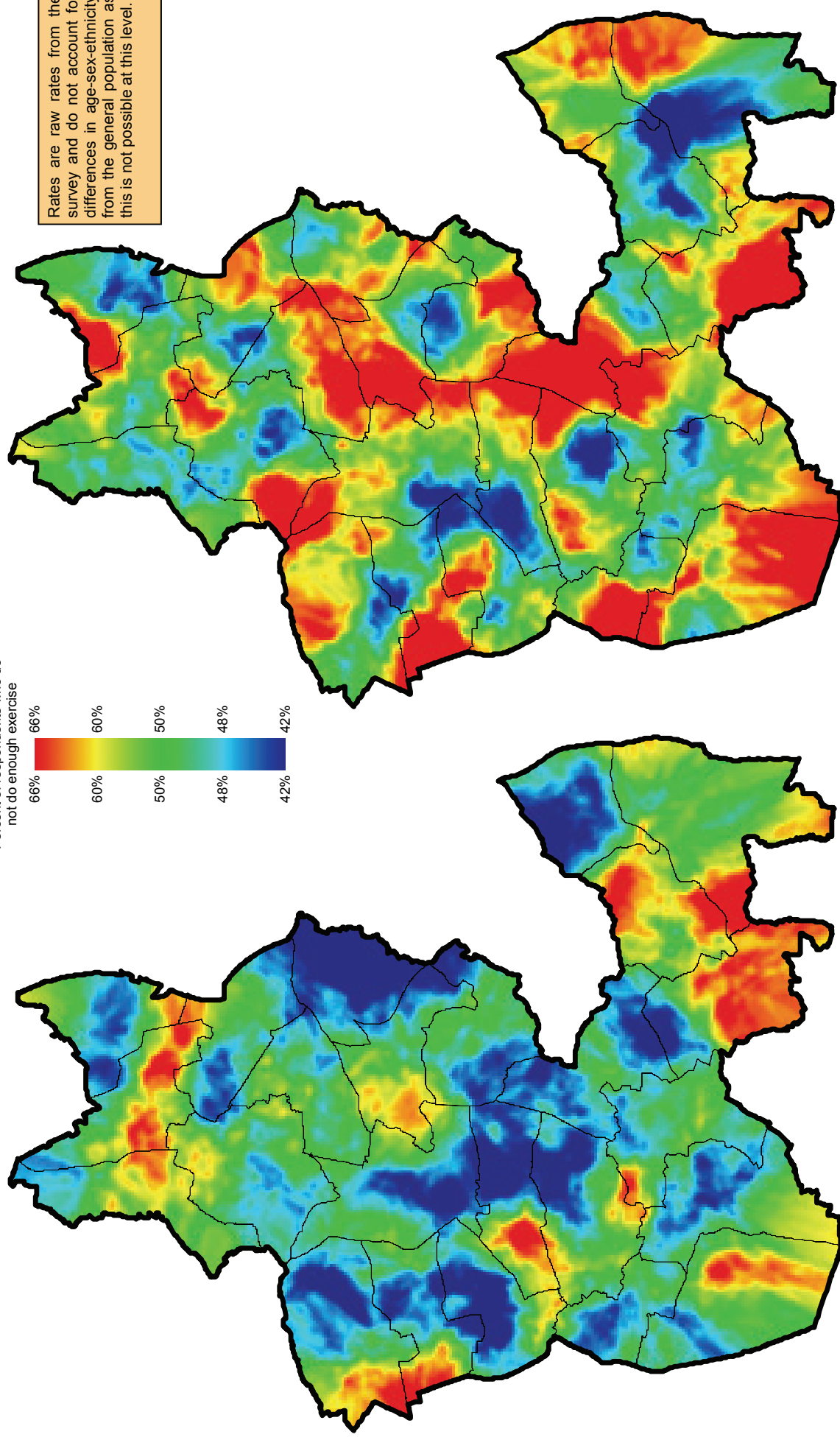


Males

Percent of respondents who do not do enough exercise



Females

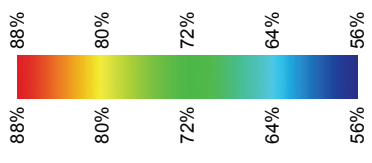




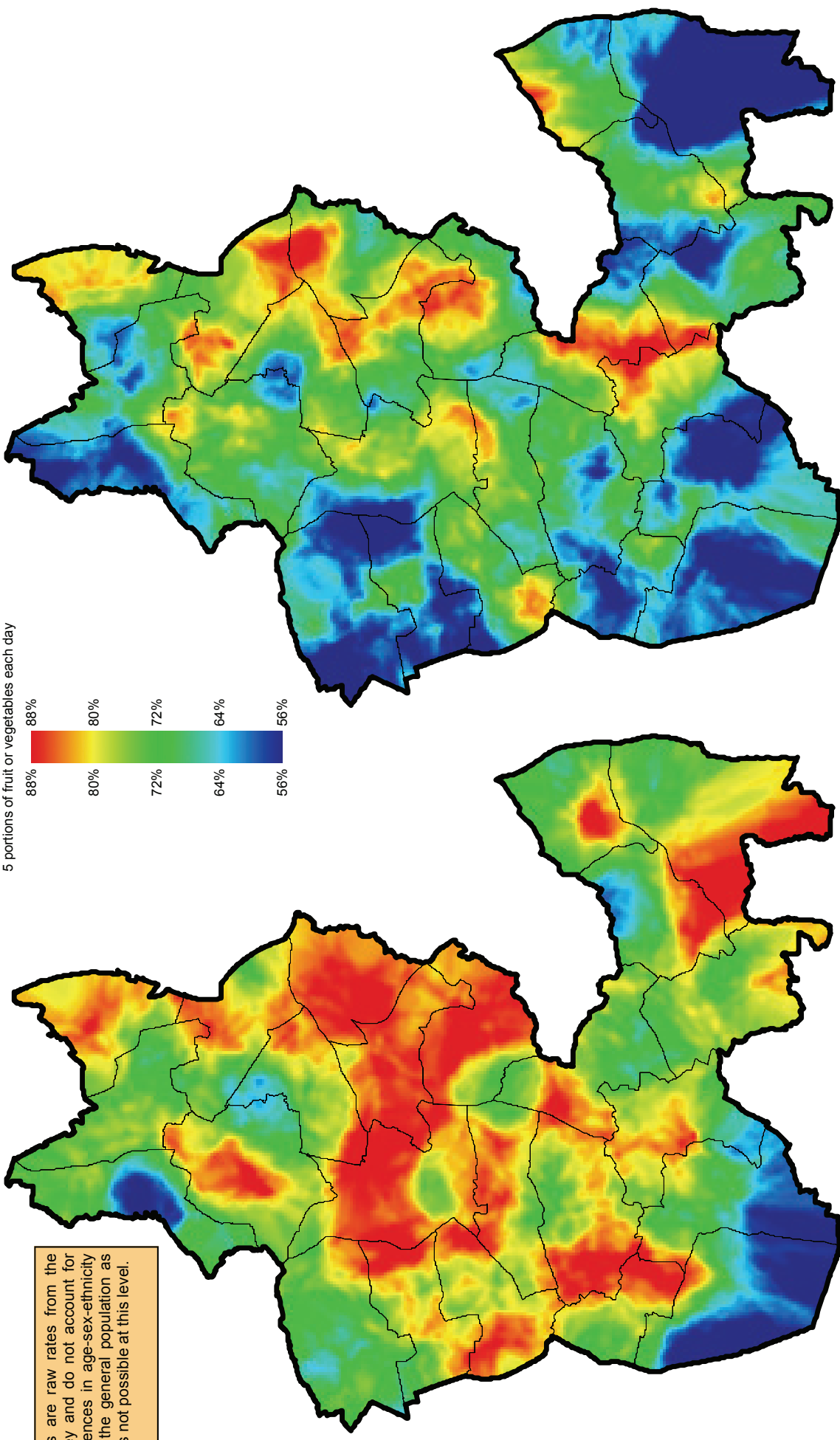
Males

Rates are raw rates from the survey and do not account for differences in age-sex-ethnicity from the general population as this is not possible at this level.

Percent of respondents who eat less than 5 portions of fruit or vegetables each day



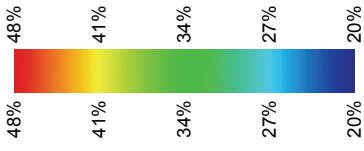
Females



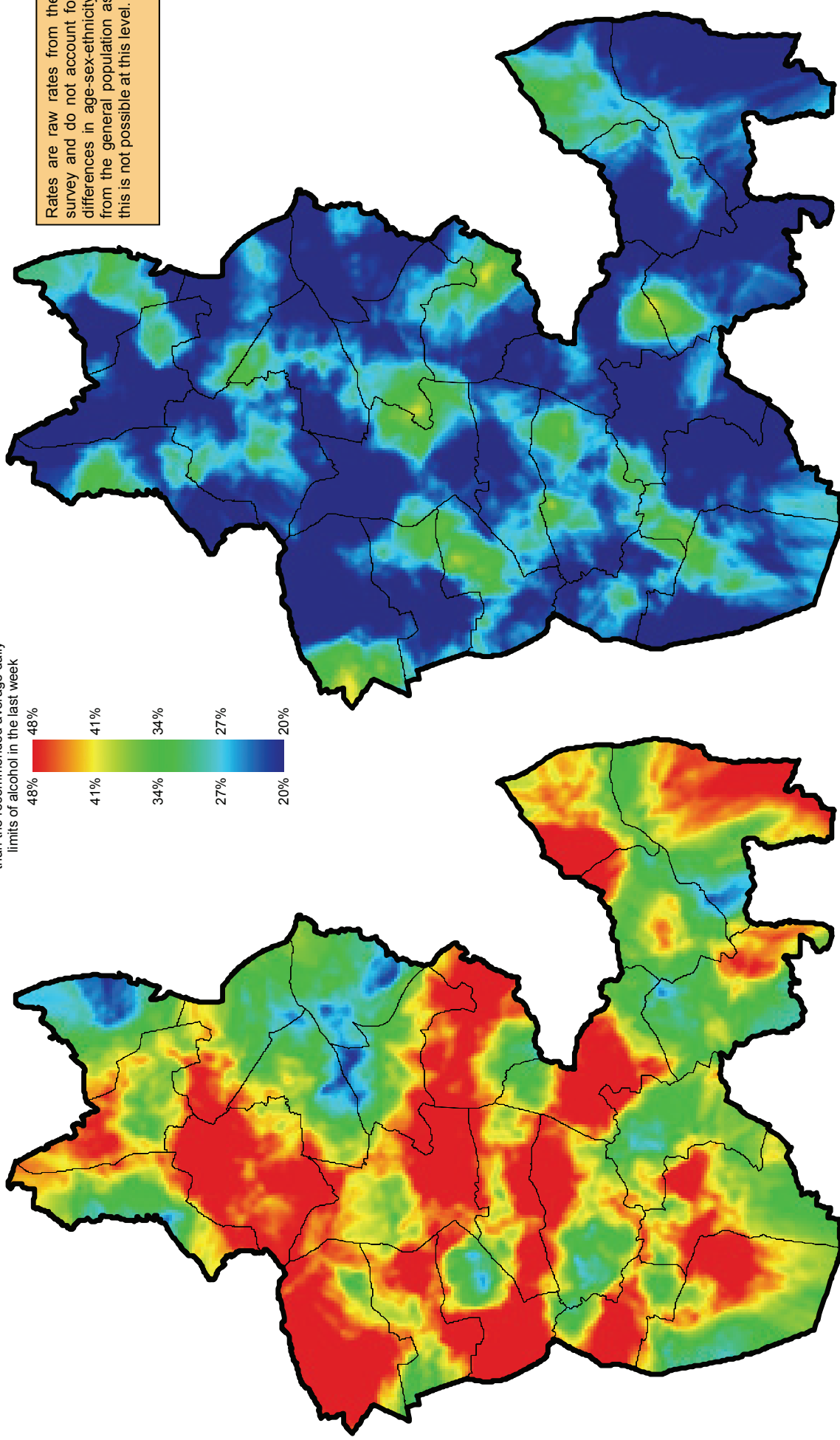


Males

Percent of respondents who drank more than the recommended average daily limits of alcohol in the last week



Females



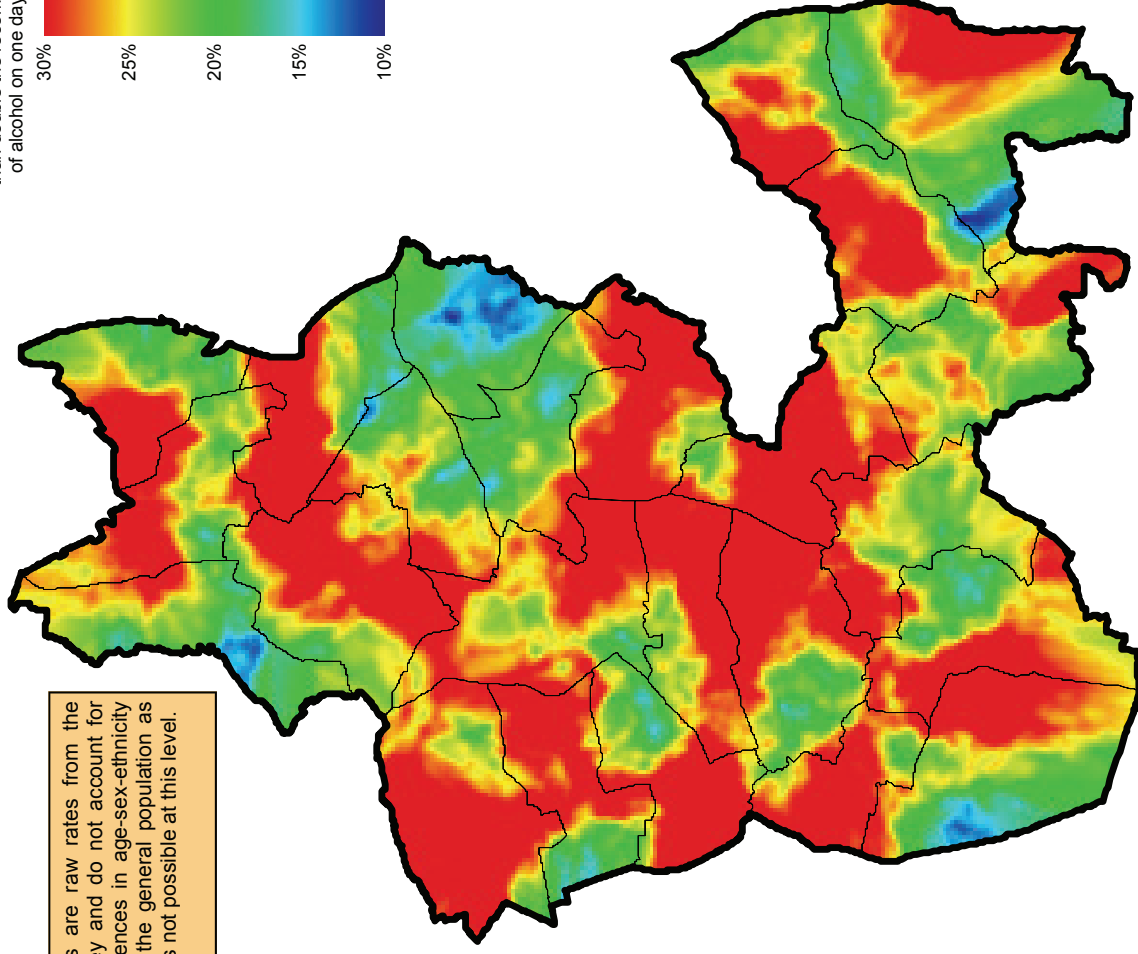
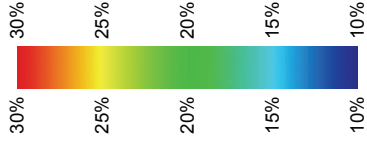
Rates are raw rates from the survey and do not account for differences in age-sex-ethnicity from the general population as this is not possible at this level.



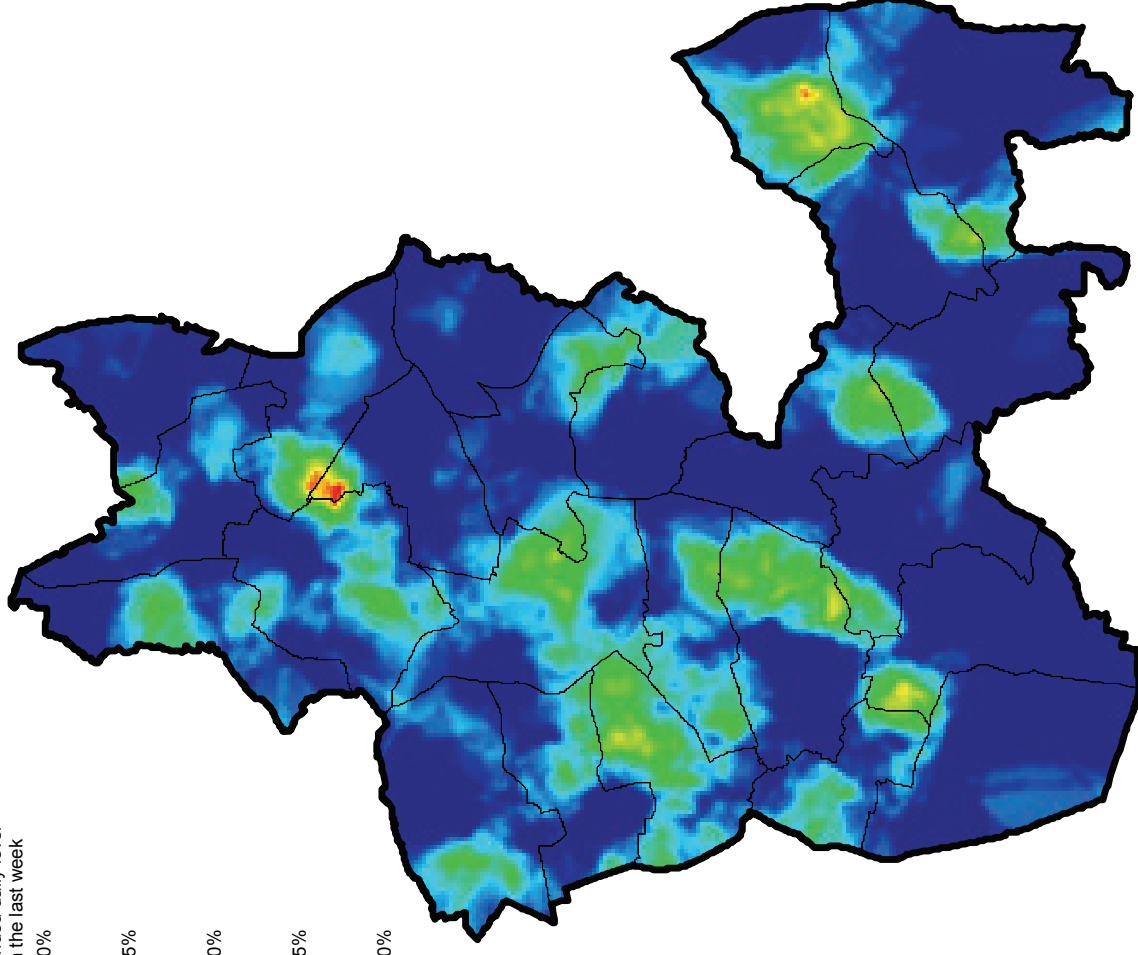
Males

Rates are raw rates from the survey and do not account for differences in age-sex-ethnicity from the general population as this is not possible at this level.

Percent of respondents who drink more than double the recommended daily level of alcohol on one day in the last week



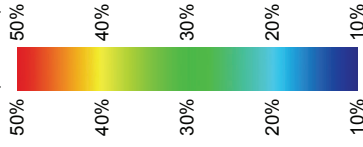
Females





Males

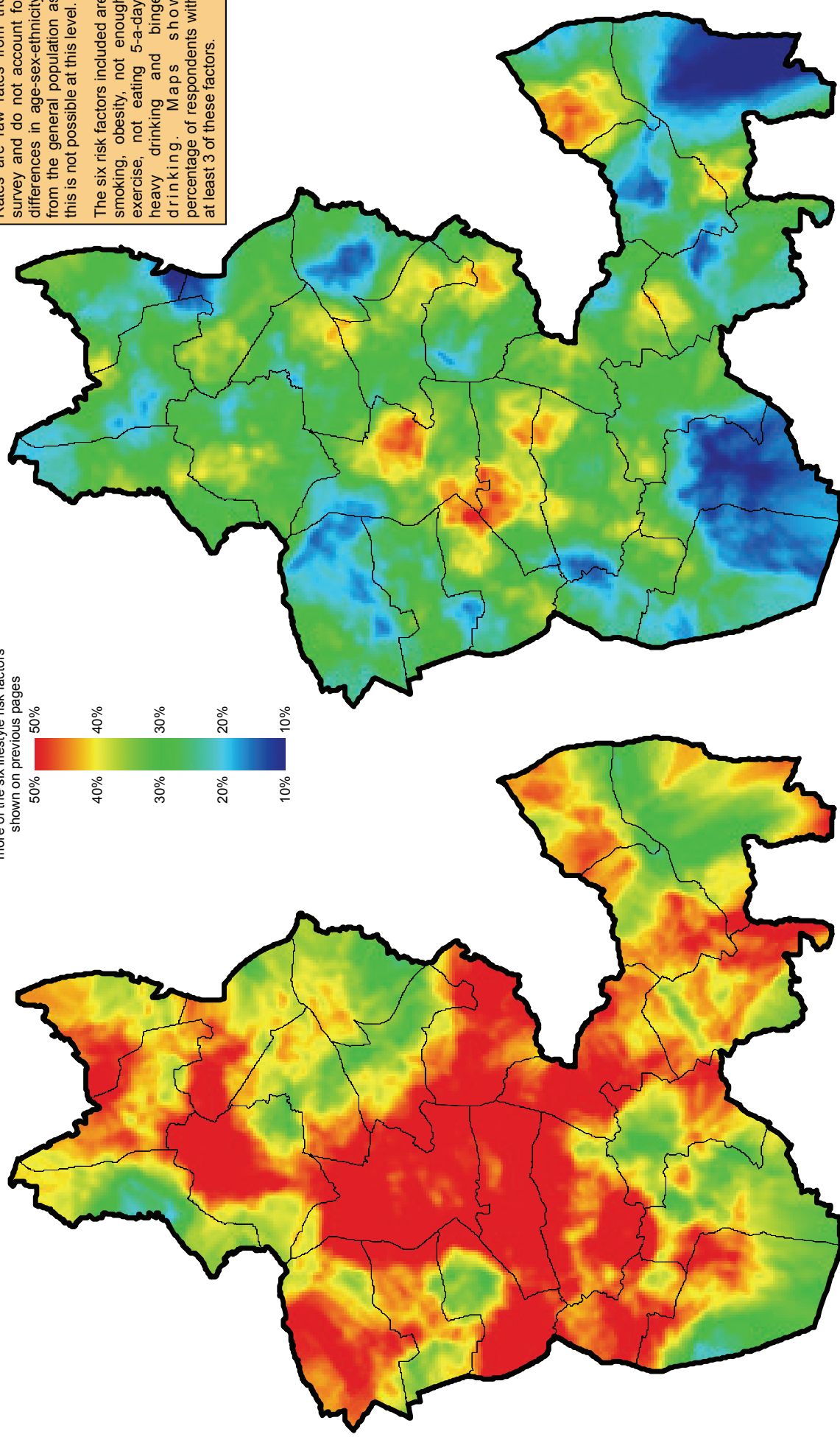
Percent of respondents who had three or more of the six lifestyle risk factors shown on previous pages



Females

Rates are raw rates from the survey and do not account for differences in age-sex-ethnicity from the general population as this is not possible at this level.

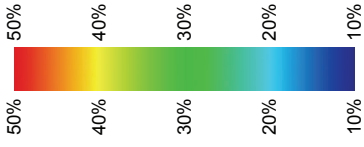
The six risk factors included are smoking, obesity, not enough exercise, not eating 5-a-day, heavy drinking and binge drinking. Maps show percentage of respondents with at least 3 of these factors.



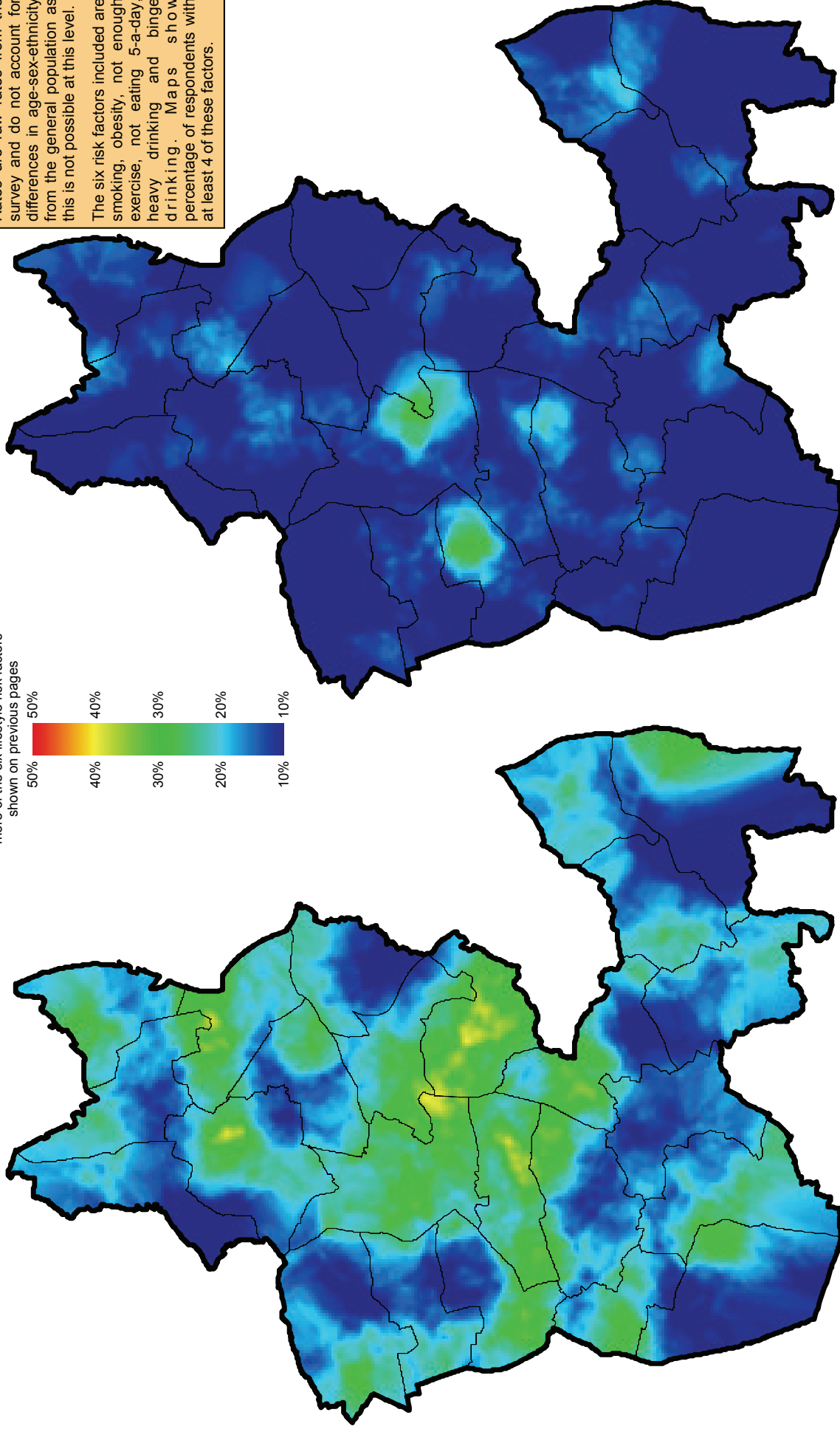


Males

Percent of respondents who had four or more of the six lifestyle risk factors shown on previous pages



Females



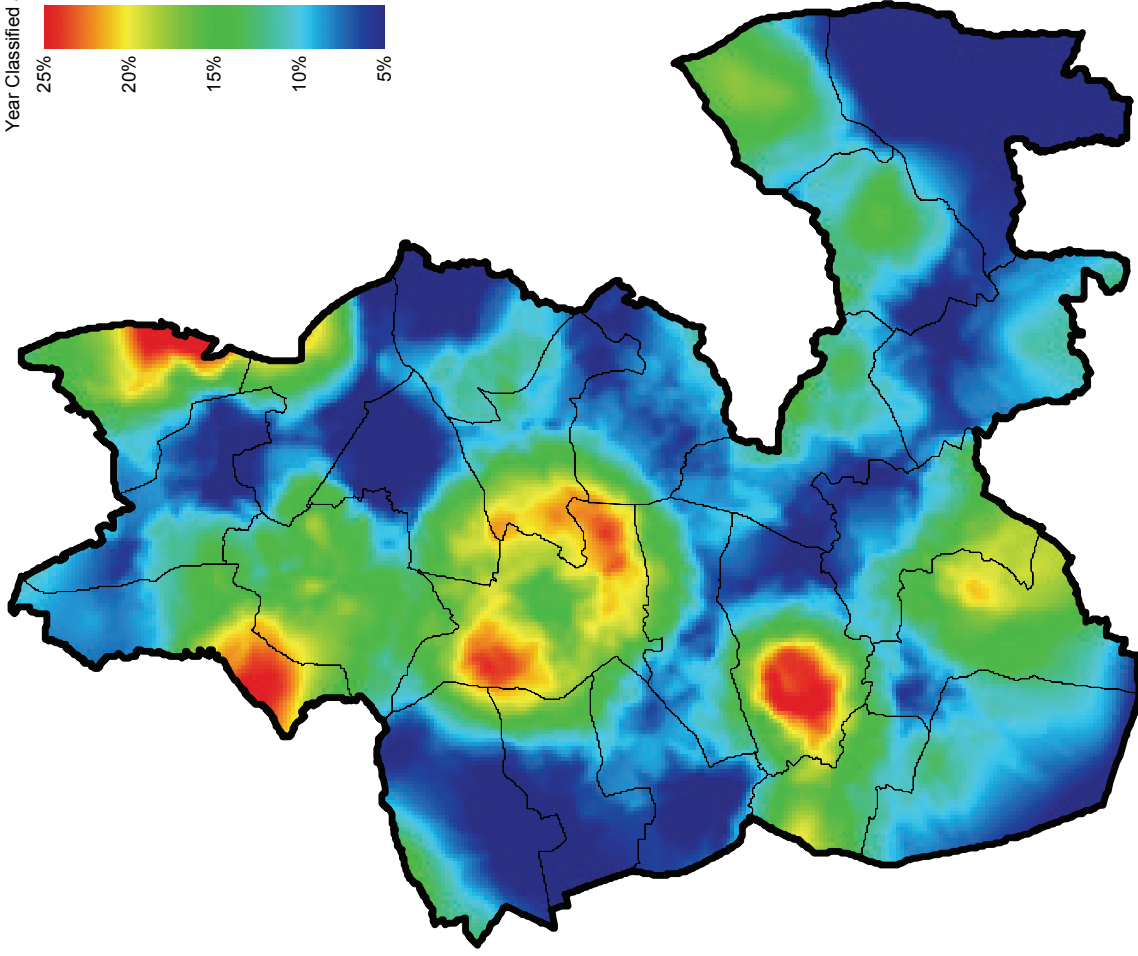
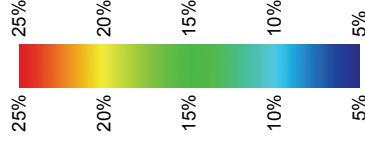
Rates are raw rates from the survey and do not account for differences in age-sex-ethnicity from the general population as this is not possible at this level.

The six risk factors included are smoking, obesity, not enough exercise, not eating 5-a-day, heavy drinking and binge drinking. Maps show percentage of respondents with at least 4 of these factors.

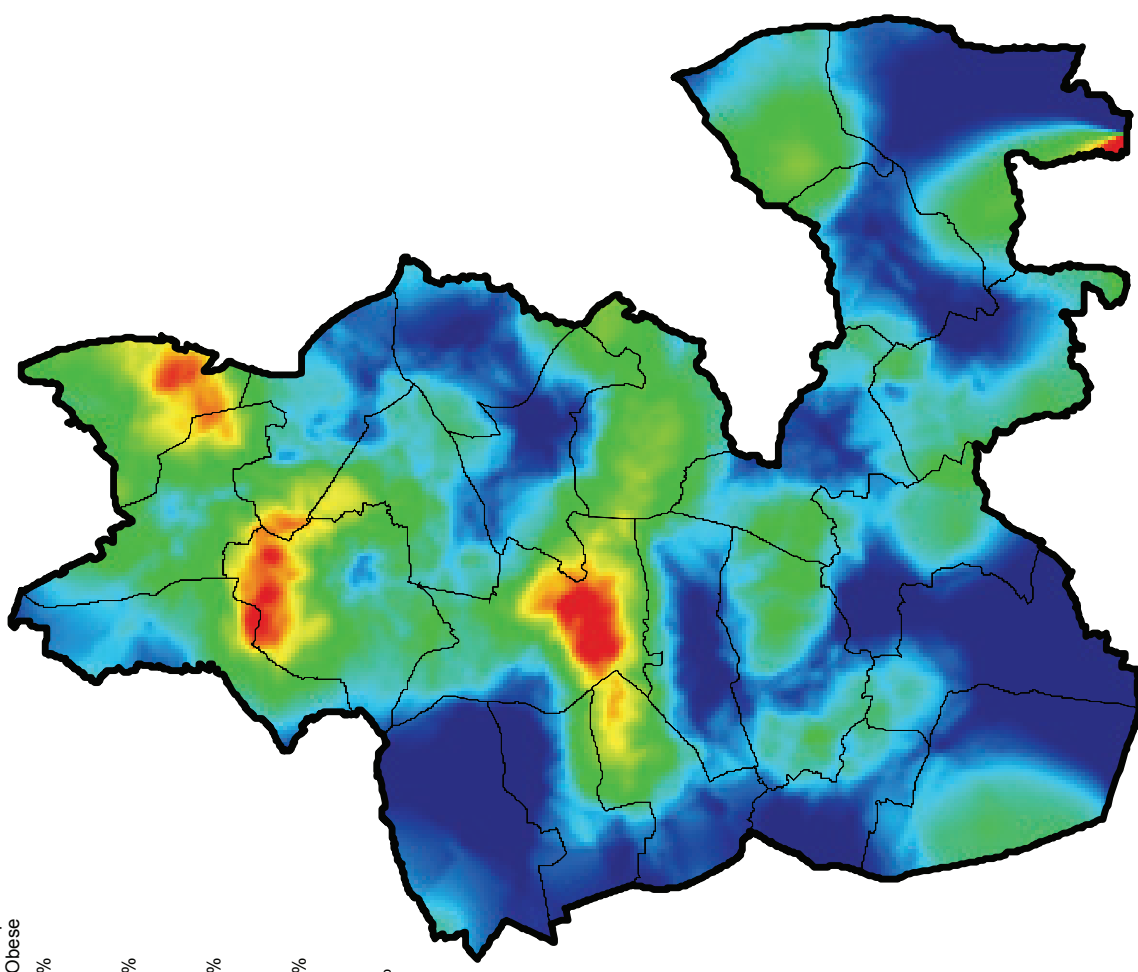


Males

Percent of Children in Reception Year Classified as Obese

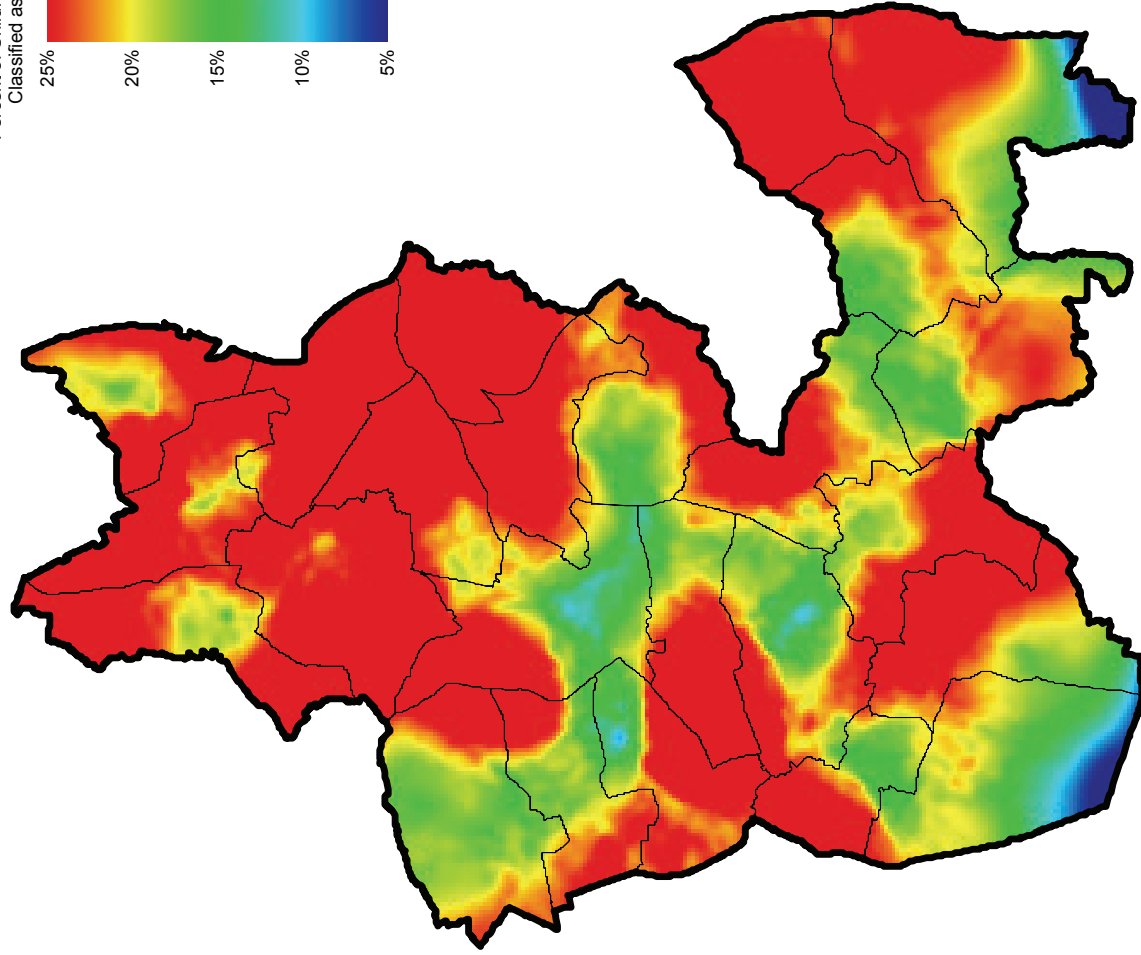


Females

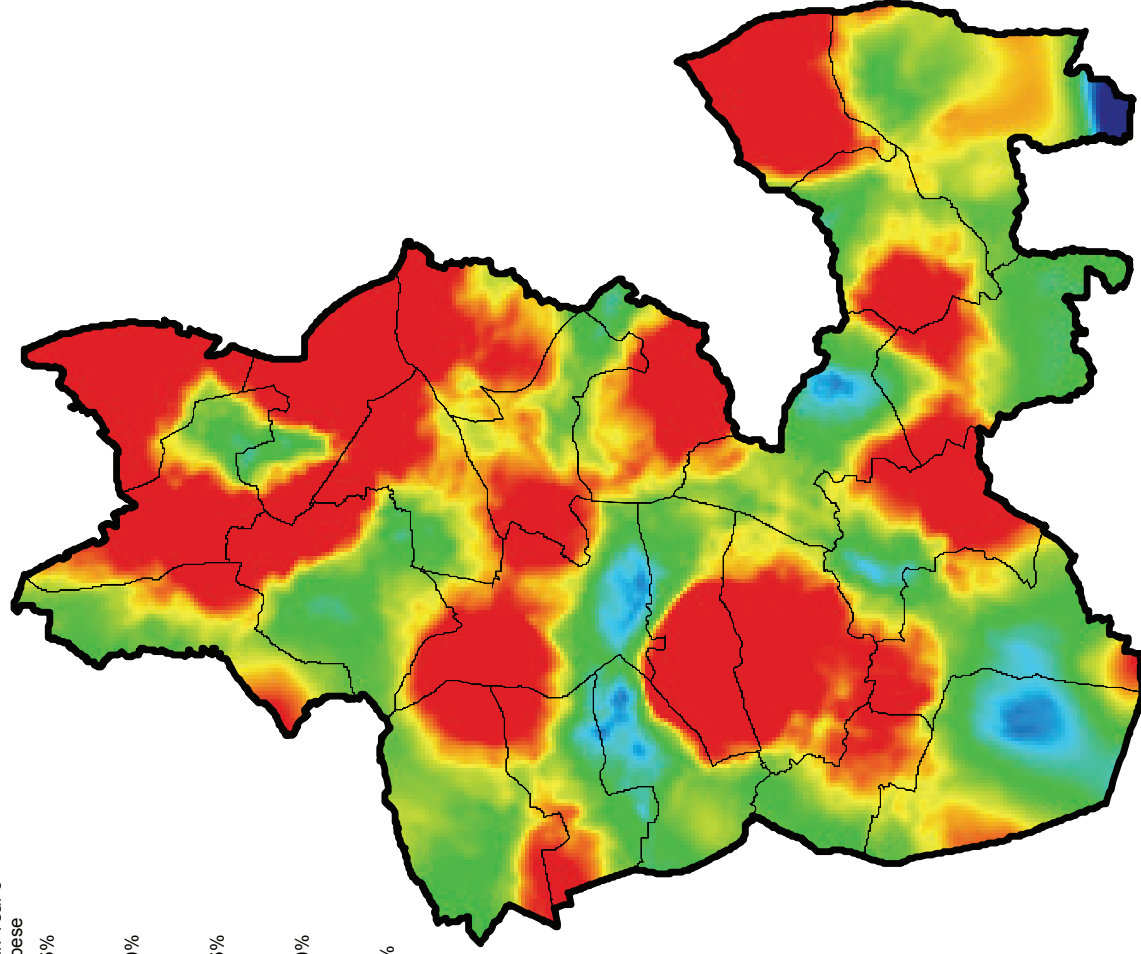


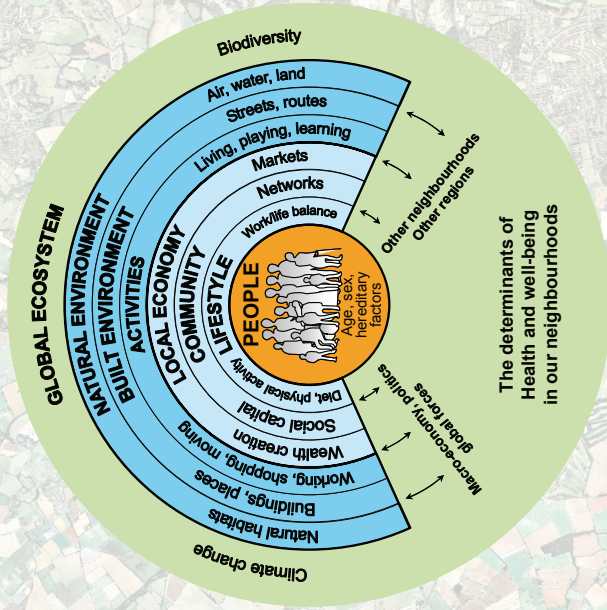


Males



Females





Introduction

People's health is affected by the traits they are born with, such as their gender and the genetic makeup they have inherited. Age also plays a crucial role in how likely people are to contract certain diseases or suffer health problems.

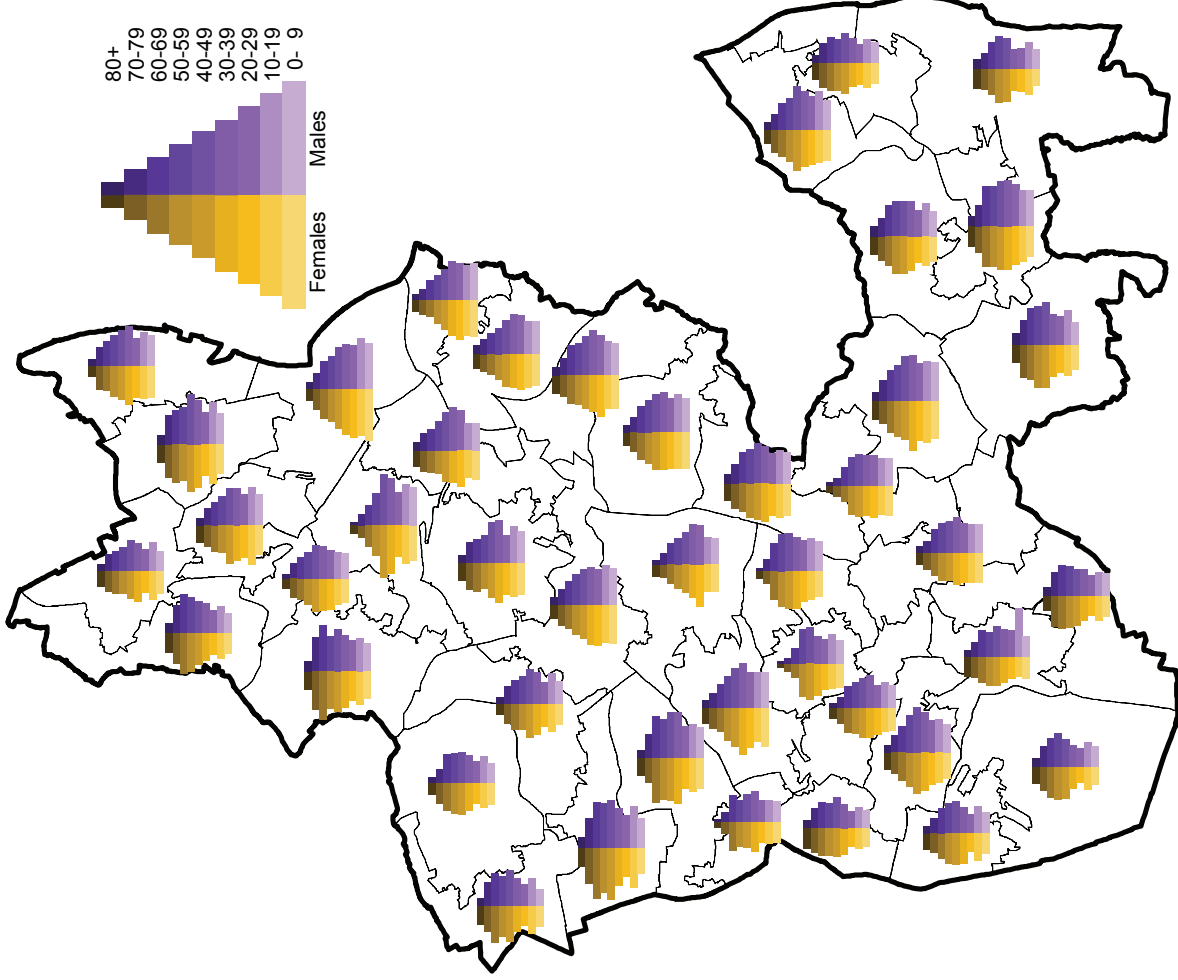
Contents

- Introduction
- Demography
- Life Expectancy
- Fertility

Hereditary factors are important sometimes in directly affecting the risk of a particular disease, or in affecting the propensity towards certain other factors, such as obesity, that influence health. People who have a natural predisposition to particular health problems need to be extra aware of doing all they can to mitigate this.



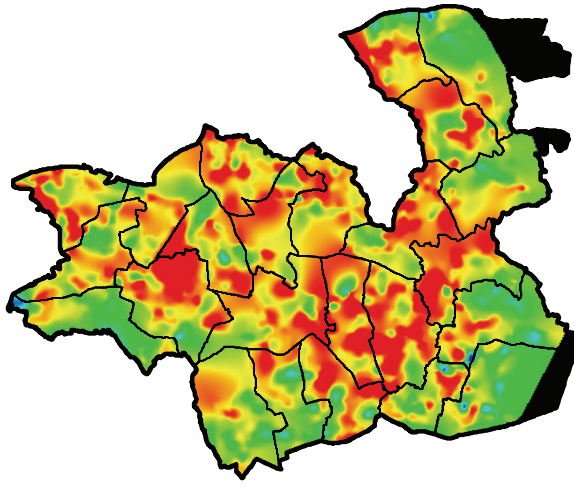
Population Pyramids - Middle Super Output Areas



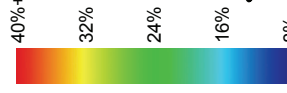
Aged Under 20



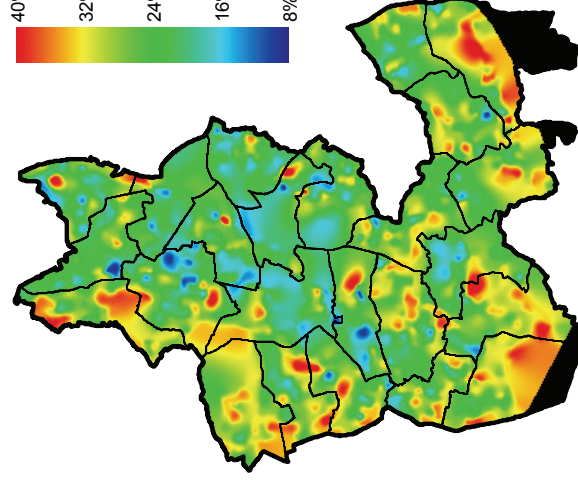
Aged 20-44



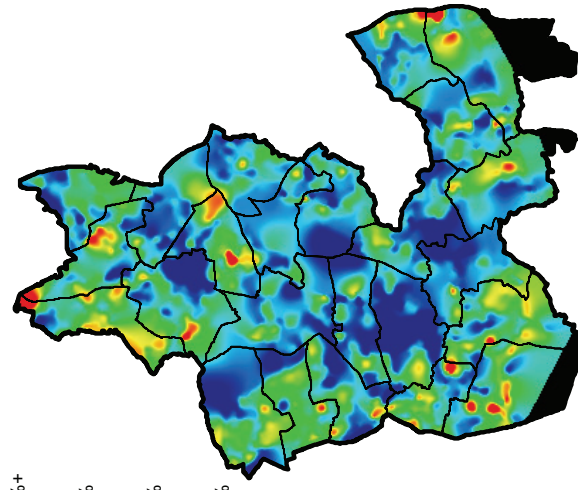
Proportion of population from Different Age Groups (2006)



Aged 45-64



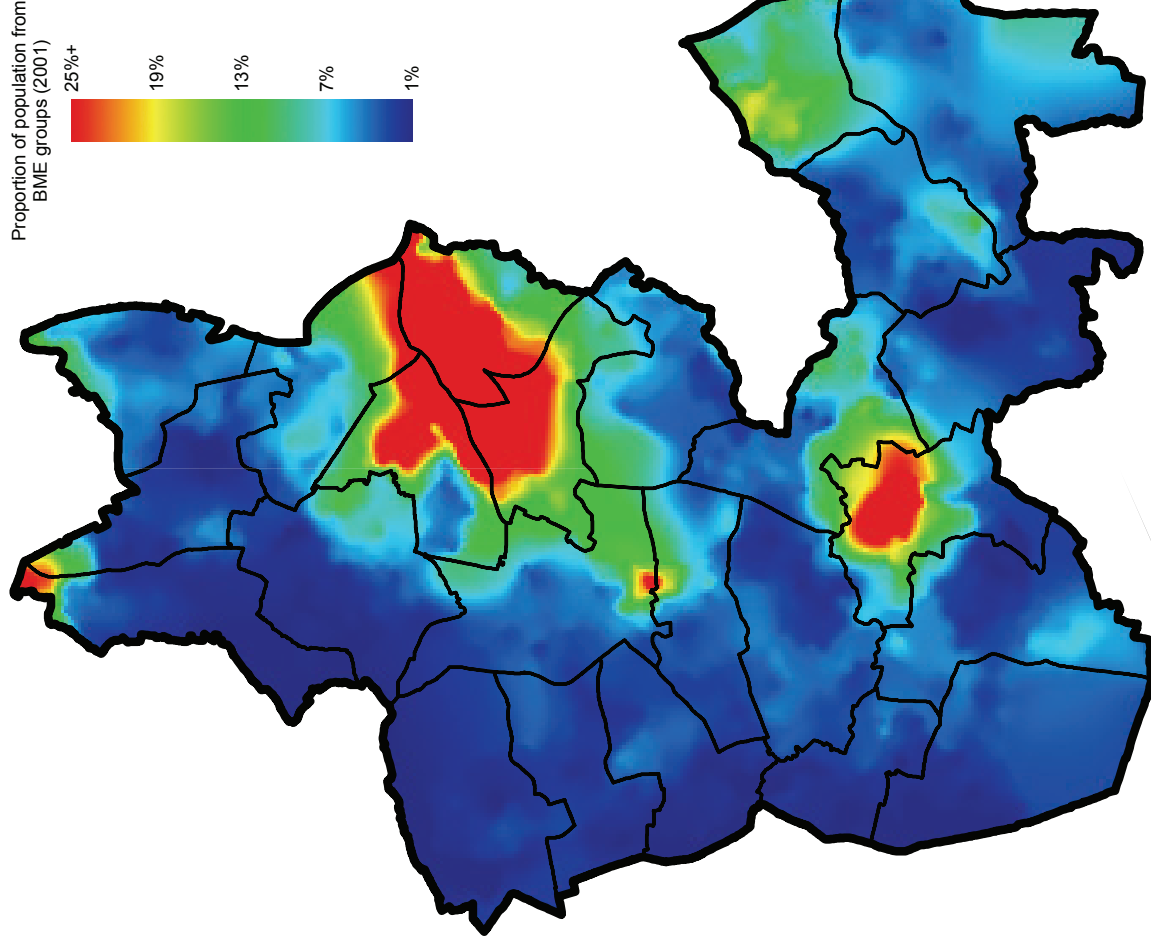
Aged 65+



Source: Office for National Statistics (ONS) Mid-year population estimates 2006
2001 Census



Proportion of Population from Black and Minority Ethnic Groups



Age

The map on the left shows middle super output areas population pyramids for 2006. It shows how different the age structures are in small area populations within Dudley. There are some pyramids that have high numbers of children and a second bulge representing their parents. Others are much straighter all the way up the pyramid. Some have bulges in older age groups, suggesting an area to which people move in retirement or old age.

The four surface maps represent the concentration of the different broad age categories. They show that areas with high concentrations of young people tend to be in the central part of the district, with older people more concentrated around the south and western parts.

Certain areas of high concentration represent particular residencies. For example the area of very high concentration of under 20s in Stourbridge is due to the Old Swinford Hospital boarding school for boys. For the older age group, residential homes could lead to spots of high concentration.

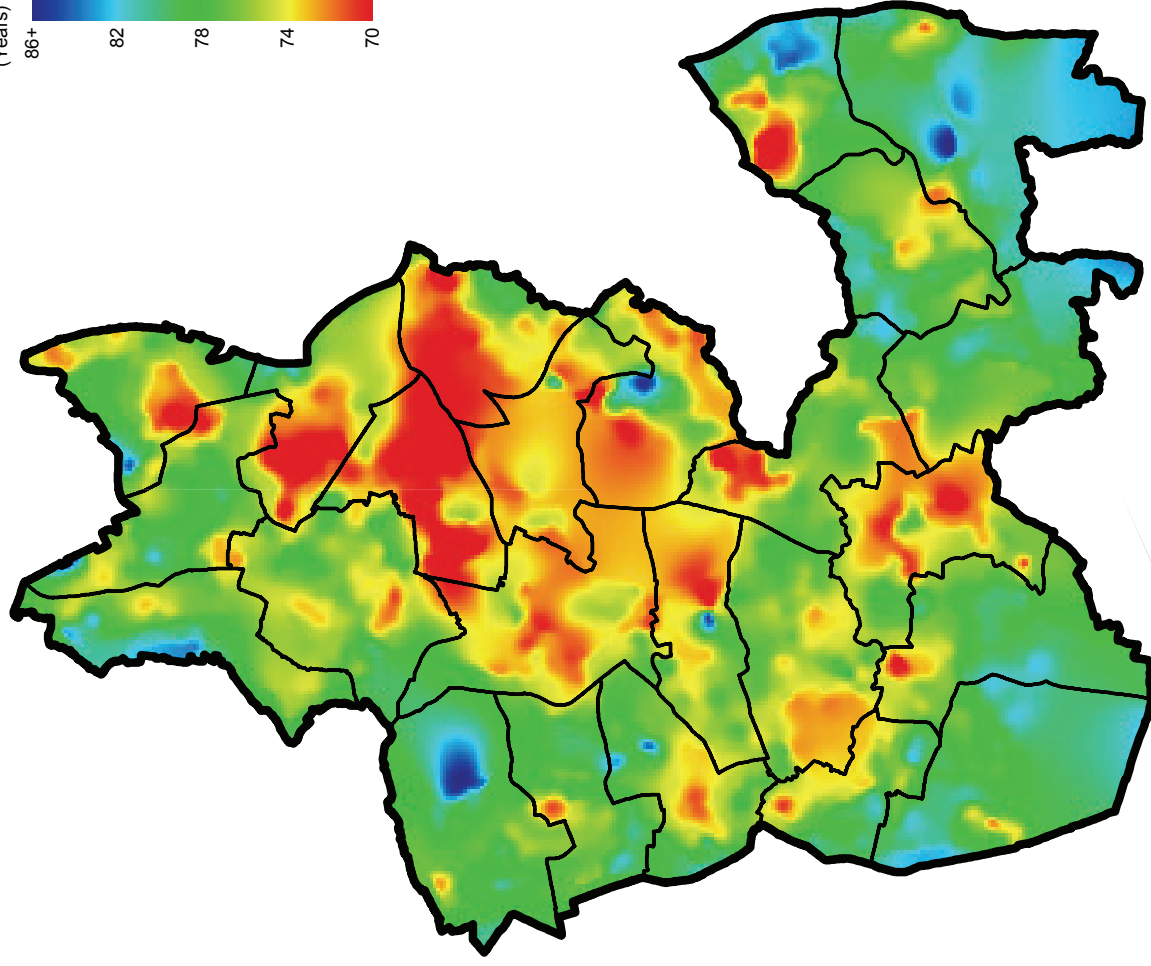
Ethnicity

The map of ethnicity is based on output area ethnicity data from the 2001 Census. Although these data are now 7 years out of date, the broad distribution is likely to remain similar although the scale may be slightly different. There are two principal areas of high ethnic minorities in Dudley. The St Thomas area, which in fact includes parts of St James and Netherton & Woodside, and the Lye area. In these areas more than a quarter of the population are from black and minority ethnic groups.

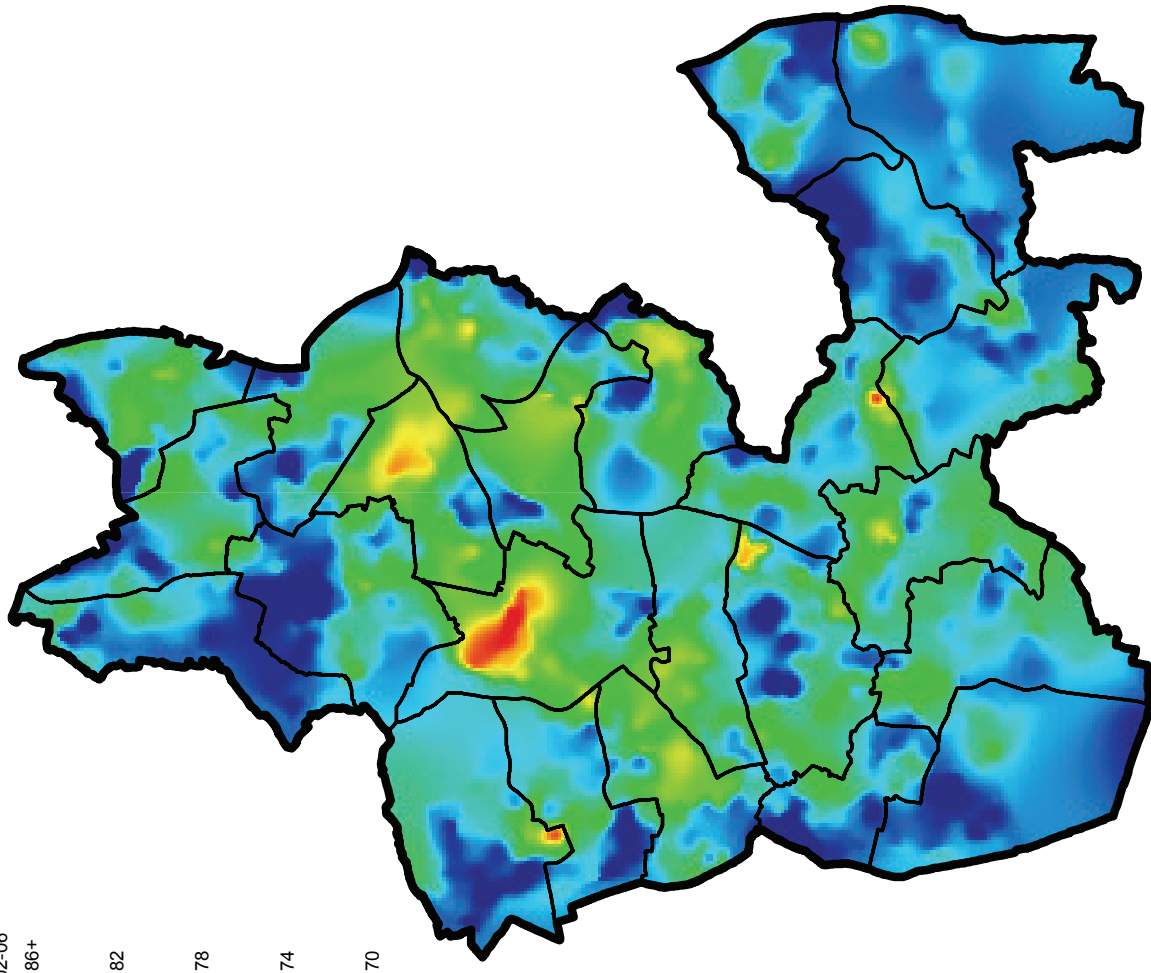
There are also small concentrations in Brierley Hill/Brockmoor, at the northern tip of Sedgley and in the northern part of Halesowen. Across much of the rest of Dudley the rates in 2001 were less than 1% of the population.



Males



Females





Fertility Rates

Life Expectancy

The maps opposite show calculated life expectancy for men and women based on mortality data for 2002-2006 combined. They are shown to the same scale with red areas representing a life expectancy of 70 years and under and blue being areas where life expectancy is 86 years or more.

The overall level for males is lower than that for females, but the pattern of higher and lower levels are similar for both sexes. The highest life expectancy is found in the southern and western parts of the district, with the lowest in the central and eastern parts.

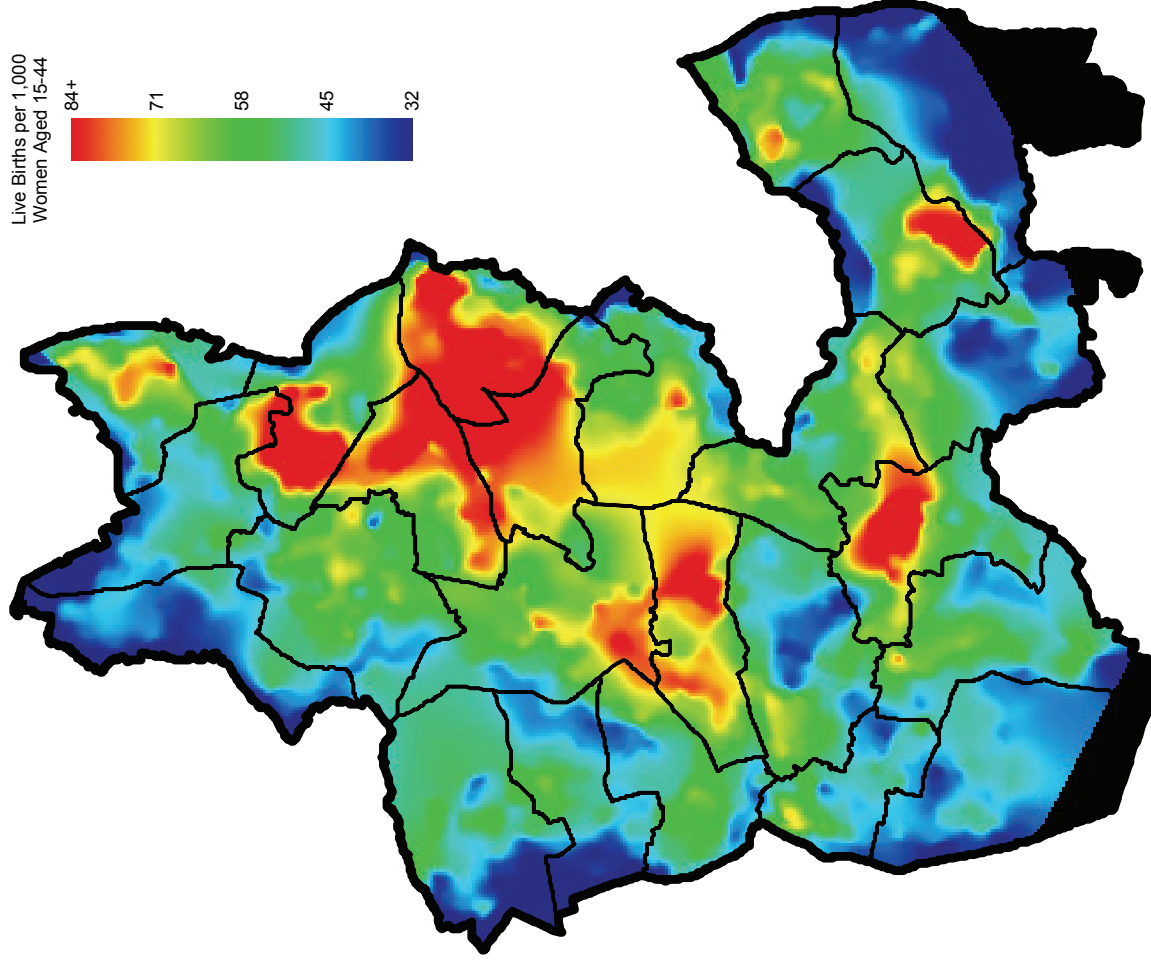
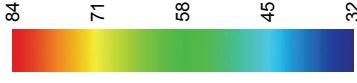
Life expectancy in the areas with the very lowest levels is around 20 years lower than in the areas with the highest for both sexes, but the difference between men and women is around 5 years. Male life expectancy ranges from as low as 65 years to 85, with females ranging from 70 years to 90.

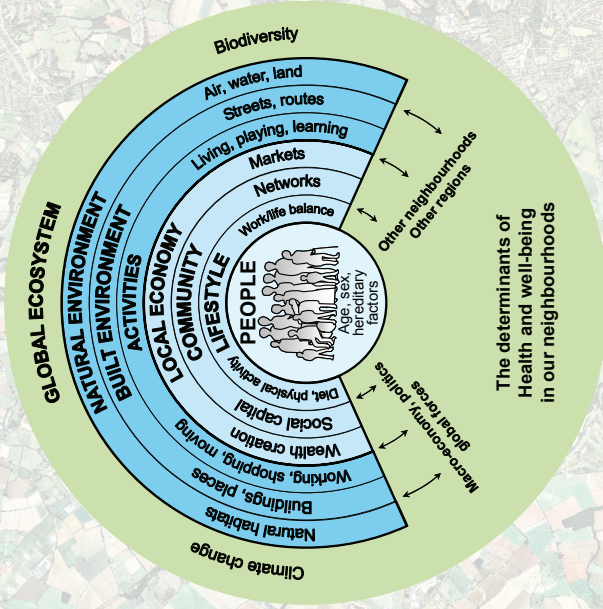
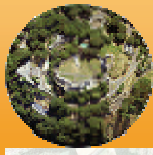
Fertility

The fertility rate is defined as the number of live births per 1,000 women aged 15 to 44. As can be seen the rates (2002-2006) vary considerably across the district, with the highest rates more than 2½ times the lowest.

The highest rates are found in St Thomas, Netherpton & Woodside, St James, Castle & Priory, Lye and Brierley Hill. The pattern matches the areas with high rates of young people, which is not surprising, but there is also a close match to the pattern of ethnic minorities.

Live Births per 1,000 Women Aged 15-44





Introduction

People are at the centre of human settlements. Previous chapters have investigated the wider determinants of health and well being. This chapter looks at the impact of these determinants on people's health, in Dudley, focussing on health outcomes, the most reliable of which is mortality. Morbidity data has been included from various sources to give an indication of incidence and prevalence of the major health outcomes.

Contents

- Introduction
- Mortality
- Morbidity—Cancer Incidence
- Morbidity—Hospital Admissions
- Morbidity—QOF Prevalence
- Screening Coverage

These outcomes are influenced by many or all of the indicators shown in the previous chapters and the relationship between these is often complex. For some it is easy to see correlations, for others the time lag or the interaction between factors clouds direct correlations. There is also often a feedback interaction. For instance, people with poor health may have difficulty in getting work, which in turn influences their social status. This can then affect their self-esteem and can influence the life-style choices they make.



Mortality Surface Maps

The following section shows surface maps of mortality from various important causes. Directly Standardised Rates have been calculated from deaths for 2002 to 2006 combined and populations for Census Output Areas using geostatistical smoothing techniques as described in Annex 1. Each cause has maps for males and females with both shaded to the same scale. The legend bar is shown between the two.

Traditionally any mapping of rates below district level is done by showing ward rates. Whilst these are useful they can mask a lot of the variation that happens within wards. It also can suggest a sharp boundary between higher and lower rates where the reality is usually a more gradual change, with lots of small variations at very small areas. The surface maps allow these small variations to be seen in a way that gives an overall impression of the pattern of a disease within Dudley.

All Age All Cause Mortality

Comparing the maps for males and females shows that, in general, the rates for men are higher than for women, with large areas of red on the male map and far more blue on that for females.

There is a large area of relatively high rates for both sexes across the central, north east and west part of the district covering Castle & Priory, St James, St Thomas, Netherton & Woodside, Brockmoor & Pensnett and Brierley Hill wards. There are other small areas with high rates, especially for men where the overall variability between the best and worst is greater.

Circulatory Diseases <75

As circulatory diseases contribute the most to overall mortality it is not surprising to see that the pattern matches fairly closely that of the all cause maps. Both also match remarkably closely to the pattern of deprivation shown in chapter 7 and the closeness of this

match seems to be stronger for circulatory diseases, especially in males.

Cancers <75

The maps of mortality from all cancers in those aged under 75 are much more similar between the sexes. The difference between areas with the highest rates and those with the lowest is also much less (around 3 to 4 times as opposed to 10 times). Although there is some similarity between the patterns for males and females, they are quite different in detail. This is not surprising as all cancers comprises many different diseases which affect men and women differently. Lung cancer rates are much higher for men and are very strongly associated with deprivation. For women breast cancer is as high and in some areas higher than lung cancer, but breast cancer has a very different relationship to deprivation.

Accidents

Although mortality rates from accidents in Dudley as a whole are relatively low, there are some areas with much higher rates than the average. For women there are a few small areas with high rates, but for men there are a number of patches of high rates, particularly in St Thomas, in St Andrews and Brierley Hill, in Lye and Cradley and in Coseley.

Smoking Related Diseases <75

The maps for smoking related diseases show a disparity between men and women, with men having much higher rates than for women across the whole area. There is also a very wide variation between parts of the district, with the highest rates for men being over 10 times the lowest rates. Even for women where rates are generally lower, the variation is as much as 8 times the lowest value. This demonstrates the important part smoking plays in health inequalities.

The two biggest causes of death due to smoking are heart disease



and lung cancer, therefore it is no surprise that the overall pattern is similar to the patterns of circulatory diseases and cancers (except that for women the cancers pattern is also strongly influenced by breast cancer)

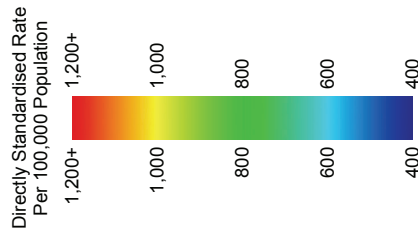
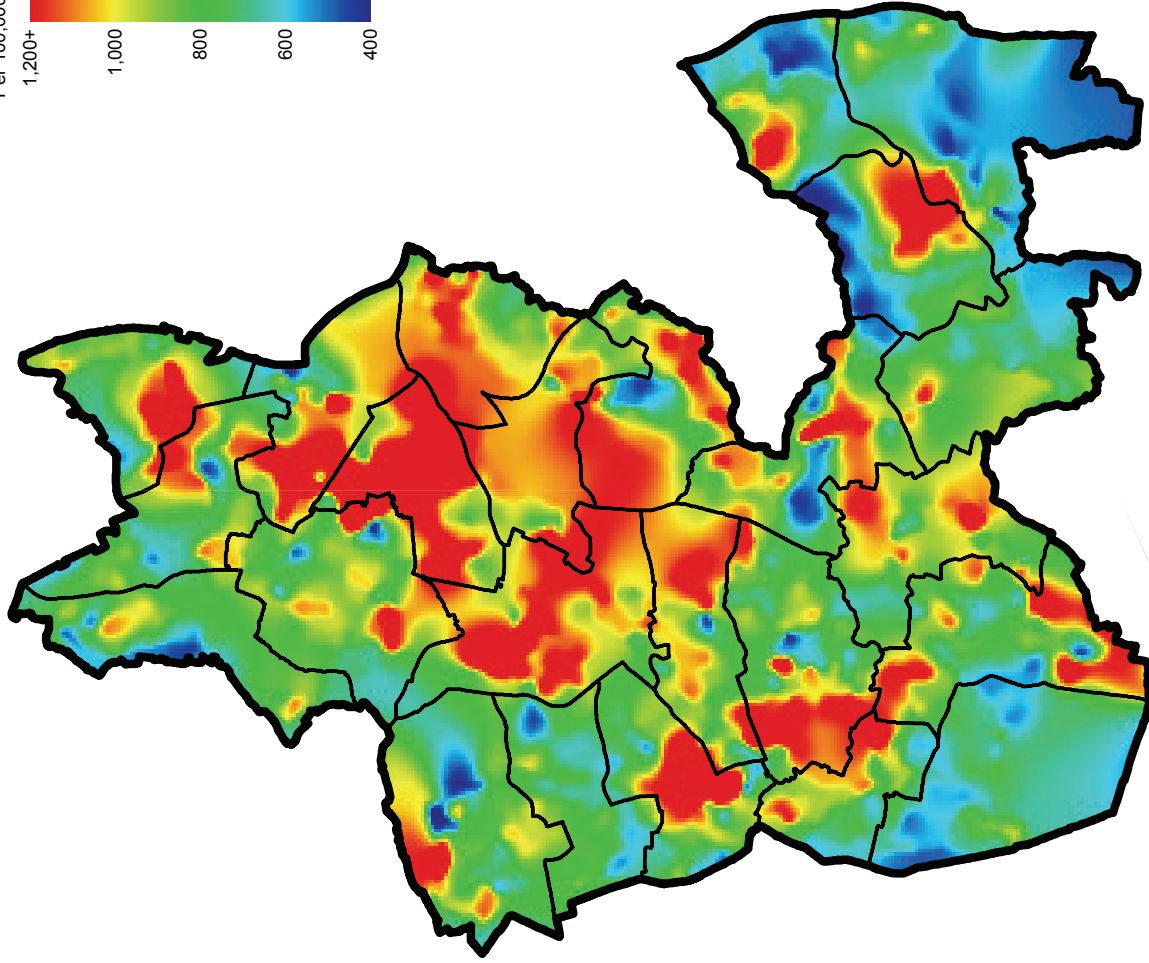
Alcohol Related Diseases <75

Alcohol related diseases shows the strongest pattern for men of any of the mortality maps. There is a large very defined area of high rates covering parts of St James, St Thomas, St Andrews, Netherton & Woodside and Brockmoor & Pensnett, with another small area covering Lye. The rates in the rest of the borough are much lower and negligible in some areas.

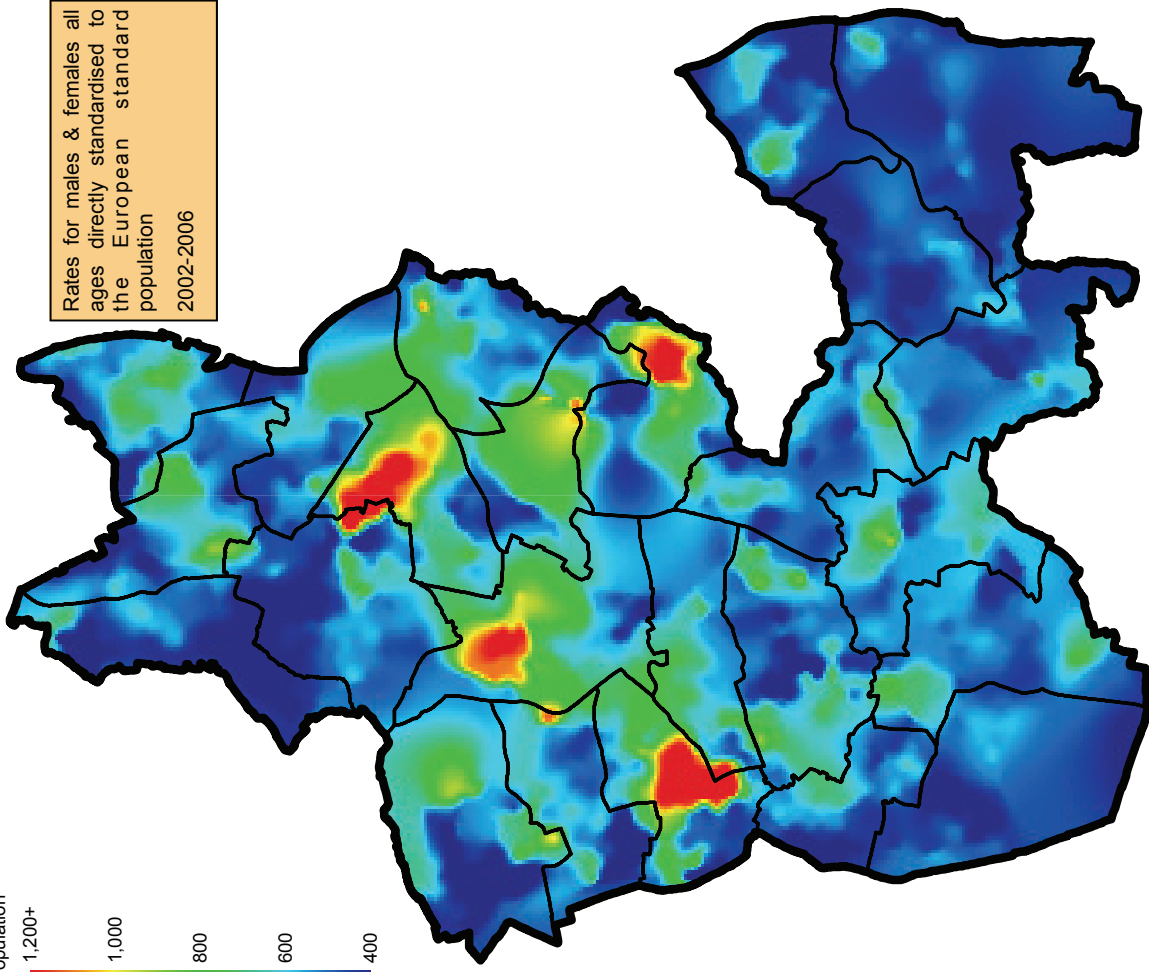
For women the high rates are less widespread, but there are peaks in St James and Brockmoor, with a small patch of high rates in the Hawbush part of Amblecote.



Males



Females



Rates for males & females all ages directly standardised to the European standard population 2002-2006

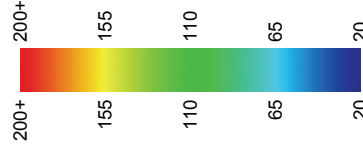
Source: Office for National Statistics (ONS) Annual District Deaths Extracts
2001 Census Output Area Populations



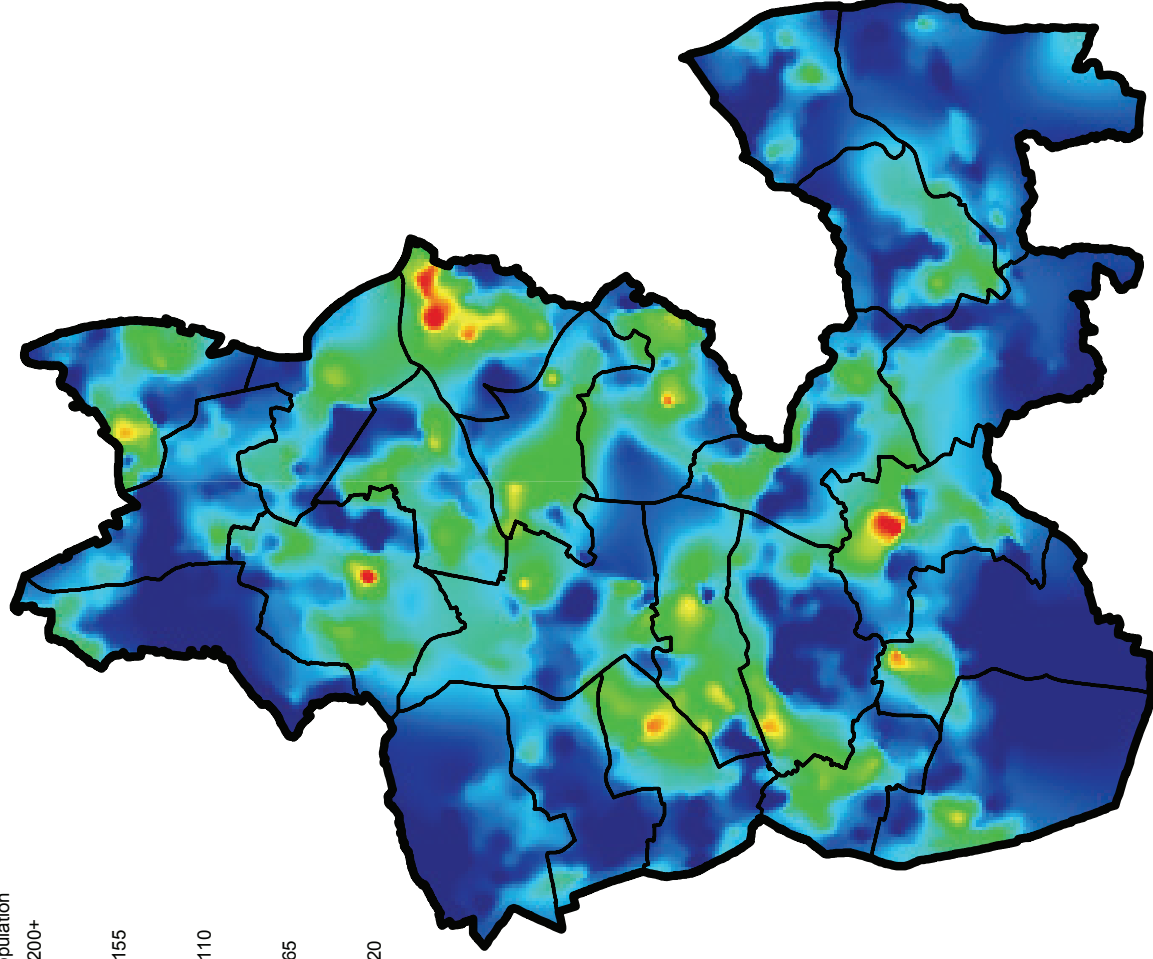
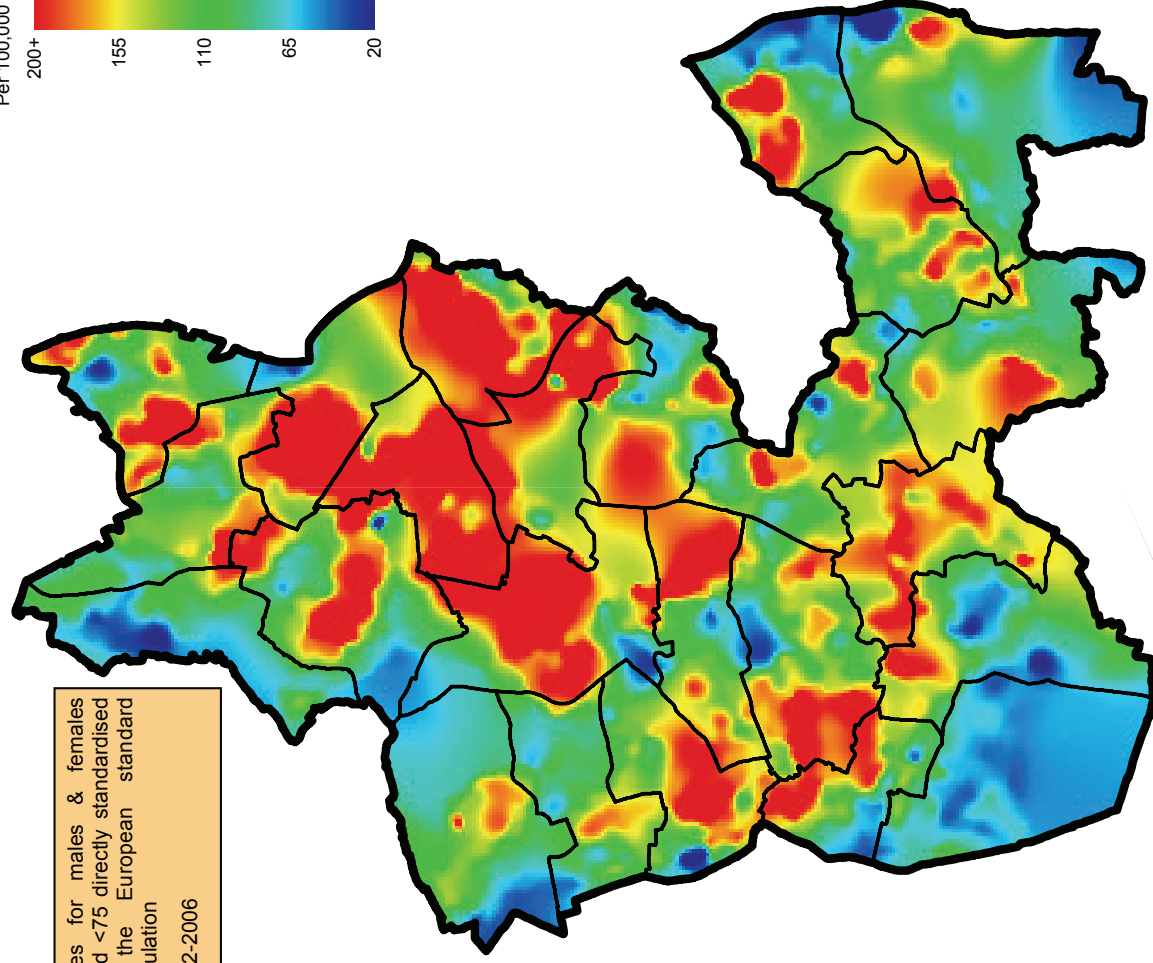
Males

Females

Directly Standardised Rate
Per 100,000 Population

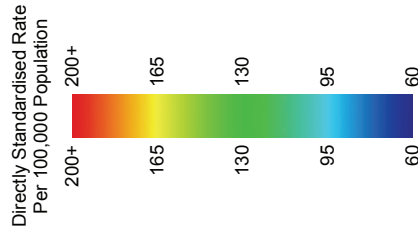
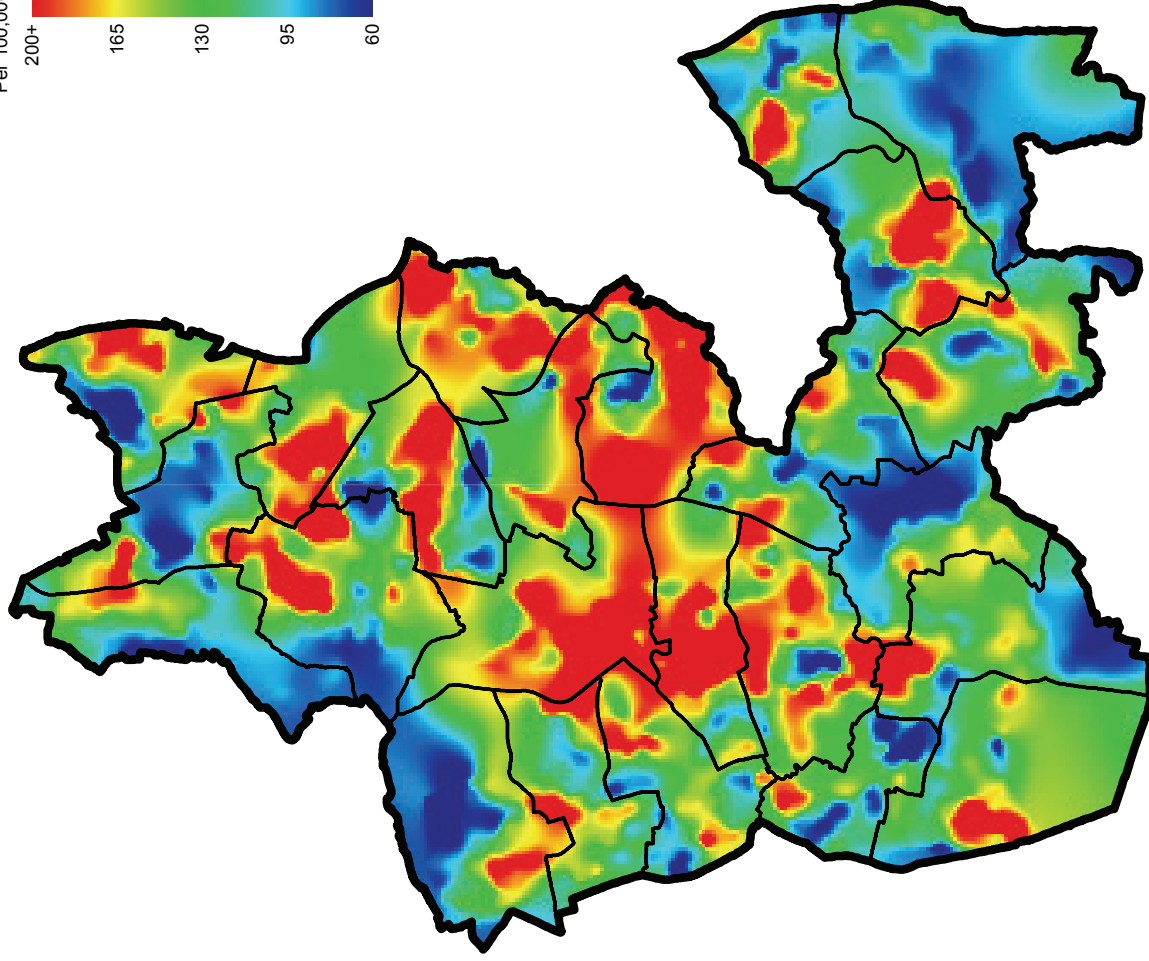


Rates for males & females
aged <75 directly standardised
to the European standard
population
2002-2006

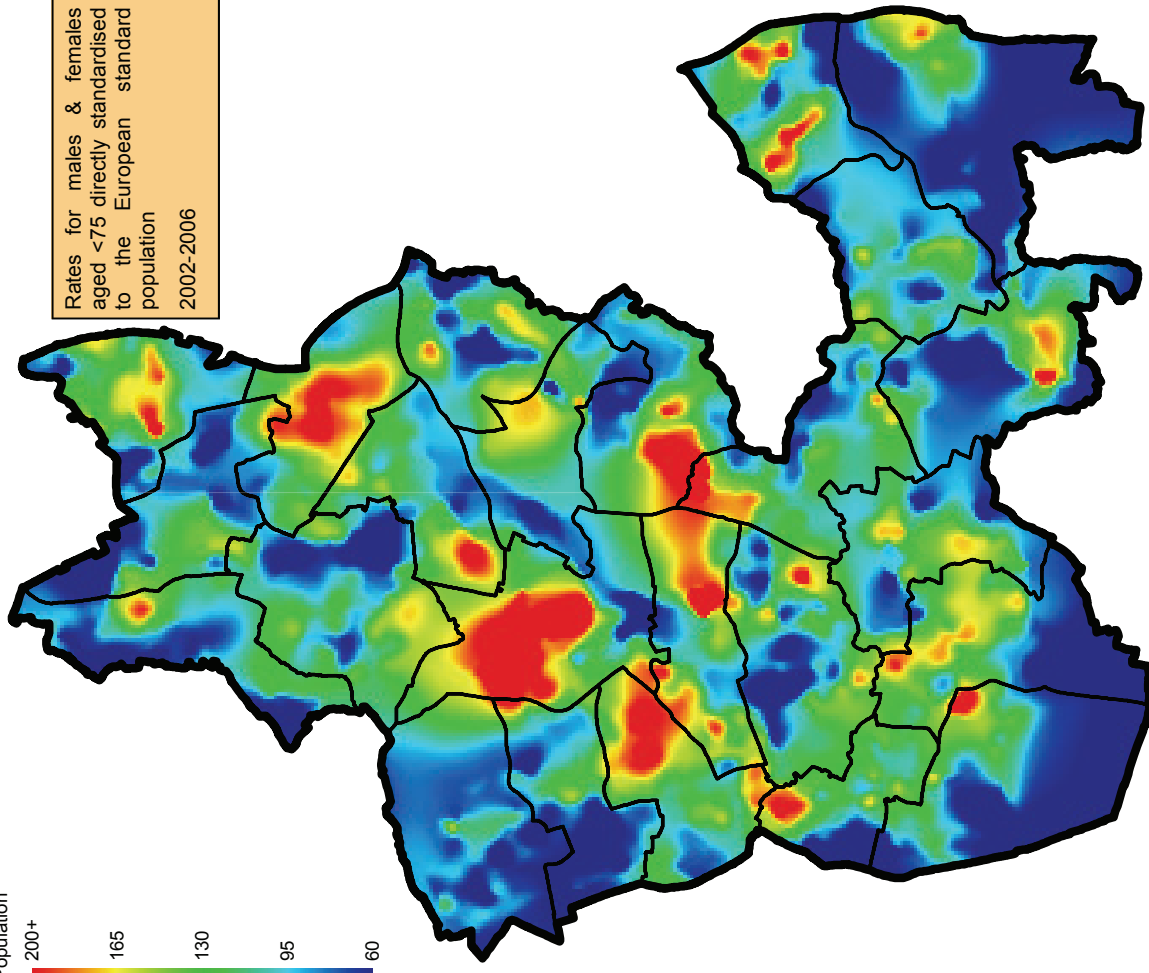




Males



Females



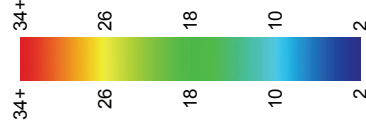
Rates for males & females aged <75 directly standardised to the European standard population 2002-2006



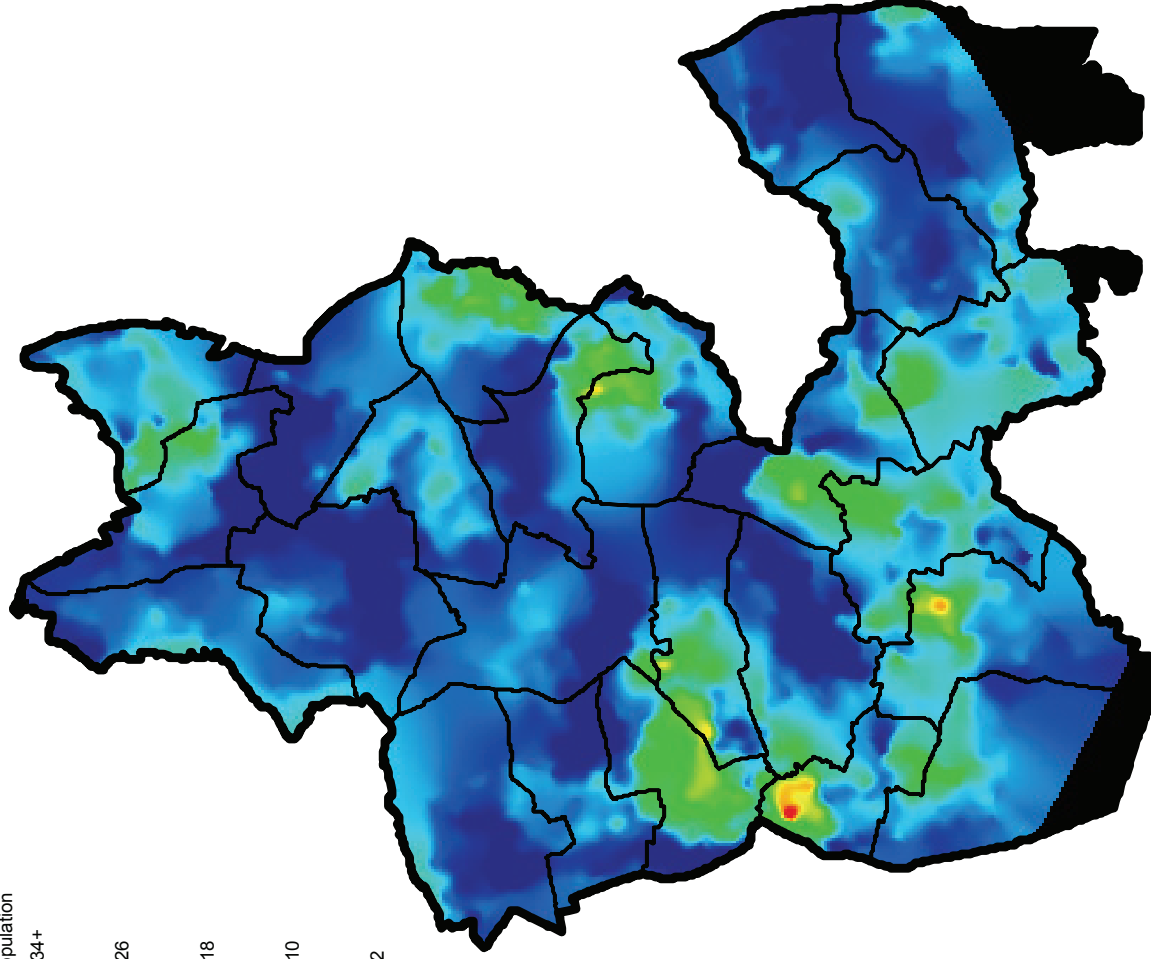
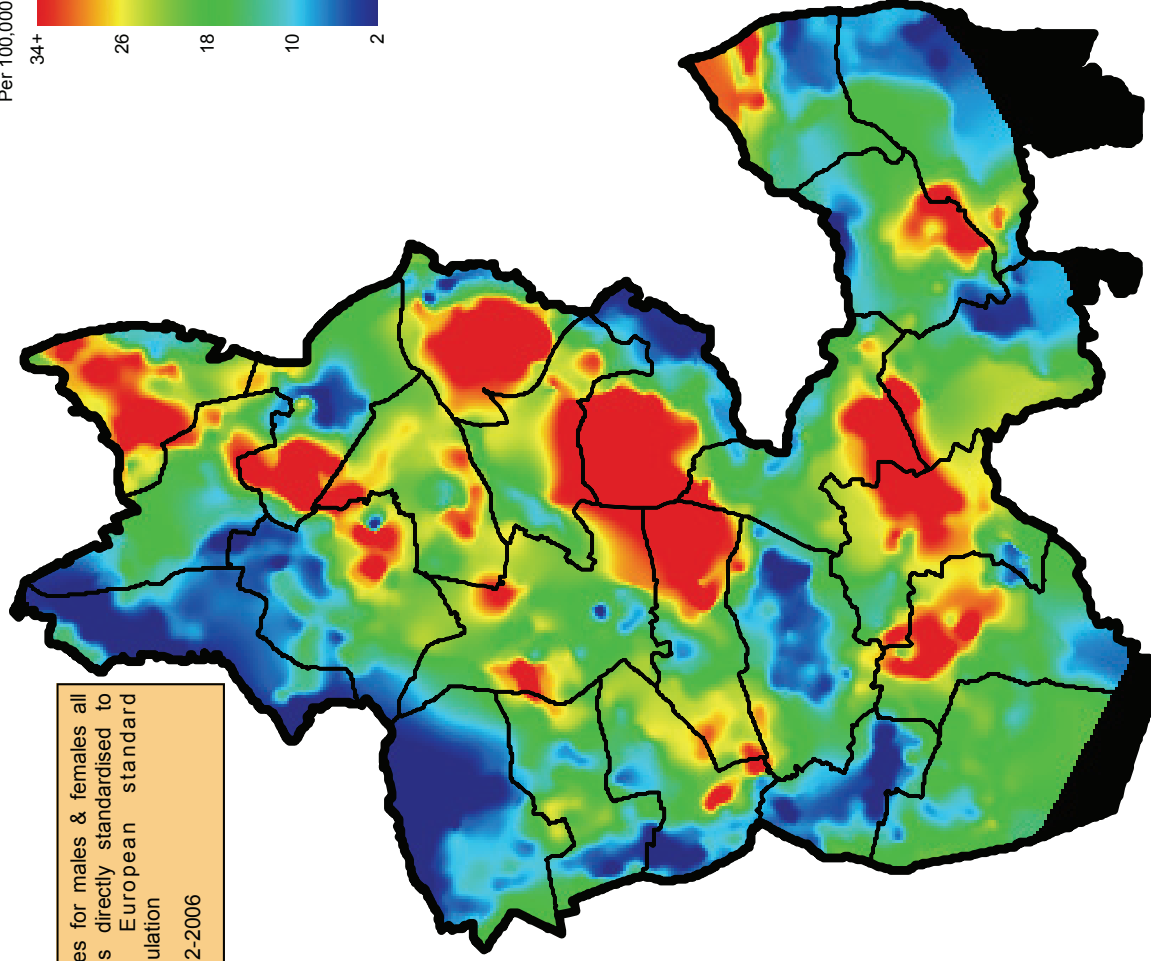
Males

Females

Directly Standardised Rate
Per 100,000 Population

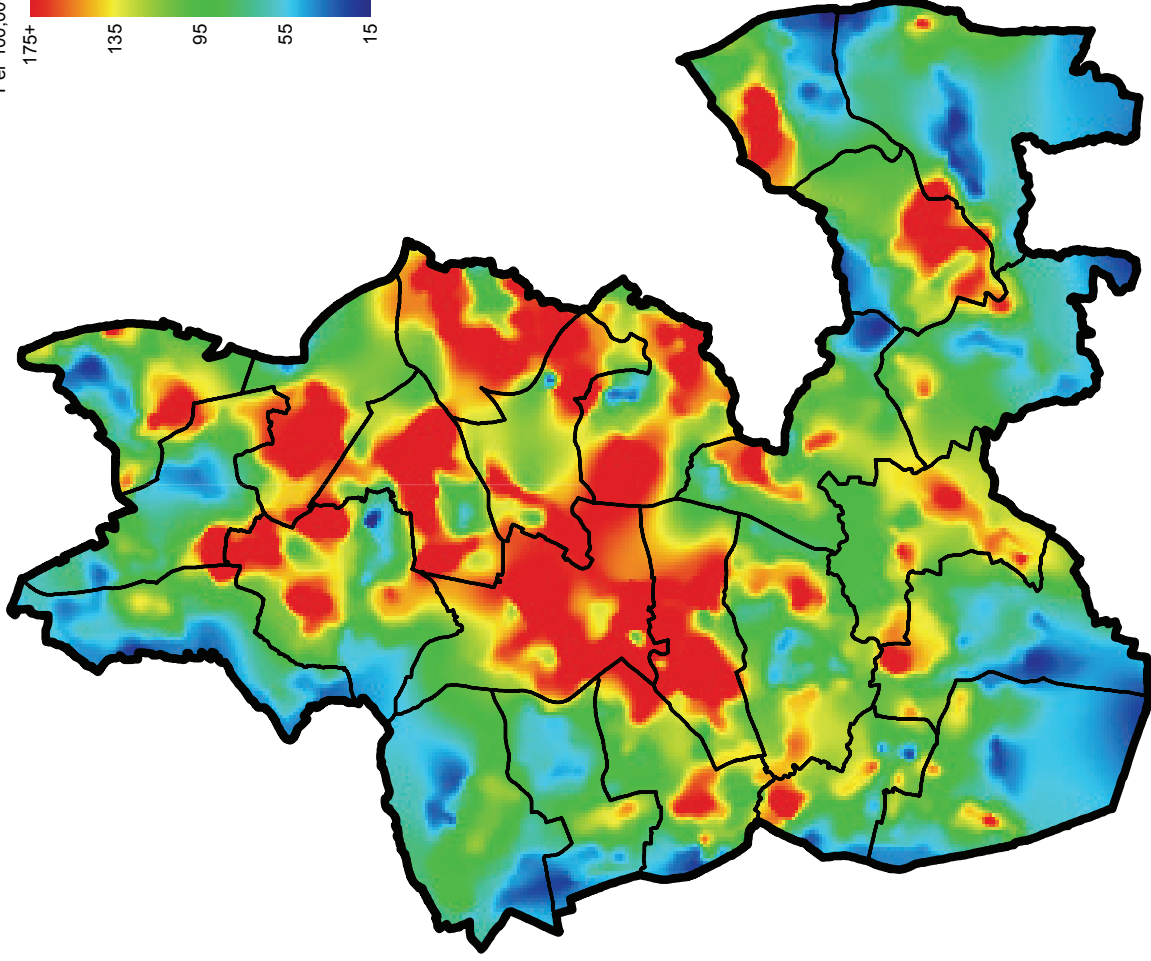


Rates for males & females all ages directly standardised to the European standard population 2002-2006

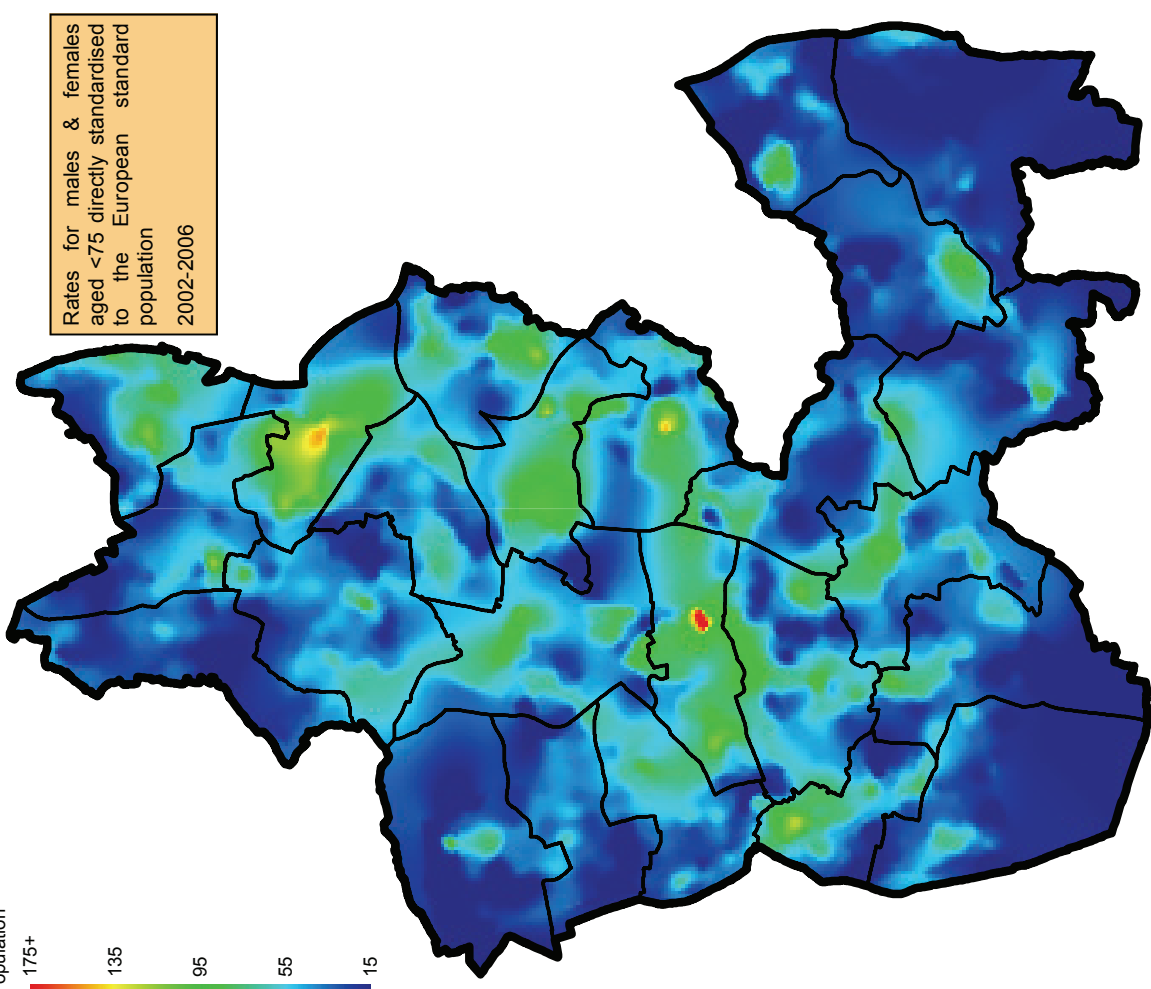




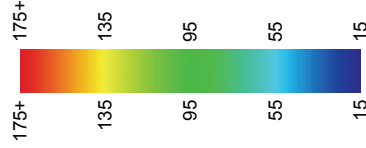
Males



Females



Directly Standardised Rate
Per 100,000 Population



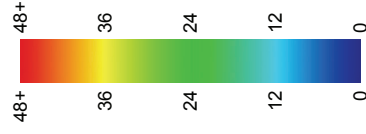
Rates for males & females
aged <75 directly standardised
to the European standard
population
2002-2006



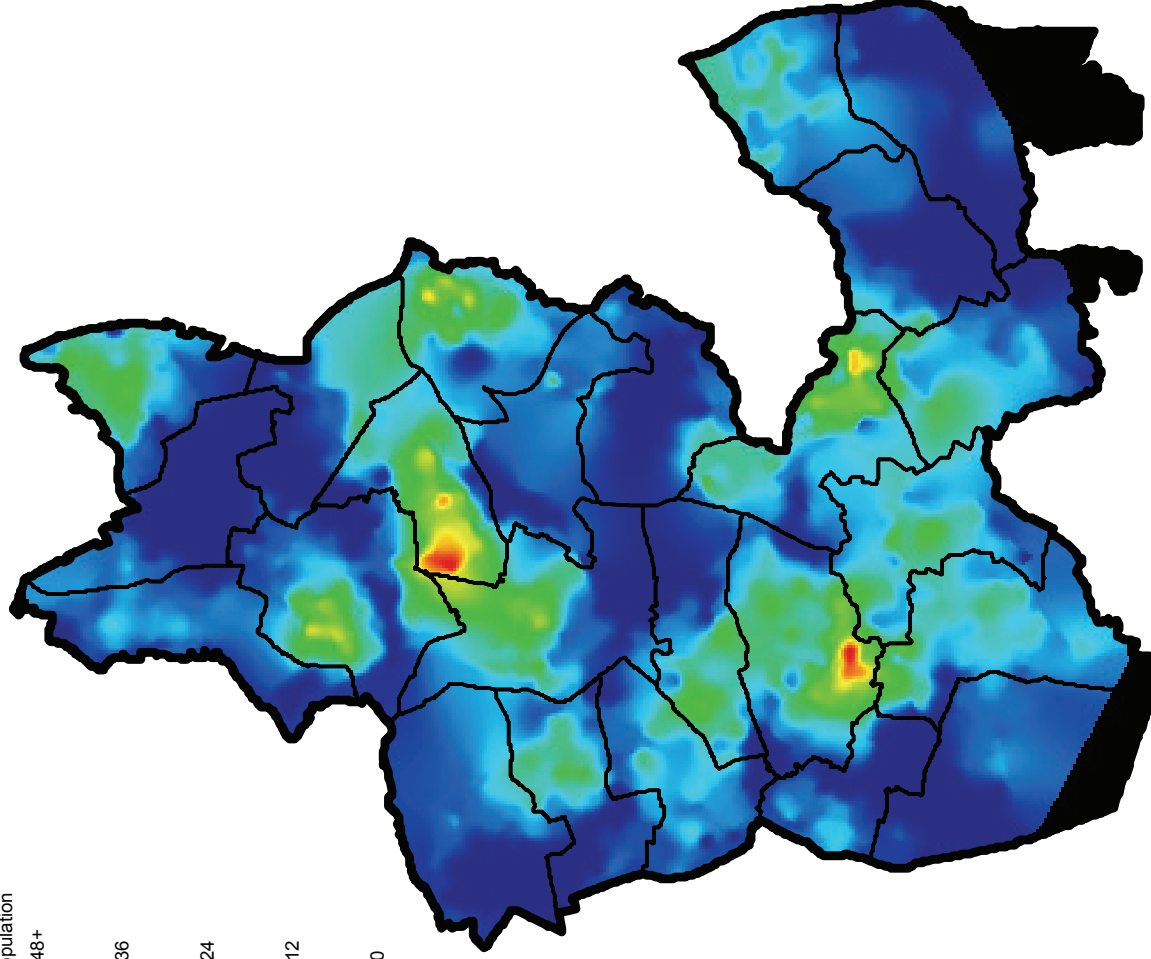
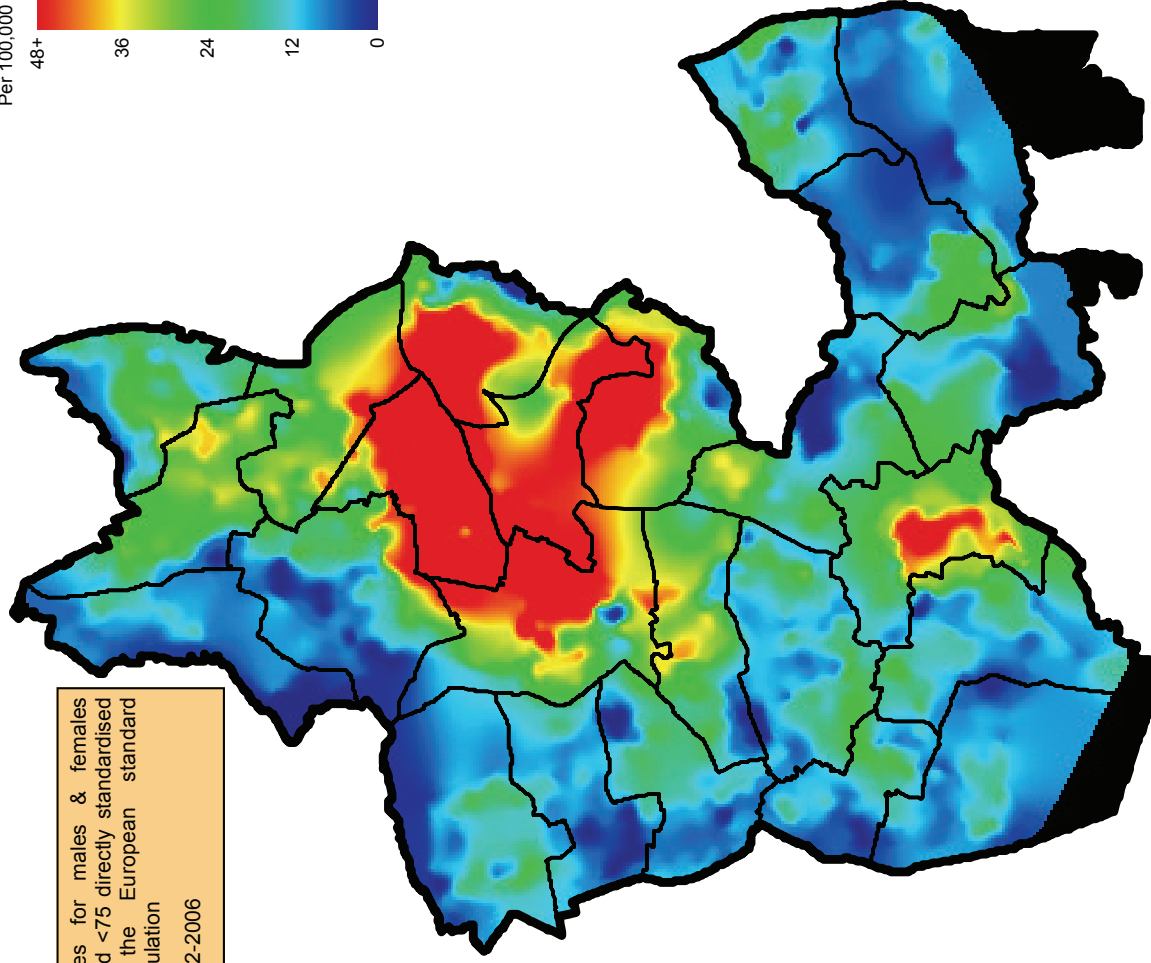
Males

Females

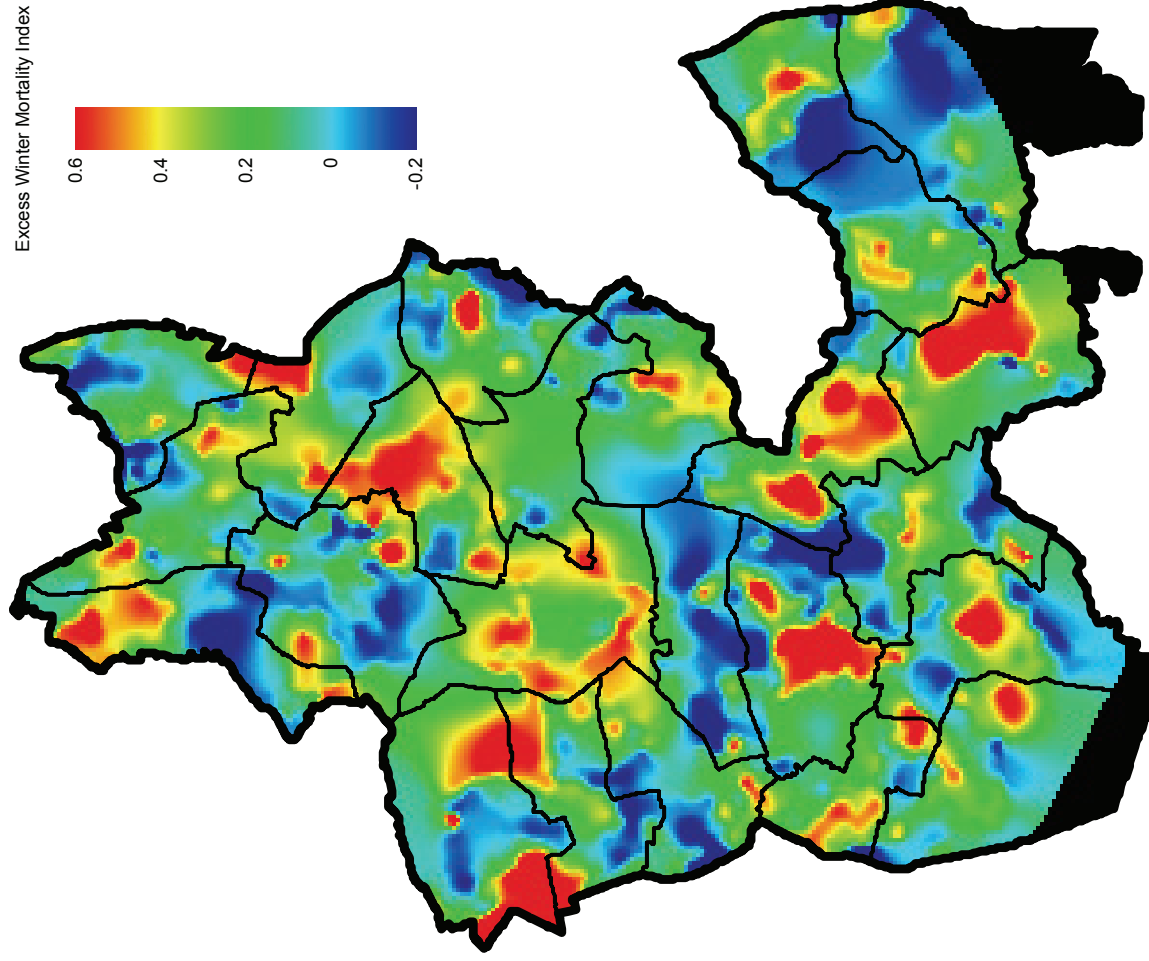
Directly Standardised Rate
Per 100,000 Population



Rates for males & females aged <75 directly standardised to the European standard population 2002-2006



Excess Winter Mortality Index Both Sexes 2002-2006



The map left shows excess winter mortality. This is defined as the number of excess deaths occurring in winter (December to March) over the average number of deaths in the rest of the year (see annex 1 for formula). A value of zero indicates that there were no more deaths per month in winter than there were in the rest of the year, with a value greater than zero indicating excess winter deaths and a value below zero meaning that there were fewer in winter than the rest of the year.

The scale for the map indicates that areas shaded blue represent values below zero and shades of green through to red indicate excess winter deaths, with the areas shaded red having 60% more deaths in winter than the rest of the year for the five years 2002 to 2006.

The pattern is fairly dispersed with small pockets of high rates all over the district. It is known that older people are the most likely to be affected by cold winters, but in Dudley the more affluent areas also have a higher number of older people. Therefore the complexity of the pattern could be to do with the interaction between the distribution of elderly people and deprivation, with elderly living in deprived areas more likely to be adversely affected by the cold winter weather than those in affluent areas.



Morbidity Maps

The following section gives output area maps of morbidity from various important causes and from varying sources including cancer registry and emergency hospital admissions. Directly Standardised Rates have been calculated from these sources for 2003 to 2005 for cancer incidence and 2001/02 to 2005/06 for hospital admissions and populations for Census Output Areas. Each cause has maps for males and females with both shaded to the same scale. The legend bar is shown between the two.

All Cancers Incidence Rate <75

Comparing the maps for males and females shows that in general the rates for women are higher than for men, with areas of red, orange and yellow on the female map and far more blue and green on that for males.

Emergency Admissions for Chronic Conditions Usually managed in Primary Care - All Ages

The purpose of this indicator is to help monitor potentially avoidable emergency hospital admissions for certain acute illnesses (ear/nose/throat conditions, kidney/urinary tract infections, heart failure) that are amenable to management in a primary care setting through, for example, better support in the management of illnesses in the home (providing support as well as facilitating access to health advice and therapy through NHS Direct and enhanced primary care). Comparing the maps for males and females shows that in general the rates for men are slightly higher than for women but in both cases they are significantly higher than the rates for England.

Emergency Admissions for Neuroses - All Ages

Comparing the maps for males and females shows that in general the rates are not dissimilar for men and women, but there are a few output areas that are significantly higher for women.

Emergency Admissions for Schizophrenia - All Ages

Comparing the maps for males and females shows that in general the rates for men are higher than for women, with areas of red, orange and yellow on the male map and far more blue and green on that for females.

Admissions for Primary Hip Replacement - Aged 65+

Comparing the maps for males and females shows that in general the rates for women are higher than for men, with more areas of red and pale blue on the female map and far more dark blue and some green on that for males.

Admissions for Accidents - All Ages and Aged 65+

Comparing the maps for males and females shows that in general the rates for men of all ages are higher than for women of all ages, this is reversed when only the 65+ age group is considered. Directly Standardised Rates for accidents are highest for the 65+ age group.

Admissions for Acute Myocardial Infarction - Aged 65+

Comparing the maps for males and females shows that in general the rates for men are higher than for women, with areas of red, orange, yellow and green on the male map and far more blue on that for females. The higher male admission rate Super Output Areas (SOAs) are spread across the borough.

Admissions for Heart Failure- Aged 65+

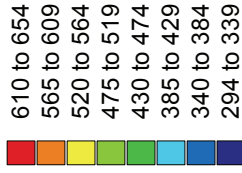
Comparing the maps for males and females shows that in general the rates for men are higher than for women, with areas of red, orange, yellow and green on the male map and far more blue on that for females.



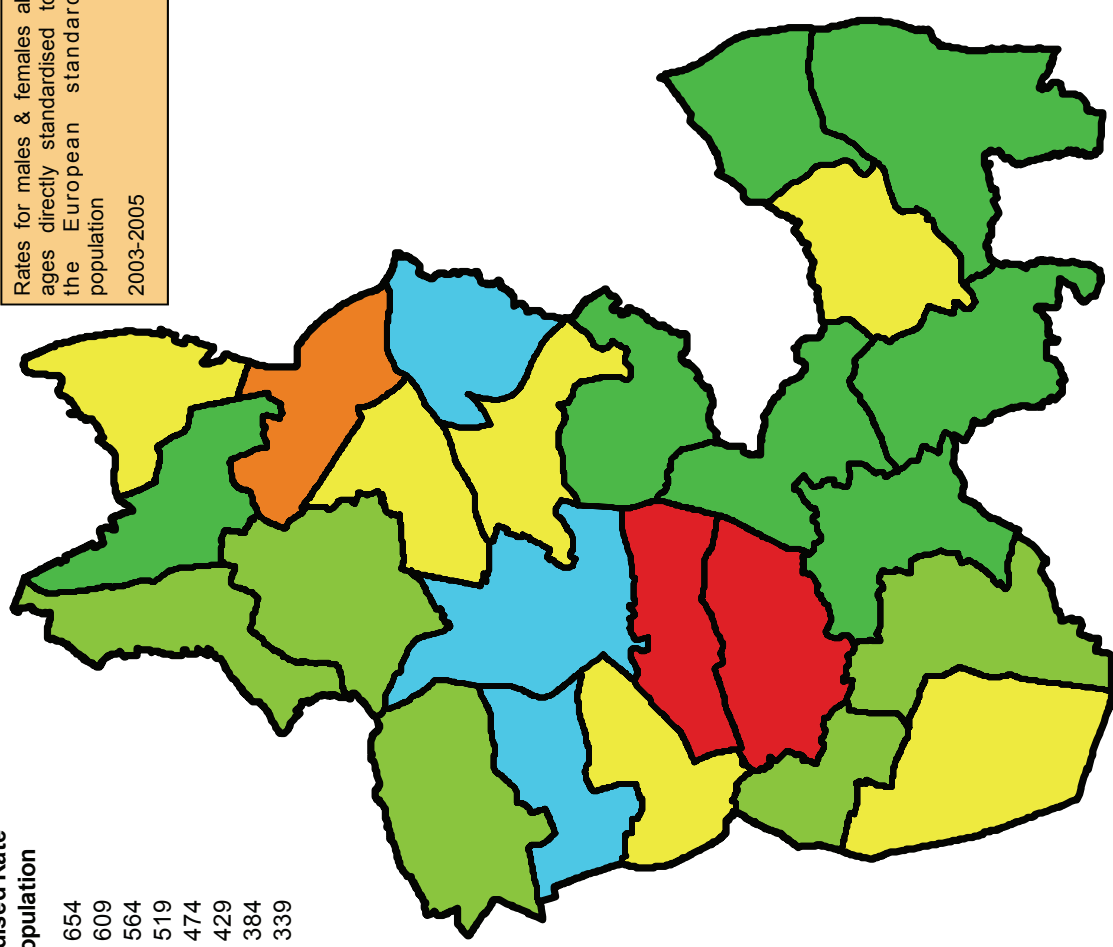
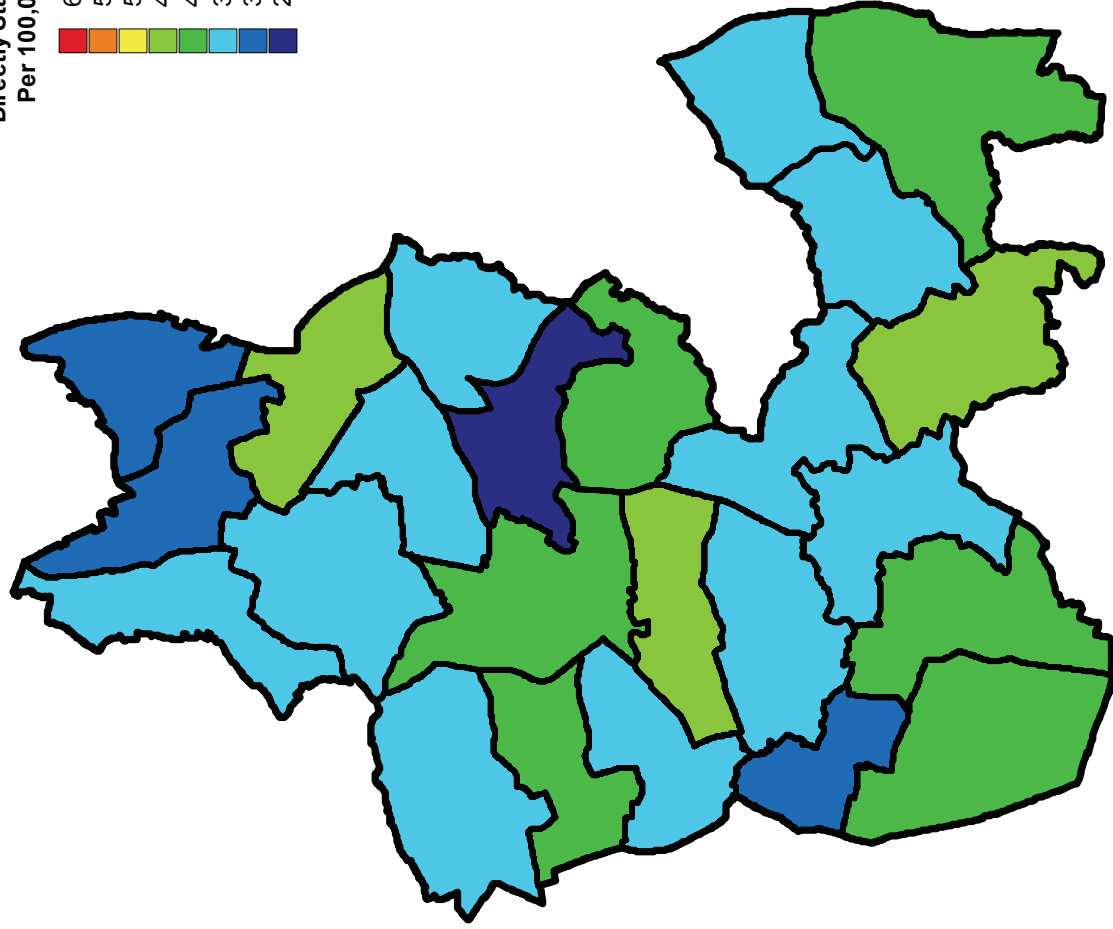
Males

Females

Directly Standardised Rate
Per 100,000 Population



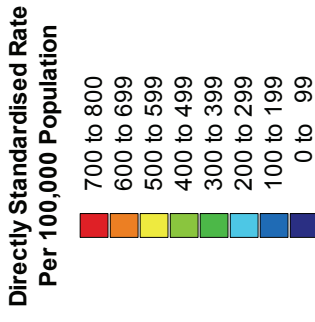
Rates for males & females all ages directly standardised to the European standard population 2003-2005



Emergency Admissions for Chronic Conditions Usually managed in Primary Care - All Ages

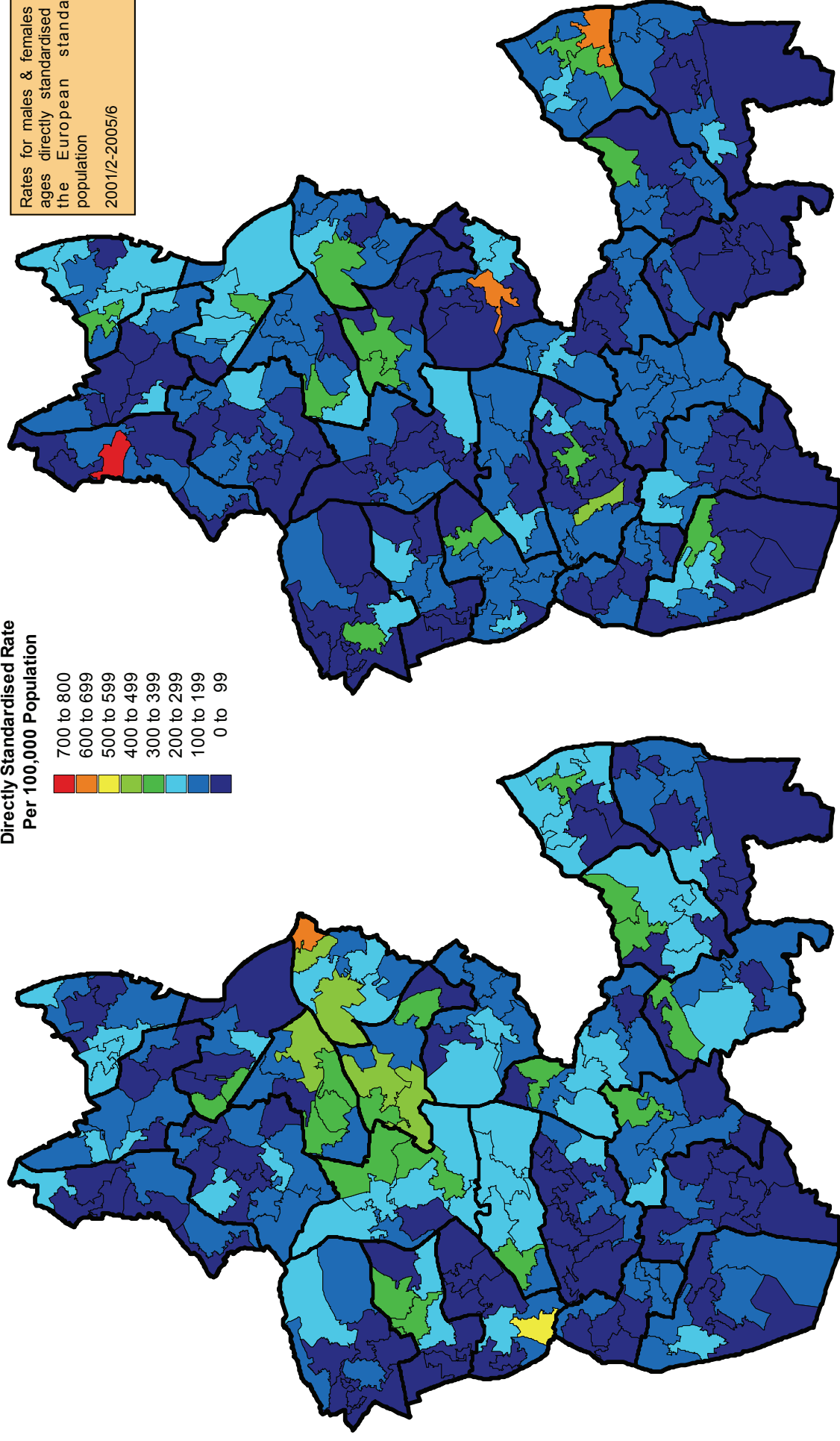


Males



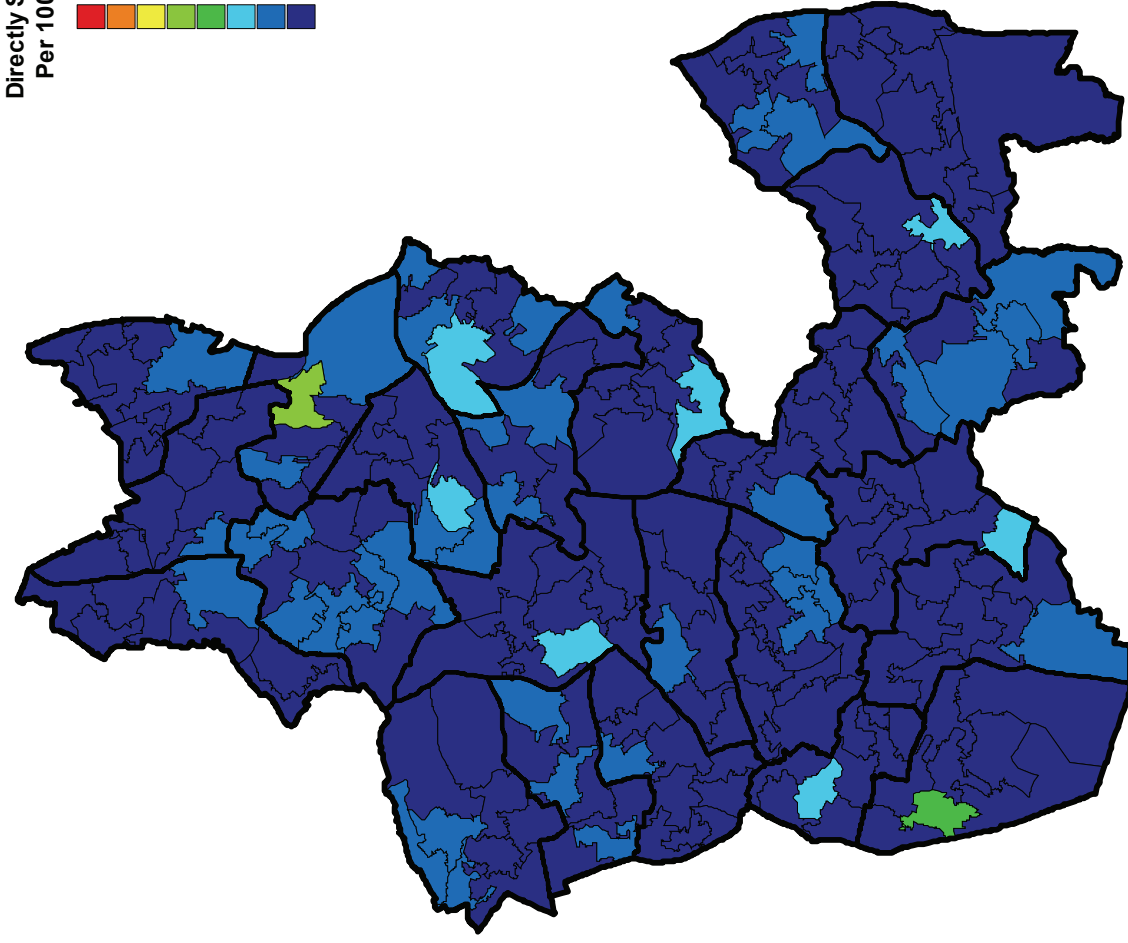
Females

Rates for males & females all
ages directly standardised to
the European standard
population
2001/2-2005/6

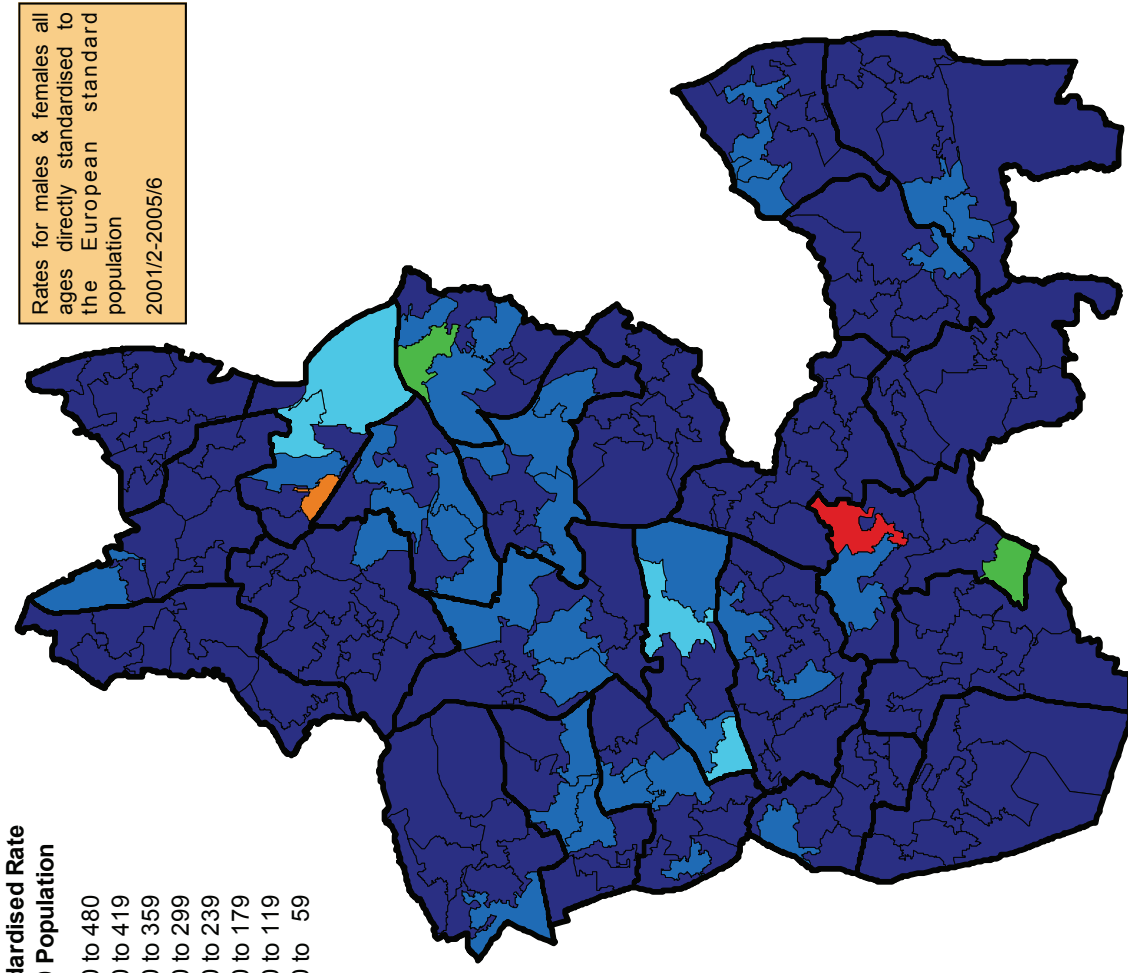




Males



Females



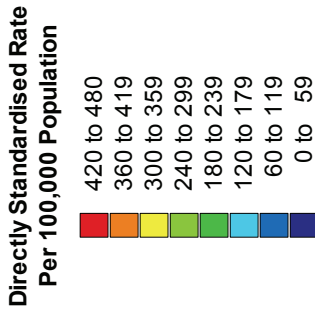
Directly Standardised Rate
Per 100,000 Population

- 420 to 480
- 360 to 419
- 300 to 359
- 240 to 299
- 180 to 239
- 120 to 179
- 60 to 119
- 0 to 59

Rates for males & females all
ages directly standardised to
the European standard
population
2001/2-2005/6

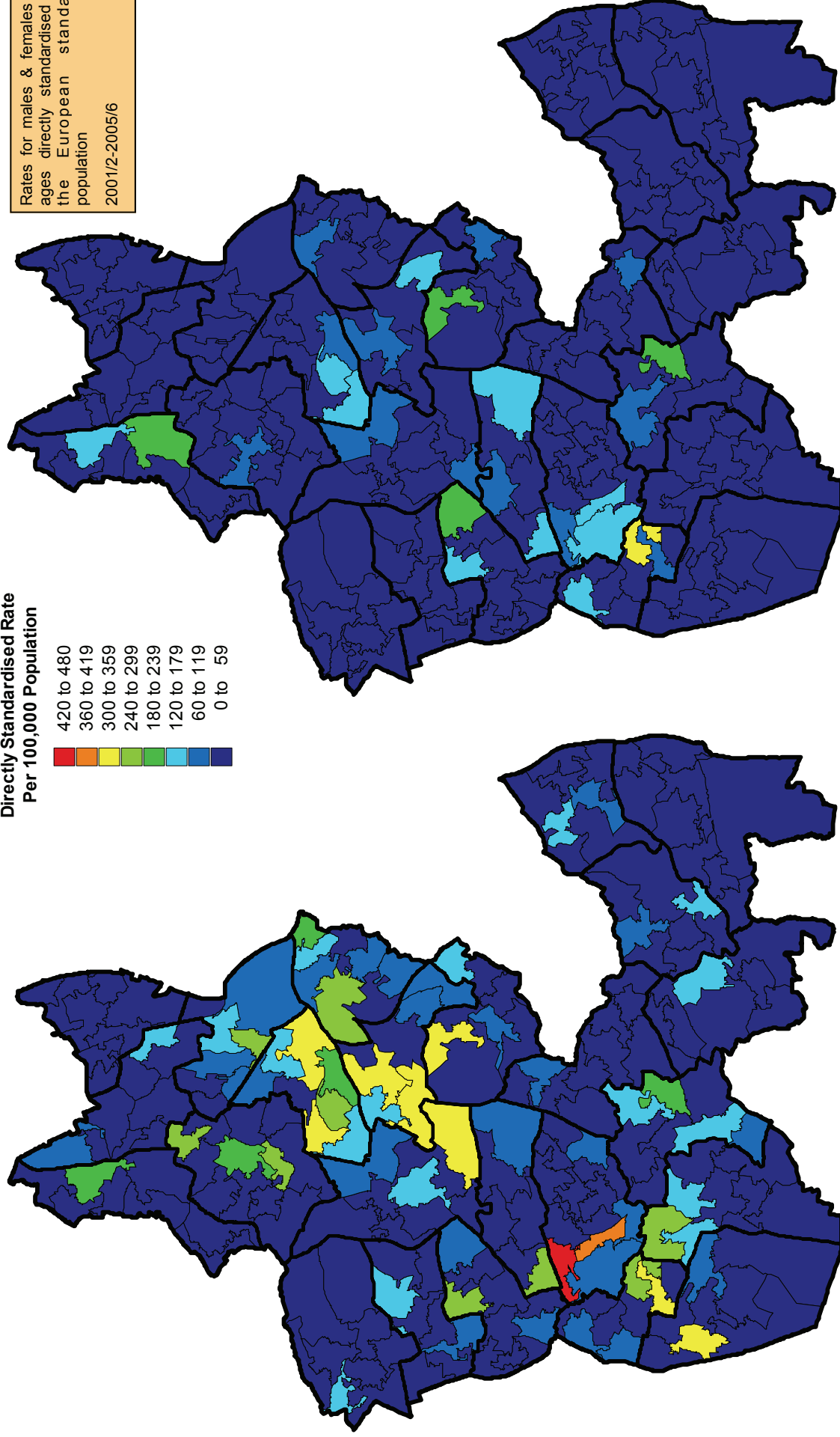


Males



Females

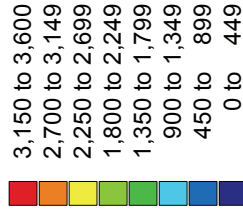
Rates for males & females all ages directly standardised to the European standard population 2001/2-2005/6





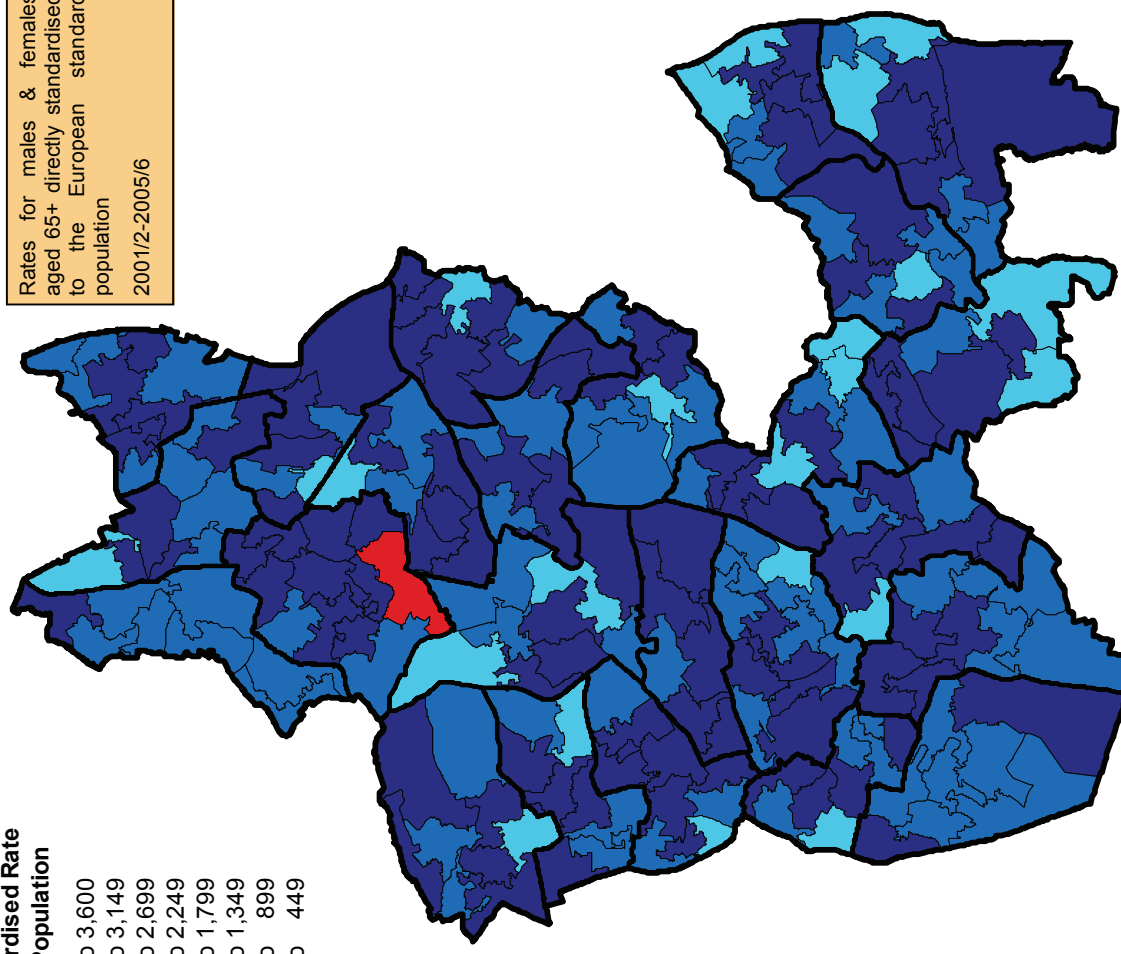
Males

Directly Standardised Rate
Per 100,000 Population



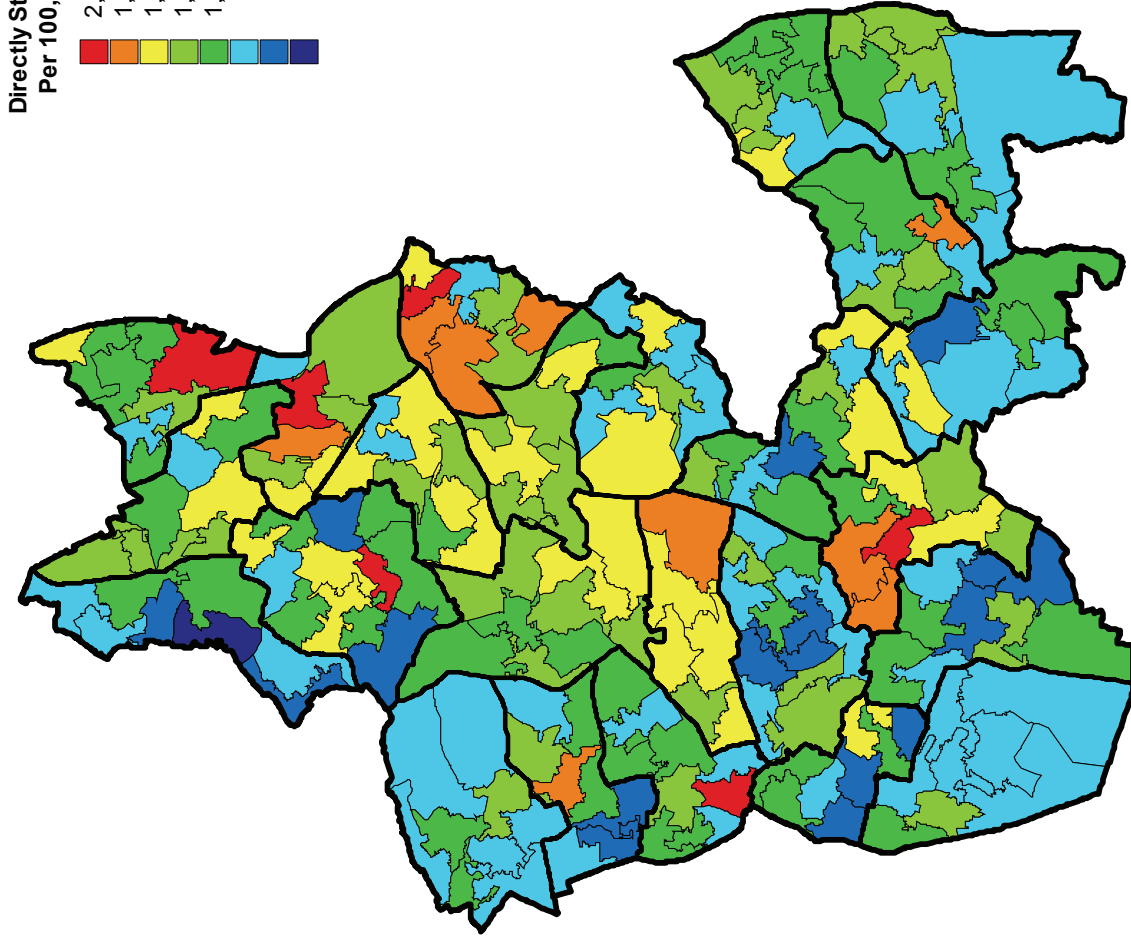
Females

Rates for males & females
aged 65+ directly standardised
to the European standard
population
2001/2-2005/6

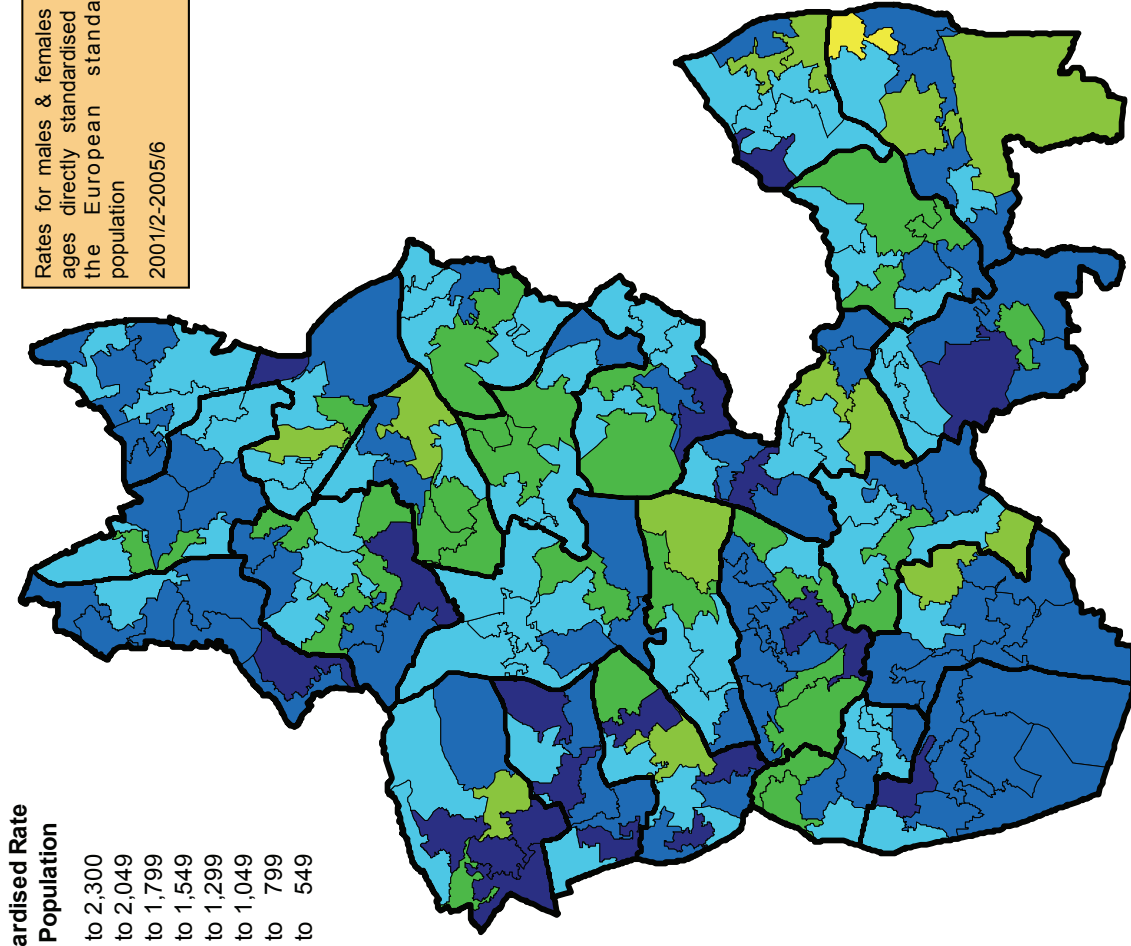




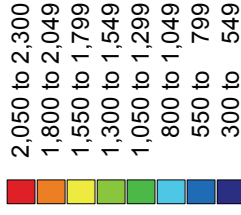
Males



Females



Directly Standardised Rate
Per 100,000 Population

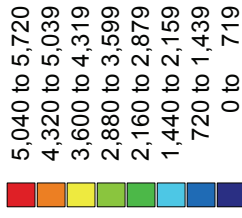


Rates for males & females all ages directly standardised to the European standard population 2001/2-2005/6



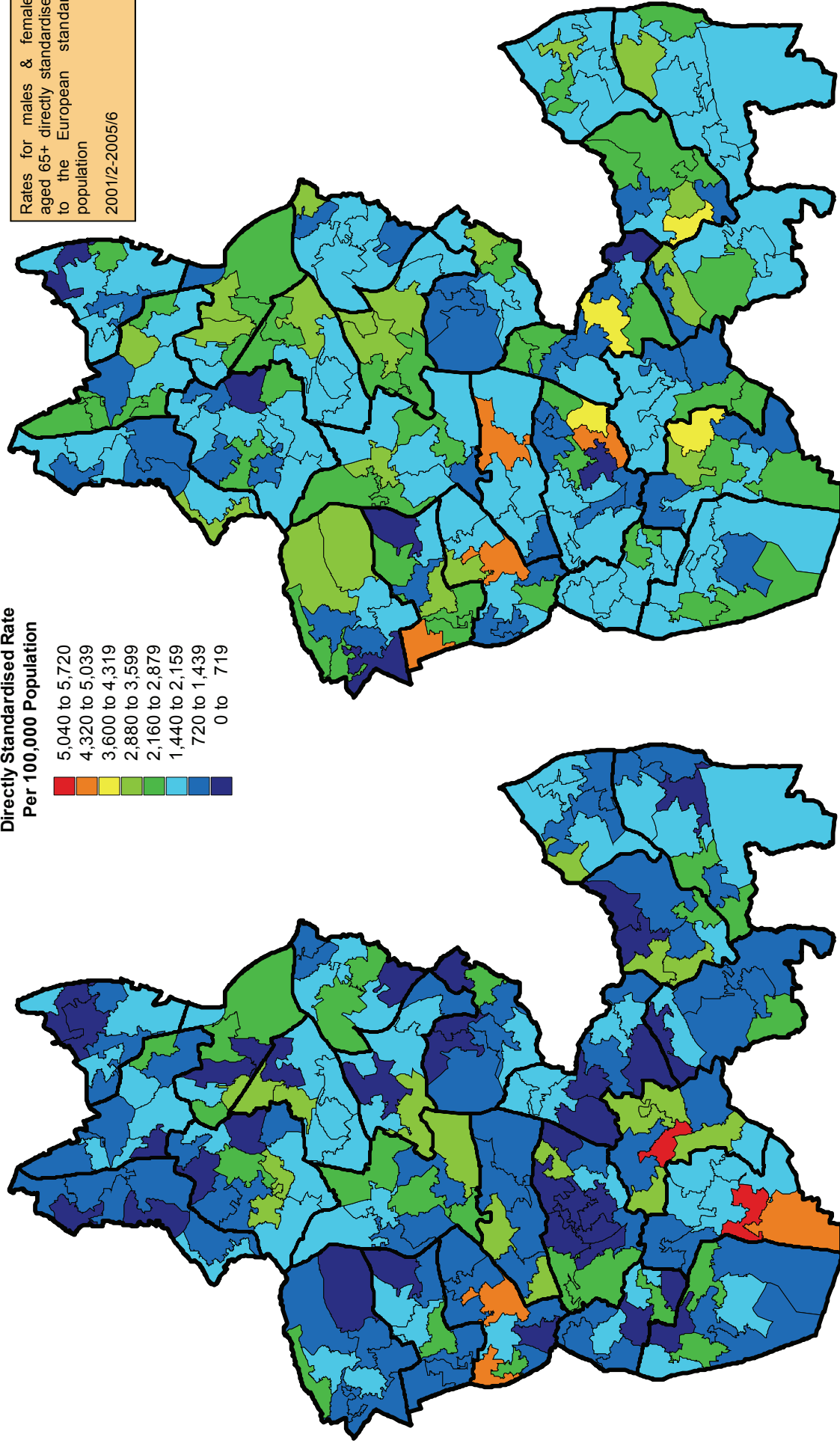
Males

Directly Standardised Rate
Per 100,000 Population



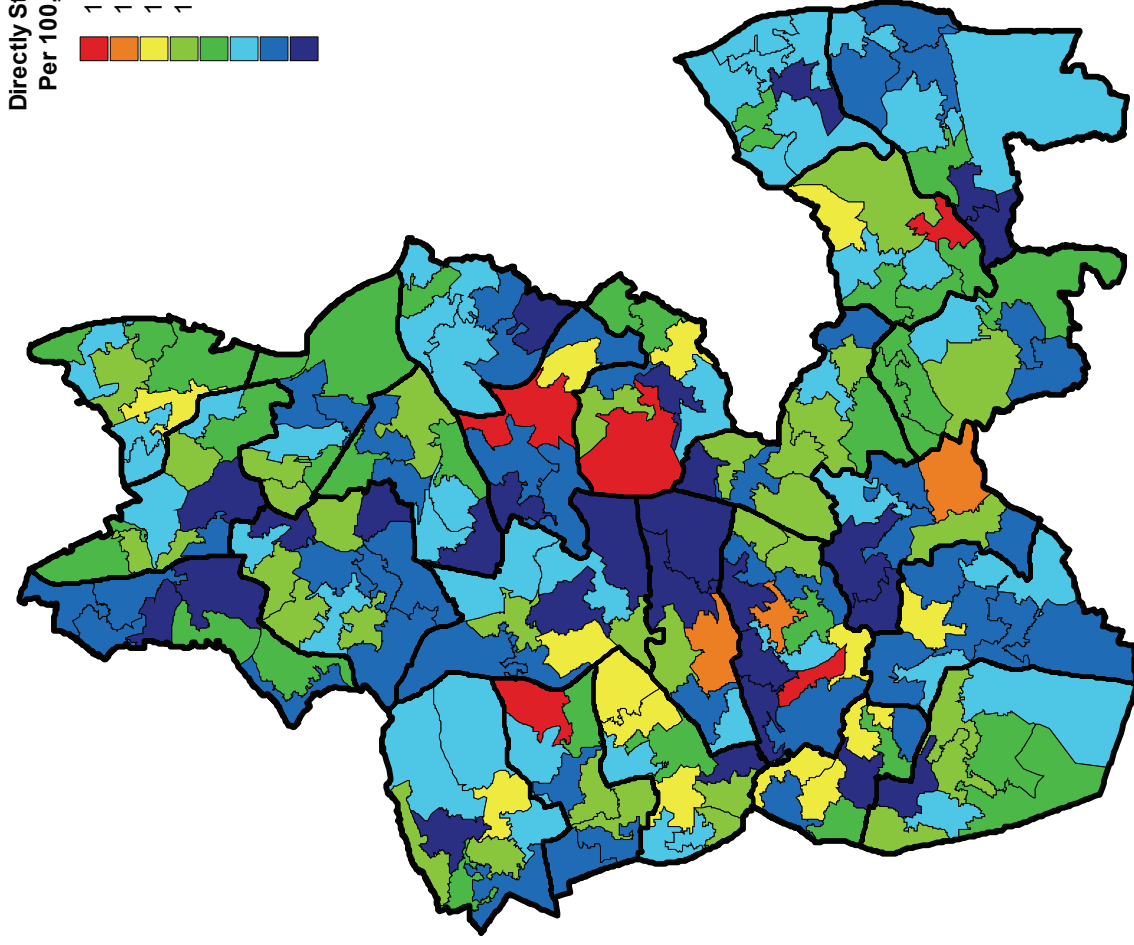
Females

Rates for males & females
aged 65+ directly standardised
to the European standard
population
2001/2-2005/6

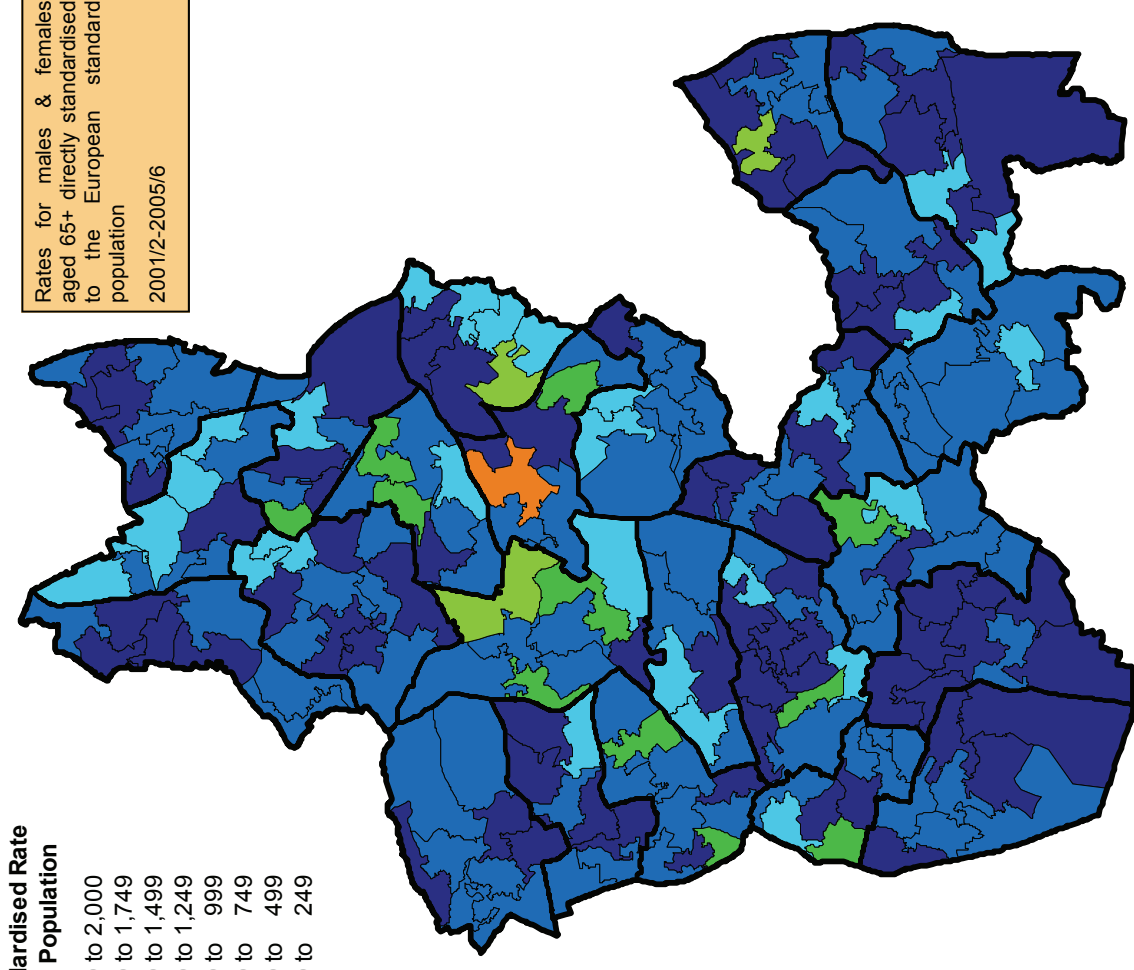


Source: Hospital Admissions data supplied by West Midlands Public Health Observatory from HES

Males



Females



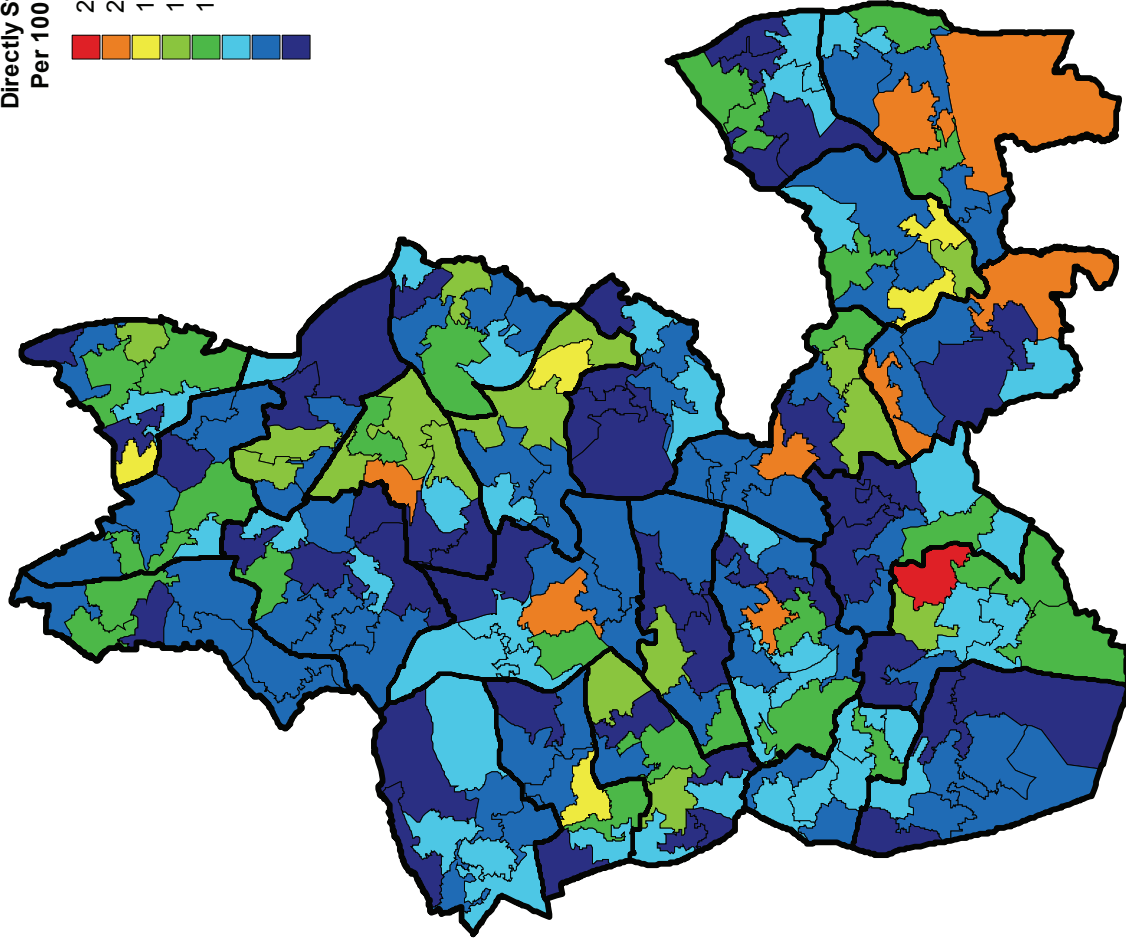


Males

Directly Standardised Rate
Per 100,000 Population

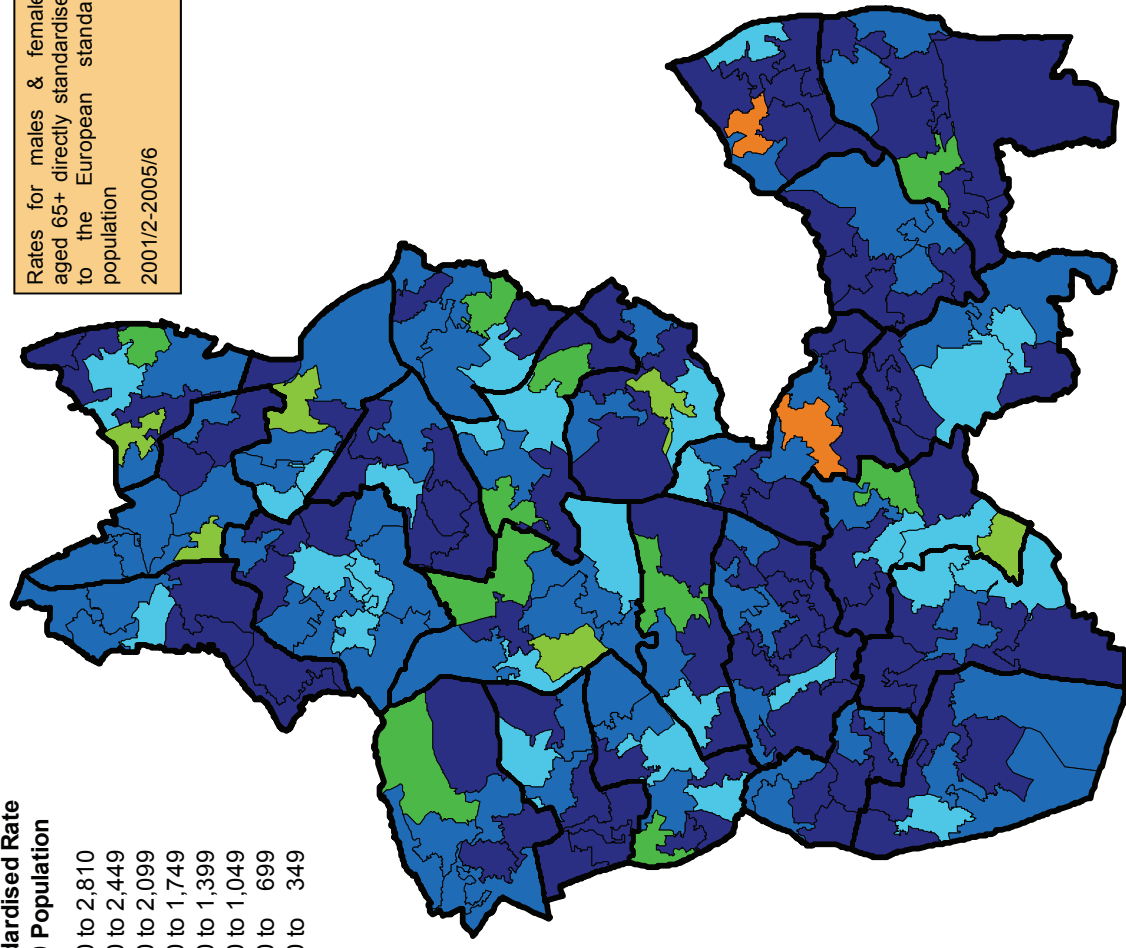


- 2,450 to 2,810
- 2,100 to 2,449
- 1,750 to 2,099
- 1,400 to 1,749
- 1,050 to 1,399
- 700 to 1,049
- 350 to 699
- 0 to 349



Females

Rates for males & females
aged 65+ directly standardised
to the European standard
population
2001/2-2005/6



Source: Hospital Admissions data supplied by West Midlands Public Health Observatory from HES



Morbidity Maps

The following section gives super output area maps of morbidity from various important causes from the Quality and Outcomes Framework (QOF). The method used is described in Annex 1. QOF register prevalence figures have been calculated from this source at March 2007 and populations for Census Output Areas. Each cause has maps for persons. There is a legend bar shown for each map. The QOF register prevalence figures are limited to people who are registered with a Dudley GP and have attended the practice within the last 15 months and are therefore not necessarily a true reflection of community prevalence of disease.

Coronary Heart Disease (CHD) and Hypertension

As would be expected the QOF register prevalence for controlled hypertension is higher than the QOF register prevalence for CHD. If hypertension is being detected early and controlled in an area then it would be expected that the CHD prevalence for the same area would be ranked lower and vice versa. From the maps both of these scenarios are noted with the latter being the case in the south and west of the borough.

Heart Failure

The map showing the QOF register prevalence of heart failure is similar to that for CHD, though the levels of QOF register prevalence are lower.

Cancer

The map showing the QOF register prevalence of cancer, tends to show the areas on the edge of the borough to have the highest prevalence. This differs to the incidence maps but these data were directly age standardised or this may also reflect differential survival rates. The QOF register prevalence of cancer is much lower than the QOF register prevalence for heart diseases.

Chronic Obstructive Pulmonary Disease (COPD)

The map showing the QOF register prevalence of COPD shows that it is higher than the Dudley average prevalence of 1.3% in over a third of the super output areas and these are spread throughout the borough, though pockets of high prevalence are seen in Sedgley, Gornal Wood and Pedmore.

Obesity

The map showing the QOF register prevalence of Obesity shows that it is higher than the Dudley average prevalence of 9.3% in over a third of the super output areas and these are spread throughout the centre of the borough, though pockets of high prevalence are seen in Quarry Bank and St. Andrews. The overall QOF register prevalence for Obesity is considerably lower than that recorded in the Dudley Health Survey 2004 (17.4%) and comparison of the maps shows little congruence, suggesting under ascertainment at some GP practices.

Cervical Screening Coverage - Age 25-64

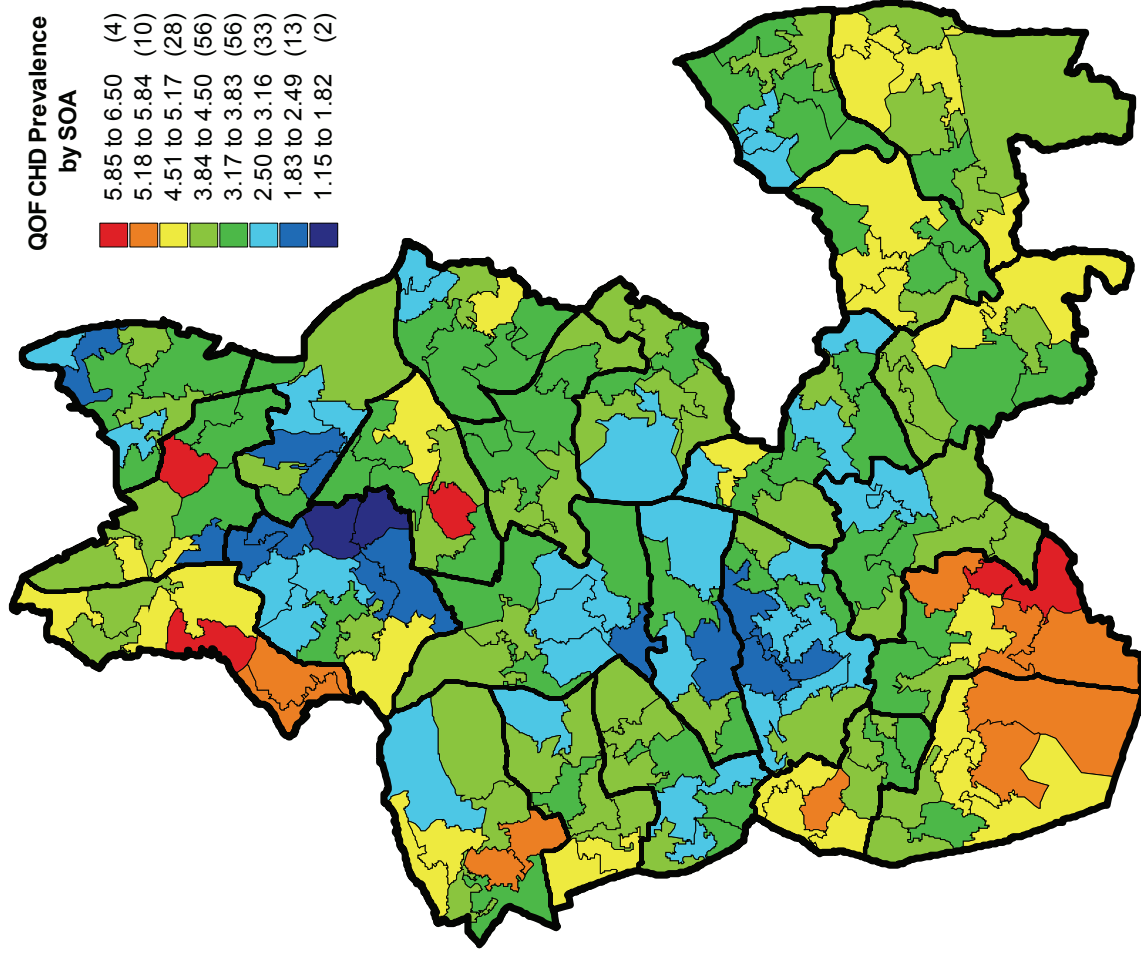
The map showing the cervical screening coverage by middle super output area shows that it is lower than the Dudley average coverage of 80.1% in 17 of the 43 middle super output areas and these are spread throughout the north of the borough, though pockets of low coverage are seen in Quarry Bank and Lye.

Breast Screening Coverage - Age 50-70

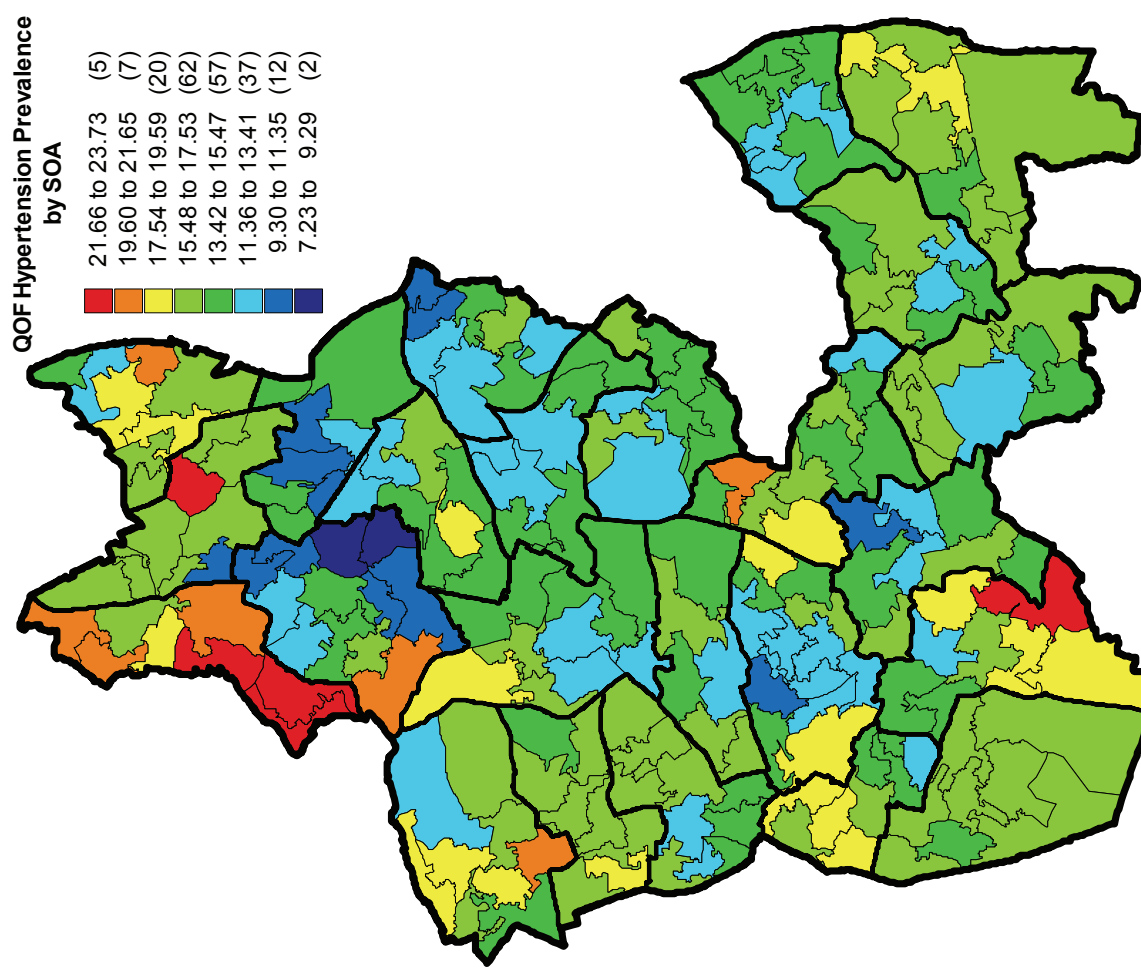
The map showing the breast screening coverage by middle super output area shows that it is lower than the Dudley average coverage of 74.1% in half of the middle super output areas and these are spread throughout the centre of the borough.



Coronary Heart Disease



Hypertension





QOF Register Prevalence

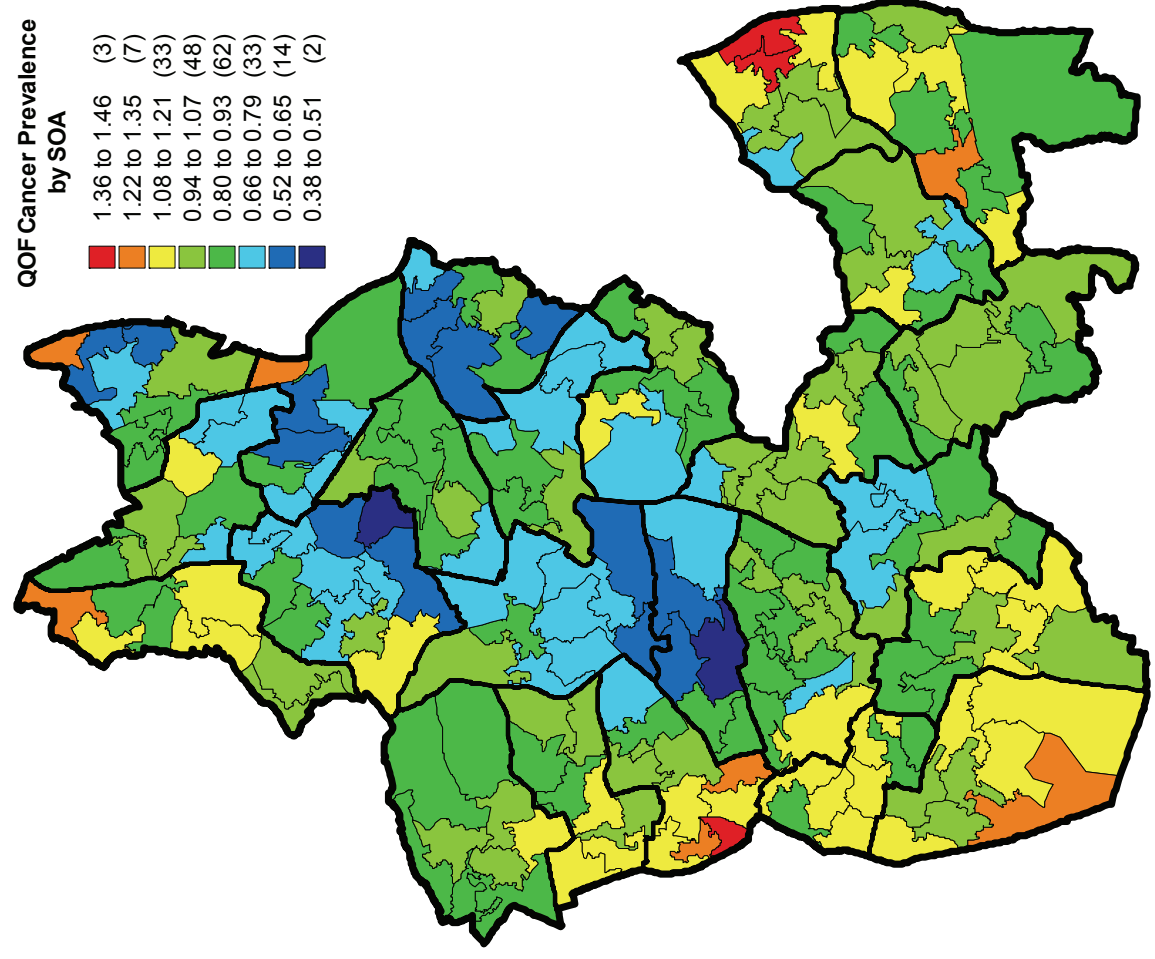
Heart Failure

QOF Heart Failure Prevalence by SOA

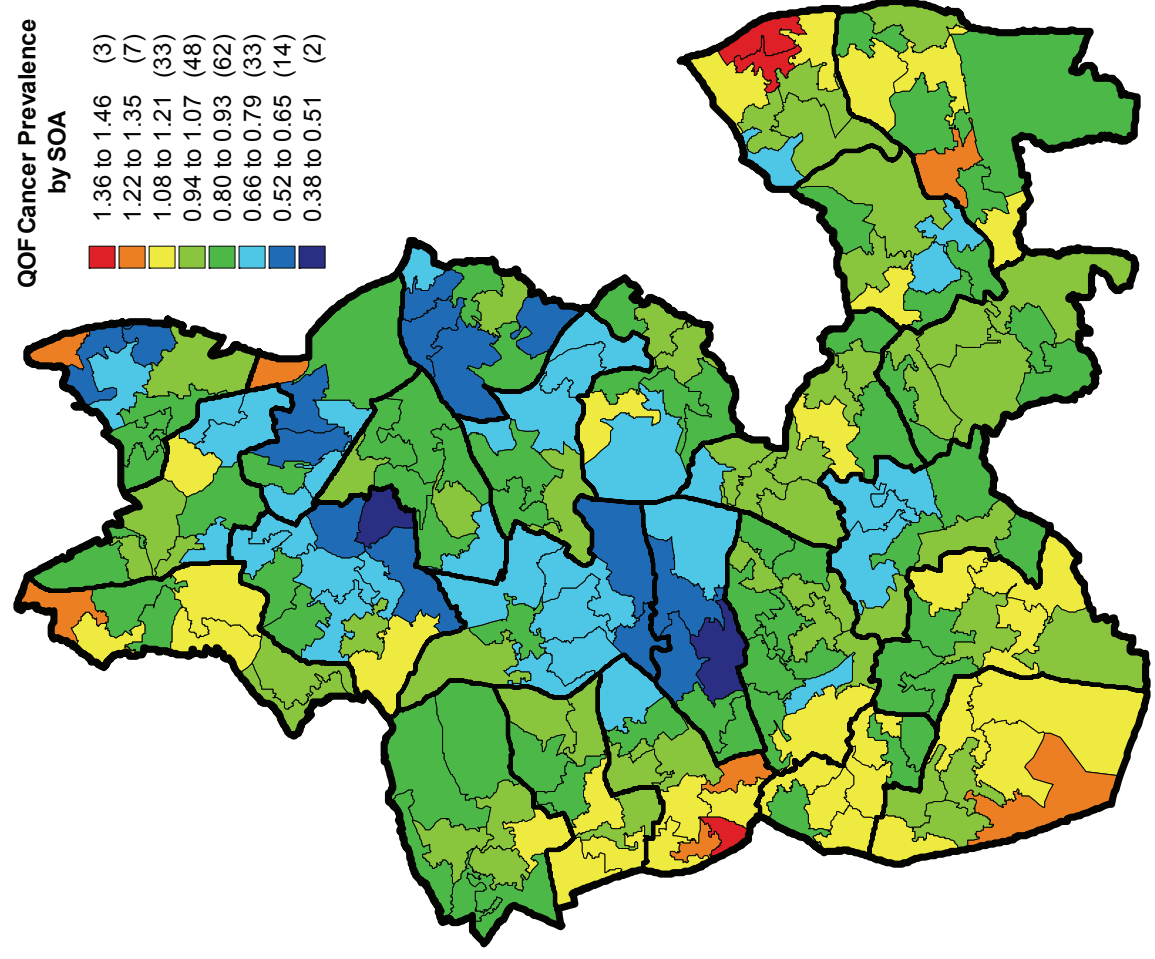
| | |
|--------------|------|
| 1.47 to 1.65 | (4) |
| 1.29 to 1.46 | (9) |
| 1.10 to 1.28 | (26) |
| 0.92 to 1.09 | (27) |
| 0.74 to 0.91 | (45) |
| 0.56 to 0.73 | (56) |
| 0.37 to 0.55 | (27) |
| 0.17 to 0.36 | (8) |

QOF Cancer Prevalence by SOA

| | |
|--------------|------|
| 1.36 to 1.46 | (3) |
| 1.22 to 1.35 | (7) |
| 1.08 to 1.21 | (33) |
| 0.94 to 1.07 | (48) |
| 0.80 to 0.93 | (62) |
| 0.66 to 0.79 | (33) |
| 0.52 to 0.65 | (14) |
| 0.38 to 0.51 | (2) |

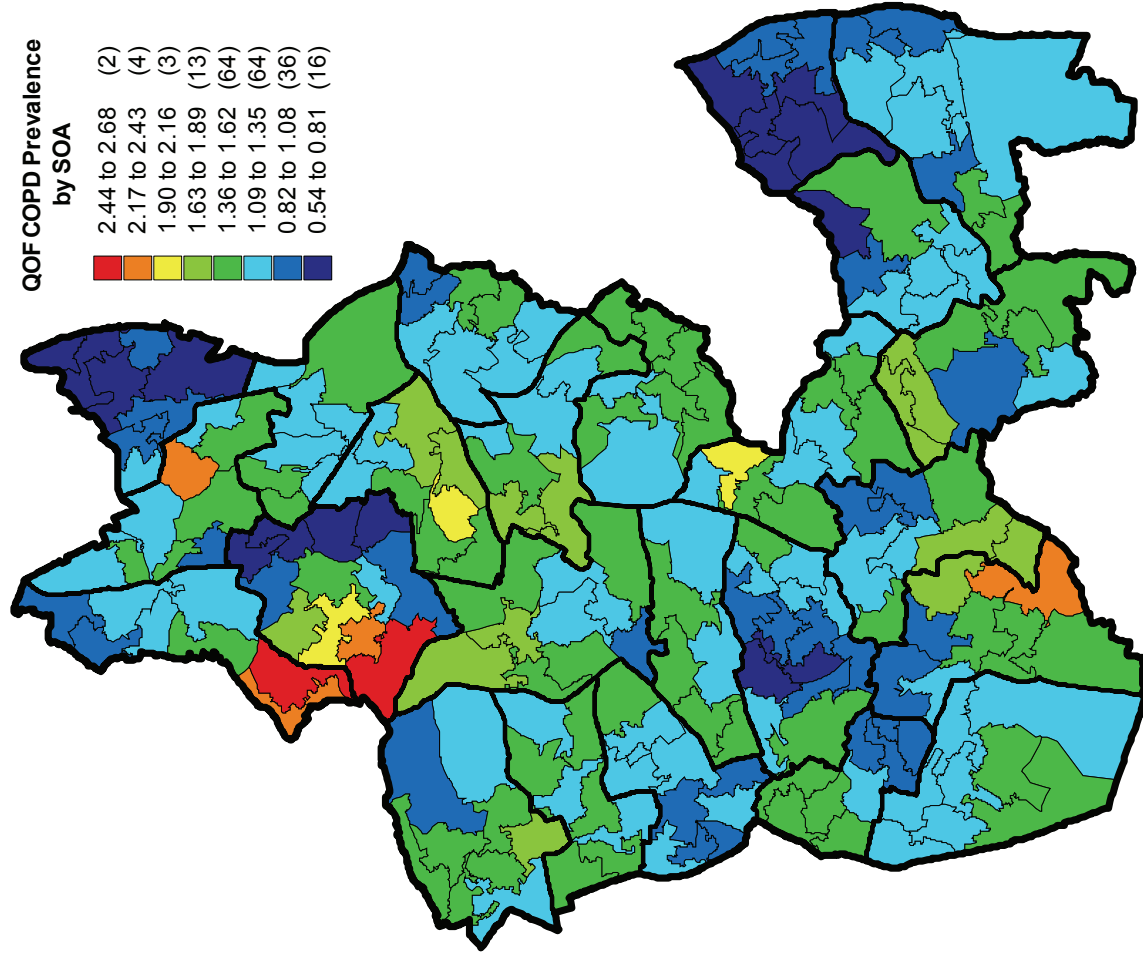


Cancer

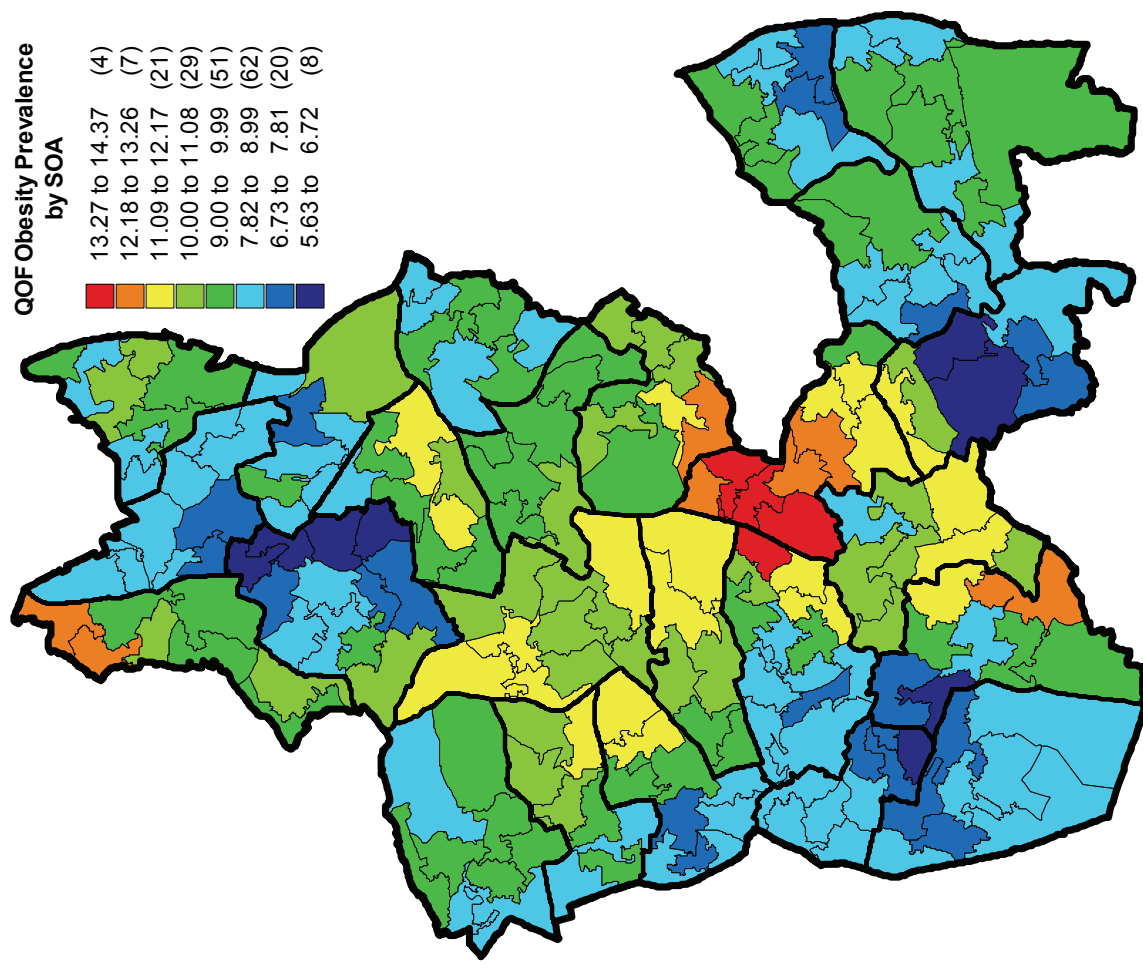




COPD



Obesity

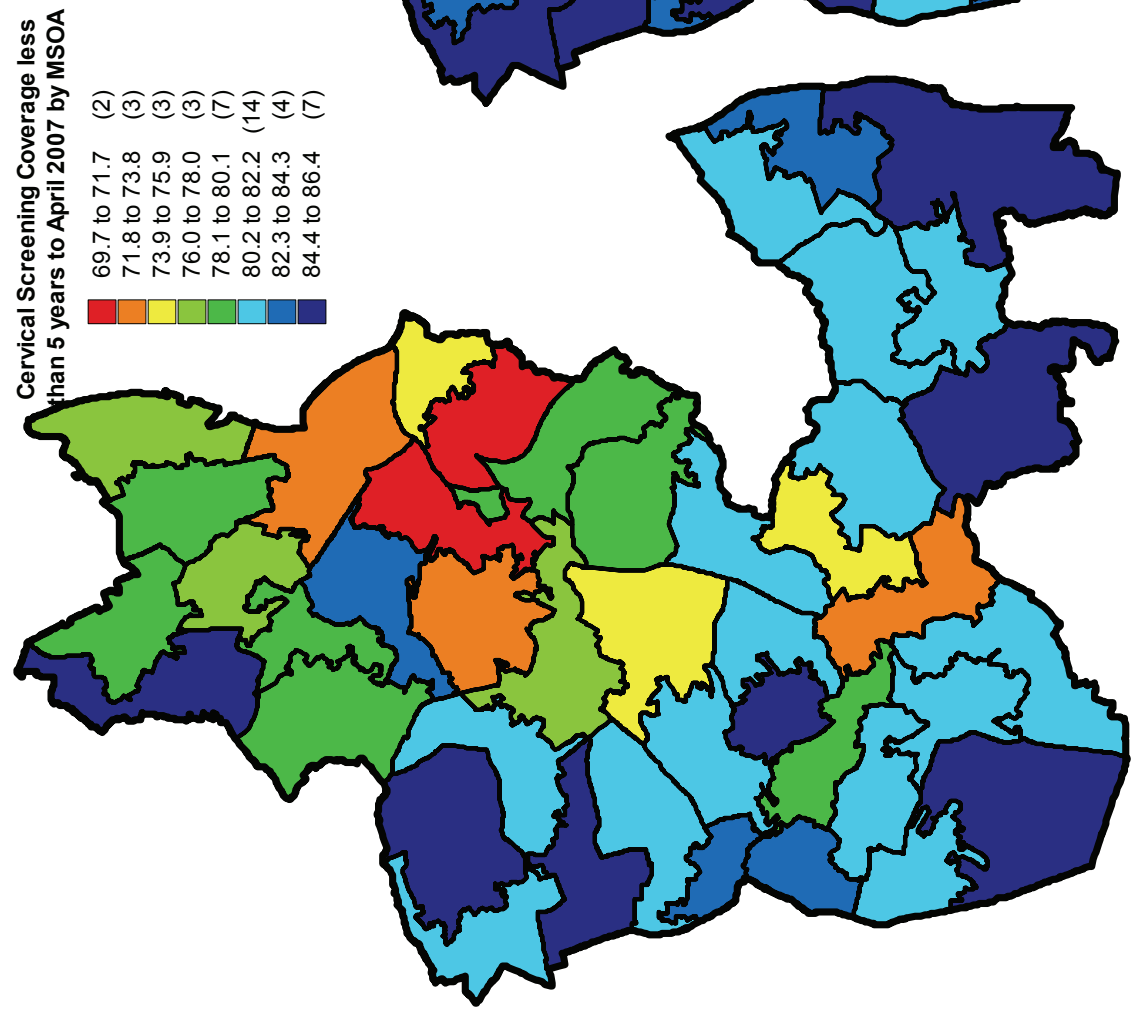


Health Outcomes

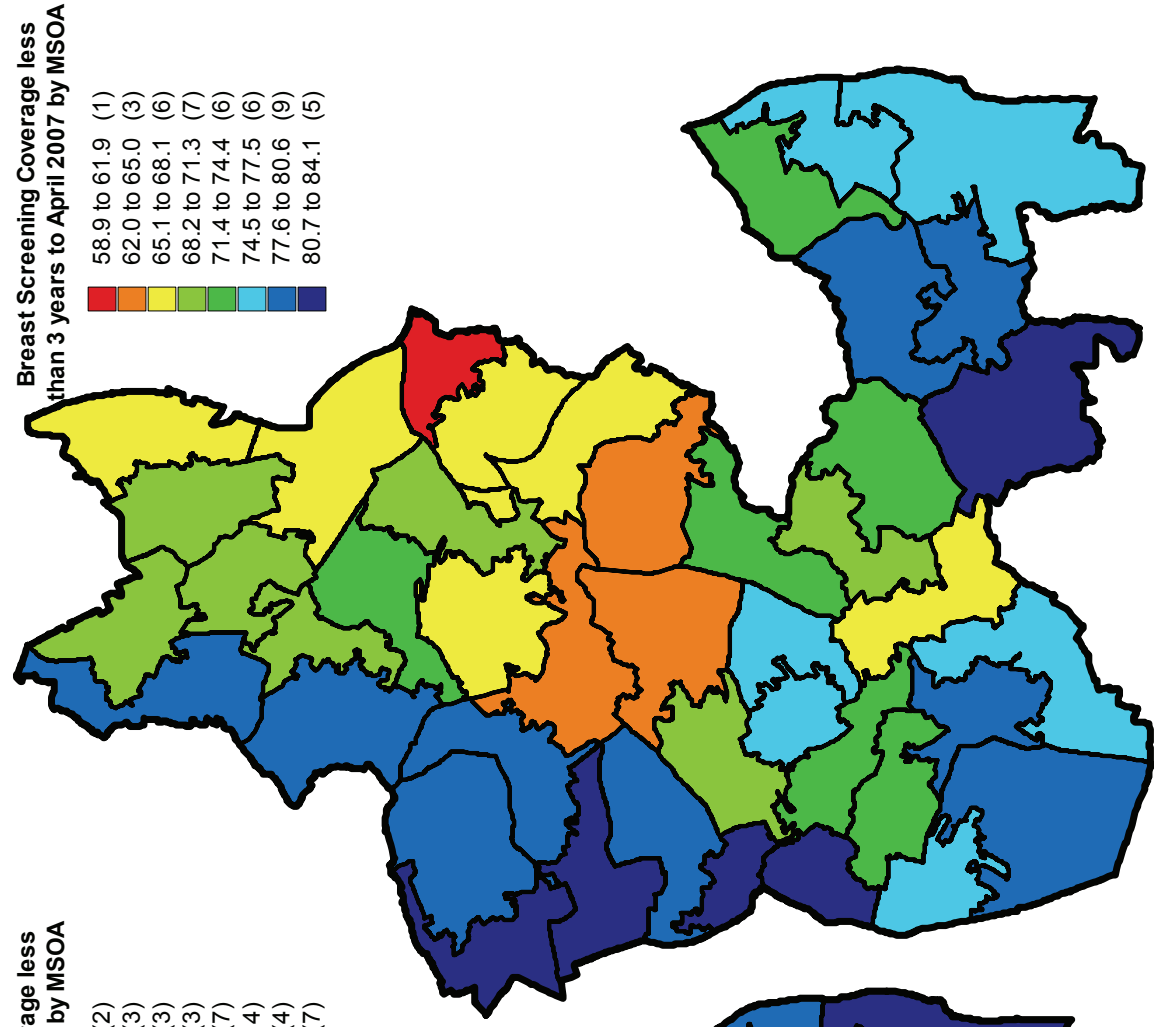


Screening Coverage

Cervical Screening Coverage, Age 25-64



Breast Screening Coverage, Age 50-70





Contents

Glossary

Annex 1 - Methods

Annex 2 - Data Sources

Annex 3 - ICD 10 Code Definitions

Annex 4 - Administrative, Statistical & Postal Boundaries

References



Cancer Screening - Tests performed on people who have no symptoms or findings suggestive of a cancer. A screening test is done on "normal" people to find hidden disease. If the person has symptoms or findings that could be due to a cancer then diagnostic tests have to be done. Screening tests are not diagnostic tests. Abnormal screening tests indicate a potential problem that must be resolved by diagnostic tests.

Quality Outcome Framework (QOF) - The "evidence-based" indicator framework for measuring General Medical Services contract practice achievement.

Life Expectancy - Life expectancy at birth is defined as the age to which the average newborn would live if they were to experience the current average mortality rates.

Directly Standardised Rates (DSR) - A rate that allows comparisons between populations with differing population characteristics (age/sex). Annex 1 explains the method more fully.

Family Health Service Register (FHS Register) - A register of any Dudley resident who is registered with a doctor.

Finished Consultant Episodes (FCEs) - A period of care under one consultant within one hospital. Each treatment under a new consultant results in a new episode being recorded; see Annex 2 for more information.

Hospital Episode Rates - These are rates that are calculated using FCEs. They are not calculated with a doctor.

lated using the number of admissions to hospital. Further details are included in Annex 2.

Index of Multiple Deprivation (IMD) - The IMD was published in 2007. It takes a range of variables and calculates an overall index. It can also be broken down to various domains looking at specific aspects of deprivation.

International Classification of Disease (ICD) - The International Classification of Disease coding system.

Neuroses - Neuroses includes severe phobias, severe anxiety disorders, obsessive-compulsive disorder, reaction to severe stress and adjustment disorders, dissociative disorders (where the integration of past memories and awareness of identity and immediate sensation is lost), somatoform disorders (in which physical symptoms appear to have no physical basis) and other rarer neurotic disorders and those of an unspecified nature.

Lower Super Output Area (LSOA) - Minimum population 1000; mean 1500. Built from groups of OAs (typically 4 to 6) and constrained by the boundaries of the wards used for 2001 Census outputs.

Middle Super Output Area (MSOA) - Minimum population 5000; mean 7200. Built from groups of Lower Layer SOAs and constrained by the 2003 local authority boundaries used for 2001 Census outputs.

Output Area (OA) - The smallest area at which 2001 Census data are published.

Office for National Statistics (ONS) - Government agency responsible for the collection and dissemination of data within the UK. www.statistics.gov.uk

Primary Care Trust (PCTs) - NHS trust responsible for the planning and securing of health services and improving the health of the local population.



Travel Times

Creating 'walk zones' for Health Services in Dudley using Network Analyst extension in ArcView v9.2

- The aim of this exercise was to create service area 'walk zones' for various health services (children's centres, dental practices, GP practices, health centres, opticians and pharmacies) within Dudley on behalf of Dudley PCT.
- Walk zone analysis was performed using the Network Analyst Extension in ArcView v9.2.
- Communication and topographic data, derived from Ordnance Survey Meridian 2 (January 2007) was used as the primary geographic data source.

The exercise was based on two stages: creating a network dataset in ArcCatalog and performing the service area analysis in ArcMap.

The following steps were carried out to perform the analysis:

Creating a network dataset

1. A road network dataset was created for A-roads, B-roads, minor roads and roundabouts. Motorways were omitted from the network dataset (since a pedestrian should not use this as a walking route).
2. The connectivity policy for each road was assigned 'any vertex', and any roundabout to be honoured.

3. Road length, which is included in the Meridian 2 data, was used to calculate walk zones in minutes for each road, based on an assigned speed.

4. The walk speeds used in this project were derived from Social Services specification for disability allowance based on Research on Road Traffic (HMSO, 1965) which found average walking speed for an adult to be 1.52 metres a second (5.472 km/hr). For the purpose of this exercise a lower speed for the average speed for 'a woman with small child' value of 0.72 metres per second (2.592 km/hr) was also used.

Performing the Service Area analysis to produce walk zone polygons

1. Health service locations were geocoded by postcode.
2. Breaks of 10, 20 and 30 minutes were set up for each health service.
3. Polygons were generated and classified with different shaded colours. (Note: polygon generation settings were 'merged by break value' where join of polygons of multiple facilities have the same break value. This polygon generation method was chosen to optimise display in MapInfo.)
4. Additional contextual data added. Walk zone polygons are converted into .tab format for use by Dudley PCT under the terms of their pilot OS NHS SLA (2005).

Issues

1. Although the exercise provides useful results, it is by no means definitive. The walk zones are based on pedestrians using road routes. The analysis does not account for other ad hoc routes for example, through parks or open space which could prove shorter or quicker alternatives to the pavement of a road.
2. This method assumes a pedestrian to walk along any road when in reality this may not always be possible due to a lack of pavement.
3. The presence of underpasses at junctions may actually reduce walk times from those computed by this method.
4. Although average speeds for walking have been used it does not account for many other factors that will affect walking time. For example, the time taken to cross a road would vary according to the time of day. Similarly it does not account for any roads with a slope which will also affect pedestrian walking time especially in the less able: a gradient of 10% would result in an 11.5% reduction in walking speed and a gradient of 20% would mean a 25% reduction (Source: *Fruin, 1987*).



Surface Maps

There are two types of surface map found in this report. They both look similar in the final result, but have been derived in different ways. One sort has been derived from area data and the second from point data.

Area data surface maps

The principal reason for using area data is that they allow the calculation of rates (including standardised rates). The problem with this is that it is difficult to obtain a smooth surface from such data especially if the areas are large. It is important therefore to try to use as small areas as possible. In this report all the area-based surface maps are derived from Census Output Area (OA) data. This presents its own problems associated with small numbers. Each OA does not have sufficient population to allow the calculation of robust figures even combining many years.

In order to get round this problem we use a spatial moving average. This method is similar to a time-series moving average, where each value is calculated from the data for the time-point in question and the points either side. For a spatial moving average we use the data for the area in question and its immediate neighbours. For some data we also need to use the data for the second-order neighbours (i.e. the neighbours of the neighbours). This is illustrated in figure 1 where we are calculating the value for the area in red from the data in the red and orange areas or from the red, orange and yellow areas if numbers are very small.

The resulting values are then treated as point data by using the population weighted centroid of the OA – the central point of where people actually live within the OA. A “nearest neighbour” smoothing algorithm was then applied which essentially interpolates values in between all these point data, smoothing out the transitions between areas as illustrated in figures 2 and 3. In the resulting surface the value at the actual centroids is the exact value of the data relating to the OA.

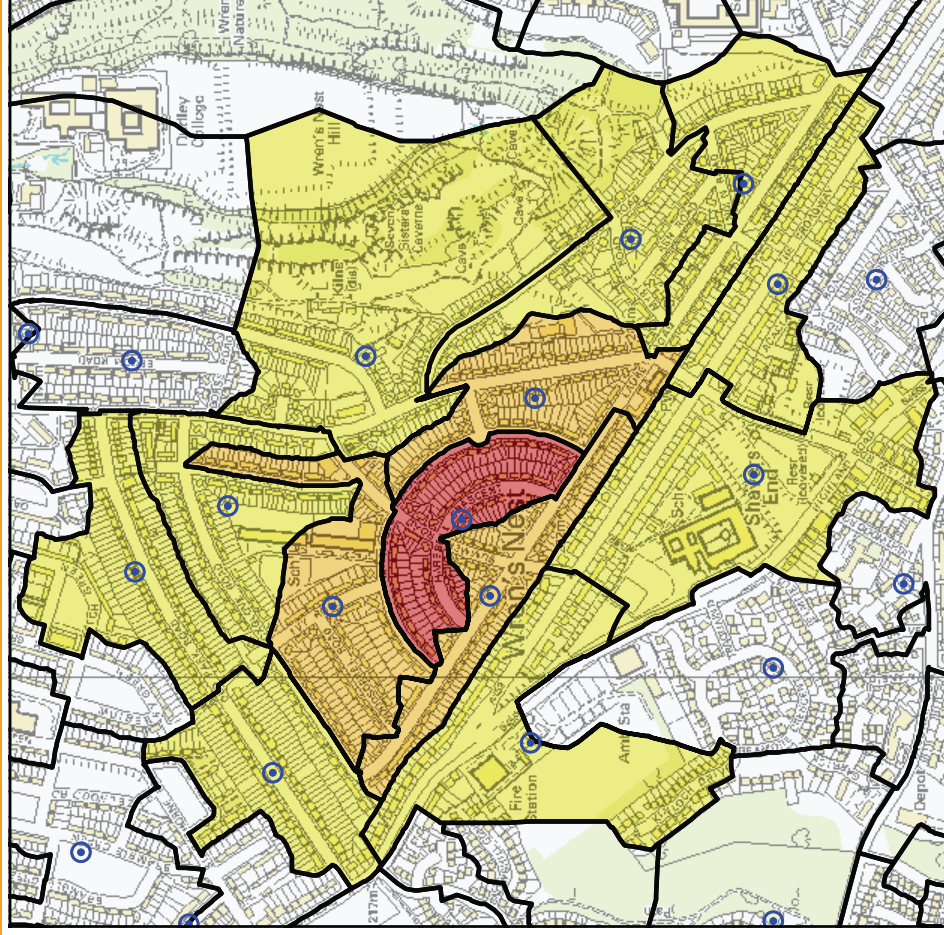
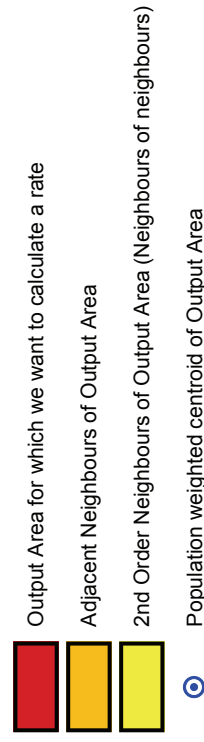


Figure 1



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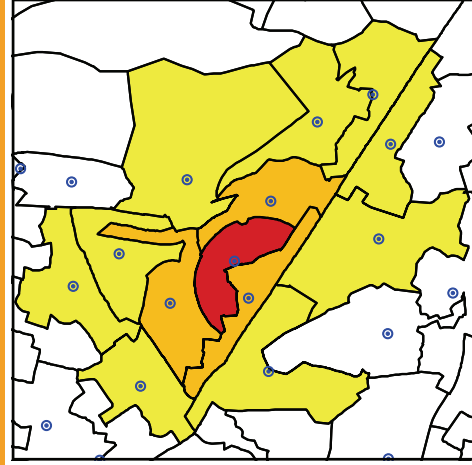


Figure 2

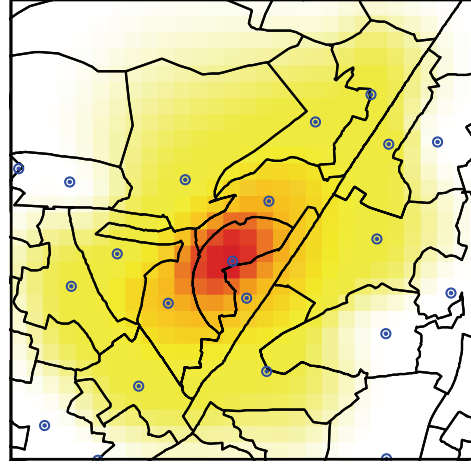


Figure 3

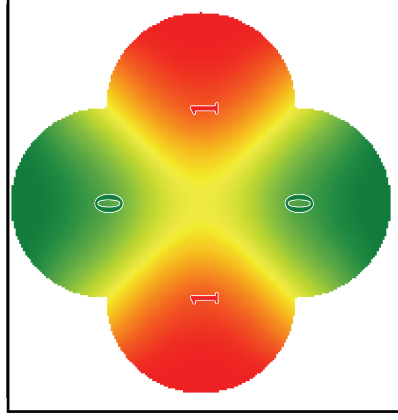


Figure 4

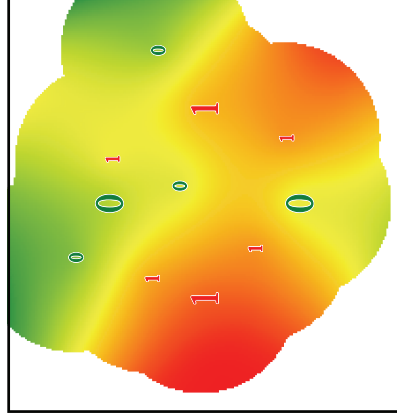


Figure 5

Point data surface maps

All the surface maps in the report that use the Dudley Health Survey 2004 data have been derived from point data. That is that each respondent to the survey is plotted on the map according to their postcode. All the measures used are dichotomous variables – that is variables that have only two possible outcomes (either yes or no). So, for example, on the lifestyle map of obesity the variable value is either “yes” – i.e. the person is obese, or “no” – the person is not obese. We then apply the value 1 to “yes” and 0 to “no”.

What this gives us is points all over Dudley with either a 0 or a 1 associated with them. In order to convert these to a surface we apply a spatial algorithm called inverse distance weighted interpolation. This method gives lower weighting to a point the further from that point you get. Figure 4 shows 4 data points with their value of 0 or 1 and the resulting surface generated from them. Here the value 1 is red, 0 is green and 1/2 is yellow. The value exactly in the middle between the points is 0.5. The closer to the points with value 1 you go the more the surface colour changes from yellow to red.

What the surface represents then is the proportion of yeses. With red being 100%, yellow 50% and green 0%. Figure 5 shows the same four points, but with some additional points, showing how the surface forms around the points. The cluster of three 1s results in an area where the underlying percentage is close to 100%, whereas where there are both 1s and 0s, the surface is yellow representing 50%.



Excess Winter Mortality

Excess winter mortality is defined as deaths occurring in December-March minus the average of the deaths occurring in the preceding August to November and the following April to July. All cause all age deaths were combined for the winter and summer periods of 2002 to 2006. The excess winter mortality ratios were calculated for each output area and a surface map produced.

Direct Standardisation

A directly standardised rate is the rate of events that would occur in a standard population, if that population were to experience the event characteristics of the population of interest. Generally the population that is used as the standard is the European Standard Population. If we were to calculate directly age standardised rates (DASRs) with Dudley as our population of interest, we would apply the mortality rates or hospital admissions rates that occurred in Dudley, to the standard population. This would give us the expected number of deaths or admissions that would occur, if the standard population had the same age structure as Dudley. Direct standardisation using the same standard population is the preferred method to use when comparing a number of populations against each other.

Quality Outcome Framework (QOF) Disease Prevalence Maps

The QOF database provides the disease register (number of patients with a particular disease) and the patient register by GP practice. From this disease prevalence can be estimated (number of people recorded on the register/registered population). These data are not available at any level of geography so to produce a disease prevalence map it is necessary to estimate the disease registers using national prevalence figures and the GP patient register which is available by super output area (SOA) (National Health Applications & Infrastructure Services Exeter System, (NHAIS)).

For each disease the number of patients on the respective register was adjusted for Dudley residents as the QOF database holds all patients registered with a Dudley GP regardless of their residence, whereas the NHAIS has the number of patients registered with a Dudley GP and who live in Dudley Borough.

The NHAIS population was tabulated by age band (to correspond to the age bands used in each of the National Prevalence data), sex, SOA and GP practice.

The National Prevalence figures for each disease by age band and sex were obtained from the Health Survey for England.

The expected number of patients for each disease was calculated from the National Prevalence data and the NHAIS tabulated popula-

tion. These were then adjusted by the overall practice prevalence.

The disease prevalence for each SOA was then calculated as the adjusted number on the register divided by the NHAIS population.

The limitations of this methodology are:

- The QOF registers apply to the whole practice population including patients from both within and outside the borough and excludes any Dudley residents registered with a non-Dudley GP.
- Using the NHAIS database to obtain practice populations by SOA, limits the population data to Dudley residents registered with Dudley GPs.
- The National Prevalence figures are derived from the Health Survey for England and it was assumed that the Dudley prevalence's do not differ significantly from these.
- It is assumed that the disease prevalence will be the same for each SOA.

With all this considered, the methodology does provide an estimation of disease prevalence at the SOA geography level.

Cervical Screening Coverage

Cervical Screening Coverage is calculated as the number of adequates divided by the number eligible, where eligible is the resident women aged 25-64 less those women with recall ceased due to hysterectomy and adequate is the number of eligible women with an adequate test in the last 5 years.

The data were downloaded from the NHAIS Exeter database using the download Cervical Screening Statistical Download (AJ-CSSD) covering the period October 2001 to March 2007, with the age range 25 to 64, who may have a test, by postcode. In addition it was necessary to identify those women who were ceased due to hysterectomy and this was done using the Cervical Screening data download to GP's Computers (AJ-CSPG). These two files were linked via NHS number to provide the eligible and adequate test data by middle super output area.

Breast Screening Coverage

Breast screening coverage is defined as the proportion of women eligible for screening who have had a test with a recorded result at least once in the previous 3 years. Women ineligible for screening, and therefore excluded from both the numerator and denominator of the coverage calculation, are those whose recall has been ceased for clinical reasons (e.g. those who have had a bilateral mastectomy).

The data were downloaded from the NHAIS Exeter database using the download Breast Screening Statistical Download (AJ-BSSD) covering the period April 2004 to March 2007, with the age range 50 to 70, who may have a test, by postcode. Postcode was linked to middle super output area for mapping.

Small Numbers

When carrying out analysis on smaller geographical areas the number of events in question are likely to be much smaller than looking at the larger areas. Small numbers can be unstable, a small fluctuation in numbers can lead to a large fluctuation or change in the rate that has been calculated. There are a number of ways of adding stability to data. Years of data can be aggregated and trend data can be used.

Life Expectancy

The calculation of life expectancy requires two sets of data, all cause mortality and population. Both need to be in age and sex categories. The method used in this report uses data broken down by 5-year age bands, with under 1s and 0-4s being separated because the mortality patterns in these groups are very different. The calculation involves calculating the average proportion dying in each age group and the average age in that age group being applied to this proportion. For all but the last age group this average age is simply the mid-point of the group (e.g. for 60-64 year-olds it is 62.5 -

as this group includes people of age 64 years and 364 days). The final age-group is open ended and the calculation of the average age in this group is based on an assumption of an exponential distribution of deaths.



Black Country Observatory

This is the intelligence unit of the Black Country Consortium. The Black Country Observatory holds a wide range of data sources and has access to the Annual Business Inquiry data and provided the data at census 2001 ward level. The Annual Business Inquiry (ABI) is conducted in two parts: employment and financial information. The financial inquiry covers about two thirds of the UK economy i.e. production; construction; motor trades; wholesale; retail; catering; property; service trades, agriculture (part), hunting, forestry and fishing. Employment inquiry coverage is wider.

British Geological Survey (BGS)

The British Geological Survey (BGS) is the world's longest established national geological survey and the UK's premier centre for earth science information and expertise. The bedrock geology for Great Britain is available on the BGS website in the Digital Geological Map of Great Britain.

http://www.bgs.ac.uk/products/digitalmaps/data_625k.html

Department for Business Enterprise and Regulatory Reform

The website compiles VAT stocks, registrations and de-registrations by main industry groups annually.

<http://stats.berr.gov.uk/ed/>

Department of Communities & Local Government Indices of Deprivation 2007

The Index of Multiple Deprivation combines a number of indicators, chosen to cover a range of eco-

nomie, social and housing issues, into a single deprivation score for each small area in England. The Indices are used widely to analyse patterns of deprivation, identify areas that would benefit from special initiatives or programmes and as a tool to determine eligibility for specific funding streams.

<http://www.communities.gov.uk/communities/neighbourhoodrenewal/deprivation/>

Environment Agency

The Flood risk data for Dudley was supplied by the Environment Agency via a CD entitled "Flood Map and Historic Flood Map for England and Wales December 2006, Environment Agency". It is available from Environment Agency Head Office, Rio House, Aztec West, Almondsbury, Bristol, BS12 4UD. The water quality maps for the West Midlands are available at

<http://www.environment-agency.gov.uk/regions/midlands/835324/835577/1169194/1268521/>

Experian Ltd. Mosaic Public Sector

Dudley PCT currently hold a licence for Dudley data from the Mosaic Public Sector classification system.

<http://www.business-strategies.co.uk/Products%20and%20services/Micromarketing%20data/Consumer%20segmentation/Mosaic/Mosaic%20Public%20Sector.aspx>

Met Office

The maps reproduced in the report for average annual temperature, maximum annual temperature, minimum annual temperature, average annual hours of sunshine, average annual rainfall and average annual days rainfall >1mm came from the Met Office website and covered the period 1971 to

2000. The data used to produce the trend chart for annual maximum and minimum temperature came from the Historic Station Data section of the website (<http://www.metoffice.gov.uk/climate/uk/stationdata/index.html>). The three stations selected provided a triangulation of Dudley.

<http://www.metoffice.gov.uk/climate/uk/averages/19712000/mapped.html>

Ordnance Survey

The NHS has a service agreement with Ordnance Survey for the supply of geographical information to PCTs. As a result of this Dudley PCT has access to a number of mapping products which have been used in this report. The products are as follows:

OS Mastermap

This product provides information down to individual addresses, streets, and buildings, with each feature assigned a unique identifier known as a TOID@ (16 digit reference number). This makes it possible to identify unambiguously any single feature within the dataset. There are three layers, Address Layer, Topography Layer which were used in this report and Integrated Transport Network Layer which is not licensed for use by the PCT. The Address layer provides precise coordinates of postal addresses for residential and commercial properties in Dudley and provides the most up to date link between a property address and the exact location of the property. The Topography Layer is broken down into nine themes, providing large-scale topographic representation of classified land areas; buildings; roads; tracks and paths; rail; water; terrain and height; heritage and antiquities; structures; and administrative boundaries.

Meridian™ 2

Meridian™ 2 is a mid-scale vector product separated into two themes: topography and communication. The data is given at a notional scale of approximately 1:75,000. This representation is delivered through a number of layers of data, including motorways, A roads, B roads, railways, developed land use areas, hydrology and woodland.

Code-Point

Code-Point is a postal geography dataset that features a single geographically referenced point to represent each of the Postcode Units within Dudley. The Code-Point location is derived from the precise coordinates of addresses sharing the same Postcode Unit in Ordnance Survey's large-scale address database used to create the OS MasterMap Address Layer. This in turn is created and maintained from Royal Mail's PAF. Code-Point has been used to geocode post-code data from the Dudley Health Survey 2004 and for data derived from the NHAIS Exeter System.

OS Street View™

OS Street View is a 1:10,000 scale street-level colour digital raster mapping that has been specifically designed to cartographically emphasise road carriageways, road names and their DfT numbers. Major public buildings are also highlighted and annotated. OS Street View has been used as a backdrop to the flood risk areas.

Dudley MBC

Directorate of Adult, Community and Housing Services, Supporting People and Housing Strategy

The directorate commissioned DCA to carry out a Housing Needs and Demand Survey in 2005 and they supplied the survey data, for analysis of housing type and tenure by 2004 electoral ward. The report is available on the Dudley MBC website - Housing Needs & Demand Study 2005, DCA

<http://www.dudley.gov.uk/housing/strategies--policies/key-findings>

GMIS Unit

The corporate Geographical Management Information Solutions (GMIS) system supports the use of spatial information within the borough. The unit has provided a wide variety of spatial information for this report mainly from the Dudley Adopted Unitary Development Plan including nature sites, travel routes, housing renewal, green and open spaces, retail centres and play areas.

<http://online.dudley.gov.uk/about/dudleyudap/>

Strategic Information & Systems Team, Childrens Services

The Directorate of Children's Services is the part of the Council with lead responsibility for services to children and young people. The Directorate is focused on improving the outcomes for all children and young people in Dudley. The work is based on the framework within the Children's Act 2004 and Every Child Matters - Change for Children. The Strategic Information & Systems Team supplied the student performance data for KS1, KS2,

KS3 and KS4 at the Middle Super Output Area geography.

Strategic Research & Intelligence Team, Chief Executives

Community Geography, Dudley's Community geography is the result of member consultation carried out in 2005 in response to a need to create descriptions of recognisable communities at neighbourhood level, rather than relying on the larger wards, or anonymous super output areas. There are 83 community areas.

Dudley PCT

Dudley Health Survey 2004

Dudley Health Survey 2004 was carried out via a postal questionnaire sent to residents registered with Dudley GPs. The survey design was based on a random sample from the Family Health Services Register, stratified by 2001 ward, age and sex. Post-stratification of the respondents was undertaken to the 2001 census population using age, sex, Index of Multiple Deprivation (IMD) 2004 quintiles and ethnicity. Survey design and subsequent statistical analysis was carried out using R version 2.4.0. 16,500 questionnaires were mailed out on 20th October 2004 and 7100 valid questionnaires were returned by 21st January 2005 giving an overall response rate of 44%.

Dudley Child Health System, childhood obesity surveillance data 2006-07

Established in 2005, the National Child Measurement Programme (NCMP) weighs and measures children in reception (aged 4 to 5 years) and year 6 (aged 10 to 11 years) to assess overweight and obese levels. The Department of Health (DH) and

Department for Children Schools and Families (DCSF) have responsibility for the NCMP. Locally the data are collected, checked, validated and stored on the Child Health System before being uploaded to the National register.

National Health Applications & Infrastructure Services (NHAIS)

The NHAIS Exeter System is a software suite used by all Health Authorities in England and Wales for the administration of cancer screening call/recall programmes and to deal with patient registration and contractor payments. This data source was used for Dudley resident population registered with a Dudley GP and to calculate both Cervical and Breast screening coverage.

Quality Management and Analysis System (QMAS)

The Quality and Outcome Framework data for each GP practice in the borough is recorded by QMAS. An annual download of these data at PCT and GP Practice level is available from the Information Centre.

<http://www.ic.nhs.uk/our-services/improving-patient-care/the-quality-and-outcomes-framework-qof-2006/07/qof-2006-07-data-tables>

Office for National Statistics (ONS)

Population Estimates

The Office for National Statistics (ONS) produces annual estimates of the resident population as at 30 June each year. The population estimates tell us how many people live in the UK as a whole and in each local area and pro-

vide information on age-sex structure of the population in these areas by age and sex.

<http://www.statistics.gov.uk/statbase/Product.asp?vlnk=601>

The most authoritative population estimates come from the Census, which takes place every 10 years in the UK, the most recent being held in April 2001. Population estimates from the Census are updated each year to produce mid-year population estimates for the years in between Censuses.

Mid-year population estimates are made for the population resident on 30 June of the reference year. The starting point for the estimate is the resident population on 30 June in the previous year. This population by single year of age is then aged on by one year (for example all three-year-olds become four-year-olds one year later). Those who have been born during the 12 month period are then added on to the population and all those who have died during the 12 month period are removed according to their age, sex, and their usual place of residence. The other factor to be taken into account in estimating the national population is the movement of people in and out of the UK (international migration) and movements within the UK (internal migration) must also be accounted for.

Annual District Deaths Extracts (ADDE)

Mortality data were sourced from the ADDE. The ADDE is supplied by the ONS on an annual basis, and is based on details from the medical certificate of cause of death and other relevant particulars supplied by informants (usually relatives) to local Registrars. The process of death

registration in England and Wales is very complex and governed by a variety of laws.

Most mortality statistics including those presented within this report are based on the 'underlying cause of death'. This is defined by the World Health Organisation as:

- a) the disease or injury that initiated the train of events directly leading to the death; or
- b) the circumstances of the accident or violence that produced the fatal injury.

Annual District Births Extract (ADBE)

The ADBE is a database supplied to Dudley by the Office for National Statistics on an annual basis, and is based on details from the birth certificate released by local Registrars. The ADBE contains among other things, date of birth of baby, the mother's area of residence and the birth weight of the baby. The data also contain details of stillbirths.

ONS Area Classification for Output Areas 2007

The 2001 Area Classification of output areas is used to group together geographic areas according to key characteristics common to the population in that grouping. These groupings are called clusters, and are derived using 2001 population census data. This is a new classification produced using the same principles but a different statistical methodology from that used to produce the other area classifications. (http://www.statistics.gov.uk/about/methodology_by_theme/area_classification/oa/default.asp)

Nomisweb

Nomisweb gives access to the most detailed and up-to-date labour market statistics from official sources for local areas throughout the UK. Data sources include the Labour Force Survey (LFS), claimant count, Annual Business Inquiry (ABI), New Earnings Survey (NES), and the 2001, 1991 and 1981 Censuses of Population.

www.nomisweb.co.uk

Neighbourhood Statistics

Air quality data at middle super output area as collected by the Department of the Environment, Food and Rural Affairs (DEFRA).

www.neighbourhood.statistics.gov.uk

West Midlands Cancer Intelligence Unit (WMCIU)

Health Geographical Information Systems Service

The Health GIS Service currently operates within the West Midlands Cancer Intelligence Unit where it is able to integrate health, socio-demographic and environmental data for use in epidemiological studies and health service analyses. The service makes use of geographic and non-geographic data sets available nationally and locally to commerce and the academic community. The service is able to respond to ad hoc requests for maps and information and can provide spatial analytical services to support research initiatives within the NHS. The service provided walk-zone polygons for Dudley Health Services (See Annex 1 for details of the methods used to calculate walk-zones).

Cancer Registrations

In the UK cancer registries were set up during the period 1945 to 1965. Their purpose is to evaluate the risk of and survival from cancer. Twelve cancer registries now give complete population coverage of England, Wales, Scotland and Northern Ireland. Each registry is population based so that the information provided gives an unbiased profile of cancer across the whole catchment population. Data are collected on all patients whether they are treated in hospitals (acute, long stay, hospice or private) or by their general practitioners. Cancer incidence is the number of new cases that occur in a defined population within a specified time period. In order to access this information it is necessary to register on the WMCIU website

<http://www.wmpho.org.uk/wmciu/CIS4.htm>

West Midlands Public Health Observatory (WMPHO)

Deaths by sex, age and underlying cause for output areas neighbouring the Dudley borough boundary, 2002-2006 were supplied by WMPHO from the ONS Annual District Deaths Extract (See above).

Hospital Episode Statistics (HES)

WMPHO has access to an extract of HES data for the West Midlands Region going back 10 years, as well as access to an on-line system (HES2) for the whole of England (although this does not contain sensitive data items e.g. post-code, date of birth and other potential patient identifiers). Admissions data were accessed for the Super Output Areas of Dudley. These data

are useful to monitor morbidity (illness) within populations. A measure that is used is Finished Consultant Episodes (FCEs). When a patient is admitted to hospital they are allocated to a consultant for care. Once the patient leaves the care of that particular consultant, this is called an FCE. This can be said to be a measure of patients receiving care for particular conditions.

There are a number of things that need to be considered about FCEs. There is an element of over-counting using FCEs. This is because a patient can be admitted to hospital and then allocated to a consultant, however they can then be assigned to or transferred to another consultant. This transfer would then be considered a new episode. There would be an FCE for the first consultant and once care is completed with the second consultant this would be another FCE. FCEs are not admissions to hospital. If admissions were considered in the above example there would only be one admission but two FCEs.

Another factor that needs to be considered when using these data are their accuracy or quality. There may be a variation in completeness of hospital records, the accuracy of coding of procedures and general coding quality. This is an issue both in terms of comparing areas using HES but also when comparing trend data.





| Cause | ICD 10 Codes |
|---|-------------------------------------|
| All Circulatory Diseases | I* |
| Hypertensive Disease | I10 to I15 |
| CHD | I20 to I25 |
| Acute Myocardial Infarction | I21 to I22 |
| Heart Failure | I50 |
| Stroke | I60 to I69 |
| All Cancers | C* |
| All Respiratory Diseases | J00 to J99 |
| COPD | J40 to J44 |
| Schizophrenia | F20, F21, F23.2, F25 |
| Neuroses | F40 to F48 |
| Accidents ^a | V01 to X59 |
| Suicides and Undetermined Injury | X60 to X84, Y10 to Y34 except Y33.9 |
| Chronic Conditions Usually Managed in Primary Care Includes | J45 to J46 E10 to E14 |
| •Asthma •Diabetes Mellitus | |
| Alcohol Related Diseases Includes | F10 |
| •Mental and behavioural disorders due to alcohol •Alcoholic cardiomyopathy •Chronic liver disease and cirrhosis •Accidental poisoning by exposure to alcohol | I42.6 K70, K73, K74 X45 |

a The definition for hospital admissions for accidents is ICD10 S00 to T98 AND an external cause code V01 to X59 or Y40 to Y84

| Cause | ICD 10 Codes |
|--|--|
| Smoking Related Diseases Includes proportions ^a of: | C14.0, C32 C15 C16 C25 C33 to C34 C54 C67 C64 C80 C92 G20 I20 to I25 I51.5 I60 to I69 I70 I71 J18 J44 K25 to K26 |
| •Upper Respiratory Tract Cancer (73%) •Oesophageal Cancer (71%) •Stomach Cancer (27%) •Pancreatic Cancer (29%) •Lung Cancer (87%) •Endometrial Cancer (-20%) ^b •Bladder Cancer(40%) •Kidney Cancer (28%) •Cancer of Unspecified Site (20%) •Myeloid Leukaemia (16%) •Parkinson's Disease (-45%) ^b •CHD (9%-58%) ^c •Myocardial Degeneration (20%) •Cerebrovascular Disease (2%-55%) ^c •Atherosclerosis (19%) •Aortic Aneurism (64%) •Pneumonia (19%-40%) ^c •COPD (86%) •Stomach/Duodenal Ulcer (56%) | |

a From studies, it has been calculated that proportions of these diseases are attributable to smoking. The percentages shown are for both sexes, actual figures used in this report differ for males and females.

b There is a negative association between smoking and Endometrial Cancer and Parkinson's Disease, indicated by the negative percentage attribution.

c The proportion of deaths from CHD, cerebrovascular disease (stroke) and pneumonia attributable to smoking varies with age group as well as sex.

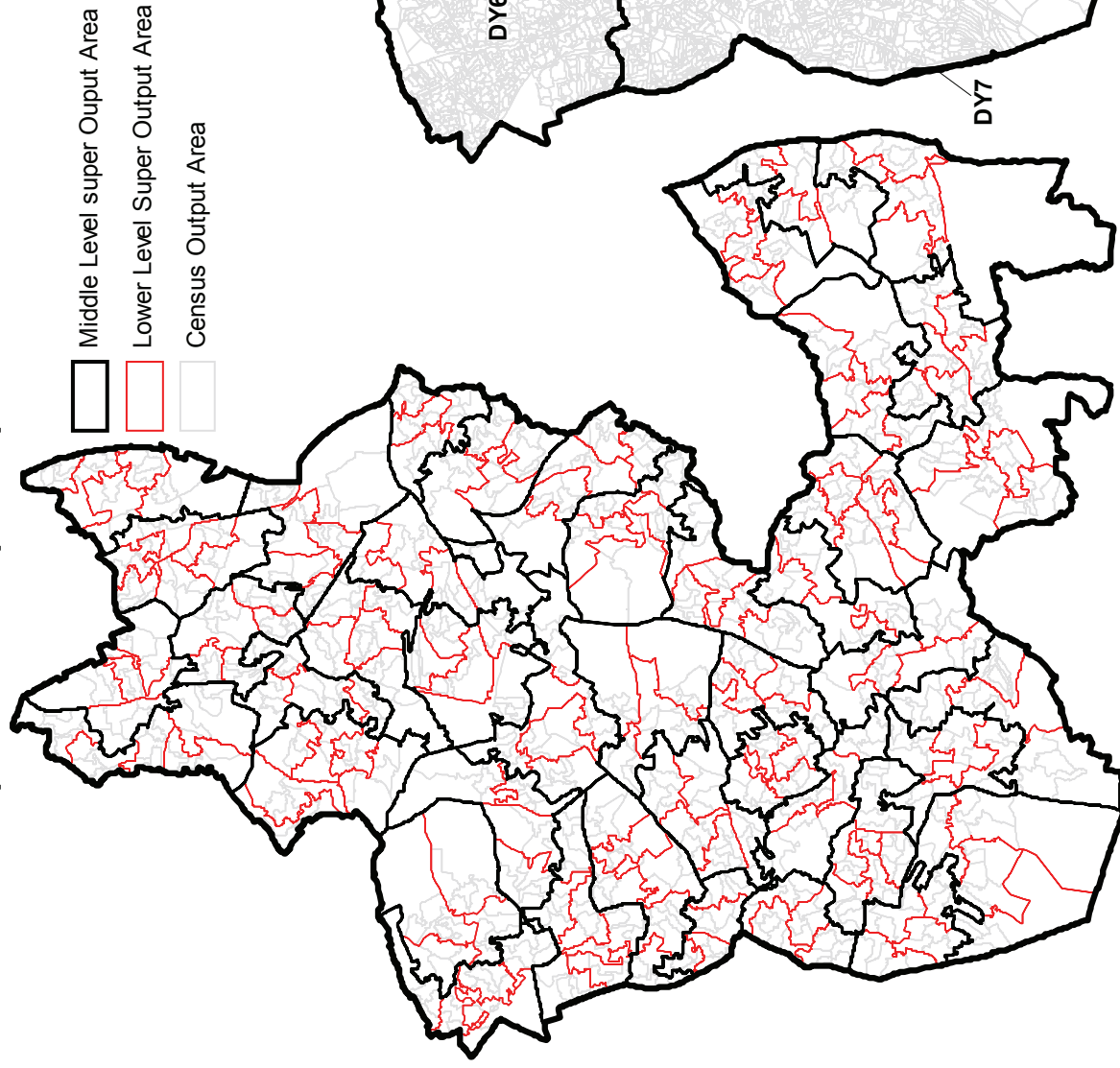
Electoral Wards 2001



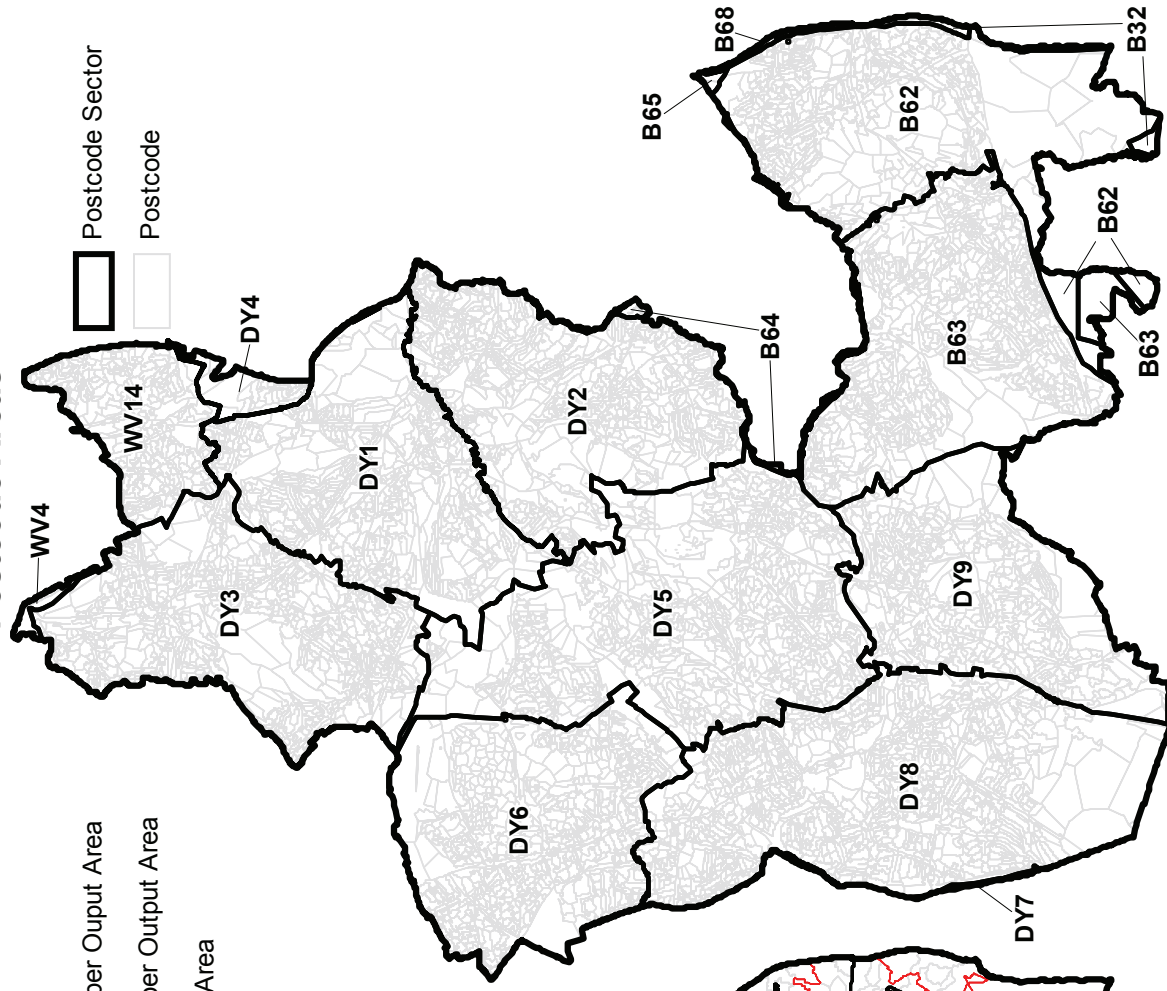
Electoral Wards 2004



Census Output Areas & Super Output Areas



Postcode Areas



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