

Chapter 5

Healthcare

Good population health outcomes, including reducing health inequalities, depend not only on preventing communicable disease, and improving health through promoting positive health behaviours and healthy environments, but also on the quality and accessibility of healthcare services provided by the NHS.

The NHS contribution to improving outcomes and reducing mortality comes from its role in ensuring comprehensive access to services, including early diagnosis, prompt high quality, safe effective treatment and care, and in providing effective preventive services such as screening, immunisation, and smoking cessation. The health service also has an essential role in reducing health inequalities through providing equity of access to health services on the basis of need.

Whereas most of the increase in life expectancy in the first half of the 20th century has been attributed to improved living conditions, nutrition and other public health measures, John Bunker¹ estimated that in the second half of the 20th century healthcare contributed approximately half to the increase in life expectancy.

This chapter explores the contribution health and social care make to improving the health of the population of England. The topics and indicators are chosen to reflect the role of health and social care services in improving the health of populations. While overall improvements in healthcare quality have contributed to better health and life expectancy, this chapter does not address quality issues. Rather it addresses trends in mortality that are amenable to healthcare, preventive activities that the NHS undertakes and access to health and social care, with a specific focus on equality of access by different population groups. It identifies and celebrates success but also highlights where there is unwarranted variation in access or outcome with a call for action to reduce the variation. The NHS Atlas of Variation² series, which explores unexplained and unwarranted variations in healthcare, in order to focus attention on the value and quality of care provided at a local level, looks in considerable depth at health service delivery and outcome for a range of conditions and is a valuable resource therefore to support and complement the topics in this chapter.

The outcome indicators reviewed in this chapter are mortality amenable to health care and cancer survival. Over the last 10 years, the avoidable mortality rate has fallen. The mortality rate for conditions amenable to healthcare has declined faster than the preventable mortality rate. Between 2001 and 2010, avoidable mortality overall decreased by 25%, mortality considered amenable to healthcare by 35% and preventable mortality by 23%. Cancer survival is an important quality marker. Survival in England has improved over the past decade for all cancers. Despite this, survival for many cancers

remains poor in comparison with other developed countries, with delay in diagnosis being a key reason for poor survival rates. Lung cancer in particular has one of the poorest five year survival rates with even the best English survival rates well below the European average.

Since 2000, a number of new preventive and screening programmes have been introduced such as NHS smoking cessation services, bowel cancer screening, newborn bloodspot screening, diabetic retinopathy screening, and routine human papilloma virus (HPV) immunisation for females aged 12-13 years. The past few years have seen an improvement in coverage of routine childhood (pre-school) immunisations, particularly in London, where coverage has been lower historically. Coverage of breast and cervical screening programmes has also improved. Other successes include more than 380,000 people in England successfully quitting smoking with NHS Stop Smoking Services in 2010/11, and early access to maternity services, with over 80% of pregnant women accessing timely services in all English regions except London.

Inequality in access, which drives inequalities in outcomes, remains a major challenge. A number of indicators are explored in this chapter in relation to inequality in identification and access by geography, age, ethnicity and deprivation. There are marked geographic variations in immunisation uptake of measles, mumps and rubella (MMR) in young children, HPV in females aged 12-13 years, and influenza in older people. Access to specialist services such as alcohol treatment, drug use services, and obesity operations vary across England. For patients with long term conditions such as coronary heart disease, chronic obstructive pulmonary disease (COPD), diabetes, renal disease, and dementia, registrations in general practice, when compared with expected prevalence, show marked under diagnosis. There is considerable geographic variation in renal replacement therapy for chronic kidney disease.

Deprivation is another important factor underlying access and uptake of services. Mothers from deprived areas are less likely to breastfeed at 6 to 8 weeks. Emergency admissions show a strong relationship with deprivation, with more than a twofold difference between the most and least deprived quintiles of PCTs, and for COPD there is a fourfold difference. For people with Types 1 and 2 diabetes, achievement of target glucose control is lower with increasing social deprivation. For severe osteoarthritis, joint replacement is highly effective, but people in deprived areas benefit less, with fewer operations performed and reduced health gain from them. Even in the place of death, deprivation has an influence, with fewer people dying in their usual place of residence in deprived areas.

Improving access to, and promoting the use of, appropriate community, primary, and social care can help reduce costs associated with treating and managing long term conditions. For example, in 2009/10, almost half the people with diabetes did not receive the expected standards of care in primary care

and many are not being identified early, which is essential for effective control of diabetes.

Reducing emergency admissions for long term conditions is a key outcome for the NHS, resulting in less inappropriate use of clinical resources and improving patient experience. Emergency admission rates at primary care trust level, for both chronic and acute conditions usually managed in primary care, show an approximate four-fold range. Effective management and treatment in an ambulatory care setting, particularly in primary care, will reduce emergency admissions.

Where there is variation in access or outcome between different population groups, the contributory factors include delayed presentation, delayed diagnosis, and delayed entry into care. Improvement in access to health care services and early detection and diagnosis improve outcomes, reduce unwarranted variations, and reduce costs. For example, the percentage of women who access maternity services late could be reduced through targeting vulnerable and socially excluded groups, and breastfeeding rates could be improved through peer support and education supported by health professionals. Good glucose control can be achieved in people with diabetes if everyone with diabetes is identified early and receives care to the expected standards. Monitoring and evaluation provides an assessment of the quality and performance of preventive services and healthcare and is essential to understanding the benefits and harms resulting from different rates of access and provision. Much unwarranted variation can be addressed by establishing population based systems of care, and applying evidence based patient pathways.

¹ Bunker, J. P. "The role of medical care in contributing to health improvements within societies." *Int.J.Epidemiol.* 30 (2001): 1260-63.

² QIPP Rightcare. The NHS Atlas of Variation in Healthcare: Reducing unwarranted variation to increase value and improve quality. London 2011 <http://www.rightcare.nhs.uk/index.php/nhs-atlas/>

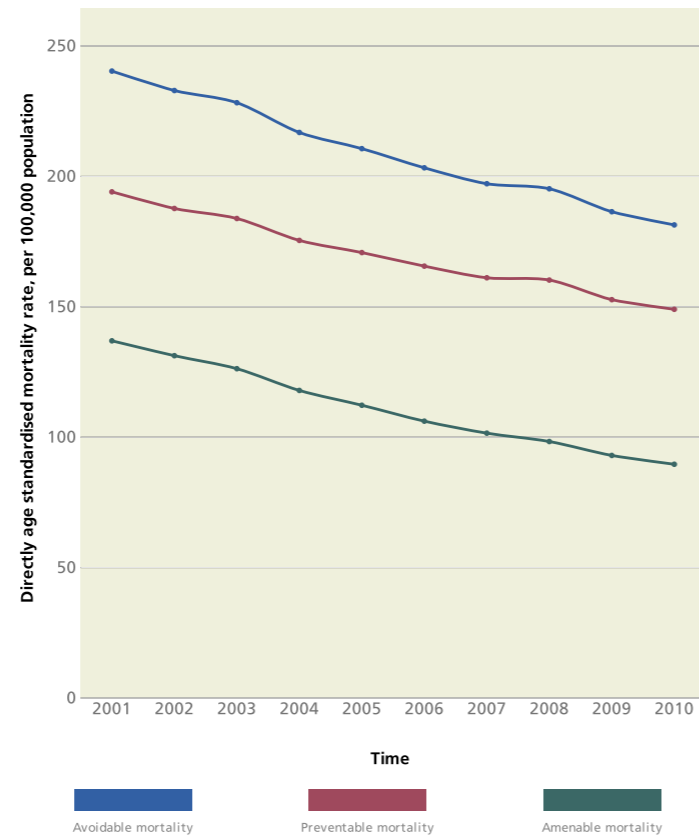
Understanding which deaths are potentially avoidable allows an assessment of the quality and performance of both healthcare and public health policies. Deaths amenable to healthcare are those that could be avoided by good healthcare, preventable deaths are those that could be avoided by public health interventions, and avoidable deaths are those that are considered either preventable or amenable.

In 2001, mortality due to causes considered avoidable represented approximately 26% of all deaths registered in England. This proportion decreased slightly over the period 2001–10 to almost 24% of all deaths in 2010.

Between 2001 and 2010, mortality considered amenable to healthcare decreased by 35%, preventable mortality by 23%, and avoidable mortality by 25%. In 2010, avoidable mortality varied between the regions of England and the rate for men and women is highest in the North West, and lowest for men in the East of England and for women in the South West.

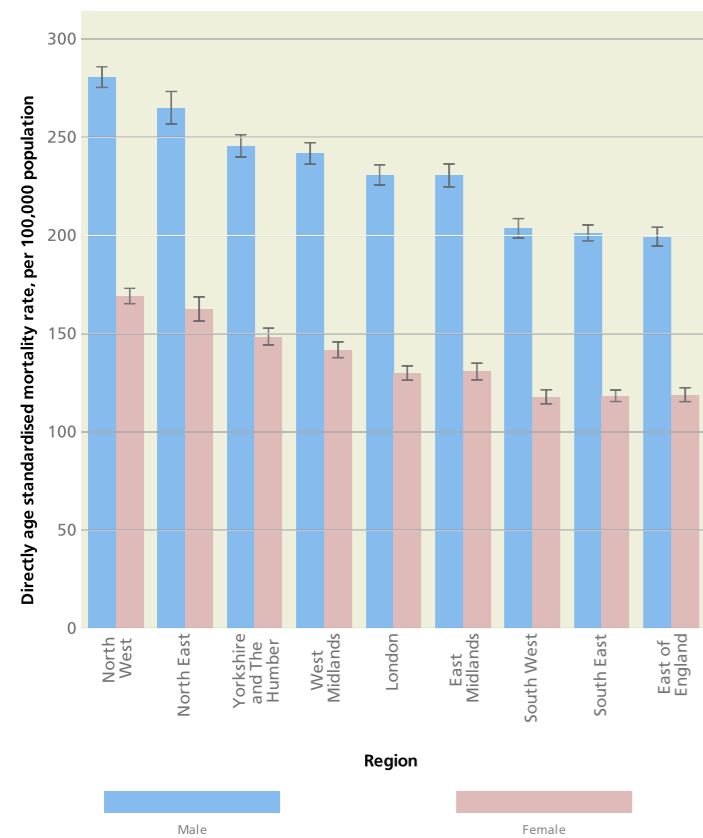
Interpretation of these statistics is not straightforward, but reduction in mortality amenable to healthcare appears to have made a contribution to the fall in overall mortality over the last decade. However in 2010 there were still 52,880 deaths amenable to healthcare that potentially could have been avoided.

Trend in mortality due to causes considered avoidable, England, 2001 to 2010



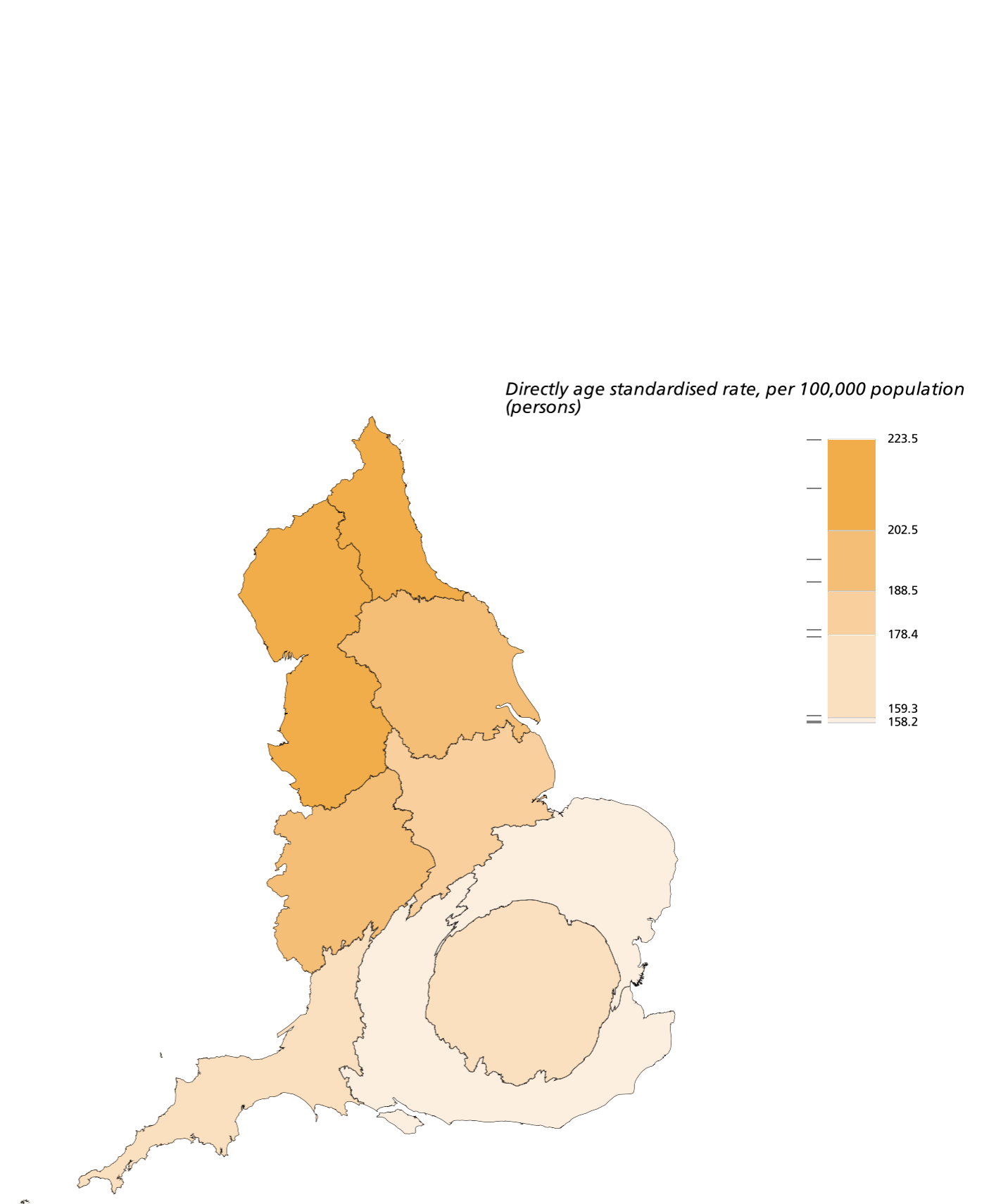
Source: Death registrations and 2001 to 2010 population estimates, ONS.

Mortality due to causes considered avoidable, by Region, England, 2010



Source: Death registrations and 2010 population estimates, ONS.

Mortality due to causes considered avoidable by Region, England, 2010



Source: Death registrations and 2010 population estimates, ONS.

Cancer survival in England has improved over the past decade. Despite this, survival for many cancers remains poor in comparison with other developed countries. Late diagnosis is the major factor underlying the poor survival rates in England.

The International Cancer Benchmarking Partnership has shown that survival improved during 1995–2007 for lung, colorectal, breast (women) and ovarian cancers in all areas, but remained higher in Australia, Canada, and Sweden, than in England.¹ This was particularly so in the first year after diagnosis and for patients aged 65 years and older. International differences narrowed at all ages for breast cancer, but less so or not at all for the other cancers.

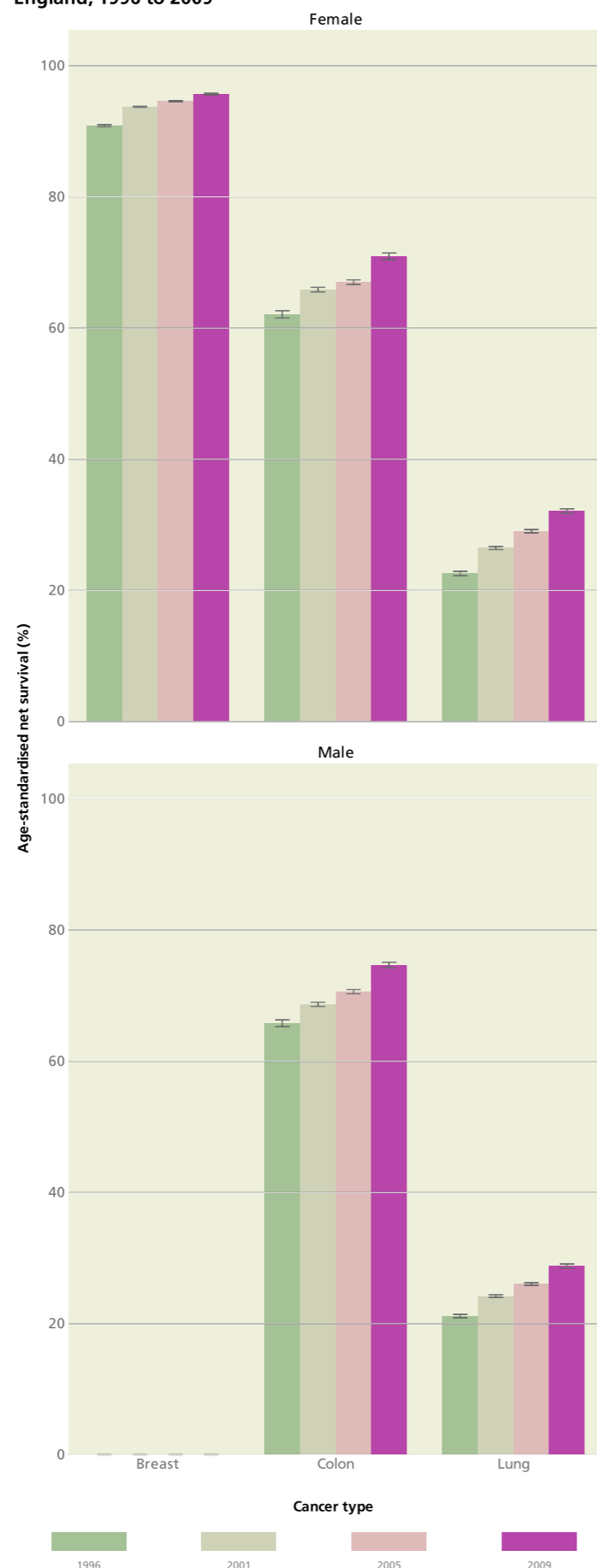
Geographic inequalities in cancer survival are also evident within England, with a clear north-south gradient in 1996 that was somewhat less marked in 2009.

One and five year survival rates have improved for cancers of the breast, colon and lung over the last decade.

Lung cancer still has one of the poorest five year survival rates (8.8% in women, 7.3% in men), with even the best English survival rates well below the European average. This is because more than two thirds of patients are still diagnosed at a late stage when curative treatment is not possible.

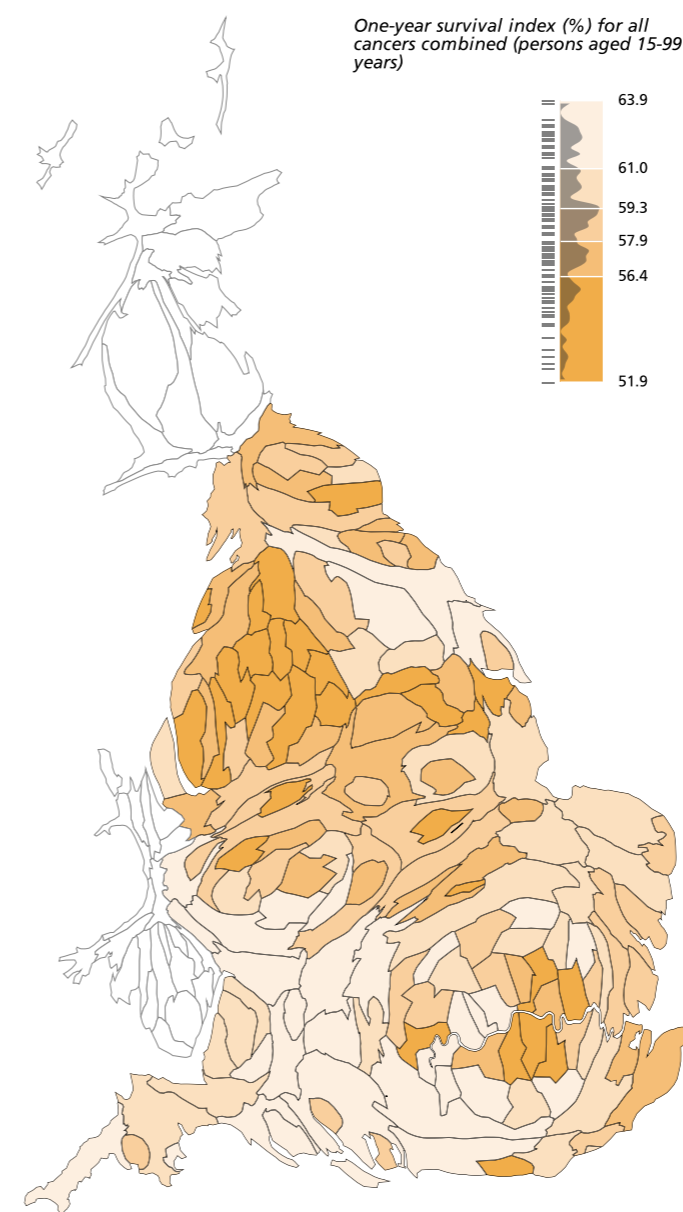
¹ Coleman MP, et al, (2011). 'Cancer survival in Australia, Canada, Denmark, Norway, Sweden, and the UK, 1995–2007 (the International Cancer Benchmarking Partnership): an analysis of population-based cancer registry data'. *The Lancet*, vol 377, no 9760, pp 127–38.

Trend in one-year age-adjusted net survival for adults diagnosed with breast, colon and lung cancers by year of diagnosis and sex, England, 1996 to 2009



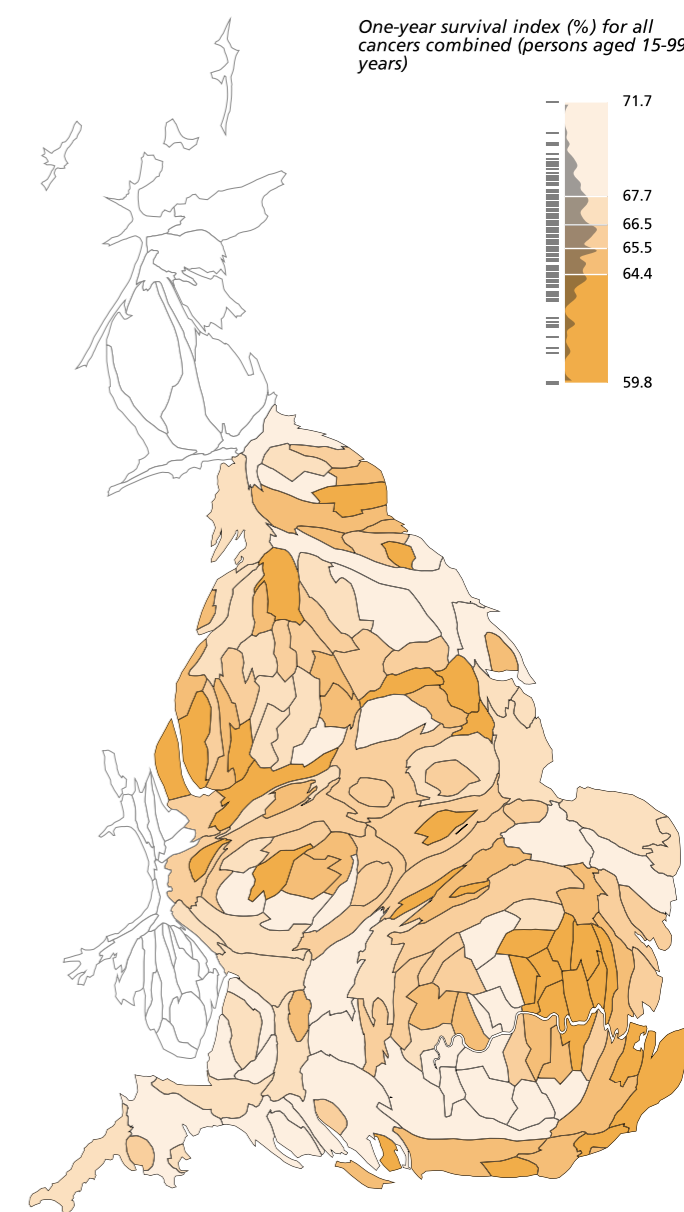
Source: ONS and the London School of Hygiene and Tropical Medicine. (Provided by NCIN & UKACR); Note data on breast cancer survival for males not shown

One-year survival index for all cancers combined by primary care trust, England, 1996



Source: ONS and the London School of Hygiene and Tropical Medicine. (Provided by NCIN & UKACR)

One-year survival index for all cancers combined by primary care trust, England, 2009



Source: ONS and the London School of Hygiene and Tropical Medicine. (Provided by NCIN & UKACR)

“Immunization is widely recognized as a proven tool for controlling and possibly eradicating disease and remains one of the most cost effective public health interventions” (World Health Organization). The national immunisation programme, which is shaped by advice from the Joint Committee on Vaccination and Immunisation, offers protection against a wide range of diseases/infections: diphtheria, tetanus, pertussis, polio and Haemophilus influenzae type b (Hib), meningococcal group C, pneumococcal disease, measles, mumps and rubella, hepatitis B, tuberculosis, cervical cancer caused by certain human papilloma viruses (HPVs) and influenza. Immunisations are targeted to specific age or clinical risk groups and success depends on high coverage in relevant groups.

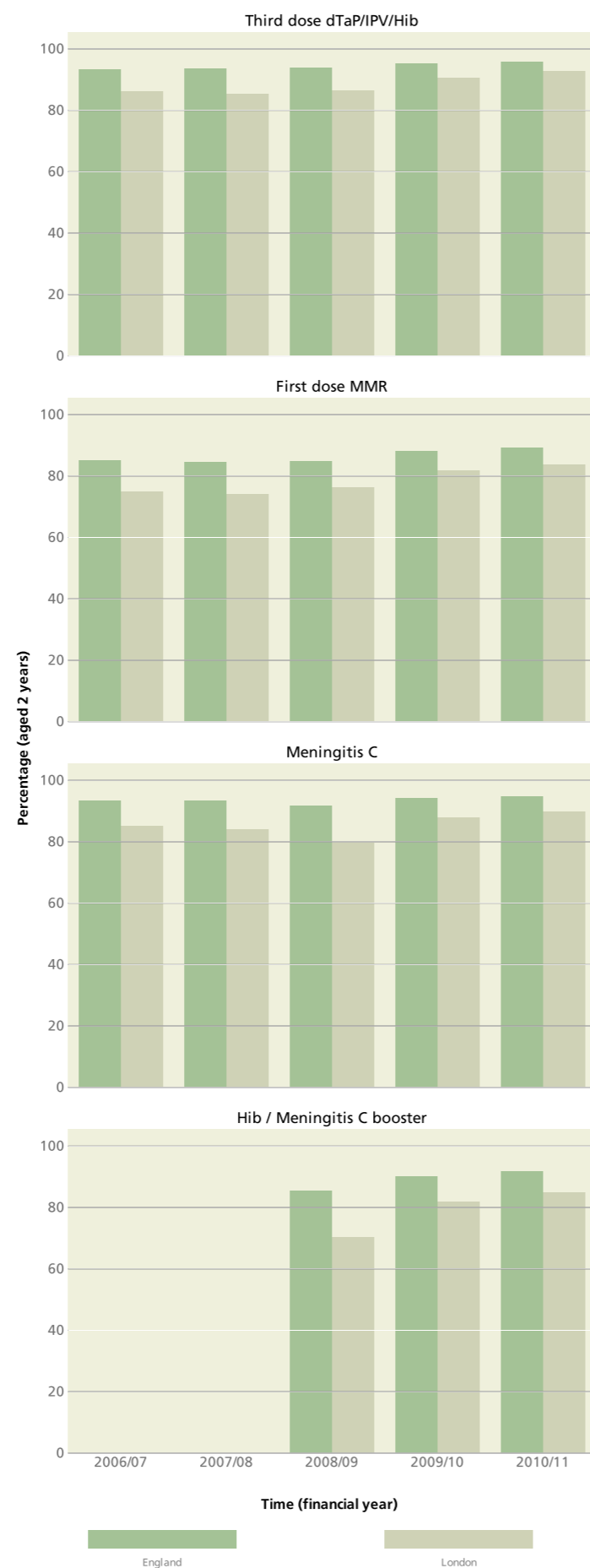
Coverage is the proportion of the target population that has been immunised. There is improving coverage of routine childhood (pre-school) immunisations, particularly in London, where coverage has been lower historically. Routine HPV immunisation for females aged 12-13 years has been successfully introduced; 80.1% coverage in the first year (2008/09), 76.4% coverage in 2009/10 and 84.2% coverage in 2010/11.

There is geographic variation in coverage as demonstrated by MMR immunisation of young children and HPV immunisation of young females. Influenza immunisations also show geographic variation in those aged 65 years and older and particularly in those aged six months to under 65 years in clinical risk groups for severe disease.

Worryingly, there is lower influenza immunisation coverage in clinical risk groups aged under 65 years compared with all those aged 65 years and older. The service has been set a challenging target of achieving 70% coverage in 2012/13, and 75% in 2013/14. It is important that we significantly increase vaccine coverage among this population. Evidence from research indicates effectiveness of ten simple steps to achieve high influenza vaccine coverage e.g. accuracy of lists of patients in risk groups, ensuring patients are contacted with an invitation to be vaccinated.¹

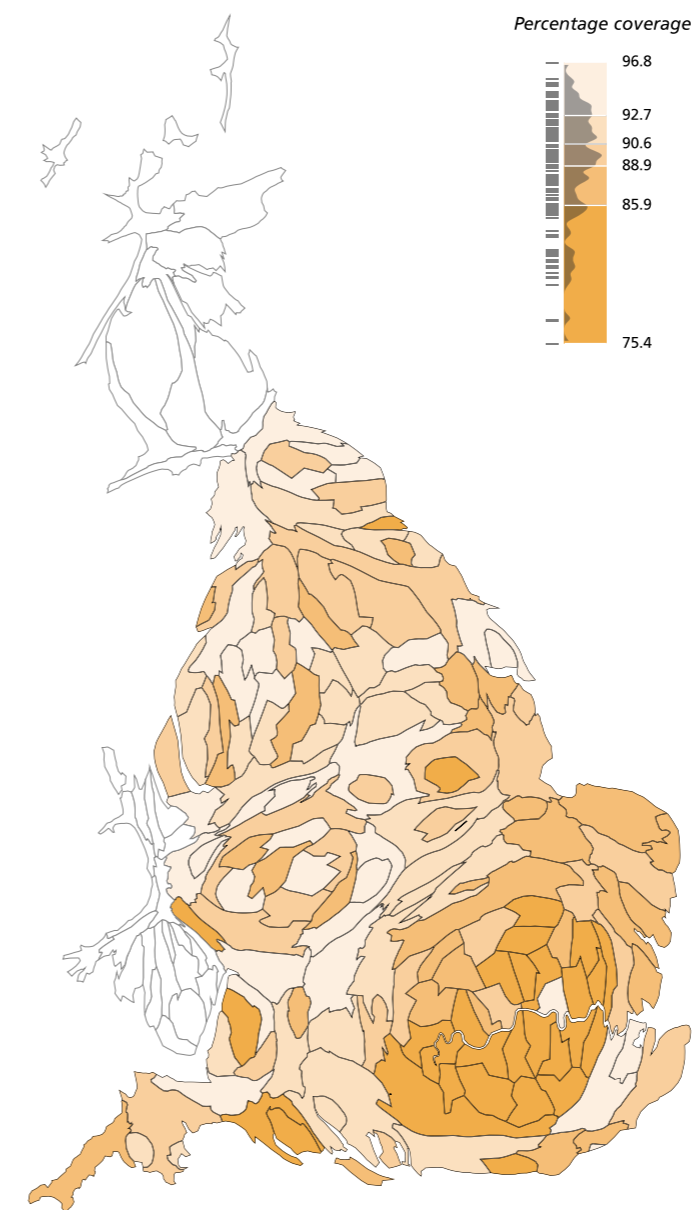
¹ <http://www.dh.gov.uk/health/2012/05/flu-vaccination-programme-2012-13/>

Trend in childhood vaccination coverage at 2 years of age, England and London, 2006/07 to 2010/11



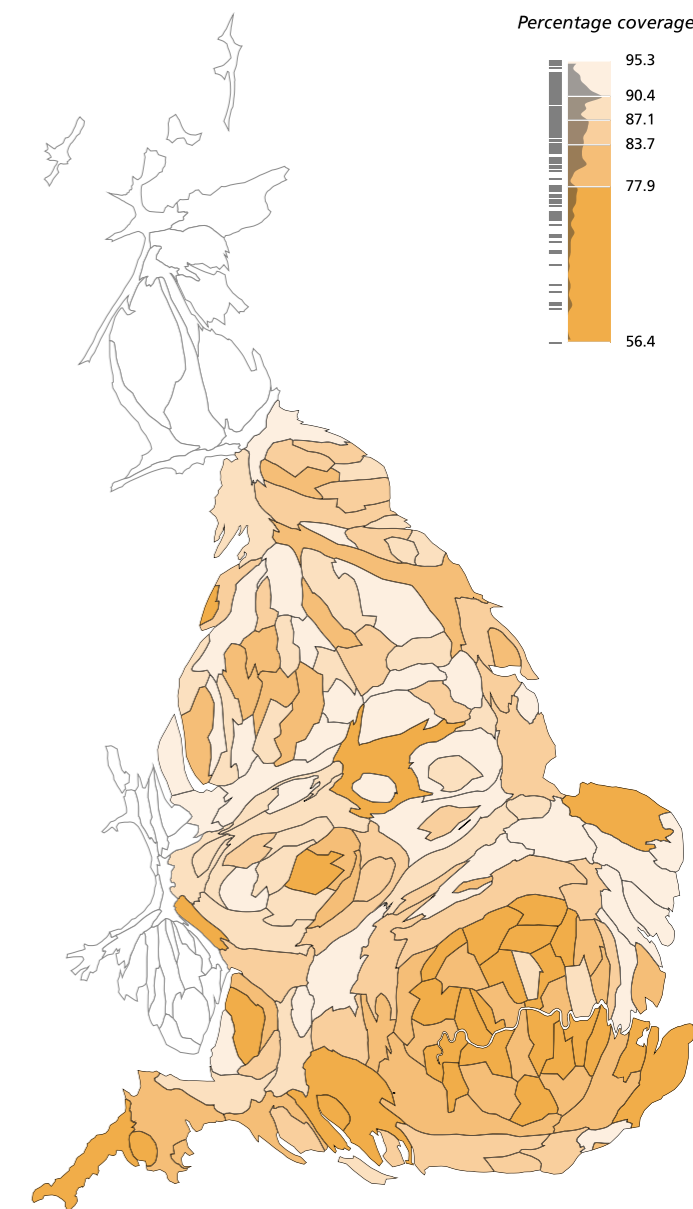
Source: COVER collection, HPA; Note: Data for Hib/MenC 2006/7 & 2007/8 unavailable

MMR vaccination coverage at two years of age by primary care trust, England, 2010/11



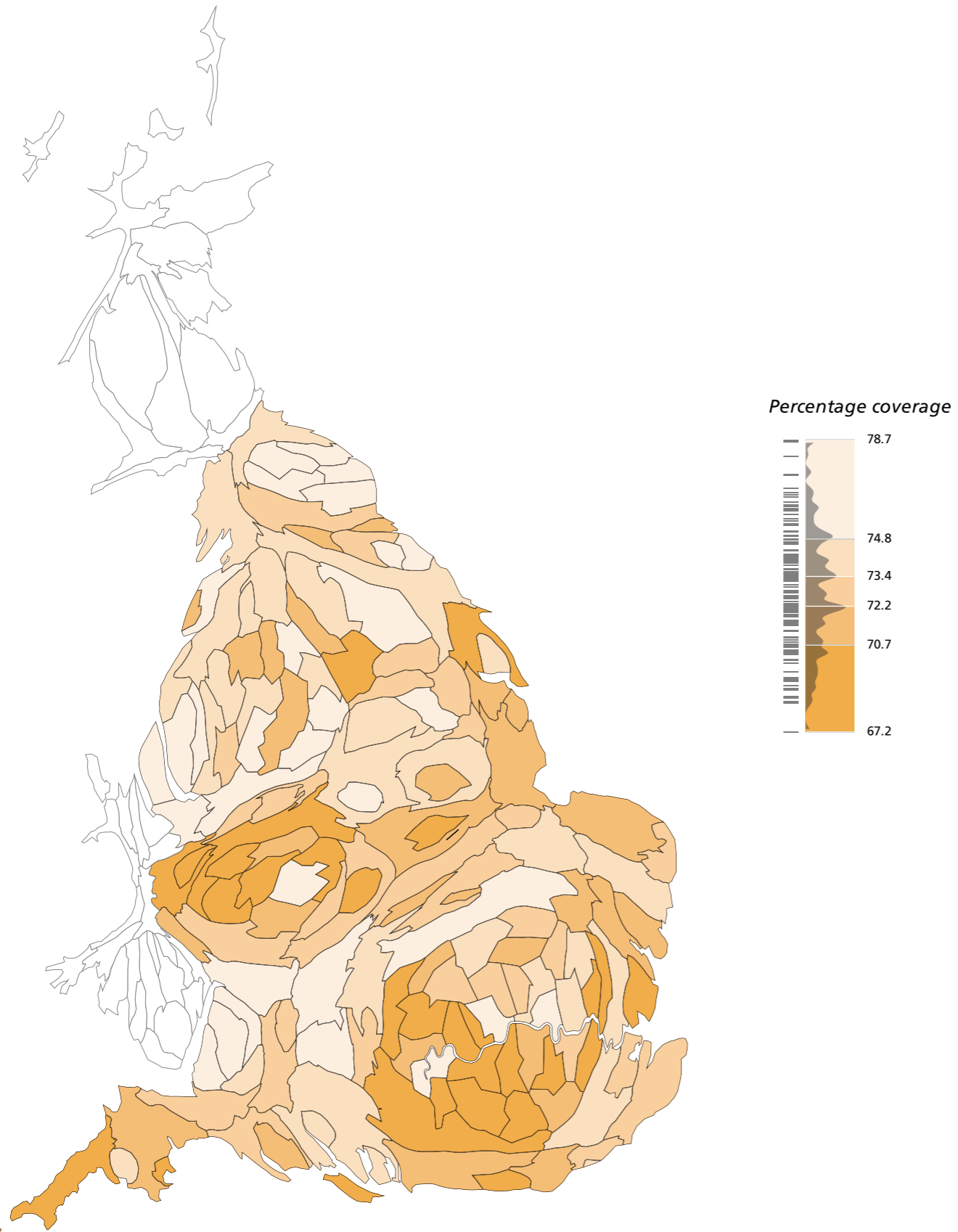
Source: COVER collection, HPA.

HPV vaccination coverage (completion of three dose course) in females aged 12 to 13 years by primary care trust, England, 2010/11



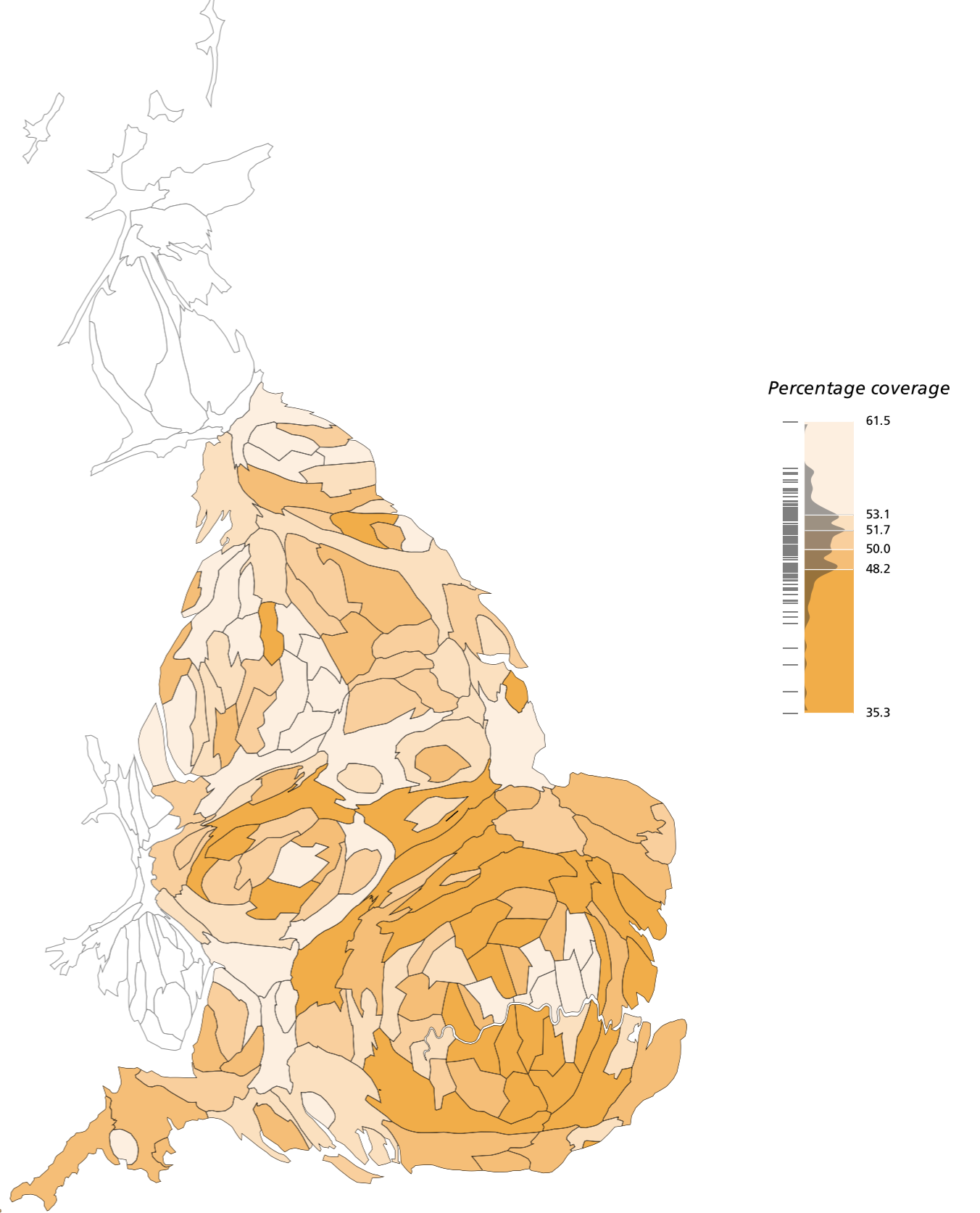
Source: ImmForm system, DH. (Provided by the HPA)

Influenza vaccine coverage in those aged 65 years and over by primary care trust, England, 2010/11



Source: ImmForm system, DH. (Provided by the HPA)

Influenza vaccine coverage in those aged under 65 in clinical risk groups (excluding pregnant women) by primary care trust, England, 2010/11



Source: ImmForm system, DH. (Provided by the HPA)

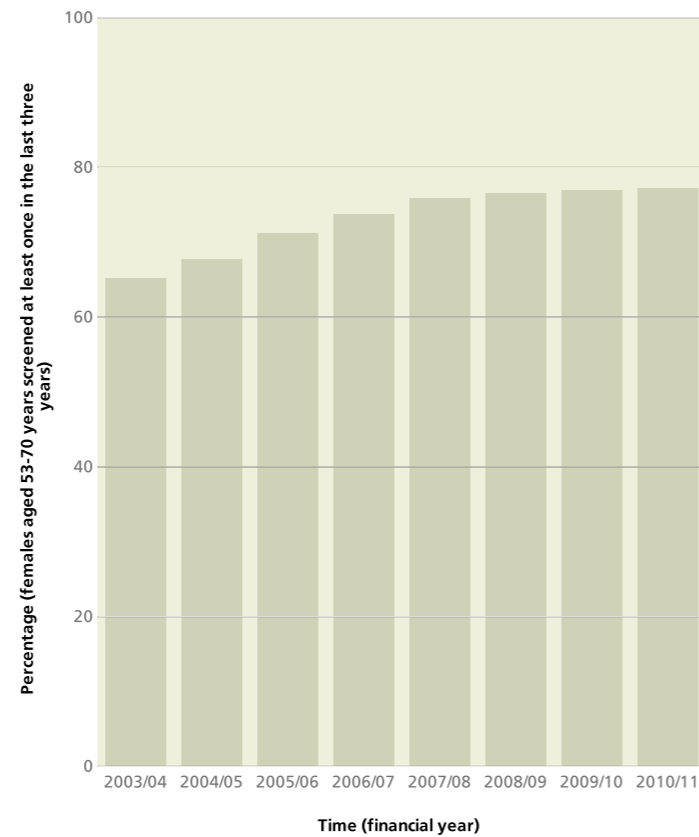
Screening is intended to detect cancers at an early stage. Under the national programme, eligible women aged 50-70 years are invited for regular breast screening and those aged 25-64 years are invited for regular cervical screening.

Breast Screening: In 2011, coverage in those aged 53-70 years was 77%. 131 PCTs reported target coverage (70%); 36 PCTs reported 80%, 20 PCTs reported less than 70%. From 2003 to 2011 coverage increased by 12%, partly due to screening programme expansion and the drive to increase uptake in the target age ranges.

Cervical Screening: In 2011, coverage in those aged 25-64 years was 79%. 149 PCTs reported target coverage (70%); 58 PCTs reported 80%, two PCTs reported less than 70%. From 2004 to 2011, coverage has improved in those aged 25-49 years by 3% and reduced in those aged 50-64 years by 3%. Changes to the screening policy in 2003 may partly explain the trends observed here. There was a marked increase in screening uptake in the younger cohort during January 2009 - June 2009 resulting from the 'Jade Goody effect'.

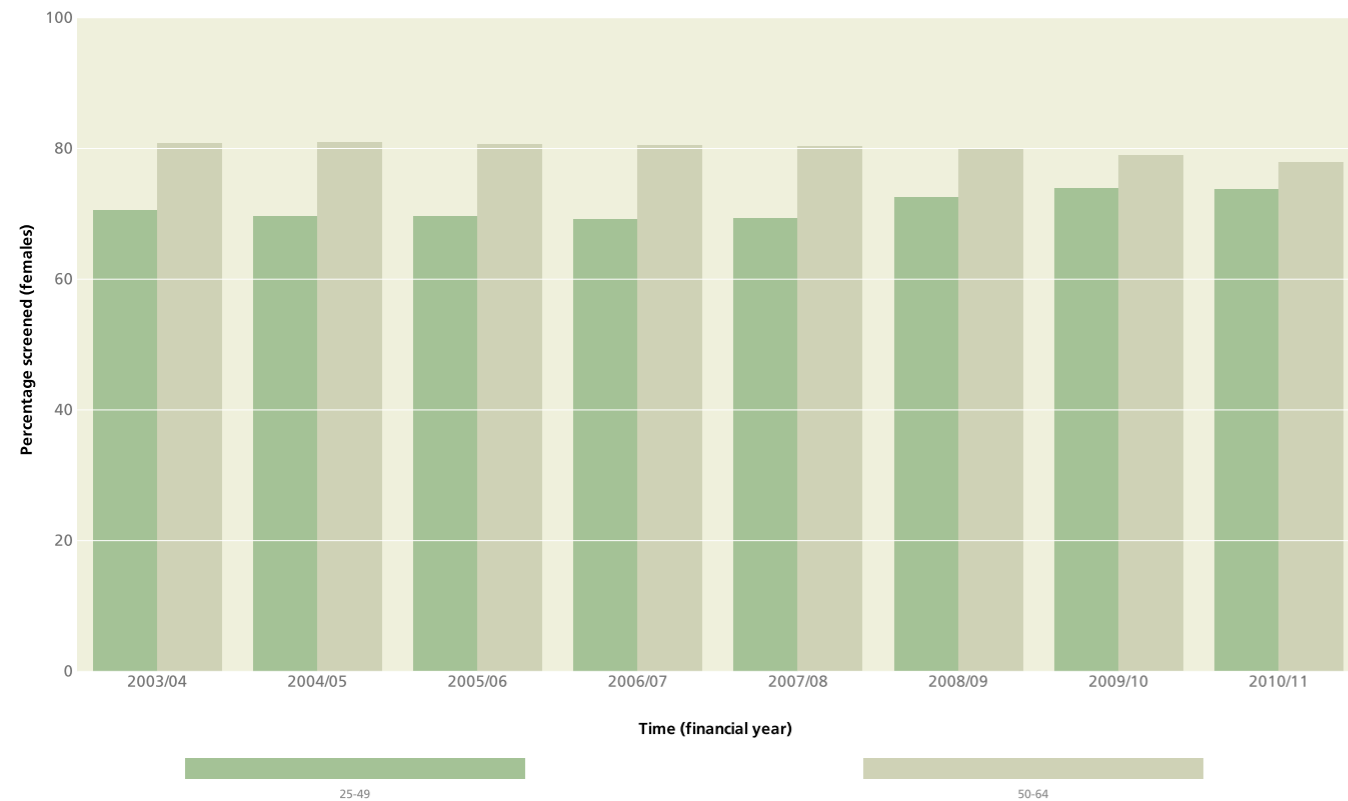
Initiatives aimed at improving screening coverage are essential to maintaining the quality and effectiveness of screening services. Information on coverage is an essential tool to monitor progress.

Trend in breast cancer screening coverage in females aged 53 to 70 years, England, 2003/04 to 2010/11



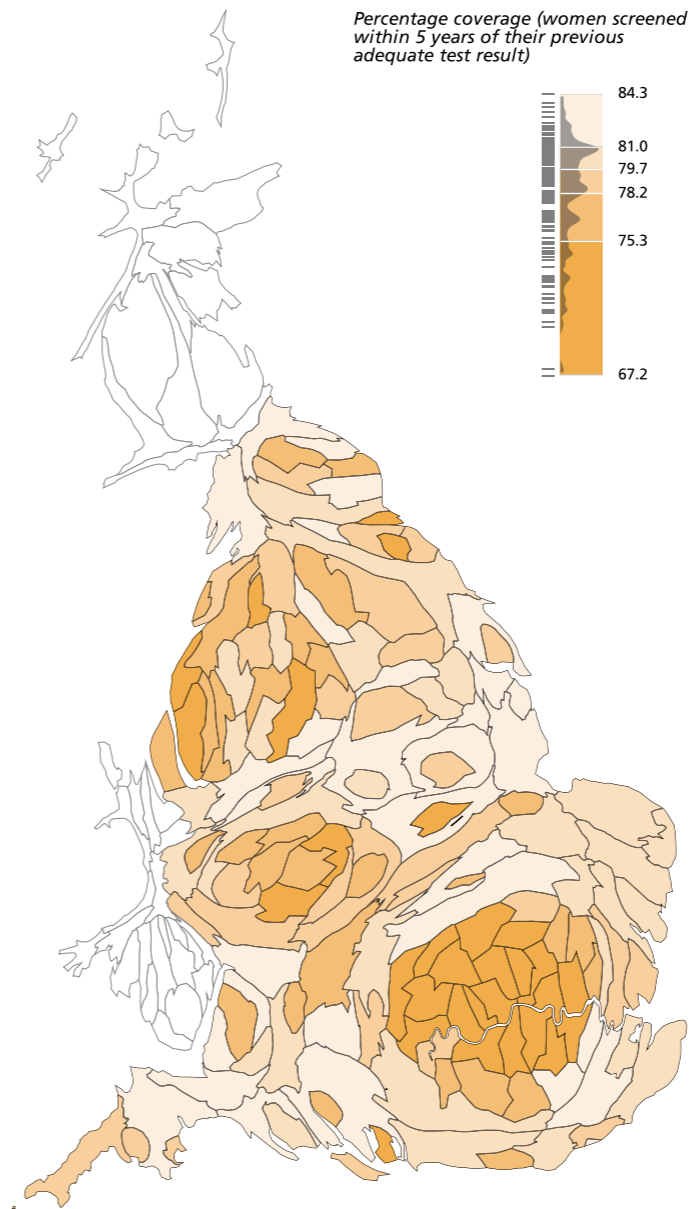
Source: KC63 statistics, DH. (Provided by the Health and Social Care Information Centre. Crown Copyright © 2012)

Trend in cervical cancer screening coverage, England, 2003/04 to 2010/11



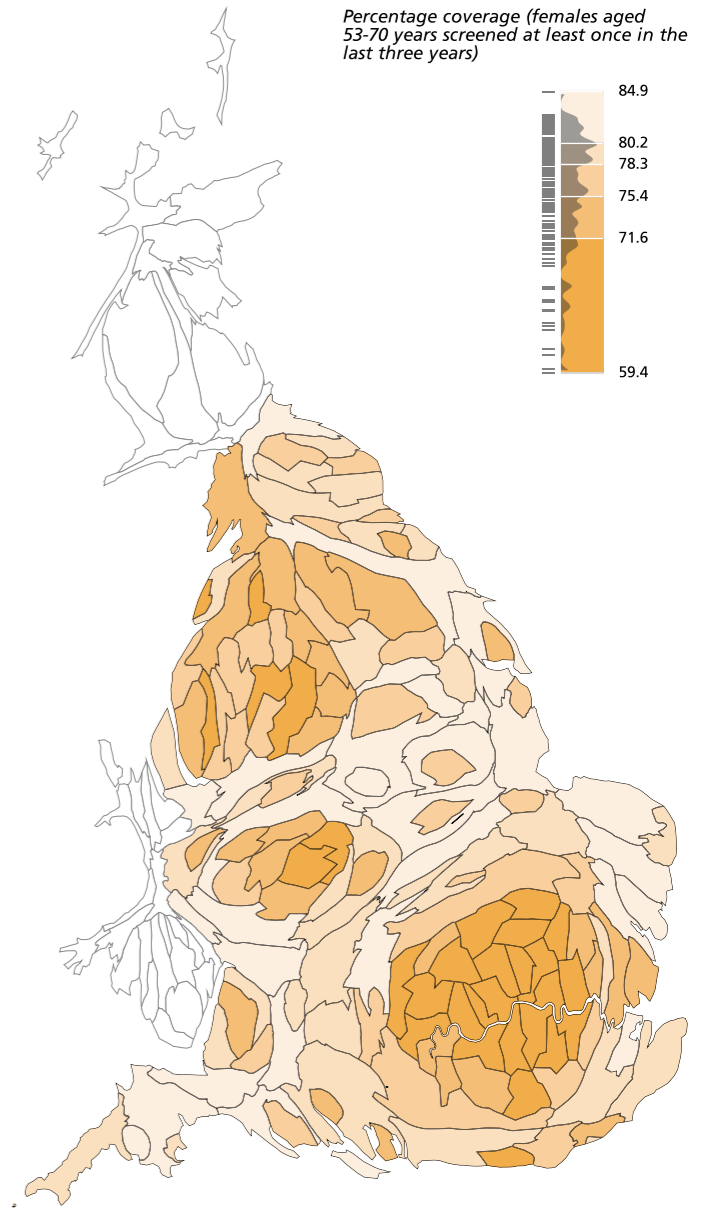
Source: KC53 statistics, DH. (Provided by the Health and Social Care Information Centre. Crown Copyright © 2012)

Cervical screening coverage of the target age group (aged 25 to 64 years), by primary care trust, England, 31st March 2011



Source: KC53 statistics, DH. (Provided by the Health and Social Care Information Centre)

Breast cancer screening coverage in females aged 53 to 70 years, by primary care trust, England, 2010/11



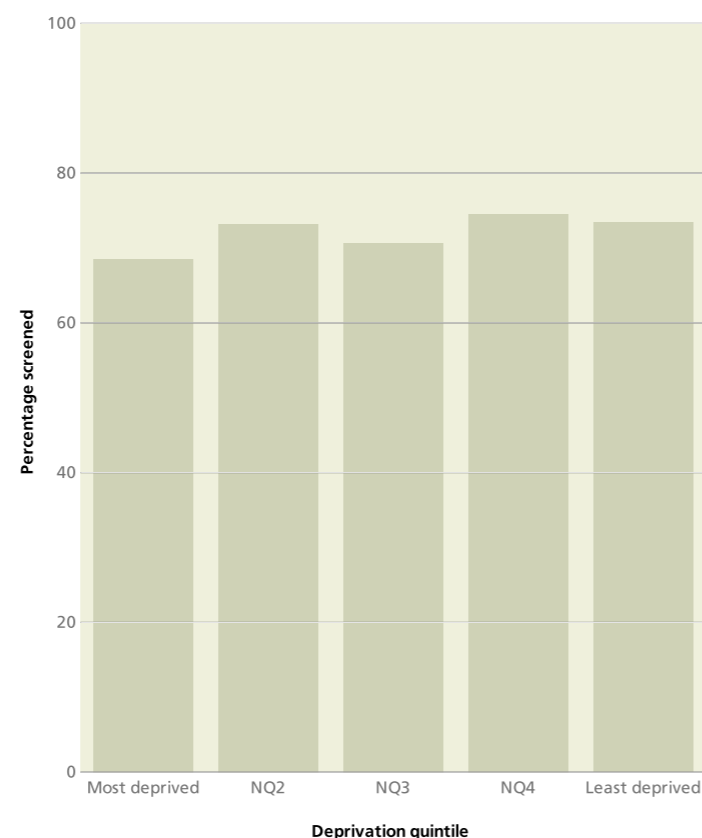
Source: KC63 statistics, DH. (Provided by The Health and Social Care Information Centre. Crown Copyright © 2012)

Diabetic retinopathy is the most common cause of blindness in adults. Early diagnosis and treatment prevents severe vision loss from diabetic retinopathy (the earlier treatment is received, the more likely it is to be effective). The National Diabetic Eye Screening Programme (DESP) offers annual screening to all those with diabetes aged 12 years and over. It is delivered by 91 local programmes, many with different service models developed according to local circumstances.

There is significant geographical variation in the uptake of screening. Uptake is measured by the percentage of the diabetic population who were offered retinopathy screening and accepted. In 2011 this ranged from 27% to 91%. The inter-quartile range was between 68% and 78%. The two PCTs with the lowest reported uptake were undergoing significant service reconfiguration during data collection. Caution is needed with interpretation due to data quality issues, leading to exclusion of data from two PCTs.

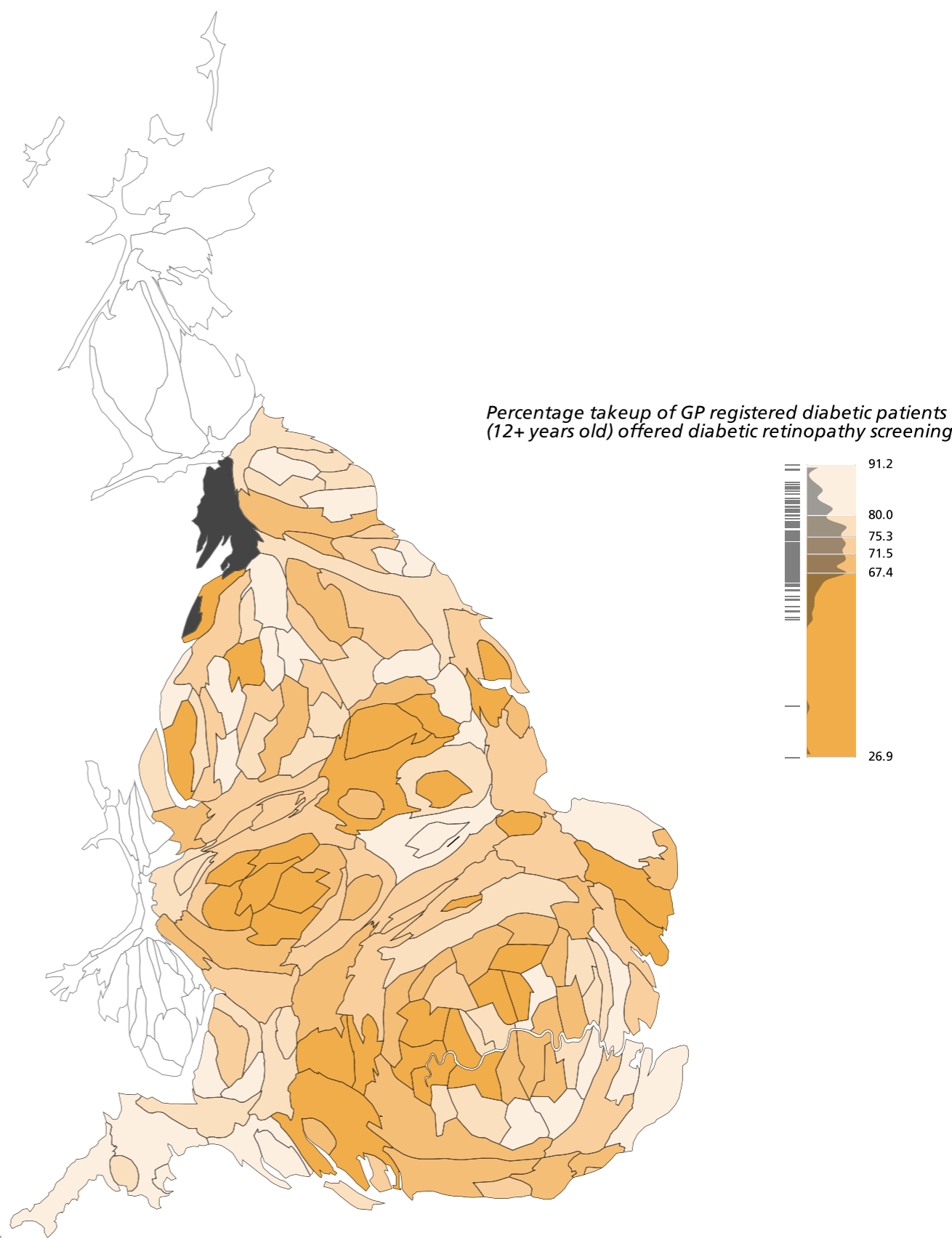
To increase rates of early detection of diabetic retinopathy, local programmes need to improve screening uptake in the diabetic population. Improvement in screening uptake, and in the quality of data collection, will ensure that all people with diabetes in England are offered high quality screening.

Diabetic retinopathy screening uptake by deprivation, England, 2010/11



Source: Integrated Performance Measures Monitoring (IPMR) return, DH. (Analysis by NHS Diabetic Eye Screening Programme)

Diabetic retinopathy screening by primary care trust, England, July - September 2011



Source: Integrated Performance Measures Monitoring (IPMR) return, DH. (Analysis by NHS Diabetic Eye Screening Programme)

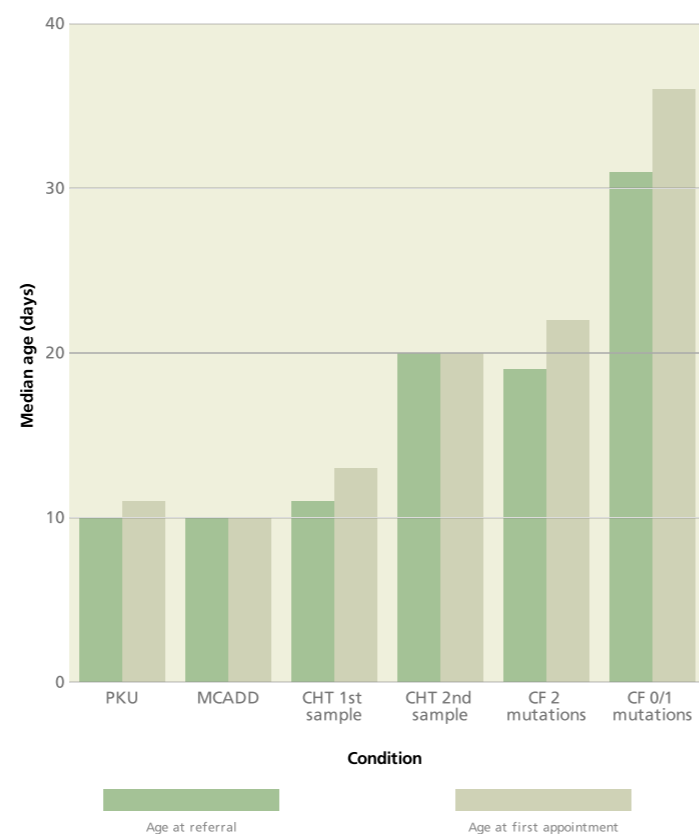
Newborn Bloodspot Screening is offered to all newborns to identify babies with rare but serious conditions. For the very small number of cases identified, early detection offers early treatment to improve health and prevent severe disability or death.

Babies are referred to specialist care directly by the laboratory and parents offered specialist appointment before the baby is 2 weeks of age (PKU, MCADD, CHT detected on 1st sample) and 4-6 weeks (CF, CHT detected on 2nd sample). All results are recorded on the Child Health System (CHS) within 6 weeks, the majority by 17 days.

Most screen positive babies are entering care in time though nationwide variation exists with some babies not accessing timely care. There is also considerable geographical variation in recording and reporting coverage, ranging from 100% to incomplete data for a number of areas. There is significant variation of Sickle Cell Disease birth prevalence by ethnicity which is consistent over time with approximately 1 in 100 Black African babies testing screen positive in the period from 2005-2011.

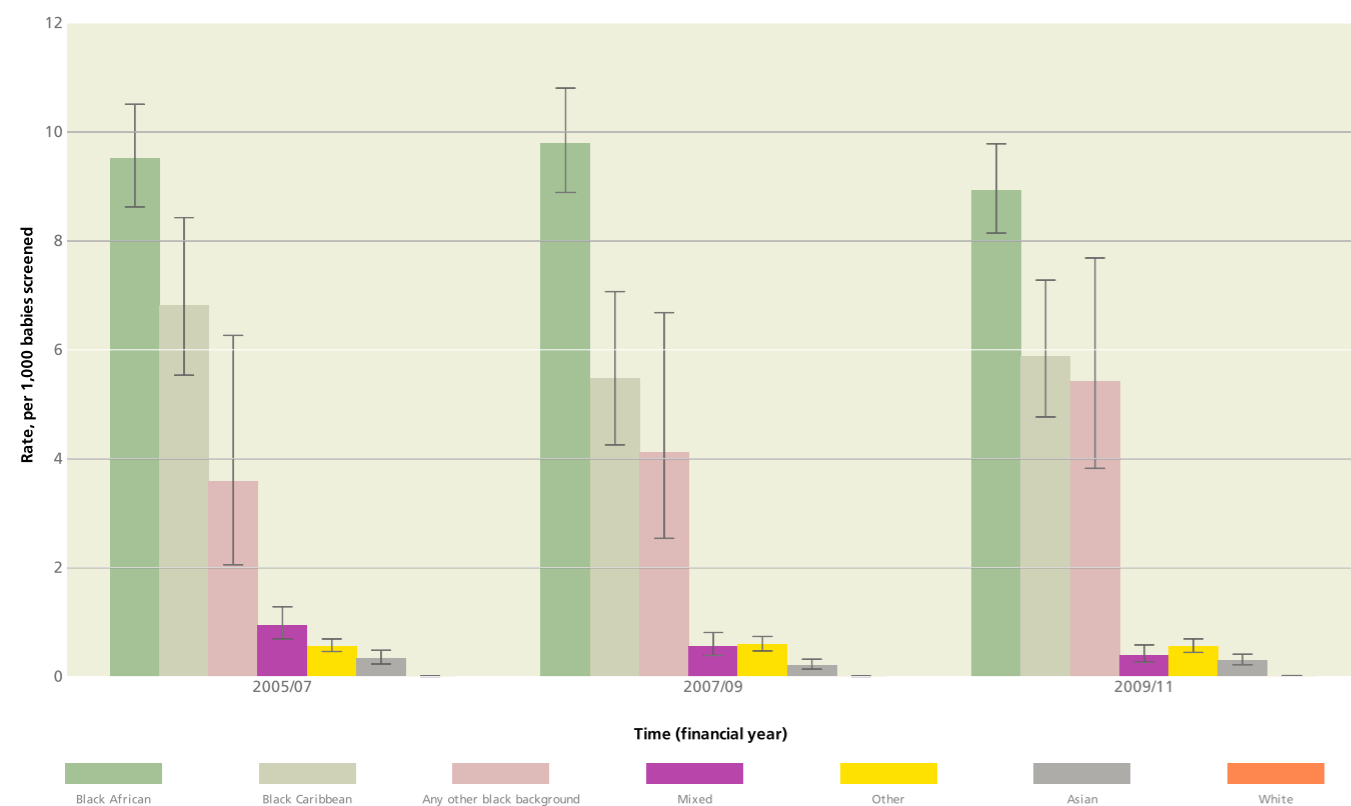
Early detection with early entry of screen positive babies into specialist care will improve outcomes. To reduce variation in coverage, there must be reduced reliance on manual data recording and manual processes.

Median age at referral and first appointment for babies screened positive for selected conditions, England, 2010/11



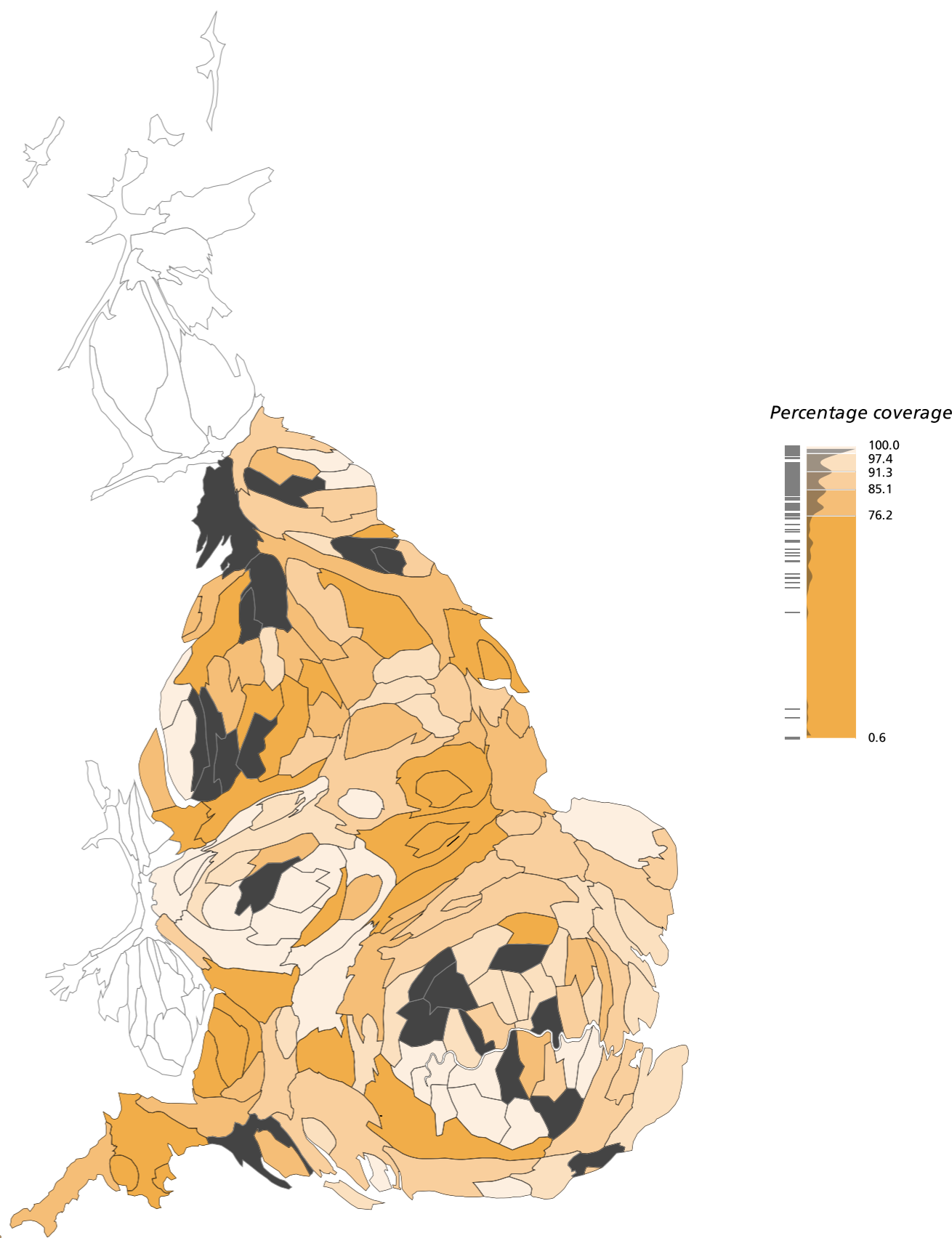
Source: Newborn Screening Laboratories. (Analysis by UK Newborn Screening Programme Centre)

Trend in rate of babies screened positive for significant sickle cell conditions by ethnic group, England, 2005/07 to 2009/11



Source: NHS Sickle Cell and Thalassemia Screening Programme. (Data from 13 newborn screening haemoglobinopathy laboratories)

Newborn blood spot screening coverage at 17 days by primary care trust, England, 2010/11



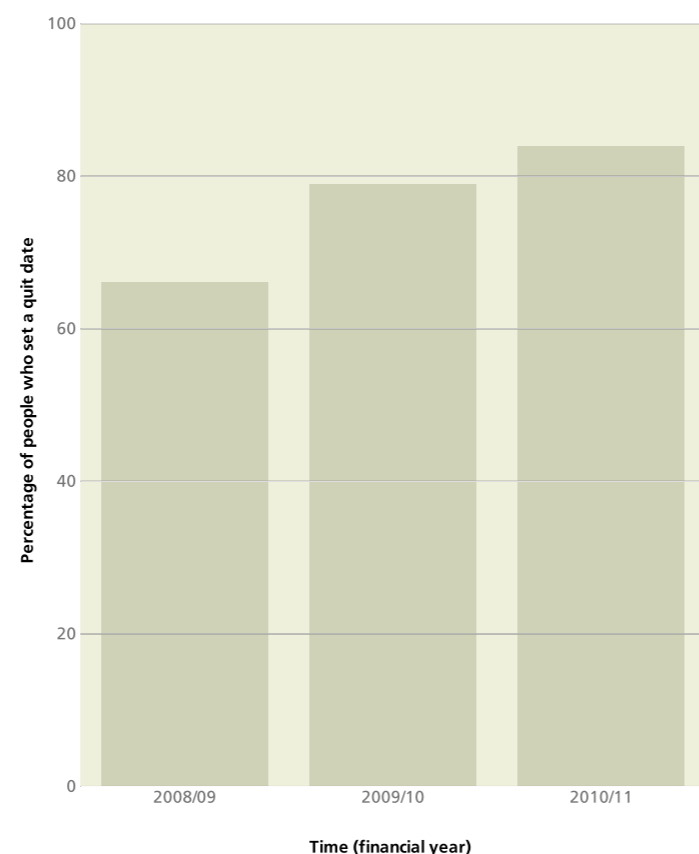
Source: Child Health Record Departments. (Analysis by UK Newborn Screening Programme Centre)

Smoking is an important cause of preventable illness and early death in England, and a major contributor to health inequalities. NHS Stop Smoking Services (NHS SSS) offer support to help people quit smoking. These services complement the use of pharmacotherapy, are provided by trained personnel and are designed to be widely accessible within the local community through group therapy and 1-1 support. Over 380,000 people in England successfully quit smoking with NHS Stop Smoking Services in 2010/11, but there was substantial variation across local areas with some of the highest rates found in the Midlands and the North.

Of those with a valid National Statistics Socio-Economic Classification (NS-SEC) record, 84% set a quit date with an NHS Stop Smoking Service in 2010/11. About 270,000 (70%) of those who quit smoking were carbon monoxide (CO) validated at 4 weeks follow-up i.e. their smoking quit status could be confirmed by the level of CO in their blood stream. This is an indication of the level of tobacco use and, where possible, is recorded for all those who self-report that they have quit smoking at 4 weeks follow-up.

The annual cost to the NHS of treating smoking related illness and disease were estimated at £5.2 billion a year in 2005/06.¹ There is clear evidence that a range of interventions in primary care, pharmacy, local authority and workplace settings are effective in reducing smoking. Improving access to, and promoting use of NHS SSS, can help prevent smoking related illnesses and associated treatment costs.

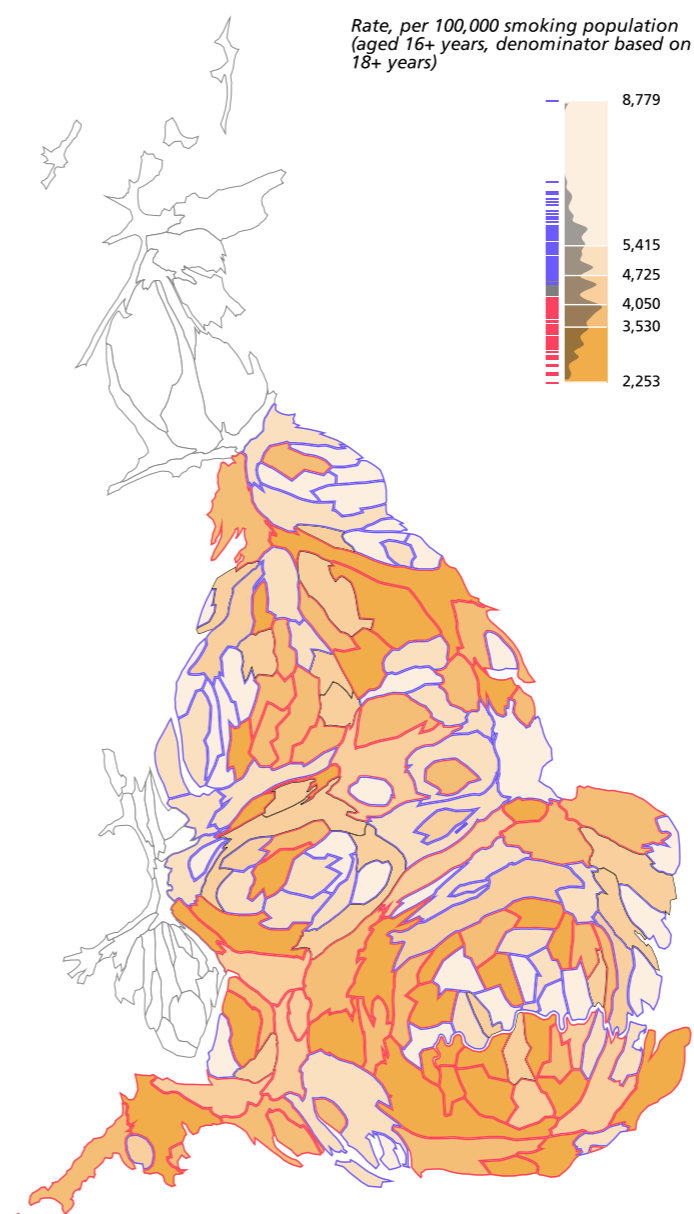
Trend in percentage of persons who set a quit date with a Stop Smoking Service, England, 2008/09 to 2010/11



Source: Health and Social Care Information Centre, Crown Copyright © 2012. (Analysis by LHO)

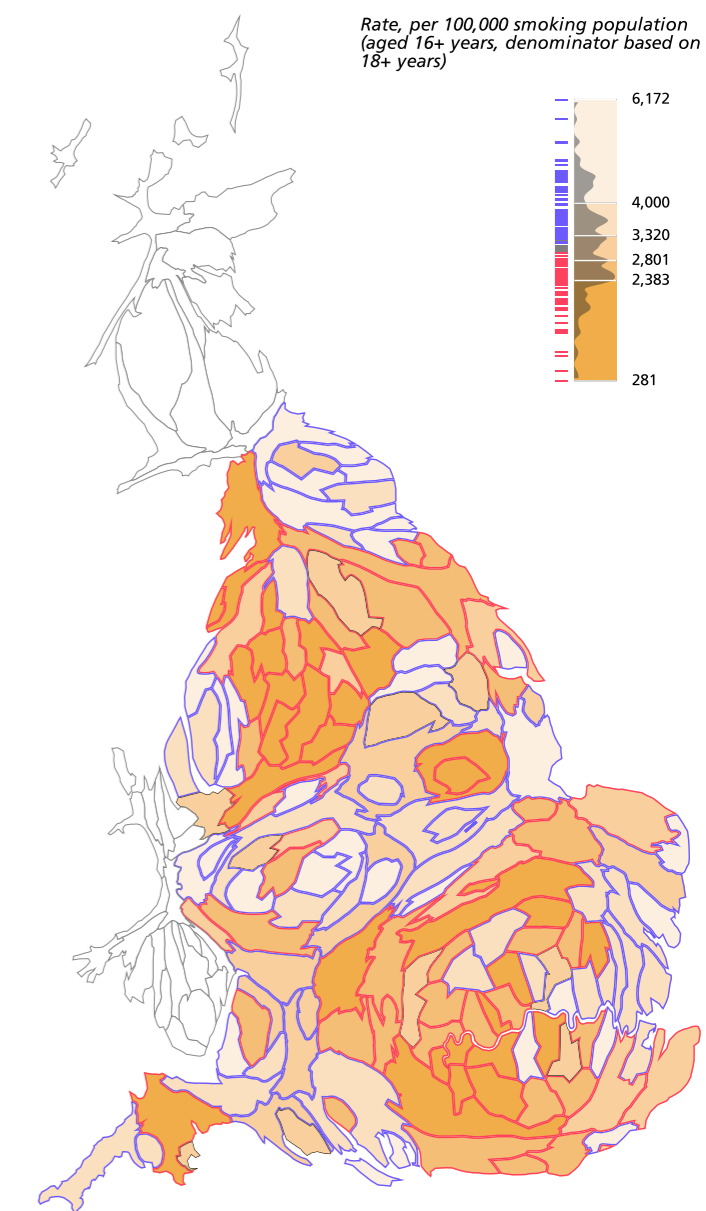
¹ Allender, S. The burden of smoking-related ill health in the UK. Tobacco Control 2009;18:262-267 doi:10.1136/tc.2008.026294

Successful smoking quitter rates at 4 week follow up by primary care trust, England, 2010/11



Source: The Health and Social Care Information Centre, ONS Integrated Household Survey 2010/11. Crown Copyright © 2012. 2010 population estimates, ONS. (Analysis by LHO)

Successful smoking quitter rates (CO validated) at 4 week follow up by primary care trust, England, 2010/11



Source: The Health and Social Care Information Centre, ONS Integrated Household Survey 2010/11. Crown Copyright © 2012. 2010 population estimates, ONS. (Analysis by LHO)

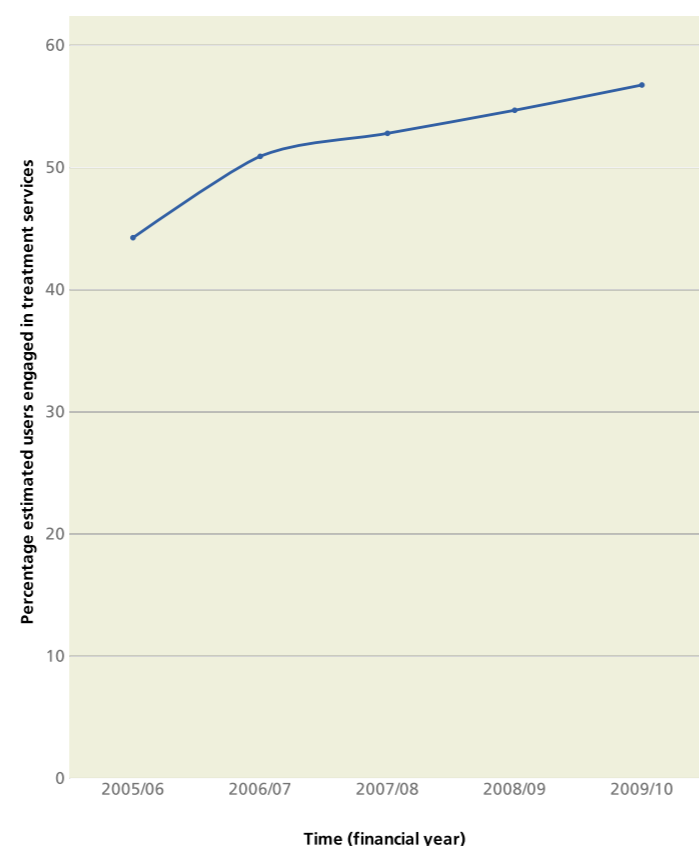
Both drug and alcohol use create huge societal costs due to their impact on individuals and their families, and on services. Treatments for drug and alcohol use are effective in reducing harmful behaviours. Healthcare workers need to identify harmful drinking and alcohol dependence, and provide structured, brief advice. The aims of specialist services are to promote recovery from addiction, minimise harm and reintegrate users into society.

Access to specialist alcohol treatment services varies across England, the highest rates of access being in urban areas. Access to drug use treatment services also shows variation and concentration in urban areas. Typically, four out of five users in treatment are heroin users.

It is estimated that 57% of opiate and/or crack users in England are in structured treatment, however there is considerable variation across local authorities from under 21% to 75%. Over the last five years users in treatment has risen from 44% to 57%, and users waiting over three weeks to get into treatment has fallen from 14% to 4%.

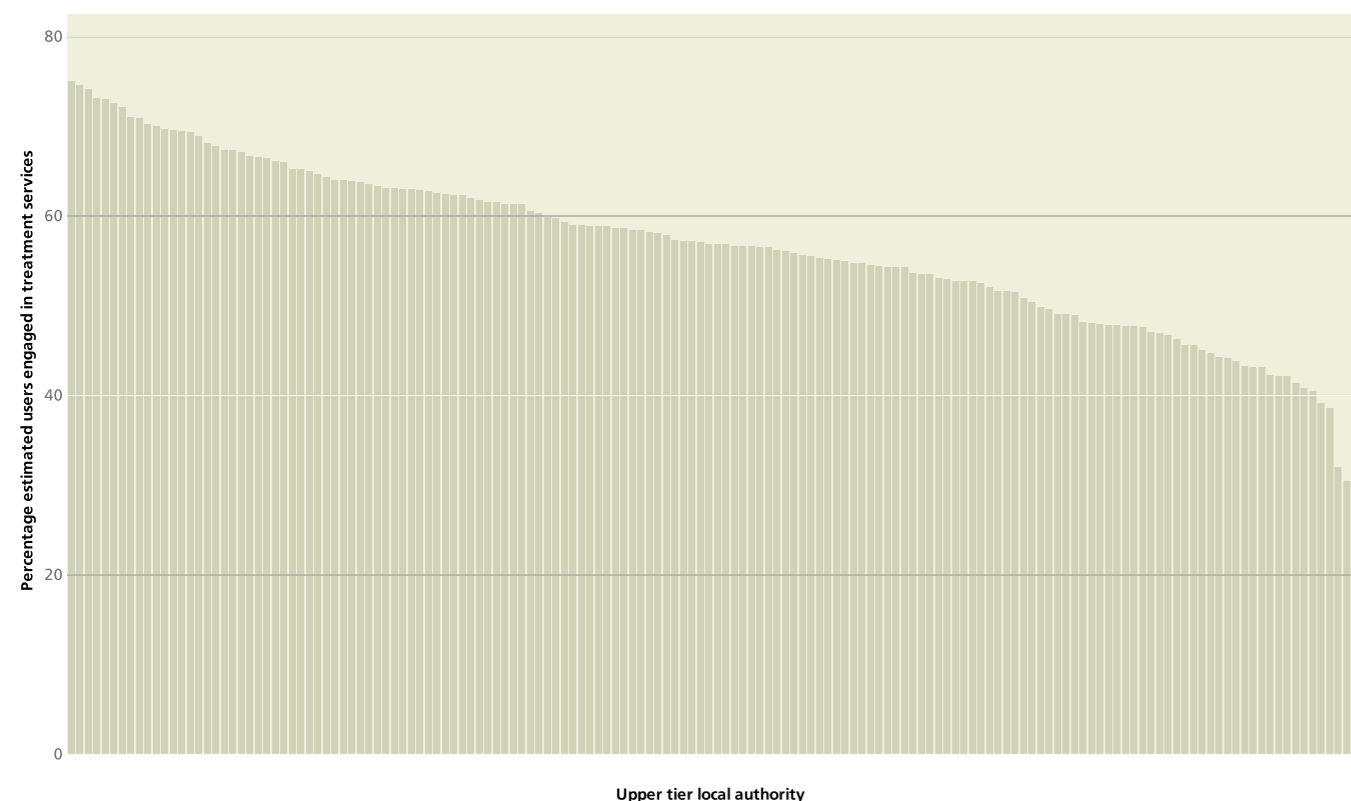
While the prevalence of alcohol dependence is much higher than drug dependence the provision of specialist alcohol treatment is less than that for drug treatment and needs to be increased. Provision should reflect need more closely for both drugs and alcohol services.

Trend in percentage of adult opiate and/or crack users engaged in treatment, England, 2005/06 to 2009/10



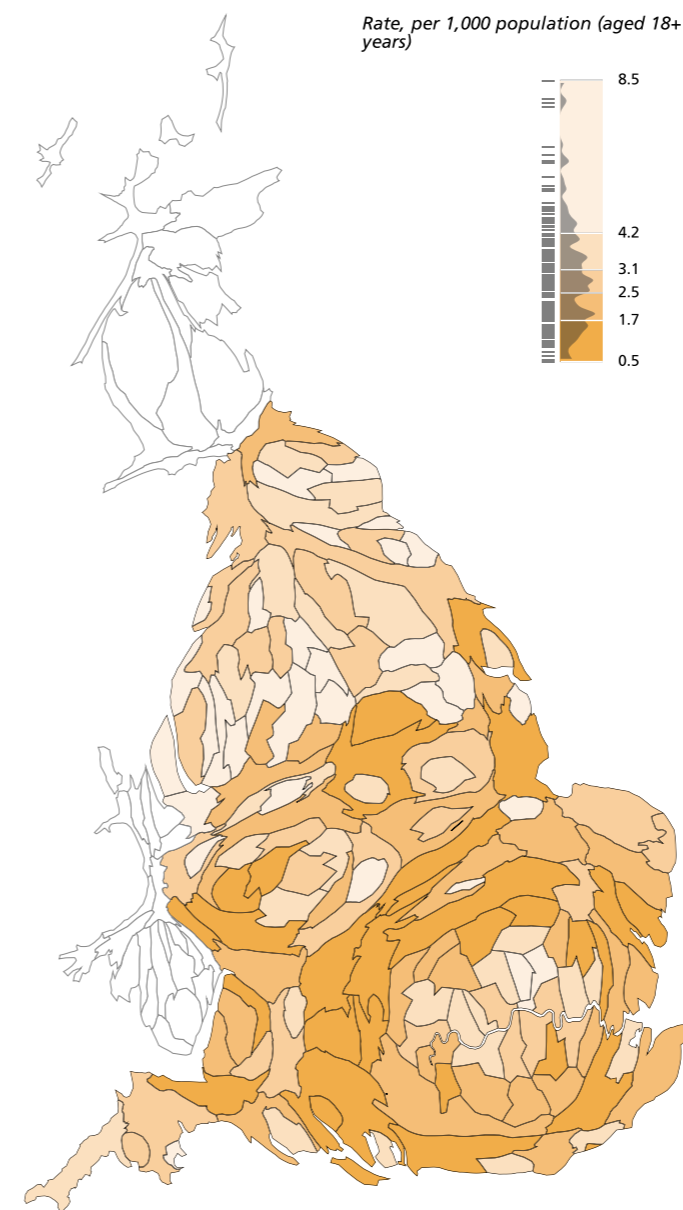
Source: National Treatment Agency (NTA)

Proportion of adult opiate and/or crack users engaged in treatment by upper tier local authority, England, 2009/10



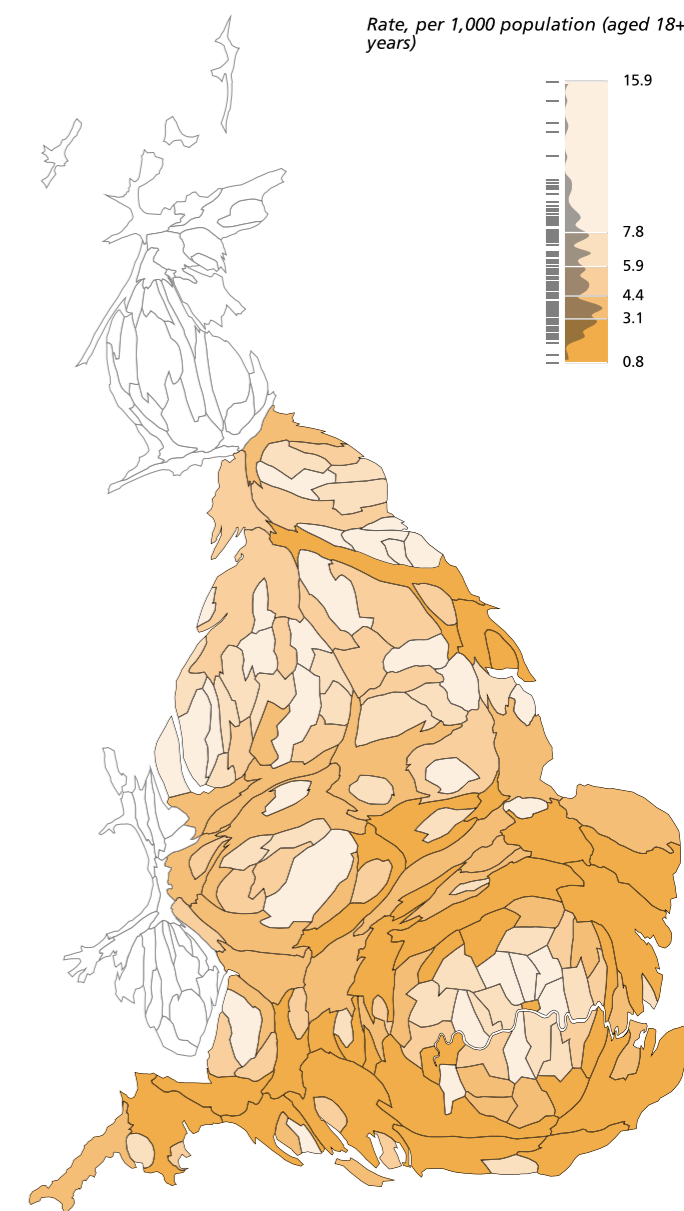
Source: National Treatment Agency (NTA).

Alcohol treatment rate in persons aged 18 years and over by primary care trust, England, 2010/11



Source: National Treatment Agency (NTA). 2010 population estimates, ONS. (Analysis by SEPHO)

Adults receiving drug treatment by upper tier local authority, England, 2010/11



Source: National Treatment Agency (NTA). 2010 population estimates, ONS. (Analysis by SEPHO)

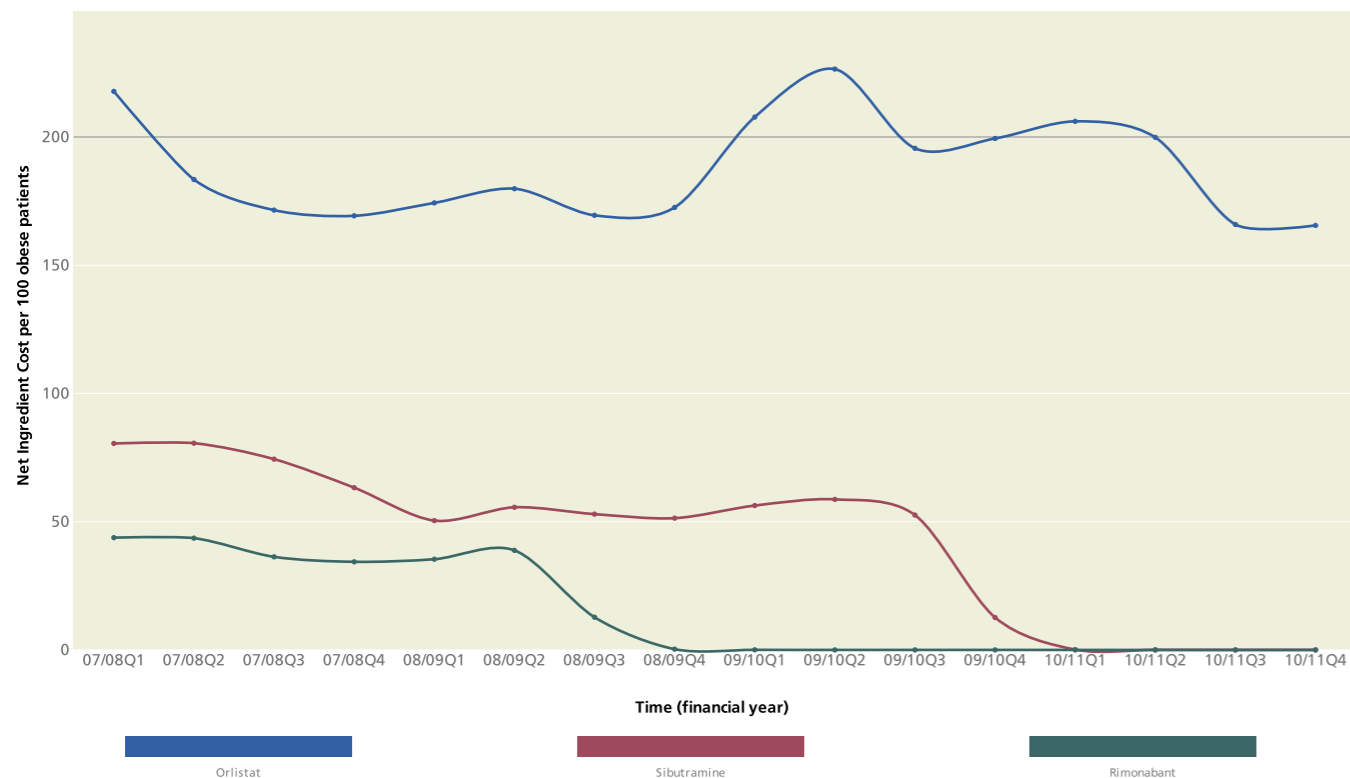
Obesity is a serious and increasing public health problem. Multi-component weight management programmes are available through the NHS, as is treatment using drugs and surgery. NICE clinical guideline 43 addresses the prevention and management of overweight and obesity in adults and children.

Drug treatment should only be prescribed for adults who have failed to achieve their target weight with lifestyle changes. Orlistat is the only licensed drug for obesity, available on prescription and over the counter. Marketing authorisation for Sibutramine and Rimonabant has been suspended due to concerns about side effects.

The prescribing data are presented as the rate of obesity drug prescribing per 100 obese patients. There is wide variation in prescribing rates, reflecting differences in clinical practice. Overall, prescribing has decreased over the last four years.

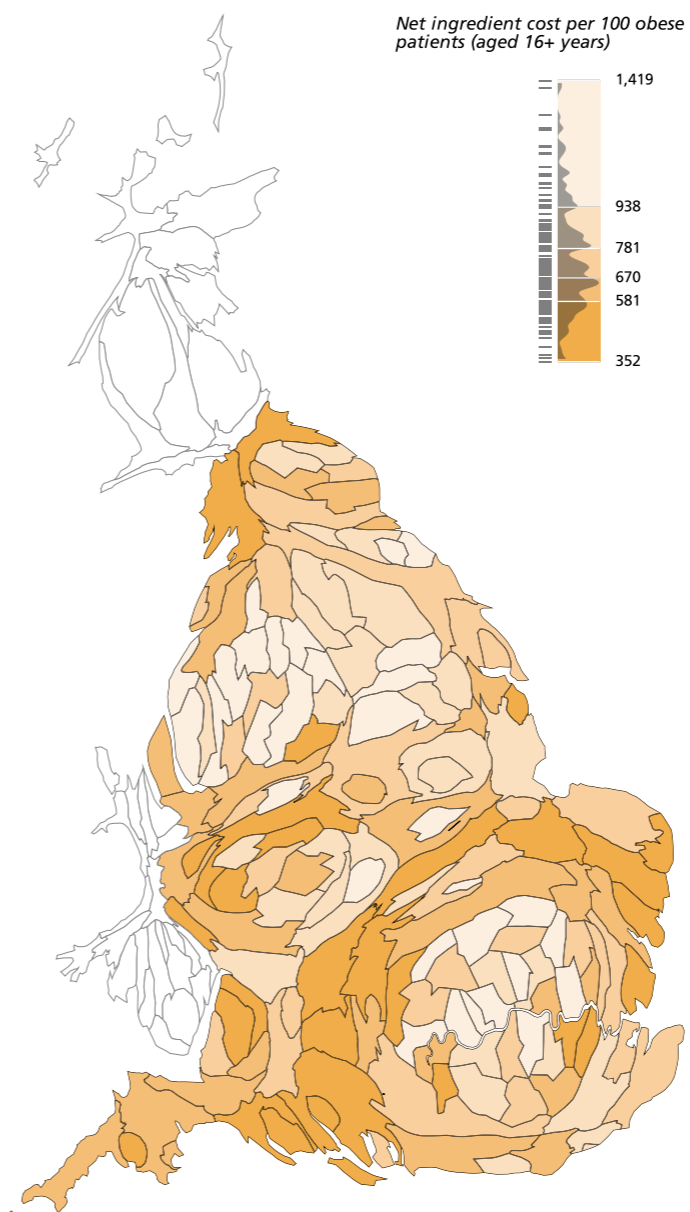
Weight loss (bariatric) surgery should be offered only when non-surgical measures have been unsuccessful. It is recommended as a treatment option for people who are morbidly obese or have significant obesity related disease. The number of NHS funded operations has increased rapidly over recent years, but the level of provision varies widely between PCTs, reflecting variations in access and prevalence of obesity. Lack of private sector data makes interpretation difficult.

Trend in prescribing for obesity drugs (Orlistat, Sibutramine & Rimonabant), England, by quarter 2007/08 to 2010/11



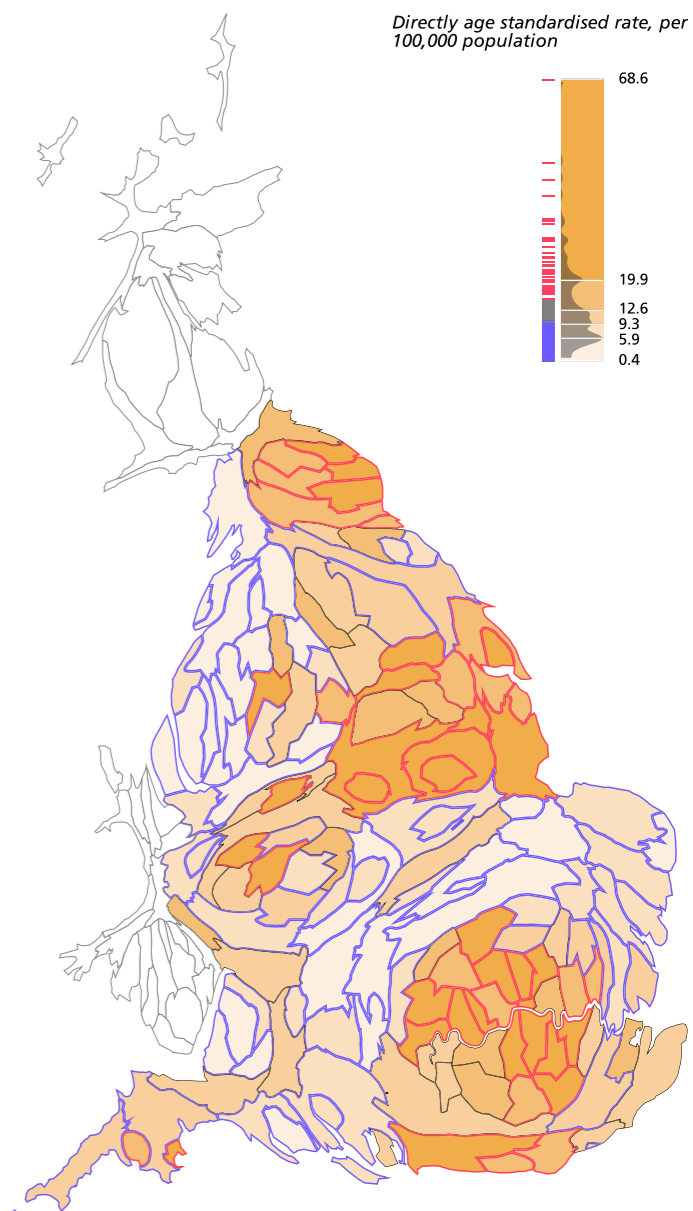
Source: NHS Prescription Services Prescribing Database via ePACT, NHS Business Services Authority. Estimated number of obese patients, Quality and Outcomes Framework (QOF), Health and Social Care Information Centre. Crown Copyright © 2012. (Analysis by SEPHO)

Obesity prescribing (Orlistat, Sibutramine & Rimonabant) by primary care trust, England, 2010/11



Source: NHS Prescription Services Prescribing Database via ePACT, NHS Business Services Authority. Estimated number of obese patients, Quality and Outcomes Framework (QOF), Health and Social Care Information Centre. Crown Copyright © 2012. (Analysis by SEPHO)

Bariatric procedure rates by primary care trust, England, 2008/09-2010/11



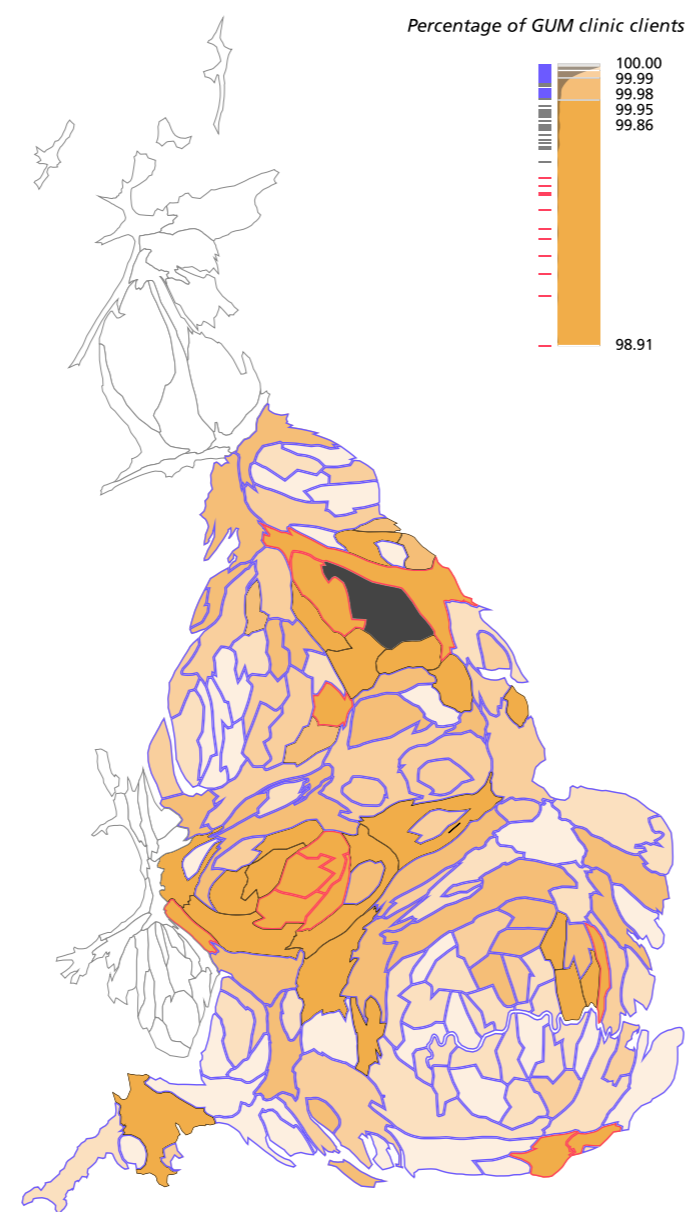
Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. 2010 Population estimates supplied by ONS. (Analysis by SEPHO)

The number of diagnoses of sexually transmitted infections (STIs) is rising. While prevention remains the highest priority, early detection and treatment prevents onward transmission and long term complications such as pelvic inflammatory disease, ectopic pregnancy, infertility, and in the case of HIV, life threatening illness.

Government policy is to ensure an integrated model of service delivery that provides easy access to confidential, non-judgmental services for STIs. Services are provided through general practice, or through sexual health or genitourinary medicine (GUM) clinics.

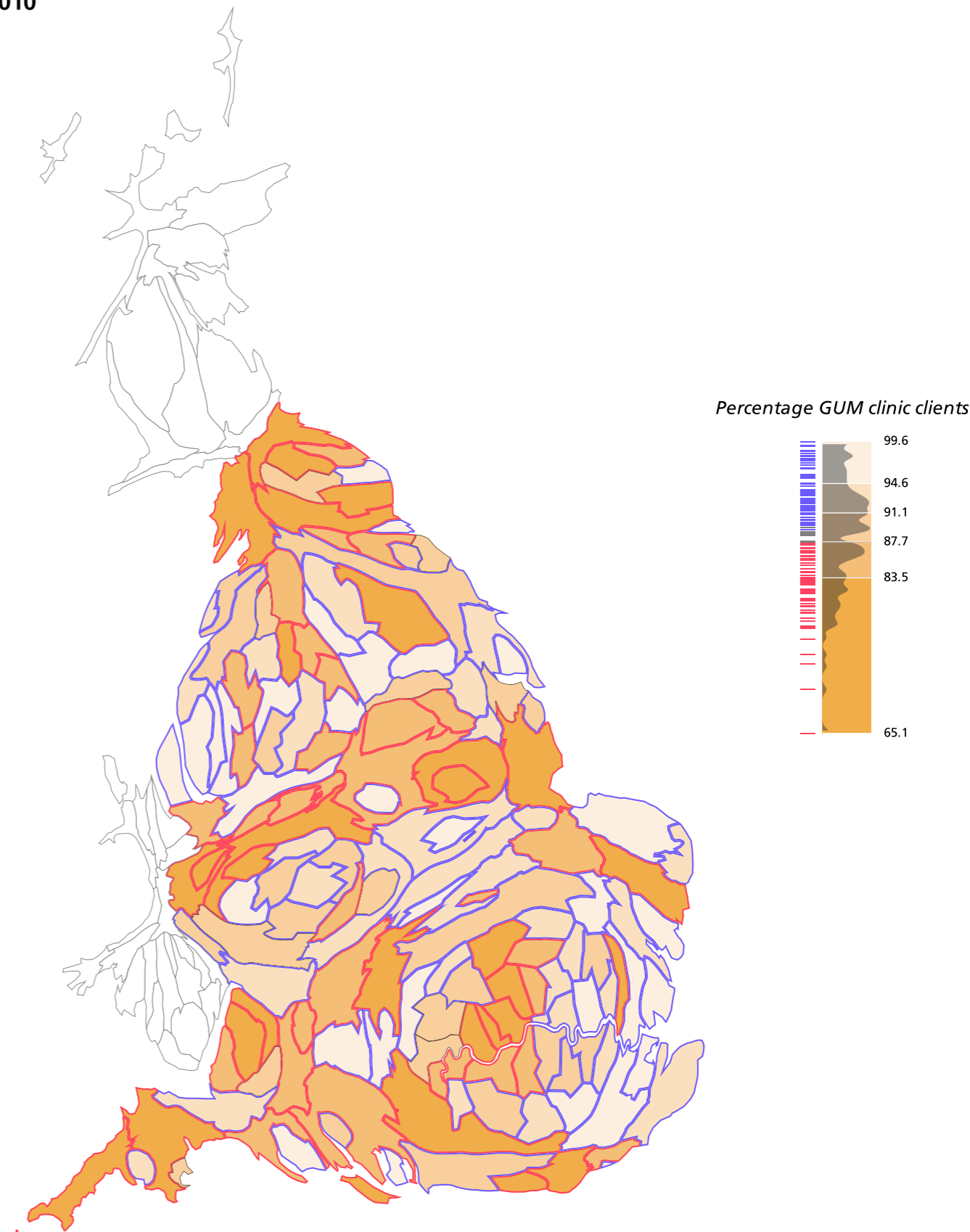
The government pledges that people can access GUM clinics within 48 hours of contacting a service, either as self referrals, or through a clinical referral. In 2010 over 99% of clients in all but two PCT areas were offered an appointment within two working days. However, not all took advantage of the offer of rapid access. The average number of clients seen within two working days was 88% but there was considerable variation from 65% to nearly 100%. Access in rural areas appears to be a particular challenge. Young people need to be continually made aware of STIs and the services available.

Proportion of genitourinary medicine clinic clients offered an appointment within 2 working days by primary care trust, England, 2010



Source: Genitourinary Medicine Access Monthly Monitoring audit (GUMAMM), DH. (Analysis provided by SWPHO). Note: Leeds PCT (percentage of GUM clinic clients offered an appointment within 2 working days = 88.9, 95% CI 88.4 to 88.4) is excluded from this map as it is an extreme outlier.

Proportion of genitourinary medicine clinic clients seen within 2 working days by primary care trust, England, 2010



Source: Genitourinary Medicine Access Monthly Monitoring audit (GUMAMM), DH. (Analysis provided by SWPHO)

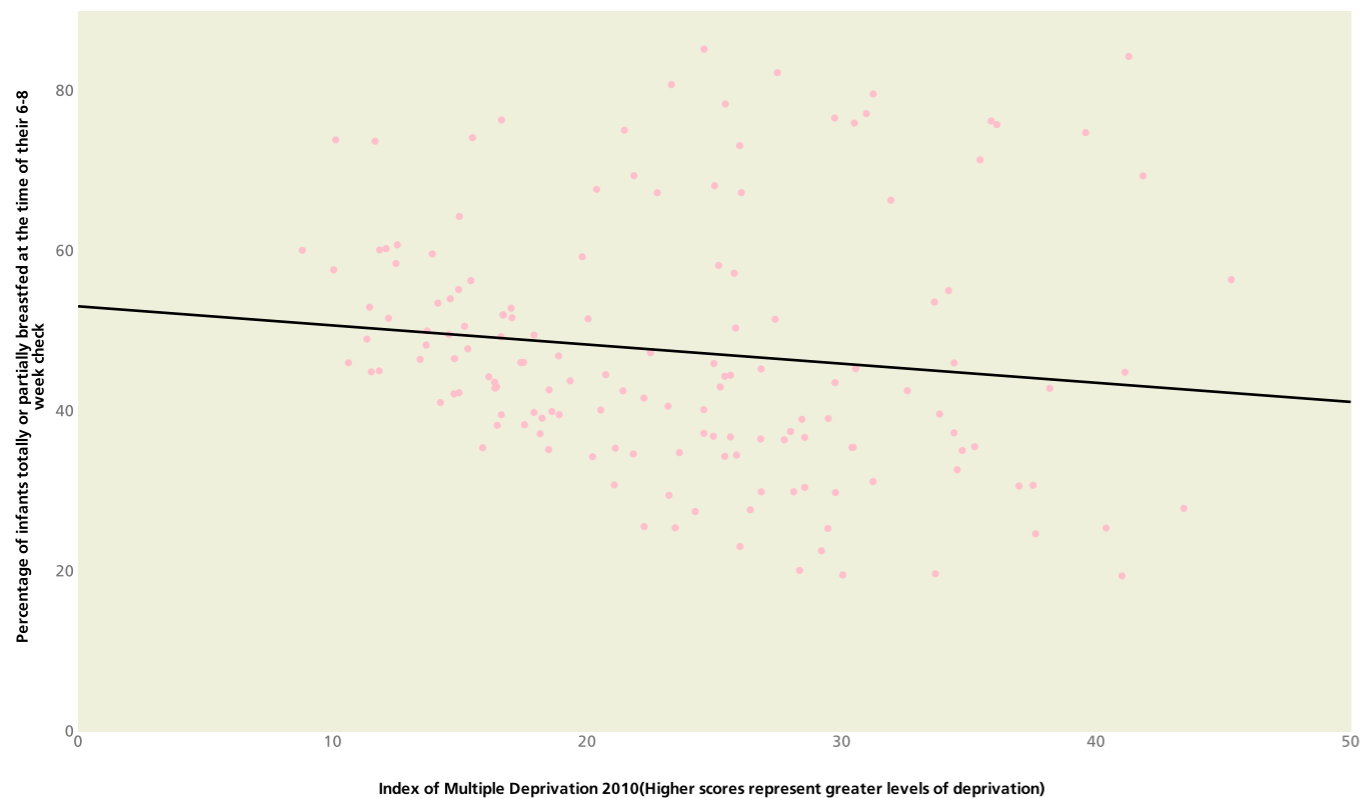
Pregnant women should access maternity services before 13 weeks for assessment, information sharing and planning care. Rates of early access to maternity services are above 80% for all regions with the exception of London at 76%. Nationally, the figure is 84%. Services should aim to increase the percentage of women who access maternity services early through targeting vulnerable and socially excluded groups and focusing on reducing the health inequalities these groups face.

Currently, exclusive breastfeeding is recommended for the first 6 months, as research has shown that infants who are not breastfed are more likely to have infections. They may be more likely to develop diabetes in later life. For mothers, breastfeeding may reduce the risk of certain cancers.

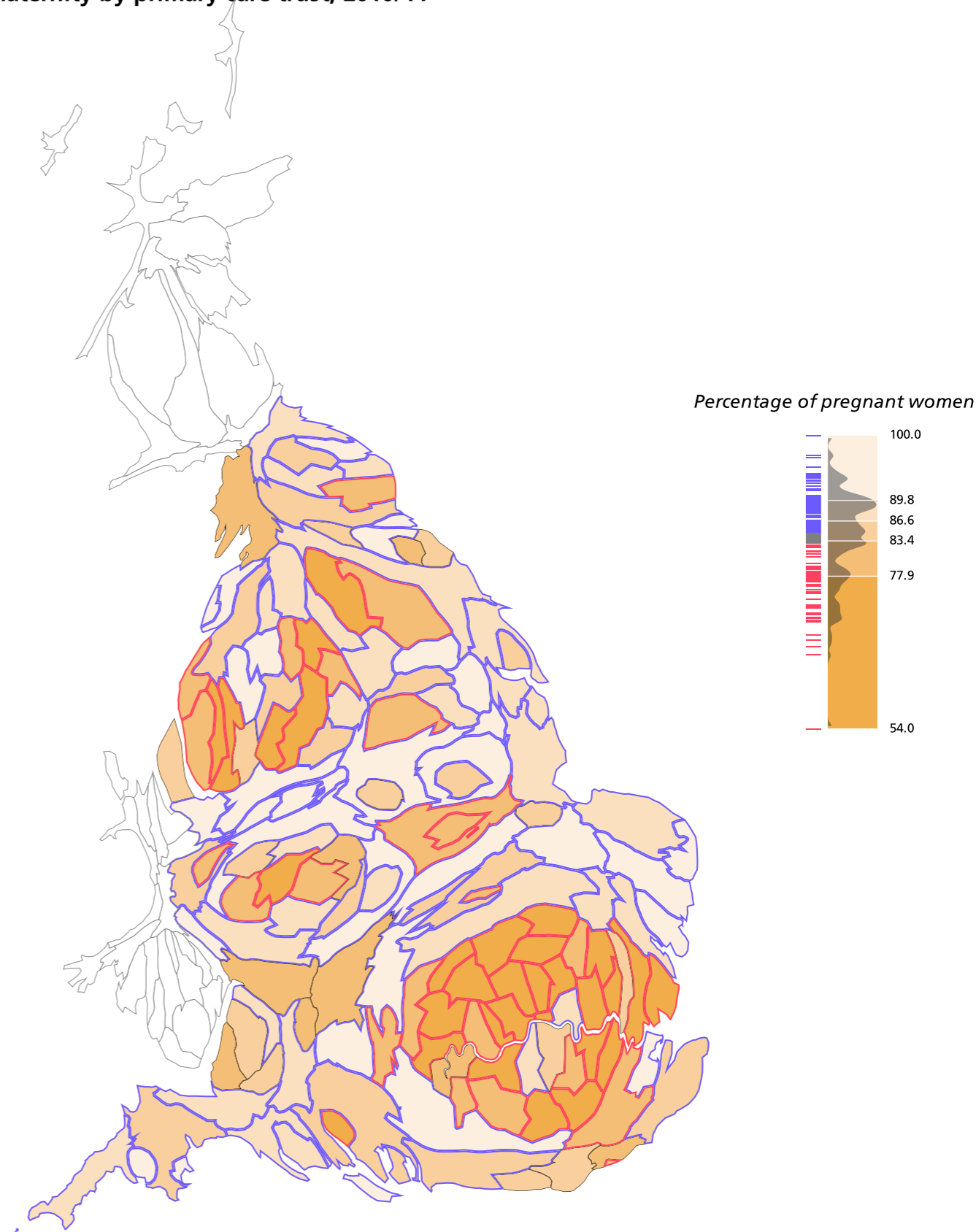
Local breastfeeding rates at 6 to 8 weeks vary greatly, ranging from 19% to 85%, with a national average of 49%. There is only a weak correlation with deprivation indicating that mothers from deprived areas are being well supported.

To improve breastfeeding rates, services should consider implementing peer support, education for health professionals, and ensuring organisational compliance with the UNICEF Baby Friendly accreditation.

Comparison of proportion of infants totally or partially breastfed and deprivation by primary care trust, England, 2010/11



Proportion of women seen and assessed by a healthcare professional within 12 weeks and 6 days of their maternity by primary care trust, 2010/11



Reducing unnecessary emergency admissions for children is a priority, and reduces the use of clinical resources. Evidence suggests that, even where clinicians agree on the optimal quality of a clinical service, variations in children's health services still exist.

Currently, emergency admission rates for all conditions are highest in children aged 0-4 years, and boys in general have higher admission rates than girls.

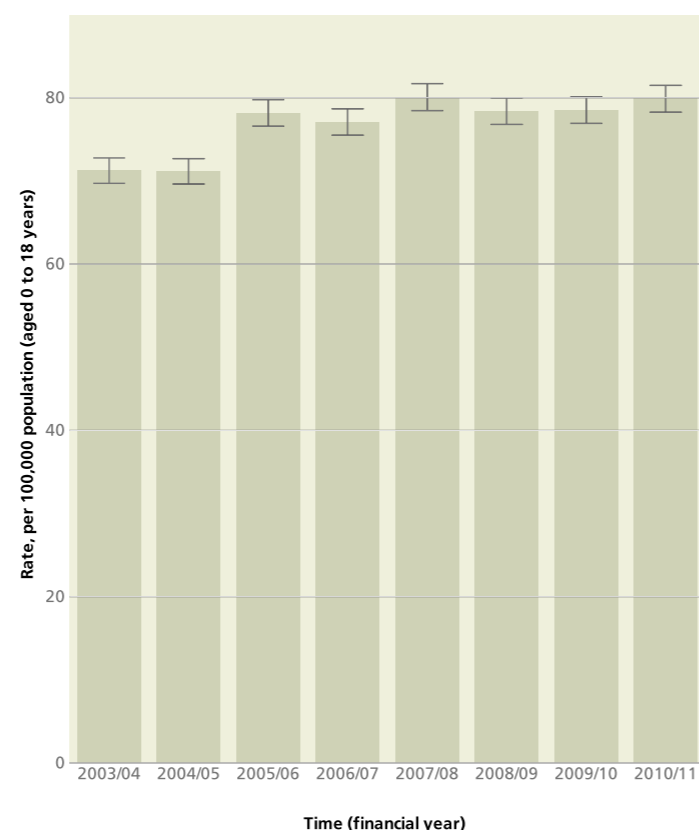
The rate of emergency admissions can be improved by reducing the number of childhood accidents. Issuing advice on safety in the home and working in partnership to improve road safety will contribute to this priority.

Since 2003/04, the national rate of emergency admission for epilepsy in children has risen. For PCTs in England, current rates range from 19.1 to 181.2 admissions per 100,000 population aged 0-18 years. These variations probably reflect differences in clinical practice and availability of specialist services.

Epilepsy is more common in deprived populations. However, deprivation alone cannot explain this degree of variation. The reasons for variation need to be investigated using a range of comparators, which will inform decisions around commissioning interventions and services such as specialist nurses and liaison with primary care and schools. This is explored in more depth in the NHS Atlas of Variation for Children and Young People¹

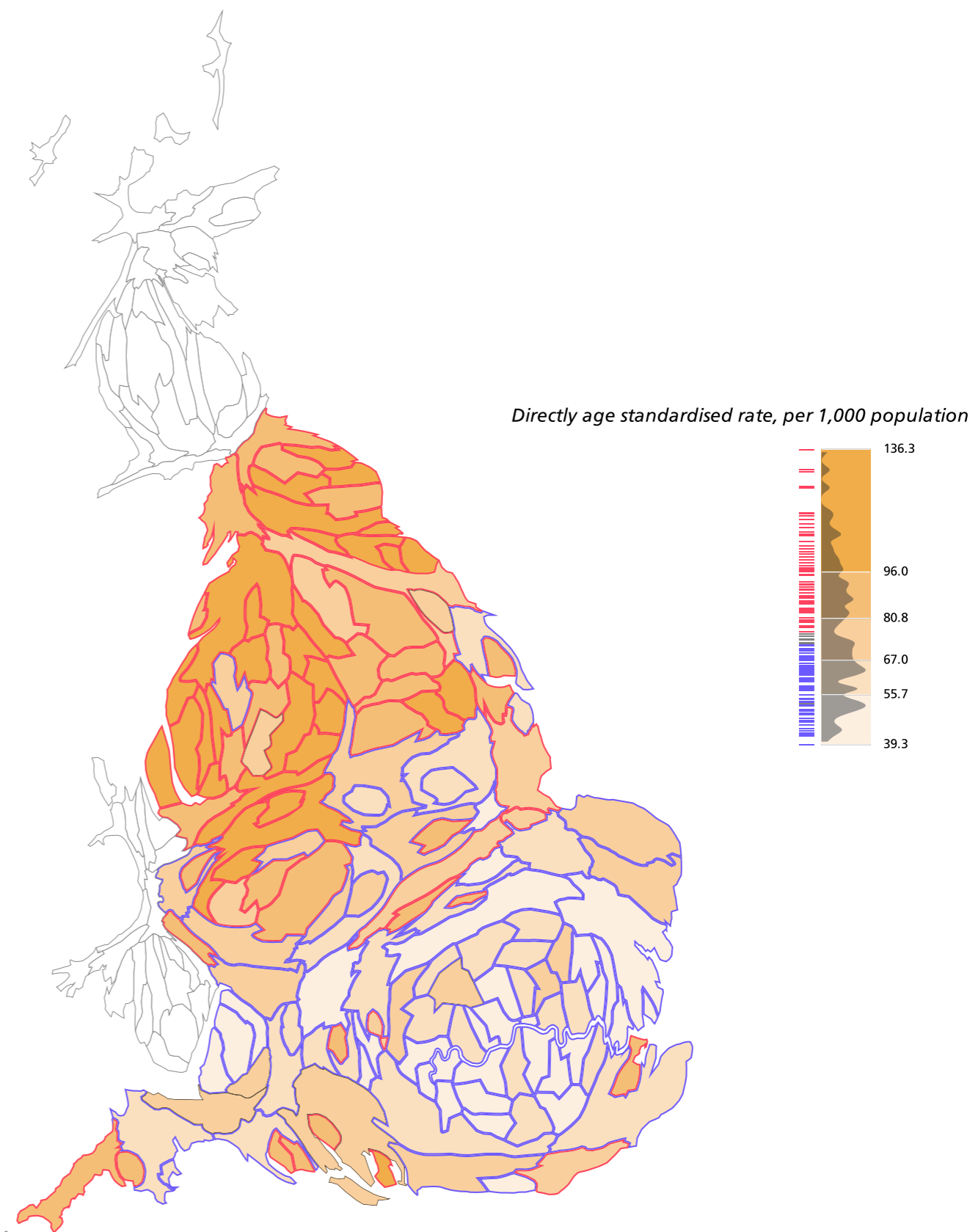
¹ Right Care (2012) NHS Atlas of Variation for Children and Young People. Available at <http://www.rightcare.nhs.uk/index.php/atlas/children-and-young-adults/> [Accessed 17 October 2012]

Trend in emergency admission rate for epilepsy in 0 to 18 year olds, England, 2003/04 to 2010/11



Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre.Crown Copyright © 2012. 2003 to 2010 population estimates supplied by ONS. (Analysis by ChiMat)

Rate of emergency admissions in 0 to 19 year olds by upper tier local authority, England, 2010/11



Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre.Crown Copyright © 2012. 2010 population estimates supplied by ONS. (Analysis by ChiMat)

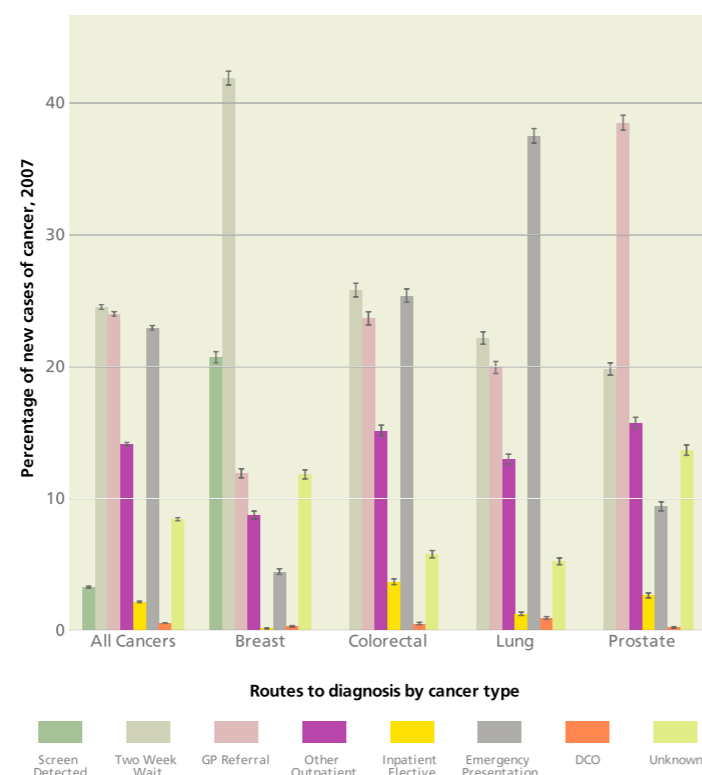
It is estimated that if cancer patients were diagnosed at the same earlier stage as they are in other countries, up to 10,000 deaths in England could be avoided every year.

Across England, there are around one million urgent GP referrals for suspected cancer each year. Of these patients, around 95% were seen within 14 days of referral. On average, a GP will make around 25 urgent referrals a year. However there is wide variation in urgent GP referrals rates across PCTs and GP practices in England.

To help promote early diagnosis of cancer a better understanding of the different routes taken by patients to their cancer diagnoses, and the effect this has on overall outcomes, is important. Across all cancers, 25% of patients are being diagnosed through the 'Two Week Wait' route, whilst 23% are presenting as emergencies.

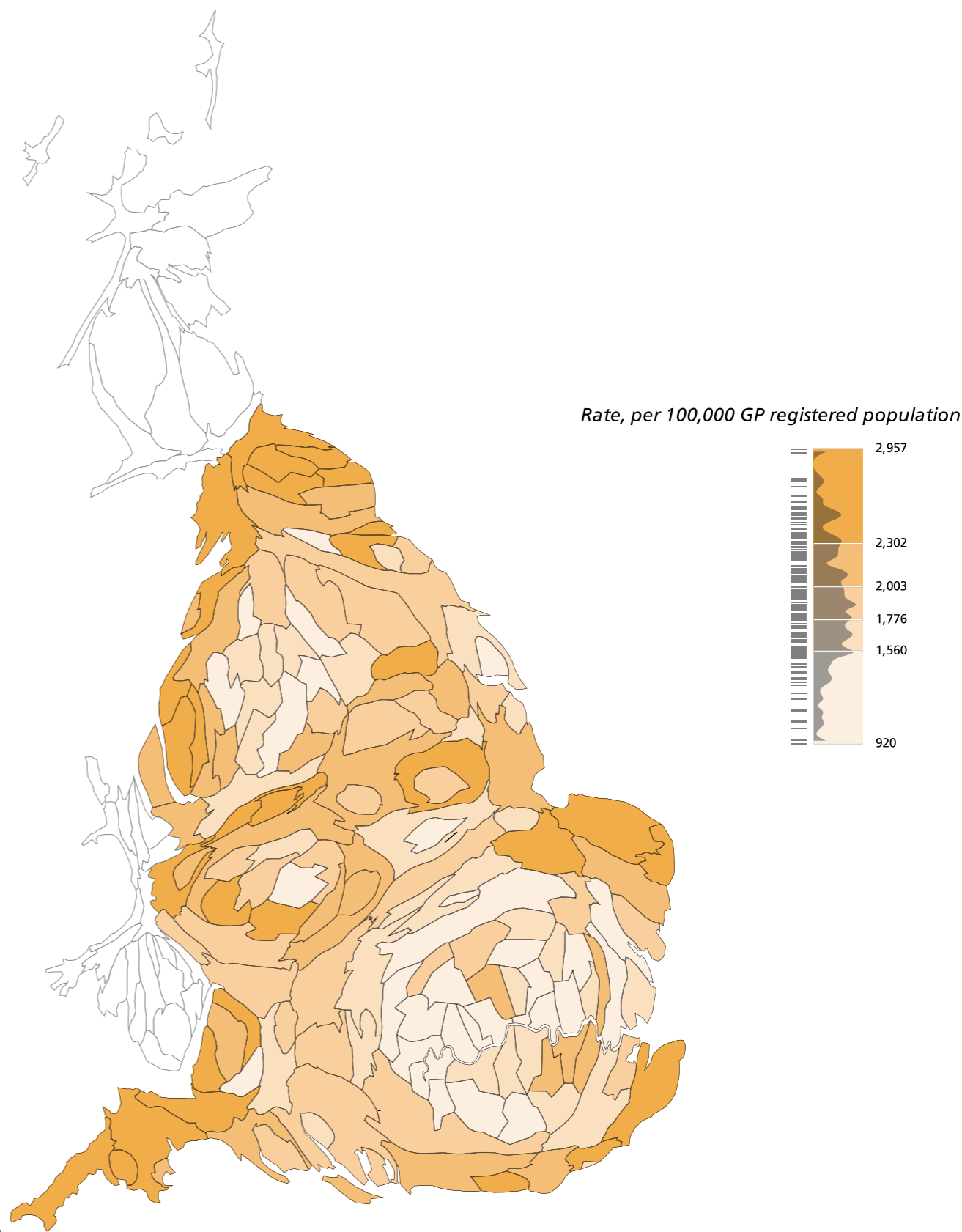
Over 90% of patients diagnosed with the earliest stage of bowel cancer (Dukes A) survived five years from diagnosis compared to only 7% of those diagnosed with advanced disease which has spread to other parts of the body (Dukes D). The introduction of the bowel screening programme for people aged 60-69 will help cancer to be detected earlier and result in improved outcomes for patients.

Routes to diagnosis by cancer type, England, 2007



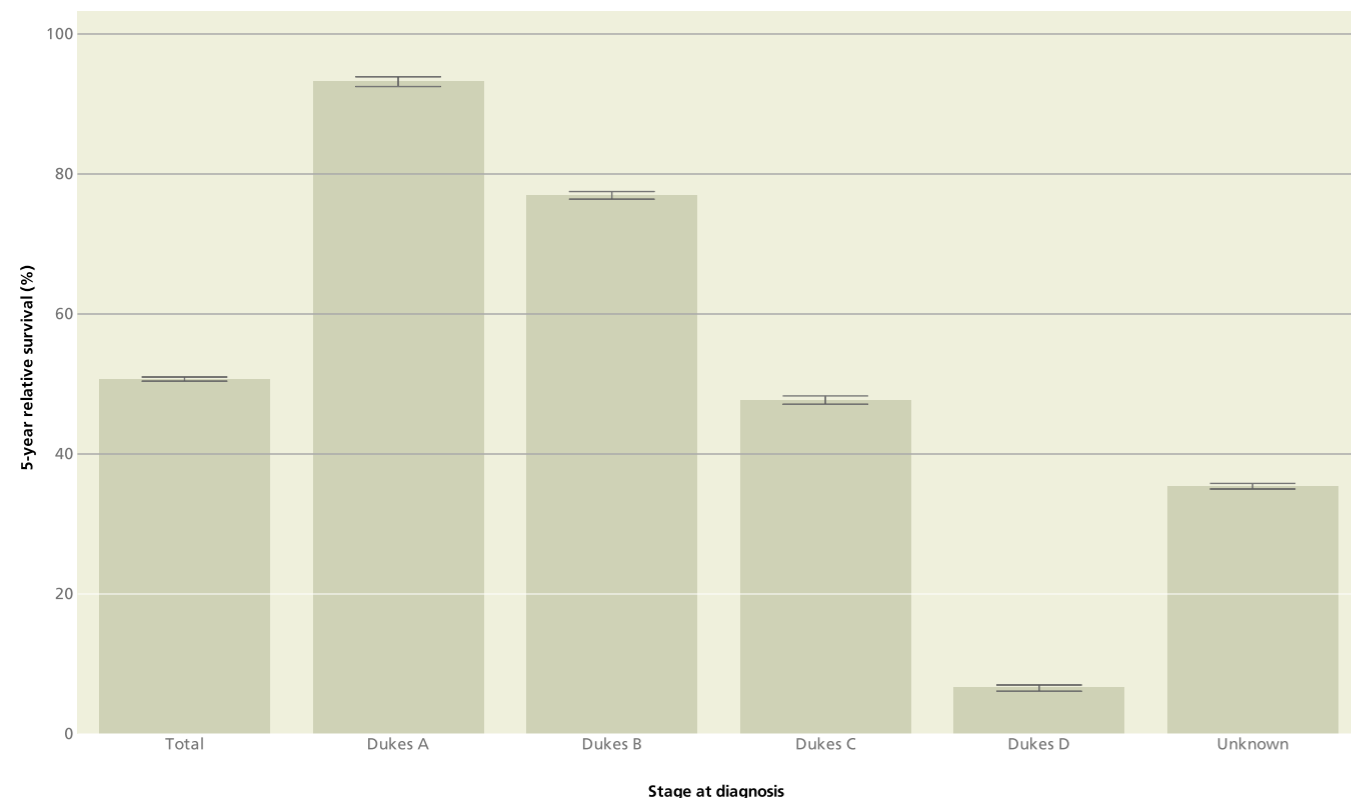
Source: National Cancer Data Repository, UKACR/NCIN, persons registered with cancer, 2007; Cancer Waiting Times, DH via Trent Cancer Registry, Two-week referrals with a suspicion of cancer, Dec 2006 to Jan 2008; Hospital Episode Statistics, Health and Social Care Information Centre, Crown Copyright © 2012 via NatCansAT, in-patient and out-patient care episodes, Jan 2004 to Dec 2007. (Analysis by NCIN)

Rate of urgent GP referrals for suspected cancer, all cancers by primary care trust, England, 2010/11



Source: Commissioner-based cancer waiting times, April 2010 to March 2011, Cancer Waiting Times, DH. GP registered populations 2010, Attribution dataset, Health and Social Care Information Centre. Crown Copyright © 2012. (Analysis by NCIN)

5-year survival for colorectal cancer patients diagnosed between 1996 and 2002 by stage at diagnosis, England



Source: National Cancer Intelligence Network (NCIN)

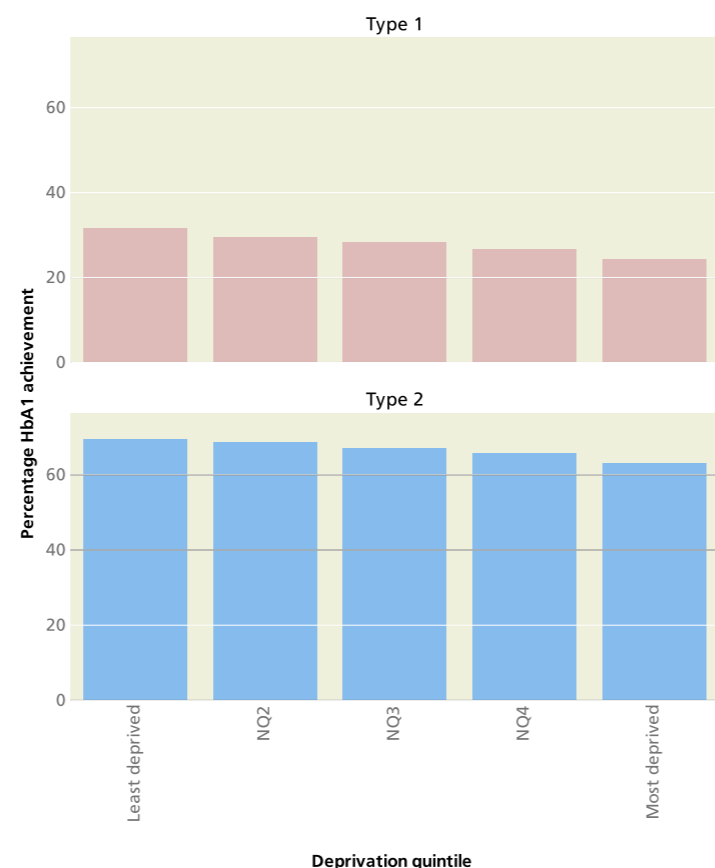
In 2009/10, 50.1% of people with diabetes received all nine 'care processes', key tests for diabetes care known as 'the core bundle'¹, which means almost half of the people with diabetes did not achieve this basic standard of care. In 19 PCTs over 60% of patients received the core bundle while 2 PCTs reported ≤ 10% of patients receiving this core bundle.

The recommended glucose control target (HbA1c ≤ 7.5%) was achieved in 66% of people with Type 2 diabetes but in only 28% of people with Type 1 diabetes. Younger people less frequently achieve the target (following the initial high achievement in children aged 0-5 years).

Achieving the target glucose control is less likely with increasing social deprivation: 32% in the least deprived compared to 24% in the most deprived (Type 1) and similarly, 70% in the least deprived compared to 63% in the most deprived (Type 2).

Variations in uptake of the 'core bundle' mean that not all diabetics are being identified early and/or not accessing the key health checks necessary for effective control of diabetes. More needs to be done, particularly in children and young people, to ensure that everyone with diabetes is identified early and receives the 'core bundle', as good glucose control will delay development and severity of diabetic complications.

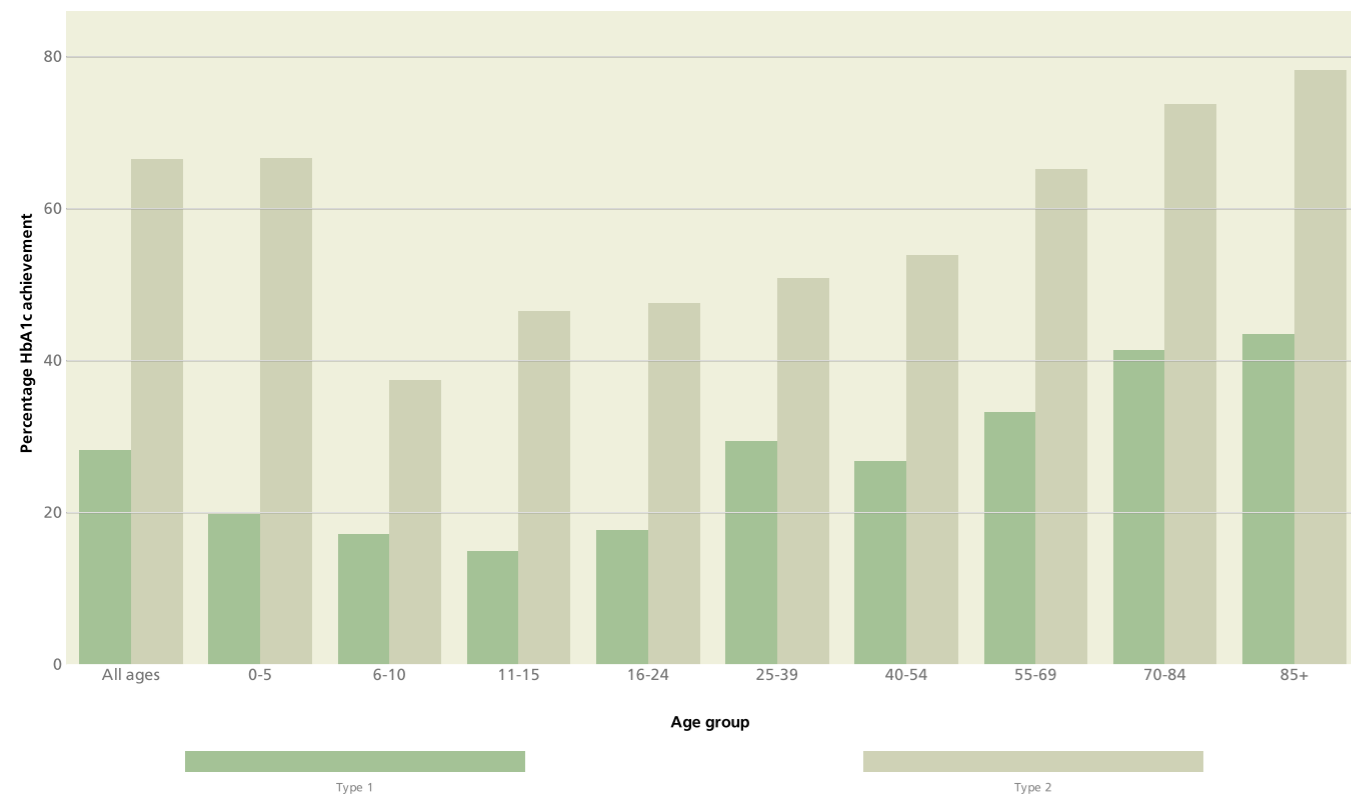
Percentage HbA1 achievement by type of diabetes and deprivation, England, 2009/10



Source: National Diabetes Audit 2009/10, The NHS Information Centre for Health and Social Care. (Analysis by Diabetes Health Intelligence)

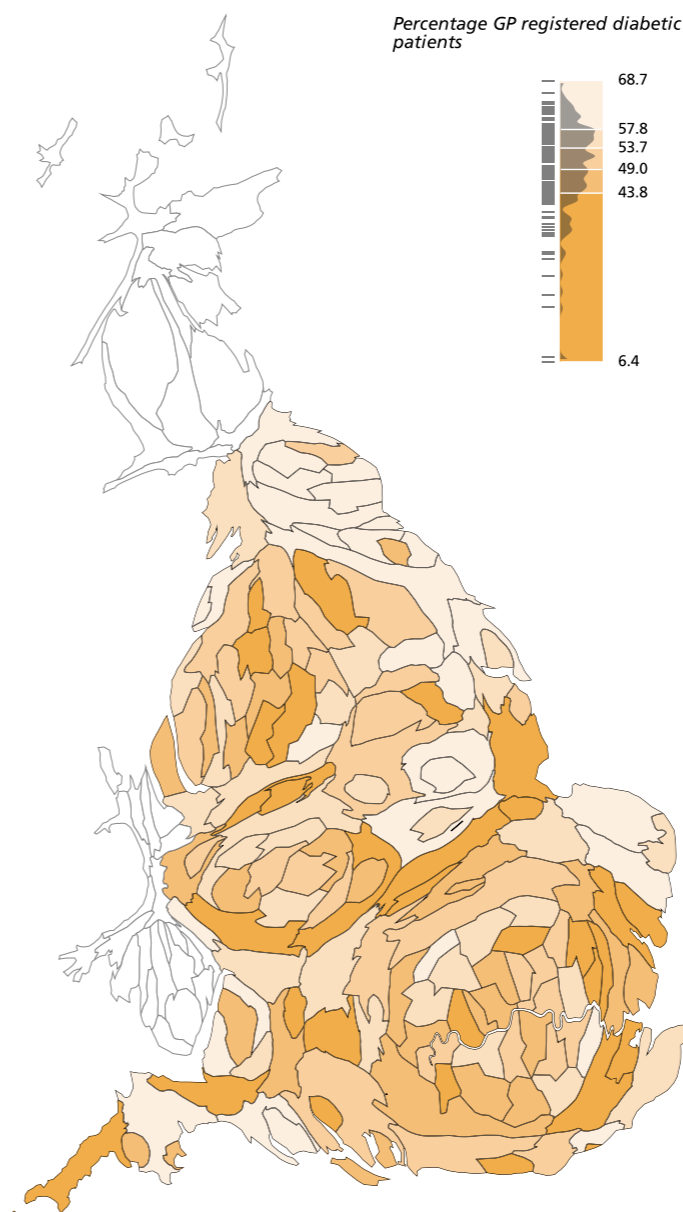
1 Diabetes - NICE Pathways <http://pathways.nice.org.uk/pathways/diabetes>

Percentage HbA1c achievement by type of diabetes and age band, England, 2009/10



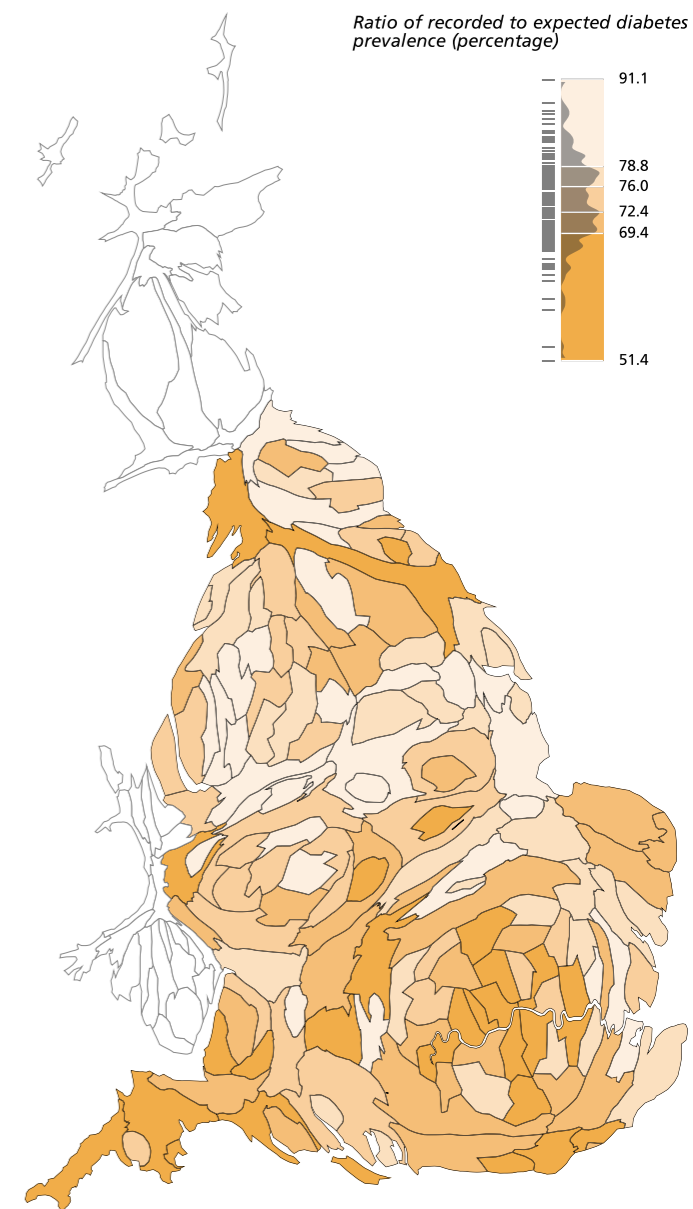
Source: National Diabetes Audit 2009/10, the Health and Social Care Information Centre. Crown Copyright © 2012. (Analysis by Diabetes Health Intelligence)

Percentage of persons with diabetes receiving all nine NICE recommended diabetes care processes by primary care trust, England, 2009/10



Source: National Diabetes Audit 2009/10, Health and Social Care Information Centre. Crown Copyright © 2012. (Analysis by Diabetes Health Intelligence)

Ratio of recorded to expected diabetes prevalence by primary care trust, England, 2011



Source: Quality and Outcomes Framework (QOF), Health and Social Care Information Centre, 2010/11. Crown Copyright © 2012; APHO Diabetes Prevalence Model. (Analysis by Diabetes Health Intelligence)

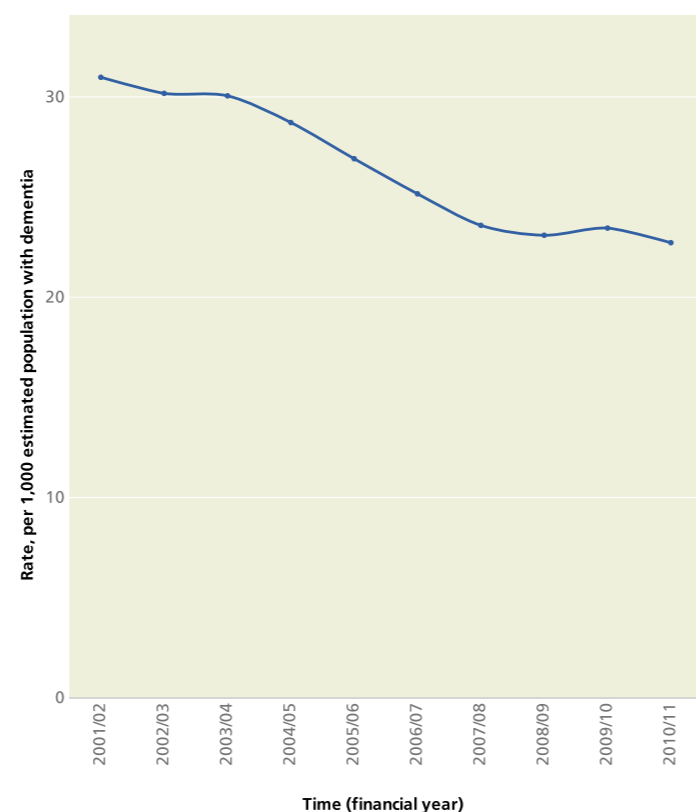
Dementia currently affects about 750,000 people in the UK and the number is increasing as the population ages (see Chapter 2 of this report). Early diagnosis is crucial to planning services, maintaining independence and starting appropriate care and treatment. People with dementia have complex needs, and high levels of dependency. Multidisciplinary care is required to support patients and carers, and avoid unnecessary hospital admissions. Those admitted to hospital need appropriate and supportive care.

At least 40% of people with dementia have not been diagnosed and there is a twofold variation in diagnosis between local authorities. This could be due to lack of awareness by clinicians, or lack of access to services.

The rate of hospital admissions shows a fivefold variation. There are particularly high rates in the North West. The rate of hospital admissions of people with dementias appears to have dropped over the last 10 years.

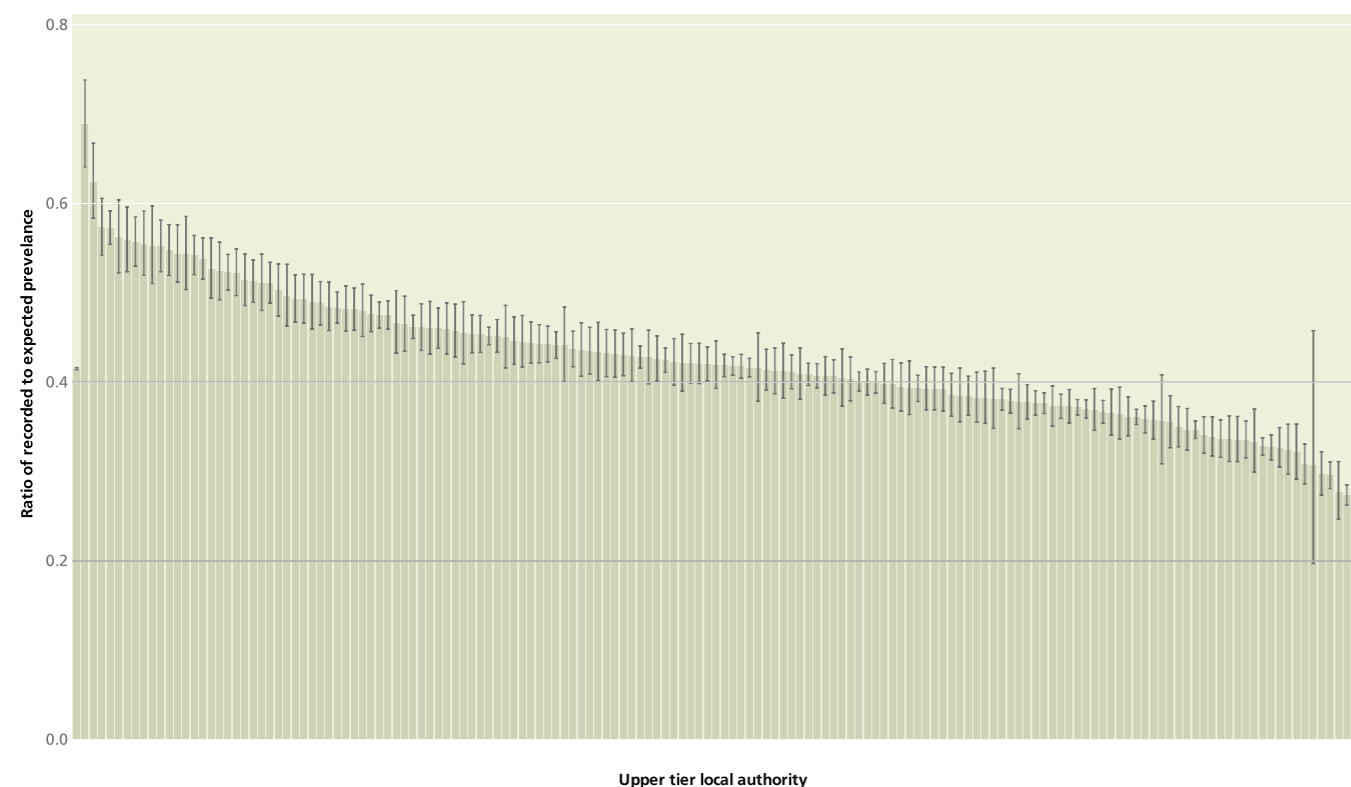
An estimated 6.1 million people suffer from anxiety and depression disorders in England. The access rate of people with anxiety and/or depression disorders to psychological therapies is 2.1%. However there is fivefold variation in access between PCTs. There is currently a phased roll-out of the Improving Access to Psychological Therapies programme, therefore some PCTs will not yet have an established programme.

Trend in hospital admission rates for alzheimers and other related dementias, England, 2001/02 to 2010/11



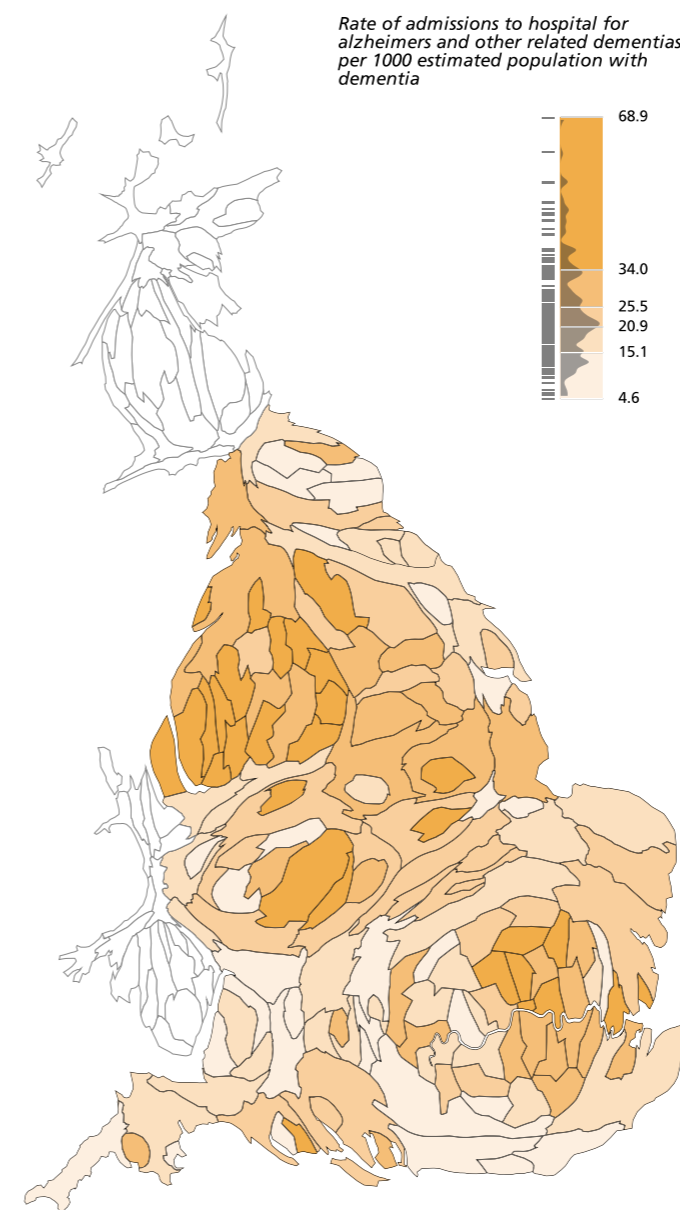
Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. Projecting Older People Population Information (POPP) and Projecting Adult Needs and Service Information (PANSI), Institute of Public Care. (Analysis by NEPHO)

Ratio of recorded to expected dementia prevalence by upper tier local authority, England, 2010/11



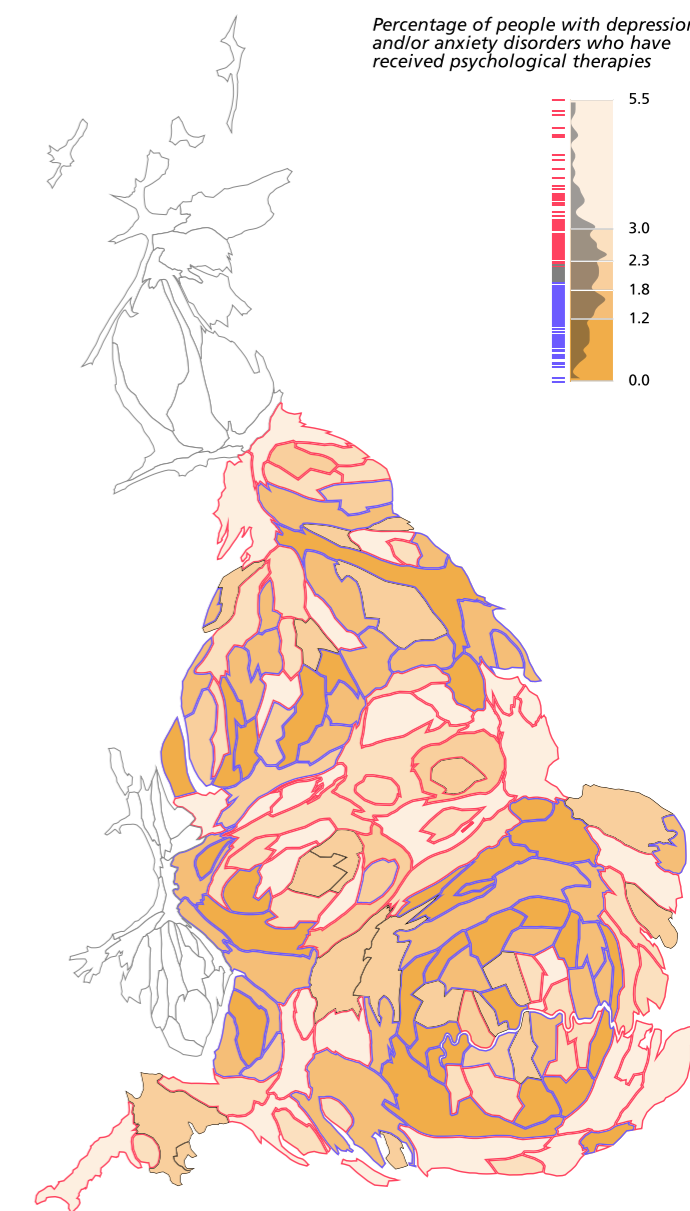
Source: Quality and Outcomes Framework (QOF), Health and Social Care Information Centre. Crown Copyright © 2012. Projecting Older People Population Information (POPP) and Projecting Adult Needs and Service Information (PANSI), Institute of Public Care. (Analysis by NEPHO)

Rate of hospital admissions for dementia by upper tier local authority (estimated dementia population), England, 2010/11



Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. Projecting Older People Population Information (POPP) and Projecting Adult Needs and Service Information (PANSI), Institute of Public Care. (Analysis by NEPHO)

Access to treatment for anxiety or depression by primary care trust, England, as at Quarter 2 2011/12



Source: Improving Access to Psychological Therapies (IAPT), Health and Social Care Information Centre. Crown Copyright © 2012. (Provided by NEPHO)

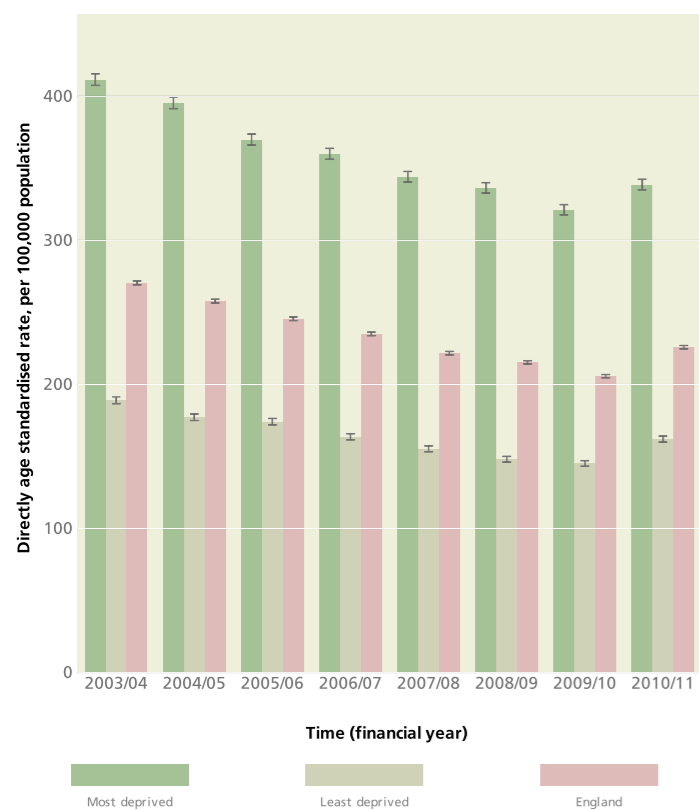
Despite reductions in mortality from coronary heart disease (CHD) over the last 30 years, CHD continues to be a major cause of death in England. The identification and care of people at high risk, and with established disease, requires systematic models of care at scale through primary care teams.

Comparing the registrations of patients with CHD in general practice with expected prevalence shows considerable underdiagnosis in many areas, particularly in the south and London. Overall only 77% of expected cases are on GP registers.

Emergency admissions are higher in the north of England and in London. Emergency admissions have a strong relationship with deprivation, with a more than twofold difference between the most deprived quintile of PCTs and the least deprived. Since 2003 the emergency admissions rates have dropped for the most and least deprived population quintiles though worryingly there was an upturn in admission rates in 2010 in both quintiles and for England overall. The relative inequalities gap between the two quintiles has not changed over these years.

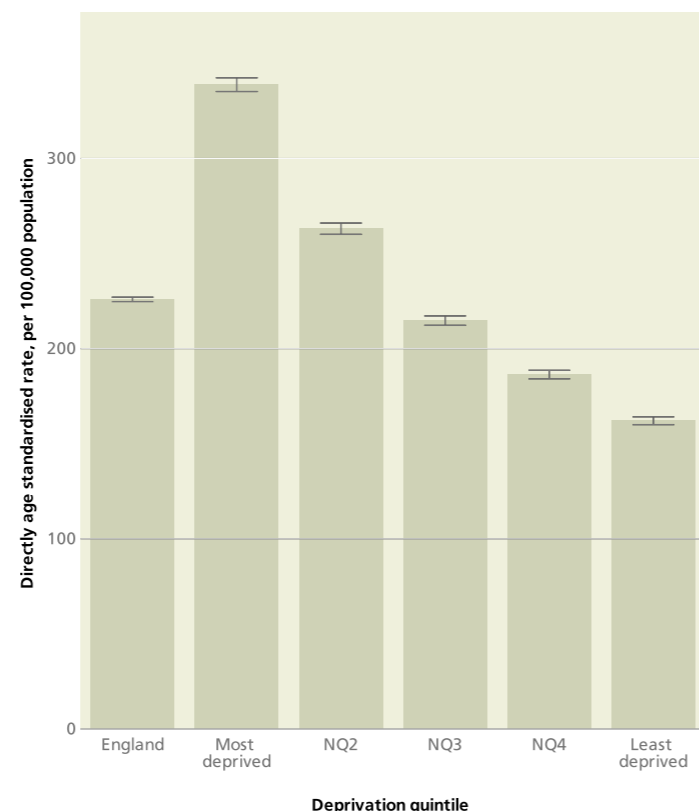
Primary care teams need to put intensive effort into identifying and managing people at high risk or with established disease. The implementation of the NHS Health Checks programme should detect the population at risk and reduce inequalities.

Trend in emergency hospital admission rates for coronary heart disease, England, 2003/04 to 2010/11



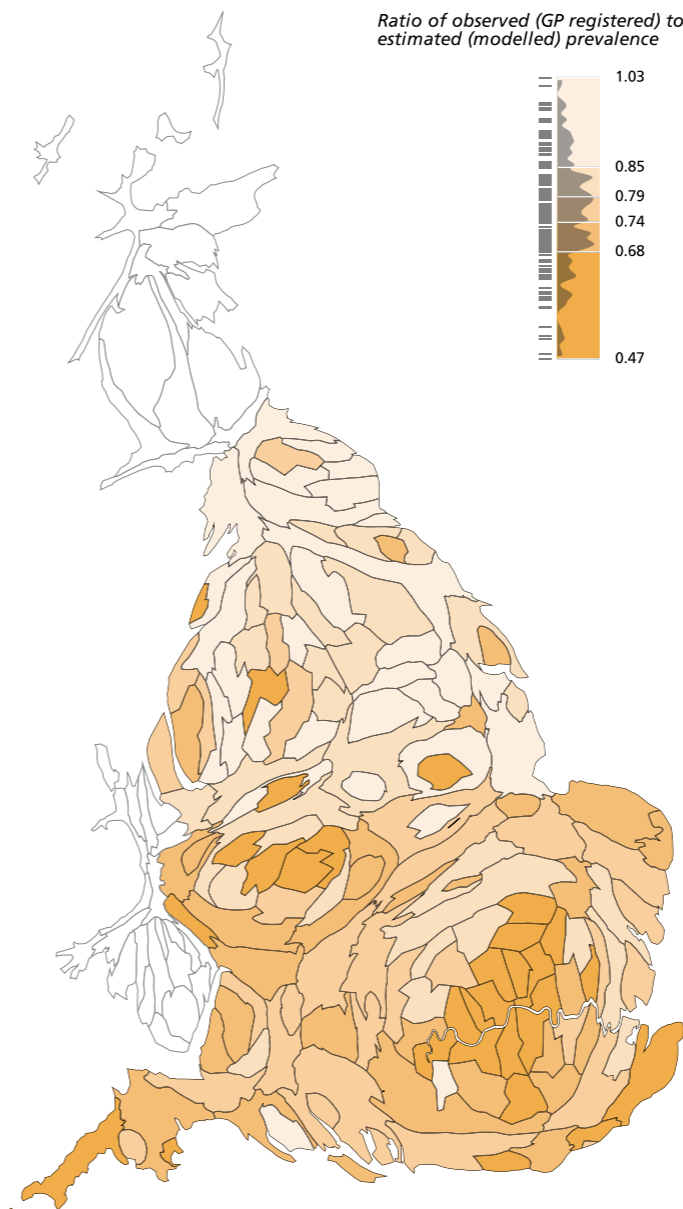
Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. 2003 to 2010 population estimates supplied by ONS. (Analysis by PHOs, led by EMPHO)

Emergency hospital admission rates for coronary heart disease by deprivation, England, 2010/11



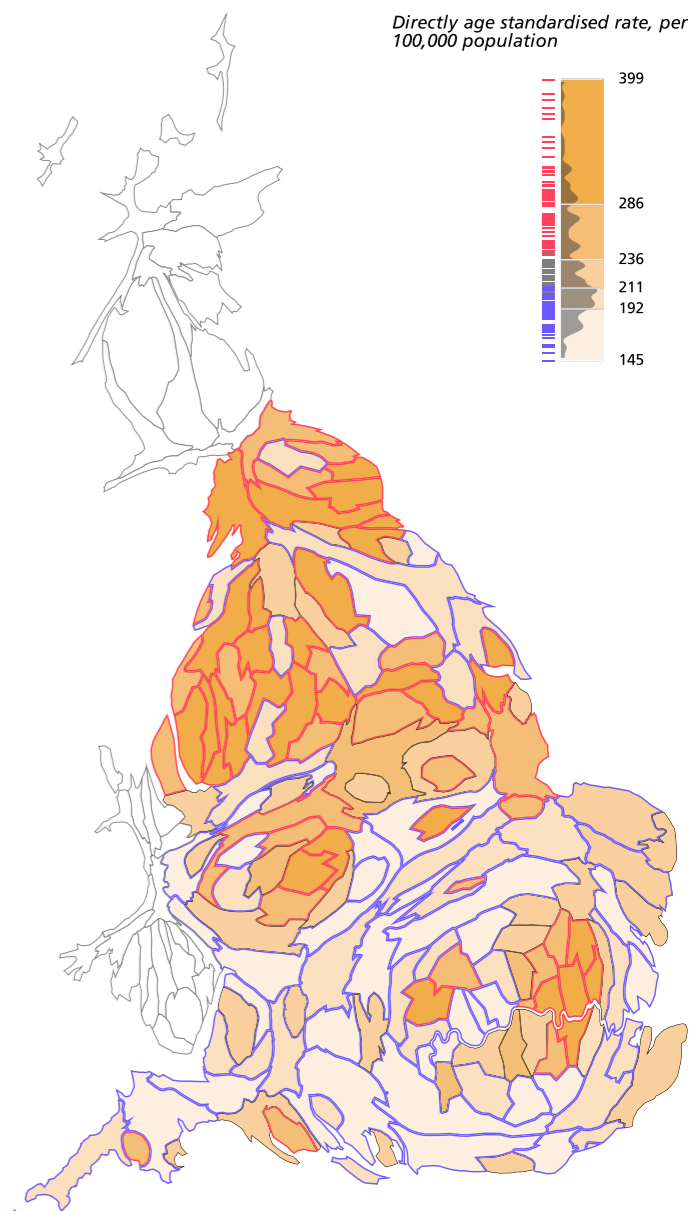
Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. 2010 population estimates supplied by ONS. (Analysis by PHOs, led by EMPHO)

Ratio of observed to estimated prevalence of coronary heart disease by primary care trust, England, 2010/11



Source: Quality and Outcomes Framework (QOF), Health and Social Care Information Centre. Crown Copyright © 2012; and PHO modelled estimate of prevalence of CHD in England, December 2011. (Analysis by SEPHO)

Emergency hospital admission rates for coronary heart disease by primary care trust, England, 2010/11



Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. 2010 Population estimates supplied by ONS. (Analysis by PHOs, led by EMPHO)

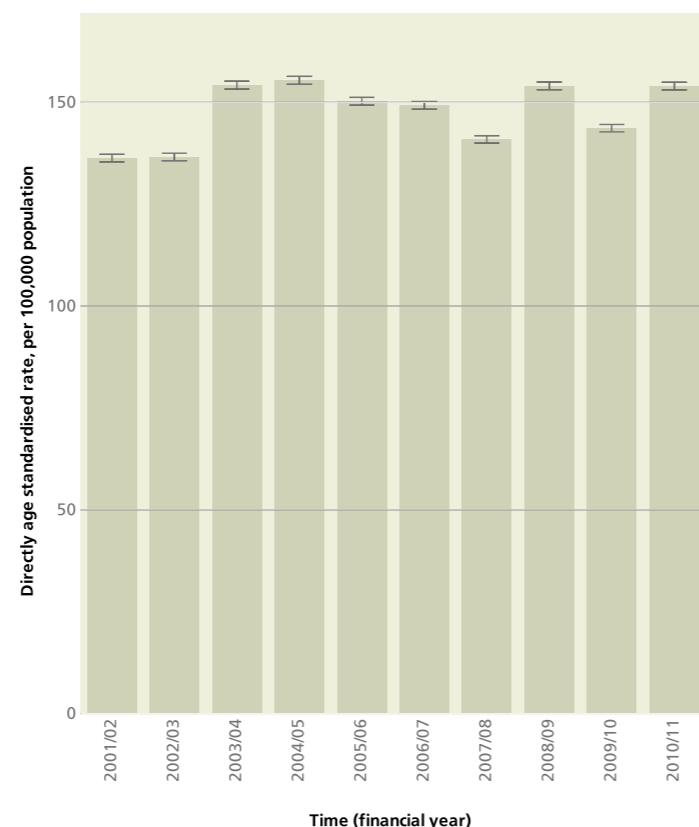
Chronic obstructive pulmonary disease (COPD) is chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible. The main cause of COPD is smoking. Early identification of COPD and treatment delays progression, improves quality of life, and reduces emergency admissions. About 30% of patients with known COPD continue to smoke.

Comparing the registrations of patients with COPD in general practice with expected prevalence shows considerable underdiagnosis in many areas, particularly in London. Registration rates are highest in the north, reflecting the higher prevalence.

Many emergency admissions for COPD can be avoided through better management in the community. Emergency admissions are higher in the north of England and in London, partly due to the higher prevalence of COPD in these areas. Admissions have a strong relationship with deprivation, with a fourfold difference between the most and least deprived quintiles of PCTs. Admission rates have remained static over 10 years.

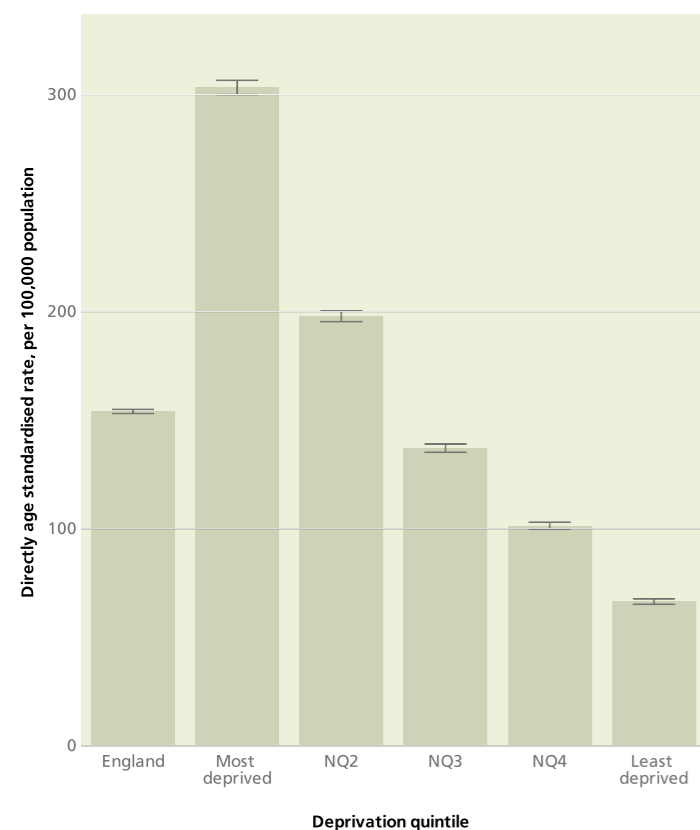
Preventing uptake of, or stopping, smoking is a high priority. Treatment of COPD requires encouraging patients to stop smoking, and effective inhaled therapy. Exacerbations and emergency admissions can be minimised by appropriate inhaled therapy and appropriate immunisation. Pulmonary rehabilitation should be made available to all who need it.

Trend in emergency hospital admission rates for chronic obstructive pulmonary disease (COPD), England, 2001/02 to 2010/11



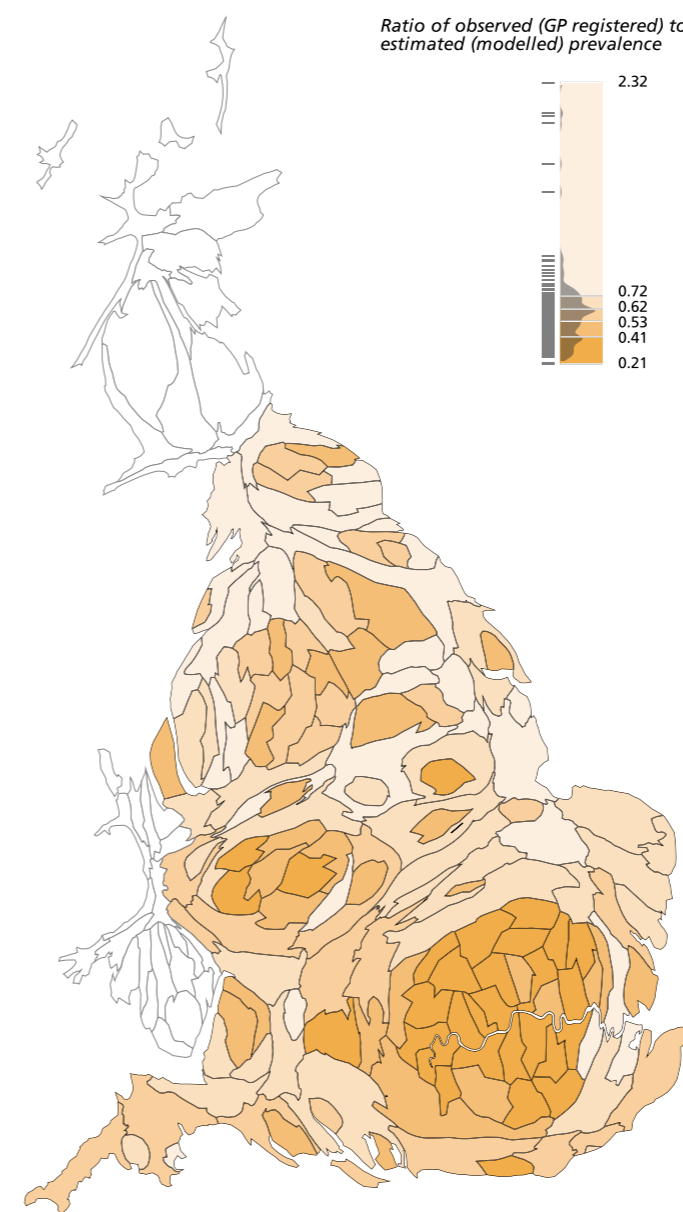
Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. 2010 population estimates supplied by ONS. (Analysis by SEPHO)

Emergency hospital admission rates for chronic obstructive pulmonary disease (COPD) by deprivation, England, 2010/11



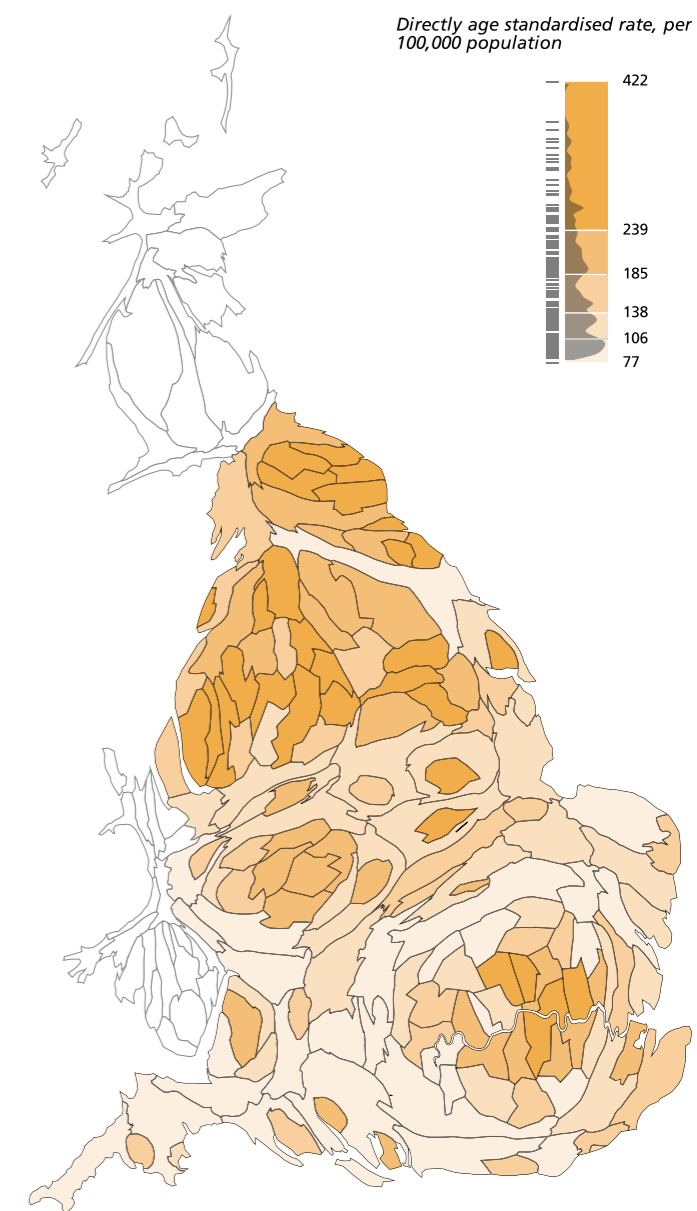
Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. 2010 population estimates supplied by ONS. (Analysis by SEPHO)

Ratio of observed to estimated prevalence of chronic obstructive pulmonary disease (COPD) by primary care trust, England, 2010/11



Source: Quality and Outcomes Framework (QOF), Health and Social Care Information Centre. Crown Copyright © 2012; and PHO modelled estimate of prevalence of COPD in England, December 2011. (Analysis by ERPHO)

Emergency hospital admission rates for chronic obstructive pulmonary disease (COPD) by primary care trust, England, 2010/11



Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. 2010 Population estimates supplied by ONS. (Analysis by SEPHO)

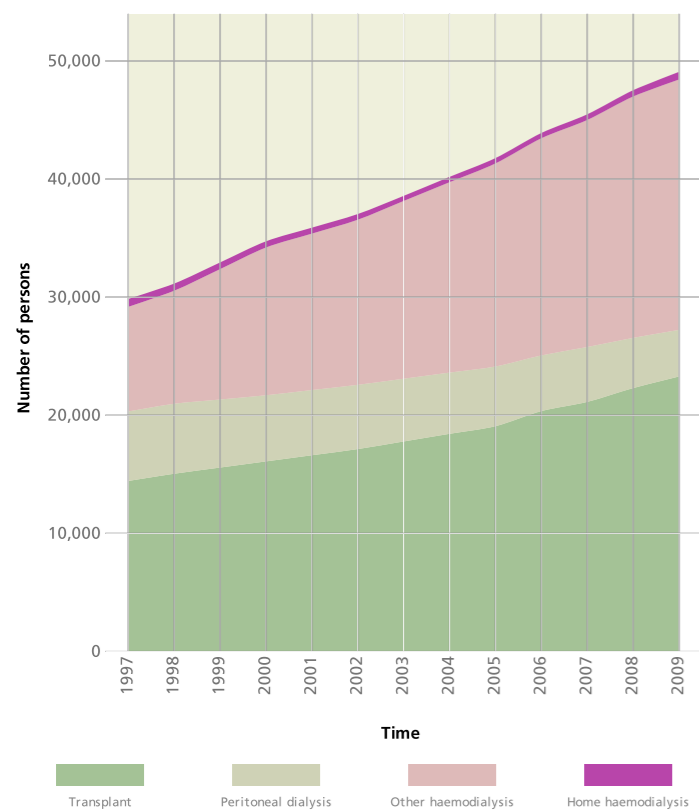
Chronic kidney disease (CKD) is a long term treatable condition affecting about three million people in England with eventual progression to end-stage renal failure which is managed with renal replacement therapy (RRT). The five stages of CKD range from normal kidney function but with other evidence of kidney disease (Stage 1) to severely reduced kidney function (stages 3-5). Diabetes is the leading cause of CKD.

There is variation across the English regions in prevalence of later stage CKD as measured by registration in primary care. Half of all PCTs identify less than 65% of their people with CKD. CKD increases with age, with over 30% of those aged 75+ affected.

There is marked geographical variation in RRT uptake rates with two thirds of areas significantly different from the England average. Uptake rates also vary significantly over time in the choice of treatment modality. In England in 2009, nearly 50,000 people were on dialysis or living with transplants. Since 1997, the numbers of renal transplants and in-centre haemodialysis have been rising steadily, in part due to increase in patient survival.

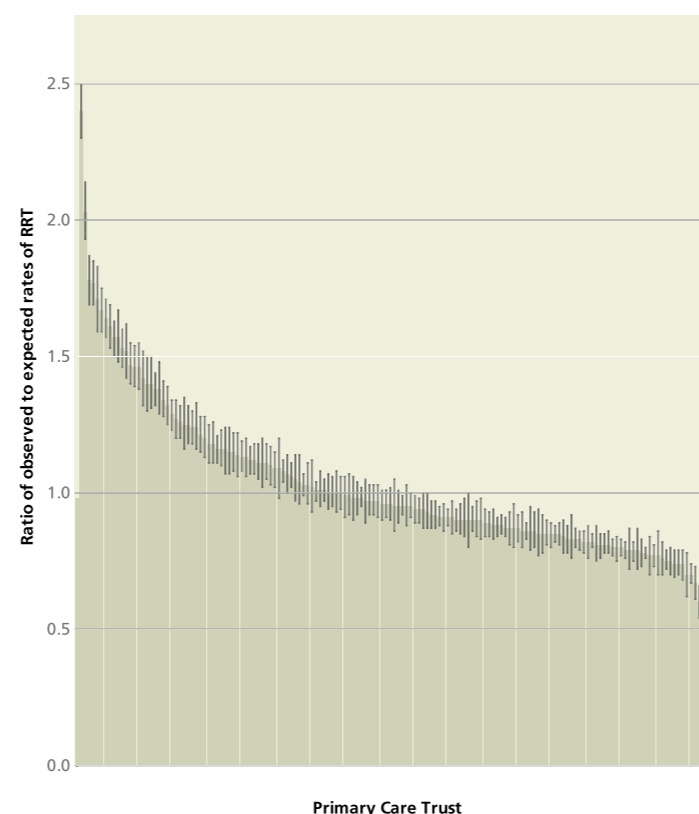
To reduce variation in CKD identification and to increase uptake of RRT, it is important to identify CKD early and ensure that access to RRT is proportional to need.

Trend in number of persons on Renal Replacement Therapy (RRT) by modality, UK, 1997 to 2009



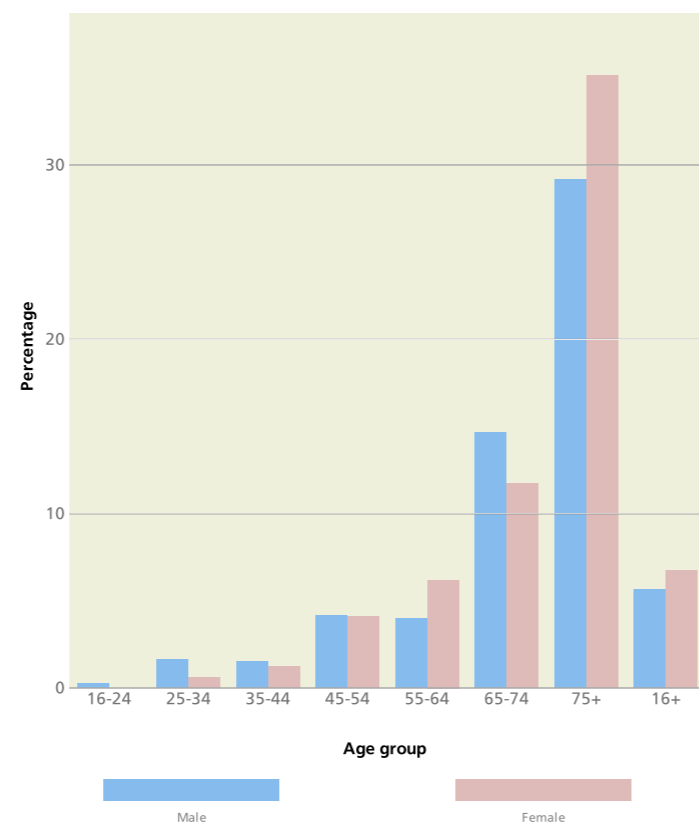
Source: UK Renal Registry, the Renal Association. (Provided by EMPHO. Analysis and interpretation should not be seen as an official policy or interpretation of the UK Renal Registry or the Renal Association)

Observed Renal Replacement Therapy (RRT) compared to expected level, by primary care trust, England, 2004-09



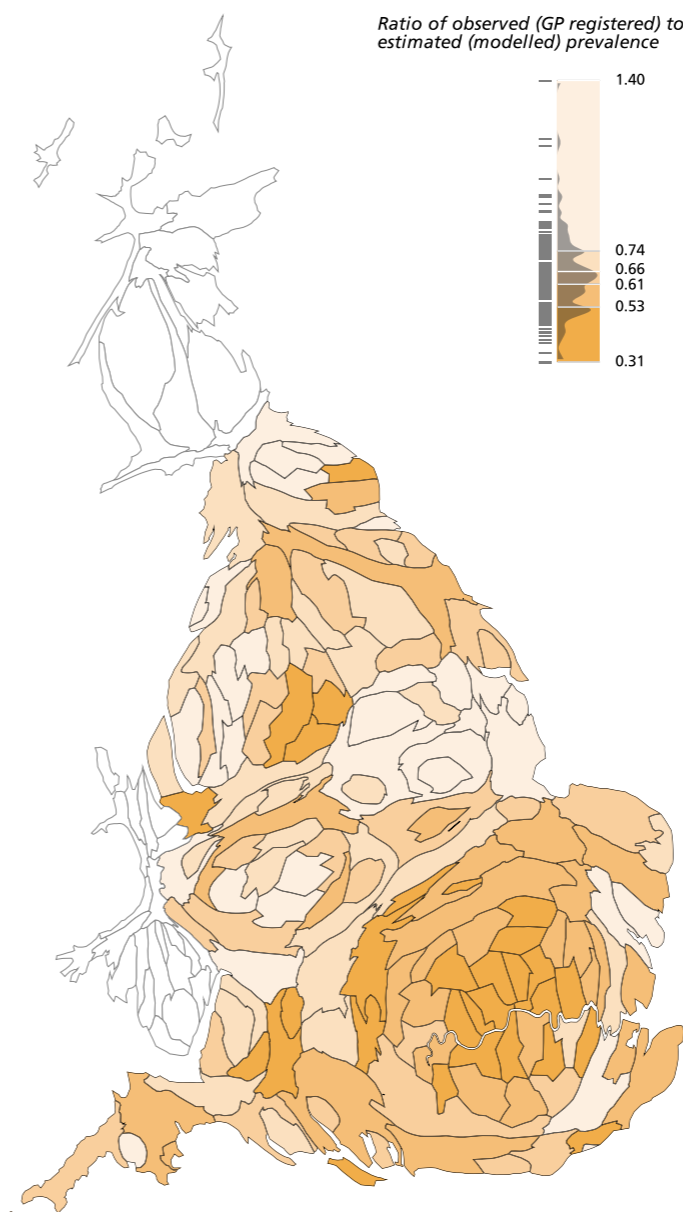
Source: UK Renal Registry, the Renal Association. (Provided by EMPHO. Analysis and interpretation should not be seen as an official policy or interpretation of the UK Renal Registry or the Renal Association)

Prevalence of chronic kidney disease (stages 3-5), by age and sex, England, 2009/10



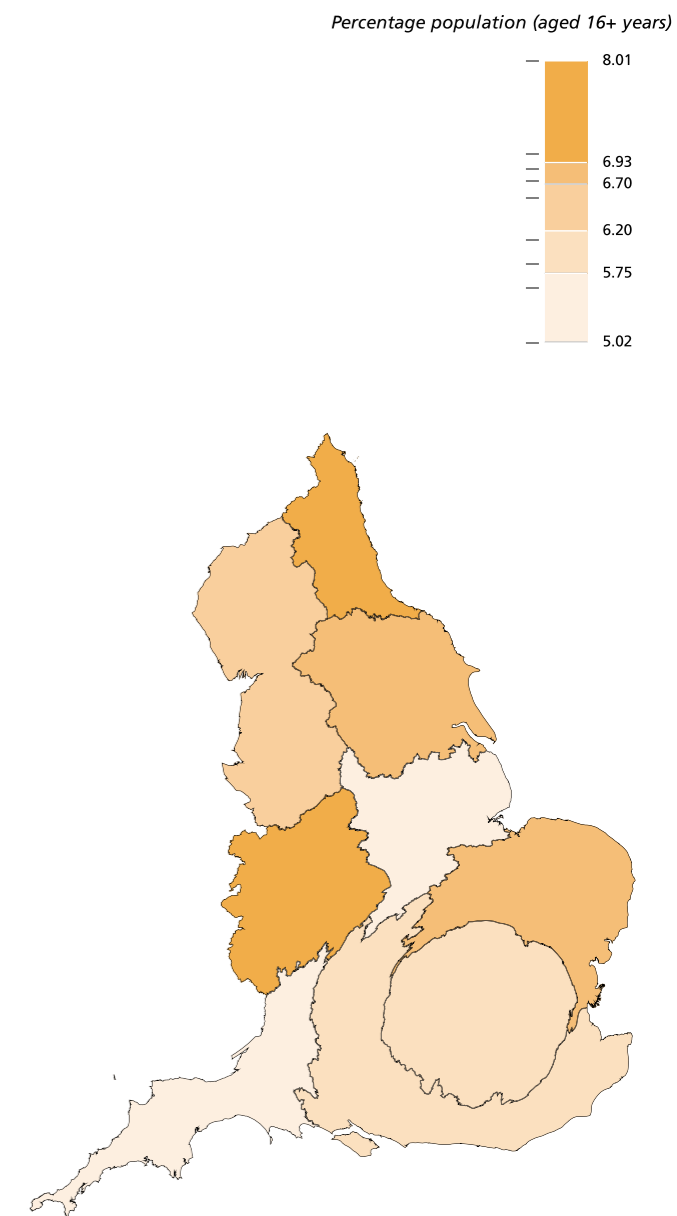
Source: Health Survey for England. Copyright © 2011. Re-used with the permission of the Health and Social Care Information Centre. All rights reserved. (Provided by EMPHO)

Ratio of observed to expected chronic kidney disease prevalence (stages 3-5) by primary care trust, England, 2010/11



Source: Observed prevalence from Quality and Outcomes Framework (QOF), Health and Social Care Information Centre, 2010/11. Crown Copyright © 2012; expected prevalence from Health Survey for England 2010. © Crown Copyright 2012 and 2010 Attribution dataset, DH. (Analysis by EMPHO)

Prevalence of survey defined chronic kidney disease (stages 3-5) by region, England, 2009/10



Source: Observed prevalence from Quality and Outcomes Framework (QOF), Health and Social Care Information Centre, 2010/11. Crown Copyright © 2012; expected prevalence from Health Survey for England 2010. © Crown Copyright 2012 and 2010 Attribution dataset, DH. (Analysis by EMPHO)

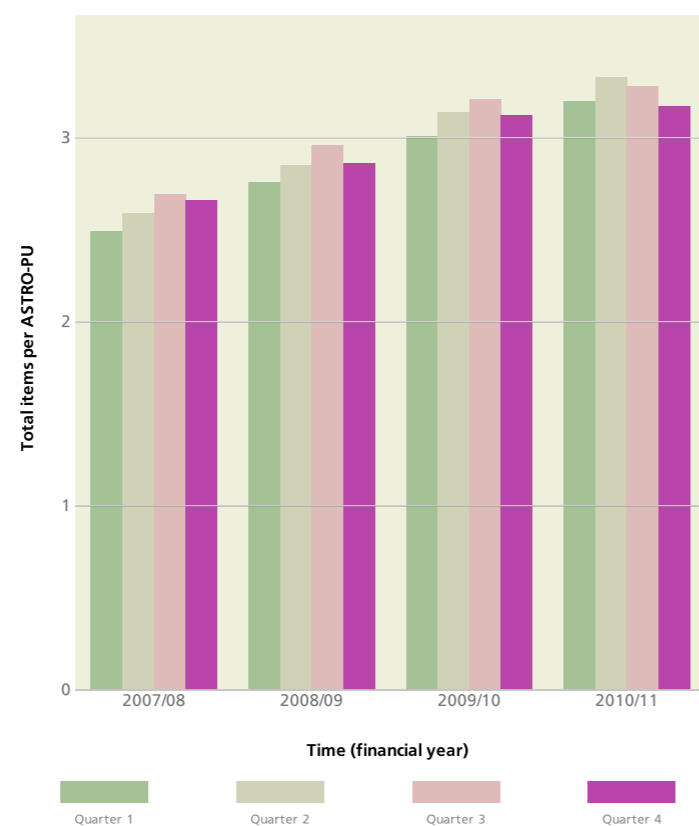
The impact of osteoporosis is highlighted in Chapter 2 of this report. However, fractures due to this silent condition are not inevitable. Early diagnosis and treatment, including prevention of falls, reduces fractures, pain, loss of independence and early mortality. After controlling for age and sex, the large variation seen in access to diagnostic bone-density scanning is unexpected. The recent decrease in treatments prescribed is unexplained.

Osteoarthritis, a painful, degenerative condition of joints, affects 8 million people nationwide. Though the single largest cause of pain and disability in this country¹, it is a generally unrecognised public health priority. It is difficult to obtain accurate data on prevalence.

Joint replacement is a highly effective treatment for severe osteoarthritis. However, people in deprived areas benefit less, with fewer operations performed, and reduced associated health gain. Variation in access is not likely to be due to differences in disease prevalence, as need is generally greater in deprived areas.

The incidence of these conditions is expected to increase in our ageing society. Improved data on population prevalence and on non-surgical treatments is needed to drive better services and outcomes.

Trend in prescribing for drugs used in the treatment of osteoporosis, England, 2007/08 to 2010/11



Source: NHS Prescription Services Prescribing Database via ePACT, NHS Business Services Authority. (Analysis by SEPHO)

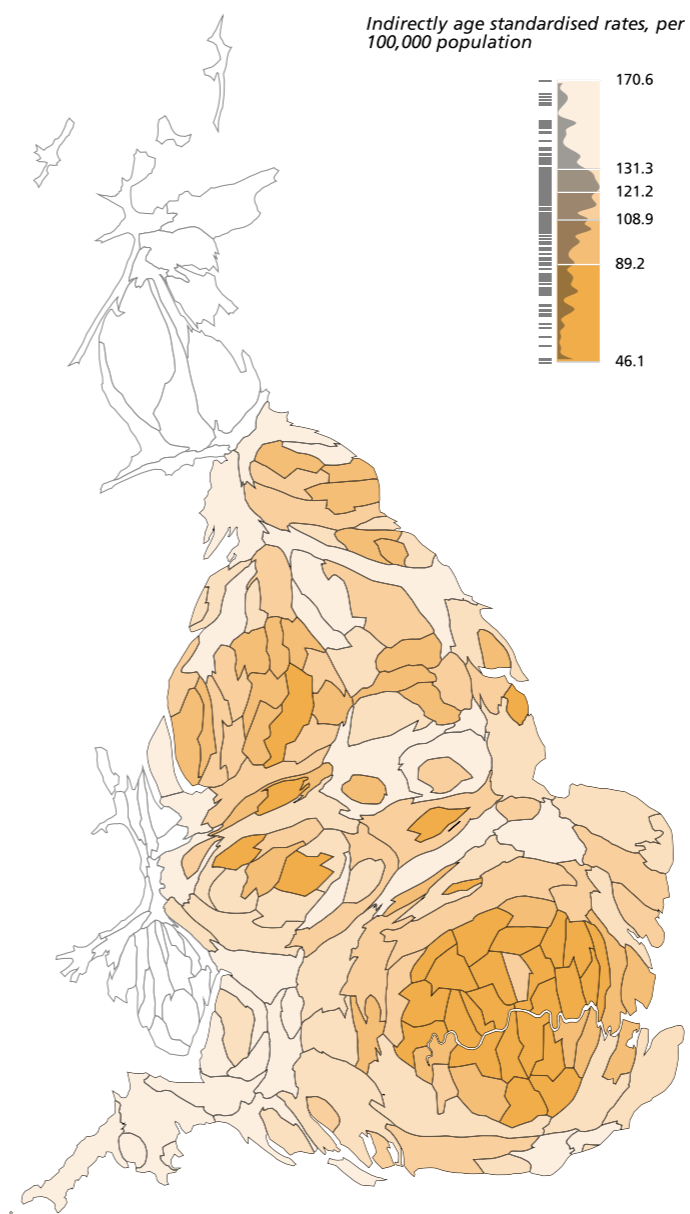
1 "Bajekal M, Primatesta P, Prior G, editors. Health Survey for England 2001: Disability. London: The Stationery Office; 2003."

Comparison of health gain per primary hip replacement and deprivation by primary care trust, 2010/2011



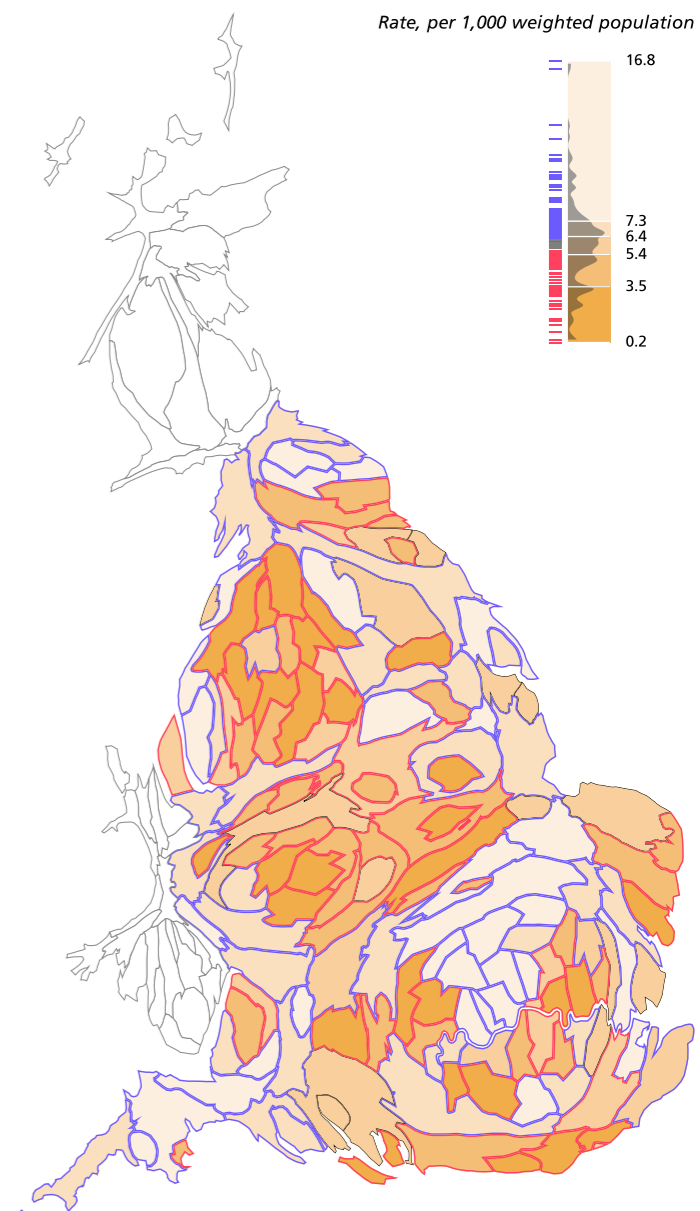
Source: Indices of Deprivation 2010, DCLG. Patient Reported Outcome Measures (PROMS), DH. (Analysis by SEPHO)

Hospital admission rate for uncemented and cemented primary hip replacements by primary care trust, England, 2010/11



Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. Population data, Attribution Data Set 2010, DH. (Analysis by DH)

Dual-energy X-ray (DEXA) scan activity rate by primary care trust, England, 2010/11



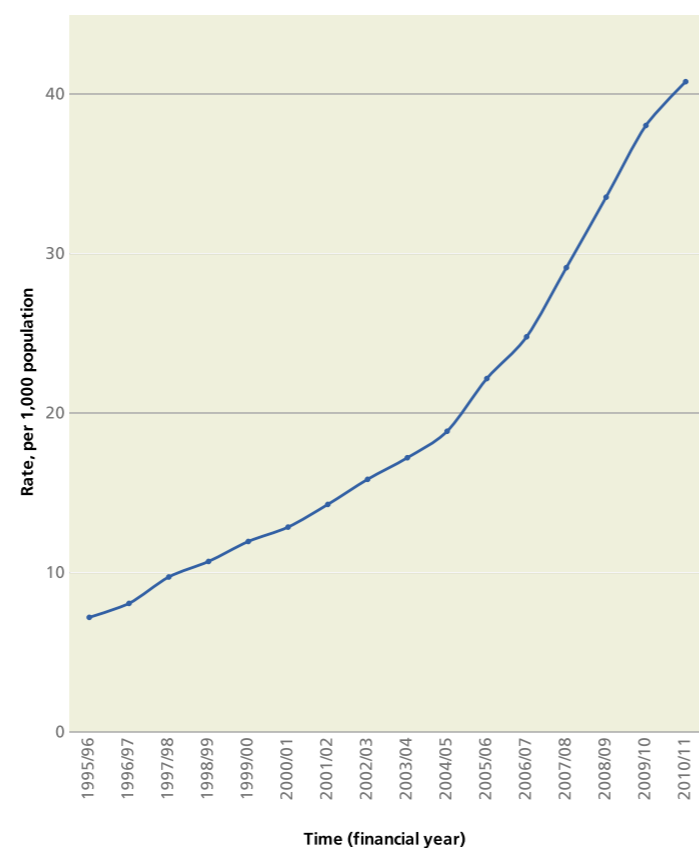
Source: DM01 monthly diagnostics return and weighted populations, DH. (Analysis by SEPHO)

Magnetic Resonance Imaging (MRI) has the potential to reduce the number of other diagnostic procedures that need to be performed. Understanding variation in its utilisation gives an assessment of the quality and performance of healthcare provision.

In 2010/11, in England, the average rate of MRI activity per 1,000 weighted population was 40.1. For PCTs, the rate ranged from 18.1 to 76.5 (4.2-fold variation). Some of this variation can be attributed to the availability of both equipment and workforce. Much of the variation could be due to local clinical practices that have evolved over time, which need re-assessing.

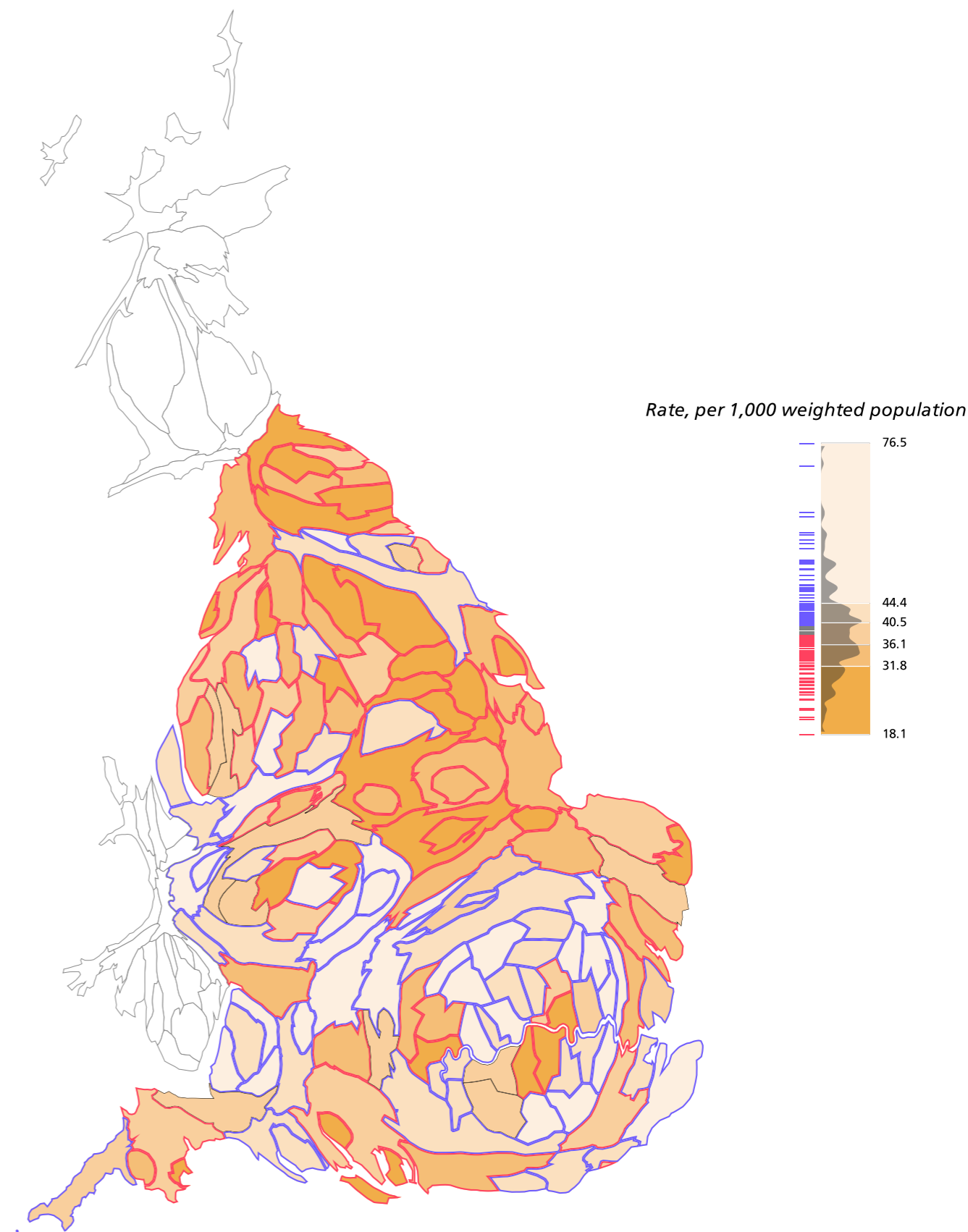
The rate of MRI activity has steadily increased over time from 7.2 per 1,000 in 1995/6 to 40.8 per 1,000 in 2010/11. There is concern among clinicians about the increasing use of MRI because of incidental findings which can lead to unnecessary investigation and anxiety. Reviewing rates of MRI activity in the local areas will identify under and over-use with the consequent need for education and skills development. To address unwarranted variation, it is important to apply evidence based patient pathways for diagnostics, to promote evaluation to understand the benefits and harms resulting from different rates of MRI investigation.

Trend in rate of MRI activity, England, 1995/96 to 2010/11



Source: KH12 return, DH. (Analysis by SEPHO)

Access to diagnostic services, rate of MRI activity by primary care trust, England, 2010/11



Source: DM01 monthly diagnostics return and weighted populations, DH. (Analysis by SEPHO)

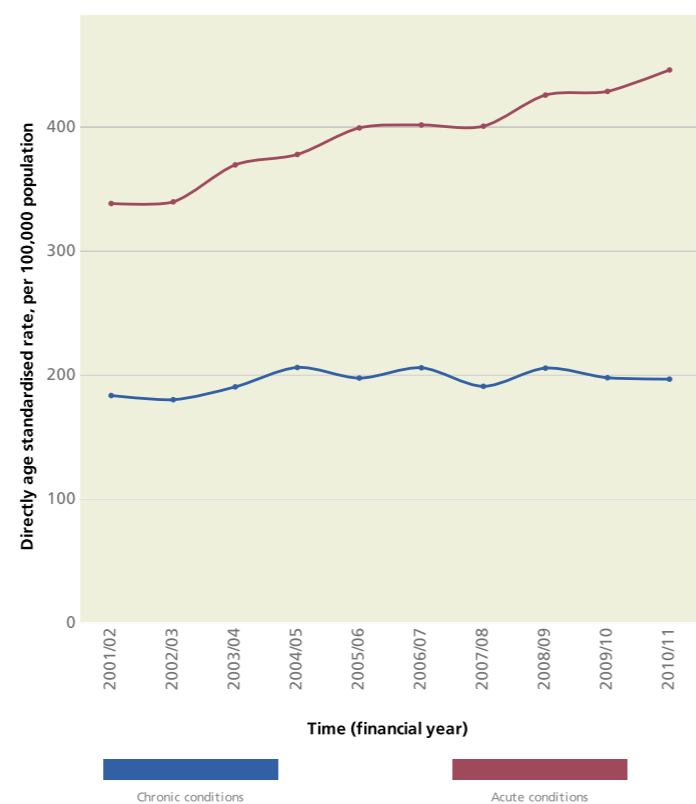
Reducing emergency admissions for long term conditions is a key outcome for the NHS. Effective management and treatment of acute and chronic conditions should be provided in an ambulatory care setting, particularly in primary care. Monitoring potentially avoidable emergency admissions provides an assessment of the quality and performance of preventive services and healthcare.

Within England, there is wide variation in PCT emergency admission rates. In 2010, the emergency admission rate for both chronic and acute conditions had an approximate fourfold range.

The reasons for this variation include differences in prevalence and severity of the conditions, the social circumstances of some patients, poorer access to primary care, diagnostic and preventive services, and the quality of services. Over 10 years the rate for acute conditions has increased by 32%. In comparison, chronic conditions showed a small change over time.

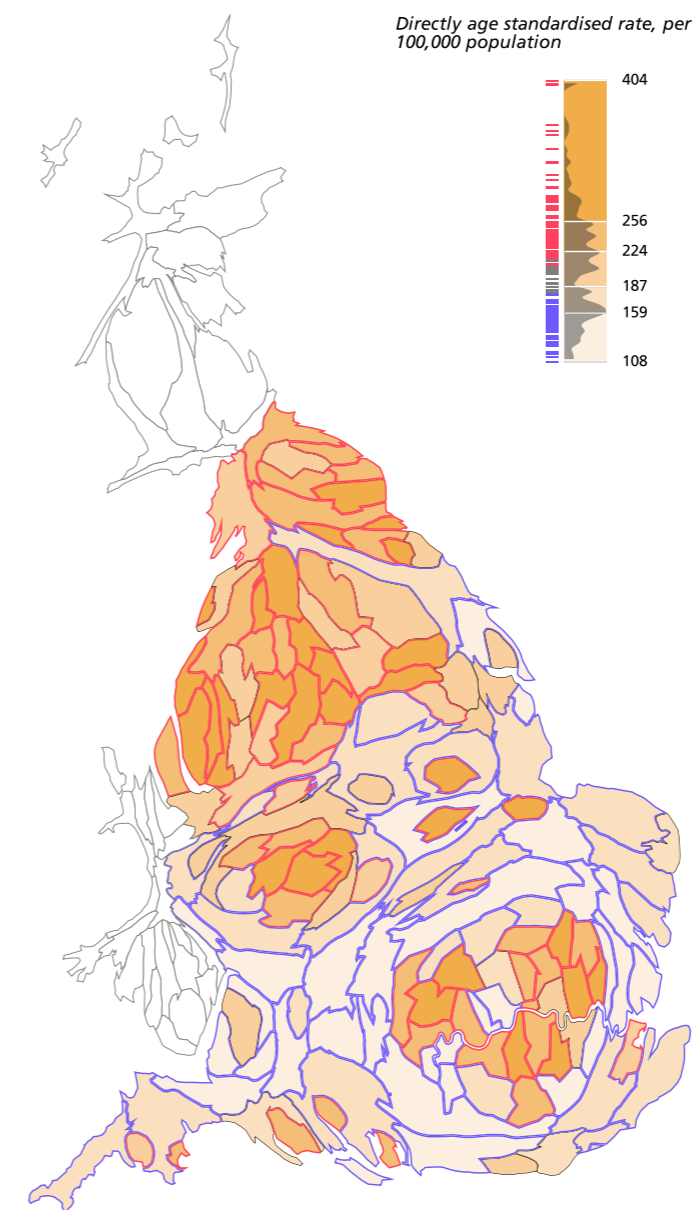
Emergency hospital admissions are costly and frequently preventable. High rates of admission could indicate poor coordination between primary and secondary care, and inadequacy of preventive services. Commissioners and providers need to address pathways of care for the target conditions. There needs to be a focus on the integration of services, as well as the skill mix of clinical staff, and this should form a part of their audit and evaluation of services.

Trend in emergency admission rates due to chronic and acute conditions usually managed in Primary Care, England, 2001/02 to 2010/11



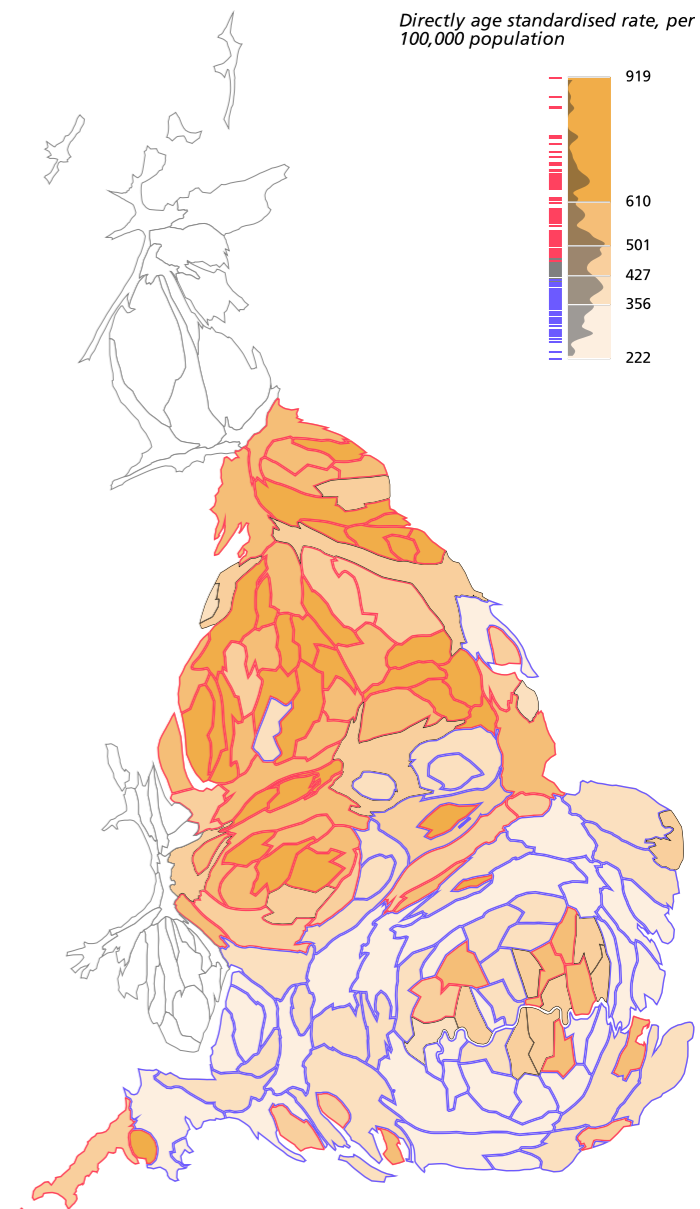
Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. 2003 to 2010 population estimates supplied by ONS. (Analysis by PHOs, led by EMPHO)

Emergency admission rates for chronic conditions (usually managed in primary care) by primary care trust, England, 2010/11



Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. 2010 population estimates supplied by ONS. (Analysis by PHOs, led by EMPHO)

Emergency admission rates for acute conditions (usually managed in primary care) by primary care trust, England, 2010/11



Source: Hospital Episode Statistics (HES), Health and Social Care Information Centre. Crown Copyright © 2012. 2010 population estimates supplied by ONS. (Analysis by PHOs, led by EMPHO)

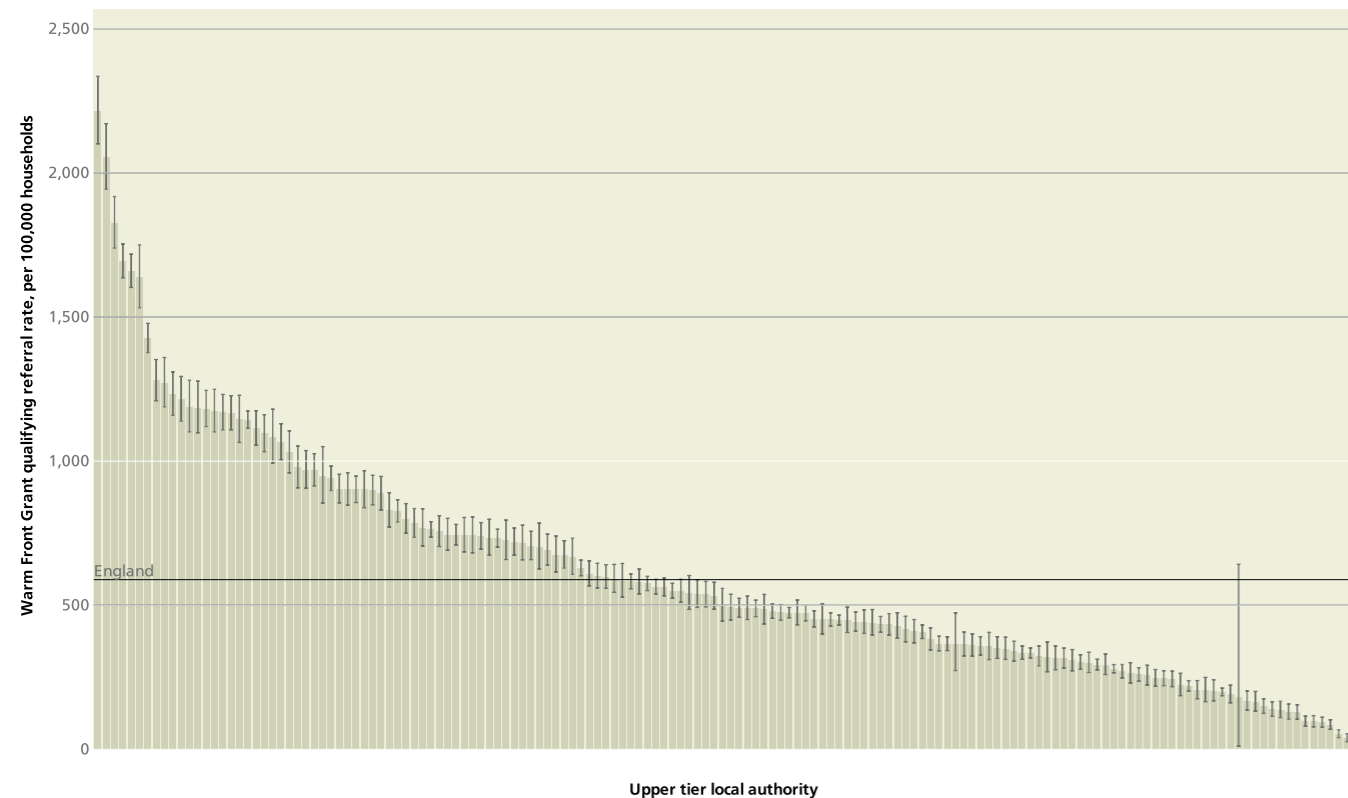
The majority of people would like to stay living in their own home, and social care performs a vital function in helping vulnerable people to live independently. Funding is available to people assessed as being in need of support and not able to pay for their own care.

There is a more than threefold variation between local authorities in the proportion of adults being supported to live independently. This variation can be attributed to differing population needs, to different assessment processes in different authorities, and to availability of residential care. Local authorities should aim to deliver more care within people's own homes.

Excess winter deaths (see Chapter 2) are preventable. One initiative aimed at reducing winter deaths is the Warm Front scheme which installs insulation and heating improvements to make homes warmer, and more energy efficient. The scheme is available to households on income-related benefits living in properties that are poorly insulated and/or do not have central heating.

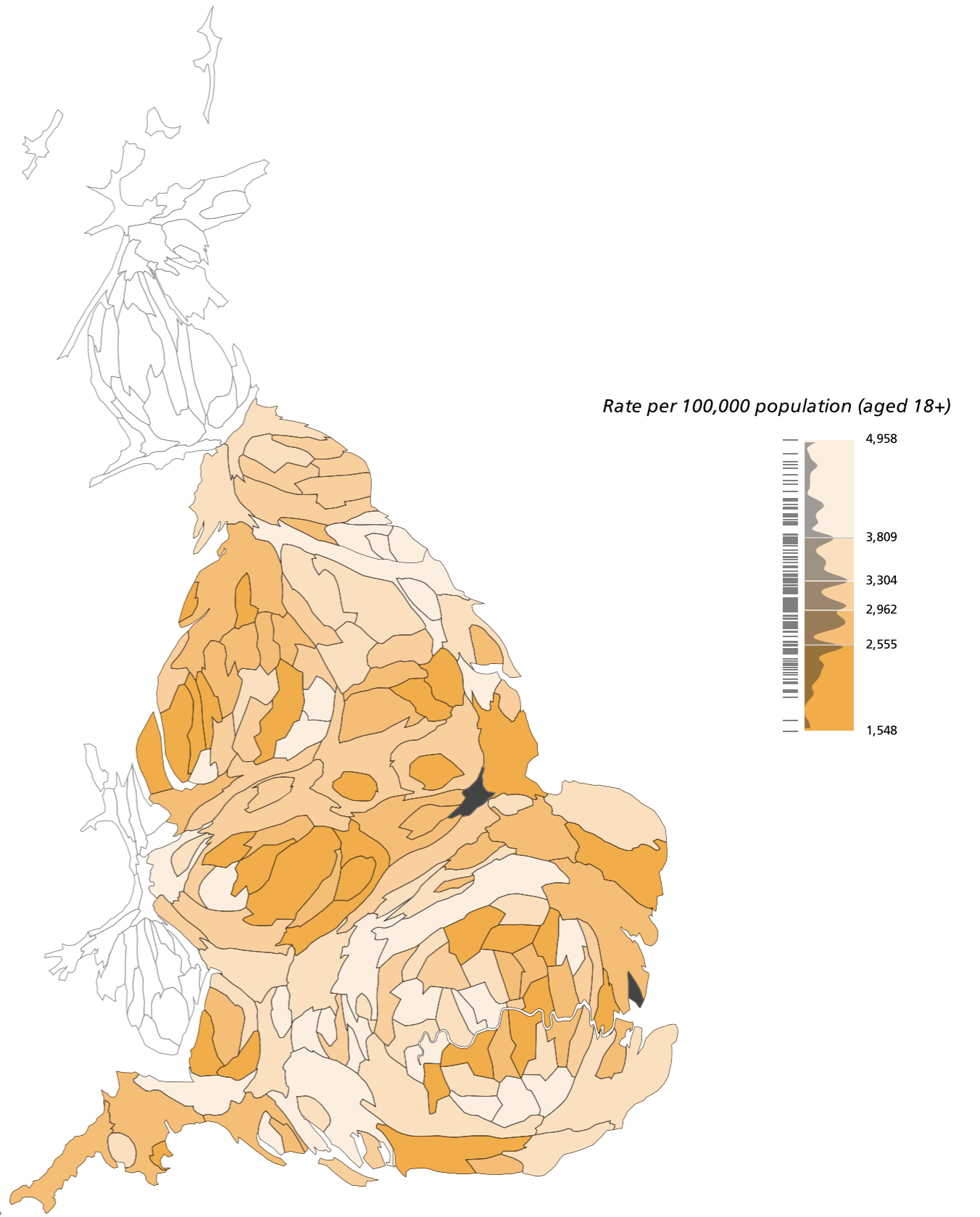
The uptake of grants for the scheme shows substantial variation across England ranging from under 100 to over 2,000 per 100,000 households. This degree of variation cannot be explained by need alone, though low uptake areas may have had higher uptake in previous years.

Rate of Warm Front Grant qualifying referrals by upper tier local authority, England, 2010/11



Source: Warm Front Grant qualifying referrals, Carillion Energy Services. Estimated number of households 2008, DCLG. (Analysis by EMPHO)

Rate of adults supported to live independently by upper tier local authority, England, 2009/10



Source: Referrals, Assessment and Packages of Care Data (RAP) and Grant Funded Services (GFS1) data, Health and Social Care Information Centre. Crown Copyright © 2012. 2009 population estimates, ONS. (Analysis by WMPHO)

End of life care involves support for the dying patient, relatives and carers. This includes respecting the patient's wishes, preventing unnecessary emergency admission to hospital and good pain relief.

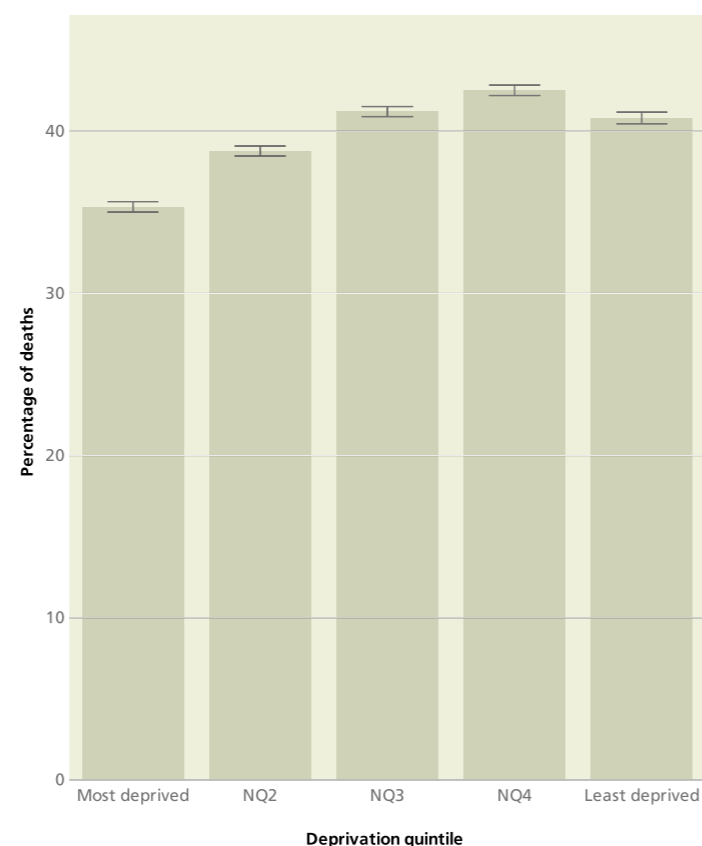
Over 450,000 people die in England each year. Two thirds are aged over 75. In 2010 the majority of deaths (53%) occurred in hospitals, 39% in the usual place of residence (21% home, 18% care homes), and 5% in hospices. A majority of people, when asked, would prefer to die in their usual place of residence.

The percentage of all deaths in the usual place of residence ranged from 23% to 51% across local authorities, a 2.2 fold difference. Those with the lowest percentages are in conurbations.

35.3% of people from the most deprived quintile in England die in their usual place of residence compared to 40.8% from the least deprived quintile. Cause of and age of death, as well as access to services, living arrangements and the availability of family or other local support may be factors.

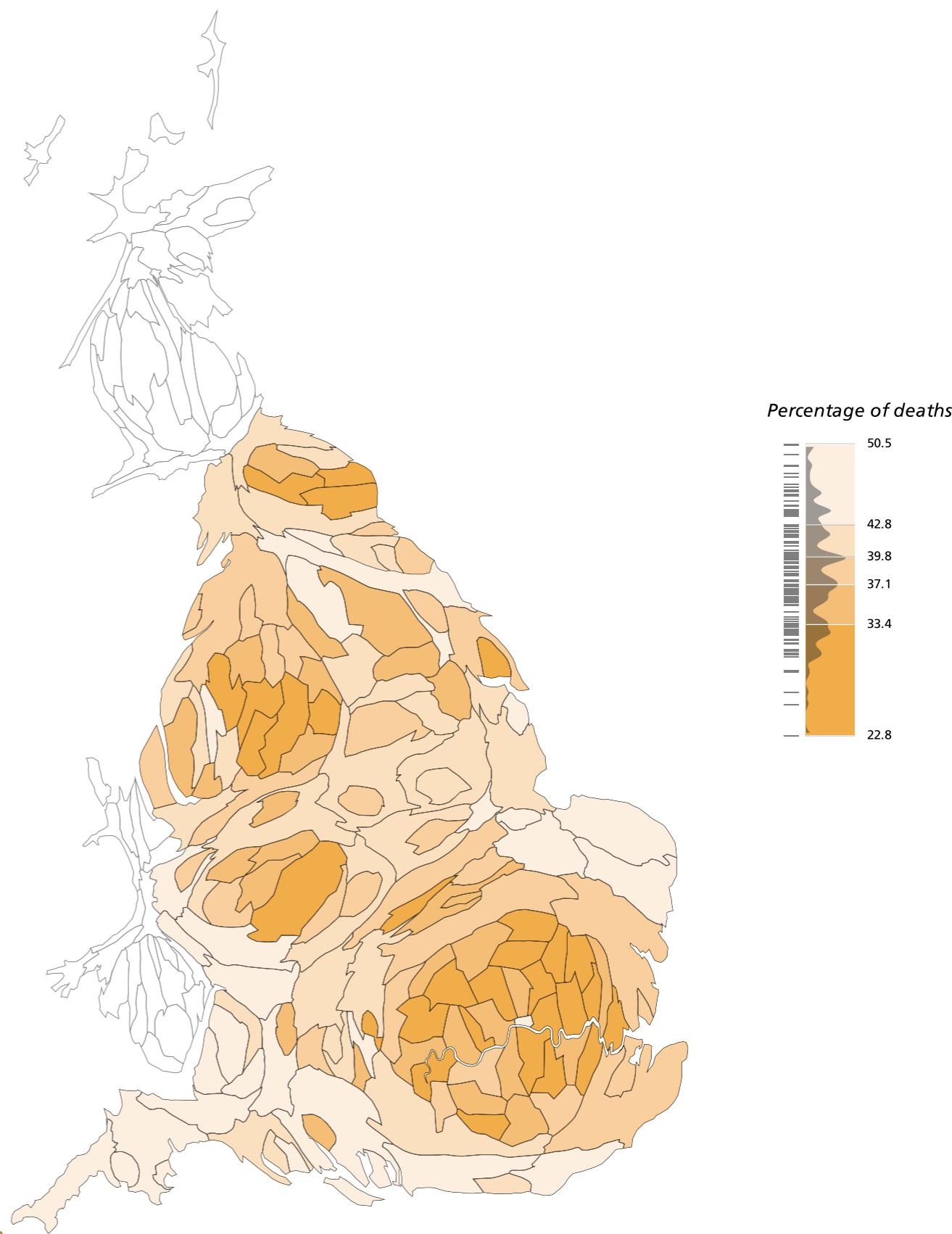
There is substantial variation in place of death. Emergency hospital care is expensive and can result in poorer experiences for patients and families. Good practice requires clear end of life plans to respect and facilitate patients' preferences.

Proportion of deaths in usual place of residence by deprivation, England, 2010



Source: Annual Mortality Extract 2010, ONS. (Analysis by SWPHO)

Proportion of deaths in usual place of residence by upper tier local authority, England, 2010



Source: Deaths registrations, ONS. (Analysis by SWPHO)