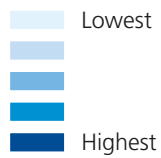


PROBLEMS OF THE MUSCULO-SKELETAL SYSTEM

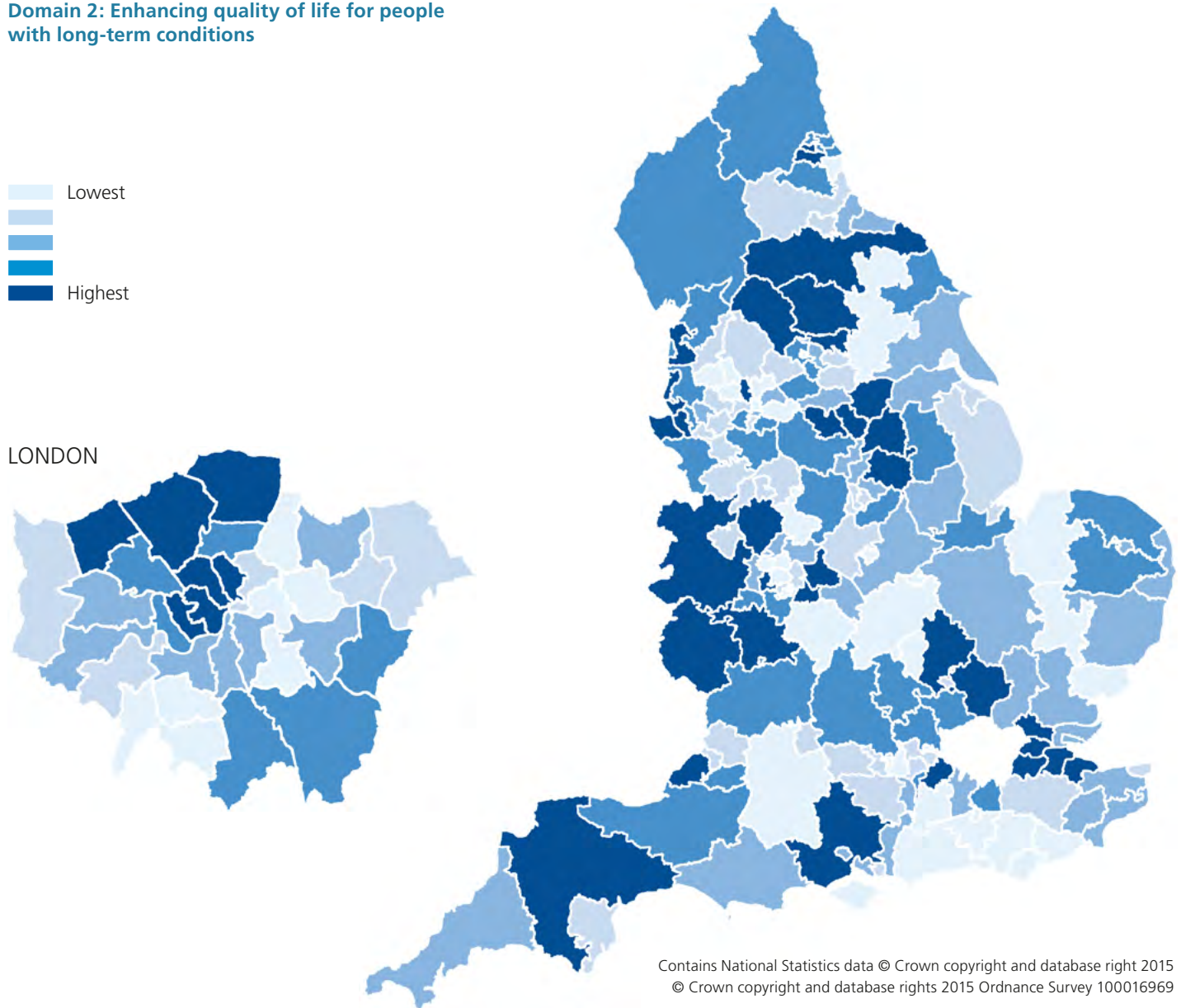
Map 56: Rate of dual-energy X-ray absorptiometry (DEXA) activity per weighted population by CCG

Adjusted for age, sex and "need", 2013/14

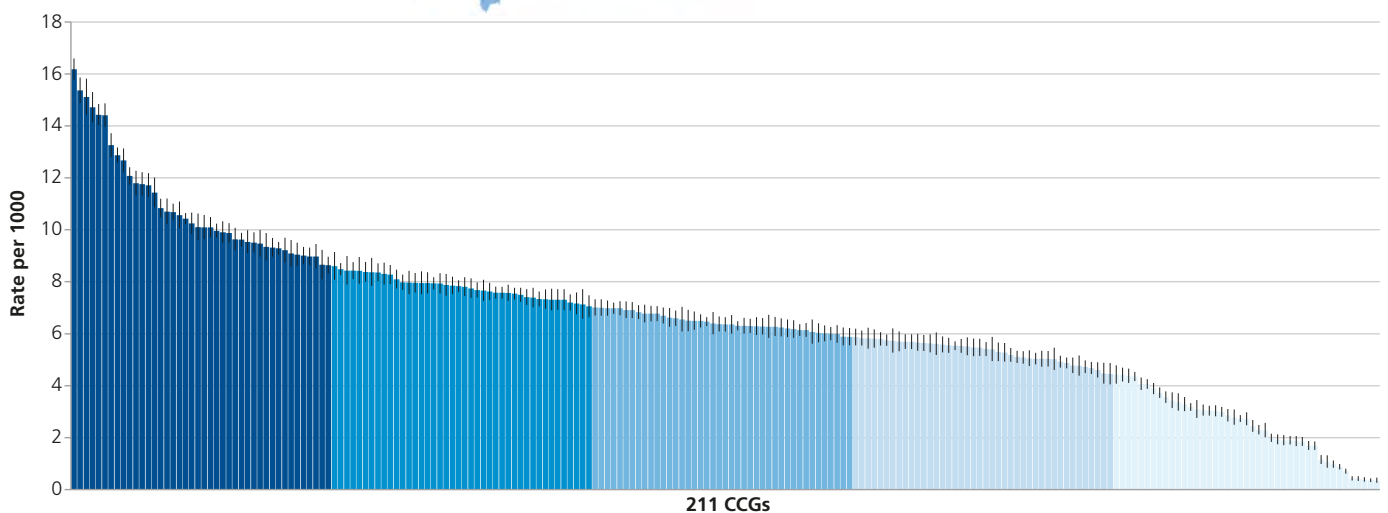
Domain 2: Enhancing quality of life for people with long-term conditions



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Context

Dual-energy X-ray absorptiometry (DEXA) is a type of X-ray used to measure the amount of calcium in bones. It is one of several techniques known as bone densitometry, which can be used to measure the density of bones. When measuring low bone density, a DEXA scan is more sensitive than a normal X-ray. It is also safer in that it delivers a much lower dose of radiation.

There are two types of DEXA scan:

- axial or central, in which a scanning arm passes over the body to measure bone density in the centre of the skeleton;
- peripheral (pDEXA), in which a scanning arm or portable device measures bone density in peripheral parts of the body, such as the wrist or heel.

Measurements of bone density are used:

- in the diagnosis of osteoporosis or to assess the risk of osteoporosis developing;
- to monitor the effectiveness of treatment for conditions such as osteoporosis;
- in the diagnosis of other bone disorders, such as osteopenia, an early sign of bone loss where bone mineral density is lower than normal.

Osteoporosis involves a gradual loss of calcium from the bones which results in the bones becoming thinner, more fragile and more likely to break. Osteoporosis is most commonly seen in women following the menopause, although it can affect men. The risk of a fragility fracture is affected by age, weight, prior history, family history, smoking habit, and excessive consumption of alcohol. Following a suspected fragility fracture, investigation of bone density, for instance using DEXA, is advised such that osteoporosis treatment can be initiated to help prevent a subsequent fracture and the consequent considerable morbidity.

Magnitude of variation

For CCGs in England, the rate of DEXA activity ranged from 0.3 to 16.2 per 1000 weighted population (46.7-fold variation). When the seven CCGs with the highest rates and the seven CCGs with the lowest rates are excluded, the range is 1.0–12.9 per 1000 weighted population, and the variation is 13.2-fold.¹

Irrespective of the change in geography since this indicator was first presented (i.e. from PCT to CCG), the degree of variation in the rate of DEXA activity after exclusions appears to be persisting at a relatively high level.

One possible reason for warranted variation is differences in the use of other tests to measure bone density. It is unlikely, however, that this factor explains all of the variation observed. As this indicator has been designed to take account of the age-structure of the population, possible reasons for unwarranted variation include differences in:

- availability of imaging services;
- the stage of development of integrated systems for fracture prevention.

Options for action

Commissioners, clinicians and service providers need to review the prevention of falls and fractures in local populations, including:

- excessive prescribing;
- the prevention of fragility fractures, including the use of osteoporosis investigations and treatment as part of the routine management of suspected fragility fractures.

The Department of Health's Impact Assessment of fracture prevention interventions² may be useful in this review.

Commissioners need to specify to service providers that all patients who experience a fragility fracture should have access to a Fracture Liaison Service, providing falls prevention and evaluation for osteoporosis and future fracture risk.

Public Health England together with Better Value Healthcare and Wiltshire County Council have set up the "Triple F Programme: Falls & Fragility Fractures Prevention" (see "Resources"), which involves local authority public health teams gathering and making available information about their local Triple F system. Benefits include support for local Triple F initiatives, assessing and tracking performance, learning from best practice, and strengthening local partnerships.

RESOURCES

- Royal College of Radiologists imaging referral guidelines, iRefer. iRefer is available to all NHS professionals in the UK. <http://www.rcr.ac.uk/content.aspx?PageID=995> For iRefer – England, NHS professionals need to register to use the portal. Login to <http://portal.e-lfh.org.uk/>
- Prevention Package for Older People Resources (2010) http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/en/Publicationsandstatistics/Publications/dh_103146
- Department of Health (2009) Falls and fractures: effective interventions in health and social care. http://www.laterlifetraining.co.uk/wp-content/uploads/2011/12/FF_Effective-Interventions-in-health-and-social-care.pdf
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- NICE pathways. Osteoporosis overview. <http://pathways.nice.org.uk/pathways/osteoporosis>
- Royal College of General Practitioners and National Osteoporosis Society (2014) Osteoporosis Resources for Primary Care. <http://www.osteoporosis-resources.org.uk/>
- Public Health England, Better Value Healthcare and Wiltshire County Council. Triple F Programme: Falls & Fragility Fractures Prevention. <http://www.healthcarepublichealth.net/falls-and-fragility-fractures.php>

1 For 2010/11 data by PCT, see Atlas 2.0, Map 70, and for 2012/13 data by PCT, see Diagnostics Atlas, Map 5.

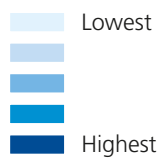
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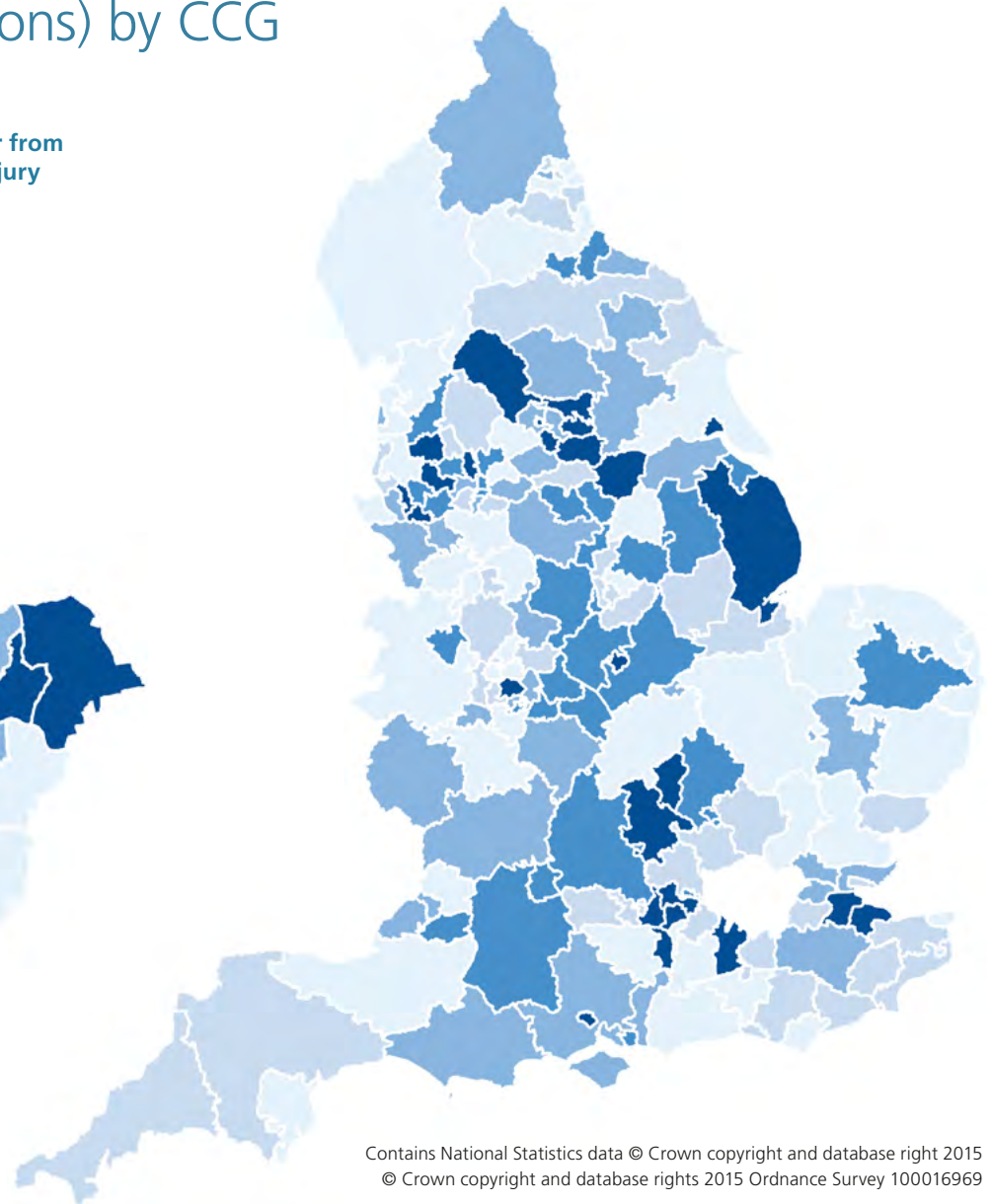
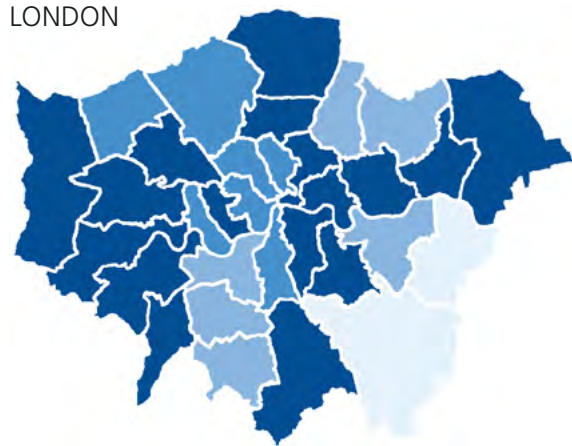
Map 57: Percentage of people aged 75 years and over with a fragility fracture on or after 1 April 2012 who were treated with a bone-sparing agent (excluding exceptions) by CCG

2013/14

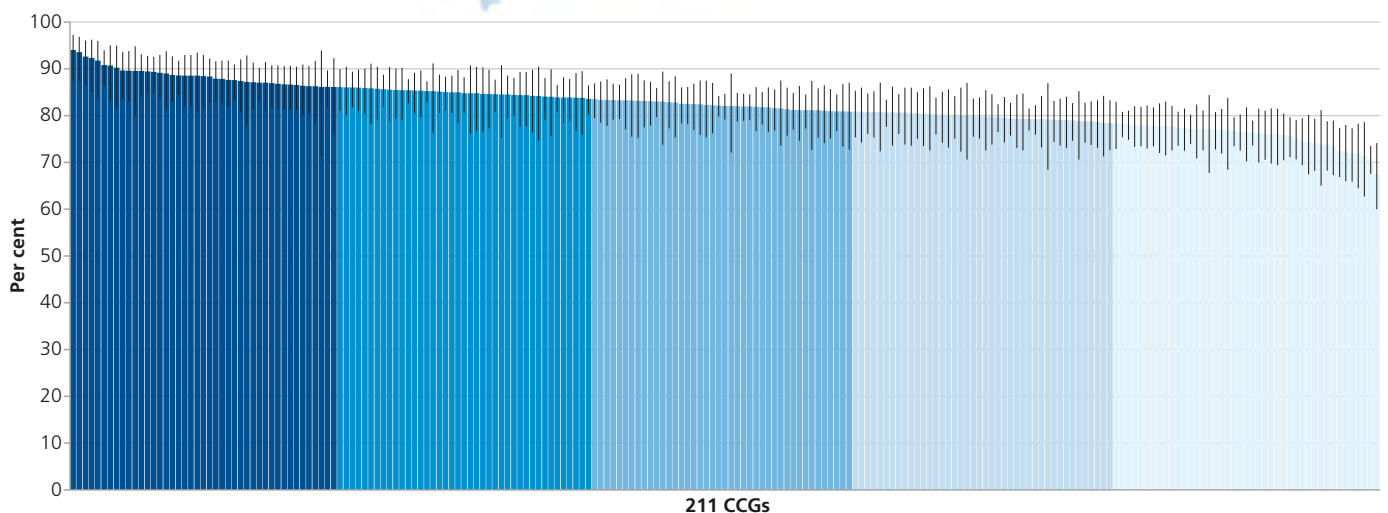
Domain 3: Helping people to recover from episodes of ill health or following injury



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Context

Fragility fractures result from mechanical forces that would not ordinarily result in fracture, referred to as “low-level trauma”, and quantified by the World Health Organization (WHO) as forces equivalent to a fall from a standing height or less. The common sites for fragility fracture are the spine, hip and wrist, although they can also occur in the arm, pelvis, ribs and other bones. Fragility fractures can cause pain and disability, with a reduced quality of life. Hip and vertebral fractures are associated with decreased life-expectancy; hip fracture usually requires hospitalisation, and only 30% of patients fully recover.¹ Reduced bone density is a major risk factor for fragility fracture; other risk factors include age, sex, previous fractures, a family history of osteoporosis, and the use of oral or systemic glucocorticosteroids.

The prevalence of osteoporosis increases with age due to age-related bone loss in men and women, and increased bone loss after the menopause in women. As the population ages, the incidence of osteoporosis and fragility fracture will increase.

Over 300,000 patients present with fragility fractures to hospitals in the UK each year.² Fragility fractures for people over 60 years account for more NHS bed-days than those for stroke patients over 60 years, cardiac ischaemia, heart failure, chronic obstructive pulmonary disease (COPD), and diabetes patients for all ages combined. Burge et al estimated the direct medical costs of fragility fractures to the UK healthcare economy at £1.8 billion in 2000, with the potential to increase to £2.2 billion by the year 2025.³

Magnitude of variation

For CCGs in England, the percentage of people aged 75 years and over with a fragility fracture on or after 1 April 2012 who were treated with a bone-sparing agent (excluding exceptions) ranged from 67.5% to 94.0% (1.4-fold variation). When the seven CCGs with the highest percentages and the seven CCGs with the lowest percentages are excluded, the range is 73.5–90.2%, and the variation is 1.2-fold.

This means that 6.0–32.5% of patients aged 75 years and over had a fragility fracture on or after 1 April 2012 and were not being treated with a bone-sparing agent (5-fold variation); after exclusions, the range of patients not being treated is 9.8–26.5%, and the variation is 2.7-fold. Thus, for every 10 people with a fragility fracture at CCG-level across England, 1–2 people are not being treated with a bone-sparing agent (after exclusions).

Possible reasons for the degree of variation observed are:

- patient willingness to begin treatment with a bone-sparing agent;
- early discontinuation of treatment (<1 year) by the patient.

Options for action

To prevent further fractures in people who have already had one or more, service providers and clinicians need to identify patients who may be at increased risk in order to initiate preventative treatment using risk assessment tools such as FRAX® and QFracture®-2013 risk calculator (see “Resources”).

NICE guidance (CG146; see “Resources”) is available on the selection and use of risk assessment tools when caring for people at risk of fragility fractures.

Commissioners need to specify that service providers and clinicians follow NICE guidance on the assessment and prevention of falls in older people (CG161; see “Resources”):

- for older people in contact with health professionals, they should be asked routinely whether they have fallen in the last year, and if so the frequency, context and characteristics of those falls;
- for older people presenting for medical attention because of a fall, who report recurrent falls in the previous year or who have abnormalities of gait and/or balance, they should be offered a multifactorial falls assessment performed by a healthcare professional with appropriate skills and experience working in a specialist falls service;
- for older people in hospital, clinicians need to consider a multifactorial fall assessment that identifies a patient’s individual risk factors, and enables treatment and management during the patient’s hospital stay.

Commissioners can also specify that service providers at hospitals and nursing homes provide an active falls prevention programme.

Public Health England together with Better Value Healthcare and Wiltshire County Council have set up the “Triple F Programme: Falls & Fragility Fractures Prevention” (see “Resources”), which involves local authority public health teams gathering and making available information about their local Triple F system. Benefits include support for local Triple F initiatives, assessing and tracking performance, learning from best practice, and strengthening local partnerships.

RESOURCES

- NICE. Osteoporosis: assessing the risk of fragility fracture. NICE guidelines [CG146]. August 2012. <http://www.nice.org.uk/guidance/cg146>
- NICE. Falls: assessment and prevention of falls in older people. NICE guidelines [CG161]. June 2013. <http://www.nice.org.uk/guidance/cg161>
- NICE pathways. Osteoporosis overview. <http://pathways.nice.org.uk/pathways/osteoporosis>
- NICE pathways. Fragility fracture risk assessment. [http://pathways.nice.org.uk/pathways/osteoporosis/fragility-fracture-risk-assessment](http://pathways.nice.org.uk/pathways/osteoporosis/fragility-fracture-risk-assessment#path=view%3A/pathways/osteoporosis/osteoporosis-overview.xml&content=view-index)
- Royal College of General Practitioners and National Osteoporosis Society. Osteoporosis Resources for Primary Care. <http://www.osteoporosis-resources.org.uk/>
- FRAX. <http://www.shef.ac.uk/FRAX>
- QFracture. <http://www.qfracture.org/>
- British Orthopaedic Association. The care of patients with fragility fracture. September 2007. <http://www.fractures.com/pdf/BOA-BGS-Blue-Book.pdf>
- Public Health England, Better Value Healthcare and Wiltshire County Council. Triple F Programme: Falls & Fragility Fractures Prevention. <http://www.healthcarepublichealth.net/falls-and-fragility-fractures.php>

1 Sernbo I, Johnell O (1993) Consequences of a hip fracture: a prospective study over 1 year. *Osteoporosis International* 3:148-153.

2 British Geriatrics Society. The Care of Patients with Fragility Fracture (“Blue Book”). http://www.bgs.org.uk/index.php?option=com_content&view=article&id=338:bluebookfragilityfracture&catid=47:fallsandbones&Itemid=307

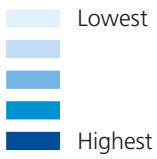
3 Burge RT, Worley D, Johansen A et al. The cost of osteoporotic fractures in the UK: projections for 2000-2020. *Journal of Medical Economics* 2001; 4: 51-62.

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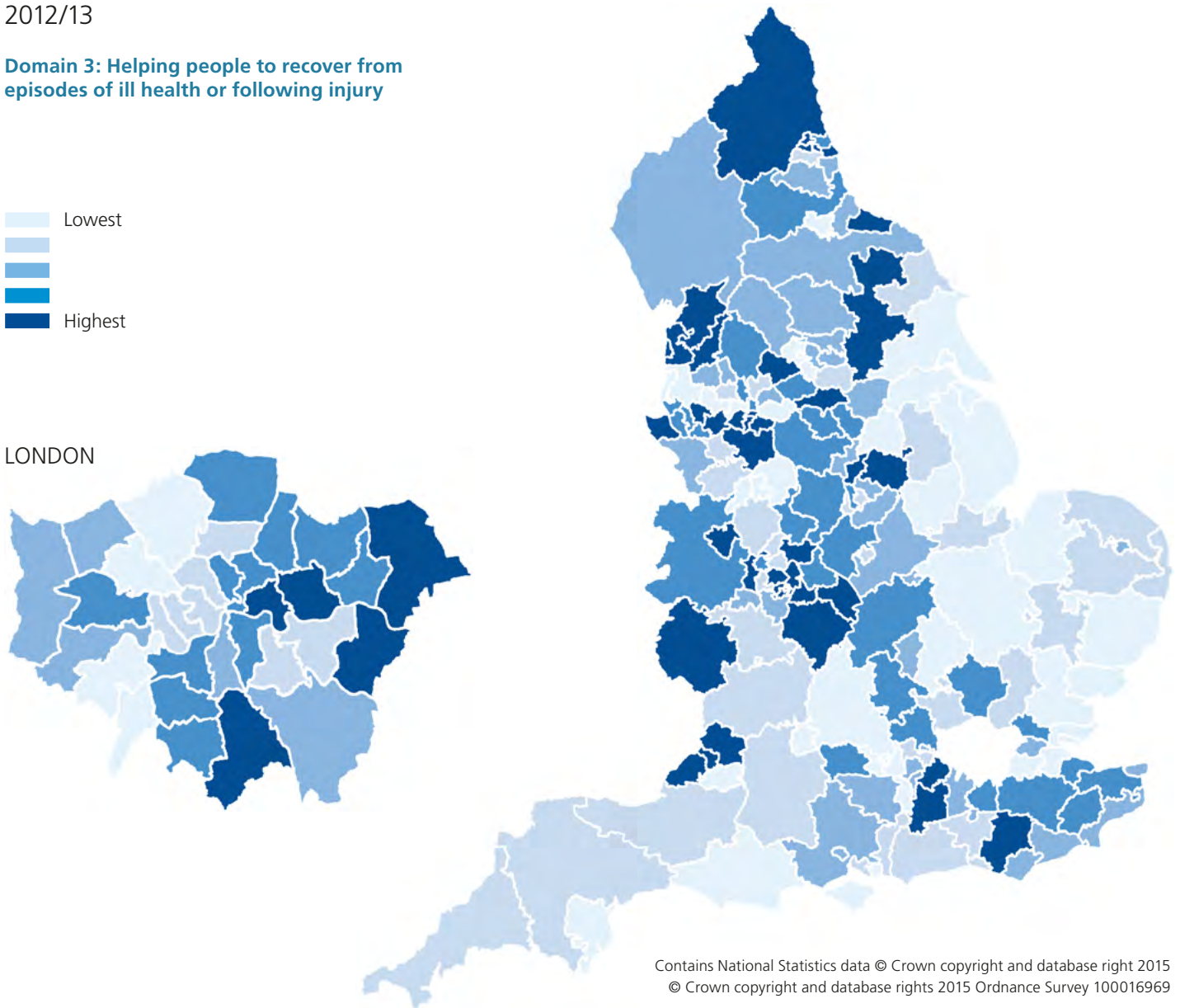
Map 58: Mean length of stay (days) for emergency admission to hospital for fractured neck of femur (FNOF) by CCG

2012/13

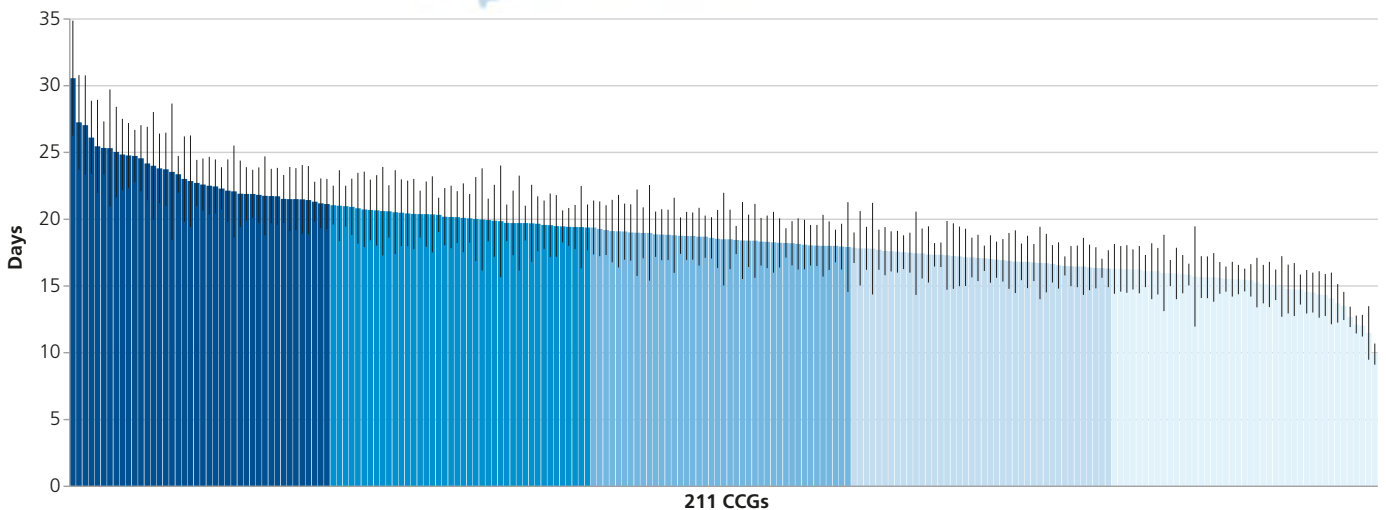
Domain 3: Helping people to recover from episodes of ill health or following injury



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Context

Each year, over 300,000 patients present with fragility fractures to hospitals in the UK,¹ primarily due to a combination of osteoporosis and a fall. One of the common sites for fragility fractures is the hip; about one-third of fragility fractures are hip fractures.

Hospital Episode Statistics (HES) have been used to estimate that hip fracture incidence will increase from 70,000 per year in 2006 to 91,500 in 2015 and to 101,000 by 2020, making this group of people a priority for the NHS.

Within one month, 8% of people with fractured neck of femur (FNOF) die in hospital; at one year, 20% are dead, and 50% are permanently disabled². Although the outcomes and mortality following hip fracture have improved considerably over the past four years, there are variations in service provision and outcomes among CCGs. The change in demographics of the older population makes it essential that these variations are reduced.

Since April 2010, the Best Practice Tariff (BPT) for hip fracture provides a tariff uplift for each patient treatment complying with certain clinical criteria (see "Resources"), which can create incentives for service improvement. Compliance is monitored through the National Hip Fracture Database (NHFD), a national audit project aimed at facilitating improvements in the quality and cost-effectiveness of hip-fracture care (see "Resources"), which covers all CCGs and hospitals. Since its inception in 2007, the NHFD has improved the provision of care for people with hip fractures by promoting the integration of care, and secondary prevention.

Magnitude of variation

For CCGs in England, the mean length of stay for emergency admission to hospital for FNOF ranged from 9.9 to 30.6 days (3.1-fold variation). When the seven CCGs with the longest mean lengths of stay and the seven CCGs with the shortest mean lengths of stay are excluded, the range is 14.1–25.0 days, and the variation is 1.8-fold.

After exclusions, the difference in the range for the mean length of stay for emergency admission to hospital for fractured neck of femur across CCGs in England is 10 days.

Potential reasons for the degree of variation observed include differences in:

- › discharge criteria;
- › availability of support/care in the community once patients have been discharged;
- › access to early supported discharge.

Options for action

Commissioners and service providers can use the NHFD to review outcomes for FNOF, such as:

- › time to surgery;
- › length of stay;
- › incidence of pressure sores;
- › falls assessment;
- › secondary osteoporosis prevention;
- › 30-day adjusted mortality.

The NHFD has published a report for commissioners (see "Resources"), presenting a re-analysis of the data in the annual report, broken down for the different populations for which each commissioning group is responsible, thereby enabling commissioners to benchmark the performance of their local provider against national norms.

Commissioners need to specify that service providers:

- › follow NICE guidance and quality standards (see "Resources"), and guidance from specialist professional organisations such as the British Orthopaedic Association (BOA), e.g. BOAST-1 and the "Blue Book" (see "Resources"), on best practice for hip-fracture care;
- › offer patients a Hip Fracture Programme that includes multidisciplinary management (NICE CG124) – early supported discharge can be considered as part of the Hip Fracture Programme provided the programme's multidisciplinary team remain involved and the patient fulfils four criteria;
- › offer patients with hip fracture a bone health assessment before discharge from hospital to identify future fracture risk and pharmacological intervention as needed before discharge from hospital (NICE Quality Statement 12).

RESOURCES

- › National Hip Fracture Database (NHFD). <http://www.nhfd.co.uk/>
- › National Hip Fracture Database (NHFD) CCG Reports 2014. <http://www.nhfd.co.uk/20/hipfractureR.nsf/vwContent/2014ccgreport>
- › Best Practice Tariff (BPT) for Fragility Hip Fracture Care User Guide. [http://www.nhfd.co.uk/20/hipfractureR.nsf/0/9b0c5ea2e986ff56802577af0046b1df/\\$FILE/Best%20Practice%20Tariff%20User%20Guide.pdf](http://www.nhfd.co.uk/20/hipfractureR.nsf/0/9b0c5ea2e986ff56802577af0046b1df/$FILE/Best%20Practice%20Tariff%20User%20Guide.pdf)
- › British Orthopaedic Association. The care of patients with fragility fracture (known as the "Blue Book"). September 2007. <http://www.fractures.com/pdf/BOA-BGS-Blue-Book.pdf>
- › Clinical Effectiveness and Evaluation Unit, Royal College of Physicians. National Hip Fracture Database. National report 2013. [http://www.nhfd.co.uk/20/hipfractureR.nsf/luMenuDefinitions/F29405CD131D1F36802579C900553994/\\$file/NHFD%20Summary%20Report%202013.pdf?OpenElement](http://www.nhfd.co.uk/20/hipfractureR.nsf/luMenuDefinitions/F29405CD131D1F36802579C900553994/$file/NHFD%20Summary%20Report%202013.pdf?OpenElement)
- › NICE. Falls: assessment and prevention of falls in older people. NICE guidelines [CG161]. June 2013. <http://www.nice.org.uk/guidance/cg161>
- › NICE. Hip fracture: management of hip fracture in adults. NICE Guidelines [CG124]. June 2011. <http://www.nice.org.uk/guidance/cg124>
- › NICE. Quality Standard for hip fracture. NICE quality standard [QS16]. March 2012. <https://www.nice.org.uk/guidance/qs16>
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- › NICE. Alendronate, etidronate, risendronate, raloxifene, strontium ranelate and teriparatide for the secondary prevention of osteoporotic fragility fractures in postmenopausal women (amended). Technology appraisal guidance [TA161]. October 2008. <http://guidance.nice.org.uk/TA161>
- › The British Orthopaedic Association (BOA). BOAST-1. <http://www.boa.ac.uk>

1 British Orthopaedic Association (2007) The care of patients with fragility fracture. <http://www.fractures.com/pdf/BOA-BGS-Blue-Book.pdf>

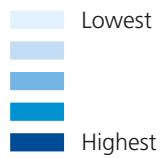
2 Sernbo I, Johnell O (1993) Consequences of a hip fracture: a prospective study over 1 year. *Osteoporosis International* 3:148-153. <http://www.ncbi.nlm.nih.gov/pubmed/8481591>

PROBLEMS OF THE MUSCULO-SKELETAL SYSTEM

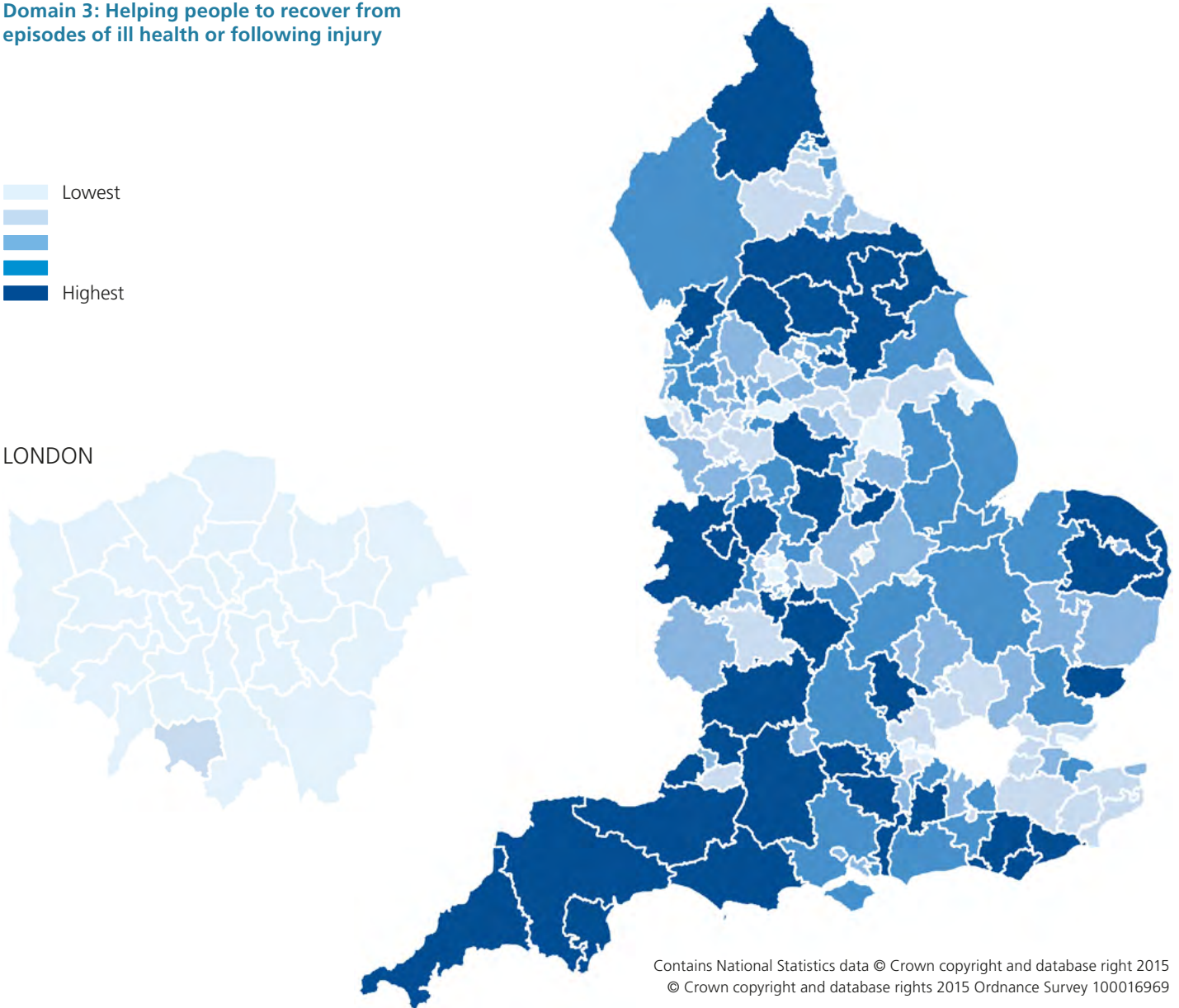
Map 59: Rate of primary hip replacement procedures per population by CCG

Directly standardised rate, adjusted for age and sex, 2012/13

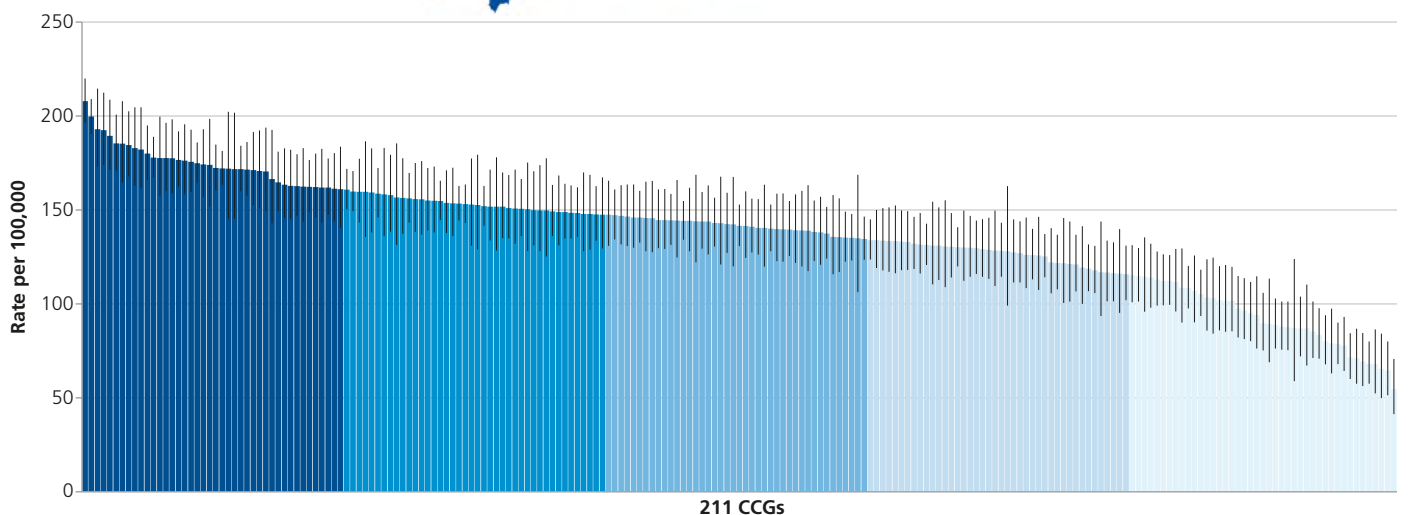
Domain 3: Helping people to recover from episodes of ill health or following injury



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Context

Primary hip replacement involves the surgical replacement of all or part of the hip joint with an artificial joint. Removal of all of the hip joint, in which the articular surfaces of the hip and acetabulum are replaced, is known as total hip arthroplasty; removal of part of the hip joint is known as hemi-arthroplasty.

Conventional total hip arthroplasty involves removal of the femoral head and neck. Hip re-surfacing, involving replacement of the femoral head surface and the acetabular surface, is now limited in its indication and not recommended in smaller patients and women because re-surfacing has performed poorly in these groups. Re-surfacing may be considered in larger men, but the advantages over conventional replacement are probably minimal and there is a risk of metal-on-metal adverse reaction. Metal-on-metal hip replacement, including re-surfacing, should be used with caution, and following a discussion with the patient about the risks and benefits. Regular long-term follow-up is needed to monitor patients for metal-on-metal adverse reactions.

The indications for total hip arthroplasty are:

- › end-stage arthritis of the hip where non-surgical management has failed to control pain and disability;
- › fracture of the proximal femur.

The majority of people with osteoarthritis are managed in primary care. Exercise and weight loss are core treatments that help people to self-manage their condition and relieve their symptoms. To reduce referrals that may not be needed, in quality statement 7 of the NICE quality standard for Osteoarthritis, it states that people with osteoarthritis should be supported with non-surgical core treatments for at least 3 months before any referral for consideration of joint surgery.¹

Although scoring tools are used in some general practices to identify which people with osteoarthritis are eligible for referral for consideration of surgery, the NICE quality standard advises against them because there is no evidence to support their use. Instead, healthcare professionals need to offer support and advice to people to help reach a shared decision, based on the severity of their symptoms, their general health, their expectations of lifestyle and activity, and the effectiveness of any non-surgical treatments.

In an investigation of four major surgical operations, The Royal College of Surgeons of England (RCSEng) described a situation that was creating a "postcode lottery for access to surgical treatment". With respect to hip replacement, RCSEng highlighted that, of the CCGs reviewed:

- › 73% did not follow NICE and clinical guidance on referral for hip replacement, or had no commissioning policy for this procedure, which could lead to too many or too few referrals;
- › 44% required patients to be in various degrees of pain or immobility (with no consistency across the country) or required patients to lose weight before surgery.²

Magnitude of variation

For CCGs in England, the rate of primary hip replacement procedures ranged from 55 to 208 per 100,000 population (3.8-fold variation). When the seven CCGs with the highest rates and the seven CCGs with the lowest rates are excluded,

the range is 72–185 per 100,000 population, and the variation is 2.6-fold.

The main reason for warranted variation is differences in the local prevalence of osteoarthritis and osteoporosis. Potential reasons for unwarranted variation include differences in:

- › access to hip replacement surgery;
- › the timing of referral from primary care to secondary care for consideration of surgery;
- › criteria for undertaking surgery;
- › requirements prior to surgery.

Options for action

Commissioners need to develop a policy on commissioning primary hip replacement procedures. Commissioners also need to specify that service providers:

- › follow NICE and other clinical guidance on referral for hip replacement (see "Resources");
- › work towards achieving the NICE quality standard on osteoarthritis (QS87), including quality statement 7 (see "Resources");
- › apply shared decision-making and use patient decision aids to help people assess the appropriateness of hip replacement surgery, based on the severity of their symptoms, their general health, their expectations of lifestyle and activity, and the effectiveness of any non-surgical treatments (see "Resources").

RESOURCES

- › National Joint Registry. <http://www.njrcentre.org.uk/njrcentre/default.aspx>
- › British Orthopaedic Association. Primary total hip replacement: A guide to good practice. 1999; revised August 2006; November 2012. <https://www.britishhipssociety.com/uploaded/Blue%20Book%202012%20fsh%20nov%202012.pdf>
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- › NICE. Quality Standard for hip fracture. NICE quality standard [QS16]. March 2012. <https://www.nice.org.uk/guidance/qs16>
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1 NICE. Osteoarthritis. Quality standard [QS87]. June 2015. Quality statement 7. <http://www.nice.org.uk/guidance/qs87/chapter/Quality-statement-7-Core-treatments-before-referral-for-consideration-of-joint-surgery>

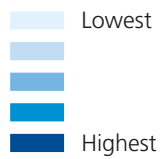
2 The Royal College of Surgeons of England. Is access to surgery a postcode lottery? July 2014. <https://www.rcseng.ac.uk/news/docs/Is%20access%20to%20surgery%20a%20postcode%20lottery.pdf>

PROBLEMS OF THE MUSCULO-SKELETAL SYSTEM

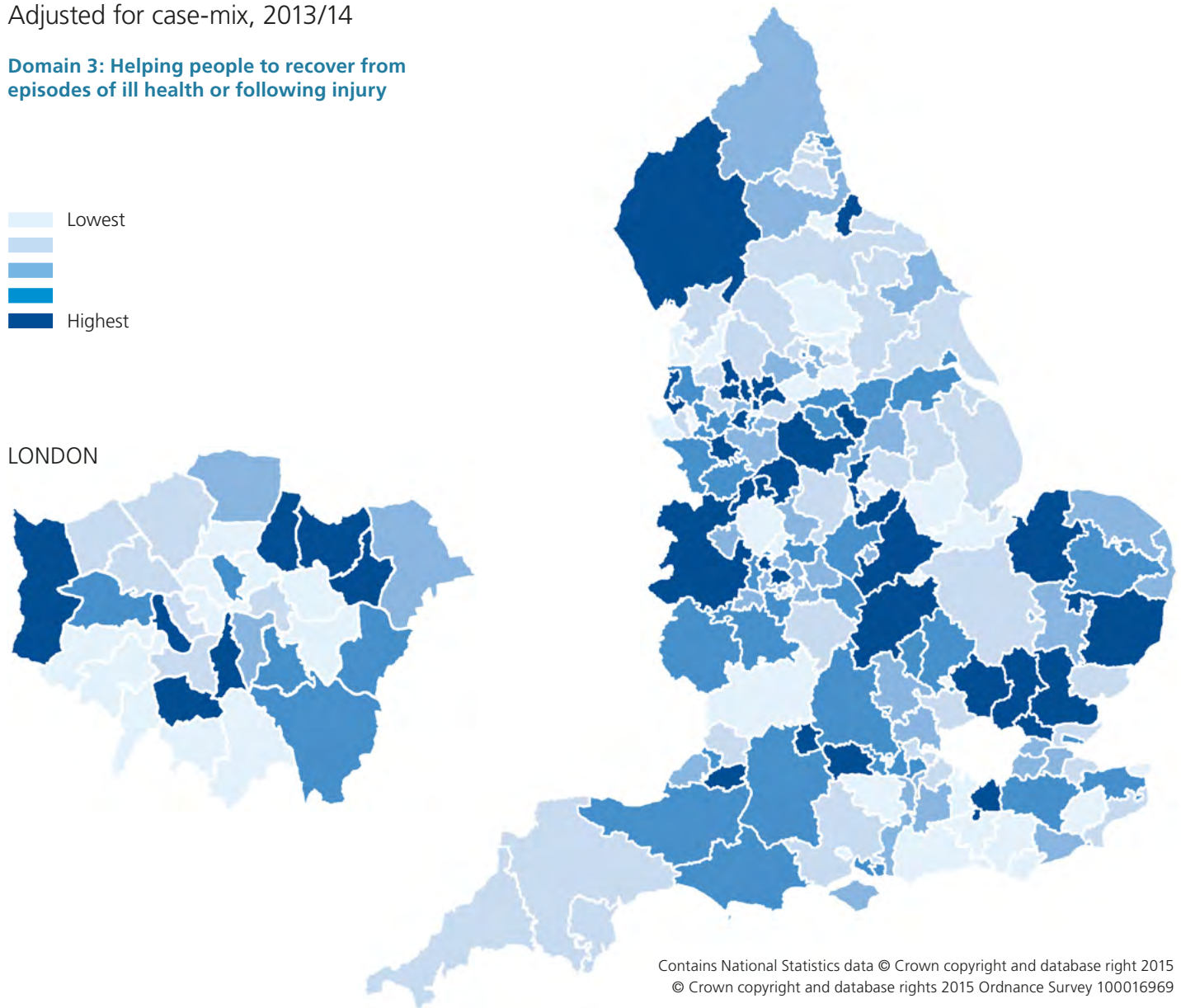
Map 60: Mean patient-reported health gain (EQ-5D Index score) for primary hip replacement procedures by CCG

Adjusted for case-mix, 2013/14

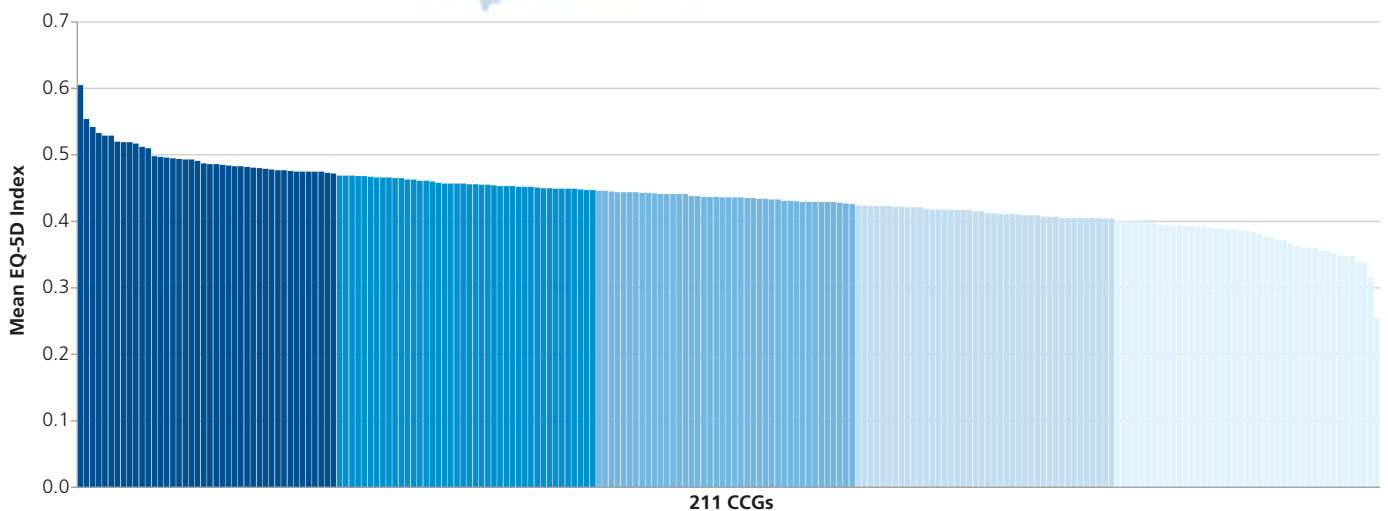
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Context

The Department of Health set up a Patient Reported Outcomes Measures (PROMs) Programme, which is now run by NHS England. Patient reported outcome measures (PROMs) assess health gain in patients undergoing one of four surgical procedures, including hip replacement, and is based on responses to a questionnaire administered before and six months after the operation.¹ The EQ-5D is a standardised instrument for measuring health outcome used in the PROMs for hip, and knee, replacement (see “Resources”), not only to assess the outcome, but also to measure the need for operation by assessing the severity of disease pre-operatively.

At the time of writing, the National Joint Registry (NJR) is undertaking research that will extend the follow-up for PROMs for hip and knee replacement (see “Resources”) to gain a greater understanding of the factors influencing the success of joint replacement over the long term from a patient’s perspective. Follow-up in this study was scheduled at 1, 3 and 5 years after operation, the baseline questionnaires at 6 months relating to a consecutive sample of national PROMs questionnaires received in 2010, for a cohort of 25,000 people undergoing hip replacement and 25,000 people undergoing knee replacement. The initial analysis was focused on:

- the optimal timing of PROMs response after surgery;
- the predictors of response;
- the variation in trajectories of response.

An interim report is anticipated in the near future.

A case-mix adjustment has been used to calculate the results presented in Map 60. This adjustment takes into account patient characteristics such as ethnicity, gender, age, pre-operative health and deprivation. As such, it presents patients’ outcomes once these characteristics have been accounted for.

Magnitude of variation

For CCGs in England, the mean patient-reported health gain (EQ-5D Index score) for primary hip replacement procedures ranged from 0.3 to 0.6 (2.4-fold variation). When the seven CCGs with the highest scores and the seven CCGs with the lowest scores are excluded, the range is 0.4–0.5, and the variation is 1.5-fold.

Potential reasons for the degree of variation observed include differences in:

- patients’ expectations of surgery;
- the occurrence of adverse effects following surgery;
- clinical practice, such as type of implant used;
- the balance between joint-related improvements and improvements in general health.

Options for action

Commissioners and service providers need to work together to identify the causes of variation in the local population. In late 2015, NHS England are publishing a bite-size guide to PROMs, which will set out the steps commissioners and service providers can take to understand the reasons for variation. For instance, at the level of an individual NHS Trust, it is possible to investigate whether patients are more or less likely to report post-operative complications, such as infections, or whether outcomes fall short on any particular aspect of patients’ quality of life, such as pain or mobility. In addition, it is possible for individual NHS Trusts to identify groups of patients whose outcomes are better or worse, e.g. patients grouped by age, gender or pre-operative health. Some NHS Trusts have successfully used this type of analysis to improve outcomes, for example, by making changes to clinical practice or by changing implant brands.

To reduce unwarranted variation in patient-reported health gain from hip replacement surgery, commissioners need to specify that service providers, especially clinicians, promote the use of patient decision aids that will support individuals in making a fully informed decision about hip replacement. NHS RightCare has developed a patient decision aid for osteoarthritis of the hip (see “Resources”).

Patient decision aids enable individuals to take account not only of the risks and benefits of surgery as relating to them, but also of their own values and preferences in relation to the treatment. The use of patient decision tools is likely to be more acceptable to patients and clinicians than applying eligibility thresholds based on pre-operative PROMs scores. The questionnaires used in PROMs have not been validated for the purpose of making predictions about outcomes for individual patients. Given the large degree of variation in outcomes for individual patients, it is neither appropriate nor effective to use PROMs in this way.

RESOURCES

- HSCIC. Patient Reported Outcome Measures (PROMs). <http://www.hscic.gov.uk/proms>
- EuroQol. EQ-5D. <http://www.euroqol.org/>
- National Joint Registry. NJR Patient Reported Outcome Measures. <http://www.njrcentre.org.uk/njrcentre/Research/NJRPROMs/tabid/203/Default.aspx>
- NHS Right Care. Osteoarthritis of the Hip Decision Aid. <http://sdm.rightcare.nhs.uk/pda/osteoarthritis-of-the-hip/>

1 HSCIC. Patient Reported Outcome Measures (PROMs). <http://www.hscic.gov.uk/proms>

2 HSCIC. Patient Reported Outcome Measures (PROMs) in England - 2012-13, Special Topic: Patient engagement with PROMs by demographic characteristics, procedure type and self-reported pre-operative health. February 2015. <http://www.hscic.gov.uk/catalogue/PUB16482>