# Equality Analysis

For 2016-17 to 2020-21 revenue allocations to Clinical Commissioning Groups and commissioning areas

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# Equality Analysis

2016-17 to 2020-21 revenue allocations to
Clinical Commissioning Groups and commissioning areas

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Promoting equality and addressing health inequalities are at the heart of NHS England's values. Throughout the development of the policies and processes cited in this document, we have:

Given due regards to the need to eliminate discrimination, harassment and victimisation, to advance equality of opportunity, and to foster good relations between people who share a relevant protected characteristic (as cited under the Equality Act 2010) and those who do not share it;

Given regard to the need to reduce inequalities between patients in access to, and outcomes from, healthcare services and in securing that services are provided in an integrated way where this might reduce health inequalities.

# Contents

# 1  Introduction

## 1.1  Allocations covered

Financial allocations for 2016-17 to 2020-21 were published on 8 January 2016 for Clinical Commissioning Group (CCG) areas for:

- core CCG allocations;
- specialised services allocations;
- primary medical care allocations; and
- total allocations (the sum of the core CCG, specialised and primary medical care).

The first three years, 2016-17 to 2018-19, are firm allocations[1] and the final two years, 2019-20 and 2020-21are indicative allocations.

This equality analysis covers these allocations.

## 1.2  NHS England Board meeting

The NHS England Board meeting on 17 December 2015 agreed the principles and parameters for funding allocations for the years 2016-17 to 2020-21.

The decisions taken by the NHS England Board were based on the Mandate to NHS England requiring a transparent allocations process based on the objective of equal access for equal need. The NHS England Board also took into account its legal duty to have regard to the need to reduce inequalities between patients in access to, and outcomes from, healthcare services. These duties are in addition to the public sector equality duty of the Equality Act 2010.

## 1.3  Other documents

The following documents set out the policy for 2016-17 to 2020-21 allocations:

- the NHS England Board paper *Allocation of resources to NHS England and the commissioning sector for 2016/17 to 2020/21;*
- *Delivering the Forward View: NHS planning guidance 2016/17 – 2020/21*; and
- *Financial Allocations 2016/17 to 2020/21*.

## 1.4  Structure of this paper

The following sections cover: the legal duties; target allocations and the weighted capitation formulae; pace of change; the protected characteristics under the public sector equality duty; and the role of local commissioners. In doing so, they cover how

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[1] Subject to NHS England's right to change firm allocations under the specific circumstances set out in the Board paper.

setting allocations contributes to NHS England's duty to have regard to reducing inequalities in access to and outcomes from health care services.

# 2  Legal duties

NHS England has two separate duties on equality and on health inequalities: the public sector equality duty; and those established under the Health and Social Care Act 2012.

## 2.1  Public Sector Equality Duty

The public sector equality duty that is set out in the Equality Act 2010 requires public authorities, in the exercise of their functions, to have due regard to the need to:

- eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act;
- advance equality of opportunity between people who share a protected characteristic and those who do not; and
- foster good relations between people who share a protected characteristic and those who do not.

The Act explains that having due regard for advancing equality involves:

- removing or minimising disadvantages suffered by people due to their protected characteristics;
- taking steps to meet the needs of people from protected groups where these are different from the needs of other people; and
- encouraging people from protected groups to participate in public life or in other activities where their participation is disproportionately low.

## 2.2  Health Inequalities Duties

The Health and Social Care Act 2012 established the first specific legal duties on NHS England to have regard to the need to reduce inequalities between patients in access to, and outcomes from, healthcare services and in securing that services are provided in an integrated way. These duties had legal effect from April 1st 2013.

# 3  Target allocations

## 3.1  Steps in setting allocations

Once the national budgets are known, there are four steps in the calculation of actual allocations:

- determine target allocations based on relative need and relative unavoidable costs;
- establish baselines (the previous year's allocations plus any adjustments);
- calculate opening distances from target (baseline minus target);

- determine pace of change policy, that is how far CCG areas are moved closer to their target allocation each year through differential growth. Pace of change policy balances, within the available resources, providing stability in funding for all organisations with moving those furthest under target closer towards their target.

## 3.2  Target shares

The national weighted capitation formulae are used to calculate CCG areas' target shares of the available resources. Target shares are in proportion to each CCG's population weighted by the need for health care services (such as that due to the age profile of the population). There are also weights to account for differences in unavoidable costs due to location in providing healthcare services between geographical areas across England.

The target shares of the available national budget give each CCG's target allocation in monetary terms.

There are separate weighted capitation formulae for CCGs' core responsibilities (allocations of £70.54 billion in 2016-17), specialised services (£14.51 billion in 2016-17) and primary medical care (£7.34 billion in 2016-17).

## 3.3  Advisory Committee on Resource Allocation

The weighted capitation formulae are recommended by the Advisory Committee on Resource Allocation (ACRA). ACRA is an independent, expert, technical committee and its membership includes GPs, academics, public health experts and NHS managers.

ACRA's recommendations are evidence based from research and statistical modelling.

## 3.4  Equality

Equality is at the heart of the weighted capitation formulae. The formulae recommended by ACRA aim to allow local organisations to commission similar levels of health services for populations with similar levels of need (horizontal equity), and appropriately higher levels of health services for populations with higher levels of need (vertical equity).

The principle of a weighted capitation formula was established in 1976 following the *Report of the Revenue Working Party (RAWP)*."[2] RAWP interpreted its terms of reference as being: "to reduce progressively, and as far as feasible, the disparities between the different parts of the country in terms of the opportunity for access to health care of people at equal risk."

## 3.5  Weighted capitation formulae

### 3.5.1  Components

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[2] Department of Health and Social Security (1976) *Sharing Resources for Health in England* Report of the Resource Allocation Working Party, HMSO, London

The weighted populations for CCGs' areas are based on:

- the population base – a count of the population each CCG is responsible for;

- a weight, or adjustment, for higher need for health care services due to age (areas with more elderly populations receive higher allocations per head, all else being equal);

- a weight, or adjustment, for additional need for health services over and above that due to age (areas with poorer health receive higher allocations, all else being equal);

- an adjustment for unmet need and health inequalities;

- a weight, or adjustment, for unavoidable differences in the costs of providing health services due to location alone – the Market Forces Factor (areas where the cost of living, land etc are higher receive higher allocations, all else being equal);

- in the formula for core CCG allocations, an adjustment for the higher costs of providing emergency ambulance services in sparsely populated areas, and an adjustment for the higher costs faced by unavoidably small hospitals in remote areas providing 24 hour accident and emergency services.

### 3.5.2  Accounting for differences in need for different services

The values of the weights per head differ between the formulae for CCG core allocations, primary medical care and specialised services due to differences in relative need across the country for the respective health services.

The weighted capitation formula for CCG core allocations also has separate components for general and acute, mental health, maternity and prescribing. This is because need varies differently across the country for each of these services.

The research developing general and acute models used data at the individual level (anonymised) to provide accurate estimates of the different needs of different individuals and population groups. The exception to this was the prescribing formula, as data were only available at GP practice level. Previous formulae typically estimated need for small areas, which may not have fully captured differences in need within small areas.

The modelling for the new formula for specialised services also adopted the person based approach using individual level data (anonymised). This formula covered 46% of spend on specialised services. Data were not available for modelling the other 54%, and so uplifted historic spend was used as the targets for these.

The refreshed formula for primary medical care was also based on modelling individual level data. Both the individual patient and their GP practice were anonymised in the data set provided for the modelling.

### 3.5.3  Refreshed and updated formulae

Nearly all of the formulae have been refreshed for 2016-17 to 2020-21 allocations, using the most recent data available and providing up-to-date estimates of relative need and unavoidable costs. The exception was the mental health formula which

was the most up-to-date component of the formula for 2014-15 and 2015-16 allocations. A formula for specialised services has been developed for the first time for allocations from 2016-17.

The latest available data on GP practice registered lists have been used for the population base for all the formulae and components.

Full details on the updated weighted capitation formulae are in the *Technical Guide to Allocation Formulae and Pace of Change for 2016-17 to 2020-21 revenue allocations to Clinical Commissioning Groups and commissioning areas*, which is published alongside this equality analysis.

## 3.6  Adjusting for different characteristics

### 3.6.1  Modelling utilisation

Observing need per head directly has not proved possible to date. Instead statistical modelling by academic researchers has examined the relationship between the utilisation of health services on the one hand, and the characteristics of individuals (including diagnoses data) and the area where they live on the other hand. These models have been used to decide which factors to include in the formula to predict future need per head.

### 3.6.2  Need related to age and sex

People do not have identical needs for health care services. A key difference is that need varies according to age and sex, and in particular the very young and elderly, whose populations are not evenly distributed across the country, have a higher need for health services than the rest of the population. The weighted capitation formulae therefore take into account the relative need per head of different age-sex groups and the different age-sex profiles of local populations.

### 3.6.3  Additional need (over and above that related to age and sex)

Even when differences related to age and sex are accounted for, populations with the same age profiles display different levels of need. An additional adjustment to reflect the relative need for health services over and above that related to age and sex is therefore necessary. This adjustment is based on morbidity indicators and characteristics, such as deprivation, associated with morbidity.

Need related to age, sex and additional need over and above that due to age and sex are estimated as a single set of weights rather than two separate sets of weights in the general and acute, mental health, maternity, primary medical care, and specialised services models. This is because additional need varies by age-sex group and differentially across the country by age-sex group. The prescribing formula estimated need related to age-sex separately to additional need due to data availability.

Additional need for general and acute, mental health, specialised services was estimated using morbidity data based on the diagnoses for hospital inpatient admissions for each patient.

The Index of Multiple Deprivation (IMD) was used in the primary medical care formula due to the absence of other information in the data set available for the modelling.

The prescribing formula also used the IMD, and proxies for morbidity mainly from the Population Census.

### 3.6.4 Supply side variables

The models also include 'supply' variables to take account of the greater availability of health care services generally leading to higher use. While the supply variables are included in the models, they are set to the national average when calculating weighted populations. This means areas are not penalised in the formula for lower utilisation due to relatively lower capacity.

### 3.6.5 Unmet need and health inequalities adjustment

The models typically assess need as it is currently met by NHS services and therefore may not capture unmet need or inappropriately met need. Typically the most deprived communities do not access health care in the most appropriate way, resulting in poorer health outcomes. NHS England also has a duty to have regard to the need to reduce inequalities between patients in access to, and outcomes from, healthcare services.

There is an adjustment for unmet/inappropriately met need and health inequalities in the weighted capitation formula. This is based on a measure of population health (the standardised mortality ratio for those under 75 years of age (SMR<75)). The adjustment is calculated for the population of each small area and then aggregated to CCG level. Applying the measure at the small area level takes into account unmet need/health inequalities within as well as between CCGs.

ACRA's recommendations are principally based on research and modelling. However, due to the lack of robust quantitative evidence on unmet need which is comprehensive and consistent between services and across the country, ACRA's recommended measure to be used for the unmet need and health inequalities adjustment was largely pragmatic and based on judgement.

ACRA considered a range of measures of population health for the adjustment. These were found to be highly correlated with each other. The SMR<75 has the advantage that it can be updated regularly at small area level, while other measures can only typically be updated at small area level using data from the 10 yearly Census. The SMR<75 was recommended as an indicator of the health of the whole population of areas, including morbidity and all age groups.

The adjustment for unmet need and health inequalities was refined for allocations from 2016-17 to give a higher weight per head than previously to the small areas with the worst SMR<75s.

ACRA was unable to recommend the share of the overall weighted capitation formula that should be based on the unmet need and health inequalities adjustment. The NHS England Board meeting of 17 December 2015 decided that the share should be 15% for primary medical allocations, 10% for CCG core allocations, and 5% for specialised services.

The share is highest for primary medical care as it is expected that unmet need and health inequalities can be more effectively addressed through primary medical care than through secondary care. The share is lower for specialised services on the basis that unmet need and the potential to impact on inequalities is likely to be lower in this sector.

### 3.6.6  Unavoidable costs

The weighted capitation formula includes adjustments for unavoidable costs due to location, so that areas with higher costs are not disadvantaged in their allocations. The adjustments for higher unavoidable costs include the market forces factor (MFF), the emergency ambulance cost adjustment (EACA) and an adjustment for remote hospitals.

The MFF adjusts for unavoidably higher unit staff and premises costs, which are higher in particular in London. The EACA adjusts for the longer journey times of ambulances in sparsely populated areas, and the final adjustment is for the higher costs of hospitals because of unavoidable smallness due to remoteness.

# 4  Pace of change policy

Pace of change policy sets actual allocations by determining how far CCG areas are moved closer to their target allocation each year through differential growth. Pace of change policy balances, within the available resources, providing stability in funding for all organisations with moving those furthest under target closer towards their target.

The overall approach to pace of change for 2016-17 to 2020-21 allocations is based upon achieving greater equity of access through accelerating alignment of allocations with target allocations with the result that:

- in 2016-17 all CCGs are no further than 5% under target for CCG commissioned services;
- in 2016-17 all CCG areas are no more than 5% under target for the total commissioning streams for their population; and
- a similar position for primary medical care allocations is achieved by 2018-19.

# 5  Protected groups

The protected characteristics under the Public Sector Equality Duty are:

- age;
- disability;
- gender reassignment (including transgender);
- marriage and civil partnership;
- pregnancy and maternity;
- race;
- religion or belief;
- sex;
- sexual orientation;
- carers 'by association' with some of the protected characteristics e.g. disability and age; and
- other identified groups.

Each of these is considered below, followed by a summary in Table 5.1.

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### 5.1.1  Selection of variables

The formulae are based on academic research, refreshed by NHS England for 2016-17 allocations.

The research considered a wide range of plausible need characteristics for inclusion in the models. The sub-set of variables included in the preferred models was selected on the basis of statistical criteria relating to the statistical significance of each characteristic and the statistical goodness of fit of the overall model. The modelling was necessarily limited to considering those characteristics for which consistent data are available for each individual or small area.

The general and acute, mental health, maternity and specialised services formulae are based on individual level data that include diagnostic information from inpatient spells. The need for health care services of the protected and other groups is generally identified through the diagnostic data rather than through other direct variables, though the modelling tested whether the more direct variables should also be included.

### 5.1.2  Age

The weighted capitation formulae specifically takes into account the different needs for health care services by age group, which are especially higher for older age groups and significantly greater for the oldest age groups.

For example, the general and acute formula gives a weight per head 11 times higher for those aged 65-70 compared with those aged 20-25, and 20 times higher for those aged 85 and over compared with those aged 20-25.

The mental health component has separate formulae for working age and older adults, as their needs are different. Dementia is more prevalent amongst the older age groups, while acute need is more prevalent among the working age group. The different needs of different age groups are also taken into account in each of the working age and older age group models.

### 5.1.3  Sex

The weighted capitation formula directly takes account of the different needs of males and females in each age-group. For example, the need for general and acute services for women in their 30s is higher than that for men, while the need for general and acute services for men aged 85 and over is higher than for women.

The mental health component has separate formulae for men and women of working age as their needs were found to be different.

### 5.1.4  Race

The mental health, prescribing and maternity formulae include ethnicity variables.

The modelling for the mental health formula had data available on ethnicity at the individual level for users of mental health services. The modelling tested 16 ethnicity variables, of which 3 or 4 were found to be statistically significant, the number varying between the working age and older adults models. Those of Caribbean ethnic origin were found to have higher need, and also for men, those of African ethnic origin.

The research for the prescribing and maternity formulae did not have data on ethnicity for each individual. Instead the proportion of people by ethnic group in each

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individual's place of residence was used from the Population Census (place of residence was defined by Lower Level Super Output Area – LSOA[3]). A number of variables for ethnicity were tested and the proportion of non-white people in the prescribing formula and the proportion of black African ethnic groups for maternity were found to be statistically significant with a positive coefficient, indicating higher need.

The research for the general and acute and specialised services formulae tested a wide range of variables on ethnicity but none were found to be statistically significant over and above the person based diagnostic data in the models.

### 5.1.5  Disability

The aim of the formula is to equalise allocations relative to health needs across CCGs, and therefore directly reflect need due to disability. For example, the general and acute and mental health models are largely based on past patterns of morbidity at the individual level as measured by diagnostic data for hospital admissions. The prescribing formula also includes morbidity measures, such as the proportion of the local population with activity limiting health conditions. The data available for the primary medical care formula did not include data on disability, but the Index of Multiple Deprivation (IMD) was used as proxy for poorer health.

There is also a separate unmet need/health inequalities adjustment based on the SMR<75 for small areas (Middle Level Super Output Areas - MSOAs[4]). This is because the models typically assess need as it is currently met by NHS services and therefore may not capture unmet need or inappropriately met need. Typically, the most deprived communities do not access health care in the most optimal way, resulting in poorer health outcomes.

### 5.1.6  Gender reassignment (including transgender) and sexual orientation

These groups' treatment needs, as for all population groups, will be included in the diagnostic information used in the general and acute and mental health services formulae. Beyond this, there is a lack of data on the groups' needs suitable for consideration for use in an allocations formula and so there is no specific adjustment in the formulae. As for other groups, local commissioners and providers are subject to the public sector equality duty.

### 5.1.7  Marriage and civil partnership

Marital and civil partnership status was tested in developing the formulae and found to be statistically significant in general and acute and mental health formulae, and not statistically significant in the specialised services formula. The available data did not permit marriage and civil partnership to be tested as an additional variable in the primary medical care workload formula.

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[3] LSOAs are designed by ONS to have similar population sizes (average of 1,600) and as far as practical similar socio-economic characteristics.

[4] MSOAs are designed by ONS to have similar population sizes, with an average population size of around 8,000.

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### 5.1.8 Religion or belief

Religion or belief were tested for inclusion in the general and acute, specialised services and mental health formulae and found not to be statistically significant (over and above the other variables in the model, such as diagnoses).

### 5.1.9 Pregnancy and maternity

There is a separate maternity formula within the formula for CCG core allocations to take into account the specific health care needs related to pregnancy and maternity.

### 5.1.10 Carers

There is no specific adjustment in the formulae for carers. Data on voluntary care was tested for inclusion in the general and acute formula but was not found to be statistically significant. As for other groups, local commissioners and providers are subject to the public sector equality duty.

### 5.1.11 Other identified groups - deprivation

Areas with greater socio-economic disadvantage typically have poorer health after accounting for age and higher health care needs. This is reflected in the formulae through the inclusion of morbidity data or indicators. Morbidity data were not available for the primary medical care formula, and the Index of Multiple Deprivation was included instead.

As noted above, there is also a separate unmet need/health inequalities adjustment based on the SMR<75 for small areas (MSOAs). There is this adjustment because the models typically assess need as it is currently met by NHS services and therefore may not capture unmet need or inappropriately met need. Typically the most deprived communities do not access health care in the most optimal way, resulting in poorer health outcomes.

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## Table 5.1: Summary table

| Protected characteristic | CCG formula | Specialised services | Primary medical care |
|---|---|---|---|
| **Age** | Included in formula | Included in formula | Included in formula |
| **Disability** | Morbidity included in all models using diagnostic data and through indicators in the prescribing model where availability of more direct measures is limited at the level of modelling.<br><br>There is also an unmet need/health inequalities adjustment based on the SMR<75 for small areas. | Morbidity included in all models using diagnostic data.<br><br>There is also an unmet need/health inequalities adjustment based on the SMR<75 for small areas. | Morbidity proxied by IMD due to lack of other data.<br><br>There is also an unmet need/health inequalities adjustment based on the SMR<75 for small areas. |
| **Gender reassignment** | All individuals' diagnostic information is used in the modelling.<br><br>Beyond this there is a lack of data on the need by gender reassignment for consideration for use in the formula.<br><br>There is no reason to believe the formula disadvantages individuals by gender reassignment. | All individuals' diagnostic information is used in the modelling.<br><br>Beyond this there is a lack of data on the need by gender reassignment for consideration for use in the formula.<br><br>There is no reason to believe the formula disadvantages individuals by gender reassignment. | There is a lack of data on the need by gender reassignment for consideration for use in the formula.<br><br>There is no reason to believe the formula disadvantages individuals by gender reassignment. |
| **Marriage and civil partnership** | Marital and civil partnership status was tested in developing the formulae and found to be statistically significant in G&A and mental health formulae. | Marital and civil partnership status was tested in developing the formulae and found not to be statistically significant. | Restrictions on the data available prevented linking to other data sources, so could not be tested |
| **Pregnancy and maternity** | There is a separate model for maternity services. | | |

| Protected characteristic | CCG formula | Specialised services | Primary medical care |
|---|---|---|---|
| **Race** | Ethnicity was tested for inclusion in the G&A formula and was found not to be statistically significant (over and above the other variables in the model, such as diagnoses).<br><br>16 ethnicity variables were tested for inclusion in the mental health formula, of which 3-4 were found to be statistically significant (number differed between the stages of the two stage model). | Ethnicity was tested for inclusion in the formula and was found not to be statistically significant (over and above the other variables in the model, such as diagnoses). | Restrictions on the data available prevented linking to other data sources, so could not be tested |
| **Religion or belief** | Religion or belief were tested for inclusion in the G&A and mental health formulae and found not to be statistically significant (over and above the other variables in the model, such as diagnoses). | Religion or belief were tested for inclusion in the G&A and mental health formula and found not to be statistically significant (over and above the other variables in the model, such as diagnoses). | Restrictions on the data available prevented linking to other data sources, so could not be tested |
| **Sex** | Included in formula | Included in formula | Included in formula |
| **Sexual orientation** | All individuals' diagnostic information is used in the modelling.<br><br>Beyond this there is a lack of data by sexual orientation for consideration for use in the formula.<br><br>There is no reason to believe the formula disadvantages individuals by sexual orientation. | All individuals' diagnostic information is used in the modelling.<br><br>Beyond this there is a lack of data by sexual orientation for consideration for use in the formula.<br><br>There is no reason to believe the formula disadvantages individuals by sexual orientation. | There is a lack of data by sexual orientation for consideration for use in the formula.<br><br>There is no reason to believe the formula disadvantages individuals by sexual orientation. |
| **Carers 'by association' with some of the protected characteristics e.g. disability and age** | The proportion providing unpaid care was tested in developing the models and found to be statistically significant only in the mental health formula. | The proportion providing unpaid care was tested in developing the models and found to be statistically significant only in the mental health formula. | Restrictions on the data available prevented linking to other data sources, so could not be tested |

# 6   Local commissioning

The weighted capitation formula supports equal opportunity of access for equal need. Achieving equal access also depends on local commissioning decisions and local practice.

CCGs and all NHS organisations have a statutory duty to meet the general and specific duties of the Equality Act 2010 and the public sector equality duty.

Each CCG receives a single core allocation (excluding running costs), which is not broken by function or programme. It is for each CCG to determine how best to invest their resources to meet the needs of their responsible populations, within national standards and NHS England's strategic guidance. CCGs have the same equality duties as NHS England.

# 7   Monitoring and review

The weighted capitation formulae are regularly reviewed and updated to take account of changing patterns of need and the latest data. Nearly all components of the formula have been refreshed and updated for allocations from 2016-17. The equality analysis will be reviewed as part of future reviews of the formulae.