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From: Carl Baker & Rachael Harker
Social and General Statistics
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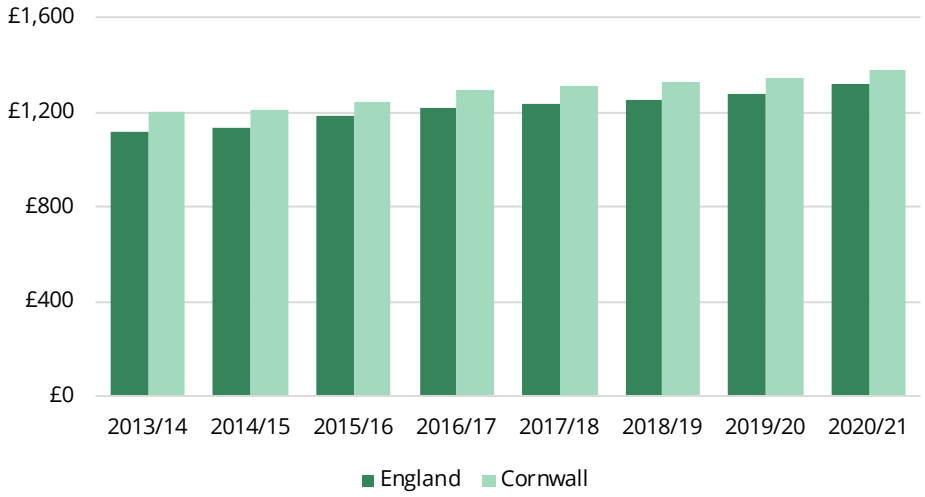
Kernow CCG Funding

The latest CCG funding allocations were published in 2016 and cover a five year period from 2016/17 to 2020/21. NHS England publish the allocations in pdf format including the distance from target of each CCG: CCG allocations 2016/17 to 2020/21.

Allocations for Kernow CCG are summarised in the table and chart below. The CCG receives above average funding per head compared with England as a whole. You will also note that the CCG's average annual increases from 2016/17 to 2020/21 (in the table below) are below the national average increase in each year. This is due to the CCG having a positive DFT (distance from target). The DFT's role in the allocation of funding is described in further detail in the overview of the allocations progress section overleaf.[1]

Kernow CCG funding per head, compared with England, 2013 to 2021



Cornwall CCG Funding Allocations, 2016/17 to 2020/21

	2016/17	2017/18	2018/19	2019/20	2020/21
Funding Allocation £m	731.2	749.1	764.2	777.3	805.8
Distance from Target	+1.5%	+1.7%	+1.6%	+1.0%	+0.7%
Kernow increase %	*+3.0%*	*+2.4%*	*+2.0%*	*+1.7%*	*+3.7%*
England increase %	*+3.7%*	*+1.9%*	*+2.1%*	*+2.5%*	*+3.9%*

[1] The table also details non-recurrent adjustments for 2017/18 and 2018/19 which were announced last year. These result in small increases in funding for Kernow CCG in both years.

Overview of the allocations process

CCG allocations are based on the weighted capitation formulae recommended by the independent Advisory Committee on Resource Allocation (ACRA). The CCG allocations published by NHS England show details of the actual allocation each CCG receives as well as an indication of its "distance from target" (DFT). The distance from target figure reflects the fact that the target allocation determined by the funding formula is not always what a CCG receives.

The starting point for determining the target allocation is the latest population estimate for the CCG area. If all CCG populations had equal need, and costs didn't vary across the country, the process could end here, with every CCG receiving a target share in proportion to their population size (i.e. an equal per capita allocation). However, health needs and costs do vary, and the population estimates are 'weighted' to reflect this.

The weights used in the formula are based on:

- need due to age (the more elderly the population, the higher the need per head, all else being equal);
- additional need over and above that due to age (eg health status);
- an adjustment for unmet need and health inequalities;
- unavoidable higher costs of delivering health care due to location alone, known as the Market Forces Factor (this reflects that staff, land and building costs are higher in e.g. London than the rest of the country).

The effect of the weighting means that, in general, CCGs with more elderly populations, those in urban and deprived areas etc will have higher target allocations than they would under a simple population-based formula.

The Department of Health has used a weighted capitation formula since 1977/78. Given the changing nature of society it would be intransigent to retain the same funding formula each year. Consequently revisions to the funding formula are made to reflect such factors as changing population structures, increased understanding/estimation of health needs, deprivation etc.

Since the first funding allocations were made any suggested revisions to allocation formula have to be tempered by the observation that the previous formula dictated a given level of funding in a given area. If a revised formula results in substantial differences in funding allocations it may not always be practical to implement the ideal "fair share" according to a new formula. For example, the formula for 2016/17 to 2020/21 would mean that some CCGs could see funding increases of around 10% (ie their DFT is currently -10%) while others could see decreases of as much as 34% (ie DFT is +34%). To avoid wide swings in year on year allocations, a political decision is taken by the Department of Health to constrain increases in allocations where CCGs are determined to be under target.

CCGs move towards their target allocation over time. Each year all CCGs receive an increase in funding, however, the percentage increase varies depending on their DFT. CCGs that are above target generally receive less than the national average funding increase while PCT below target will receive more than the national average.

This is illustrated below by looking again at the allocations for Kernow CCG – this was defined as being 1.5% above target for 2016/17 based on the current formula. As a result funding increases for the CCG are below the national average throughout the funding period. This has the effect of reducing the DFT to +0.7% by 2020/21.

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The pace at which CCGs move towards their target is set by ministers at the start of each funding round by something known as the 'pace of change'. The pace of change helps to ensure a steady move towards a target year on year without causing extreme disruptions to local health services or political outcry.

The pace of change rules associated with the current formula are intended to ensure that:

- no CCG is more than 5% below target.
- all CCGs receive a minimum per capita growth that is equivalent to real terms cash growth at the average population growth (in 2016/17 this equates to 0.91%).
- all CCGs receive a minimum cash growth equal to real terms growth plus specific non-routine policy pressures (predominantly relating to pensions and 7 day services); unless the CCG is more than 10% above target, when its cash growth is limited to the specific policy pressures.

Details of the weights used in the allocations formula

The basic approach in calculating need weighted populations is to multiply the population for each age-sex group for each GP practice by the relative need per head estimated by academic researchers. The products for each age-sex group are summed to give the relative need weighted population for each GP practice. The weighted populations for GP practices are summed to give the relative need weighted populations for each CCG.

The approach for weighting for unmet need is based on the standardised mortality ratio for those under 75 years of age (SMR<75) applied at small area level to take account of inequality in health outcomes within as well as between CCGs.

The two adjustments for unavoidable costs due to location are the market forces factor and the emergency ambulance cost adjustment (EACA) are then added at CCG level. The SMR<75 weighted population combined with the need and unavoidable cost weighted population gives the relative overall weighted population for each CCG.

Unmet need adjustment: SMR<75

In the absence of robust quantitative evidence which is comprehensive and consistent between services and across the country, ACRA's recommendation of the measure used for the unmet need adjustment is largely based on judgement. ACRA was unable to recommend the share of the overall weighted capitation formula that should be based on the unmet need adjustment. The NHS England Board meeting of 17 December 2013 determined the share should be 10%.

ACRA considered a range of measures of population health for the adjustment for unmet need. These were found to be highly correlated with each other. The preferred measure was the SMR<75 which 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 for all age groups.

The SMR<75 is a measure of how many more or fewer deaths there are in a local area compared with the national average, having adjusted for the difference between the age profile of local areas compared with the national average. It is applied at small area level (middle layer super output area (MSOA)) and then aggregated to CCGs. This allows for inequality within, as well as between, CCGs to be taken into account.

Each MSOA was assigned to one of 10 groups based on its SMR<75 value, those with the lowest SMR<75 values were in group one, and those with the highest SMR<75 values were assigned to group ten. The groups had an equal span of SMR<75 (subject to at least 5% of MSOAs being in the group). The alternative of having equal numbers of MSOAs in each group would have meant very small differences in the SMR<75 values between the middle groups. Each of the ten groups is assigned a weight per head, with the MSOAs in group 10 having a weight five times higher than the MSOAs in group 1. The weight for the intermediate groups increases exponentially, so that group one has a weight of 1.00, group two a weight of 1.20, group three a weight of 1.43, up to group ten with a weight of 5.00. The exponential increase in the weights means the impact of the SMR<75 based adjustment between CCGs depends on how many of its MSOAs are in each of the 10 groups.

Each MSOA's population is given a weight of between 1 to 5, and the MSOA weighted populations are then summed to CCG level.

Market Forces Factor (MFF)

The MFF adjusts for the unavoidable cost differences between areas due to their geographical location alone. For example it typically costs more to run a hospital in a city centre than in other areas due to higher staff, buildings and land costs. This adjustment is for higher, unavoidable input costs alone, not due to higher costs due to higher need.
There are four components to the MFF, unavoidable differences in cost across the country due to each of:

- medical and dental staff;
- other staff;
- land; and
- buildings.

The staff component (non-medical and dental) is based on the HERU research report *The Staff Market Forces Factor component of the weighted capitation formula: new estimates*. In the

NHS, pay rates are determined by national pay structures and therefore differences across the country are relatively small. However, indirect pay costs faced by providers differ significantly across the country, such as vacancy rates, staff turnover rates and use of agency staff. The HERU research report used differences in pay rates across the country in the private sector, which were found to be highly correlated with these indirect staff costs faced by NHS providers.

The private sector pay rates used were adjusted for differences across the country in age and sex of employees, occupation, industry and level of responsibility of the job. Indirect staff costs for medical and dental staff were found not to differ across the country as they do for other staff. Instead the medical and dental component was based on the direct, higher costs of employing medical and dental staff in London, i.e. on the London pay weighting.

The building component is based on relative location factors calculated by the Building Cost Information Service (BCIS) from an analysis of tender prices for public and private contracts at local authority level. The land component is based on the land value per hectare calculated for each Trust.

Emergency Ambulance Cost Adjustment

The Emergency Ambulance Cost Adjustment (EACA) adjusts for unavoidable variations in the cost of providing emergency ambulance services in different geographical areas, and in particular sparsely populated and metropolitan areas.

Revisions to the formula for 2016/17 to 2020/21

The formula used for the latest five year funding allocation period is broadly unchanged from the previous allocation formula. However, some changes are evident in the current formula:

1. Introduction of a sparsity adjustment
2. Update to the Emergency Ambulance Cost Adjustment (EACA)
3. Revised application of inequalities data.

Sparsity adjustment

The sparsity adjustment provides funding to CCGs to meet the unavoidably higher costs of remote hospital sites, where the costs are higher because the level of activity is too low for the hospital to operate at an efficient scale.

The package of recommendations has three key elements:

☐ the criteria for considering a provider's site remote;

☐ the cost curve for assessing the unavoidable impact of scale on efficiency; and

☐ the reference point on the cost curve used as the basis for deriving a cost adjustment.

There are three criteria that a hospital providing Type I A&E services must meet for its commissioning CCG to be considered eligible for the uplift to its target:

- there must be 200,000 or fewer population within a one-hour travel time. A population served of 200,000 is the estimated scale at which a hospital can achieve close to national efficiency levels. This ensures that a large provider that is geographically remote but operating at efficient scale does not receive extra support;
- the next nearest provider must be one hour or more by normal road travel times (including ferry times where relevant). This is a measure of whether or not consolidation of services on to fewer sites is feasible; and

- for at least 10% of the population in the hospital's catchment area, this must be the closest provider, with the next nearest provider over an hour away. An adjustment to target allocations for the relevant CCG is only made when this percentage is 10% or higher. This avoids giving very small (immaterial) adjustments to a large number of providers.

A relevant cost curve was created by analysing the costs of all hospital sites relative to their size as measured by activity levels. The estimated relative costs were adjusted to remove the impact of differences in case mix and in costs that are already compensated through the market forces factor (e.g. differential staff and premises costs across the country).

National average costs at the point representing the average size of hospital sites were used as the reference point for deriving the size of individual adjustments. The cost curve gives the estimated higher costs above national average costs for each of the hospitals with activity levels which correspond to population catchment areas of under 200,000 people. The sparsity adjustment therefore reflects the expected cost premium based on national scale/cost relationships rather than the actual cost position of the individual site, which may be affected by a number of factors unrelated to its scale.

EACA update

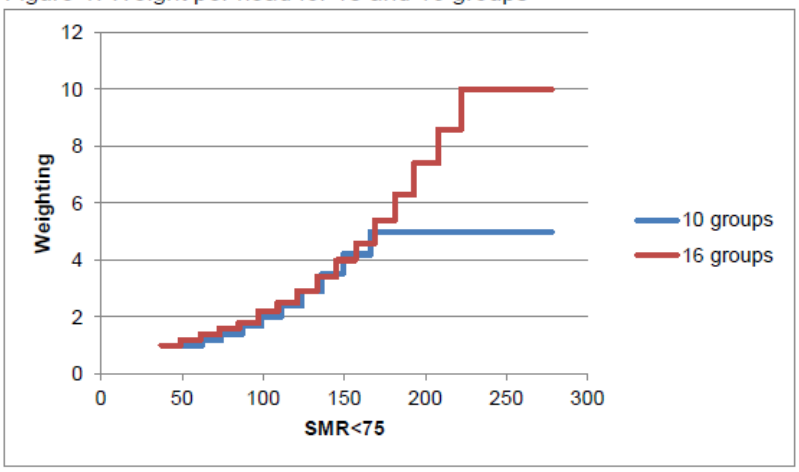
The previous EACA formula was unchanged since its inception in 1998/99 - apart from mapping to the different commissioning organisations over time. The old formula was based on the volume of activity, the case-mix of activity and a measure of rurality. The updated versions produces a new adjustment by modelling the time taken by ambulances to reach incidents, provide treatment and convey patients to hospitals by MSOA across a combined data set from four of the 10 Ambulance Trusts.

Inequalities adjustment

The unmet need adjustment in the previous formula used the standardised mortality ratio under 75 (SMR<75) for small geographical areas – Middle Layer Super Output Areas (MSOAs) – of which there are 6,791 in England. The MSOAs were placed into 10 groups according to the value of their SMR<75. All MSOAs in the same group received the same weight per head, with the MSOAs in the group with the highest SMR<75s receiving a weight per head 5 times higher than those in the group with the lowest SMRs. The intermediate 8 groups receive a weight per head between 1 and 5.

The revised current formula increases the number of groups for the unmet need adjustment to the CCG formula from 10 to 16 and increases the weight per head across these to a range of 10 to 1. The impact of moving to 16 groups is to increase the target allocations to the areas with the very worst SMR<75. This can be seen from the steeper curve for the 16 group model compared to the 10 group model in Figure 1, which show the weights per head for the MSOA groups.

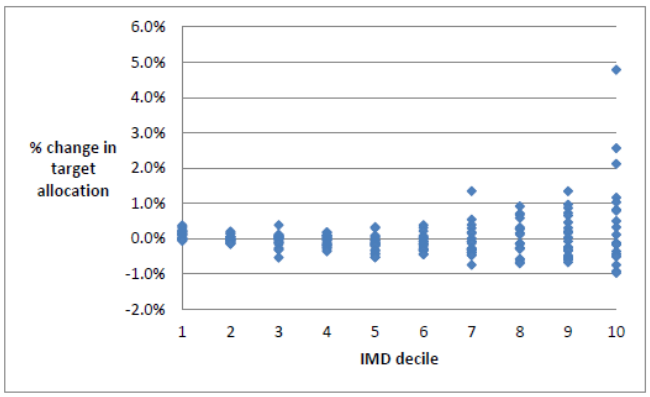
Figure 1: Weight per head for 10 and 16 groups



The general impact of this more sensitive approach is to increase or decrease individual target allocations by up to 1%. Six CCGs see an increase in their target allocation of more than 1% (up to 4.8% in one case) because they have a high proportion of small areas with the worst SMR<75s, which are now given a higher weight.

Figure 2 shows for CCGs the change in total target allocations by reference to their Index of Multiple Deprivation (IMD) decile, with decile 1 being the least deprived. This indicates that by changing the formula more resources are being directed to the CCGs which have areas with the very poorest health. The dispersion in the higher deciles is due to differences between CCGs in the number of small areas with the highest SMR<75s and the number of small areas with a high but not the highest SMR<75s. Small areas in the former are now given a much higher weight per head and small areas in the latter are given a relatively lower weight per head than previously.

Figure 2: Change in target allocation by IMD decile



Overall impact of changes to the CCG formula

The changes are relatively small overall but tend to move money in the direction of a combination of age and deprivation. NHS England have produced the charts shown below to illustrate the profile of target allocations with respect to age and deprivation.

Table A2: Age and deprivation distribution of 2015-16 target model

		Younger									Older	
		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	All ages
Less deprived	D1		1,084	1,097	1,169	1,120	1,086	1,117	1,156	1,158		1,124
	D2		0	1,170	1,127	1,140	1,117	1,142	1,182	1,196	1,244	1,152
	D3		1,121		1,139	1,256		1,204	1,164	1,202	1,303	1,215
	D4	1,026	1,125	1,137			1,192	1,289	1,200	1,224	1,302	1,195
	D5		1,121		1,168	1,218	1,264	1,276	1,262	1,286	1,267	1,244
More deprived	D6	1,110	1,158	1,161	1,168	1,301	1,262	1,327	1,292	1,282	1,258	1,236
	D7	1,153	1,160	1,163	1,136	1,193	1,354	1,346	1,380		1,303	1,212
	D8	1,149	1,167	1,191	1,295	1,351	1,291		1,445		1,330	1,262
	D9	1,183	1,147	1,336	1,462	1,249	1,381	1,397	1,456	1,397		1,290
	D10	1,152	1,200	1,351	1,252	1,374			1,463			1,275
	All depn	1,152	1,159	1,263	1,187	1,226	1,246	1,235	1,246	1,236	1,295	1,222

Table A3: Age and deprivation distribution of 2016-17 target model

		Younger									Older	
		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	All ages
Less deprived	D1		1,059	1,059	1,126	1,144	1,111	1,148	1,119	1,198		1,135
	D2			1,157	1,142	1,171	1,101	1,138	1,200	1,197	1,220	1,156
	D3		1,062		1,135	1,237		1,220	1,164	1,203	1,291	1,209
	D4	1,005	1,126	1,118			1,208	1,251	1,211	1,217	1,299	1,194
	D5		1,109		1,168	1,227	1,277	1,267	1,278	1,298	1,290	1,250
More deprived	D6	1,061	1,094	1,169	1,173	1,283	1,216	1,312	1,299	1,315	1,281	1,230
	D7	1,143	1,141	1,166	1,184	1,179	1,339	1,351	1,366		1,308	1,207
	D8	1,150	1,168	1,173	1,286	1,356	1,303		1,486		1,348	1,265
	D9	1,164	1,115	1,332	1,426	1,253	1,354	1,400	1,452	1,401		1,275
	D10	1,151	1,243	1,343	1,284	1,371			1,527			1,285
	All depn	1,139	1,158	1,254	1,189	1,234	1,239	1,235	1,254	1,247	1,295	1,222

Key:
- Decrease over £5 per head
- Increase over £5 per head
- Changes of less that £5 per head

Note: The published target distribution has been normalised to 2016-17 quantum and normalised using 2016-17 populations to facilitate comparison.