HFMA briefing
March 2024

A primary care funding model to address health inequalities

A case study from Leicester, Leicestershire and Rutland

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Executive summary

This case study describes Leicester, Leicestershire and Rutland (LLR) CCGs' model for primary care funding, developed in 2020/21, to ensure better alignment of primary care funding with population need. This has enabled the CCGs and their successor integrated care board (ICB) to drive up health equity and reduce health inequalities.

> *'A key purpose of the integrated care system (ICS) is to reduce health inequity. This requires us to ensure there is better alignment of the funding of services to population health need. The proposed primary care funding model is an important example of this, and it is fantastic that the extensive engagement process undertaken by the CCG team has shown that GPs are very supportive of this approach.*
>
> *The funding model (using population health data) is an example of how the ICS needs to work in wider transformation of the NHS in LLR including ensuring greater investment where it is needed, for example in collaborative working across pathways, in prevention and in developing community-based services.'*
>
> *LLR chairs*

Not all organisations will have the resources available to innovate at the scale of LLR CCGs, but the approach provides insight for organisations and systems aiming to address health inequalities through a simplified payment mechanism that can be tailored as appropriate.

> *'It is great to see an excellent example of working collaboratively to look at the needs of local populations. The way the system pulled resources together creatively to address these needs and narrow health inequalities is a great example of local initiative, collaboration and system working.'*
>
> *Professor Bola Owolabi, director of the national healthcare inequalities improvement programme, NHS England*

As a place, LLR has three distinct areas ranging from the most affluent (Rutland) to the least affluent (Leicester) as reflected by the wide-ranging pendulum of national *Index of multiple deprivation (IMD)*[1]. The national funding regime for primary care has been in place for almost 20 years. This formula, the Carr-Hill[2] or global sums formula, is based on an estimate of a practice's patient workload and certain unavoidable costs, such as the additional costs of serving a rural or remote area and the effect of geography on staff markets and pay, and not on the actual delivery of services. The Carr-Hill formula is largely driven by age and/or gender. We know that areas of deprivation have lower life expectancy and are therefore disadvantaged through the Carr-Hill formula. The formula does not recognise issues such as communication or co-morbidities which are larger drivers of patient need and health outcomes. Also, the allocation of funds for locally enhanced services (LES) using weighted list size did not account for clinical case mix. This meant that funding allocations did not recognise differences in clinical burden between practices.

To address this issue, LLR CCGs focused on a modification of the case-mix adjustment through the application of Johns Hopkins University Adjusted Clinical Groups (ACG) System[3]. This is a population health analytics software that is flexible and responsive to new information which improves population health through resource allocation, clinical case management, predictive modelling, identifying trends and opportunities to improve them.

LLR CCGs developed a solution based on patient level data, applying a system designed to apportion resource based on measured need, adjusted for variation in data completeness, and other factors such as list turnover, communication (where English is not a first language) and deprivation.

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[1] Ministry of Housing, Communities and Local Government, *English indices of deprivation 2019,* September 2019

[2] BMA, *Focus on the global sum allocation formula (Carr-Hill Formula),* September 2020

[3] John Hopkins medicine, *ACG System Overview - Johns Hopkins ACG® System*

This was then used to create a new financial model to fund primary care. The financial model has a number of key components:

- case mix adjusted for population need as it affects primary care (using the ACG system)
- adjustment from distortion created by variable coding quality
- calculation of a proxy of relative need
- adjustment for list turnover and communications issues
- addition of the practice share (determined by above) to the core level of funding (core staff component plus 1.5% rurality) and share from IMD (deprivation index) to find final amount
- practices that would otherwise lose are brought up to the existing funding, in line with a no losers approach.

In the new model, some large practices were allocated only the national growth and inflation levels, reflecting the fact that their registered population was largely younger and healthier, while some smaller inner-city practices were allocated greater sums, because they have a greater proportion of patients with clinical needs, higher deprivation or communication issues who required more input from the practice team. This approach proved itself capable of focusing resource allocation more appropriately and had the confidence of the primary care teams as it was based on local data.

The main outcomes have been:

- A £3m investment was made to give all practices a fairer level of baseline funding based on need and demographics with a commitment to the model for a three-year minimum period allowing practices to plan accordingly.
- Further investments in primary care were transparently distributed and flexed to existing and newly identified population needs.
- Each practice has a baseline of patient need, current outcome measures and a financial baseline that reflects their patients' needs.
- Reduced bureaucracy with a simplified payment and contracting model and a move towards measuring outcomes.
- Teams developed a set of primary care and population health metrics that were measured and monitored over time.
- Areas of increased funding could be tailored to specific practices and support to meet the needs of their local communities, thereby enhancing patient care and experience.
- LLR CCGs collected data in one place rather than the many returns that were previously linked to obtaining funding, reducing the administrative burden.

LLR ICB is continuing to review the outcomes achieved.

If there is concern about the differing level of funding within GP practices in your patch, impacting their performance and patient care, you may wish to follow the approach and methodology detailed within this case study, to create a more tailored and appropriate funding model, which addresses health inequalities within primary care.

Introduction

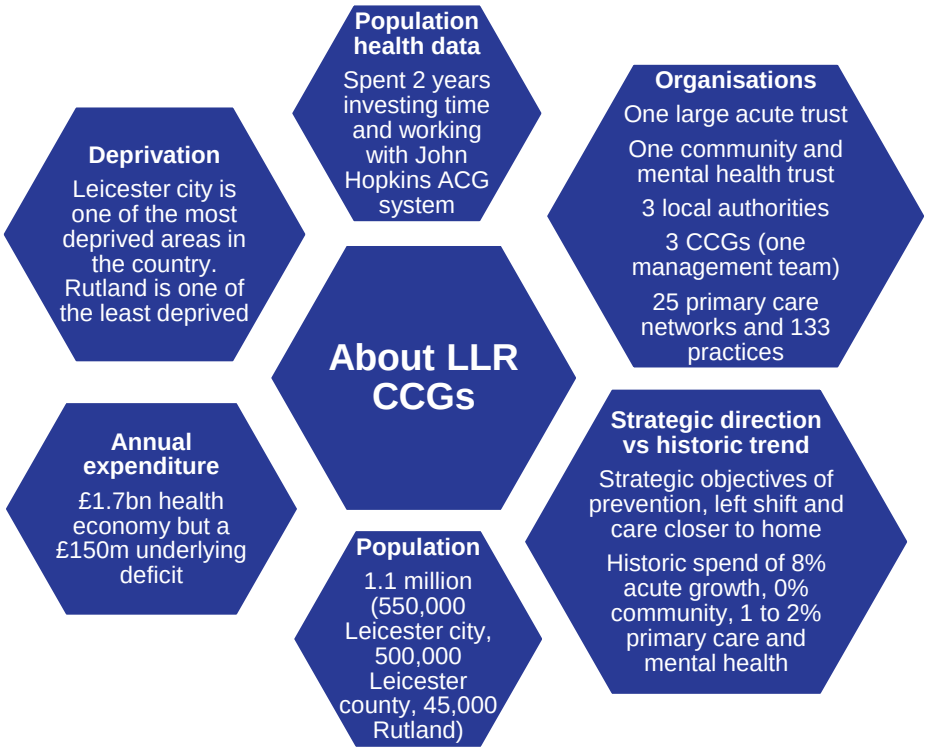
The Healthcare Financial Management Association (HFMA) is working on a range of outputs to help finance staff to support their organisations and systems to reduce health inequalities. Further information about why this is important for finance staff can be found in *Health inequalities: establishing the case for change*[4]. There is also an HFMA briefing which explains the resources and funding available to address health inequalities *Resources and funding to reduce health inequalities*[5] and a further briefing that summarises examples of the ways in which the finance function is helping to reduce health inequalities[6].

As part of the programme, the HFMA is publishing a series of case studies focusing on organisations that have started on their health inequalities improvement journey.

About LLR CCGs

Leicester, Leicestershire and Rutland (LLR) CCGs, now replaced by the ICB, commissioned a wide range of acute, mental health, community health and primary care services for a population of around 1.1 million across Leicester, Leicestershire and Rutland. Figure 1 below provides some background information on LLR CCGs.

Figure 1: Facts about LLR CCGs



Source: LLR CCGs

What was the problem?

Differences in deprivation

As a place, LLR has three distinct areas ranging from Rutland which was extremely affluent and had a score of 156 out of 157 on the national index of multiple deprivation[7] (IMD) rating, to Leicester city which was in the top 15 most deprived areas and had a multi-generational population. In the middle,

[4] HFMA, *Health inequalities: establishing the case for change,* May 2023
[5] HFMA, *Resources and funding to reduce health inequalities*, July 2023
[6] HFMA, *How finance teams are helping to reduce health inequalities*, September 2023
[7] Ministry of Housing, Communities and Local Government, *English indices of deprivation 2019,* September 2019

was Leicester county. The catalyst for change came from inner city GPs who believed that they were under funded and this was impacting their performance, compared to practices in the Rutland region.

This concern led to the LLR CCGs' board investigating the issue further. The board was fully committed to reviewing and addressing health inequalities across the patch and had already employed an expert looking at population health management (PHM) for two years prior to this project so that the data was robust (however this was not a prerequisite to progress this new way of working). A retired GP was also invited to support the project.

Concerns with current funding formula

The existing funding regime in place relied on the Carr-Hill[8], or global sums formula, which is based on an estimate of a practice's patient workload and certain unavoidable costs (for example, the additional costs of serving a rural or remote area and the effect of geography on staff markets and pay), not on the actual delivery of services. Further issues with this approach were that the Carr-Hill formula is largely driven by age and/or gender and does not reflect the complexities of the world that we live in. In addition, the allocation of funds for locally enhanced services (LES) using weighted list size does not account for clinical case mix. This means that funding allocations did not recognise differences in patient need and, therefore, clinical burden.

Funding for general practice

There are several different income streams for general practice. For example, most of a practice's income comes from its core contract agreements to meet mandatory requirements, running essential services and operating additional and out-of-hours services, where they have been agreed. This is known as the global sum payment and is explained further below.

However, the other income streams come from other NHS sources such as the quality and outcomes framework (QOF) scheme or payments for providing additional/ enhanced services.

Global sum payment

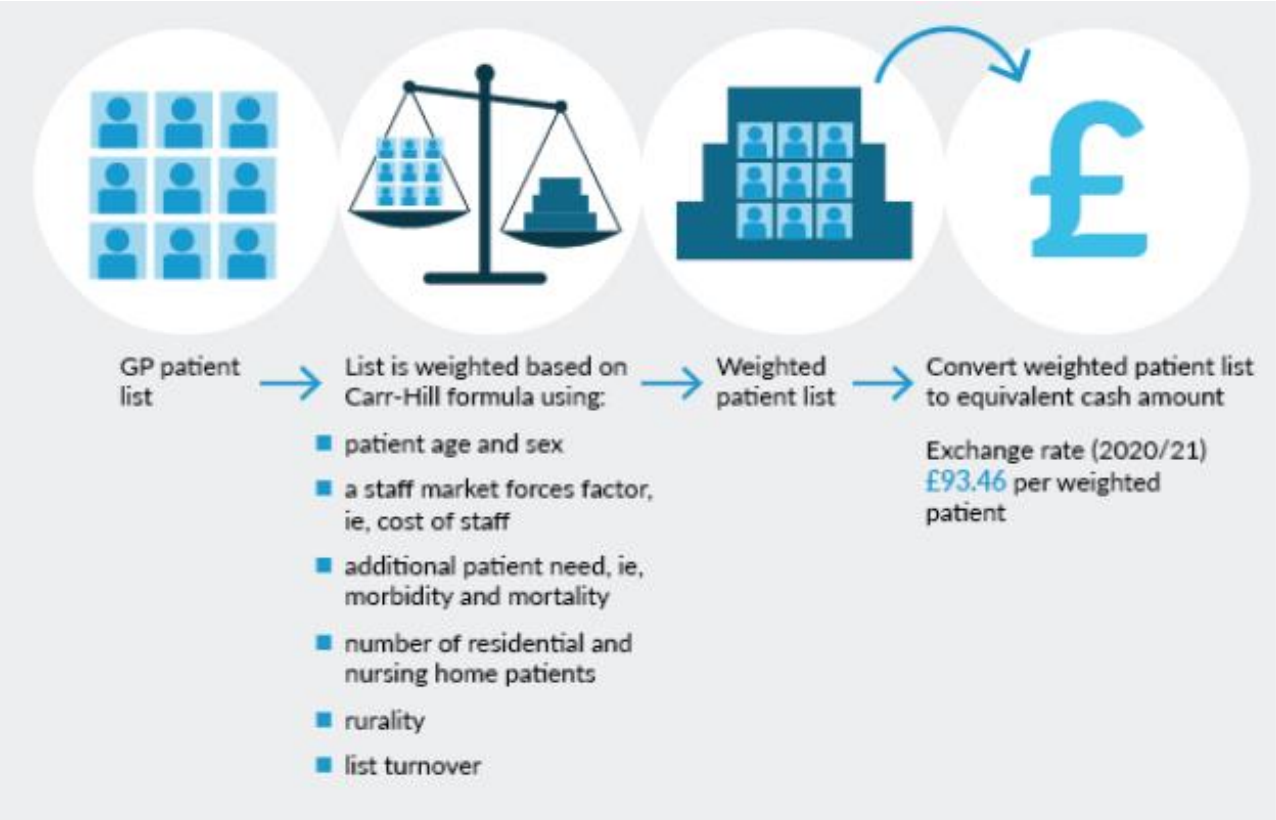
About half of the income a practice receives is from the global sum payment. This includes payment for out-of-hours and additional services, but percentage deductions are applied to the global sum payment if a practice opts out of these.

The workload component of the global sum includes adjustments for age and sex, residential and nursing homes and general morbidity and mortality factors. The global sum payment for each practice is based on a weighted sum for every patient on the practice list.

The Carr-Hill formula (also known as the global sum allocation formula) is used to apply these weightings. The global sum amount is reviewed quarterly to account for changes to the practice's patient population. Figure 2 gives a graphical representation of the Carr-Hill or global sum allocation formula.

[8] BMA, *Focus on the global sum allocation formula (Carr-Hill Formula),* September 2020

Figure 2: The Carr-Hill or global sum allocation formula



Source: The King's Fund

Why change the approach?

The Carr-Hill formula has long been recognised as carrying significant limitations and has been subject to several reviews. LLR CCGs decided that a much more tailored approach was needed to allocate primary care funding that used the local patient level data. This could potentially be used to address longstanding issues such as those related to atypical practices and language barriers, as well as more accurately allowing for local morbidity variation.

Using a more population health-based model in LLR, it was evident that:

- 29 practices (22% of all practices) had over a 10% shortfall or excess to target funding
- eight practices (6% of all practices) had over a 15% shortfall or excess to target funding
- the practices that had a shortfall were in the most deprived areas
- the areas which were deemed to be overfunded were in areas with a low index of multiple deprivation.

The Carr-Hill formula when compared to the population health needs formula could be considered to widen the health inequalities gap.

In 2016, a former board member of Leicester City CCG, developed a modification of the case-mix adjustment architecture of the Johns Hopkins University Adjusted Clinical Groups (ACG) System[9]. This is a population health analytics software that is flexible and responsive to new information which improves population health through resource allocation, clinical case management, predictive modelling, identifying trends and opportunities to improve them.

Variable coding of morbidity between practices was an issue through examination of ACG practice data in Leicester city, which impacted upon case mix adjusted ACG output. Hence, a model to estimate and adjust case mix outputs for the completeness of clinical coding was developed which allowed more meaningful comparison on practice activity, linking observed variation of expected

[9] John Hopkins medicine, *ACG System Overview - Johns Hopkins ACG® System*

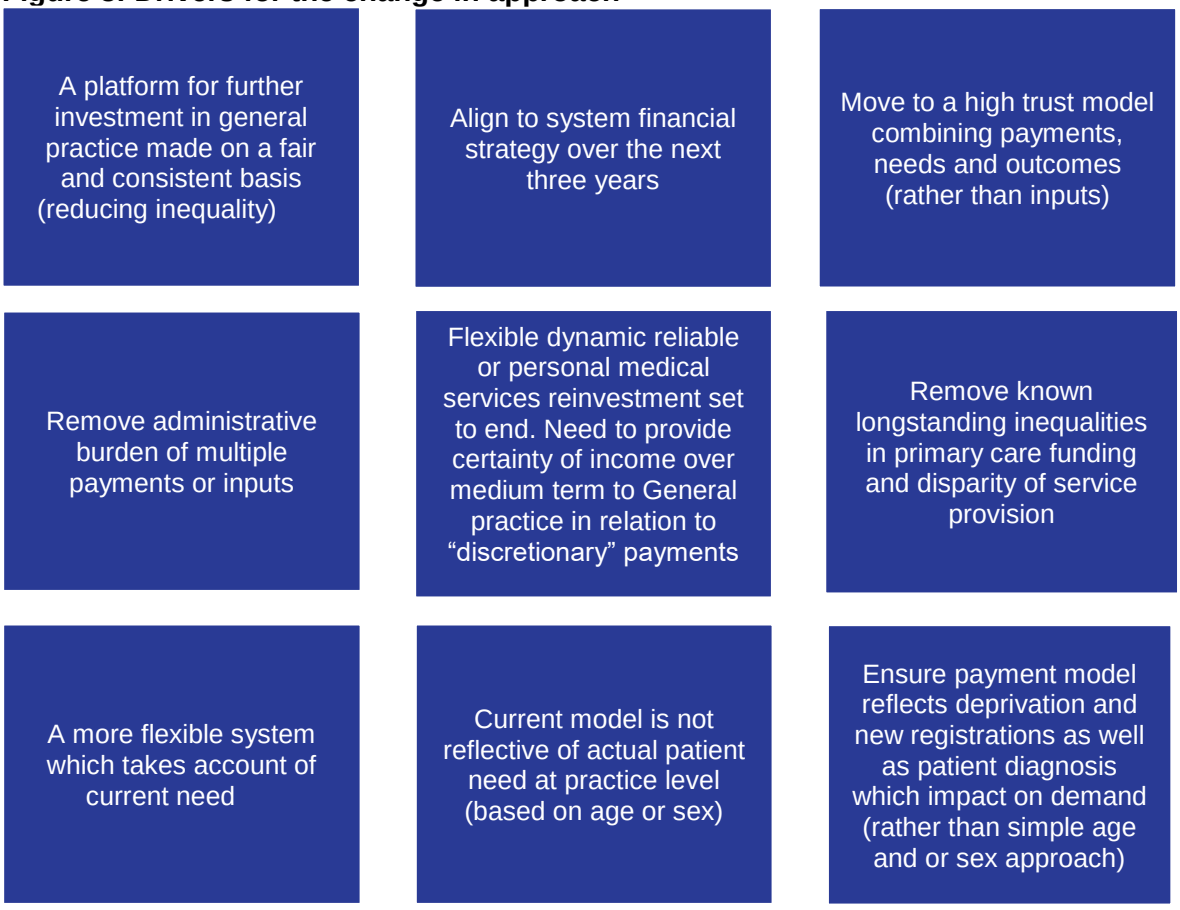
secondary care activity to other independent variables (like patient experience survey results). It allowed the creation of statistical process control charts with expected run rates which gave a more nuanced picture of clinical outcomes rather than the traditional red, amber, green (RAG) rating system used previously. The model had been subject to peer review by the team working for Johns Hopkins in Europe on the ACG System and at patient classification systems international conferences.

Since 2017, LLR CCGs used a model based on the prevalence of population markers within the ACG system for certain types of complexity (frailty flag, five or more chronic conditions, high probability of high cost) to allocate funding to practices participating in a local enhanced service (LES) – planning for integrated care in general practice. This is an enhanced programme of primary care aimed at improving outcomes for those with frailty and multi-morbidity.

In this allocation model, some large practices were allocated relatively few additional resources reflecting the fact that their registered population was largely younger and healthier, while some smaller inner-city practices were allocated greater sums. This was based on having a greater proportion of sicker patients requiring more input from the practice team. This approach proved itself capable of focusing resource allocation more appropriately, while carrying the confidence of the primary care teams. This allocation model had also been used to allocate funding to all LLR practices for the home first medical model[10].

The above work provided confidence in the idea that this approach might be applied more generally to the issue of primary care funding. The intention was to develop a solution that was based upon patient level data, applying a system (ACG) designed to apportion resource based on such measured need, adjusted for variation in data completeness, and other factors such as turnover and deprivation. Figure 3 summarises the reasons behind LLR CCGs change in approach.

Figure 3: Drivers for the change in approach



Source: LLR primary care funding model

[10] Home First, *Health and Care Leicestershire,* [Accessed May 2023]

Ambition and principles

The aim of the funding review was to better align primary care funding with population need to drive up health equity and reduce health inequalities. The review formed part of LLR CCGs' financial strategy to deliver better outcomes and move towards increased prevention and community care through an investment approach.

A number of principles were developed by the LLR CCGs to guide the work. These were:

- aim for what is equitable – access to healthcare should depend on need, not which practice a patient is registered with. An essential requirement is a level playing field of funding for the practices matched to the needs they are expected to meet, so they have an equivalent financial opportunity to provide the same level of care
- use datasets closest to population served – if money is to follow the patients, there needs to be a direct link between those patients and the money
- use local data in the design of the allocation system – as well being the raw material for the calculations themselves, local data should be used to derive the weightings, not distant national resources that are less sensitive to local variation in need. Focus will be on the added value of integrated service models that bring together parts of the system to address inequalities at neighbourhood, place and system geographies
- avoid using activity to allocate resource – using activity has the potential merely to reinforce historical inequity and behaviour
- there will be no losers through the adoption of this model – if the new formula identified a practice as being 'over-funded', their allocation would not decrease or be redistributed but stay at the same level
- there will be targeted approaches to reduce inequalities, based on local intelligence
- resource will be allocated and principles will be collectively agreed by the LLR system, but the focus for spend will be determined locally
- there will be a focus on partnerships between voluntary, community and social enterprise (VCSE) organisations and health partners to maximise reach into communities with the highest level of need
- there will be a focus on additionality and how the resource is adding value to reduce inequalities. For place-based allocations this additionality will be determined locally and may come from the continuation of targeted approaches that are underway but may be financially at risk.

Engagement

LLR CCGs identified that several stakeholders needed to be involved for the project to be a success. A task and finish group (the group) was set up and extensive engagement was undertaken with primary care colleagues. Through the group, LLR CCGs started an initial discussion in October 2020 for implementation on 1 July 2021.

The local medical committee (LMC) was not invited to be part of the group and while this did not impact the successful outcome of the project, the group reflected that it would have been helpful to have them also represented so that they had the opportunity to influence, shape and co-design the methodology.

GPs who had concerns about the new methodology were invited to join the group so that there was a balance of views. The team used the work done by John Hopkins University on population health management (PHM) to have data that was specific to each practice so that they had a good understanding of the current funding allocation and the impact of the revised proposed methodology.

Regular webinars took place over two months alongside practice visits, supplemented by a frequently asked questions document. The approach suggested that practices would be managed on outcomes rather than completion of standards, reducing the administrative burden. The 'high trust and low bureaucracy' approach worked well alongside openness and transparency. The decision regarding participation in this project was done at individual practice level.

How the revised model was developed

Outline of the model

The model took all sources of primary care funding available to the LLR CCGs as a starting point. Certain elements such as prescribing, dispensing and premises were then excluded. Three groups of funding were initially scoped, representing different proportions of overall funding:
Group 1: this included all sources of funding
Group 2: this included the bulk of funding including global sum and discretionary services
Group 3: this included the discretionary funding of enhanced services and community-based services.

Observations about the groups

Group 1 was not viable as it was clear from the start that certain payments such as for premises, prescribing and dispensing could not be included in a single model because of the complexity and historical contingencies.

Group 2 included most of the funding and would have the most impact and so debate moved quickly on to deriving a formula that could be used to distribute Group 2 resources. Discussions gradually moved to an agreed basket of funds to be included in Group 2.

Group 3 was superfluous, as it left very little resource to allocate and would not provide meaningful outputs to warrant its use.

Developing the model

Key elements of the model were reviewed, and a brief description of the work done in a table-top exploration exercise is outlined below. It was vital to conduct this table-top exercise as it was the first step to model a number of different options and gave HM Treasury an idea of what might be required. Equally as important at this stage, was to start to develop a narrative as to why the change was needed. LLR CCGs had a clear narrative around inequity which made sense to GPs after several experienced GPs had been involved in developing the health inequalities framework. Getting the rationale clearly stated from the outset was crucial such as ‘levelling up versus redistribution’ and ‘no losers’. The principles needed to be clearly explained and defended. This exercise ensured a clear rationale, purpose and consistency in approach.

Core funding

It was recognised that all practices would require some baseline funding simply to establish the service, regardless of the needs of the population served. Therefore, at the start it was decided to use the staff component of the global sum, plus some allowance for rurality as the core funding and then allocate the rest according to a needs-based assessment and residual deprivation.

Developing the case mix adjustment for expected need

Previous attempts to adjust funding for differentials in primary care demand have had to rely on practice population level statistics, such as age and sex, general morbidity measures or numbers in care homes. This not only carries the risk of double counting, but these areas fail to capture much of the detail.

This is important as 80% of demand at any given time comes from 20% of the population and this high-level data does not give a good handle on the 20%. A tool that can deal with both the huge range of clinical conditions contributing to demand and occurrence in billions of potential combinations, was needed. Such a tool would preclude the need for multiple bites at the needs-adjustment cherry and remove double counting.

LLR CCGs’ experience in using the ACG system tool to monitor activity and adjust it for coding variation and case mix suggested that it might be possible to use it to adjust for primary care workload. This approach had also shown itself flexible enough to handle wide variations in practice type from university sites to the homeless service, giving meaningful output across the whole range

of types. This illustrated the very real advantage of using local patient level data which genuinely reflects clinical variability in a way that population driven data approaches do not.

The impact of clinical demand is different for different parts of the healthcare system. For example, a ruptured aortic aneurysm is not going to impact primary care very much (at least in the short term) but will have a big impact on secondary care services, especially if initial treatment is successful. Conversely, psychosocial issues with associated depression and anxiety are likely to make significant demands on a primary care service. However, if primary care is working well, this will result in minimal impact on secondary care. In order to work more effectively, case mix adjusting the clinical picture to estimate expected demand, will require a different set of weights for primary and secondary care services.

In order to test the ACG system, a comparison exercise was conducted between LLR CCGs and primary care funding developed using the ACG system in Sweden. From their primary care activity, the Swedish team had derived weights for the ACG cells (the components used to categorise individual patients uniquely into groups of similar health need). These weights were then applied to practice populations to derive the expected relative health care need for primary care for each population.

Comparing the primary care ACG weight set enabled LLR CCGs to make a comparison with the existing case mix. By adjusting for total secondary care cost in LLR CCGs, expected differences in cost were established. For example, the ACG cells dealing with psychosocial issues and acute childhood illness were weighted 7 to 20 times higher in the primary care weight set, which is what one would expect, given that primary care rather than secondary care carries the bulk of the impact of that type of need.

This suggested that it was reasonable to use the locally derived weights in the LLR CCGs model. For each practice the ‘case mix coding adjusted expected (primary care) activity’ was calculated using 2020 ACG patient-level data, LLR derived primary care weights and the coding adjusted ACG cell counts. This formed the basis for the subsequent adjustments.

It is important to note that work on improving consistency in SystmOne (an electronic patient record) was an important part of the process.

Adjusting for registration

Registration is when patients register with a practice and an adjustment is needed to reflect the additional primary care workload associated with patients in the first year after they register with a practice. LLR CCGs examined data extracted from SystmOne in 2019. The population registered for more than a year was 910,357 and 663,535 encounters were observed in the last year. 86,352 were registered within the previous 12 months (8.8% of total), with 56,643 encounters. The rate of activity per patient was therefore 0.73 and 0.66 respectively but this needed to be adjusted for the fact that not all the patients registered in the last year were present for the whole year.

The rate ratio

This is a calculation of annual activity rate for new registrants and is important because it helps in calculating the activity adjusted for registration. For LLR CCGs the annual activity rate for new registrants is 1.21 times the overall patient rate and this matches the suggested revised formula adjustment. This is the rate ratio.

For each practice the proportion of patients newly registered in the previous 12 months is extracted and adjusted using the rate ratio.

The newly adjusted activities are taken to the next adjustment stage.

Potential areas for improvement

The adjustment could itself be case mix adjusted to allow for different practices registering groups of patients with different needs in the first year. For example, it is highly likely that practices serving care

homes regularly registering new patients needing terminal care will face a considerably higher additional burden than practices with high turnovers of 'ordinary' patients.

Adjusting for communication

It has long been recognised in LLR (but never implemented) that communication issues in primary care pose an additional burden upon services. Historical discussions have revolved around the obvious communication problems associated with serving communities where English is not well spoken. This was a problem in Leicester.

On discussion, the group concluded that the issue should be broadened to 'communication'. There were two reasons for this. Firstly, the issue was not language per se, as there were plenty of situations where primary care was conducted perfectly well in a foreign language, without any obvious need for additional resource as both parties shared the same language. Secondly, there was often a need for additional time for effective communication with patients with hearing, learning or other disabilities which needed to be recognised in any solution.

Practices often recorded potential communication issues in order to flag it up to those who handle appointments so that the appropriate arrangements could be made at the time of booking. Having chosen a range of codes indicating communication issues that were likely to require additional input, LLR CCGs looked for evidence of recording them in patient records, to see if this approach was viable locally.

Data was available from 128 practices across LLR. Only two practices had no coded evidence of patients with communication issues and all had recorded codes indicating patients who had no communication problems. The prevalence of communication issues ranged from 0 to 69% (the asylum seeker service) resulting in an average of 4.24%.

By CCG, the city average was 8.2% (East 1.3% and West 0.9%). This was encouraging and it was considered likely that specificity could be improved by more careful code choice. This showed that such an adjustment is viable and can be based on local data. The code choice was changed slightly in the final model but made little difference to the first draft.

'Communication adjusted expected activity' is derived by calculating the extra activity needed for each practice to compensate for communication issues.

This is determined by an adjustment factor which is the percentage of existing communication problem patients' activity that needs to be added to compensate for the communication difficulty.

This factor is subject to debate but might be derivable from directly observed activity data eventually. In the LLR CCG model the figure of 100% was chosen. This was based upon current locally enhanced services in the city, where the presence of communication issues was regarded as doubling the amount of time necessary.

For each practice the proportion of patients with recorded evidence of a communication issue was extracted.

For each practice their activity adjusted for turnover is increased according to the formula:

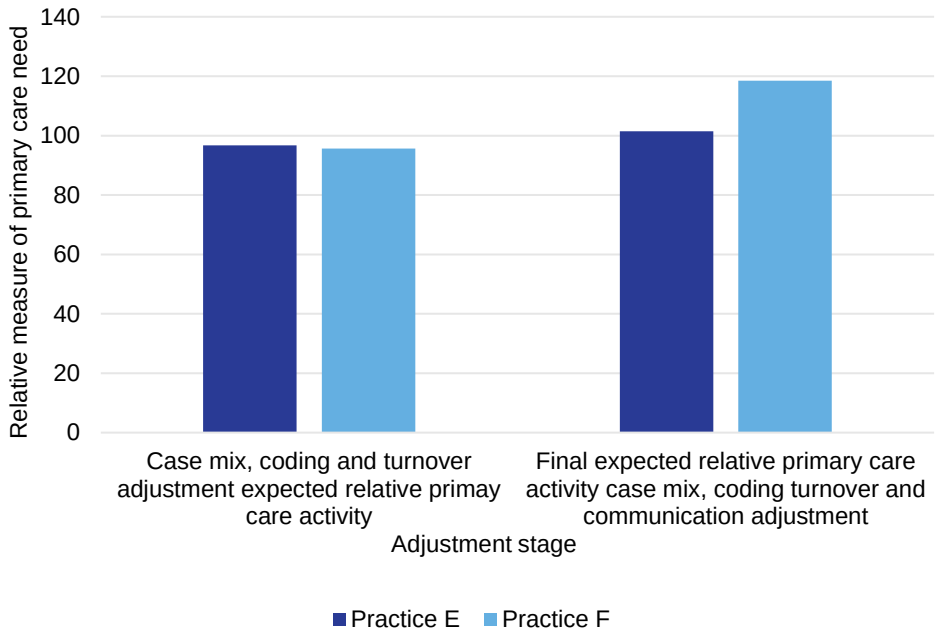
Activity adjusted for communications = (Activity adjusted for turnover) *(1 + (Practice % prevalence of communication issues / 100) *(% adjustment factor / 100))

The newly adjusted activities are then used to calculate the final share for each practice of the total needs apportioned budget.

The relative communications adjusted weight for each practice is calculated by dividing its activity adjusted for communications by the sum total of communications adjusted activity. This is then used to apportion the 90% of the needs assessed component of the budget. The corresponding sums are added to each practice's share.

Figure 4 below demonstrates the differential between two practices once a communication adjustment is made. Both are inner city, practice E has average communication issues and practice F has higher communication issues, some 3.7 times that of Practice E.

Figure 4: Adjusting for communication issues



Some potential areas for improvement are:

- discussion of the codes used, and further refinement may be beneficial
- it may help to have a standardised template across your place or system for recording communications issues to improve data quality.

Adjusting for deprivation

Some 10% of the needs component is allocated using deprivation. The IMD is derived for each practice based on the postcode of its registered patients. The choice of 10% was based on a GP task group consensus after looking at a sensitivity analysis and considering the factors set out below.

Deprivation affects primary health care delivery in several ways:

- Patients in deprived areas tend to show a higher level of multimorbidity, also more frequently complicated by psycho-social issues, than less deprived patients of the same age. This means that funding systems based only upon age tend to under-resource practices serving more deprived populations.
- Patients in deprived areas tend to show higher rates of acute illness (for example increased respiratory illness exacerbated by smoking) and accidents, with a corresponding higher impact on primary care services for a given age or sex distribution. This means that a funding system that does not adjust for this will tend to under-resource.
- Patients in deprived areas tend to take up primary and secondary prevention services less well (for example, vaccination, cervical smears, proactive management of chronic conditions). This means that to achieve equity in health outcome a higher unit input is required.
- Patients in deprived areas tend to be less concordant with medical advice, because of chaotic lifestyles, competing social needs, poorer literacy etc.

Therefore, in conclusion, the model holds a proportion of funding back for allocation according to deprivation indicator, to adjust for residual deprivation not accounted for by the other adjustments. If it was possible to get consistent and complete primary care activity it may be possible to adjust for this more directly.

The calculation is as follows:

IMD figures for all practices were supplied by public health

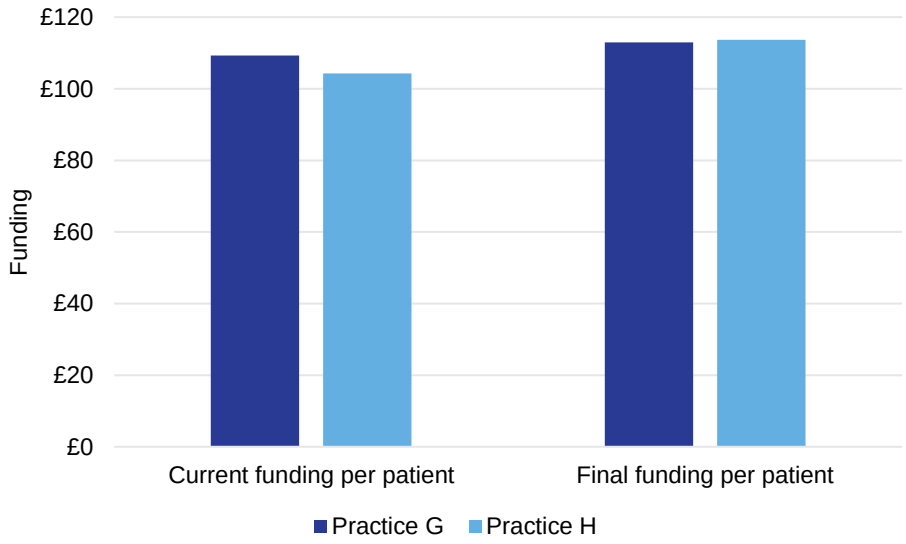
The overall deprivation weight is calculated for each practice by multiplying the IMD score by the list size.

The relative deprivation weight for each practice is calculated by dividing its overall deprivation weight by the sum of overall deprivation weights.

This is then used to apportion the 10% of the needs assessed component of the budget. The corresponding sums are added to each practice's share.

Figure 5 below demonstrates the differential between two practices once a deprivation adjustment is made. Practice G is suburban and the 83rd most deprived area in LLR, practice H is inner city and the 5th most deprived in LLR.

Figure 5: Adjusting for deprivation



Final form of the model

The finance team did a huge job in pulling together all the strands of primary care funding across LLR CCGs to ensure that the data fed into the model was as comprehensive as possible.

This work was shared with a wider group within LLR containing Institute of Leadership and Management members (ILMs) and GPs with real world knowledge of the full range of practices and all three CCGs.

The wider group helped to test the model and refine the funding basket for funding group 2, and some of the parameters such as deprivation, as well as advance the expected outcomes discussion.

The output was a breakdown by practice of the relative expected primary care activity, adjusted for coding quality and morbidity. This was used to apportion the total budget allocated to this section.

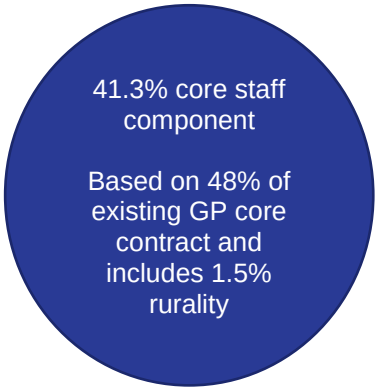
Basic description of the funding model and implementation

The starting point was to include everything and then exclude certain things by exception. A summary of the inclusions and exclusions is captured in the table below.

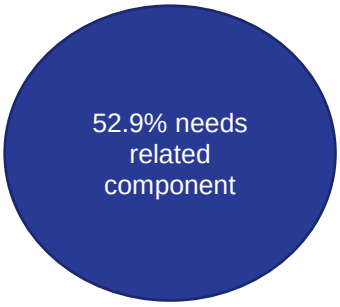
Included in the model	Excluded from the model
General medical services core contract	Extended access, extended or out of hours
General practice safety improvement programme	Quality outcome framework (QOF)
General practice discretionary investment	Direct enhanced services for learning disabilities health check
Federation quality innovation productivity prevention	Primary care network payments and support
Community based services minor injuries	Premises costs
Community based services	Non-delegated funds (general practice forward view, GP IT, public health and so on)
Primary integrated care services general practice	Individual practice specific funds, for example, dispensing, international normalisation ratio
Personal medical services or flexible dynamic reliable services	Ad hoc funds, for example, locum costs, international recruitment

Summary of how the financial model works

The financial model calculates payments due to practices by using:

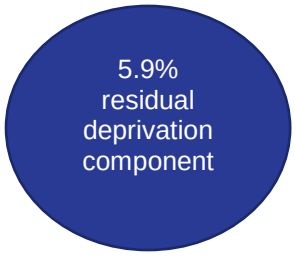


Core staff component including rurality



Needs related component that is adjusted for:

- case mix to consider multi-morbidity of actual patients
- communication issues as longer is needed to deliver equivalent care
- list turnover which is higher as there is more demand and newly registered patients require more time (for example in Leicester city which had a high turnover due to university population).



Deprivation component that is adjusted for IMD

This provides an adjusted funding share. The core staff component is set aside first based on the current level of core contract income received by a practice. The remainder of the core contract and other funding included in the model is then distributed to all practices based on needs and deprivation (90:10)

The detail of the financial model

The primary care financial model was created with the aim of funding practices based upon need. The basis of the model was patient-level data.

The key areas are:

- core related component for certain staff, for example, reception, admin, clinical staff
- needs related component
- effects of deprivation remaining after needs adjustment.

Core related component (41.3% of total available)

This is predominantly staff (once estates is excluded).

One of the requirements of the funding was to support system leadership and capability to address health inequalities. LLR CCGs proposed 8% of the resource to support system leadership and capability to address health inequalities across LLR.

This included providing resource to expand the work of the LLR Health Inequalities Academy to deliver dedicated training and support to the system. The resource could also be used to help build system insight and intelligence to better target approaches and understand the impact made with interventions to address inequalities.

This is met by taking the staffing component (48%) of the global sum and rurality.

Needs related component (52.9% of total available)

In LLR 22% of the local population live in areas ranked in the most deprived 10% areas nationally.

Men living in these communities can expect to live on average 10 years less than their counterparts living in areas ranked in the least deprived decile and women can expect to live on average 8.5 years less than their counterparts living in the least deprived decile. There are inequalities by deprivation also for the proportion of life that people can expect to live in good health across LLR.

LLR CCGs' ability as a health and care system to act on inequalities related to deprivation was compounded by proportionately lower staffing levels in areas where deprivation was higher. For example, on average in LLR data from December 2020 showed people living in the least deprived quintile were expected to have 6.34 GPs per 10,000 population, compared to 5.43 GPs per 10,000 population in the most deprived quintile.

Due to the stark links between deprivation and health outcomes, LLR CCGs therefore proposed a weighted resource allocated based on principles of equity by deprivation for 52.9% of the overall resource.

These allocations would be made to local places based on the proportion of their population living in lower layer super output area (LSOAs) which is a geographic area ranked as being in the 10% most deprived. LLR CCGs would recommend that places target this proportion of the allocation towards local community interventions at a neighbourhood or primary care network (PCN) population footprint to further align with population need.

Figure 6: Methodology used in the needs related component

Step 1:
Derive a measure of relative expected primary care activity adjusted for need using case mix adjustment.

Step 2:
This measure is then progressively adjusted for the other factors (turnover and communications) again based on LLR (or your own place) practice data.

Step 3:
Use this relative measure to divide up the total sum available to the needs related component between practices.

Step 4:
Derive a set of weights for use in ACG case mix adjustment for how the need impacts on primary care in LLR.

This was done using primary care data in SystmOne for primary care consultations or phone advice and visits. The weights showed high correlation with the Swedish set derived for the same purpose.

Step 5:
Having adjusted the primary care data for coding variation between practices, this set of weights was then used to derive the relative expected primary care activity above.

Step 6:
Further adjustments were made for:
a) communication issues – uses proportion of observed coded patients with an established communication issue that is used to increase the case mix coding adjusted weighted activity
b) list turnover – uses proportion of patients newly registered and increases the expected activity proportionally.

Deprivation related component (5.9% of total available)

The core staff component is set aside first based on the current level of core contract income received by a practice. The remainder of core contract and other funding included in the model is then distributed to all practices based on needs and deprivation.

Figure 7: Methodology used in the deprivation component

Step 1:
Ensure that the case mix is only partially adjusted for deprivation and that it does not adjust for other additional work needed in deprived areas to achieve the same outcomes as less deprived e.g. high vaccination coverage.

Step 2:
Decide on the allocation for deprivation taking into account the national allocation figure i.e. 10% of the needs related component was calculated according to IMD.

Step 3:
Test the model by examining the outputs with a subgroup.

How the funding was structured

In summary:

- there was an investment of approximately £3m to give all practices a fairer level of baseline funding based on need and demographics

- future investments in primary care will be able to be transparently distributed at practice and place based on the population health need
- all inflationary agreements for 2021/22 were included on top of the financial model.

Monitoring and outcomes

A balanced scorecard of relatively few (compared to current payment mechanisms) metrics were agreed to be monitored for all practices across LLR:

- each practice has a baseline of patient need, current outcome measures and now a financial baseline that reflects the patient need
- teams have developed a set of primary care and population health metrics that will be measured, and progress monitored over time
- areas of increased funding can tailor their practice and service offered to support the needs of their local communities
- LLR CCGs still have a statutory responsibility to measure the key metrics and performance in primary care
- LLR CCGs collect this data in one place rather than the many returns that were previously linked to obtaining funding.

Outcomes based review

LLR ICB is continuing to review the outcomes achieved and have embarked on an outcomes based review.

Key considerations and learnings

Before implementing a new model you may wish to consider the factors set out below.

- Local engagement with the British Medical Association at the outset will support the process.
- In the absence of any other UK tested case-mix tool, organisations may wish to get a licence for the ACG system (cost around £40k). The case-mix function is the product of long development by a trusted public health team in an internationally well-regarded university. Unless there are other tools also with that function, you may wish to opt for this rather than trying to develop a case-mix algorithm from scratch.
- The ability to adjust for coding deficits is critical. A retired GP supported LLR CCGs with that part of the work.
- Determine the mix of deprivation versus case mix assessed need for the needs-based element of the funding formula.
- Determine the case mix formula for assessing need and what to use. LLR CCGs used comprehensive case mix adjustment based on recorded diagnostic data, modified by turnover and communication.
- Consider using a national case mix adjustment system with a decision about how or whether to adjust for coding quality.
- Systems for processing all this will need to be in place and the confidence of the public in how this data is to be handled or shared is essential.
- Work on data quality and completeness and standardisation of reporting between ICSs and GP systems needs to be optimised.
- Determine what outcomes are expected for funding within scope. Should there be a core set nationally with local variation on top depending on local priority needs?

Critical success factors

LLR identified some critical success factors:

- the group had a retired GP who liaised with other GPs and understood their challenges. Due to his background, the retired GP could articulate progress and resolve queries in a way that was widely understood
- there was a no losers approach – those practices that were over funded did not lose allocation which helped with commitment to the approach

- certainty over income for a longer period of three years provided practices with financial confidence to sign up to this approach.

How to find out more

Please contact Nicci Briggs, chief finance officer, Cambridgeshire and Peterborough Integrated Care Board (ICB) at nicci.briggs@nhs.net.

About the HFMA

The Healthcare Financial Management Association (HFMA) is the professional body for finance staff in healthcare. For nearly 70 years, it has provided independent and objective advice to its members and the wider healthcare community. It is a charitable organisation that promotes best practice and innovation in financial management and governance across the UK health economy through its local and national networks.

The association also analyses and responds to national policy and aims to exert influence in shaping the wider healthcare agenda. It has particular interest in promoting the highest professional standards in financial management and governance and is keen to work with other organisations to promote approaches that really are 'fit for purpose' and effective.

The HFMA offers a range of qualifications in healthcare business and finance at undergraduate and postgraduate level and can provide a route to an MBA in healthcare finance. The qualifications are delivered through HFMA's Academy which was launched in 2017 and has already established strong learner and alumni networks.

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