Department of
Health, Social Services and Public Safety

An Roinn
Sláinte, Seirbhísí Sóisialta agus Sábháilteachta Poiblí

www.dhsspsni.gov.uk

Review of the Northern Ireland GMS Global Sum Formula

Executive Summary

Northern Ireland GMS Working Group
18 September 2007

Executive Summary

Introduction

1. This report presents the results of the review of the N Ireland GMS global sum formula. This formula distributes global sum payments to practices in line with the weighted needs of patients to reflect practice workload and the relative costs of service delivery.

2. This review was undertaken by the NI GMS Formula Working Group which included representatives of the DHSSPS (both policy and statistical officers), the four Health & Social Services Boards, statistical representatives from the Central Services Agency and a representative of the BMA's General Practitioners Committee (GPC).

3. This N Ireland Formula Review follows publication of the Formula Review Group's (FRG) Report "Review of the GMS Global Sum Formula". After publication of the new GMS Contract proposals in 2003, GPs expressed some concerns about the accuracy and robustness of the global sum formula. In response, the negotiators moved to reassure the profession by undertaking a thorough review of the formula.

4. NI was represented on the FRG in terms of policy, statistical and GP representation. The FRG produced a report for consultation in 2007 and recommendations will then be put forward to plenary regarding formula changes and implementation in April 2008. The NI GMS Working Group has now tested each element of the formula and this report recommends refinements where necessary, either to meet statutory equality obligations or to better reflect GMS workload in N Ireland.

WORKLOAD FACTORS

Current Workload Factors in NI Global Sum Formula

5. The current NI global sum formula makes adjustments for 4 practice workload factors:

   - The age/gender mix of the practice population
   - The nursing and residential home population of the practice
   - The number of new registrations in the practice population
   - The additional needs of the practice population

   Each of these adjustments generates a separate practice index, by comparing the practice score to the NI average. These separate estimated factors of workload are then combined by multiplying the index of each separate adjustment together.

Formula Review Group (FRG) Recommendation for Workload Factors

6. The FRG has recommended a workload adjustment based on 14 age/gender bands, newly registered patients within the last 12 months and the Index of Multiple Deprivation Health Domain score for the patient's electoral ward of residency.

7. This workload adjustment was derived using Q-Research which is a database of GP consultations direct from GP clinical systems. The adjustment was derived using a multivariate approach which allowed the factors of age/gender, additional need and list turnover to be modelled simultaneously, producing one single workload factor.

NI GMS Working Group Recommendation for Workload Factors

The N Ireland GMS Working Group recommends a revised global sum formula that includes an updated age/gender adjustment, calculated using the existing data sources and existing methodology. The Group recommends that the adjustments for list turnover, additional needs & nursing/residential homes continue unchanged. These separate adjustments would be combined by multiplying each factor together.

Age/Gender Workload Curve

8. Continuation of an age/gender adjustment is recommended to reflect the effect of patient age and gender on workload. The current adjustment is NI-specific, being derived from the number of GP surgery consultations and number of home visits from the Continuous Household Survey. UK based studies are used to adjust for length of both surgery consultations and home visits. The NI GMS Working Group has recommended that the adjustment is updated with the most recent data available on consultations (CHS data 2003/04 to 2005/06). Trend analysis has shown that consultation rates in NI have increased steadily over a number of years and the inclusion of practice nurse consultations has seen a sharp increase in recent years. The updated consultations and length adjustments produce the following age/gender curve:

Revised Age/Gender Workload Index

	0-4	5-15	16-44	45-64	65-74	75-84	85+
Males	2.71	1.00	1.56	4.28	6.01	7.80	9.54
Females	2.82	1.21	3.86	5.26	6.85	8.12	11.06

Nursing & Residential Homes Adjustment

9. Continuation of this adjustment is recommended. This adjustment reflects the additional workload associated with patients in nursing and residential homes. Overall, patients in nursing/residential homes generate more workload than patients with otherwise similar characteristics who are not in nursing/residential homes; mainly due to travelling time. The current adjustment is based on 2 surveys: one survey of nursing/residential home managers used to measure the age and gender specific consultation rates; and a second survey of GPs to estimate consultation length and travelling time. NI was adequately represented in these surveys and so the uplift factors were deemed appropriate for application in N Ireland. The factor of 1.43 would therefore continue to be applied in respect of these patients.

Number of New Registrations/List Turnover

10. Continuation of this adjustment is recommended. Areas with high list turnover often have higher workload as patients in their first year of registration tend to have more consultations than other patients with otherwise similar characteristics. The current adjustment is based on data from the General Practice Research Database and was considered appropriate for application in N Ireland. The factor of 1.46 would therefore continue to be applied in respect of these new patients.

Additional Needs Index

11. Continuation of an additional needs adjustment is recommended to reflect the other patient characteristics which influence workload. The current adjustment was developed using data on GP consultations from the N Ireland Health & Social Wellbeing Survey and tested a number of morbidity, mortality, socio-economic and deprivation variables. It is recommended that the adjustment continues with the best significant predictors: Standardised Limited Long-Standing Illness (SLLI), Standardised Self-Assessed Health "Not Good" (SSAH), unemployment rate (UNEMP) and single carer households (SCHH).

Main Differences between FRG & NI GMS Working Group Recommendations

- **N Ireland would retain separate workload factors and update where possible; as opposed to the FRG recommendation for a single workload factor.**

Reasons for NI Alternative Recommendation to FRG Recommendation

- Analysis of trends in surgery consultations, comparing GB and N Ireland, indicates that consultations in each age/gender band are much higher in N Ireland than in GB. The NI data produces a much steeper age/gender curve, particularly in the elderly age groups. For example, a female aged 85+ using the NI age/gender curve carries a weight 3.5 times that of a female aged 85+ using the GB age/gender curve. The GB curve would not adequately reflect GMS workload in N Ireland.

- Adoption of the FRG recommendation would decrease the weighted share of those practices with the highest proportion of elderly patients. This is a result of the GB age/gender curve being less steep than the NI-specific curve and therefore not placing adequate weight on elderly patients; who will have a greater need for health care, generate more practice workload and so require a greater share of relative resources.

- There is doubt over the appropriateness of applying the Q-Research additional need weight. The IMD Health Domain in operation in N Ireland is based on different variables from the IMD Health Domain developed for England. The NI Health Domain is more mortality than morbidity related due to containing a measure of cancer incidence coupled with excluding a measure of emergency admissions to hospital.

- Equality analysis has demonstrated that there would be some adverse impacts for people with a disability or long-term limiting illness if N Ireland were to adopt the FRG recommendation. A greater proportion of people ***with*** a long-term illness or disability live in electoral wards that lose in terms of relative share of resources, compared to those people without a long-term disability or illness.

- Likewise adoption of the FRG recommendation would decrease the weighted share of those practices with high additional need due to ill-health and deprivation. Further analysis has demonstrated that both this redistribution and the adverse equality impact are due to the composition of the NI Health Domain being more mortality than illness orientated

- There would be considerable changes in weighted patients for many NI practices if the FRG recommendation was adopted; overall 6% of global sum (equivalent to £5.1m in 2006/07) would be redistributed at practice level; ranging from a gain in weighted patients of +67% to a loss of -31%. Adoption of the FRG recommendation, would lead to significant redistributive effects across particular types of practices (including groupings determined by age, illness, deprivation, rurality, turnover and home patients).

- The N Ireland recommendation is based on adjustments derived from NI-specific data. Where possible it is always deemed more appropriate to apply a formula which is derived from country-specific data; this will better reflect GMS workload in N Ireland.

♦ ♦ ♦

COST FACTORS

Current Staff Market Forces Factor in NI Global Sum Formula

12. The current global sum formula in N Ireland makes adjustment for a Staff Market Forces Factor, to reflect the geographical variation in staff costs that practices will incur. The current adjustment was developed using GB data and as NI data was not amenable to similar analysis, the weightings were set as follows: practices located outside Belfast have a weighting of 0.885 (average between Scotland & Wales) and the weighting for Belfast practices is 0.91 (average of Edinburgh and Cardiff).

Formula Review Group (FRG) Recommendation for Staff Market Forces Factor

13. The FRG has recommended that the existing methodology be retained and simply updated with the latest available data.

NI GMS Working Group Recommendation for Staff Market Forces Factor

The N Ireland GMS Working Group recommends that a revised global sum formula should include a neutralised staff market forces factor adjustment. Neutralising as opposed to exclusion allows for any future revisions pending further evidence.

Main Differences between FRG & NI GMS Working Group Recommendations

- **N Ireland would neutralise the staff MFF by setting the weight to 1.0 for all practices; as opposed to retaining the current differential between practices located in Belfast and those located outside Belfast.**

Reasons for NI Alternative Recommendation to FRG Recommendation

- Analysis of the NI New Earnings Survey demonstrates that weekly earnings are not significantly different in Belfast compared to the rest of N Ireland when considering public sector health and social welfare occupations.
- In terms of competition from the private sector, in that private sector jobs may be more attractive due to higher wage differentials; analysis of the NI New Earnings Survey demonstrates that within Belfast there are no significant differences between private sector and public sector wages. In the rest of N Ireland, private sector wages are actually lower than public sector wages and therefore less likely to attract employees to move from the public sector.
- Note that neutralising the staff MFF would redistribute only 0.2% of the global sum (equivalent to £170k in 2006/07).

♦ ♦ ♦

Formula Review Group (FRG) Recommendation for GP Recruitment & Retention

14. The FRG has recommended that the global sum formula should include an adjustment for GP recruitment and retention, which will reflect the additional costs necessary to attract

GPs to practices in relatively deprived areas. This adjustment is based on an estimate of the average wage differentials attributable to geographical location after taking account of age, gender, industry type and occupation.

NI GMS Working Group Recommendation for GP Recruitment & Retention

The N Ireland GMS Working Group recommends that a revised global sum formula should not include a Cost of Recruitment & Retention adjustment.

Main Differences between FRG & NI GMS Working Group Recommendations

- **N Ireland would not include an adjustment for GP recruitment and retention; as opposed to the English formula which would include such an adjustment as an addition to the current English formula.**

Reasons for NI Alternative Recommendation to FRG Recommendation

- The FRG recommendation assumes a fairly high level of vacancies and a substantial recruitment and retention problem. Current evidence in N Ireland regarding vacancies and GP turnover does not support this issue.

♦ ♦ ♦

Current Economies of Scale Adjustment in NI Global Sum Formula

15. In the current NI rurality adjustment, an economies of scale adjustment was incorporated to take account of the fact that smaller practices face higher average costs per patient because they benefit less from economies of scale as they have to spread any fixed costs over a smaller number of patients.

Formula Review Group (FRG) Recommendation for Cost of Unavoidable Smallness (CUS)

16. The FRG recommended that an additional adjustment is introduced to take account of the economies of scale effects for isolated rural practices which unavoidably have a small list size. This adjustment is based on research by Deloitte and consists of an economies of scale adjustment plus an isolation criteria.

17. The economies of scale adjustment reflects the relationship between list size and expenses per patient that exists for small practices. As it would be inappropriate to reward small practices without recognising the cause, an isolation criteria is then applied based on the degree to which its smallness is unavoidable.

NI GMS Working Group Recommendation for Cost of Unavoidable Smallness (CUS)

The N Ireland GMS Working Group recommends a revised global sum formula that includes a Cost of Unavoidable Smallness adjustment.

18. The initial economies of scale adjustment for each practice would be calculated as follows:

$$\text{Initial Economies of Scale Adjustment} = \frac{35.15664 + \left[\frac{1}{\text{Listsize}} * 34573.21\right]}{50.65}$$

19. Of the current 363 practices in N Ireland, 56 practices would have an initial adjustment above 1. The remaining 307 practices are credited with a weight of 1 to reflect that practice expenses per patient stabilise rather than continue to fall as list size increases.

20. The isolation criteria, to qualify the extent that a small practice can benefit from the economies of scale adjustment; are as follows:

Scenario	**Practice Isolation Adjustment Economies of Scale Weight**
Practice closer than 2.5km to its nearest practice	The "unavoidability" of practice smallness could be avoided & the practice receives no benefit from the economies of scale adjustment.
Practice between 2.5km & 4km from its nearest practice	The benefit of the economies of scale is phased in.
Practice 4km or more from its nearest practice	The practice receives full benefit of the economies of scale adjustment.

21. Applying the isolation criteria, only 10 of the 56 practices would benefit from the economies of scale adjustment. All 10 of these practices receive full benefit from the economies of scale adjustment because each of these practices is further than 4km to its next nearest practice.

Main Differences between FRG & NI GMS Working Group Recommendations

- **There would be no differences between NI and England in terms of this adjustment. For both countries the CUS adjustment would be an addition and N Ireland would apply the CUS adjustment by exactly the same method as in England.**

Reasons for N Ireland to Adopt FRG Recommendation

- N Ireland analysis of average costs per patient, were comparable with the GB research results and so the adjustments were considered appropriate for application in N Ireland. Both GB and NI analysis shows that costs per patient fall rapidly as list size increases to approximately 1,900 and then as list size continues to increase costs appear to remain approximately constant. Detailed NI analysis, distinguishing between small and large practices and accounting for dispensing status show comparability with the GB results.

- N Ireland analysis of patient travel distances and times were comparable with the GB research results and so the adjustments were considered appropriate for application in N Ireland. Analysis of average travel distances to GP in urban and rural areas, % of patients visiting their nearest GP in urban and rural areas and the range of alternative practices available in urban and rural areas are all comparable between NI and GB.

♦ ♦ ♦

Current Rurality Adjustment in NI Global Sum Formula

22. The current NI global sum formula includes a rurality adjustment to reflect the unavoidable additional costs associated with the degree to which the area served is rural. The current adjustment was modelled on GP payment data and the best significant predictors of unavoidable costs are: distance to an urban centre of 20,000+ people (negative association), distance to an urban centre of 50,000+ people (positive association), average distance to the nearest A&E or Minor Injuries Unit (positive association) and the percentage of patients living 3 or miles from their practice of registration (positive association).

Formula Review Group (FRG) Recommendation for Rurality Adjustment

23. The FRG were unable to recommend whether or not a rurality adjustment should be included in the revised global sum formula due to the lack of evidence and rationale to support its inclusion. Having set out the issues in the consultation report, the decision on whether to continue with a rurality adjustment has been left with plenary.

NI GMS Working Group Recommendation for Rurality Adjustment

The N Ireland GMS Working Group is unable to make recommendations regarding the current rurality adjustment. If the rurality adjustment is not considered valid in its current form, it should be neutralised pending a review.

Main Differences between FRG & NI GMS Working Group Recommendations

- **The FRG has posed the decision in terms of considering the case for and against the inclusion of a rurality adjustment; whereas N Ireland has recommended that in principle the adjustment should be retained but simply neutralised pending further evidence.**

Reasons for Inclusion / Neutralisation of the Rurality Adjustment

24. Many of the cases for and against inclusion/exclusion or neutralising are the same for both countries; the cases specific to N Ireland have been presented below.

Reasons to Neutralise (set the index to 1.0 for all practices) the Rurality Adjustment

- There is an issue around the validity of analysis based on pre-Contract payments as it is possible that to some degree the higher costs of rural practices are specific to the previous Red Book payment mechanism. Some exploratory regression analysis excluding Rural Practice Payments indicates that without these payments any rurality effect seems to disappear. This suggests that there is a circular influence of including rural practice payments in the dependent cost variable and that any rurality effect may simply be a function of the previous payment mechanism.

- There is an issue around the validity of “distance to GP of registration” as a measure of rurality as people may choose not to register with their closest practice. There is also an issue around the validity of how this variable is now constructed for application in the quarterly global sum calculations. The original variable was based on claims submitted by GPs for rural practice payments; as these payments no longer exist, claim data is no

longer available. The CSA in calculating the quarterly global sums had to resort to the only practical solution available; using straight line distances between patient's postcode of residency and postcode of practice of registration. Exploratory testing would indicate that this variable, constructed in this manner, is not a significant predictor of unavoidable costs of rurality. This will be due to patients not registering with their closest practice and therefore travelling substantial distances across urban areas or travelling into urban practices while residing in rural locations.

- There is an issue around the appropriateness of an adjustment based on GP payments as opposed to GP expenses. Expenses data was not available at the time of modelling and was not available for this Review; this would have allowed us to ascertain how much of the payment was expenses associated with delivering the service and how much was retained as profit.

- Neutralising the rurality adjustment continues to acknowledge that there may be additional costs associated with providing GMS in rural areas. It maybe that the consultation process concludes that in principle an adjustment is appropriate but that the validity of the current adjustment is questioned (due to the reasons noted above); in this case the NI GMS Working Group would recommend neutralising pending a further review. This allows the adjustment to be revised and/or reinstated at a later stage.

- The current rurality adjustment incorporates an adjustment for economies of scale, albeit without justifying that the smallness of the practice is indeed warranted. The addition of the Cost of Unavoidable Smallness adjustment means that this less accurate method for dealing with economies of scale is superseded – note this is the case whether the adjustment is neutralised or retained.

Reasons to Retain the Rurality Adjustment

- Retaining the current rurality adjustment would continue to acknowledge in principle that there may be additional costs associated with rurality. Although note that if consultation concludes that there are too many validity issues to retain the adjustment in its present form, the neutralising option allows the principle to be retained without further compounding the inaccuracies of applying the current adjustment.

- A number of alternative methods for constructing the "distance to GP of registration" variable were explored, in an attempt to produce an interim solution. None of the alternatives produced an equivalent variable to the original claims data. Even though the adjustment is most likely invalid, it may be preferred that the status quo is maintained pending a more detailed review of rurality.

- The number of issues around the validity of the current rurality adjustment would indicate that a more thorough review of this adjustment is required. The need for a further review should not delay implementation of a revised formula in April 2008; the status quo could simply remain pending further review.

- Note that retaining the current adjustment with the addition of the CUS adjustment is less redistributive than neutralising the adjustment. The decision on whether to retain or neutralise the rurality adjustment requires an assessment of the trade-off between redistributive effects and validity of the adjustment.

Modelling the Recommended Formula Options

25. The NI GMS Working Group considered the projected distributional impact of the recommended formula (both, if retaining or neutralising the rurality adjustment) compared to the current NI global sum formula. It suggests that it would be anticipated that:

	Current Formula v Option 1 (Retaining Rurality)	**Current Formula v Option 2 (Neutralising Rurality)**
% Redistributed (equivalent £ in '06/07)	0.55% redistributed at practice level (equivalent to £470k in 2006/07)	1.59% redistributed at practice level (equivalent to £1.4m in 2006/07)
% of Practices Gaining & Losing Weighted Patients	53% of practices gain weighted patients 47% of practices lose weighted patients	52% of practices gain weighted patients 48% of practices lose weighted patients
Range of Change in Weighted Patients	Change in weighted patients would range from -7.4% to +27.4% (exc. 1% most extreme, the range would be -4.0% to +14.8%).	Change in weighted patients would range from -11.3% to +25.6% (exc. 1% most extreme, the range would be -9.6% to +13.8%)
Summary of Redistributive Effects	There would be small redistributive effects: option 1 compared to the current formula would increase the weighted capitation share of smaller practices (due to CUS); rural practices (due to CUS isolation) and practices with higher proportions of elderly (due to revised steeper age weights).	There would be small redistributive effects: option 2 compared to the current formula would increase the weighted capitation share of practices with higher proportions of elderly (due to revised steeper age weights); and smaller practices (due to CUS). Due to neutralising rurality, the weighted capitation share of rural practices would decrease (bar the most isolated practices which benefit from the CUS).

The Recommended Formula

26. Following examination of the factors in the current NI global sum formula and the investigation of additional factors for possible inclusion in a revised formula, the NI GMS Working Group recommends that the revised global sum formula should include the following components:

- An updated age/gender adjustment (inc. adjustments for length and home visits)
- Retention of the current additional needs index
- Retention of the current adjustment for patients in nursing and residential homes
- Retention of the current adjustment for list turnover
- Possibly a rurality adjustment (after consideration of the options)
- The addition of a Cost of Unavoidable Smallness Adjustment

- The Working Group recommends neutralising the Staff Market Forces Factor
- The Working Group recommends that there is no requirement for a GP Market Forces Factor or an adjustment for the Cost of Recruitment & Retention

Factors Considered but not Recommended for Inclusion in a Revised Formula

27. The FRG considered a number of factors that it does not recommend for inclusion in the revised formula: a GP Market Forces Factor; an adjustment for patients speaking a different language to their GP or health care professional and an adjustment for ethnicity. The NI GMS Working Group supports these views.

Minimum Practice Income Guarantee (MPIG)

28. The FRG agreed that the historic constitution of MPIG and correction factors prevented the equitable distribution of resources between practices based on the agreed formula. However, the financial stability of practices is still recognised as vital. Financial stability and reducing the reliance on MPIG will be subject to further negotiations. N Ireland will follow any national arrangements.

Financial Implications

29. Implementation of these proposals will result in some redistribution of Global Sum resources between practices however, as the overall Global Sum allocation for Northern Ireland was established as a cash limited budget at the commencement of the new General Medical Services Contract in April 2004 there will be minimal financial implications.

Equality Impact Assessment

30. In line with the commitments in its Equality Scheme, the Department has conducted a Preliminary Equality Impact Assessment (PEQIA) on the proposals. The PEQIA did not identify any potential for adverse impact on any of the nine equality categories.

Freedom of Information Act 2000 – Confidentiality of Consultations

The Department will publish a summary of responses following completion of the consultation process. Your response, and all other responses to the consultation, may be disclosed on request. The Department can only refuse to disclose information in exceptional circumstances. Before you submit your response, please read the paragraphs below on the confidentiality of consultations and they will give you guidance on the legal position about any information given by you in response to this consultation.

The Freedom of Information Act gives the public a right of access to any information held by a public authority, namely, the Department in this case. This right of access to information includes information provided in response to a consultation. The Department cannot automatically consider as confidential information supplied to it in response to a consultation. However, it does have the responsibility to decide whether any information provided by you in response to this consultation, including information about your identity should be made public or be treated as confidential.

This means that information provided by you in response to the consultation is unlikely to be treated as confidential, except in very particular circumstances. The Lord Chancellor's Code of Practice on the Freedom of Information Act provides that:

- the Department should only accept information from third parties in confidence if it is necessary to obtain that information in connection with the exercise of any of the Department's functions and it would not otherwise be provided;

- the Department should not agree to hold information received from third parties "in confidence" which is not confidential in nature;
- acceptance by the Department of confidentiality provisions must be for good reasons, capable of being justified to the Information Commissioner.

For further information about confidentiality of responses please contact the Information Commissioner's Office (or see the Commissioner's web site at: http://www.informationcommissioner.gov.uk/).

For further information about this particular consultation please contact John McCord at the address set out in this document.

Appendix B

THIS CONSULTATION PAPER IS BEING SENT TO:-

All Northern Ireland Party Leaders
Other Northern Ireland Parties
MPS and MEPs who are not Party Leaders
Northern Ireland Members of the House of Lords
Northern Ireland Affairs Committee
House of Commons Library
House of Lords Library
Northern Ireland Assembly Library
OFMDFM, Machinery of Government Division
OFMDFM, Central Management Unit
Northern Ireland Office
Legal Deposit Libraries
Departmental Library
Chief Executives – Health and Social Services Boards
Directors of Primary Care - Health and Social Services Boards
Chief Executives - Health and Social Services Trusts
Chief Executive - Central Services Agency
Chief Executives of Health and Social Services Councils
Royal College of General Practitioners (NI)
General Practitioners Committee (NI)