

A Critical Review of Two Reports on Options for Acute Hospital Services in the South West of Northern Ireland

Dr. Tony Hindle
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1. The Reports

1.1 The two reports reviewed are:

A Review of the Acute Hospitals Review Group Report: Final Report
York Health Economics Consortium
October 2001

A New Acute Hospital for the South West of Northern Ireland: Report to Fermanagh District Council
Colin Stutt Consulting
October 2001

Both reports make extensive reference to 'The Hayes Report' that was the outcome of the 'Acute Services Review Group' set up by the Minister for Health, Social Services and Public Safety in August 2000. This group reported in June 2001.

1.2 The central features of the two reports are:

The York Report

- 1) A Critique of the Hayes Report, particularly in relation to its findings and conclusions on the relative access performance and sustainability of the various acute service options evaluated
- 2) An Assessment of the Socio-Economic status of the Communities in the South West
- 3) A Recommendation for a Model of Services: A New Hospital for the South West at Omagh and a Community Hospital at Enniskillen.

The Stutt Report

- 1) A Review of the Findings and Conclusions of the Hayes Report
- 2) A Geographical Information System (GIS) based analysis of the Access Performance of a possible major Acute Hospital located at Enniskillen or at Omagh
- 3) An analysis of the 'Sustainability' of Acute Service Options for the South West
- 4) An Analysis of the relative 'Equity' of Acute Service Options for the South West

1.3 A significant part of both reports deals with the review (critical and otherwise) of the Hayes Report and this aspect is considered first in this paper. New work is also presented in both reports largely concerned with the comparison of Omagh and Enniskillen as single-site options for a major acute hospital in the southwest of Northern Ireland. In the York report this is mainly concerned with socio-economic aspects and the application of a 'drive time' model for evaluating access and sustainability. In the Stutt report this is mainly concerned with the application of a GIS package, in relation to assessing access and sustainability questions.

2. Critical Reviews of the Hayes Report

2.1 Both the reports devote much attention to reviewing the Hayes work. The York review is highly critical and the Stutt report is very much more supportive.

The York Critique

- The Hayes Conclusions with Regard to Accessibility and Catchment Populations

2.2 An important criticism levelled at the Hayes work is that it fails to reach a conclusion that is consistent with the York analysis of the accessibility and catchment population sizes of the two main options considered – a major acute hospital at Enniskillen or at Omagh. The York report states that the key analysis provided by Hayes adopts two criteria for the evaluation of options:

- 1) Accessibility for the Population of the South West
- 2) The size of natural catchment populations of hospitals located at each of the proposed sites

2.3 The York report presents a key table (Table 3.1 in their report) for four options and part of this refers to a single site in Omagh and a single site in Enniskillen. This selected information is replicated below.

Options =	Single Site – Omagh	Single Site - Enniskillen
Catchment – 2001	123,000	117,000
Catchment – 2010	130,000	124,000
Pop.more than 30 minutes away	40%	53%

Table One: Access and Catchment Populations (from the York Report)

2.4 The York report argues that the Omagh ‘solution’ appears (from the above Table) to be preferable to the Enniskillen ‘solution’ using the results presented and conclude that:

“it is difficult to justify the conclusions of the (Hayes) Report, in other words that the new hospital for the south west be located at Enniskillen”.

This is a somewhat misleading statement since it could imply that Hayes reached a conclusion concerning a preference for Enniskillen on the basis of similar access results to those presented in Table 1 and yet there is no evidence presented that this is the case.

In relation to the key results table (above), it only shows access effects in terms of 30 minutes driving time, and it is important, therefore, to examine the York ‘conclusion’ in greater depth.

- The York Methodology

2.5 In a section entitled “YHEC Methodology” (Section 3.4.3 in the York report), a methodology is outlined based on the analysis of drive times from population centroids (grouped up to post-code locations) to the nearest hospital.

This section is a very short one – only two paragraphs in length – and provides very little detailed information about the methodology or the techniques employed in applying it. It claims that it is “similar” to that employed in the Geotel study commissioned by WHSSB in 1999 and the Hindle report commissioned by DHSS&PS in 2000. Although this author is not in a position to comment on the Geotel work, he can say with confidence that his own work employed a distinctly different approach.

2.6 The results of applying the methodology are presented in detail in Appendix Two of the report, a relevant map is also shown in Appendix One (entitled “Postcode Sectors in Tyrone

and Fermanagh”) and a number of ‘drive time’ maps shown in Appendix Three. However, the Appendices contain no further information about the methodology itself.

2.7 On the map in Appendix One, around 60 postcode sectors are shown covering the two Counties and it seems from examining the ‘drive time’ maps that such times have been assessed from the centroids of each postcode sector. Any given postcode sector (in relation to any option) is allocated to one (only) of the 10-minute drive time ‘bands’ – even though many of the sectors are more than 10 miles in diameter, which could take 15 minutes or more to drive across. This is clearly a very coarse granularity and compares very unfavourably with taking an enumeration-district approach (as done by Hindle and others).

2.8 The effect of this granularity is non-trivial since it will inevitably underestimate the numbers of persons living outside any given drive time boundary. This effect arises because, even though a centroid point lies within a drive time boundary, many persons further away from the target location, within same postcode sector, might well lie outside this boundary. This effect is not compensated, in any way, by the converse effect that some persons in the chosen postcode sector lie closer to the target point than the centroid point, because access performance is being assessed in terms of numbers outside given boundaries.

2.9 In summary, the methodology appears to claim (incorrectly) that all persons in a given postcode sector will be within a drive time boundary value, if the centroid point of the sector lies within this boundary. Furthermore, it appears from the map (in Appendix One) that these errors of estimation are not likely to be unbiased with regard to access performance comparisons between the options – it can be clearly seen that postcode areas are generally larger in Tyrone than in Fermanagh.

2.10 As a final point concerning the methodology, there is no mention in the York report of the travel speed assumptions underlying the drive time estimates. Using the outline maps presented and the towns identified in them estimates of distances between these towns and the target options imply journey speeds of more than 40 mph. However there is not enough data to assess whether a single overall journey speed has been selected or whether this varies as a result of different road conditions.

- A Failure to Evaluate Adequately the Access Benefits of Irish Hospitals

2.11 The York critique accepts that the Hayes Report has recognised the potentially serious access problems arising from a single-site acute hospital located in Omagh for the population to the west of Lower and Upper Lough Erne. However, the York report states, “accepted Department of Transport methodology suggests an average drive time to Sligo (from this area of Fermanagh) of between 38 and 43 minutes”.

No detailed analysis supporting this assertion is presented and the conclusion stated seems dubious.

2.12 It is 35 miles from Boho (near the centre of the area in question) to Sligo – this requires an average journey speed of 49 mph to achieve the upper-bound quoted in the York report and the Hayes Report says that the road conditions along the route are poor. Proprietary Route Planning software predicts a journey time of (just) above an hour.

2.13 The York report makes the potentially important point that the Hayes report failed to consider the possibility that some of the population might look to Cavan as a suitable nearest hospital if Enniskillen were no longer available to them. However, the report does not relate this possible effect to the population discussed above but rather to the population of the east of the southwest.

- A Failure to Take Account of Findings by Hindle (2000)

2.14 The York report suggests that, although the AHRG makes some reference to the Hindle report in respect of greenfield site locations, it failed to note that Hindle concluded that siting a hospital at Omagh was preferable to siting a hospital at Enniskillen.

2.15 Although the quotes presented by the York team from the Hindle report are reasonably accurate, they are highly selective. Most importantly there is no statement in Hindle's report that matches the conclusion claimed for it in the York report – i.e., Hindle does not state “that siting a hospital at Omagh was preferable to siting a hospital at Enniskillen” (page 19).

For example, Hindle states:

“However in absolute terms the estimated access service available to the residents of Fermanagh, given the Tyrone County option, is not as satisfactory as the estimated performance for the residents of Omagh, given the Erne option”.

- Sustainability

2.16 A large section of the York report is devoted to the issue of sustainable services. This section is entitled “Delivering Quality Services” and covers four distinct areas where, it is argued, there are clear benefits from siting a single-site hospital (in the southwest) at Omagh rather than Enniskillen.

Although this section is implicitly a critique of the Hayes conclusions, it is dealt with later in this paper.

The Stutt Critique

Overall Stance

2.17 The Stutt report does contain a Review of the Hayes report but it is mainly supportive. This is clear from the final section of this part of the Stutt report:

“The Hayes Report is an impressively comprehensive and well-informed analysis of a highly complex and controversial subject. Implementation of the Hayes recommendations would provide the South West of Northern Ireland – both Counties Tyrone and Fermanagh – with high quality, accessible and sustainable acute health care services involving...”

The report then lists eight major benefits.

- Access Time Modelling

2.18 Stutt argues that the methodology for access time modelling in Hayes was not fully transparent and, hence, not entirely satisfactory. This criticism led the to the development of a revised method of travel distance (and time) assessment.

2.19 The report states that the methodology used for assessing travel times by the Hayes Group related only to clusters of Local Authority Wards and only to an Enniskillen location for a new major hospital. This, according to the Stutt Report made it difficult to relate to “particular communities and their populations”. As a result, this work made use of “our own sophisticated GIS”. Unfortunately very little detailed information is presented in the report concerning the basic properties and features of this GIS.

Distance Bands

2.20 It is clear from the report that, by methods that are not disclosed, road distance bands (with boundaries at 10, 20, 30, 40 and 50 miles) were derived around all the existing or proposed hospitals in the Hayes Report. These bands encompassed each of the enumeration districts in the Province. Thus, it is claimed, any such district can be classified as being ‘inside’ or ‘outside’ any given distance band boundary with respect to any hospital being considered. It appears that this analysis, if the GIS technique does what is claimed for it, is likely to be much more accurate in estimating persons within given distance bands than is the York approach.

2.21 Various charts are presented to illustrate the distance bands produced by the GIS analysis. These pictures do give some cause for concern in regard to the accuracy of the method in that the boundary edges on these pictures seem rather less sinuous than might be expected – if these distance bands were contours on a relief map they would be reflecting a very flat, smooth surface without many hills and valleys. In this case, the equivalents of hills and valleys are twisty roads (and routes) and straighter roads (and routes). Although it is clear that major routing constraints have been recognised (around Loughs for example), it is not clear whether road interconnectedness has been fully taken into account. Some routes are relatively straight and others are not and this should lead to distance contours that have a sinuous appearance. However this factor alone is not likely to lead to major errors of estimation.

Conversion into Travel Times

2.22 The main problem arises in the way in which distances are converted into times in this work. The assumption is made that any person living more than 40 miles from the nearest hospital will be more than 60 minutes away and that anyone living between 30 and 40 miles will be ‘at risk’ of being more than this travel time away.

2.23 The report does not quantify this degree of ‘risk’. This would not be quite such a difficulty if the subsequent analysis (of different locations for a hospital in the south west) that has been attempted were not so critically dependent on the numbers of the population living in the 30 to 40 mile banding. This criticality is easily appreciated from one of the key tables (page 16 in the report) comparing an Omagh and an Enniskillen ‘solution’. This is reproduced here.

Options	New Hospital in the South West in ..	
	Omagh	Enniskillen
30 to 40 miles	14,041	4,961
40 to 50 miles	680	118
Total	14,721	5,079

Table Two: Persons Resident within Distance Bands for Two Options

2.24 Although, if the distance banding results are accepted as accurate, the table shows that the Enniskillen access performance is better than the Omagh performance for both bands, the absolute numbers in the 40+ mile band are very small. This difference of 562 persons might well be smaller than the statistical errors of estimation – representing only one or two enumeration districts. Interestingly, the report dismisses an average time to hospital of 9.96 minutes to 9.76 minutes in favour of an Omagh location as “trivial” but appears to regard 562 persons as highly significant.

2.25 The conclusion reached from this analysis is that “Enniskillen is clearly preferable to the location of the hospital in Omagh in that the Enniskillen location involves significantly fewer persons being beyond one hour’s travel time from an acute hospital”. This conclusion is not justified by the analysis as it stands. The 30-mile to 40-mile band is critical and there is no reason to suppose that the (unquantified) ‘risk’ of persons in this band being beyond the 60-minute driving time target is the same in all areas – this would depend on the precise spatial distribution of the population within the band.

- Comparisons with the York Estimates of Access Performance

2.26 The York method for estimating persons within ‘drive time’ bands and the Stutt method of converting distance banding to estimates of persons outside given access times both have weaknesses – as discussed earlier in this paper. However, the Stutt approach is much the more promising.

2.27 The York study has used a method that aggregates the population into such large units (in terms of population and area size) that it guarantees the underestimation of persons facing driving times that are longer than any selected value. The strength of the Stutt approach, on the other hand, is that it appears to be based on a GIS that allows enumeration district populations to be analysed independently.

2.28 Although neither method deals adequately with the critical issue of journey speeds, the Stutt approach is again the more satisfactory in that the assumptions made are, at least, made transparent.

2.29 In terms of the access performance findings presented, Table 3 shows some of the main comparisons. However the findings are not directly comparable because (a) York considered only the population of Tyrone and Fermanagh and Stutt considered the population of the whole of Northern Ireland and (b) the time bands chosen cannot be matched up perfectly. Some interpretation of Stutt’s journey speed assumption has been needed to generate these results.

Persons Outside	Omagh Solution		Enniskillen Solution	
	York	Stutt	York	Stutt
30 minutes	53935	168115	72332	186160
40 minutes	17852		27578	
50 minutes	3582	14721	0	5079
60 minutes	0	680	0	118

Table Three: Comparing the Findings concerning Access Performance

2.30 In order to make these results more directly comparable Table 4 shows the differences from the ‘best’ site in each access time category.

Extra Persons Outside	Omagh Solution		Enniskillen Solution	
	York	Stutt	York	Stutt
30 minutes			18397	18045
40 minutes			9726	N/A
50 minutes	3582	9642		
60 minutes		562		

Table Four: Comparing the Findings in terms of Access Penalties

2.31 In general terms the two pieces of work are in agreement – as the access time being considered increases the balance of advantage moves from an Omagh ‘solution’ towards an Enniskillen ‘solution’. Numerically there are differences but the trend is consistent. However, given the weaknesses of both approaches this consistency does not mean that either set of results is correct.

3. Socio-Economic Factors: York

3.1 This work makes use of the indices of deprivation produced by the Social Disadvantage Research Centre at Oxford University. The report maps the Health Deprivation and Disability domain, the Employment domain and the Multiple Deprivation measure for all the Wards in Northern Ireland. All these indicators show generally higher values for the District of Omagh than for Fermanagh.

Access and Sustainability

3.2 As a result of the findings that deprivation indicators show higher values for Omagh, the rather simplistic argument is presented that; therefore, a single major hospital at Enniskillen would disadvantage in access terms communities that are relatively more deprived than would a single hospital at Omagh. These differences in deprivation, it is argued, will have an added impact (over and above impacts arising from geographical factors) on both accessibility (the proportions of demand outside access time bands) and sustainability (the extent to which hospitals will attract a sufficiently high workload to be viable).

3.3 No actual data concerning current demand levels and rates for acute services (arising from the different communities) are assembled to support (or otherwise) these conclusions. In fact, the analysis of access actually presented in the report is concerned only with the numbers of persons resident at different drive times from the alternative hospital locations and does not include any demand-related weightings.

3.4 In the report by Hindle in 2000, the annual number of major acute incidents arising from the various communities in the southwest of Northern Ireland (for 1999) was obtained from the Hospital Information Systems data in the relevant NI hospitals. The resulting numbers of incidents and the demand rates per head for three key districts are shown in Table 5.

Districts	Annual Acute Incidents	Demand Rates per Head
Omagh	9081	0.19
Fermanagh	9523	0.17
Strabane	6772	0.18

Table Five: Major Acute Incidents and Demand Rates for Three Districts (1999)

3.5 The above results suggest that demand rates per head are not very different for the districts, although the rate for Omagh is the highest of the three. Nevertheless, in terms of the absolute numbers of incidents, Fermanagh shows the highest level of demand. Overall these differences in demand levels and rates seem too small to have a major effect on access performance but whether they do or not cannot be assessed without exploring the precise spatial distribution of demand. This approach was taken in the study reported by Hindle (2000).

3.6 It is not satisfactory to claim (as the York report does) that overall differences between communities in deprivation will inevitably influence access performance – the question is that of where the potential demand is located with respect to the target hospitals. Although the York report is correct in concluding that deprivation might well influence demand rates, the

work should have attempted to quantify this effect both in terms of overall demand rates and, most importantly, its spatial distribution. Furthermore it is unconvincing to highlight a possibly important determining factor (in this case 'deprivation') and yet fail to incorporate this factor into the subsequent access modelling.

Impact on the Local Economy

3.7 In this part of the work it is suggested in the York report that the population in Omagh has in the recent past and will continue in the future to grow more rapidly than is the case for the population in Fermanagh. However, the figures quoted are for the urban areas of Omagh and Enniskillen. In terms of population projections supplied by the DHSS&PS the overall growth rates for the two key districts from the year 1993 to the year 2010 are very similar – of between 9% and 10%.

3.8 The report does not demonstrate in clear terms why the differential growth rates (as predicted by York) in the urban areas of Omagh and Enniskillen is likely to have a significant effect on either accessibility or sustainability. Whether a hospital is located in Enniskillen or Omagh it will be the nearest hospital for both urban areas, so the differential sustainability impact argument seems a weak one.

3.9 There could be some 'extra' access performance effects arising from the differential growth rates quoted but the work does not attempt to quantify these. Given that the distance from the centre of Omagh to the centre of Enniskillen is only 26 miles, any effects at the 60-minute target level are highly unlikely, although there could well be marginal effects at a 30-minute target level.

Other Factors

3.10 The report includes comments on differential employment effects and on 'equality proofing'. However, the arguments presented on these aspects are tentative and inconclusive.

On employment effects the report simply concludes "any relocation of services will have an adverse impact on the local economy of the town from which services are removed."

In relation to 'equality proofing', the York report quotes some of the findings of a PAFT appraisal commissioned by the WHSSB in March 1999. The difference highlighted (from this PAFT report) between a move from the status quo to a single-site Enniskillen hospital or to a single-site Omagh hospital is that the former would have a differential effect on Catholics and the latter would not.

4. Sustainability

Delivering Quality Services: The York Report

4.1 The York report provides a quantitative picture concerning catchment populations of the options in Appendix 2. The main 'findings' are that an Omagh site has a projected 2010 population of around 130,000 and Enniskillen a population of around 123,000, supporting the Hayes conclusion that a hospital at Omagh would have a "slightly larger catchment population".

4.2 The report also suggests a catchment population for ENT at Omagh of around 150,000 (plus extra demand from Ireland) and around 300,000 for Renal Services. No quantitative statements are made with regard to ENT and Renal Services for a hospital located in Enniskillen. However a section of the report is devoted to marshalling arguments in support of retaining ENT and Renal Services at Omagh. This section also introduces discussion of the

possible impact of the location options on maternity services and on A&E services in the southwest.

4.3 Although some data are presented and, to a degree, analysed with regard to ENT, Renal, Maternity and A&E services, most of the conclusions are unsupported by this analysis and are simply assertions that Omagh is a preferable location for such services.

For example:

“The ENT services (at Omagh) are well established, serve a large population including that of Fermanagh, and may become unviable if relocated to Enniskillen, thus reducing accessibility for the population of the South West” (Emphasis is the writers)

“Renal services were established in Omagh to increase take up of renal dialysis and to increase accessibility to a specialist service. The choice of location at Omagh was made to maximise viability and accessibility: moving the services to Enniskillen would reduce both viability and accessibility, resulting in the services most likely being relocated to Altnagelvin”

“Maintaining services at Enniskillen would necessitate the running of maternity services, that would be similar in size (and, hence, would have similar problems of sustainability) to services which the AHRG are proposing should be closed. Moving maternity services to a hospital at or near Omagh would potentially attract a larger catchment population, would make the unit increasingly viable and would not have a detrimental effect on accessibility.”

“The findings indicate that total workload is greater and rising faster at Tyrone County than at Erne: therefore a greater number of A&E attendees will be affected by the relocation of these services to Enniskillen than to Omagh.”

4.4 The very loose links to quantitative analysis in this section of the York report is illustrated in the final quotation above. Table 5.5 in the report is used to support the comments about workload made in the quotation above – i.e., “...greater and rising faster...”. The Table shows that total attendances at Erne in year 2000 was 18,086 and at Tyrone County it was 19,928 – i.e., somewhat higher at the latter hospital. However over the 6 years since 1995 the workload at Erne has risen by around 9%, whereas at Tyrone County it has fallen by 6%.

Sustainability: The Stutt Report

4.5 This report introduces a notion of ‘static’ versus ‘dynamic’ sustainability – the former being equivalent to catchment population estimation whereas the latter refers more to political and management processes and structures that can ensure sustainability, given that a choice of service configuration has (already) been made.

- Static Sustainability

The work presented in this report relates to the application of the GIS modelling approach discussed earlier in this paper. The same distance banding (as for accessibility) was applied and the total populations in each enumeration district within each band determined. Each ED population was ‘assigned’ to its ‘nearest’ hospital. The sum total of all ED populations assigned to any hospital is regarded as its ‘catchment population’.

4.6 The assumption made about assignment of populations to their nearest hospital is made in both pieces of work reviewed. However Stutt does discuss this assumption and admits that it is a severe simplification of real-world access behaviour. On the other hand, the same assumption is also made in the York work without any discussion at all.

4.7 On current population figures, Stutt shows (using the method described above) that a hospital located at Enniskillen has a catchment population of around 105,000, whereas at Omagh this estimate is around 154,000. This is proportionately a wider difference than that suggested by York. However the report illustrates clearly that the main reason for the difference is that Omagh reduces the predicted populations (in comparison with Enniskillen) of Altnagelvin and Craigavon – by around 20,000 and by 28,000 persons respectively. Whether these reductions would (or should) happen in practice is, of course, doubtful and, in any case, the assessments might well be different if travel time were to be used as an indicator of proximity rather than distance.

- Dynamic Sustainability

4.8 The argument presented in this section is, in essence, that Enniskillen will be ‘dynamically’ sustainable with appropriate commitment and management. Very little evidence or analysis is presented in support of this assertion.

4.9 Qualitatively, the argument presented is almost a ‘mirror image’ of the argument presented in the York report in favour of an Omagh ‘solution’. Some of the key differences are illustrated in Table 6.

In Favour of Omagh	In Favour of Enniskillen
Omagh will link effectively on a North-South axis with Altnagelvin	Enniskillen will link effectively on an East-West axis with Craigavon
Omagh will not be affected like Enniskillen by the ‘attraction’ of Irish hospitals	Enniskillen, unlike Omagh, will ‘attract’ Irish patients
The viability of Omagh is independent of demands from ‘visitors’	Enniskillen will ‘attract’ a large number of ‘visitors’
Omagh is strategically closer to and well integrated with respect to other hospitals and health services – with currently operational links	Enniskillen is strategically well separated from other hospitals and can develop independently – “out of the shadow” of other hospitals
Omagh has currently an established sub-regional role	Enniskillen can form an important component in a developing cross-border sub-regional role

Table Six: Qualitative Arguments in Favour of Omagh and Enniskillen

5. Final Comments and Conclusions

5.1 The two reports reviewed in this paper provide readable and generally well-prepared arguments in favour of two diametrically opposed ‘solutions’ to the location and management of acute hospital services in the southwest of Northern Ireland. The York report argues in favour of a single-site major acute hospital located in Omagh (with a community hospital in Enniskillen) and the Stutt report argues in favour of the opposite solution.

5.2 Although both reports provide quantitative analyses, especially in relation to accessibility and sustainability, the options are also presented qualitatively in terms of a (different) strategic vision for the service in the southwest.

In relation to the quantitative work, both reports reveal work that is seriously flawed.

5.3 Both access and sustainability findings are based on models of ‘populations’ likely to ‘use’ a given hospital or hospitals if they are provided, and, once these populations are identified the models then claim to estimate driving times and distances to these hospitals.

The assumptions lying behind this work (not always clearly stated) are, in both cases, challengeable – and in serious ways.

5.4 Firstly, and most importantly, despite the obvious criticality of journey times both for determining proximity and determining access ‘performance’, neither report presents any detailed information on the travel speed assumptions that have been made. In the York report no mention of travel speeds is made at all and in the Stutt report distances are converted into times using an unquantified ‘risk’ of travelling at either 30 mph or 40 mph.

5.5 Secondly, neither piece of work presents any justification for the assumption made that persons will use the ‘nearest’ hospital. The report by Hindle (2000) showed that patients do not behave in this way at the current time and, hence, they might well not do so in the future. Furthermore such decisions might not be ‘irrational’ and might reflect the relative degrees of specialisation provided in different hospitals.

5.6 Although there might well be a justification for an argument that the aim (in strategic planning terms) should be to ensure that patients could (if they wish) use the nearest hospital, no discussion of this point is presented in the reports. Furthermore, both pieces of work appear to make the assumption (without any quantitative supporting evidence) that crude population size is an appropriate basis for estimating demand rates on hospital services. Although the York report does propose that deprivation indicators should be taken into account in estimating demand it provides no quantification of the relationship between them. In contrast, Hindle (2000) used the DHSS&PS need weights for the various acute specialties to estimate demand rates on the selected specialties and this would seem to be a much better basis for estimating access implications and sustainability.

5.7 Both pieces of work lack information concerning the techniques and methods used for modelling catchment populations and travel times. Although the Stutt report is much clearer in this regard than the York report, even in this case, the way in which distance bands are derived using the GIS is not explained. In the York work their methodology is described only in the briefest of terms and the techniques applied are not explained at all.

5.8 No sensitivity testing of the effects of key assumptions is presented in either report, not only in relation to journey speeds (already mentioned) but also in relation to other factors such as the time/distance categories used in the analyses, the levels of aggregation of population units, differential population growths, the propensity or otherwise to use Irish hospitals and so on.

5.9 If the two main options were very different in their access and sustainability performance a ‘broad brush’ approach might well have revealed this, but it is clear that this is not the case in relation to the issue of locating a single-site hospital in the southwest. In light of this, the approach needed has to be very thorough and precise – and on this criterion both the studies reviewed here have failed to reach the standards required.

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