

## **Your life in their hands redux and the question that was never asked.**

**A critique of the redesign of Health and Social Care in Skye, Lochalsh and South West Ross.**

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## **INTRODUCTION AND OVERVIEW**

1. This paper has two main elements. It is a substantial revision of the paper 'Your life in Their Hands', initially published in 2016, necessary because many if not all of the substantive and objective issues relating to the redesign of health and social care in Skye, Lochalsh and South West Ross (SLSWR) remain unaddressed, although they clearly need to be and urgently. The redesign - labeled solely 'rural' by NHS Highland (NHS) despite the reality and nature of the area- proposes closure of Portree Hospital as an emergency and inpatient facility along with its rural A and E, with a new build single community hospital built, replacing both existing hospitals and unifying their rural A and E, in Broadford.

2. Additionally, the paper considers the 'bigger picture' concerning the redesign, namely what is the optimal redesign of health and social care to meet the needs of all of the people that live, work and spend their leisure time in the artificial geographic area created by NHS Highland? This question has never been asked by NHS Highland at any stage in the redesign process and their much narrower focus, as revealed in their model options appraisal, boils down to the refurbishment of buildings and, specifically, the need, as they have determined it, to completely refurbish Broadford hospital by a new build, paid for by closing Portree Hospital and its associated rural A and E.

3. This botched redesign is based on the assumption that geographic centrality is more important than population density, which it is clear is not necessarily the case for health and social care. Geographic centrality may well be the critical determinant for a capital investment project with a product that is traded since geographic distance is a key determinant of trade. However, geographic centrality should never be the overriding criterion in determining capital investment for a service such as health and social care provision, particularly in an area as complex as SLSWR with its mix of rural and urban settlements and related asymmetries.

4. Much of the need or demand for such a service is related to population, including those who live and work there, but also the substantial tourist population who visit and stay, particularly on Skye and Raasay throughout the year. NHS Highland implicitly assume that the population asymmetries arising from differential growth rates, urban/ rural dimensions and tourism, do not exist and therefore miss the vital element in this planning process, namely where the needs are and how best to address them whether for primary care or for the secondary care that is currently provided on the island and, indeed, should be provided going forward if the correct planning question had been asked.

5. The redesign runs counter to Scottish Government policy that care should be as close to the community it seeks to serve as possible. It is noteworthy that the governing party also stated in its May 2017 local election leaflets that they were against closing 'rural A and E's.' The rural A and E that existed in Portree from 1964 was effectively closed at around the time of the redesign public consultation process in 2014, without this being part of the consultation.

## **Executive Summary**

1 A key driver for the major redesign of health and social care services in Skye, Lochalsh and South West Ross (SLSWR) by NHS Highland (NHS), which commenced formally in 2014, is the need to ensure financial and workforce sustainability. This narrow perspective does not result in the best outcome, leads to increased costs and risks to life for the community the service is supposed to be for, and is a missed opportunity to plan effectively for the next 60 years. It also fails to consider what appropriate funding should be made available.

2. Since opening in 1964 Portree Hospital has provided GP led inpatient and emergency services in north Skye, with thousands of people receiving urgent and emergency care there. Hospital beds have already been closed and changes made to out-of-hours healthcare contrary to the conditions agreed with the Cabinet Secretary in the Initial Agreement. An instruction was issued to ambulance personnel in 2011 to bypass Portree Hospital and enforced in 2014. NHS have repeatedly told the Cabinet Secretary for Health and Sport that nothing has changed and deny that the former 24 hour emergency service ever existed, contrary to the experience of the thousands of people who actually used it and live on Skye and Raasay. Only 4 staffed beds remain in Portree Hospital of the 12 at the start of the redesign despite written commitments to the contrary.

3. NHS have used a one-size-fits all approach to the redesign: the worst possible starting point imaginable.

3.1 Linkage with the Badenoch and Strathspey redesign fails to recognize that Skye is a large Scottish island and not a mainland location (see 4.4) with all of the issues this entails.

3.2 The 24 hospital beds proposed for the redesign, all located in Broadford, compare unfavourably with bed/population ratios in the UK, overseas and on the other comparable Scottish islands.

4. Geographic centre-based planning used by NHS is inappropriate for health and social care because it ignores key asymmetries. Population density and growth are not symmetrical around the geographic centre point of Skye, Lochalsh and South West Ross, an artificial geographic area created by NHS. This has important implications for the people that the redesign is supposed to serve.

4.1. The design is labeled a 'rural redesign', yet Portree is an urban township, the capital of Skye, and the main employment and education centre, much as in any Scottish township, with all that this implies for health and social care.

4.2 The pressures on healthcare due to increasing tourism, including numerous large cruise ships mooring at Portree, have not been factored into the redesign.

4.3 Differential growth projections show that the population of Portree is expected to double over the next 60 years while the rest of Skye will grow more slowly and the South West Ross area is predicted to see a decline in

population. Furthermore, the absolute number of people living and working at any one time can be at least 12 times that in Broadford with all that this implies for a health care redesign.

4.4 Skye is one of the large Scottish islands, with issues relating to isolation and distance from mainland hospitals: this has not been recognized in the redesign.

4.5 Community planning has not been used to inform the redesign.

4.6 Portree is the emergency planning centre and is the only Tier One centre on the island for a major emergency. It is very unclear how a major emergency at night, say, on one of the many major cruise ships anchored in Portree Bay, or indeed any other similar major incident, be handled if there are no inpatient beds or A and E in Portree and no robust A and E available especially if the A87 is blocked

5. The options appraisals for the service model and location, which are at the heart of the redesign, are seriously and fatally flawed:

5.1 The model options appraisal failed to include all relevant options.

5.2 The location options appraisal breaches mandatory guidelines for optimal allocation of public capital spending set out in the Scottish Capital Investment Manual.

5.3 Economic expertise was not utilized and should have been; the consultant used for the locations options appraisal did not submit any appropriate proposal for the work undertaken nor can he provide sensitivity results which are critically important and referred to in NHS documentation.

5.4 Recent trends in resident and tourist populations have not been recognized or appropriately modelled.

6 The design statement described in NHS's Initial Agreement fails to demonstrate that it will provide the greatest benefits to society, and that funds will be spent in the most efficient manner,

6.1 The redesign breaches mandatory option appraisal guidelines set out in the Scottish Capital Investment Manual, and the Treasury Green Book.

6.2 non quantifiable costs such as environmental, social, health and (non-financial) risk factors were not included (details in section 7).

6.3 undue weight was given to 'patient flow' over other more relevant criteria.

6.4 relative drive times were not fully assessed and were not included (details in 7.4).

6.5 The location option appraisal results were not statistically significant.

6.6 Sampling issues and inclusion of sunk costs biased the location option appraisal results

7. Numerous important costs and benefits are missing from the options appraisal process, which NHS had a mandatory obligation to include.

7.1 relative not absolute data should have been used, which is a very basic error.

7.1.2 relative actual population sizes of Portree and Broadford were not considered.

7.1.3 relative population growth projections show doubling of the Portree population over the 60 year horizon of the redesign, with other areas showing growth rates of one third of this level

7.2 risks related to employment, education, fishing, light engineering and the oil terminal in Portree were not factored in

7.3 the impact of A87 trunk road closure at key points on Skye has not been considered, potentially marooning the most populous part of the whole area from both A and E and inpatient beds.

7.4 30 and 60-minute drive times have not been adjusted for population differentials. They should have been to avoid imposing extra risk and costs onto the community. When this adjustment is made Portree is clearly the location that maximises the number of people who can reach hospital within the Golden Hour and half hour times. Any responsible authority not make this the main primary and secondary health care centre but this critical input was absent from the options appraisal modelling.

7.5 The RNLI lifeboat is based in Portree and unable to dock at Broadford and this fact was ignored.

7.6 Distributional effects of the various options on vulnerable groups such as the most deprived and older people were not included despite the fact that they are extremely important in this area.

7.7 cost implications for the local economy and the environment were not considered

8. Submissions regarding Public Petition PE1591 lodged with the Scottish Parliament Public Petitions Committee in September 2015, and still active, include detailed concerns around all the issues detailed above and these have as yet not been addressed in a satisfactory manner by NHS or the Cabinet Secretary for health and sport. Indeed, a recent submission shows that some NHS statements to the Petitions Committee have been deliberately intended to mislead.

9 Transport and access issues which are so crucial, particularly for those with the greatest needs in society, have not been appropriately assessed or factored in to the redesign to date.

10. Appendix 1 of this paper contains a number of comments and responses from Dr David Alston, Chair of NHS, on the initial paper 'Your life in their hands' and a set of responses, in turn, from Ronald MacDonald.

## Recommendations

1. The first main recommendation of this paper is that the rural A and E service in Portree (or whatever label may be used for the 24/7 doctor led emergency and accident service that was in Portree from 1964 to 2014) is immediately reinstated before any lives are unnecessarily lost for the objective reasons clearly articulated here and which relate to Portree being the optimal location for an A and E for the whole of Skye, Lochalsh and South West Ross. Once that has been re-established there should then be a thoroughgoing appraisal of the nature of the A and E unit centred in Portree since as an urban settlement, and main employment centre with a key and important tourist component, it needs to have a fit for purpose A and E unit given the exponential growth in both tourism and population over the projected life of the redesign. Relatedly, given the nature of Portree, it is vitally important that there are in-patient community beds available in Portree and the North of Skye as there has been for the last 50 years. The current case for removing them has not been made using objective criteria and is simply a straightforward cost cutting exercise.
2. Given the planning horizon for the health and social care redesign is generational, there needs to be a proper needs assessment conducted based on all objective information that should have been fed into the original options appraisal process – both model and location - and as discussed in this paper. This will in all likelihood need a greater budget on par with other large Scottish islands to meet the unique needs of the artificial geographic area created by NHSH. If this is not done, then the SLSWR community is going to be faced with a broken model which will unambiguously provide an inferior health and social care package to what was there previously and to what would be in place if the correct optimising process had been utilised at the initial modelling stage of the redesign. This too will have key implications for the local economy, and indeed the wider Scottish economy, given the crucial importance of tourism to Skye and Raasay and indeed Scotland.
3. Since the redesign has already had innumerable deleterious consequences for the people who live and work in the area, it is vitally important that policy makers learn from this experience and prevent health boards making the same mistakes that have been made in SLSWR. In this regard there clearly needs to be external scrutiny and monitoring placed on health boards for this type of activity since that has been largely absent during the process here and there has clearly been a massive democratic deficit. The key to addressing this is a recognition that NHSH are effectively a monopoly provider of their service and as a monopoly provider their treatment of staff and patients must be to the very highest standards and be in line with best practice otherwise our communities will be stuck with second best solutions for generations to come.

# **1 Health and social care redesign: sustainability for whom?**

## **Workforce challenges**

Proposed and ongoing changes to the health and social care package provided in the UK and in Scotland have been on the political radar for some time now. Scotland in particular has an ageing demographic which not only has implications for the sustainability of care for the whole population, including the older cohort, but also for the work force and particularly the supply of trained medical, nursing and health practitioners. A central element of the modernization process is a move away from traditional hospital based care to better care in the community, particularly for older people.

Additionally there is an inexorable rise in the demand for NHS services due to a number of factors. Improved technology and treatments means more diseases can be treated, and the increasing costs of so doing are placing increasing strains on the service. With the price of the service being effectively zero at the point of delivery, the true cost shows up in the form of queues and attempts to resolve these by setting national targets.

Radical change to the GP contracts in 2004 has had key implications for out of hours cover, particularly in rural settings, and doubtless the 2017 contractual change will have further implications for labour force availability locally and nationally.

The issue of a contracting labour force, a key driver for NHS service redesign, needs to be addressed. First, it is important to note that there is no necessary correlation, and certainly not the unitary one assumed by NHS, between a country's, or an area's, demographic and its work force. Of much greater impact is the relationship between labour participation and the labour market. Changes in a particular profession's contract can have a big impact on participation in the labour market. The change to the GP contract is perhaps the most obvious example of this in the current context and the proposed changes to the current contract it is argued will have important implications for rural practices due to the apparent payment differential across the urban – rural setting. Contractual issues are understood to be at the heart of rapid turnover and recruitment challenges to Portree Urgent Care service.

There are of course a raft of other reasons why labour participation and therefore the labour force may not be optimal in any one area – whether they be local and national labour markets. For example, quotas placed on individual groups of workers within the health service, such as a quota put on nurse recruitment in 2010 by the Cabinet Secretary for health, is an obvious example of this. In sum, the notion that we as a community or a country are helpless to address the issue of a shrinking work force is chimeric.

Although NHS are keen to stress the financial and workforce sustainability of their service, sustainability of local communities is also important. The Treasury Green Book<sup>2</sup> makes it abundantly clear that any capital investment of the type at the heart of the redesign should recognize the issues facing the local economy and society more widely, including the environment. This aspect of the redesign has been completely ignored by NHS. Hence the title of this section - sustainability for whom?

### **National funding issues**

There are also national funding issues which undoubtedly impact on the sustainability of health services and the local redesign here. For example, in a recent paper by Prof Jim Gallagher<sup>3</sup> it is demonstrated that at a national level Scottish Government has reallocated £1bn of money that should have gone to the Scottish health service through the Barnett formula but has been redirected to other areas such as free tertiary education for both Scottish and EU students. In this regard, it is also pertinent to note that the so-called Barnett dividend to Scotland has not changed over the last 25 years and that dividend is predicated on, *inter alia*, the rural nature of Scotland and the desire to provide similar levels of, for example, health and social care provision in areas such as SLSWR that citizens can obtain in say the central belt. Although the Scottish Government may claim they have protected the health budget in Scotland in real terms the actual deflator they should be using to adjust their budgetary spending is very different to the one they use which allows them to 'square the circle' of the diversion of £1bn politically. There can be little doubt that this 'missing billion' combined with the well-known financial difficulties of NHS is the real reason for the proposed dramatic cut back in the provision of health and social care provision in SLSWR.

The 'rural redesign' for SLSWR needs to be seen in the context of the above background. Although given this it is recognized that change is necessary, attempts to impose a one-sized-fits-all policy onto a community which contains a substantial element of the **Large Island Model** (discussed below) is simply wrong and actually leads to much worse than expected outcomes.

### **60 year planning horizon**

The major redesign of health services in SLSWR offered NHS Highland (NHS) a clean sheet to look at all of the factors that are of relevance for the whole area and provide community and hospital services that will be fit for purpose for the present generation and the next 60 years, the planning horizon of the project. Although, the opportunity to have access to updated and appropriate health services is warmly welcomed by the community, there are considerable concerns

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<sup>2</sup> *The Treasury Green Book is the key guideline manual for capital expenditure appraisals in the UK and underpins the decision on any public sector capital expenditure of £15m and above in Scotland; it has been adopted by Scottish Government for capital expenditure decision-making.*

<sup>3</sup> *See: J Gallagher, 'Public Spending in Scotland: Relativities and Priorities What the data tell us', Nuffield College Oxford.*

as to the implications of the current proposals for access to both community and hospital care. It is asserted in this paper that not only are NHSH in clear breach of mandatory guidelines in terms of their planning process but that it is hard to imagine a more poorly planned modelling exercise, with basic failures running through the whole process, from start to finish. The outcome of this is not only significantly increased costs, of various kinds, to this community, but also most worryingly in an increased and unnecessary risk to life which could be very large indeed given the extant risk and population profiles.

## **2 Historic hospital and out of hours healthcare provision on the Isle of Skye**

Historically, and prior to 1964, the main hospital on Skye and Lochalsh has been located in Broadford. This is because prior to the formation of the NHSH hospital provision was provided by the private sector and the creation of the Dr MacKinnon Memorial Hospital in the 1930s was financed by private sector fundraising and major donations. Since the creation of this hospital there seems to be an ingrained belief amongst NHSH managers that this decision is immutable and therefore the main hospital has to be in Broadford.

### **Hospital beds**

However, as Skye developed since the 1930s, Portree became the main population centre on the island and indeed it is now an urban settlement, on the basis of internationally defined and accepted criteria and the only township in all of SLSWR with a baseline population which is at least three times that of Broadford. An urban area has a very different profile and set of needs to the rural areas surrounding it, and in recognition of the population shift on Skye, Portree community hospital was set up in 1964 and had 12 community beds which, along with those in Gesto (a small community hospital north of Portree, now closed), gave north Skye a total of 18 beds. It also had what classed as a rural A&E (i.e. this is not a full consultant led unit with trauma beds etc. but is a base where those involved in accidents and emergencies could go by ambulance, or by any other available means if an ambulance is not available, to get life stabilizing treatment). Scottish Ambulance Service (SAS) figures show that from 1964 to 2014 literally thousands of patients were taken by ambulance to Portree hospital from the Portree catchment area, which includes the huge land mass to its north and west, to be treated by the dedicated 24/7 doctor led unit.

Although Portree Hospital currently has 12 beds, only up to 4 of these are available due to staff shortages.<sup>4</sup>

### **Out of hours healthcare**

24/7 cover was stopped in 2014 and the lead clinician on Skye issued an order in 2010 to the effect that ambulances were no longer permitted to stop at Portree's

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<sup>4</sup> NHSH are in something of denial as to whether an A&E actually existed in Portree. However, a letter of 13 April signed by the partners of the Portree Medical Centre confirms that there has been an A&E service in Portree for 50 years as everyone who has lives here, and especially those whose lives were saved by having the said A&E, know full well.

rural A&E with patients from Portree and the north of Skye to receive rapid attention if a paramedic was not available on an ambulance or if indeed there is no available ambulance (see section 3.4). Initially, ambulance crews would use their discretion as to whether or not to stop at Portree but this directive was enforced in 2014 and that important option was finally closed down (i.e. at the start of the redesign process). No consultation took place with the Skye and Raasay community regarding the closure of this rural A and E department and no data has been provided as to the outcomes of this enforcement notice, although NHS Highland claim that their alternative provision of not stopping at Portree is superior, they have never explained to the public how this can be. Given the differential time delays and distances between stopping for early emergency treatment at Portree or continuing on for much later treatment at Broadford, it is no wonder that NHS Highland has never been able to justify this skewed decision to the increasingly vulnerable residents of Portree and its hinterland to the north.

Although NHS Highland are currently in denial about the existence of this service, which the local population know and accept was in place until the start of the redesign (in their view it was closed a long time ago), both Portree and Broadford hospitals were classified by NHS Highland in *Their Being Here*<sup>5</sup> document as recently as 2017 as having exactly the same status as 'Community Emergency' hospitals, since until recently both hospitals had what is widely accepted in the Highland area as a rural A&E. Since the withdrawal of the service from Portree no credible analysis to back up the decision to close this service has been given. This paper shows that the withdrawal of an A&E service from Portree is a serious mistake as a properly conducted options appraisal would have shown that the area is urgently in need of one now and going forward over the life of the redesign given the population densities, risk factors and other criteria which have gone unaddressed in the locational study.

### **3 The Starting Point of the redesign – a one-size-fits all joint Hubco model: Spinal roads, escape routes and in-patient bed numbers.**

#### **Linkage with Badenoch and Strathspey redesign**

The budget for the redesign project (£15m) and the equipment for the new hospital (£700,000) for SLSWR was set before there had been a study of the health care needs of the boundary area drawn up (this has in fact never been done) and was simply set to match an area with which SLSWR is twinned, namely Badenoch and Strathspey; the project is referred to as a twinned Hubco project. However, this plan and equality of funding omits the glaring fact that Skye is an island similar in size to the bigger Scottish Islands – Lewis, Orkney and Shetland – with similar issues of geographic distance and a mix of rural and urban settlements.

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<sup>5</sup> Being Here: An Approach to Building Sustainability of Health and Care Services in Remote and Rural Areas (2017), NHS Highland

Badenoch and Strathspey is not an island, has an internal roads network that is half of Skye's 600km, implying a different form of road dependency, with its capital, Aviemore, a mere 40 minute drive along a dual carriageway from the main hub of Raigmore with its full consultant led A&E. Compare this with the capital of Skye, Portree, and its urban settlement, some 2-3 hours' drive each way from Raigmore and one which is the capital of Scotland's second largest tourist destination with up to 60,000 staying in Portree or in the North of Skye. Needless to say, the distances from settlements to the North of Portree - such as, Kilmuir, Staffin and Flodigarry - significant catchment areas for rural communities, are significantly further away over poor single-track roads. Also, there are of course many 'escape routes' from an area like Badenoch and Strathspey if a single road is blocked. On an island like Skye if the single spinal road is blocked all of the people north of the blockage - effectively Portree and the North are without a 24/7 rural A&E since the capricious withdrawal of that service.

### **Hospital bed numbers**

The funding formulae given to Scottish Government and to NHS boards includes significant extra funding for island areas like Skye compared to what is currently being proposed. This is clear if you look at bed numbers and A&E provision on other comparable islands. NHS have now stated, despite assurances to the contrary to the petitions Committee, that the number of in-patient beds in the new hospital will be 24 from the preexisting 32, across the two community hospitals in Portree and Broadford. Indeed, this cut is on top of a previous commitment from NHS not to cut 6 community hospital beds on the island after they closed Gesto community hospital in 2006; so the effective cut in bed numbers for the area is from 38 to 24 a dramatic change of 36%, at a time when Skye and Raasay have one of the fastest growing populations in Highland.

The World Bank provides world-wide in-patient bed number data per 1000 of the population. For the UK as a whole, it is 10.7, but for the redesign area of SLSWR it is a startling 1.6 putting us on a par with some of the poorest countries in the world such as Senegal and Burundi! Perhaps most starkly this number is dramatically different too to our near neighbor Lewis, which has many of the island characteristics of Skye and Raasay, but has a bed score of 5.5, over three times that on Skye and Raasay. Since Skye and Raasay face the same range of issues as other large islands, so this is clearly blatant and unjustified, by any objective criteria, discrimination.

It is noteworthy that the bed modelling that NHS undertook to arrive at their steady state bed number of 24 for SLSWR was based on a model designed for Badenoch and Strathspey, took no account of the 240 mile round trip distance from the main population centre in SLSWR and also, critically, took no account of the fact that the population of Portree is set to double over the planning horizon of the redesign. Furthermore, NHS's bed modelling seems to take no account of the sizeable cohort of 60 older people based in Portree care homes and more generally the ageing demographic, that they are so keen to stress in their sustainability justification for the redesign, who also presumably need in-patient beds from time to time too. In other words, bed planning for the redesign is further evidence of planning at its worst.

### **Equipment funding**

The level of equipment in the redesigned model should also surely be dramatically different in the two Hubco areas given the geographic differentials involved. For example, leading edge scanner technology exists in the capitals of all the large Scottish islands – Stornoway, Kirkwall and Lerwick – but none exists on Skye and none is proposed in the new redesign. Both SLSWR and Badenoch and Strathspey, amazingly, are given the same amount of funding in the initial funding settlement – both receive £15M for the hospital build and £800,000 for equipment. The planning decision making behind this is non-existent and clearly ludicrous in its implicit assumptions. It's as if NSHH is asserting don't let reality distort our theory. In fact, theory and objective facts and criteria are the only reality that our community is prepared to countenance.

## **4 Geographic centre based vs population based planning**

### **Addition of South West Ross (SWR) to the catchment area**

Not long before the current discussion for a new hospital, NHSH included SWR in the catchment area for the redesign to make Broadford the 'geographic centre' of the whole area. This brings a population counterpart to the greater population density in north and central Skye and then allows them to argue that locating the sole hospital and rural A and E for the area in Broadford dovetails with their patient flow concept (see below), the central plank of NHSH's argument for retaining Broadford as the main hospital. And, of course, they conveniently have a land bank in Broadford, and a need to renovate Broadford Hospital. Given that as noted above (section 1) Scottish Government has diverted £1billion from the Scottish NHS budget over the last 10 years and NHSH are in continual financial meltdown, this accords with the overall national financial narrative although clearly not the needs of locals or tourists.

People living in SWR always had access to Broadford Hospital if they so wished, but would usually prefer to go to the better equipped Raigmore: 90 per cent of SWR bed occupancy days are in Raigmore Hospital and Broadford is also almost never used as the acute centre for SWR residents. Close to 80% of 999 calls on Skye are from postcodes that have Portree as their nearest hospital. Presumably this pattern will continue since we now know that Broadford Hospital will not have the state of the art facilities that other island hospitals have.

By creating this artificial catchment area to make Broadford the geographic centre NHSH then ignore a number of crucial issues which are basic 'level one' issues for an appropriate redesign of this type. First, NHSH implicitly assume that the population and its needs are symmetrically distributed around the new geographic centre. This assumption is at the heart of one of the most serious flaws in the redesign since there are at least three important asymmetries that should have been addressed in the planning process but which have not been.

## **Important population asymmetries**

### **4.1 The Rural-Urban asymmetry**

The first mistake that NHS make in this regard is to assume the whole area of SLSWR is rural in nature – indeed the redesign is labeled a ‘rural redesign’ which is a glaring error for anyone who has visited Portree recently. Much of the area of SLSWR is, of course rural in nature, but by the international standard population metric used to define rural and urban areas Portree is clearly an urban area and indeed a town with many of the key features of townships across Scotland. There is no other urban area in all of SLSWR that meets this criterion. As we shall discuss in more detail below, it is extremely important to recognize, in terms of the differing needs and possibilities available for service provision, especially in terms of primary care access, that this important asymmetry is recognized in the redesign.

### **4.2 Tourist Destination Asymmetry**

There is also the asymmetry in tourist numbers. It is now widely recognized that the Isle of Skye is the number two tourist destination in Scotland, with up to a million tourists visiting the island each year. The main destination centre on Skye – where people spend at least two to three hours a day – is its capital, Portree. The tourist season in Skye now spans the period from March to November and in Portree it is now clearly 24/7. In the very peak of the season, and as reported by amongst others the BBC, there can be anything up to 60,000 additional tourists on Skye most of them based in terms of accommodation in Portree and North Skye, approximating one million tourists per annum visiting Portree. The vast majority stay for 24 hours or more, given Portree has by far the largest concentration of accommodation for tourists on the island in terms of B+B, hotel, and holiday rentals, plus the largest support sector in terms of restaurants and shops.

The Cabinet Secretary for Tourism has made great capital and publicity of the inadequate tourism infrastructure on Skye, in terms of car parking and toilets. But local health care, and its effective dismantling in this area are not mentioned despite their crucial importance for all those living here, those employed in the tourism sector and the large cohort of tourists that can be based in Portree and North Skye on any given day.

Additionally, Portree has the only Tier one centre for a major incident, which could happen for a variety of reasons, many related to tourism. For example, there is a growing number and rising frequency of huge cruise liners anchoring off Portree (and not off Broadford) throughout the summer season, disgorging thousands of additional – and quite often elderly – passengers into the Portree and Northern Skye hinterland.

### **4.3 Asymmetry in differential population growth projections.**

A third asymmetry arises due to very different population clusters and projections for areas within the redesign boundary. The core population of Portree in 2015 was approximately 2500, around three times that of Broadford.

The core population of Portree is not the same as the true population of Portree. For example, the daily population of Portree is further boosted by the island's high school and its teachers, primary schools (both English and Gaelic) and a campus of the West Highland College, University of the Highlands & Islands, raising the population by at least a further a further 1,000.

Additionally, as the main employment centre in all of SLSWR, a raft of businesses and their employees are located in the capital: the Highland Council have their main office in Portree along with the Transport, Environmental and Community services, the main offices of Scottish Water and Scottish Power, a large hospitality sector comprising various hotels and restaurants, Skye Linen, Jans Van hire and Hardware operations, three garages and the island's main heavy goods vehicle testing station, three industrial estates, extensive fish farming operations in Loch Portree, the main refuse collection centre for the whole area and the prawn and pelagic fishing fleets. Several other key organisations are headquartered in Portree such as HIE, SLCVO and CAB.

We estimate that these daily activities add at least 1,500 people to the Portree population total. So the true day-to-day population of Portree could easily be upwards of 12,000 people when tourist numbers are added in, compared to a population of around 1,000 in Broadford with similar adjustments.

In terms of population growth, HIE figures show that the population of Portree is currently growing at 1.2% per annum and that the rate of that growth also appears to be increasing; the population of the rest of the area excluding Portree is growing at 0.4% per annum, one third that of Portree and, in contrast to Portree, this rate of growth appears to be decreasing over time. Interestingly, population trends show negative growth rates for South West Ross and the Lochalsh area. The population of Portree is set to double over the life of the redesign while that in the rest of Skye is set to grow at a much reduced rate and other parts of the area, such as South West Ross have negative projected artes based on current projections. Any objective planning process should have factored this in and its implications and consequences for primary and secondary care for the majority, but this was completely ignored in the redesign process going against basic good practice.

#### **4.4 The Scottish Large Island Model**

A further asymmetry arises because Skye, as an island, shares with its large island cousins - such as, Lewis, Shetland and Orkney - many key issues in terms of the geographic distance of its capital from any major consultant led hospital and the fact that its people may be blocked on the island due to weather conditions and therefore become totally reliant on the provision of primary and perhaps also secondary services too, if available, on the island. Perhaps a concrete example will illustrate this. Residents of SWR actually have choices that those in Portree and North Skye do not and indeed the residents of tiny Lochcarron on the edge of the new boundary have 24/7 doctor out of hours cover, an available ambulance and the choice of Broadford, Dingwall or Raigmore to go to in an emergency. Compare this with a resident of a village in North Skye such as Kilmuir who has no 24/7 doctor cover, can no longer stop in Portree

24/7 and if the main spinal road on Skye is blocked south of Portree, as it often is, has no A&E cover whatsoever, along with the vast majority on Skye unless they have exceptional swimming skills, which seems unlikely in an A&E emergency.

#### **4.5 NHS's failure to utilize Community Partnership Planning**

Many of these asymmetries would doubtless have been clear to NHS if they had been working in partnership with the Highland Council in terms of the development of the local plan. The community partnership approach to planning is much touted by Scottish Government. Unfortunately, NHS played no role in the development of the local plan until they had decided on their hub and spoke model and the location of the hub and spoke. In other words, planning for a capital project of this nature at its worst.

#### **4.6 Emergency Planning**

Portree is the emergency planning centre for the whole of SLSWR and has the only Tier One centre (this is a centre where a large number of people can be taken to in an emergency for safe housing and treatment) – Portree High School - on the island for a major emergency. How, for example, would a major emergency at night on one of the many major cruise ships anchored in Portree bay, or indeed any other similar major incident, be handled if there are no inpatient beds or A and E in Portree, particularly if the A87 was blocked as it often is and given Skye's island status?

### **5. The Options Appraisal Process**

There are two options appraisals in the relevant redesign documents: the model options appraisal – that is, what kind of model should be put in place – a hub and spoke, a single hospital or a refurbishment of the existing hospital buildings - and a locational options appraisal which seeks to answer where the hub and spoke should be placed given the chosen model. No other models were considered although there may well have been other options that are better suited to the designated redesign area. Indeed having extensively studied the issues surrounding the redesign that is undoubtedly the case.

#### **5.1 Options Appraisal of the service model**

The model options appraisal has been conducted in line with the *Scottish Capital Investment Manual (SCIM)* and the HM Treasury's *Green Book* guidance on options appraisal as it considers both quantifiable and non-quantifiable costs and benefits and also the risks relating to model choice. Additionally, a Net Present Value (NPV) framework is used for the 60-year life of the project. Three alternatives are considered in this modelling exercise – renovation of the existing hospital buildings, a single hospital site or a hub and spoke model.

However, the NPV framework used is predicated on the correct model being chosen out of the limited range of options available. The three options given – do nothing, renovate the existing hospital sites or hub and spoke are very limiting for an area the size of SLSWR with its rural urban mix and all of the related issues discussed in this paper. Intuitively, and given the catchment area that

NHSH are trying to achieve and particular in light of the distinct nature of Skye as an Island (see 4.4), it would seem rational to have considered other robust options such as a hub-hub or other appropriate variants.

## 5.2. The Locational Options Appraisal

In contrast to the model options appraisal the locational options appraisal (LOA) conducted by NHSH is deeply flawed and is, for a number of reasons, in clear breach of the *Green Book*, the adopted guidelines used by the Scottish Government and the Scottish Capital Investment Manual (*SCIM*)<sup>6</sup>, a mandatory document. Specifically, the LOA ignores any of the costs and all of the risks (non-model) associated with locational choice. It ignores quantification of any of the costs or benefits which exist and only focuses on a limited set of non-financial benefits. Furthermore, it ignores important factors such as the distributional impacts of location choice and the implications for the economy and environment. NHSH were required to consider all benefits and costs in their decision making since only by so doing can they say anything valid about optimal resource allocation and whether the locational decision offers best value, provides the maximum benefits to the community and ultimately saves the maximum number of lives over the 60-year horizon of the project.

Doubtless many of the worrying issues here arise because in every other instance of which we are aware, for similar sized population densities and risk profiles, NHSH has always placed its hub hospital in the most densely populated town with scant regard for geographic centrality, as have other Health Boards particularly the large island health boards of Stornoway/Harris, Shetland and Orkney. As we shall demonstrate, placing the hospital in the main centre immediately removes the greater loss of life issue and internalizes the other issues noted above. **The placing of a hospital away from the main population and employment centre in the mixed rural/urban mix of Skye and other large islands will always lead to a sub-optimal allocation of resources and therefore breaks the key rule of optimal resource allocation that a new build hospital should lead to the maximum welfare for the greatest number of people at the most efficient cost.**

## 5.3 Economic skills are required in options appraisal

It is noteworthy that the manual adopted by the Scottish Government to ensure that public sector groups achieve best value and maximise net benefits in their investment decisions is written by economists and signed off by the Chief Economist to the Treasury. The *SCIM* is based on the *Green Book* and defers to it. We must presume therefore that the person or persons who undertook the location options appraisal (LOA) on behalf of NHSH is/are suitably qualified to use these manuals.

However, in looking more closely at this issue, and as a result of various FOI requests, the following is known about this person. The LOA was conducted by a qualified engineer not an economist, is now retired and apparently cannot be

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<sup>6</sup> *The Scottish Capital Investment manual can be viewed here:*  
<http://www.pcpd.scot.nhs.uk/Capital/scimpilot.htm>

contacted regarding issues arising from his work. His resume shows that he has worked in a consultancy capacity previously for the NHS but, as I understand it, that dealt with the preparation of business case models and not in terms of options appraisals that require the skilled use of relative data profiles and differentials in addition to using non-quantifiable data. Indeed, his application for the locations appraisal is not an application for an options appraisal at all but an application for a business plan which was not in fact undertaken by him! Furthermore, in the initial application, where mention is made of the options appraisal and reference is made to sensitivity tests to assess the robustness of selected options, these are not available as an FOI request testifies. It is important to note that public funds have been used to pay for this LOA which furthermore given the nature of method chosen (the weighted scoring option discussed below) none of the people involved in the appraisal were skilled in this or the options appraisal process more generally.

In order to avoid misconceptions and misperceptions that seem to have arisen from the first draft of this paper as to why an economist should be involved in the decision regarding the location of a hospital in SLWR, it is worth defining up front what economics as a discipline is about. Nobel Laureate Paul Samuelson and William Nordhaus define this succinctly in their well-known level one Economics text book:

*Economics is the study of how societies use scarce resources to produce valuable commodities and services and distribute them among different people. Behind this definition are two key ideas in economics: **that goods are scarce and that society must use its resources efficiently.***

In sum, the latter means that resources should be used in an efficient way so that the net benefits to society of a resource allocation exercise (in this case SLSWR) should be maximised. Unfortunately, that is simply not happening for the health redesign for SLSWR which in essence is at the heart of what this paper is about.

Economics deals with both microeconomic issues – the allocation of resources at the local level, such as a new hospital or other private or public service - and macroeconomic issues relating to the whole economy such as finance, recessions, and banking. A focus on the latter often leads to the misconception in the eyes of the uninitiated that economics is all about money, the stock market and ‘financial costs and risks’. Although financial costs are often considered by economists, the opportunity cost is the relevant cost measure economists use in an options appraisal. The SCIM defines opportunity cost: *The opportunity cost of using a resource is its value in its next best alternative use. An emphasis on opportunities foregone is central to the way of thinking that underpins all the costing in an economic appraisal’*

In essence, it is the failure by NHSH to determine the opportunity cost of their decision making that has produced the many errors in their LOA. Indeed, in their written and oral statements members of NHSH have indicated that because their LOA is not about ‘financial costs’ that they can ignore any inclusion of costs in the

exercise. This is erroneous underscoring a profound misunderstanding of the options appraisal process and the concept of the maximising net benefits.

#### **5.4 Recent changes in population and tourism**

The redesign ignores the reality of population differentials in levels and growth terms noted in section 4 above and makes no attempt to quantify these which is a clear breach of the mandatory requirements in the guidance.

## 6 NHS location options appraisal will not achieve the maximum benefits from public spending

### 6.1 National guidance

The spending of public money has to be undertaken with due regard to optimizing the benefits of public spending in an efficient way and in a manner that is transparent and consistent. As the Treasury Green Book notes in its introduction, appropriate evaluation methods should be applied to public sector expenditure to ensure **'that public funds are spent on activities that provide the greatest benefits to society, and that they are spent in the most efficient way'**.

Few could argue with this statement, nor with the methods outlined in great detail in the *Green Book* for achieving such an optimum. This has been adopted by the Scottish Government for public spending decisions and underpins the *Scottish Public Finance Manual* and the *SCIM*. The latter's guidelines are mandatory for capital investment projects in the NHS where clearly making the wrong decision not only has implications for the allocation of public funds but also potentially the lives of members of society.

How is this to be achieved?

*Treasury Green Book 5.1.* The relevant costs and benefits to **government and society** of all options should be valued, and the net benefits or costs calculated. The decision maker can then compare the results between options to help select the best.

*Scottish Capital Investment Manual 3.1* The relevant **base case costs and benefits to government and society of all options should be valued**, and the net benefits or costs calculated. Relevant costs and benefits are those that will be affected by the decision at hand.

*Scottish Public Finance Manual:* also neatly summarises the importance of taking account of risk factors in an option appraisal, and the analysis of risk is dealt with at length in both the *SCIM* and the *Green Book*.

For each option, the impact of **all** relevant factors and **related risks and uncertainties** should be set out **systematically** and an assessment made of where the **balance of advantage lies**. The *Green Book* gives more detailed guidance and points to other sources which can help, for example, to assess risk and uncertainty, and costs & benefits not easily valued, such as environmental effects.

In any options appraisal the first best policy is always to attempt to quantify the costs and benefits in monetary terms. For costs and benefits that cannot be quantified a non-monetary approach is permitted, such as a multiple criteria analysis (MCA), but the pitfalls in using the latter are well known especially regarding the design of the underlying sample used and the use of an MCA approach does not preclude appropriate costs and benefits being quantified nor

does it offer leeway for excluding other non-quantifiable costs and benefits, including risk factors.

Since we have observed a misunderstanding from NHSH regarding the role of the Scottish Health Council's role in the options appraisal process it is worth noting here that in 2010 the Scottish Government issued a practice note stating, inter alia:

*The Scottish Health Council does not comment on clinical or financial issues; **the adequacy of Board compliance with the technical requirements laid out in The Green Book option appraisal process**; or the effectiveness of a Board's engagement with its own staff.*

*Scottish Government Practice Note CEL 4 (2010) 10 February 2010 para 14*

The failure of NHSH in their options appraisal process to assess the impact of their changes for society – both in an economic sense and more widely in terms of issues such as the environment, its failure to set out systematically all of the (non-financial) risks that arise in the main urban centre, its failure to quantify any of the costs and benefits of, its failure to include all of the costs and benefits, its failure to model deprivation measures, and its failure to model differential population projections mean that the options appraisal is meaningless and tells the community nothing about the optimality of the siting of the new hospital or indeed of the facilities available in the new hospital building or indeed whether the hub and spoke model is the optimal model for this area. We now consider this summary in more detail.

## **6.2 Failure to assess and include costs**

As the mandatory guidelines noted above demonstrate, maximising the benefits to society of a particular expenditure is achieved by assessing **all** of the costs and benefits of the project. The LOA reported by NHSH makes no attempt to quantify any of the relevant costs or benefits, despite their being extant quantifiable costs and benefits, which the *SCIM* indicates should be quantified, and relies on assessing certain 'non-financial' benefits using a weighted scoring method (see below). The *SCIM* indicates that even within such an approach that '**costs and benefits** should be quantified in suitable....units' and that all non-quantifiable impacts, such as **environmental, social, health and risk factors should be included in such a study. Only a subset of these factors has been included by NHSH in their options appraisal** making optimal decision making impossible. Since no costs of any sort enter into the location calculation, since no risks or further benefits have been included and since no heed is paid to environmental or distributional aspects it is immediately clear that the NHSH LOA document can say nothing about maximising the net benefits to the local community and beyond, the key criterion for the allocation of public funds!

## **6.3 Undue weight given to patient flow**

The reason that NHSH have chosen a 'non-financial' approach is because they consider the predominant benefit of the new hospital location to be one of patient flow (that is the ability to get patients stabilized in Broadford so they may then journey on to Raigmore if necessary). Their focus on this criterion

seems to strain logic to its limits for two key reasons. First, those patients living south of Broadford – in Sleat, Lochalsh and South West Ross - will be moving in the wrong direction for the flow concept to work. Second, for the most populous area, in the north of Skye, for the flow model to work it obviously depends on getting people from the north to Broadford in time to stabilize them or stabilising them in an ambulance and there are fatal flaws in this argument as we note below. That of course is why the whole range of cost and benefits should have been considered rather than being blithely ignored.

Clearly these extensive omissions render the appraisal meaningless as it pertains to maximising the benefits of public funds for the whole area. However, and perhaps most tellingly about the whole OA exercise is that the ‘non-financial’ weighted approach is ideally suited to considering a whole range of difficult to quantify issues in the context of the redesign such as deprivation. Of course, the reason these other non-quantifiable items are not included in the LOA is that their chosen site, where they have a pre-existing land bank, would have not even reached the top three sites for the hub for less the spoke!

#### **6.4 Relative drive times not fully assessed and not included**

The 30 and 60-minute drive times calculated by NHS SH show the numbers of registered patients in the whole area who can get to either Broadford or Portree in 30 or 60 minutes for the whole area. Both favour Portree (see 7.7 below), massively reinforced when a basic adjustment is made for significant North-South population differentials which, based on the *SCIM/Green Book*, NHS SH would have been expected to make. Although the ambulance staff in SLSWR are amongst the most dedicated in the country, ambulance response times are unknown and even if an ambulance could get to a patient on time, due to the policy of NHS SH, there is no guarantee that any given ambulance will have a paramedic on board, a crucial aspect of NHS SH’s clinical pathways model. With an A&E in Portree, the most populous area on the island, everyone in the north would have ready access to medical or paramedical help if they have a car or if they can find someone with a car. It’s noteworthy that Portree has an excellent range of taxi providers unmatched anywhere else in SLSWR.

Accordingly, North Skye residents and the large and growing tourist population, would have a much greater chance of getting to an A&E in Portree within the 60-minute Golden Hour even if all ambulances in the north were elsewhere occupied, as frequently occurs. Indeed, SAS data demonstrates that, since the one third cut of community bed numbers, ambulances are spending more time making the 240-mile round trip to Inverness (and beyond) to ‘find a bed’ for patients, thereby reinforcing the need for a rural A&E service for North Skye and Portree residents & tourists, irrespective of ambulance availability, particularly in circumstances where the spinal road is blocked. The issue of ambulance supply is further exacerbated by the practice of ambulances entering Inverness being automatically absorbed into the pool of ambulances in the Inverness area. This means that even when the ambulance and its crew return to Skye, safe staffing levels necessitate the crew moving to an off duty rota.

### **6.5 Location appraisal results not statistically significant**

The NHSH location study asks members of the sample to give scores out of 10 to various criteria deemed relevant to the siting of the hub. These include patient flow to Inverness, demographic centre, geographic centre, travel time for visiting consultants, suitability of development of the spoke and the ease of acquisition of sites. Weights are given to each criterion and the weights are scored, then the scores are summed. The highest weight is given to the patient flow criterion, devised by one stakeholder group, the clinicians.

The outcome with the highest marks then becomes the chosen Hub. Broadford scores 766 to Portree's 717 for the hub location, a margin of 49. However, if the 'Ease of Acquisition' term is excluded, (which captures the fact that NHSH have already bought land in Broadford for the new hospital prior to the options appraisal, a sunk cost and therefore should not have been included in such an appraisal!) the margin is reduced to a non-statistically significant margin of 16, which would evaporate when subjected to the appraisal factors enumerated in the foregoing.

### **6.6 Sampling issues and the inclusion of sunk costs.**

It is well known, as stressed in the *Green Book*, that a key deficiency of the weighted scoring method is that the outcomes are highly sensitive to the sample chosen. There are at least two key issues here – the unbiasedness of the sample and the dominant group problem. The quality of the sample design is crucial (as noted in my submission to the petitions committee of 7 October 2016) to obtaining unbiased results. The NHSH LOA skews the sample in two key ways against Portree as the hub.

First, there have been legitimate questions raised over the balance of the sample used in the locational study, in terms of giving equal representation to different areas, which NHSH refute. However, even if we accept the sample is balanced that is NOT the correct sample representation since it is supposed to be representative of the true population distribution; that is, in a statistical sense it should be unbiased if it is in any sense to be regarded as objective. As we have seen, the majority of people in SLSWR live in the north of Skye including Portree, and Portree has the highest scores for both 30 and 60-minute drive times.

Also, and as discussed elsewhere we know that by far the greatest use of emergency (999) calls is from the north of the island. It follows from this that just as the various criteria in the study have to be weighted so to do the people ranking the criteria. But equal weights have been used across the sample in this study and therefore the results cannot represent an unbiased outcome. Relatedly Portree as an urban area and in a statistical sense, discussed in more detail below, will have a very different sampling distribution to the rural distribution which relates to the whole area of SLSWR, clearly a fundamental problem with the whole design process. The differing underlying distributions were not reflected in the sample of people used in the weighted scoring study abrogating the quality of the sample design.

A second sampling issue relates to what may be referred to as the dominant group bias, where it is open for particularly strongly opinionated individuals or groups to dominate the sample and produce a biased outcome. For example, if there is an over representation of NHS employees in the sample, then they are likely to bias the result in favour of their preferred option since the oft repeated opinion of NHS is that the Hub hospital should be in Broadford and not Portree. The dominant group in the sample is indeed NHS, with 9 of its own employees in the sample of 22.

In addition to the dominant group in the sample being NHS employees there is no dedicated patient group in the study. The *SCIM* guidelines indicate the importance of having a group of patients in such a study, again blithely ignored in this case. The NHS rationalisation is that everyone in the sample are potential patients. However, this misses the point entirely since it is patients that have used the facilities under scrutiny that are surely relevant here and there are many patients in the north of Skye who would not be alive today failing access to a rural A&E service in Portree over the last 50 years. They simply would not have been alive today if they had had to travel to Broadford. It is these patients that should have a say in a study of this kind and asked what difference the removal of an A&E facility over a period of 60 years is likely to make. Even if the location study had considered all of the costs and benefits it would still be of dubious value given it excludes bona fide patients, the ultimate users of the service, from the study.

A further issue with the locational options appraisal relates to the issue of 'sunk costs'. As stressed in the *Green Book* sunk costs are the 'costs of goods and services that have already been incurred and are irrevocable should be ignored in an appraisal'. The criterion 'The ease of access of acquisition' [of a hospital] site is one of the criteria used in the LOA since NHS had **already** bought land in Broadford to build of a new hospital - which in and of itself must be regarded as a highly questionable use of public funds. Accordingly, as a sunk cost this criterion should not have been used in the LOA. And it is interesting to note that the only sensitivity analysis of their modelling is one in which this criterion is dropped reducing the margin in favour of Broadford to only 16 points! Of course, since the term should not have been included in the first place this means that no meaningful sensitivity analysis was applied to the results in the location appraisal, yet a further breach of mandatory guidelines.

## **7 The missing costs and benefits in the NHS options appraisal**

In this section we describe and assess the missing information from the NHS location options appraisal study.

### **7.1 Relative not absolute data should be used: differences between Broadford and Portree and their implications**

In an options appraisal of this nature it is important to ask if the issue in question is an absolute one, in which case absolute data should be used, or if it is a relative

comparison in which case relative data should be used. This is fundamental to any options appraisal. Since this is a *relative* comparison of Portree vs. Broadford relative data should be used. However, to the extent that NHSH do refer to data in any of their documentation, it is always in absolute terms and no attempt is ever made to quantify relative data in the LOA which, as the *SCIM/Green Book* guidance notes, should be the first point of departure if such data are available which they are in this case.

Both the *SCIM* and the *Green Book* make clear that any properly conducted options appraisal will contain assumptions about demand or need for the service and such demand or need will be based on demographics. Furthermore, both sources stress the need to conduct a sensitivity analysis on such assumptions (and other crucial factors). Nowhere in the LOA can any assumptions be seen about such projections, far less any sensitivity analysis being undertaken. Yet there is ample data available to make such an analysis for the area under scrutiny as we now demonstrate.

## **7.2 Relative population size**

It was noted in Section 4 that important population differentials exist within the SLSWR area but that this has not been factored into the options appraisals process and this in and of itself renders the process meaningless from a planning perspective.

## **7.3 Implications of ignoring population asymmetries**

Two important and significant factors follow on from the huge population differential between Portree and Broadford (see 4.3). First, other things being equal, in the much larger population we will obviously expect a much larger need for emergency services than the smaller sector and, given that the proposed A&E service is to be in the smaller population centre, along with the ambulance centre, it therefore follows that there will be a higher risk of people in the most populous area simply not reaching an A&E centre, especially given the vagaries of the ambulance service (see above and below). That is a statistical fact. Clearly, this risk could be avoided by operating a 24/7 rural A&E in the most populous area.

A significant cost missing from NHSH LOA relates to this population differential. The drive time between Broadford and Portree is approximately 36 minutes (in optimal conditions) in either direction. And given the population of Portree is at least 12 times that of Broadford this means that 12 times more people will need to make the journey than would not be necessary if the hospital was in Portree. Since Portree is the main employment centre the cost of time off work and the costs to the wider economy will obviously be far greater if the hospital is in Broadford. While NHSH are supposed to account for this in their planning they have in fact ignored the full economic costs, that includes salary losses, national insurance and pension costs and attendant travel costs. This begs the question of who is going to pay the resulting many hundreds of thousands pounds per annum.

#### **7.4 Relative population growth**

The NHSH location options appraisal does not take account of the projected growth of population over the 60-year period of the redesign although the *Green Book* makes clear that 'demand risk' for a product or service has to be modeled over the life of the project.

The projected population figures discussed in 4.3 above mean that over the course of the horizon that NHSH are using for the new hospital, **the core population of Portree is set to at least double**, (while the population of the rest of Skye grows by approximately one third of its current value) and therefore becomes a very significant population centre for the whole area even without the added tourist numbers and the added affect from being the main population centre. Tourist numbers have also been increasing steeply in recent years and if this trend continues it will widen the disparity over the life of the project even further and the risk of failing to get to A&E massively.

#### **7.5 Work related risks**

Clearly the relative population disparity between Portree and Broadford means that there is a far greater probability that someone is going to need an urgent admission than in a much smaller population location like Broadford. Furthermore, there are a number of key factors in Portree that do not exist or are relatively smaller in Broadford that increase the risk further by a significant extent and result in Portree being very similar in nature to a typical urban setting rather than the rural setting assumed by NHSH. There is as we have noted (section 4.3) a considerable base of what could be termed light engineering jobs in Portree, along with the fish farming and fishing fleet, all of these bearing higher risk than the average risk in a rural area and much closer in risk terms to any urban area.

Perhaps the major risk factor in Portree relative to Broadford is the large oil storage facility that exists in Portree. This is a depot storing many thousands of gallons of highly flammable oil products and is regularly supplied by large oil tankers along a road which is clearly not fit for purpose. This depot is not built on an industrial estate but right in the heart of the town at the opposite side of The Lump to the hospital. The risk assessment for this depot shows that if there is an explosion it would be like a bomb going off in the centre of Portree that would affect the harbour area on that side of The Lump and all dwelling houses from there to the Cuillin Hills Hotel. Within the last two years there has been a large oil spill on the entrance road to the depot and a major incident was only averted by having a 24/7 fire service in place.

Clearly the harbour area is heavily populated by tourists and visitors throughout the year. The consequences of an incident there are almost unimaginable especially if there was no accident and emergency provision or hospital beds in Portree. This of course is not a remote probability accident since as noted within the last two years there has been a major oil spillage in this very area. But the risk remains and has not been considered in NHSH plans. The emergency planning centre for the whole area is based in Portree, and the GP practice is the largest in the area, but there is no A&E to react rapidly to a major incident in

Portree which is the most likely place for it to occur. Furthermore, the only Tier one centre on Skye and Raasay is as we have noted above in Portree in case of a major emergency which could, for example, happen overnight with one of the major cruise ships carrying thousands of people on board that anchor in Portree bay. But how would the management of such an incident of there were multiple casualties work if there is no actual equipped A and E unit in Portree and the nearest unit is some 40 minutes away from the main location where the casualties would be taken?

## **7.6 Impact of trunk road closure**

The location options appraisal completely ignores the possibility of trunk road closure due to accidents or adverse weather that would result in zero A&E access for the population in the north if the hospital is placed in Broadford. For example, if there were to be a road blockage on the A87 between Broadford and Sligachan all of the north, including the many tourists based there, would be blocked from access to an A&E. This is clearly not a trivial or unlikely event. With the huge influx of tourists to the island there are many accidents on this road and the road can often be blocked for this reason and, of course, NHSH plans to force people from the main population centre to travel back and forth to Broadford can only exacerbate this.

Police Scotland will always try to give access to an emergency vehicle in the case of a non-fatal accident. However, in the case of a road accident involving a fatality the road is closed to ALL traffic until the forensic examinations have been completed. During the last fatal accident on the Sligachan-Broadford Road the road was closed for a total of 8 hours and can be closed for up to 24 hours! Of course, there are other reasons, such as a landslips and other natural events that could also lead to a major closure of this road (the road was closed on Christmas eve 2017 due to heavy snow which resulted in a jack-knifed lorry blocking the road for many hours at the Drum nan Cleog pass and the road was only passible after that in a 4x4 (we do not have 4x4 ambulances). This at a time when the out-of-hours service for Portree and the North had to close at 6pm on Christmas eve until boxing day due to staffing issues.

It is important to note that with no A&E in the north of the island the people there **have nowhere to go in the event of the above noted road closure on the A87**, which could well be a major incident in Portree involving multiple casualties. If the A&E is placed in the north of the island a blockage between Sligachan and Broadford would not be as devastating for residents in the south as they would always be able to get off the island and head for the nearest medical centre which could be reached considerably within 8 hours. It is also noteworthy that residents in the north of the island have access to what are effectively two loop roads – the Sligachan–Dunvegan–Portree–Sligachan loop and the Portree–Uig–Staffin–Portree loop. If one leg of these loops is blocked due to an accident the majority of residents always have the option of reaching an A&E centre in Portree. This is a considerable benefit for the vast bulk of the area’s population which has not been considered in NHSH’s plan for placing the hospital hub in Broadford for the next 60 years.

**It is clear from this brief summary of population issues and risk factors that there is a hugely greater probability of people needing urgent A&E attention in Portree than in Broadford and therefore a potentially far greater loss of life by placing the Hub in Broadford rather than in Portree and no ambulance service however well provided (see 3.7) can compensate for that. But there are further omissions which make the current parlous state of health care in the north of the island even more serious as we move forward.**

### **7.7 Drive times, the Golden Hour and half hour and a killer punch**

At the heart of the community's concern about plans to locate the new hub hospital at a considerable distance along rural roads from the main population centre is the higher probability of loss of life. Although the direction of patient flow is considered highly significant by the location options appraisal group, **the length of time to get to hospital in an emergency is not included.** The widely recognized concept of the 'Golden Hour' does not seem important to NHH but it is to members of this community who would rather get to a facility which they know they can reach in time to save their life rather than be taken on a flow trip to Inverness which they do not survive. Indeed, the concept of the golden 30 minutes is being increasingly used in many continental European countries such as the Netherlands and can of course be easily achieved in urban areas such as Portree with a little thought and care put into the planning process.

*'In **emergency medicine**, the **golden hour** (also known as **golden time**) refers to a time period lasting for one **hour**, or less, following traumatic injury being sustained by a casualty or **medical emergency**, during which there is the highest likelihood that prompt **medical** treatment will prevent death.'*(Wikipedia definition).

We understand that the Scottish Ambulance Service (SAS) does not have targets for response times in rural areas but it is surely significant that in more populated areas the target response time for life threatening incidents is 8 minutes, and 19 minutes for serious but not life-threatening incidents. Portree of course is akin to an urban area in terms of the factors noted above, and the many tourists who stay there for the bulk of the year who will surely expect these kind of response times if they were to become seriously ill. In this area therefore, it is crucial that in the event of an ambulance without a paramedic not being immediately available, or no ambulance at all (both perfectly plausible outcomes given NHH's design) which is very possible, that those in Portree and the north of the island can attempt to reach medical help as soon as possible. Travel times to the Hub for the bulk of the population are therefore of critical importance. Presumably the many thousands of tourists who pay large sums of money into the hospitality sector in Portree, which has huge effects on the local economy and beyond, in terms of employment and revenue generated are entitled to expect, along with everyone else in the area, at least expect similar response times to other urban areas in the case of an emergency? Not so. Not so indeed to the nth degree!

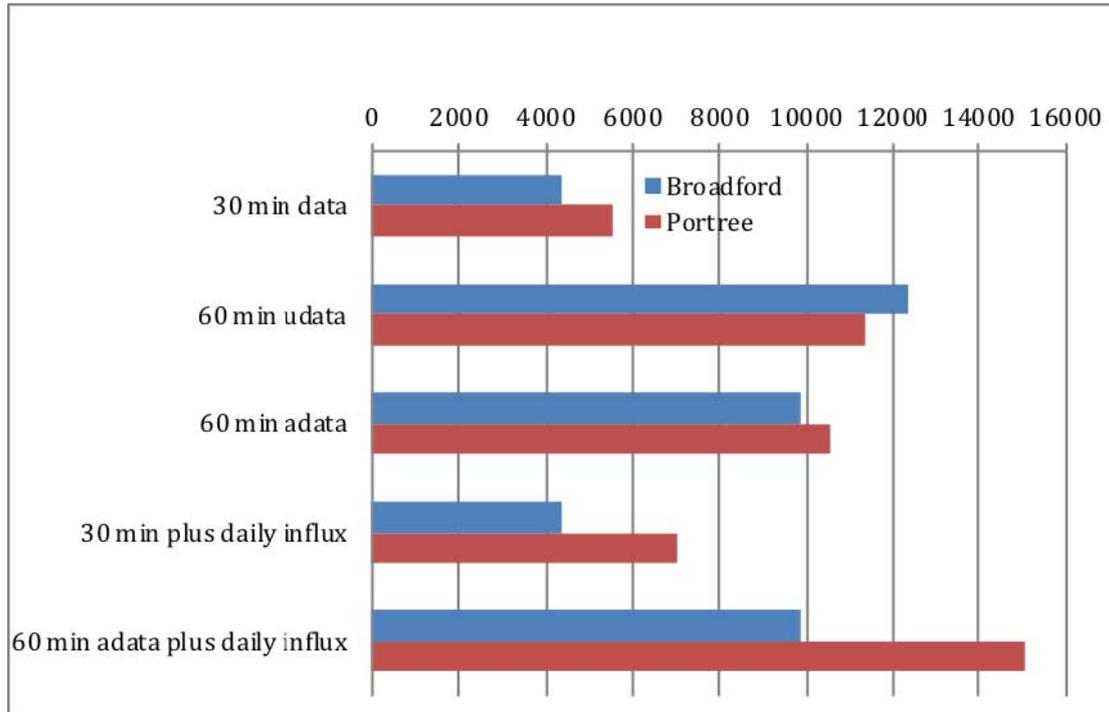
There are currently 5 operational ambulances based on Skye and Lochalsh (two in the north of Skye (the one based in Dunvegan has no paramedic as part of the team), two in Broadford and one in Kyle) and one in Lochcarron. The proposed changes indicate that the main ambulance base will be in Broadford, which seems extraordinary since it means that any ambulance that has to travel from Broadford to Portree and back again will by definition have exceeded the Golden Hour in drive time! Although ambulances are fully crewed in terms of technical staff not every ambulance can be guaranteed to have a paramedic on board and at any one time there can in fact be no ambulances in the north of Skye due to them being en route to Raigmore in Inverness. If an ambulance is available it may well not have a paramedic on board. Furthermore, there was until recently a rapid response vehicle based in Portree but this has also now been withdrawn from the area. In the absence of an A&E, it is this parlous system that the most populous area of SLSWR with all of the associated risks needs to access acute and emergency care. Where else would this kind of emergency health provision be regarded as acceptable for the most populous area in a civilized country?

NHSH report 30 and 60-minute population driving times to the two alternative hub locations<sup>7</sup> and these numbers are shown in Figure 1 below as 30-min data and 60-min data (unadjusted) respectively. Since neither Broadford nor Portree's drive times overlap at the 30-minute horizon, no relative population adjustment needs to be made and it is clear that the 30-min drive time favours Portree by a margin of over a thousand. But the difference becomes much more dramatic when the actual true population is added in, 30-min plus daily influx. Here the population difference is approximately 3 times, underscoring the points made above that given the much greater population in Portree and the greater risks associated with that population it is crucially important that the maximum number of lives can be saved at this horizon.

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<sup>7</sup> See: 'Population drive times access to community hospitals in Skye and Lochalsh and South West Ross', I Douglas, November 2013, NHSH, Health Intelligence and Knowledge Team.

**Figure 1: Population numbers within 30 and 60-minutes drive time of Broadford and Portree**



Notes: The labels '30-min data' and '60-min udata' (udata=unadjusted data) are the drive times to Portree and Broadford hospitals as reported by NHS; '60-min adata' (adata=adjusted data) are the 60-minute drive times recognizing that Portree has a population 3 times the size of Broadford; the '30 min plus daily influx' and '60-min adata plus daily influx' are the 30 and 60-min figures respectively with the daily population influx as discussed in the paper.

The 60-minute drive times – the Golden Hour - as reported by NHS are '60-min udata' (unadjusted). However, there is an overlap of both Portree and Broadford distances at the 60-minute horizon since the population of both locations can reach the other in 60-minutes. It follows therefore that the figure for Broadford includes the core population of Portree which as noted is over x times larger than Broadford. So, Broadford only has a superior 60-minute distance because Portree has the largest population! Adding in the many tourists reinforces the absurdity of reporting such a figure without adjusting for the population difference that someone with a basic health economics background should clearly have done. The absurdity of the failure to adjust the raw data by population figures can be seen in the following example. Imagine if for some reason the total population of Broadford decided to move to the Portree area and there were no other changes, then on the basis of NHS calculations Broadford would still be the optimal place to put the hospital in terms of 60-minute drive time despite the fact that no one lived there!

Since Portree clearly has the much higher risk/cost profile it is clearly important to adjust the 60-minute figures for the relative disparity in populations between the two locations which is the appropriate comparison given the overlap. These numbers are shown as '60-min adata' (adjusted) and again show that Portree is

the key location in terms also of the Golden Hour. Adjusting this 60-minute figure for the higher underlying daily additions to its populations is shown as '60-min adata plus daily influx' which again decisively favours Portree as do the figures for the projected population growth over the planning period (not reported here but available on request).

### 7.8 Lifeboat access

The main RNLI lifeboat station for the north of Skye, serving an area up to Lochinver, is based in Portree and serves not only as a sea-based emergency service but also as a land-based emergency service for the Isle of Raasay now that NHS have withdrawn their previous nursing service to that island. It is important to note in regard to both these vital emergency services that due to tidal conditions the RNLI boat cannot dock at Broadford and has to discharge any injured persons or emergencies at Portree. Given that it can take anything up to an hour for the lifeboat to get the injured to Portree, an A&E in Portree is the only realistic option for saving lives here. Clearly the extra 35-minute drive to Broadford would take most, if not all of their passengers, outside the Golden Hour if there is no paramedic in Portree to meet the boat. As noted elsewhere without a 24/7 A&E there is no guarantee of this. Needless to say, there is no RNLI lifeboat base in Broadford.

### 7.9 Distributional effects including deprivation

'Policies, programmes and projects may give rise to distributional effects between people of different **incomes, ages, genders, religions, ethnic groups, health states, skills or locations**' (the *SCIM* and the *Green Book*). Both the *Green Book* and the *SCIM* note the importance of the distributional effects of a project and indicate they should be: 'identified and as far as possible quantified in appraisals'. More generally, the concept of distributional effects alerts us to the reality that the siting of a new hospital, can 'lead to gainers and losers and how the costs and benefits are distributed among different individuals or sectors of the economy can be very important. In general proposals that deliver greater net benefits to lower income groups should be rated more favourably than those that benefit higher income groups.'

The *SCIM* suggests using the weighted scoring exercise adopted by NHS to do this but despite the importance of this the NHS location appraisal has completely ignored such distributional effects. A couple of important examples of distribution effects in the context of the current proposal follow.

**Income.** As NHS's own analysis demonstrates, the north of Skye has the highest rate of income deprivation for the SLSWR region with 75% of those in that category<sup>8</sup>. The two most deprived areas are Portree North and Portree West, closely followed by Skye North East. The only other zone which comes close to

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<sup>8</sup> See: 'Income deprivation in Skye, Lochalsh and West Ross', I Douglas, July 2014, NHS, Health Intelligence and Knowledge Team.

these numbers is Kyle of Lochalsh<sup>9</sup>. As the *Green Book* stresses the reason it is important to capture such deprivation effects is that individuals on low income will be the most disproportionately impacted by the removal of 24/7 A&E facilities. Annex 5 of the *Green Book* demonstrates in great detail how these effects can be measured and the *SCIM* recommends evaluating such distribution effects using the very weighted average model that NHSH use for their partial and seriously flawed analysis. This has been completely ignored by NHSH.

**Age.** The current proposed redesign of health care in SLSWR involves the removal of hospital beds – up to a third of the pre-existing community beds have now been cut from Skye - with the savings supposedly being reinvested in alternative community care for the elderly. This proposal is however so weak in detail and on practical implementation that it will quickly unravel into a crisis detrimental to those who are trying to remain in their communities, abandoned in their homes until they require hospital admission which will for many be at such a distance from home that relatives will only be able to visit infrequently. As we have already seen, many elderly folk are now denied entry into Broadford hospital and as a result often develop more serious conditions necessitating entry into an acute bed in Raigmore, with all of the extra costs this entails for the NHSH and the patient and his or her family.

The costs of this failure to deliver will be huge in terms of financial running costs, drafting in locum and bank staff as well as paying huge sums to the private sector. These costs do not enter anywhere into the cost benefit calculus of the redesign but they clearly should be in accounting for the distributional impacts of the options appraisal. The increased hardship for patients and carers that the current redesign will generate will be one of its greatest failures.

### **7.10 Implications for the local economy and the environment**

As also stressed by the *SCIM*: 'Wider social and environmental costs and benefits ...need to be assessed'. We noted above the many extra journeys that would be made from the most populous area to the less populous area if the new hospital with A&E is located in Broadford, and that these should be costed at full economic costs. Who is going to pick up the tab for the consequent implications for the local economy of people having to take far more time off work to attend or visit hospital than would be the case if it were located in the main population centre? (How about reducing the salaries of all decision makers involved in proportion to the scale of the added burden to be borne by the taxpayer?)

As is well known, the considerable prosperity that has been generated in the Portree area, which has ripple effects through the whole of the Skye and Lochalsh economy and indeed beyond, is based on the vibrant tourism industry. How are the up to a million tourists per year that stay predominantly in Portree and the north of the island going to feel about the fact that an A&E facility has been withdrawn, and that despite Portree being the kind of urban area that offers them all of the usual benefits of restaurants, accommodation etc. along

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with the attendant risks, they may be completely unable to access an A&E service in an emergency? Where else in Scotland or indeed anywhere else in the UK does such an absurd and scandalous situation arise? Of course, if such an incident were to occur this would in addition to the tragic personal consequences have devastating effects on the local tourism industry because the only health provider in the area had in fact ignored the main driver of the area by assuming that the whole area is equally rural. Perhaps there should be a road sign at Sligachan - "WELCOME AT YOUR OWN RISK – FÀILTE: AG DO RISG".

The many extra unnecessary journeys discussed above over the course of 60 years will have untold consequences on the environment and the road structure, leading to a higher probability of road traffic accidents, but again these have not been costed, despite a requirement to do so and clear guidance being given on how to account for such factors in conducting an LOA.

Additionally, as noted in 4.5 above, NHSH played no role in the development of the local plan, the key economic development planning instrument of the Highland Council and partners, until they had made their decision for a hub and spoke model with the hub in Broadford. They therefore paid no heed to the needs of the wider community in terms of the sustainability of relative population projections and different SLSWR zones, particularly Portree and its environs with one of the highest projected population growths in Highland. The need to attract younger families to support the latent growth with the kind of maternity facilities required for urban areas 120 miles distant from the main hub hospital and the range of diagnostic facilities that other large Scottish islands now take for granted but are currently off the agenda for Skye and Raasay, was not considered.

## **8. Submissions to the Scottish Parliament Public Petitions Committee**

**The community group SOS NHS Skye submitted a petition in October 2015 to the Scottish Parliament Public Petitions Committee. This calls on the Cabinet Secretary to reverse her approval of NHS Highland's major redesign proposals and remains active despite discussion at 9 sessions of the committee (PE01591).**

Detailed concerns about the incomplete nature of the location options appraisal carried out by NHSH were submitted on 17 September 2016 and 7 October 2016 (PE1591/J and PE1591/L). Hitherto there has been no objective or substantive response to these submissions from either NHS Highland or the Scottish Government. NHSH's response is to say that they will consider the issues raised at the business plan stage. However, clearly since the location issue has already been decided that statement is simply a red herring. This has been confirmed in the Outline Business Case (OBC) which is now in the public domain and in the process of being approved by the Scottish Government. The OBC does not address the substantive issues raised in the initial version of this paper. NHSH assert that Highland Council (HC) and the HIE have offered their support to the redesign. However, it is clear that the only offer by the HC for the new project was for the hub and spoke model. HC were not asked if they supported the results of the options appraisal. No evidence has been presented that either of these organisations were invited to sign-off on the results of the location options appraisal.

The only response to date from the Cabinet Secretary (CS) for Health is to say that the Capital Investment Group has indicated the options appraisal (singular) is 'very good'. However, as noted there are two options appraisals of relevance—one on the new service model and one on location – and taken in totality these options appraisals have a number of glaring omissions according to both the HM Treasury *Green Book* and the *SCIM* manual of the Scottish Government Capital Investment Group.

A recent submission to the Petitions Committee shows that there have been persistent and ongoing misrepresentations by NHSH to the committee on the actuality of the redesign process in Skye, Lochalsh and South West Ross: [http://www.parliament.scot/S5\\_PublicPetitionsCommittee/Submissions%202018/PE1591\\_Y.pdf](http://www.parliament.scot/S5_PublicPetitionsCommittee/Submissions%202018/PE1591_Y.pdf)

## **9. Transport and access issues**

Transport and access issues which are so critical, particularly for those with the greatest needs in society, have not been appropriately assessed or factored in to the redesign to date.

In 2018, some four years after the start of the redesign process, NHSH produced the findings of a transport study for the redesign commissioned using public

funds from two academics from Aberdeen University. Unfortunately, and yet again in leaving it this length into the planning process, and some 3 years after their locations option appraisal, they demonstrate again their complete ignorance of the issues relating to planning for an exercise such as this. For example, and it is important to stress that this is just one of many examples that could be given, a key aspect of the redesign process should have been the recognition of deprivation issues in the community.

As noted above, Portree and North Skye have two clusters of deprivation which are amongst the highest in Scotland and were completely ignored in the redesign. But why does the Green Book stipulate the importance of including such deprivation? The answer to that must be obvious even to those uninitiated in the formal options appraisal process. People living in such areas will in all likelihood not have access to private transport and will also in all likelihood not have a near neighbor who has access to a car or any means of transport. The citing of any medical facility and indeed how this cohort of people actually get to the facility should be a vital input into the planning process, but it was not in this instance and now a much more costly solution – both for the taxpayer and the individuals involved in the - will have to be found to address this. Of course, the reason we have the option appraisal rules is in order to maximize the net benefits to society and prevent the waste of public funding that has been devoted to this and other studies.

### **Concluding Comments**

In drawing this paper to a close there is a very simple way of summarising the foregoing. Prior to formal initiation of the redesign process the then senior Rural Practitioner based in Broadford argued forcefully that any new build hospital on the island should be in Broadford. This it seems was largely based on the historical notion that Broadford is the accepted location of the main hospital facility which required a fundamental refurbishment. It is interesting to note en passant that clinicians are not normally trained in the key determinants of a capital investment of this nature and it is also interesting to note that on retirement the said clinician left the area.

Clearly the need to refurbish Broadford hospital combined with the unbridled support of Broadford based clinicians and the ownership of a piece of land in Broadford for the new build was sufficient justification for having the new build there. To ensure that this would happen, in spite of a raft of objective indications that not only was the hub and spoke model inappropriate for an area such as SLSWR, and that a hub should not be in Broadford, NHSH engaged in a classic divide and rule tactic. Specifically, and as repeated submission to the petitions committee show, they made the campaign from SOS-NHS a North-South issue. In so doing and with the full support of the Cabinet Secretary for Health and Sport, it is clear that the expectations of those in South Skye and in the negative growing part of the SWLR cannot be let down.

But neither should those in Portree or North Skye be deprived of appropriate health and social care because of this cynical tactical situation. If the relevant capital investment rules are not to be implemented and followed in this redesign

then it is incumbent on the Cabinet Secretary for Health and Sport to ensure that sufficient funds are now released to ensure that those in the north of the divide and rule policy of NHS/ SG are able to access both the primary and secondary health care that they objectively deserve and need, irrespective of whether they are from a deprived background or not and the basic principles that underpin the Barnett formula should be respected in this area as they clearly are in Lewis, Orkney and Shetland and the other large Scottish islands. Of added note is that none of the other islands rank as one of the world's leading tourist destinations and are the number two tourist destination Scotland. If nothing else, and if the Scottish Government want to ensure that it has sustainable tax revenues to underpin its spending plans, it should surely ensure that Skye and Raasay have the health and social care package to facilitate this for all who live work and visit these islands now and for the next 60 years.

## Appendix 1

### **The Chairman of NHH's response to the initial version of the paper, *Your Life in their hands*, and the authors counter response.**

*Response to 'Your Life in their Hands: Are the proposed health care changes in Skye, Lochalsh and South West Ross being determined by little more than the toss of a coin? NHS Highland's Location Options Appraisal Revisited'.*

I would make the following observations on your critique, in no particular order. (David Alston's points are numbered and Ronald MacDonald's responses are in italics).

1. The critique does not acknowledge the wider strategic direction of the changes required to modernise health and social care in order to deliver sustainable models of care, moving away from traditional hospital based care to meet current and future needs. NHS Highland's service model continues to be consistent with the Scottish Government's plan and highlights the forward thinking approach of the proposed new service model. It is designed to help address the rising demand being faced by health and care services, and the changing needs of an ageing population with less reliance on hospital care and greater investment in community-based services. The reality is that going into the future we have a shrinking workforce and therefore we have to change to a new model. If we don't change we simply won't be able to sustain local services and are already facing extreme staffing pressures in Portree and Broadford as in many other parts of Highland.

This is not unique to Highland or Scotland or UK in fact it is an international problem. Moreover it's not just a health problem other public sector are facing similar challenges such Police, Teachers, Fire service and Hospitality.

*The current version of the paper does indeed include a discussion of 'the wider strategic direction' However, as I note the need for change simply cannot be used as an excuse for not conducting an option appraisal correctly so that the new model is itself sustainable and the society that it serves is sustainable socio-economically. The latter is also a key element in any capital investment of this nature.*

*You indicate that the sustainability is not just a Highland issue it is national and international. However, in this statement you have conceded that your policy is a one size fits all policy. As I pointed out in my paper, a one size fits all policy is not well suited to modelling issues in Highland, particularly in the 'large islands' where there is a mix of both urban and rural settlements and other key issues such as 'the spinal road issue'. To conflate the two and treat all as rural is simply very poor planning indeed since it will fail to meet the needs of the local population and that especially so given the geographic distance that Portree is from the main hub hospital: a round trip of 240 miles*

*in an ambulance is a very different prospect to someone in say the Badencoh and Straspey area. This is such a basic point that has been overlooked.*

*It is also unclear to me how slashing the number of community beds on the island, from the pre Gesto figure of 38 to 24, helps. Community beds are not acute beds but flexible multifunction beds, are cheaper than acute beds can be used to prevent bed blocking in Raigmore and have been used in this manner successfully in Portree for over 50 years. Since all of the evidence so far clearly demonstrates that the bed number reduction is only sustainable by prohibiting particularly older people entrance. Indeed the upshot of this policy, because of the special aspects of islands life, is to separate families by considerable distances from loved ones at a time in life when they most need family in pursuit of this model.*

*Is the overall policy being pursued here really consistent with Scottish Government policy which states that the service should be close to the community it serves? This needs to be urgently addressed since if NHSH had the wellbeing of its population at the centre of its planning then this would not be happening. As noted, the policy of health care changes to which you refer relates very specifically to acute beds. All of the beds on Skye are referred to as community hospital beds, are not as expensive as acute beds and indeed supply a range of functions for a community such as ours, including step up step down, care beds, palliative beds and also of course acute beds. For a community such as ours and especially the main urban location –Portree – which is so remote from the centre is a very different matter to cutting community beds nearer the centre.*

*However, my key point is about the locational decision for the hub given the way the hub is currently defined. The staffing problems you have at the moment are in the Broadford area, not in Portree. For example, you have advertised two fixed terms nurse positions at the moment. Were these full-time positions you would have no problem filling them in Portree. I also understand you are having difficulties in filling catering staff vacancies in Broadford but not in Portree so by closing Portree you force potential candidates into a single choice. However, and more generally, the larger population centre is always going to be the most attractive place for young professional people to live and work, especially those with school age families, given the much wider range of facilities in the township of Portree.*

*There is also a more general fallacy in thinking that NHSH and more generally the Scottish economy face a 'Shrinking workforce issue'. Clearly as anyone familiar with labour economics issues knows, the work force or labour supply is a function of many variables in addition to a country's demographic. The particular labour force available to the NHSH will for example depend on a wide range of factors such as the contract offered quotas placed on the training of staff such as the nurses etc.*

2. The arguments around unnecessary loss of life is unfounded and without evidence base. NHS Highland does not accept that the proposals will be associated with higher probability of loss of life. There are of course challenges in delivering remote and rural health care but the 'golden hour' needs to be considered in a rural context. NHS Highland and Scottish Ambulance Service work closely on this and an event exploring clinical pathways was held recently. The event focused on cardiology which was aimed at helping local people to understand pathways of care, and set our services in a local context.

*Again this statement reveals a basic misunderstanding of why there is a greater probability of loss of life under the redesign. Portree is an urban area and NOT a rural as described in the above para and throughout all the work that has been undertaken by NHSH. Until this basic point is grasped we will never have a fit for purpose redesign in our area. Treating the population of an area as having the same distribution and probability of loss of life is simply wrong, evident to anyone with a grasp of basic statistics. To put this differently, by not following optimality guidelines in the locational options appraisal – i.e. ignoring key risk factors and other factors from the cost benefit calculus - it can be stated that the mortality levels will be unambiguously greater with the current design than with an optimal design that takes into account the missing factors. This is a basic statistical/ probability outcome and does not need an evidence base. For example, you have assumed the population is wholly rural, or symmetrical, in nature around the geographic centre of the area. It is, not as my critique has made clear. There are two clear populations in the area of SLSWR.*

*There is the urban and rural cluster around Portree, the main employment centre of the whole area with a huge population influx between March and October, all with very different needs and risk profiles which have not been taken in to account. Additionally, of course Skye and Raasay are islands with a very different urban-rural mix to the typical land based situations you are using for the basis of comparison. By placing the hub in Broadford you have disregarded the risks etc from the urban area and ignored the island nature of Skye. To put it somewhat more formally you have assumed a rural distribution as say the normal distribution, but the urban population has a different distribution with, say, fatter tails and therefore different probabilities and outcomes.*

3. Ambulances are now equipped to a very high standard and have kit not available in community hospitals. This includes telemetry which allows the crew to transmit vital signs directly to the specialist unit for advice on immediate treatment and best place for definitive care. Paramedics are able to administer relevant drugs following expert advice. Where another member of the healthcare team is required, that member of staff meets the ambulance en route. This mobile professional care is more important than buildings. Portree Hospital is not equipped or staffed to provide acute emergency care and there is no change proposed, recently clarified by Dr Steve McCabe.

*The brave new world of ambulances being mini hospitals that you describe, and that the Cabinet Secretary for health described at our meeting, is some way off in our area as I am sure you are well aware. My understanding is that pilot studies are underway on this Highland and it is still unclear how these will pan out and how this alternative system will work. Telemetry is currently very limited in its scope and the only scientific paper I've seen on the topic questions its efficacy in rural areas over more traditional methods. Even if the ambulances here were mini-hospitals this is still no justification for putting the main A&E 40 minutes away from the centre where it can produce maximum benefit. In other words, an ambulance-based system, however many there are or well-equipped it is, can never compensate for a design system which does not take account all of the benefits and costs, including relative risk profiles.*

*As you will be aware, there may not be an ambulance in place in the North, as there have been on occasions recently when both have been heading to Inverness. Second, even if an ambulance is available there may be no paramedic on board to use the sophisticated equipment. In terms of telemetry, you will appreciate that Skye Lochalsh and Wester Ross was recently pronounced the worst area in the whole of the UK for broadband reception and one of the worst areas is the North of Skye and of course mobile phone reception is patchy at best.*

*Under the previous Emergency and Accident service in the North many people's lives were saved over the period 1964-2014 simply because they could get to Portree and see a doctor 24/7 by their own means of transport if that proved necessary and were told that if they had had to travel any further for such treatment their lives would have been unambiguously lost. There are, as I understand it, scores of people in this category who would be happy to give testimony to this fact. I would note in this regard the Orkney health care experience, to which Skye is often compared, which has a thriving economy due to good forward planning in every direction.*

*A new hospital is about to be built in the main population centre there and we understand it that even the smallest pockets of populations such as islands with a few hundred residents have 24/7 cover from at least a nurse practitioner, paid 24/7. Were this Orkney, a settlement such as Portree would have fully paid 24/7 doctor and nurse practitioner cover. This of course gives people great confidence in the health service there and is one of the key reasons why they continue to attract a broad mix of people to live and work there. Indeed, I am aware of people currently based on Skye, who are attracted to our way of life, but who are actively researching moving to Orkney for this very reason. I am also aware that people here are already not taking up homes they bought in the north because of the redesign. Our immediate next door neighbour is one and I believe this will have very damaging effects on our recent population growth and the wider economy which you were supposed to be cognizant of in your planning. Portree hospital may well not be currently staffed or have equipment to run an A&E. But the crucial issue*

*here is should it have that staff and equipment and the clear answer to that must be yes given the objective evidence.*

4. Framing of the question around significant economic consequence rather implies that there will be no services in north Skye and that is simply not the case. The vast majority of services are staying and community services further developed. Where there are changes (i.e transfer of 12 inpatient older adult rehabilitation beds) these will be largely be re-provided for by increasing care at home, community services and beds in local care homes in Portree. In terms of recruitment in point of fact there are more challenges in filling posts in the North than there are in other parts as evidenced by our current staffing problem in Portree. Again I understand that this is an issue affecting a number of employers.

*You have made clear that there will, for example, no-longer be an X-Ray facility in Portree. Given, Portree is the major employment centre, with all of the risks associated with this, and given that the main school and colleges are here, with all of the associated sports involved, the Skye shinty team is based here etc, Portree is where the greatest demand for X-Ray facilities is going to be and that is clear to anyone with or without options appraisal expertise. I daresay there will be many other examples of this including up to full A&E provision where the need/demand for the service will be greatest. This is of course but one example of why it is important to gauge the economic implications of your decision making on the options appraisal. The latter although appearing to save you costs is simply shifting the costs elsewhere and your cost savings are not true cost savings to society which is of course exactly why the options appraisal rules exist in the first place.*

5. On a point of accuracy those carrying out the Options Appraisal did consider the population differentials and it was one of the criteria considered.

*Population is indeed mentioned in the locational options appraisal. However, as you will see in my critique and in both the Green Book and the SCIM where variables or terms can be quantified that is what should be done. I see no reference to population differentials within Skye or across the whole area and no attempt to quantify such which is what should have been done as pointed out in my original paper. I see nothing in any document produced by NHSH and on the basis of HIE figures that the population of Portree is set to double over the life of the project whilst other areas in SLSWR are set to decline – reinforces point above. The reason being that a much more accurate appraisal can be conducted when various terms are quantified. For less quantifiable terms such as geography and risk etc supplementation with weighted benefits model which you have used is justified but what is not justified is the omission of terms or variables to suit the modeller's agenda, both from the WB model and also from the more general model which is not even considered.. HIE have data on the differential growth predictions within Skye, Lochalsh and South West Ross as I have detailed. No account was taken in the options appraisal of the fact that Portree is growing at a rate well above that of Broadford and the Highlands as a whole while the population of SW Ross is reducing. No account was taken of Portree as township with all of*

*the issues of an urban area – it was simply treated as a rural area which compounds the urban problem.*

6. NHS Highland has also looked into income deprivation and drive times and prepared a report in July 2014. While the numbers are higher in the north there are issues throughout the area in scope. This is why the shifting the balance of care agenda is so important and a move away from such reliance on traditional hospital care. Support for people in their communities with agencies working together is considered to be more important than reliance on institutional care which only caters for a small proportion of the population at any point in time.

Income generation and drive times are certainly important matters but they are certainly not new. It is clear from the Independent Research we are carrying out on Transport and Access that the challenges for some people are way beyond access to health services but challenges to shop or get out. I am sure now in your capacity as a local Councillor is a matter that will concern you and keen to understand how the Council may assist with addressing transport challenges.

*Transport issues are something the new Skye and Raasay councillors are indeed concerned about. But our concerns are a diversion from the real issue here. Drive times etc should have been key inputs – in relative terms - into your options appraisal process to gain the optimal drive times so that in total, for the whole community, these costs are minimised. Indeed, again that is the essence of an appropriately conducted options appraisal and why the methodology exists in the first place! If this had been done it would of course again have affected the outcome. Again you say that you have looked at income deprivation so why was this not included in relative terms as it should have been in the study appraisal? The weighted scoring method used in your LOA is an ideal tool for incorporating this but you went against Green book guidelines and ignored the issue. This would have been straightforward to do as this data, as is much of the other extant data, available in index form which is ideally suited for the kind of study you should have conducted (nearly all of my own studies of this nature use relative index data and there are many transformations available to facilitate the analysis of such data).*

*As noted in my paper including deprivation measures as inputs into the options appraisal process would have impacted hugely on transport implications of the redesign and could have been appropriately addressed, but it was not. Again, the use of such data would have clearly affected the outcome of your study. Indeed, the use of relative data in such a study is the most basic requirement of an options appraisal of this nature but was clearly not recognised by the person conducting the options appraisal study for reasons unknown to me.*

*With regards to deprivation, no matter what multiagency support is provided within communities, people will still get sick and need to access emergency care. Taking this further away from people who are deprived and also therefore at higher risk of acute and chronic ill health is not a mark of a caring*

*society or responsive healthcare system. NHSH is compounding the transport and other challenges people have by siting the new hospital hub at a considerable distance from where most people in the area live and where the preexisting population and transport hub actually is. That is clear and unambiguous.*

7. Road closures and major incidents are covered by Business Continuity Plans and multi-agency Emergency Plans and are not in themselves overriding factors. NHS Highland covers a massive geography over a network of small roads, unmanned level crossings and other risks. It is not possible to have hospitals in every town and therefore the emergency planning process is taken very seriously and regular multi agency exercising takes place.

Recently I have been very concerned to hear about traffic management issues on Skye and the impact this is having on blocking access. It is matters such as this which need to be managed as this has the real potential to block emergency services and indeed other service providers getting access.

Town village?

*Portree is a township Broadford is a rural village by the standard internationally recognized metric. My point related specifically to a blockage in the A87 which can dramatically affect the provision of A&E in the North, with your design but not in the South. You have not addressed that point. You'll also appreciate that the congestion you describe is due to the exponential growth in tourism in this area which our previous councillors did not factor into their planning. Again, we as councillors are taking this very seriously and have already committed a substantial part of our discretionary budget to addressing one of the key congestion points, namely the Quirang and that is currently going ahead. However, as I pointed out in my critique, just as our previous councillors did not plan for current tourist numbers neither have NHSH in their planning for this area planned for the huge demographic changes implicit in current trends and also indeed for the 60k tourists who can be in North Skye at any one time.*

*The huge extra influx of tourists into the North of the island (which is where the vast majority are based) will need medical support just as locals and the population of Portree is set to double over the course of this project, a factor which you have ignored perhaps because you believe, ironically, that your proposals will halt this much needed progress! These hugely increased numbers heighten, of course, the risk of a major emergency which as I have stated, given population densities and risk profiles, will most likely occur in Portree.*

7. NHS Highland is still going through the Business case process for the new build and in accordance with the process full economic appraisal will be

carried out along with other consideration such as wider social and environment benefits.

*Given that you indicate that the Board has had no preference for the location of the hub and spoke does this therefore mean that if the options appraisal is now done correctly that you will honour the outcome of a revised and competently executed options appraisal process? As a professional economist representing most of the people affected by the redesign I would appreciate involvement in this stage of the planning process and trust that can be facilitated. Having now had sight of NHS's business case it clearly addresses none of the issues you mention and simply builds on what I can only describe as a shambolic options appraisal process preceding it*

9. Finally, the overriding impression is that the decision on the location of the hospital should have been based on a single matter that is being located the area of biggest population. Should that be the case there would be little need for an Options Appraisal Process or any consultation, SCIM Guidance nor indeed no need to 'toss a coin'. As was borne out by the extensive Options Appraisal process and the consultation, there are numerous considerations.

*It seems you did not read my original paper very carefully, if at all! **I very specifically did not base my critique solely on population densities as is abundantly clear from the number of factors I noted that are missing from the appraisal.** Specifically, my point is that *all* costs and benefits should be considered and quantified where quantifiable and all risks should be assessed. This is the essence of what both the SCIM and the Green Book say and any independent objective assessment of what you have done will tell you exactly the same. NHS has very evidently not done this in your locational options appraisal, nor have you even properly considered the population numbers as stated. There is still time to correct this before a major planning mistake is made which this community will have to live with for the next 60 years.*

10. In fact it is not the case that services are always built in the main population centres. For instance Forth Valley was located in Larbert as a central location and the new hospital in Badenoch and Strathspey will be built in Aviemore similarly because of the advantage of a central location and closer proximity to District General Hospital – both important considerations in the Skye, Lochalsh and South West Ross proposal. Migdale Hospital in Bonar Bridge is not the main population centre in Sutherland.

*To repeat, I did not say that the main population centre was the sole criterion in a location options appraisal; there are many other factors which would have shifted the decision to place the hub in Portree rather than Broadford and I believe that will be blindingly obvious to anyone familiar with the relevant procedures. For information, and as I said in my paper, the baseline population in Portree is three times that of Broadford and is set to double over the planning horizon. Portree is also, as noted, the main employment centre for the whole of Skye, Lochalsh and South West Ross. It is also the main place where the half million tourists who visit Skye each year largely reside*

*and the second most popular destination for tourists in all of Scotland. This puts the actual 24/7 population of Portree at a conservative 7 times the size of Broadford and this, in any well conducted statistical and actuarial analysis will have clear implications for relative mortality rates over the planning horizon of the new health redesign.*

*The examples you give here in no way compare to the situation here. For example, in the central belt there are known target ambulance response times, which we do not have here, and indeed, as noted above, we may not have access to an ambulance at all so the thinking has to be very different. Also this area is purely urban so has a uniform population distribution. The population differential projections in the Badenoch and Strathspey area are very different to here and indeed the whole area is fortunate enough to be approx. 45 minutes away from Raigmore on the A9. It is a 2.5-hour drive from Portree to Raigmore, and at the peak tourist season can be anything up to a 5-hours drive over some challenging roads; the drive to Raigmore from Kyle is a full hour less than that from Portree the main local and tourist centre of Skye. Also, Portree and North Skye are the second most popular tourist destination centres in Scotland after Edinburgh. Similar points could be made about the Bonar Bridge example and of course Sutherland is not an Island, allowing residents to travel to Caithness hospitals for A&E cover.*

*Perhaps the most glaring discrepancy between the example you give and the reality here is that Skye and Raasay are islands and have strong similarities with the other large Scottish islands – Lewis/ Harris, Orkney and Shetland with their unique urban rural mix and spinal road networks. I am unaware of any of these islands using the model that you are proposing for here and for very good reasons that all who live and work on these islands know and realise full well.*

11. Furthermore, whilst the option appraisal provides necessary evidence to inform the decision-making process, it is clear from the other guidance that the views of wider local communities must also be taken into account. There was plenty and ample opportunity for this to happen. As a board, NHS Highland had no pre-conceived view as to where the new hospital should be located. It was clear both locations could perform well as a 'Hub' with varying advantages and disadvantages. Through the consultation process a clear consensus was arrived at. When I look at the extent that other agencies carry our consultations, including the Highland Council on schools. I see nothing as extensive as the process NHS Highland have been through.

*It is vitally important to note that your consultation process, however well conducted it was (and there were many, many questions relating to that process of which I trust you will be aware), by definition missed around 80% of the views of the local population. Do the views of the majority not matter? I believe the majority of people living on Skye and Raasay made their voice crystal clear in the recent local elections! It's therefore now surely time for NHH and the newly elected local councillors to find a way forward on this issue which is of critical concern to the local electorate. I believe I have amply demonstrated what these are and I and the other councillors would be very happy to engage with you and your colleagues to find a way forward which*

*will actually benefit the whole of Skye's population. It is also worth adding that whatever the outcome of your consultation it should not have overruled a properly conducted options appraisal based on the Green Book and the SCIM. The board of NHSH may well have not had a preconceived view of the redesign but that was not the view of the lead clinician on Skye at the start of the redesign as is made clear and his view, and that of his successors have clearly greatly influenced the decision making process.*