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The Scottish NHS: meeting the financial challenge ahead

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Abstract

The Scottish NHS faces a crisis of affordability in the next couple of decades as the population ages and demands on services intensify. This presents two challenges: the first is how to redesign services to achieve greater efficiencies, and the second is how to engage the public so that there is a realistic public view about what is affordable, against which a mature discussion about the hard choices about funding and provision can take place. We refer to these as the *innovation* and *openness* challenges. In the paper we outline the current state of the system and discuss possible policy options. We conclude with some recommendations for next steps.

1. Introduction

As one of the four countries of the UK, Scotland is a proud inheritor of the original “National Health Service” or NHS. The reason for the enduring popularity of the NHS in Scotland and indeed in the other countries of the United Kingdom is that it is a mechanism for providing universal coverage, enabling “everyone to obtain the services they need at a cost that is affordable to themselves and to the nation as a whole” (WHO, 2013). Universal coverage has been described by Margaret Chan, the Director of the World Health Organisation (WHO), as “the single most powerful concept that public health has to offer”, but this, if anything understates its importance: it has become a central idea in the political history of the last sixty years, as one country after another has made the journey to universal coverage, many inspired by the example of the UK.

A challenge facing virtually all high-income countries, however, is how to continue to provide universal coverage as their populations age over the next couple of decades. This applies whether or not countries have implemented universal coverage through NHS-like systems, which are funded out of general taxation, or social insurance systems on the German model, where people are enrolled with a social insurance fund (typically prevented from discriminating on the basis of pre-existing conditions to ensure universality). It also applies irrespective of the ownership structure of hospitals, the existence or otherwise of a split between purchasers and providers, the details of the financing mechanism, and so on.

Domestically, the Scottish NHS has become a central battleground in the recent independence referendum with both sides arguing that the Scottish NHS and the communitarian values which underpin it would be best protected under their preferred constitutional arrangements. This debate has underscored the popularity of universal coverage: it is an idea with deep and passionate support, and the NHS, which instantiates it, is regarded with passionate devotion.

During the Scottish independence campaign, various claims were made about the NHS. Future viability and levels of funding were debated. A leaked discussion paper, apparently prepared for NHS Scotland Chief Executives (reported by BBC Scotland, 16/09/14) argued “The status quo and preservation of existing models of care, are no longer options, given pressures we face.” As reported, the paper alleged a funding gap of £400m for the coming year. Such concerns are not confined to Scotland. In an open letter to the UK Prime Minister (The Independent, 05/10/14) the Chair of the British Medical Association and Leaders of Medical Royal Colleges and Charities wrote “The NHS and our Social Care Services are at breaking point and things cannot go on like this”. The letters claims a funding deficit of £30bn by 2020. In the USA, which spends almost double on health care compared to the UK, 16.9% of GDP against 9.3% in 2012 (OECD, 2014) a leading physician Director has described the need to reduce spending on health care, as “The central domestic challenge of our time. It is not only harming families and choking our economy, but it also threatens our national well-being and economic security” (Cochran and Kenney, 2014).

We believe the Scottish Government has been on balance a good steward of the NHS over the last several years: realistic in its assessment of the future challenges facing the system and responsible in providing a consistent policy framework for the development of the system in the years since devolution. However, given that the referendum has now happened, now is a good time to look at the long term prospects for the system. In this paper we take the opportunity to look beyond the next few years, to the mid-2030s. Unfortunately in the years to come the pressures on the system from demographic and technological change look set to intensify. We believe that the Scottish NHS will continue to exist, but services will look different and, indeed, the contract between government and citizens will have to be different. In this paper we explore a few options and scenarios.

In Section 2, we review where the Scottish NHS is currently, noting that demographic change will present the system with demands substantially in excess of those which it is able to deal with currently. One way to respond to these pressures is to seek to make the system more efficient, that is to say its ability to service needs with existing inputs can be enhanced. This seems unlikely to be possible without significant innovation, and service redesign and consolidation – we review some of the ways in which this **innovation challenge** can be met in Section 3. However, even with significant innovation, the coming resource pressures mean that the public will have to face up to what their tax money can and cannot buy for them. In Section 4, we discuss some ways in which this **openness challenge** could be addressed.

2. Background: The Scottish NHS now

Following devolution in 1999, the Scottish NHS has benefitted from relative organisational stability and a consistent policy focus on improving population health, reducing health inequalities and enhancing the quality of healthcare (for an in-depth review of the Scottish health system and policy developments, see Steel and Cylus, 2012). In 2010, the Healthcare Quality Strategy reaffirmed commitment to a comprehensive service that is effective, safe and person-centred (Scottish Government, 2010). Progress has been made in relation to each of these ambitions. For example, healthcare associated infections

and rates of emergency bed days have fallen considerably.¹ The current reform agenda seeks to strengthen health and social care integration and aims to shift the balance of care away from episodic, acute care in hospitals towards preventive medicine and support for self-care in the community for the rising number of people with long-term and complex conditions (NHS Scotland, 2013). However, flat funding with increasing demand poses a challenge to the financial sustainability of the system. This section sets out the scale and nature of the financial challenge the Scottish NHS will be facing over the next years and reviews what has been achieved so far.

2.1. Level of spending on health and the funding ‘gap’

In 2012/2013, the Scottish Government allocated £11.58 billion (about 41% of its budget) for health (Scottish Government, 2012). Between 2000 and 2009, public spending on health more than doubled in cash terms and increased by almost 40% in real (inflation-adjusted) terms (Audit Scotland, 2009). Since then the annual rate of growth has been declining and the Scottish Government’s budget plans for 2012 to 2014 set out a nominal growth of between 1.2% and 1.9% per year. This entails a real decrease of 2.8% over this timeframe (Scottish Government, 2011).

In international comparison, the United Kingdom as a whole spent about 9.3% of its Gross Domestic Product (GDP) on health in 2012 (OECD, 2014). This is similar to the Nordic countries Finland, Norway and Sweden (with about 9.1%, 9.3% and 9.6% of GDP, respectively, in 2012). However, there is a gap with respect to some countries with competitive economies including Denmark, Germany and Switzerland (with about 11%, 11.3% and 11.4% of GDP, respectively, in 2012 (OECD, 2014), indicating that higher expenditure on healthcare does not necessarily inhibit economic performance. In this respect, Scotland may have some headroom to increase spending on health to meet the financial challenges ahead; provided that, crucially, the resources that are currently in the system are effectively used, and that any extra resources are invested in high-value care to improve population health and reduce health inequalities.

Table 1 Government spending on health per head in the United Kingdom, by nation 2000/01 and 2012/13 [percentage spending relative to Scotland]

	Scotland	England	Wales	Northern Ireland
2012/13	£2072	£1,912 [92%]	£1,954 [94%]	£2,109 [102%]
2000/01	£1,064	£891 [84%]	£985 [93%]	£1,099 [103%]

Source: adapted from Bevan et al (2014).

¹ Between 2007 and 2012, Clostridium difficile infections fell by 78% and Staphylococcus aureus (MRSA/MSSA) bacteraemia fell by 37%. Over the same period, there was a 12% reduction in rates of emergency bed days for people over 75 years from about 5,466 to 4,814 per 1,000 population. See Health Protection Scotland (2014) and ISD (2013).

Compared to the other countries of the United Kingdom, public spending on health per head in Scotland was second highest after Northern Ireland in 2012/13. Over the years since 2000/01, the spending differential to England, Wales and Northern Ireland has narrowed (Table 1).

In Scotland, health is the only policy sector with an increasing resource budget (in cash terms) over the current spending period to 2015. This is due to the Scottish Government's decision to pass on increased funding from the Barnett consequentials² in full following the Department of Health 2010 UK Comprehensive Spending Review (Scottish Government, 2011b).

However, this protection of the health budget is relative: in the face of inflationary pressures arising from demographic changes, pharmaceutical and staff costs, the Scottish Government estimates that the NHS will need to make efficiency savings of at least 3% of allocated baseline funding to break even and meet rising demand for services (Scottish Government, 2011). At the beginning of 2012/13, the 14 territorial NHS boards forecast they would need to achieve savings of £271.7 million to break even. This amounted to 3.1% of the baseline revenue budget across all boards (with substantial geographic variation ranging from 1.7% at NHS Grampian to 7.1% of allocated baseline funding at NHS Shetland; Audit Scotland, 2013). There are therefore, significant challenges to financial sustainability even in the near term.

Table 2 Budget plans for Scottish Government spending on health, 2012/13

	£m	%
NHS and Special Health Boards	8,862.30	76.51
Primary and Community Care Services	1,388.00	11.98
Capital	453.5	3.92
Improving health and better public health	226.7	1.96
Education and Training	179.6	1.55
NHS Impairments	100	0.86
eHealth	90.3	0.78
Research	69.5	0.60
Clean Hospitals/MRSA Screening Programme	28.4	0.25
Access Support (waiting times management)	27.1	0.23
Distinction Awards	24	0.21
Quality and Efficiency Support	18.9	0.16
Self-Directed Support Programme	5.5	0.05
Other	109.20	0.94
Total	11,583.00	100.00

Source: Scottish Government (2011a).

² For each extra pound spent on a public service in England, the devolved governments in Scotland, Wales and Northern Ireland receive increases in their block grants proportionate to the size of their population. While this funding is not earmarked for the public service to which it was allocated in England, the Scottish Government has pledged to pass on in full the health related shares.

2. 2. Distribution of expenditure on health

Of the £11.58 billion budgeted for health in 2012/13, just over 76% consists of baseline allocations to the 14 territorial NHS boards and the nine special health boards (Table 2). The rest is transferred to boards for specific programmes or spent directly by the Scottish Government.

In 2012/13, about £10.20 billion was spent on care directly provided to patients in hospital, community and family health services within the 14 health board areas and at two special boards, the State Hospital and Golden Jubilee National Hospital. Figure 1 shows how this expenditure is distributed between sectors. This illustrates that, despite the national strategy to move care to the community, the Scottish NHS is, in terms of its resource use, still dominated by the hospital sector.

The share of the budget spent on different sectors of care has remained largely constant between 2008/09 and 2012/13: from 57.8% to 57.0% on hospital care; from 15.0% to 16.4% on community care; from 23.9% to 23.3% on family health services; and from 3.4% to 3.3% spent on resource transfers to local authorities in support of community care services.

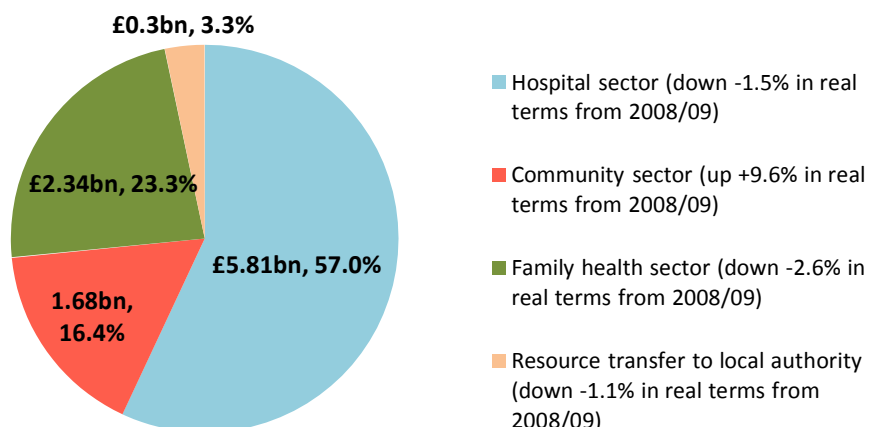
Nevertheless, in nominal terms, all sectors have seen increasing expenditure over the period from 2008/09 to 2012/13, albeit at different rates of growth (ranging from +7% in family health services and +8.1% in hospital care to +20.3% in community care). In real terms, there is evidence of a modest resource shift between community and hospital care: spending on hospital care has declined by -1.5% in real terms between 2008/09 while expenditure on community care increased during that period by +9.6% in real terms. Extra resources spent on community care largely went into three areas of expenditure:

- pharmacy (up by 35% in real terms compared to 2008/09);
- allied health professions and other paramedical staff (up by 15%); and
- administrative costs (up by 8%).

Figure 2 shows the amount and share of health spending by category in 2012/13, plus percentage changes since 2008/9. Staff costs continue to make up the largest item of spending, over two thirds of expenditure on hospital and community care. Almost 12% was spent on prescription drugs and associated pharmacy spending, an increase by 11.2% in real terms (22.1% in cash terms) compared to 2008/09. This means that pharmacy spending was the only category with real-term increases in spending over that four-year period.

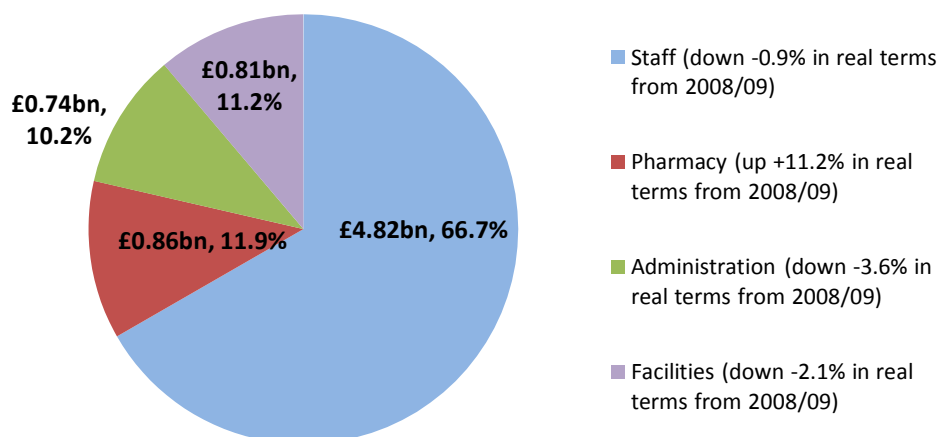
Drug costs are often regarded as an easy place to look for short term savings so it is worth drilling down in more detail. Although general practice accounts for the largest net prescribing cost (about £1.12 billion in 2012/13), spending has decreased in cash and real terms compared to 2011/12. This is linked to a drop in the cost per item of high volume proprietary costs which came off patent during 2012. These drugs could hence be substituted with cheaper generic alternatives (e.g. Atorvastatin for the lowering of blood cholesterol to prevent events associated with cardiovascular disease; ISD 2014a).

Figure 1 Distribution of health spending in Scotland and percentage changes between 2008/9 and 2012/13, by sector (s14 territorial NHS boards, Golden Jubilee Hospital and the State Hospital)



Source: ISD (2013).

Figure 2 Distribution of health spending in Scotland, plus percentage changes (2008/9 and 2012/13), by category (hospital and community care)



Source: ISD (2013).

The growth in pharmaceutical expenditure (Figure 2) is largely driven by prescribing in hospital, in particular spending on high-cost, low-volume (HCLV) drugs (Table 3). In 2012/13, NHS Boards spent over £115 million on the top ten HCLV drugs, a third of total pharmaceutical expenditure in hospital. These are expensive specialist drugs which are provided in hospital for cancer, irritable bowel conditions (anti-TNFs) and rheumatic conditions for comparatively few patients. Expenditure on these drugs tends

to increase at a faster rate than other drugs and is also less predictable, hence creating a particular cost pressure on NHS boards (Audit Scotland, 2013).

Table 3 Changes in NHS pharmaceutical expenditure in Scotland, 2010/11 – 2012/13

	Change in total spending 2010/11 to 2011/12 ^a	Change in total spending 2011/12 to 2012/13 ^b
Top 10 HCLV drugs		
Cash terms	£12.2 million (+15%)	£13.5 million (+13%)
Real terms	£10.4 million (+15%)	£12 million (+12%)
All hospital drugs		
Cash terms	£13.4 million (+5%)	£28.2 million (+9%)
Real terms	£7 million (+2.4%)	£23 million (+7%)
All GP Drugs		
Cash terms	£12 million (+1%)	£60 million (-6%)
Real terms	£11 million (-1%)	£74 million (-7%)

Source: Audit Scotland 2012/13

Notes: ^a Spending on HCLV drugs and all hospital drugs excludes NHS Highland and NHS Tayside; ^b Spending on HCLV drugs and all hospital drugs excludes NHS Tayside as data are currently being processed by ISD Scotland.

2. 3. Key drivers of expenditure growth and financial sustainability

The growth of public expenditure on healthcare is influenced by several determinants that affect the demand and supply of health services (European Commission and Economic Policy Committee, 2012):

Demand side factors may include demographic changes, related changes in health status, regulations and entitlements governing access to healthcare, and changing expectations about standards of care;

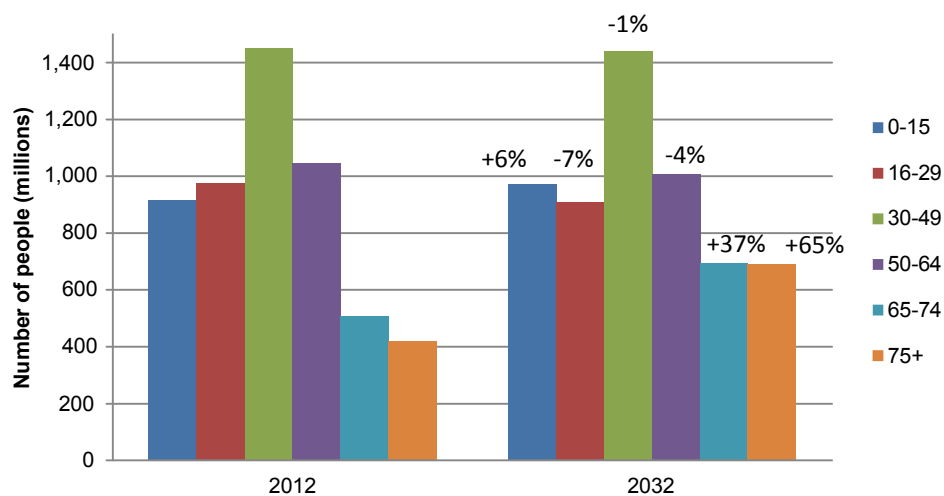
Supply side factors may include costs associated with new health technologies (in particular pharmaceuticals), staff costs, and the organisation of service provision.

In this section we focus on the demand-side factors as the supply side factors are to a large extent a function of policy action, which is the focus of the next two sections.

Rising demand: ageing of the population

Between 2012 and 2032, the share of people aged 65 years and over is projected to grow substantially (Figure 3). In contrast, the population of working age (16 to 64 years) is expected to remain stable or (in the group aged 16 to 29 years) even decline.

Figure 3 Scotland's population by selected age groups , 2012 and 2032, plus percentage change



Source: authors' estimate based on General Register for Scotland (2014).

These trends pose two challenges for the financial sustainability of the health service.

First, in terms of revenue from taxation, an increasing share of older people increases the old age dependency ratio, i.e. fewer contributors in relation to the beneficiaries of services. In Scotland, the old age dependency ratio is expected to grow by about 65% between 2012 and 2037 from 27 to 41 people over 65 years for 100 people in working age (15-64 years). Consequently, fewer people will pay taxes to finance public health care.

Second, because spending rises steeply with age, population ageing can be expected to lead to rising health and social care expenditure. In 2012, people over 65 years made up about 17% of the Scottish population, but accounted for 33% of NHS operating costs (about £3.37 billion). Integrated mapping of resource use across health and social care shows that the NHS and local authorities spent about \$4.61 billion for people over 65 years in 2012/13. Almost a third of this expenditure was consumed by emergency admissions to hospital (authors' estimate based on ISD, 2014b). The Scottish Government forecasts that, by 2031, almost £8 billion will be required to finance health and social care for older people (Figure 4). This assumes no changes in age/sex specific costs of health and social care (i.e. no improvement in the health of the population or in quality-adjusted efficiency of service delivery).

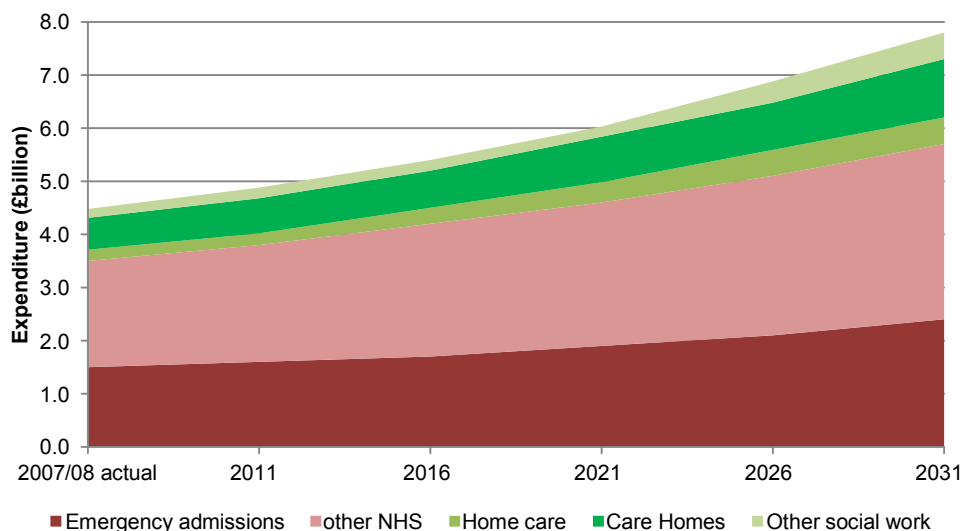
However, predicting future spending needs is fraught with methodological issues and controversies. Macroeconomic models (Lisenkova et al., 2010; Lisenkova and Mérette, 2013) show that the impact of population ageing on economic development and on labour income tax rates required to ensure a balanced government budget is highly sensitive to population projections and net migration.

In its 2012 Ageing Report, the European Commission and the Economic Policy Committee (2012) estimate a range of scenarios for future healthcare spending and sensitivity to alternative sets of

assumptions regarding future burdens of disease, income elasticity and technological change. This shows that whilst ageing *per se* does drive expenditure growth to a non-negligible extent, a key source of uncertainty is whether gains in life expectancy are spent in good or bad health. If disability is compressed towards the end of life at a faster pace than mortality (the so-called “compression of morbidity” hypothesis (Fries, 1989)), then increasing longevity entails an increasing number of health life years and this may moderate the additional cost burden from ageing (and indeed provide greater opportunity for older people work beyond statutory retirement). In contrast, the “expansion of morbidity” hypothesis (Olshansky et al., 1991) states that falling mortality goes in line with an increase in morbidity and disability. Empirical research (Global Forum for Health Research, 2008) on the validity of these hypotheses is inconclusive, and suggests potentially counter-balancing effects of rising rates of some disabling conditions (dementia, musculoskeletal diseases) and declining prevalence rates of others (cardiovascular and chronic respiratory diseases). Finally, many factors – in particular the long-term spending impact of technological change as a cost-increasing or cost-decreasing variable – are endogenous and dependent on Government policy decisions.

Though we therefore cannot know for certain what the exact future funding requirements for healthcare are, it is clear that healthcare expenditure can be expected to increase into the future.

Figure 4 Health and Social Care resource use: projected increases for people aged 65 and over, 2007/8 to 2030/31



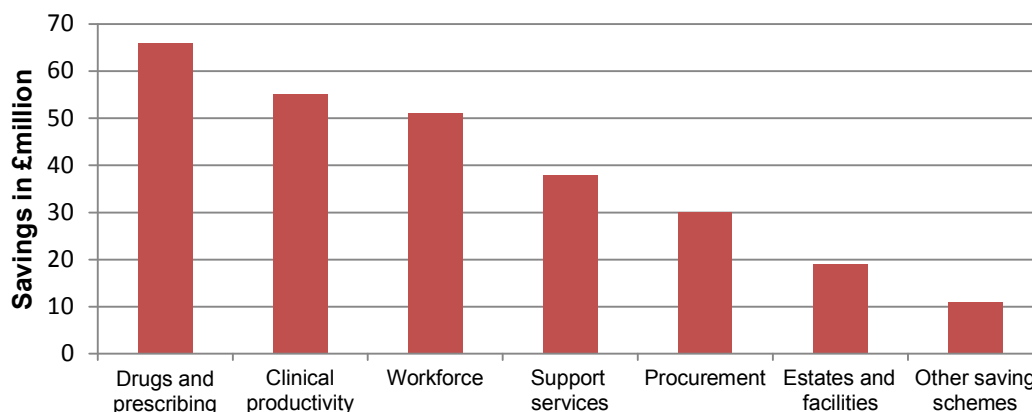
Source: Scottish Government, COSLA and NHS Scotland (2010).

2. 4. Efficiency savings: what has been achieved and how?

For 2012/13, the NHS in Scotland as a whole achieved savings of 3% of baseline funding, as required by the Scottish Government, and 99% (£269.8 million) of its own forecast savings target of £271.7 million (Audit Scotland, 2013). Since 2009, local actions to reduce costs while improving the quality of healthcare have been supported by a national Efficiency and Productivity Framework (Scottish Government, 2011b). In 2012/13, savings were achieved mainly through changes in prescribing

behaviour (for example by means of generic prescribing through the operation of the Scottish Tariff) and clinical productivity (which includes changes in acute flow and capacity management; Figure 5).

Figure 5 Efficiency savings reported by NHS boards, by workstream, 2012/13



Source: Scottish Government (2014a).

On average, 78% of savings reported by boards were recurring in 2012/13, meaning that savings achieved recur year on year (e.g. lower staff costs due to better streamlined processes). However, some boards continue to rely on a large proportion (up to 56%) of non-recurring savings (e.g. those derived from the sale of fixed assets, such as buildings); these one-off savings risk being unsustainable in the future (Audit Scotland, 2013). Moreover, 66% of savings required for 2014/15 are still unidentified. This amount increases to 73% for 2015/16. Thus, for just two years ahead, boards have not determined how or where they will release more than two-thirds of the savings needed to break even, suggesting a lack of planning how to achieve sustainable financing over the long term (Audit Scotland, 2013).

In 2013, the Scottish Government's Route Map to the 2020 vision (NHS Scotland, 2013) set out key deliverables for 2013/14 to enhance the financial sustainability of the system. These include a new innovation fund to provide pump-priming for innovations that enable Scottish small and medium sized enterprises (SMEs) to collaborate with NHS Scotland to test approaches that improve the quality of care and foster economic growth, as well as efforts to scale up shared services (including the reduction of drug costs through a single, coordinated programme at national level). However, as should be evident from the previous subsection, the system faces ever more pressing challenges to its long term sustainability over the next decade or two. It seems likely that once the one-off gains from picking the 'low hanging fruit' have been harvested, deeper policy and operational innovations will be needed to transform the health service for the years to come.

3. The innovation challenge

As health care systems in advanced economies across the world experience the same challenges of growing, ageing populations, rising levels of chronic conditions and ever increasing costs, there is a growing recognition that short-term cost cutting measures are no longer sufficient response. The challenge is now seen as how to change the way health care is delivered (Taunt et al., 2014).

Creating a system of health and social care which is patient centred, safe, accessible and affordable, requires the simultaneous pursuit of better quality of care, at lower costs. Several barriers exist to achieving this goal. The lack of a detailed model for health care reform, which balances short term cost containment with longer-term goals, is one such barrier while the absence of a candid dialogue involving patients, professionals and communities is another. There is a need to gain acceptance from stakeholders that it is no longer sufficient to avoid future costs and that reduction of current costs is required, accompanied by a redirection of costs – and care – away from hospitals. As noted, in Scotland, the hospital share all of NHS expenditure currently stands at 57%, largely unchanged over the last five years (ISD, 2014).

On their own, individual health care organisations have been historically unlikely to achieve radical service transformation, irrespective of the scale of financial challenge (Thirlby, 2011). Scottish Health Chief Executives acknowledged in their leaked paper, that: “Boards lack the mandate and ability to implement the scale of reform required” (reported by BBC Scotland, 16/09/14). To achieve a future state of high quality, affordable health care, service innovation is the key to future sustainability (Department of Health, 2011).

In Scotland, many favourable conditions are already in place to help make a start in this necessary transition. High quality medicine in centres of excellence, and primary care, a large stable workforce, 135,980 in 2014 up by nearly a third in 15 years, (Scottish Government, 2014c), comprehensive long-term data sets and a compact Public Sector, largely unaffected by continuing reforms, are in place. In relative terms, health services are well resourced, with more GPs, hospital doctors and nurses per 1000 population than the rest of the UK (Bevan et al., 2014). And, following the referendum process, the country has been described as having one of the most politically engaged populations in Europe (Alex Salmond MP, First Minister’s statement in the Scottish Parliament 23/09/14). These are all assets that Scotland can put to use, to create a sustainable health and social care service for its citizens.

These underlying circumstances support the task of translating “the best work anywhere into the standard everywhere” (Cochran and Kenney, 2014: 23), in the cause of achieving future sustainability through innovation. An example of such ‘best work’ is the introduction of integrated care, defined as “planning and providing services to impose the patient perspective as the organising principle of service delivery” (Shaw et al., 2011: 7).

As an example of an opportunity for learning, is the Kaiser Permanente health care system³. Its systematic adoption of better-integrated care supports a range of acute hospital admissions that is around one third lower than that of the UK. Similarly, its length of hospital stay per 1000 of population, is 3.9 days, against 5.7 in Scotland. Inpatient admissions in the Kaiser System are 69 per 1000 population, against 143 in Scotland. Acute bed days used per 1000 population are 270 in Kaiser, against 812 in Scotland (Bevan et al., 2014). In the UK, the health care system in Torbay is achieving comparable benefits (Thistlethwaite, 2011).

³ Kaiser Permanente is a not for profit, integrated managed care consortium, based in Oakland, California. Founded in 1945, by industrialist Henry J Kaiser, and physician Sidney Garfield, it has an income of US\$53bn, with 180,000 employees, including 15,000 physicians

Integrated care systems feature “community navigators” to co-ordinate health and social care systems and in Kaiser’s system, “community paramedics” who can intervene and treat patients in crisis, where hospital admissions may otherwise be required. In Yorkshire, Airedale Hospitals have adapted the Kaiser model of using community nurses linked directly to doctors and hospital by skype and iPad. This approach has reportedly yielded a 60% reduction in hospital admissions (Financial Times 5/10/2014). Across the NHS, face to face contact accounts for 95% of all health care intervention and a reduction of 1% of this activity is estimated to save £200m (Department of Health, 2011). In the USA, the culture of “presenteeism” in hospitals is tackled through video conferencing with doctors and groups of patients, with health care provided where the patients live, work and play.

Telehealth (the remote exchange of data between individuals and health care professionals as an assistance to diagnosis and treatment) and telecare (the use of remote monitoring to manage the risks of independent living) have benefited from £20m investment in Scotland over the past five years, affecting 44,000 patients. Benefits attributed to this investment focus on the avoidance of 8,400 emergency admissions over the same period, according to the National Telehealth and Telecare Delivery Plan (NHS Scotland, COSLA and The Scottish Government, 2012). The Delivery Plan does not make a direct connection between telehealth and telecare and cost reduction, while acknowledging that further work is required “to establish a baseline and develop consistent outcome measures and indicators, to track the impact of telehealth and telecare, on working practices, productivity and resource use”.

Statistically significant benefits in respect of reductions in admission levels and mortality have been reported (Steventon et al., 2012), but none relating to cost reduction. No significant reduction in demands on GP time was found. Innovation in telecare and telehealth has the potential to improve unnecessary hospital admissions but “robust information on costs and outcomes is lacking” (Clark and Goodwin, 2013: 3). In the Scottish context, telehealth and telecare initiatives are not yet part of a co-ordinated and systematic programme of integrated care and therefore are more likely in current form, to generate benefits in remote accessibility, rather than the more radical effects of disruptive technology now being seen elsewhere in the UK, and in the USA.

In Scotland, the Public Bodies (Joint Working) (Scotland) Act 2014 allows for the establishment of Integration Joint Boards, with the organisational potential to support widespread adoption of integrated care innovations. Alongside integrated care, the extensive mining of patient related data sets offers the opportunity to move care in Scotland from the industrial age to the information age. Data sharing with the patients at the centre is central to the success of initiatives in Torbay, resting on the principle “nothing about me, without me.”

In many systems, data mining is already used by doctors to determine the best form of treatment for patients. It is also central to risk stratification of patients. In the USA, 5% of individuals incur half of all health care expenditure (Cochran and Kenney, 2014: 21) In Airedale, 3% of patients have been identified as consuming 39% of resources (Financial Times 5/10/2014). Equivalent figures for Scotland do not appear to be readily available. Yet having such data is critical to identifying the patients who

cannot be discharged due to failings in the social care system: effectively medicalising (at great cost) social problems with roots that are outside the healthcare system. At the aggregate level is the cost of this can be demonstrated by the most recent delayed discharge figures for Scotland, which show that against a target of no patient waiting longer than two weeks for discharge (a target not demanding by international standards and due to be introduced in 2015), 518 patients were awaiting discharge, amounting to around 150,000 lost bed days. The need for approaches such as the Kaiser approach is apparent for older patients with complex needs, where increased longevity is accompanied by increased incidence of multiple conditions. In the USA, it is estimated that half of all people over the age of 75 have 3 or more complex conditions (Goodwin et al., 2014).

International models of Primary Care support the importance of the role of the General Practitioner or primary care physician, at the heart of an integrated, team based approach. The current status of General Practitioners as Independent Physicians, their existing workloads and remuneration arrangements, have the potential to inhibit their membership of integrated Teams. Correspondingly, “where care givers are working within common governance and incentives rules, facilitated through closer organizational partnership arrangements, then the more likely it seems that integrated care on the ground can be supported” (Goodwin et al., 2014: 20). A useful resource in this discussion is the recent report from King’s Fund and the Nuffield Trust, which reviews a number of possible models of integrated primary care drawing on international experience (King’s Fund and the Nuffield Trust, 2013).

4. The openness challenge

If it is not possible to find efficiency savings along the lines outlined in Section 3 to meet the challenges outlined in Section 2, additional revenue will have to be obtained from elsewhere. However, health is the second largest budget category in the public sector accounts after welfare, and although spending on benefits is arguably less politically popular than health, large scale raids on the benefit budget (to say nothing of the pension budget) would clearly raise issues of their own, outside the scope of this note. Increasing general revenues would be another route. Presumably raising significant additional financing would be well within the scope of powers of a future Scottish government with enhanced tax raising powers but public willingness to accept tax rises has yet to be tested. A conceivable policy option (quite common in other European countries) would be to institute a hypothecated tax to pay for health services: this would create greater public visibility on the costs of the healthcare system specifically and limit the scope for political discretion (or “interference”) in the allocation of funds.

If money to cover the additional expenditure is not forthcoming from general tax revenues, there are as a matter of logic, a number of possible options. These can be conceptualised through the famous cube of universal coverage promulgated by the WHO (2010). Countries providing universal coverage must make decisions about:

1. Who is covered?
2. What fraction of expenditure is covered?
3. What is covered?

Each of these dimensions of coverage drives cost and therefore countries wishing to reduce public expenditure must cut back on one of these dimensions.

In terms of 1., there is the option of denying care to some people altogether. As an example of this, Kentekenelis et al. (2014) report that 800,000 people in Greece are now unemployed and without access to either unemployment benefits or health coverage, as a result of the government's austerity programme. For them, health provision is only via the voluntary sector. Of all possible ways of dealing with a budget shortfall, this seems the worst – a breach of the very principles of universal coverage itself, and a dereliction of society's duty to people at a time in their life when they are most in need.

In terms of 2., a second option is cost-shifting to patients through imposition of or increases to user fees and co-payments. Typically there is also some form of means testing to protect those who are unable to pay. The recent history of Ireland an example of this approach close to home. Altogether Thomas et al. (2014) estimate that on average every person in Ireland is paying an extra €100 in user fees compared to before the crisis, although of course this average masks the fact that older and sicker people will pay more and younger and healthier people will pay less. Although user fees are often advocated on the grounds that they reduce unnecessary care, the general thrust of the evidence is that user fees reduce both necessary and unnecessary care in a fairly indiscriminate fashion (Swartz, 2010). What is certain is that compared to obtaining funds from general taxation, user fees disproportionately hit people who are unwell. User fees may be a last resort means of funding, if there are political barriers to raising the funds through taxation, but should not be seen as a sustainable solution.

A third alternative is to restrict what is covered in the healthcare system (this is dimension 3. above), typically by "implicit" rationing through imposing access restrictions such as waiting lists (Morton and Bevan, 2012). Economically waiting lists are problematic as a means of rationing as they impose deadweight costs in the system. Implicit rationing is also more acceptable in societies where it is accepted that "doctor knows best" but for better or for worse, modernity is associated with a decline in such deferential attitudes. A related response to restricting coverage is to degrade the quality of the service offering. Yet even if it were desirable to sanction clinicians cutting corners to reduce costs, this runs counter to the core principle of focussing on quality and patient safety which have been central to Scottish health policy discourse since devolution, and would risk undercutting the gains which have been made from the government's determined pursuit of this agenda.

In view of the problems associated with implicit rationing, many countries in response to the austerity introduced by the financial crisis have introduced or strengthened explicit rationing of services through a defined benefit plan or "positive list" of treatments which patients are entitled to expect in the public system. This is also a common feature in the systems of many middle-income countries (for example those in Latin America, see Giedion et al. (2014)) who have sought to introduce universal coverage but who are simultaneously acutely mindful of the budget constraints that such systems must operate under. An advantage of defined benefits plans is that they can be used throughout the planning process, both at the stage of budgeting and assessing public sector resource needs, as well as in monitoring system delivery. Indeed, if there is agreement about what should be provided by the healthcare system, and for what indications, it should in principle be possible to monitor the volumes of services provided with what

is expected given population morbidity, and thus assess both under- and overuse of services – see e.g. Schang et al. (2014) for an example of some modelling to support this sort of exercise in a paediatric ENT context.

Defined benefit plans have the attractive feature that they make it clear to the taxpaying public what the system can and cannot afford and thus make it possible for citizens to make an informed decision about the right level of funding for the health service. Scotland is in the fortunate position of having a suite of institutions which have a guideline development and technology assessment role: the Scottish Intercollegiate Guidelines Network (SIGN), the Scottish Medicines Consortium and the Scottish Health Technologies Group. However, defining a benefits package which is robust is not merely a technical exercise: it requires strong processes which incorporate evidence and synthesise them with social values, and which can be shown to be procedurally fair. Although engaging members of the public and other stakeholders in deliberating about the key economic and ethical challenges is not easy, examples of good practice do exist (Daniels and Sabin, 2007; Gold et al., 2007; Airoldi et al., 2014). Moreover, the National Institute of Clinical Excellence (NICE) in England has commissioned studies of population values as they relate to healthcare prioritisation (Edlin et al., 2012), and willingness to pay assessments for a quality adjusted life year (Donaldson et al., 2011, drawing on the expertise of Scottish researchers). If Scotland aspires to have a healthcare system which reflects her values, and to make a balanced and informed judgement about a socially acceptable /agreed trade-off between additional expenditure and coverage and system reform, there is a clear need to establish more clearly what these distinctively Scottish values actually are, and involve wider stakeholders in decision making about the health system, so that the coming difficult decisions are taken in as robust, defensible and democratic manner as possible.

5. Conclusion

Although we have rehearsed some of the issues and options in this paper, we do not have the knowledge or the indeed the mandate to make detailed and specific recommendations about what should be done. However, we consider that in charting a way forward, there are five important streams of activity which should be part of a credible response.

Issue One: There should be a detailed and authoritative **high level investigation of the scale of the funding gap** between projected expenditure and healthcare financing needs which Scotland faces, chaired by an authoritative and credible figure. (A possible model is the Wanless Review (Wanless, 2002) in England from some years ago). Of course, as we highlight above, the methodology for assessing future healthcare financing is not a settled science: it is not the case that there is a single number. A properly rigorous study would produce a range of estimates which reflect genuine uncertainty about the way in which population morbidity and cost drivers will evolve, and so would command broad assent and credibility. At the same time, such an assessment would provide Health Boards with the framework that they need to begin operational planning and would set the stage for an informed and realistic public discussion.

Issue Two: . There should be a concerted effort to **strengthen leadership capability** in the health service. Clinical leadership in particular has a vital role. In response to the calls from the BMA and Royal Colleges for an open debate about the future of the NHS in Scotland, doctors need to assume the role of “accountable leaders”. As the Chief Executive of the Institute of Health Improvement describes it “We need doctors to be the leaders for whom ‘hanging onto the status quo’, is a betrayal of their patients” (Maureen Bisognano, cited in Cochran and Kenney, 2014: 30). Indeed, in general, the delivery of better integrated care, based on innovative technology, new roles and personalisation of care across health and social care, will require new leaders and new leadership skills (Taunt et al., 2014).

Although integral, clinicians cannot lead in isolation. The leadership cadre in the public sector in Scotland is small and the number of leaders with the necessary experience to transcend organisational boundaries, even smaller. Universities in Scotland, with their business schools and Innovation centres offer the potential to develop programmes of joint learning, which foster a culture of innovation and the confidence to navigate new models of governance. “Mitigation Planning” for the uncomfortable consequences of shifting resources away from the acute sector and the development of robust information sharing arrangements with the patient at the centre “nothing about me, without me” will also require focussed leadership.

Issue Three: There needs to be a **suite of tools for Health Boards to shift the balance of investment** in local health economies, making difficult but necessary decisions such as closing inefficient facilities. Well-designed systems of integrated care, accompanied by innovative use of disruptive technology have the potential to release substantial monies from the acute sector (Bevan et al., 2014). Yet in Scotland and in many other countries there is no validated approach for successful disinvestment (HealthPACT, 2013). Working with universities and leading economists, Scotland could lead the way in developing an open and rigorous process for disinvestment and reinvestment, with accompanying metrics for assessing outcomes. To accompany innovation, “reverse innovation” is required, offering a mechanism for stripping out activities, which no longer add value, or can be replaced by something better (Department of Health, 2011). To realise benefits from new ways of working, existing spending must be treated as variable, when all too often it is seen as fixed (Kaplan et al., 2013).

Strategic planning requires reality-proofed technical and process tools to support difficult decisions. For example, the Journey Making approach (Ackermann and Eden, 2011) has a track record in supporting healthcare organisations to think about the formulation of strategy; the Program Budgeting and Marginal Analysis (Mitton and Donaldson, 2001) or the STAR approach sponsored by the Health Foundation (Airoldi et al., 2014) have been used to think about strategic prioritisation and service redesign. However, developing strategic planning competency is not “plug and play”: learning about such approaches has to be done in a context where there is the provision of opportunities for senior staff to learn and develop the necessary skills alongside with their peers. There needs to be a broader public national dialogue about what is affordable, what level of increased spending the public are prepared to bear, and how services are to be “rationed” if the spending to meet the financial demands of providing existing levels of service to an older and hence sicker population.

Issue Four: International experience (Clemens et al., 2014) the importance of an **open and honest debate, accompanied by broad and continuing stakeholder consultation and engagement**, leading to a shared vision of the future state. This accords with the view of the BMA Scottish Chairman (Dr Peter Bennie, cited in the Scotsman 19/09/14). Politicians have to lead this debate but ultimately the whole of Scottish society will have to participate. Here there are opportunities to learn from other areas of policy: for example, the UK government made a substantial commitment to engaging the public in a national debate about what should be done about the UK's radioactive waste in the middle of the last decade, and much could be learned from that exercise (Morton et al., 2009; Dietz and Morton, 2011). Indeed, the Irish government appears to be contemplating a move towards an explicit "health basket" or health benefits plan, arrived at in a consultative fashion through the development of a guiding "values framework" (Irish Government Department of Health, 2014).

Issue Five: Implementing a shared vision, with clinicians leading the way, is more likely to be successful, with the availability of a **Transformation Fund**, supporting the initiation of new services and the transition away from old ones (Taunt et al., 2014). As Scotland begins the process of being able to determine its own taxation levels, there is an opportunity to link revenue generated, to the evident public concern for the future sustainability of the NHS. Delivery of new models of care, in accordance with a shared vision and facilitated by a Transformation Fund, could be seen as an early and legitimising task for the new Integration Joint Boards. These are to be responsible for adult social care, adult community services and a proportion of adult acute services. Their role is to ensure "That health and social care in Scotland, is joined up and seamless" (Scottish Government, 2014 (website)).

This initiative has already attracted conflicting views. The Confederation of Scottish Local Authorities (COSLA) response to the consultation on the Public Bodies (Joint Working) (Scotland) Act highlights the need for the effective disinvestment and reinvestment mechanisms: "*Integration authorities must have sufficient control of the means to shift the balance of care from acute to community setting and take demand out of the system*" (COSLA response 2/6/2014 – authors' italics) By contrast the BMA response suggests that: "It will be difficult to support the shift of resource between health care and social care without an adverse impact on care" (BMA response 23/9/2014). Even Audit Scotland is unclear on the effects on hospitals (Audit Scotland response July 2014).

In conclusion, the delivery of health and social care which is safe, timely, effective, efficient, patient focussed and also affordable is a huge task. Our forebears have bequeathed us a healthcare system based on the principles of universal coverage which has been both resilient over decades and a source of global inspiration. In Scotland, today, politicians, clinicians and health care leaders have the opportunity, in the words of Jonas Salk, discoverer of the first polio vaccine, to demonstrate that: "Our greatest responsibility is to be good ancestors": that we have the courage and imagination to reinvent the universal coverage so that it is sustainable for future generations, and to do so in a way which remains faithful to the distinctive values of the Scottish people.

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