Elective Care Project

NHS Grampian

Initial Agreement

Artist's impression

26 October 2018

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1. The Executive Summary

1 Executive Summary

1.1 Introduction

NHS Grampian, in response to the Scottish Government allocation of capital funding for the development of elective care centres in Scotland, has undertaken a broad process of engagement involving 22 clinical services, including primary care to ensure that the funding is targeted as effectively as possible.

The process has developed a clear strategic context for transformation in elective care and a programme of redesign aimed at driving efficiency, and the delivery of "additionally" to meet anticipated need and demand for treatment in the future.

The Initial Agreement is a product of that broad process. It has identified the services that can most effectively benefit from capital investment as part of a longer term investment programme. It will:

- Advance the agreed Foresterhill Campus Development Plan by creating an elective care focus on the Campus consistent with the clinical service blueprint
- Strengthen the research and development relationship between the University of Aberdeen and NHS Grampian through the creation of a clinical research facility (funding to be secured by the University)
- Contribute to the reduction in backlog maintenance
- Develop the "tiered" approach to elective care by stimulating the creation of community diagnostic and treatment hubs with the aim of retaining activity in the community and focusing the Elective Care Centre on activity which requires specialist skills and facilities
- Support the development of the NHS Grampian Strategy and Regional Workforce Plan

1.2 Process undertaken by NHS Grampian

As indicated above, NHS Grampian (NHSG) and its partners chose to adopt a comprehensive and transformative review of its elective care services with comprehensive engagement.

The products of this engagement process has included a clinical output specification for each service which sets out the key anticipated activity, workforce and facilities challenges, and a redesign programme.

To address the challenges and solutions identified a number of work stream are set out in appendix R and will support the delivery of a Target Operating Model, (across elective care services). This work will be progressed in 3 main ways:

- as part of the wider NHSG elective care redesign programme
- as part of wider NHSG improvement plan
- as part of this capital investment Initial Agreement

The primary focus of this business case is the development of the aspects of the Elective Care Strategy that is facilitated by a programme of capital investment, with recognition of the broader Elective Care context as appropriate.

The systematic process undertaken to identify the preferred service solution is set out in appendix M and N.

1.3 What is the proposal about?

The vision for elective care is to deliver treatment and care as close to home as possible through the application of best practice, innovation and digital technology. Where treatment requires specialist skills and technology this will be undertaken in purpose designed facilities which will promote efficiency and the best patient experience possible.

In practical terms:

- High volume procedures will be decentralised as far as possible – the ability to do this depends on clinical practice and technology at any particular time
- Self management will be promoted to help individuals to manage their own conditions
- Opportunities for diagnosis and treatment to be undertaken in the community will be exploited

- Elective Care Centre facilities will be configured to support “one stop” treatment to minimise attendances and maximise efficiency

- Best practice standards of efficiency will be applied as a matter of course

The preferred service solutions set out in this Initial Agreement reflect one of the work streams associated with achieving this vision and the first stage of proposed capital investment.

1.4 What are the current arrangements?

The Elective Care Programme and its associated work in developing an Elective Care Strategy and in preparing this Initial Agreement (IA) sought first to establish a detailed understanding of the current arrangements for elective care services across acute and community based services. This widespread approach has naturally involved a number of speciality services and other teams. The specialities are set out in appendix Q with those specifically affected by this proposal set out in table ES1 below.

In establishing this level of understanding, key issues have been clarified in terms of workforce capacity and flexibility; related to the ability to meet increasing demand for services; to deliver person-centred care and to meet targets for both quality and performance.

A wide and in-depth programme of engagement with services across primary and secondary care has been led by independent healthcare planners, numbering circa 90 workshops with nearly 500 staff, patients and public. The list of specialities engaged is available at appendix Q. The outputs have been detailed documents of current service models by scope; location and workforce, trends, challenges, risks and demands – formulating that thorough understanding of current arrangements.

The services identified in table ES1 were arrived at following a robust process which is illustrated at appendix M and N.

Table ES1: Specialties affected by this proposal

Services			
1.	Cardiology	5.	Radiology

Services			
2.	Dermatology	6.	Respiratory
3.	Endoscopy	7.	Theatres
4.	Primary Care services	8.	Urology

The Strategic Case documents specialty specific aspects of the current state, however many services face common challenges which can be summarised as follows:

- Services are fragmented, not person-centred and result in avoidable attendances and admissions
- Performance and quality targets are not being met, patients awaiting essential reviews are waiting beyond their recall dates
- Where physical capacity is unable to cope with current and predicted demand
- Retention and sustainability of services and workforce is being adversely affected
- Scope to improve service efficiency and performance is constrained
- Access to and use of technology is sub-optimal
- Ongoing haphazard and wasteful use of resource will be likely in order to attempt to meet future demand with current infrastructure e.g. through high-cost reliance on 3rd party providers and supplementary staffing
- Comparative analysis of other Boards infrastructure demonstrates lower availability of essential diagnostic facilities within Grampian than comparable Boards in Scotland

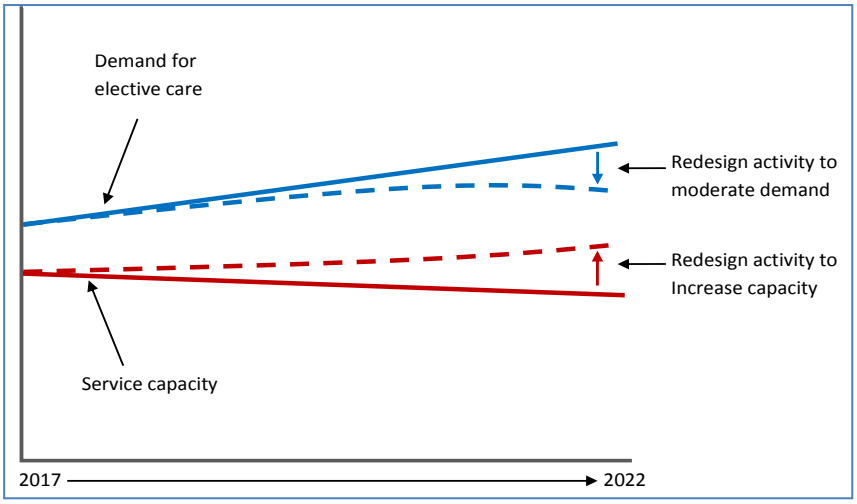
1.5 Why is the proposal a good thing to do - Need for Change?

Figure ES1 summarises the context and aims of the elective care programme. Need and demand for elective care is increasing and there

is continued pressure on capacity arising from workforce and financial resource challenges. The programme seeks to moderate demand by coordinating prevention, self management and realistic medicine initiatives i.e. to shift the demand curve; and increase capacity by improving efficiency, applying best practice and creating new capacity to meet the increasing levels of need and demand i.e. to shift the capacity curve.

The aim of the proposed capital investment is to create new capacity, and to configure this capacity in a way that supports maximum service efficiency and effectiveness.

Figure ES1: Illustration of the challenge and redesign efforts



1.6 Investment Objectives

Through the engagement process and consideration of the need for change, the Investment Objectives established for the Project are:

- Improve future service capacity by improving supporting asset base.
- Improve service performance and efficiency by optimising service redesign.
- Service redesign is enabled by use of, and access to, technology.
- Meet user requirements for service by being more person-centred.

- Improved services and sustainable workforce and equity of local access to treatment as far as possible and regionally where required, with harmonised access agreements across NoS Boards.

- Improved facilities in place to support modern outpatient care and optimised inpatient/day case activity.

1.7 What is the preferred solution?

Within the IA, the Economic Case demonstrates how NHS Grampian has selected the preferred service solution which is most suitable for further assessment at the outline business case (OBC) Stage.

The process outlined above has identified a broad range of areas that will benefit from capital investment. Recognising investment will be phased the appraisal in the Economic Case has focused on where capital investment will address the greatest Elective Care priorities and deliver most additionally.

The approach taken is that of a phased approach in identifying the initial focus for capital investment. The breadth of the analysis of elective care pressures and opportunities means that this represents a first stage of investment from a longer list of required improvements.

The preferred service solution is Option 5, as set out in table ES2.

Table ES2: Preferred Service Solution

Components
Modern and fit for purpose outpatient and ambulatory care facilities, supporting a 'one-stop' model of outpatient provision: Urology, Respiratory and Dermatology
Investment in CT and MRI facilities
Co-location of both the facilities for day surgery and endoscopy in a single new bespoke facility
The development of the concept of Community Diagnostic & Treatment Hubs

The preferred service solution will deliver investment in an elective centre on the Foresterhill Campus including a mix of new build and refurbishment of existing infrastructure (including equipment) together

with service reconfiguration across NHS Grampian including community settings.

This solution will provide opportunities to recruit and consider carefully the skill mix and competencies of the workforce and is aligned to NHS Grampian 2018 Workforce Plan. NHS Grampian recognises that a well qualified and adaptable workforce, will be pivotal to the changing model of care and opportunities of the Elective Care Programme.

What the physical solution could look like forms appendix L .

A further short listed option has been developed which includes investment in Interventional Radiology 'Hybrid' Theatre and Cardiac Catheterisation Laboratory as set out in table ES3 for the reasons below:

Table ES3: Preferred Service Solution – Additional Option

Components
Modern and fit for purpose outpatient and ambulatory care facilities, supporting a 'one-stop' model of outpatient provision for: Urology, Respiratory and Dermatology (from a longer list of specilaities)
Investment in CT and MRI facilities to meet projected future demand
Interventional Radiology 'Hybrid' Theatre to sustain both IR and Vascular Surgery in NoS
One additional Cardiac Catheterisation Laboratory, to develop regional capacity and support implementing TAVI in NoS
Co-location of both the facilities for day surgery (Urology and General Surgery) and endoscopy in a single new bespoke facility
The development of the concept of Community Diagnostic & Treatment Hubs to enable care closer to home and minimise hospital attendance

This additional option had been developed as optimally meeting the Investment Objectives of the Project, however NHS Grampian have been advised investment in Interventional Radiology 'Hybrid' Theatre and Cardiac Catheterisation Laboratory are not within the scope of the funding available and can only be pursued if funding became available,for the following reasons:

In NHS Grampian the two existing Interventional Radiology (IR) theatres are not 'Hybrid' theatres. A growing number of procedures are being undertaken in IR theatres by Surgeons. Currently, for combined

IR and Vascular procedures, a further operating theatre is reserved and transfer of patients between these may be required during the procedure. This carries a degree of patient safety and risk concerns.

In relation to Cardiac Catheterisation Laboratory capacity, TAVI (Transcatheter Aortic Valve Implantation) is currently only provided by NHS Lothian. There is growing clinical support locally and regionally for developing this service in the North, it is thought there may be an initial requirement for approximately 40 cases per year initially. It is very likely that there will also be change in the referral criteria supporting a broader application of TAVI ahead. These developments will place significant further demands on existing Cath Lab capacity, which is currently supplemented by a 3rd party provider. Our understanding of these capacity needs is being developed further in a regional context.

NHS Grampian will require to strengthen arrangements for providing services on a regional basis pertaining to modern IR theatres and Cath Lab activity in order to support retention and necessary development of services ahead. This is true for interventions such as TAVI and for ensuring regional elective Vascular surgery needs can be met in future, both electively and in terms of ARI as a Major Trauma Centre.

1.8 Is the organisation ready to proceed with the proposal?

The Commercial Case sets out the proposed procurement arrangements for this Project, NHS Scotland Frameworks 2 (FS2). NHS Grampian will deliver the Project under an existing appointment. The Project Delivery Timetable is detailed in Table ES4.

Table ES4: Project Delivery Timetable

	Key Milestones	Date
1	Strategic Assessment	Q3 2017
2	Initial Agreement (IA)	Q4 2017
3	IA Approval	Q3 2018
4	Outline Business Case (OBC)	Q2 2019
5	OBC Approval	Q2 2019
6	Full Business Case (FBC)	Q1 2020
7	FBC Approval	Q1 2020
8	Construction Commencement	Q2 2020
9	Construction Completion	Q4 2021

The Finance Case considers the affordability and financial consequences, of this Project. The capital investment required is outlined in Table ES5.

Table ES5: Summary of Initial Capital Investment

	Total
	£million's
Enabling Projects	0.00
Construction Related Costs	43.00
Furniture and Equipment	7.00
Project Development and Commissioning Costs	2.00
Total Initial Investment	**52.00**

The capital investment required for the additional option, as per table ES3, would be £56.3 million.

It is anticipated that this investment as well as delivering service development will address backlog maintenance of circa 15% of this investment.

The anticipated recurring revenue costs associated with the Project are set out in Table ES6 of £5.4 million. Should the capital investment not be made then it is anticipated that in 2022/23 a clinical service demand revenue pressure of £3.1 million (ex VAT) per annum would require to be managed by the Board.

Table ES6: Summary of Revenue Implications - First Full Year of Operation (2022/23)

	Total
	£million's
Revenue Costs	
Additional Depreciation	1.70
Additional Clinical Service Costs	2.10
Additional Non-Clinical Service Costs	0.70
Building Related Running Costs	0.90
Total Costs	**5.40**

The anticipated recurring revenue costs associated with the additional option, as per table ES3 would be £9.9 million.

NHSG has included £40 million, all subject to an additional funding allocation in its Infrastructure Plan for this Project. The revenue costs associated with the Project do not form part of the Board's financial plans for 2018/19 and future years, at this stage.

In assessing the overall affordability of the preferred service solution option NHS Grampian will consider the prioritisation of additional funding streams to address the recurring revenue costs of this Project. Furthermore additional capital funding will be required allow the preferred option to proceed.

The Management Case demonstrates that NHS Grampian has the appropriate Project Management and Governance arrangements in place.

1.9 Is this proposal still important?

In confirming the selection of the preferred solution, the Programme Board considered it against the original investment objectives, benefit criteria and the need for change identified by the Strategic Assessment.

The proposal will develop a new Elective Care Centre and support the retention of appropriate activity in the community through the development of community diagnostic and treatment hubs. The proposal is part of a wider elective care programme, linked to the North regional elective care programme. This will contribute to the creation of capacity to meet increasing need and demand for elective care treatment, by focussing the areas of investment which will provide greatest additionality.

2. The Strategic Case

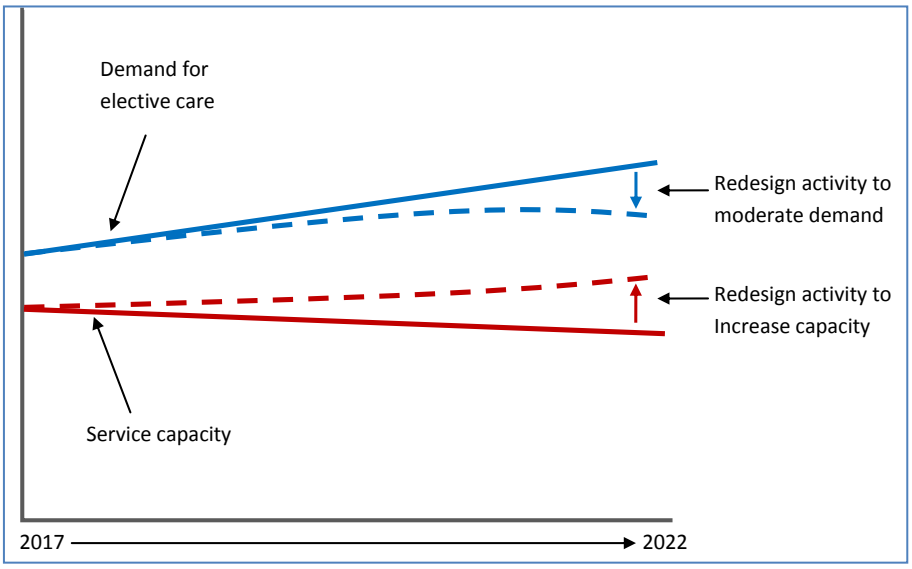
2 Strategic Case

2.1 Introduction and Programme Overview

This section prefaces the Strategic Case and provides the reader with a high-level overview of the Grampian Elective Care Programme in order to set the scene for the investment proposal outlined in this Initial Agreement (IA).

The demand for elective care is increasing and there is continued pressure on capacity arising from workforce and financial resource challenges. This is illustrated in figure S1, which conveys the context and aims of the programme, which seeks to moderate demand by coordinating prevention, self-management and realistic medicine initiatives i.e. to shift the demand curve. It also aims to increase capacity by improving efficiency, applying best practice and creating new capacity, including via the proposed investment of capital to meet higher levels of need and demand in future i.e. to shift the capacity curve.

Figure S1: Illustration of the elective care challenge and redesign effort



NHS Grampian, in response to the Scottish Government allocation of capital funding for the development of elective care centres in Scotland, has undertaken a broad process of engagement involving 22 clinical services, including primary care, to ensure that the funding is targeted as effectively as possible. The process has developed a clear strategic context for transformation in elective care and a programme

of redesign aimed at driving efficiency, and the delivery of "additionality" to meet anticipated need and demand for treatment in the future. The programme is consistent with the NHS Grampian Clinical Strategy in which elective care is a major theme, and also the developing regional approach to elective care as expressed in the draft North of Scotland Health and Social Care Delivery Plan.

This IA is a product of that broad process, which recognises that capital investment is only one aspect of how improvements can be delivered in Grampian. This section outlines those aspects of Elective Care redesign that will be enabled through the investment of capital and summarises the overall capital investment proposed in the IA. As such, it identifies the services that can most effectively benefit from capital investment as part of a longer term investment programme working optimally across and between Primary and Secondary Care. The capital investment will provide additionality through the creation of new Elective Care facilities and innovative new community-based approaches to delivering care closer to home. Benefits will be realised by improving the efficiency of those services that will occupy the new facilities, and releasing "hidden" capacity across the system though the wider elective care redesign programme.

In addition to the direct benefits related to elective care the proposed capital investment will also yield significant added value to a wide range of other services i.e. the capital investment will:

- Complement the Elective Care redesign programme and help develop a "tiered" approach to elective care through the creation of community diagnostic and treatment hubs. Retaining activity in the community and focusing secondary care Elective Care facilities on activity which requires specialist skills and facilities

- Support the development of the NHS Grampian Clinical Strategy and Regional Workforce Plan

- Advance the agreed Foresterhill Campus Development Plan by creating an elective care focus on the Campus consistent with the clinical service blueprint

- Strengthen the research and development relationship between the University of Aberdeen and NHS Grampian through the creation of a clinical research facility (funding to be secured by the University)

- Contribute to the reduction in backlog maintenance

2.1.1 Vision and Strategy

The vision for elective care is to deliver treatment and care as close to home as possible through the application of best practice, innovation and digital technology. Where treatment requires specialist skills and technology this will be undertaken in purpose designed facilities which will promote efficiency and the best patient experience possible.

What this vision means in practical terms is that:

- High-volume procedures will be decentralised as far as possible – the ability to do this depends on clinical practice and technology at any particular time
- Self-management will be promoted to help individuals to manage their own conditions
- Opportunities for diagnosis and treatment to be undertaken in the community will be exploited
- Elective Care Centre facilities will be configured to support "one-stop" treatment to minimise attendances and maximise efficiency
- Best practice standards of efficiency will be applied as a matter of course

2.1.2 Regional Planning

This IA has been prepared against the background of the developing collaboration on elective care across the six NHS Boards in the North of Scotland. This collaboration is much broader than the services being considered for the capital investment in Highland, Tayside and Grampian and encompasses work to harmonise access policies and pathways, maximise the use of elective care capacity, and ensure that a network of mutual support is developed to manage peaks of activity. Whilst the aim of all of the Boards in the North is to deliver treatment and care as close to home as possible all elective care capacity, including the capacity delivered through this Elective Care Centre proposal, will be regarded as a combined resource for the population of the North of Scotland as a whole. The planning of all of the proposed Elective Care Centres has used a common regional approach to data modelling and activity projections which will support the development of a regional Target Operating Model (TOM).

2.1.3 Process

The process to develop an Elective Care Programme and IA for capital investment started in March 2017 and has included 22 clinical services, with significant primary care involvement, circa 90 clinical engagement workshops, and nearly 500 clinicians, managers and public representatives. The products of this engagement process have included a clinical output specification for each service which sets out the key anticipated activity, workforce, patient pathway and facilities challenges. In addition, the common cross cutting themes have been developed into a system-wide redesign programme coordinated with the Grampian Clinical Strategy implementation process linked to the other strategic themes of prevention, self-management and unscheduled care. This “matrix” approach continues to develop.

Via this engagement, optimal and deliverable models for innovating in service delivery and for the achievement of additionality have been derived. These have been robustly appraised and ranked in order of what to implement soonest, as part of a phased approach to our programme of improvement in elective care. Importantly, these have helped us to articulate a future vision for elective services and this IA is therefore a product of clinical and public engagement. The IA identifies the elective services that can most effectively benefit from capital investment as part of a longer-term investment programme, working optimally across and between Primary and Secondary Care.

The engagement process continues with the development of the Target Operating Model (TOM) aimed at applying best practice, quality and innovation to meet stretching targets for delivery. This work is based on the North of Scotland activity modelling process and the development of the TOM will increasingly be taken forward on a North of Scotland basis.

2.1.4 Capital Investment Priorities

The process identified a range of clinical services that require capital investment to maximise opportunities for efficiency and additionality over the next 10-15 years. The total capital investment requirements on the long-list of required improvements are unaffordable and estimated at £91.6 million.

An option appraisal was undertaken, consistent with the Scottish Capital Investment Manual (SCIM) approach, to identify which services were the highest priorities for investment in the short term. These high priority services are Dermatology, Respiratory, Urology, Radiology, Cardiology, Endoscopy, Day Surgery and Primary Care services and

are the focus for the Initial Agreement, with a capital investment requirement of £52 million. Within this is a requirement to develop diagnostic and treatment hubs in the community to support primary care access to modern facilities for the delivery of elective care. Further work will be done during the preparation of the Outline Business Case to determine the scope of diagnostic and treatment hubs and their location. Further work will also be done to determine the contribution of Dr Gray's Hospital in Elgin as part of a wider approach to elective care in Grampian and the North of Scotland.

The services identified above include a Cardiac cath lab and Interventional Radiology 'hybrid' theatre facilities, where there is a critical need to invest. Both facilities are required to meet anticipated future demand and sustain services regionally. We have been advised by the National Programme Team that these may not be entirely consistent with the requirements or scope of the National Elective Care Centres programme priorities, but their development in Aberdeen needs to be closely related to the Elective Care Centre Development. The £52 million excludes a required £4.3 million of capital investment for these facilities. Failure to include these facilities will leave a critical need for investment in supporting, developing and sustaining vital regional services.

Unlike other Elective Care Centre projects being taken forwards by other Boards, Orthopaedics and Ophthalmology are not considered as immediate priorities for capital investment in NHS Grampian. Orthopaedics has sufficient physical operative capacity but has workforce challenges which affect the ability of the service to meet demand. Ophthalmology has recently benefitted from investment related to enabling the Baird Family Hospital and ANCHOR Centre projects, which required the demolition and relocation of the existing Ophthalmology facilities on the Foresterhill Campus. This work took account of future demand up to 2035.

2.1.5 Proposed Physical Solution

The Foresterhill Campus in Aberdeen has a fully developed clinical services plan which has guided service reconfiguration and physical planning for the past 5-10 years. The plan has Board approval and is accepted by Aberdeen City Council as formal planning guidance. Within this plan there is an area identified for elective and ambulatory care close to the main concourse and the new multi-storey car park on the Campus i.e. it was selected to provide easy access for patients whilst being close to significant clinical facilities including theatres and radiology.

The proposed physical solution also maximises the opportunities arising from other developments including the aforementioned Baird and ANCHOR projects which will deliver a new women's hospital and cancer centre in 2021. The accommodations released by this project i.e. theatres and some outpatient accommodation, will be incorporated into the Elective Care assumptions thereby maximising the impact of the investment.

The Elective Care Centre facilities will be developed partly by the renovation of an existing building which is largely vacant (apart from the newly relocated ophthalmology service, and partly by the construction of an adjacent and linked new building to create an integrated Elective Care Centre. The accommodation will provide flexible outpatient and procedure rooms and day surgery facilities with easy access to diagnostic radiology and endoscopy. The accommodation will also include clinical research facilities to promote inpatient research, and simulation teaching facilities sponsored by the University of Aberdeen.

As indicated above, the physical solution for the diagnostic and treatment hubs will be determined at OBC stage as will the contribution of Dr Gray's Hospital. Dr Gray's is being engaged with at Hospital and Health and Social Care Partnership (HSCP) levels, in order to further shape this programme of work.

Appendix Q shows each of the clinical specialties involved in the local engagement process, each of whom have engaged in a minimum of three x three hour workshops in order to inform the redesign programme and the IA development. Appendix R shows the key themes of the overarching elective care programme in Grampian.

2.2 What are the current arrangements?

This section sets out the current stage in terms of the services affected by this proposal.

2.2.1 Service details and arrangements

This section will specify details of those service providers whereby it is felt that redesign options will be significantly facilitated by capital investment, in-keeping with the overall aims of the National Elective Care Programme. Information has been included regarding service performance, demand and activity along with current patient pathways outlined at appendix S.

The non-financial benefit criteria which are described at section 2.4.3, following development they were ranked, weighted and scored by Programme Board members and all potential investment options were subsequently appraised, resulting in a prioritised list of what to invest capital in soonest, for greatest sustainable impact on elective care challenges. This process is illustrated at appendix M. All options were considered in terms of their fit with key investment objectives (shown at section 2.4.2), resulting in the creation of a list of services that would be the focus of this capital development, as shown in table S1 below.

Table S1: Services affected by this proposal

Services			
1	Cardiology	5	Radiology
2	Dermatology	6	Respiratory
3	Endoscopy	7	Theatres
4	Primary Care services	8	Urology

The current state in relation to the services listed in table S1 are summarised in Section 2.2.1.

2.2.1.1 Cardiology

The NHSG Cardiology service is located mainly at Aberdeen Royal Infirmary (ARI) with community clinics provided at the Aberdeen Health and Community Care Village (AHV) and Aboyne, Turriff, Inverurie, Kincardine, Peterhead community hospitals. A comprehensive service is also provided at Dr Gray's Hospital, Elgin. Also, a cardiac rehabilitation service is delivered at ARI and other sites across NHS Grampian.

The main workload of the service is in dealing with acutely unwell patients, for example, acute coronary syndromes, heart failure, arrhythmias and more rare but urgent problems such as infective endocarditis. The service provides both acute and elective cardiology diagnostic and treatment services for people with problems associated with the heart and blood vessels and are provided on a secondary and tertiary basis for all NoS partners.

This includes:

- Supporting acute unscheduled care at ARI
- Delivering outpatient and day case inpatient Cardiology services from Dr Gray's and ARI sites to NHSG and NHS Orkney
- Providing peripheral clinics at other medical units throughout the Board

The Cardiology service is sub-specialised into the following areas:

- Heart Failure
- Chest Pain
- Valve disorder
- Arrhythmia
- Adult congenital
- Cardiomyopathy
- Familial (occasionally with Royal Aberdeen Children's Hospital (RACH))
- Post Percutaneous Coronary Intervention (PCI) – nurse led
- Post Cardioversion – nurse led
- Implantable Devices Clinics – Physiologist led
- Diagnostics – Echocardiography, Ambulatory /Holter Monitoring, Myocardial Perfusion Scans, Cardiac MRI and CT-coronary angiography, Exercise Tolerance Testing (ETT), Electrocardiogram (ECG)
- Tilt table testing – nurse led

Specialist services provided by the service include:

- Tertiary centre for the North East of Scotland e.g. Trans-oesophageal Echocardiograph (TOE) service for NHS Orkney
- Primary Percutaneous Coronary Intervention
- Electrophysiology (EP) centre

A number of the specialist interventions are provided within the 2 existing Cardiac Catheterisation Laboratories (cath lab). These facilities are insufficient in number and ageing. Currently, there is a reliance on a 3rd party provider to provide additional elective capacity for elective cath lab activity, this poses significant ongoing risk in terms of service performance and revenue. In addition, careful patient selection is required to utilise the 3rd party cath lab as it requires patients to be fully ambulant in order to access it.

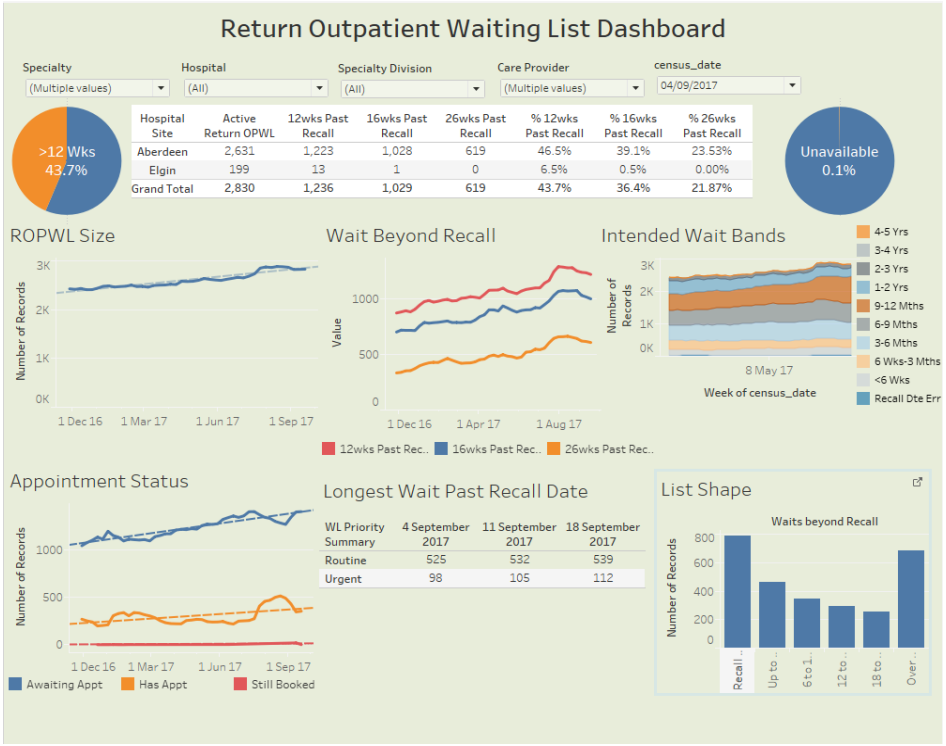
All services are provided locally with a number in conjunction with national centres e.g. Adult Congenital Heart Disease (ACHD), advanced heart failure e.g. Heart Transplant who are referred to the national centre at Golden Jubilee Hospital, and Transcatheter Aortic Valve Implantation (TAVI) which is currently referred to NHS Lothian for specialist input. Importantly, there are regional plans to deliver TAVI in the North, which are alluded to further in section 2.3.3.2

The Cardiology service provides joint input with the following specialties:

- Clinical Genetics – three or four clinics per annum
- Royal Aberdeen Children's Hospital
- Cardiothoracic joint Multi-Disciplinary Teams

The demand for Cardiology outpatient appointments is increasing, though has been relatively stable over the preceding 3-4 years. Waiting times are extending as outlined in the need for change section 2.3.3. This is linked to ageing demography, increased acuity, complexity and workforce challenges. Figure S2 below shows the challenge this places on return outpatient appointments, as the waiting list size grows along with the number of patients waiting more than 26 weeks beyond recall date. A lack of cardiac cath lab capacity is a contributory factor.

Figure S2: Cardiology Return Outpatient Waiting List Dashboard



In terms of new outpatient demand, generally 200 new outpatient attendances were seen per month between April 2011 and April 2015 when it dropped to around 150, linked to a retrial. This situation has temporarily been improved upon at times linked to use of 3rd party providers. From summer 2018 all Consultant vacancies are expected to be filled.

A figure illustrating the current cardiology patient pathway has been included at Appendix S.

2.2.1.2 Dermatology

The main Dermatology accommodation is at Burnside House, Foresterhill in Aberdeen, though outpatient and ambulatory services are delivered from a number of other clinic locations across ARI site, clinics are also held at ward 406 ARI and Royal Aberdeen Children's Hospital (RACH).

Specialist services provided include:

- Phototherapy
- Laser treatment
- Biopsies

- Patch Testing
- Lesion
- Acne
- Hyperhidrosis
- Botox
- Mohs (currently delivered by NHS Tayside).

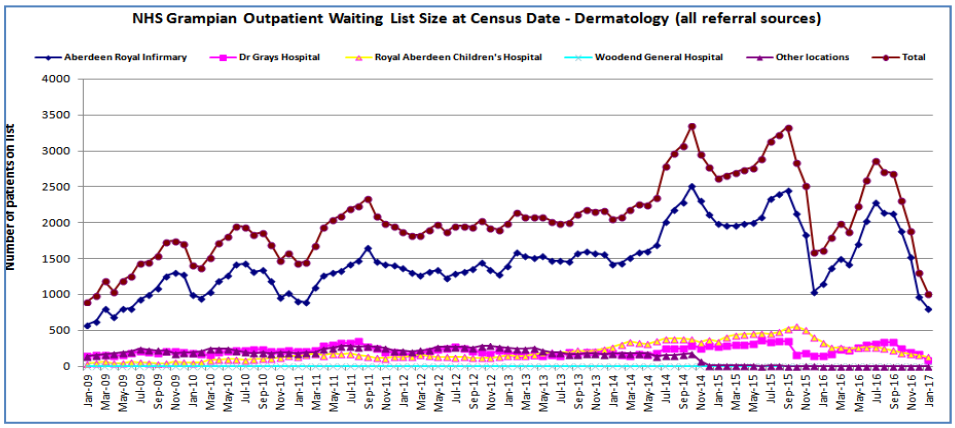
Satellite clinics are currently delivered from Fraserburgh (GP led) and Elgin. Previously clinics were also run from Banff, Huntly, Peterhead, Orkney and Shetland; these services are currently suspended due to critical staffing shortages. Orkney and Shetland have had to make alternative arrangements for all but urgent patients. The remaining satellite clinic patients now travel to ARI.

Tele-dermatology support is provided for the nurse specialists running clinics at Dr Gray's Hospital and Phototherapy treatments are provided from Ward 406 ARI, Dr Gray's and the Gilbert Bain Hospital in Shetland.

Dermatology has close links with the Plastic Surgery service with whom they provide a joint skin cancer service. There are six designated inpatient dermatology beds in ARI; these are located in Ward 110, a general medical ward. However, there are no dermatology nursing staff based in this ward and the designated beds are often used for other medical specialty patients, access to these is therefore very challenging at times.

The Outpatient waiting list is shown below in figure S3. Its size remained below 2,000 until September 2012. However, this began to increase gradually during the summer of 2013 (following staff retirement) and then rose sharply from spring 2014. Peaks of activity since then have been managed by the temporary addition of extra clinics, using 3rd party private sector providers and engaging locum Consultants at significant expense.

Figure S3: Dermatology New Outpatient Waiting Size



Note: sharp falls in list size shown in figure S3 are linked to time-limited periods of markedly increased private-sector usage. The upper line shows the total waiting list size across all sites in Grampian.

Limited outpatient day case activity is available on ward 406 and there is limited space for day treatment in Burnside house. The ability of the service to respond to growing demand is limited by the fragmented and dispersed nature of its accommodation. This compounds the extant workforce challenges and reduces opportunities for training, supervision and productivity.

Figure 2 in appendix S illustrates the Dermatology patient pathway.

2.2.1.3 Endoscopy

The Department of Gastroenterology and Endoscopy provides inpatient and outpatient treatment and diagnosis for patients with diseases or disorders of the gastro-intestinal system within NHSG, providing services also for NHS Orkney and Shetland. There are three distinct sub-specialisms within the department, though the specific service affected by this proposal is endoscopy:

- Luminal Gastroenterology
- Hepatology
- Endoscopy

Endoscopy services are predominantly provided at ARI though these are also undertaken in Dr Gray's Hospital and at the Aberdeen Health Village (by a 3rd party) and via the Community Hospital Scoping Service – available in Aboyne, Banff, Peterhead, and Stonehaven, undertaken by trained GPs. A 'hub and spoke' type model is in place

with ARI accepting more complex clinical work and other centres focusing more on disease exclusion.

Endoscopic inpatient and day case diagnostic and therapeutic interventions are delivered by Gastroenterologists, General Surgeons, Nurse Endoscopists and GPs with special interest. The Endoscopy service is provided at four sites within ARI. The main endoscopic interventions are grouped under the following:

- Diagnostic
- Bowel Screening
- Emergency
- Interventional/therapeutic procedures

The Endoscopy unit at ARI has three endoscopy rooms. Each room can support two lists per day and each list has a total of 10 or 12 'slots'. Each procedure is allocated a number of required slots:

• Colonoscopy	three slots
• Upper GI	one slot
• Flexible Sigmoidoscopy	one slot
• Endoscopy/colonoscopy	four slots

Demand for colonoscopy has been increasing in the last 3 years as indicated in table S2 below, which shows net additions of patients to waiting lists. There has been a 60% increase in demand for repeat colonoscopy procedures over the 3 year period 2013/14 to 216/17. As is shown in tables S3 and S4, demand for repeat Sigmoidoscopy and Upper GI and has increased by 50% and 25% during the same period. Maintaining activity has been challenging for Colonoscopy which has also experienced increased demand, although activity has also been higher since 2015/16 as an artefact of the 3rd party contract to provide additional Endoscopy activity at the Aberdeen Health Village (AHV) and linked to Waiting List Initiatives.

Table S2: Colonoscopy Demand

Colonoscopy						
Demand	FY1112	FY1213	FY1314	FY1415	FY1516	FY1617
ARI Booked						
New Day Case	4296	4011	3759	3787	4552	4655
Repeat Day Case	1012	1095	1007	1230	1618	1609
New Inpatient	297	209	213	182	226	235
Repeat Inpatient	66	100	85	94	145	143
Dr Gray's						
Day Case	807	658	726	826	1143	936
Repeat Day Case	303	205	187	256	351	254
Inpatient	6	0	4	4	7	20
Repeat Inpatient	4	1	0	2	4	11
Total Colonoscopies	6791	6279	5981	6381	8046	7863

Table S3: Flexible Sigmoidoscopy Demand

Flexible Sigmoidoscopy						
Demand	FY1112	FY1213	FY1314	FY1415	FY1516	FY1617
ARI Booked						
New Day Case	2209	2184	2295	2497	2134	2111
Repeat Day Case	297	415	324	400	458	483
New Inpatient	29	13	31	18	17	15
Repeat Inpatient	13	10	19	27	25	19
Dr Gray's						
Day Case	539	590	574	612	584	612
Repeat Day Case	61	59	56	81	91	100
Day Case therapeutic	37	58	50	30	47	65
Repeat Day Case therapeutic	8	4	3	1	4	5
Inpatient	2	1	1	2	0	3
Repeat Inpatient	0	0	1	1	1	1
Total Sigmoidoscopies	3195	3334	3354	3669	3361	3414

Table S4: Upper GI Endoscopy Demand

Upper GI Endoscopy						
Demand	FY1112	FY1213	FY1314	FY1415	FY1516	FY1617
ARI Booked						
New Day Case	4126	3867	3690	3315	3520	3738
Repeat Day Case	755	838	857	986	1110	1061
New Inpatient	155	102	125	74	106	84
Repeat Inpatient	82	63	85	91	85	86
Dr Gray's						
Day Case	882	810	801	802	668	738
Repeat Day Case	180	178	131	200	183	173
Inpatient	3	0	2	0	3	1
Repeat Inpatient	4	0	1	0	0	0
Total Upper GI Endoscopies	6187	5858	5692	5468	5675	5881

The dispersed acommodation utilised by the Endoscopy service limits scope for improved efficiency and productivity. In addition maintaing

confidentiality and patient dignity is challenging e.g. with patients coming in for procedures having taken bowel preparation, with limited access to toilet facilities in the clinic.

A figure illustrating the current the Endoscopy patient pathway has been included at Appendix S.

2.2.1.4 Primary Care services

In Grampian these services are delivered by the three Health and Social Care Partnerships. There are currently 75 General Practices across Grampian with a contract to provide General Medical Services (GMS). As well as provision of essential and additional services, GP practices also provide a broad range of enhanced services including National Immunisation Programmes, Minor Injuries, Minor Surgery, Drug Misuse, Near Patient Testing and care of patients with Diabetes.

There are 16 Community Hospitals operating across NHS Grampian (primarily in Aberdeenshire and Moray) providing services to rural communities. Services provided vary depending on the size of each hospital but include a broad range from acute care, A & E, palliative care to diagnostics - radiology and telemedicine, therapeutic facilities – Physiotherapy, Occupational Therapy, Minor surgery and Day Hospital/Rehabilitation. Within Aberdeen City, the Community Health & Social Care Village provides a broad range of services to the population of Aberdeen City including Minor Surgery, Radiology, Dental, Sexual Health, Physiotherapy, Podiatry, Speech and Language Therapy (SALT) and Cardiac Rehabilitation Services.

Other Primary Care Contractors are also working in collaboration to deliver enhanced services, such as the Pharmacy Minor Ailments Clinics, Chronic Medication Service, and Optometry Eye Healthcare Network.

2.2.1.5 Radiology

The function of the Radiology Service is to provide a diagnostic imaging and reporting service, imaging guided diagnostic/therapeutic procedures and interventional radiology for inpatients, day case patients and outpatients. These are referred to the service from primary and secondary care providers.

In addition to the people of Grampian, a remote reporting service and monthly radiologist visits are provided for the Orkney and Shetland Isles within a Service Level Agreement (SLA), and within Cardiac Catheterisation Labs an ablation service for Tayside.

Radiologists are present for all MDT meetings of which there are 20 per week. This includes both local and regional MDTs. Radiologists have a significant commitment preparing and leading clinical discussion for cancer and non-cancer MDTs and this equates to 25-50% of their week depending on how many MDTs they cover.

Subspecialties within the scope of this programme:

- General radiology imaging
- General ultrasound
- Computed Tomography (CT)
- Magnetic Resonance (MR)
- Nuclear Medicine (includes Positron Emission Tomography (PET) CT)
- Fluoroscopy
- Cardiac Catheterisation
- Interventional Radiology
- Barium Studies
- Gynaecological ultrasound imaging (90% will continue to be undertaken in the Radiology Department, only 10% estimated to be undertaken in the Baird Family Hospital).

Highly specialised Services (not all within scope)

- Oncology: Tumour Ablation (CT guided)
- Endoscopic Retrograde Cholangiopancreatography (ERCP) and Endoscopic ultrasound (EUS) within Fluoroscopy
- Breast Biopsies (MRI guided)
- Vascular intervention – Endovascular Aneurysm Repair (EVAR) and Fenestrated Endovascular Aortic Repair (FEVAR)
- Ultrasound guided renal biopsies in connection with Renal physicians

- Head and neck ultrasound guided Fine Needle Aspirations (FNAs)
- Ultrasound guided injections for Musculoskeletal (MSK)
- Adult and Paediatric echo
- Obstetric support

Local referrals are received from GPs, Physiotherapists, Hospital Doctors, Dentists, and Chiropractors and, in some situations, advanced practitioners.

For regional referrals, a SLA is in place for Orkney and Shetland reporting and out of hours CT (as of August 2017). Medical staff are on a rotation to cover Orkney and Shetland with a monthly radiologist visit. NHS Highland and NHS Tayside make referrals for highly specialist procedures and tertiary referrals in some areas such as paediatric.

In terms of accommodation there are limitations on the service ability to modernise and transform care. There are also significant challenges with the ageing equipment and ability to keep pace with a demographic and guideline driven demand growth, this is elaborated upon in later sections, but poses particular pressures in respect of CT, MRI and Interventional facilities.

A detailed table of service locations has been included in appendix T.

2.2.1.6 Respiratory

The NHSG Respiratory Medicine Service provides a diagnostic, treatment and advisory service for patients with conditions affecting the respiratory tract and related systems. Respiratory medicine is a significant area of activity for both primary and secondary care services in NHSG. Commonly encountered respiratory conditions include:

- Disease of the airways – such as chronic obstructive pulmonary disease (COPD) and asthma – predominantly treated in primary care with an important link to secondary care for specialist expertise, diagnosis and management of advanced disease and acute exacerbations
- Infection of the respiratory system, (such as pneumonia)
- Sleep disordered breathing

- Cystic fibrosis
- Non-cystic fibrosis bronchiectasis
- Lung cancer and mesothelioma
- Interstitial lung disease
- Pleural disorders

The function of the service is to:

- Provide inpatient services for both elective and emergency admissions, including assessment, diagnosis, treatment and rehabilitation to enable discharge planning
- Provide respiratory medicine consultation service to patients with respiratory disorders admitted to other specialties (surgical and medical, including ICU and HDU)
- Deliver multi-disciplinary provision across Grampian (such as cancer and interstitial lung disease)
- Provide day treatment provision for a wide range of respiratory disorders
- Deliver specialist diagnostic tests such as bronchoscopy
- Deliver a pulmonary function service
- Closely work with other specialties such as oncology and palliative care
- Participate in the Respiratory Medicine Managed Clinical Network (MCN) and work with primary and community health services to support effective management of respiratory disorders in community settings
- Provide patient education and support as necessary
- Provide patients with streamlined outpatient services

Specialist Respiratory services include:

- Difficult asthma clinic
- Lung cancer clinic

- Sleep clinic
- Cystic fibrosis clinic
- Pulmonary vascular clinic (performed by visiting specialists)
- Bronchiectasis clinic
- Oxygen clinic
- Interstitial lung disease clinic
- Diagnostic pleural clinic
- Early supported discharge service

Respiratory service performance on outpatient waiting times has been very challenging as is demonstrated in figure S4.

Figure S4: Respiratory outpatient waiting times Jan-Feb 2017

The quality and scale of the respiratory service outpatient accommodation is linked to inefficiencies whereby avoidable hospital admissions take place and opportunities to shift unscheduled care to scheduled are missed. Admission for the purpose of elective medical treatments also takes place – linked to availablility and suitability of outpatient accommodation.

A figure illustrating the current the Respiratory patient pathway has been included at Appendix S.

2.2.1.7 Theatres

The theatres considered within the scope of this proposal are as follows:

- Main Theatre Suite at ARI
- The Short-Stay Theatres at ARI
- 202 Urology Day Case Theatre
- Level 0 Theatres (old A&E theatres)
- Woodend Theatres (elective orthopaedic)
- Dr Gray's Theatres

Figure S5 below shows the total number of elective planned cases from 2012 to 2017. This indicates a reduction in activity from end 2016, linked to theatre workforce availability and the impact on staffed sessions.

Figure S5: Elective Theatre Activity

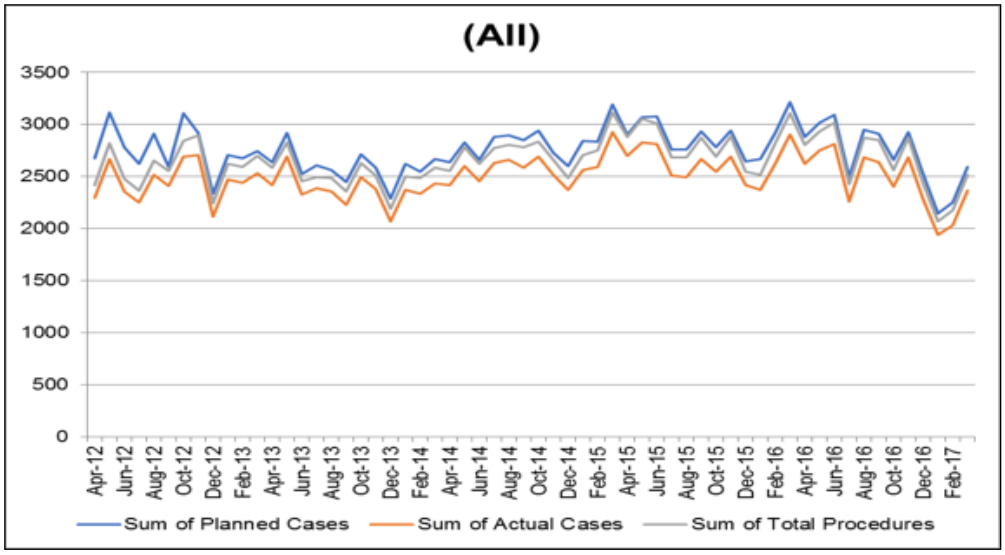
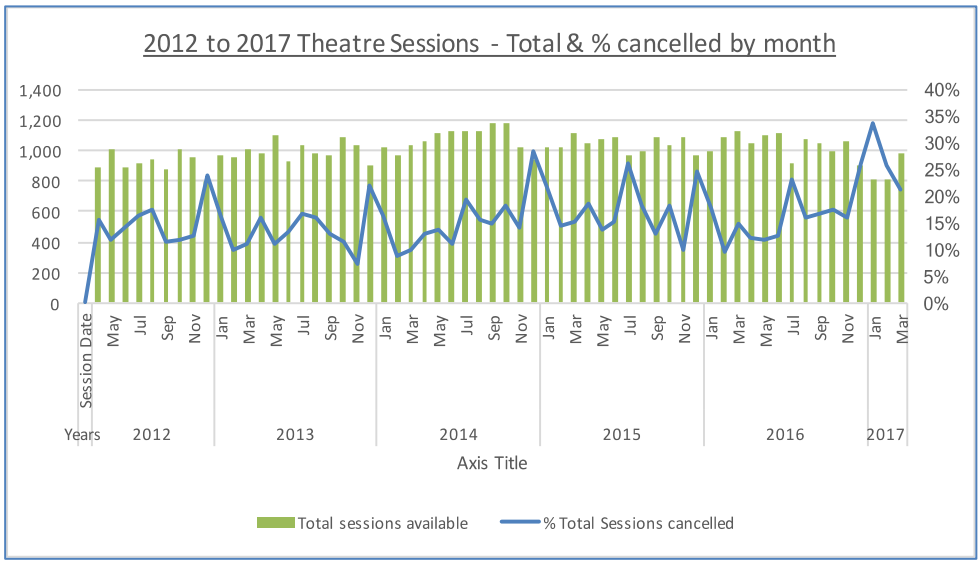


Figure S6 below shows the total number of sessions used and % cancelled from 2012 to 2017. This shows a significant reduction in January and February 2017 to the lowest number at 800 sessions. In addition, at this time there was the highest rate of cancelled sessions at 35%, again this was linked to workforce availability and winter pressures.

Figure S6: Elective Theatre Activity



2.2.1.8 Day Case surgery

It is accepted that acute hospitals should seek to shift as much inpatient activity to day case as is clinically appropriate. One determinant of performance in this regard is compliance with BADS (British Association of Day Surgery) targets. Table S5 below shows recent performance at a site level.

Table S5: BADS procedures per Site and whether Day Case or Inpatient

Hospital	Day Case / Inpatient	Non-BADS Procedure	BADS Procedure	Total Procedures
Aberdeen Royal Infirmary	Day Case	2163	5908 (66%)	8445
	Inpatient	3163	3033	5822
Dr Gray's Hospital	Day Case	1117	2056 (82%)	2448
	Inpatient	451	463	1640
Woodend General Hospital	Day Case	776	1825 (76%)	3165
	Inpatient	2119	546	2101

The theatre estate is dispersed and much of it is towards the latter stages of its life-cycle, there is scope to consolidate functions such as day surgery in order to improve productivity, as well as meet the implications of:

- The need to increase emergency theatre capacity (informed by IHO work ongoing)
- The implications and requirements associated with becoming a Major Trauma Centre (ARI autumn 2018)
- Demand growth for elective care
- Significant workforce challenges

A figure illustrating the current the Theatre patient pathway has been included at Appendix S.

2.2.1.9 Urology

The NHSG Urology service provides services to patients of all ages with disease or dysfunction of the male and female urinary tract system and male reproductive organs. This encompasses diseases of the kidney, bladder and prostate, including incontinence, infertility, cancer and reconstruction of the genito-urinary tract. In addition to providing services to the population of Grampian, services are provided to patients referred from NHS Orkney, NHS Shetland and for certain procedures, NHS Highland. The service is predominantly located within ARI with some specialist services also provided from Dr Gray's Hospital, Elgin and a small number of peripheral outpatient clinics based in four community hospitals.

Specialist outpatient services are delivered as follows:

ARI:

- Haematuria (two clinics per week)
- Prostate (two clinics per week)
- Urodynamics
- Erectile dysfunction
- Benign Prostatic Hyperplasia (BPH)
- Urinary Flow

- Intermittent Self Catheterisation (ISC)
- Prostate Cancer Follow Up
- UCAN (one stop urological cancer open five days per week)

Dr Gray's Hospital, Elgin:

- Direct Access clinic (two clinics per week)
- Cystoscopy clinic
- Prostate one-stop clinic (two clinics per week)
- Erectile Dysfunction

Joint working with other specialties/services:

- Urinary Incontinence: NHSG has a specialist MDT approach
- Joint Fertility Clinic with the Obstetric Service
- Joint Penile Cancer Clinic with the Plastic Surgery Service

In addition, the department works as required with Oncology, Renal and Radiology.

Orkney:

There is no island based Doctor with a special interest. All work other than simple cystoscopies, scans and flow, transfers to ARI. The Nurse Specialists provide remote support to Island staff. A CT Scanner is available on site.

Shetland:

There is an Island based Consultant with a special interest in Urology. In addition to cystoscopies, scans and flow, this Consultant will undertake scopes and biopsies and will dial in to MDT meetings. A CT scanner is available on site. Work beyond this transfers to ARI. The Nurse Specialists provide remote support to Island staff.

Access to Beds/Treatment Areas

Beds/Trolleys:

ARI:

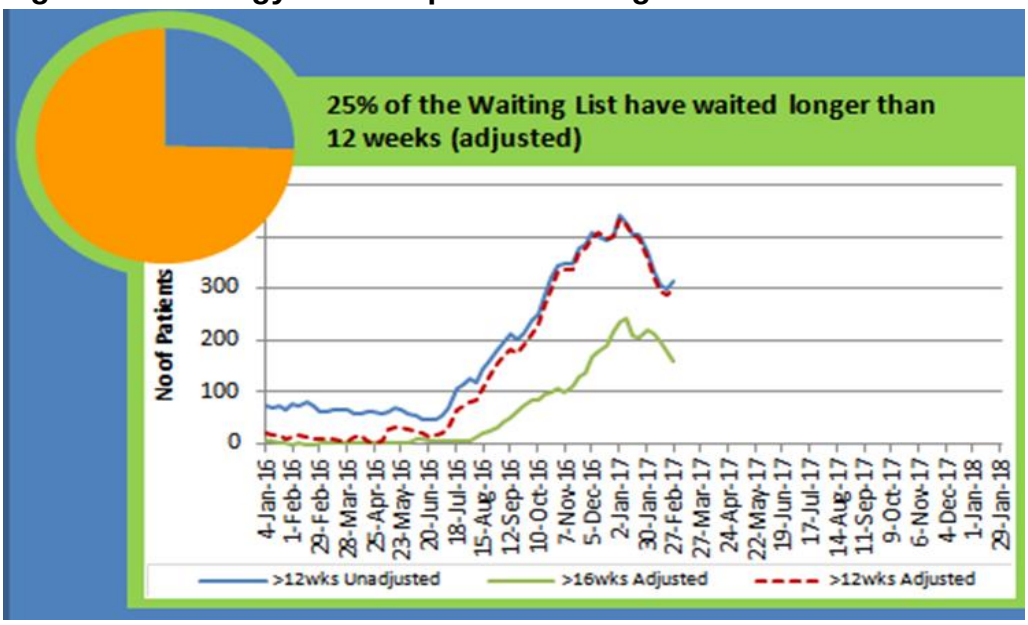
- 25 surgical beds in ward 209
- Short-stay cases are admitted to Wards 201/211
- Day case - 12 trolleys on Ward 202

Dr Gray's:

- 2-4 inpatients per week to surgical ward
- 6 day case beds

Urology waiting times have been steadily increasing as shown in figure S7. This shows steady incline in the numbers of people waiting over 12 weeks, the decline in numbers at early 2017 is linked to use of private sector, and additional non-recurring revenue funding from SG at that time.

Figure S7: Urology New Outpatient waiting times



Urology faces some of the highest forecast increases in demand, as is shown in section 2.3.1. The quality, availability and suitability of outpatient space and ease of access to diagnostics drives reduced efficiencies and patient-centredness when compared to alternative modern models of outpatient care.

A figure illustrating the elective Urology patient pathway and flow has been included at Appendix S.

This section has provided an outline of the current state in relation to main service arrangements, locations and details pertaining to those services affected by this proposal. Many services face common challenges which can be summarised as follows:

- Services are fragmented, not person-centred and result in avoidable attendances and admissions
- Performance and quality targets are not being met, patients awaiting essential reviews are waiting beyond their recall dates
- Where physical capacity is unable to cope with current and predicted demand
- Retention and sustainability of services and workforce is being adversely affected
- Scope to improve service efficiency and performance is constrained
- Access to and use of technology is sub-optimal
- Ongoing haphazard and wasteful use of resource will be likely in order to attempt to meet future demand with current infrastructure e.g. through high-cost reliance on 3rd party providers and supplementary staffing
- Comparative analysis of other Boards infrastructure demonstrates lower availability of essential diagnostic facilities within Grampian than comparable Boards in Scotland

2.2.2 Service providers

NHS Grampian and the three Integrated Joint Boards (IJBs) within Grampian are the key service providers impacted by this proposal, though there is a developing context of joint planning and delivery of services with partner Boards in the North.

The majority of services affected by this proposal are managed by NHSG, though there are some areas where services are currently delivered via 3rd party providers, linked to infrastructure and workforce challenges including:

- Mobile MRI scanning
- Mobile Cardiac Cath Lab

- Endoscopy at Aberdeen Health Village (via a 3rd party, though delivered in a NHS facility)

- Delivery of Cataract surgery and routine day case General Surgical procedures by 3rd parties, linked to theatre workforce availability

- Intermittent use of private sector Hospitals (linked to availability of SG Access funding)

- Use of the Golden Jubilee Foundation Hospital in Clydebank (though clearly this is NHS facility)

Elective Care is a key priority within the North of Scotland (NoS) Regional Delivery Plan. Engagement with colleagues from, in particular, NHS Highland and NHS Tayside is underway with a view to ensuring the integration of approaches in support of optimal service pathways and sustainability. Partners are brought together in this regard via the Regional Elective Care Programme Board, which has overseen the development of a regional strategic case in support of integrating the development of the business cases across the North Boards. In addition a senior operational group has been formed regionally and will strive to harmonise access to elective care via unified policies and pathways.

The NoS regional strategic case has taken an initial focus on the key specialties of Orthopaedics and Ophthalmology in recognition of their predicted increasing demand associated with an ageing population. These specialities are the focus of NHS Highland's approved IA and forthcoming OBC, which is consistent with the majority of the five Boards involved in the national programme. Beneficial investment in infrastructure to support improved regional patient pathways is anticipated as a result. However, the scope of this case is being broadened to reflect the NHSG and NHS Tayside Elective Care Programmes and the range of specialties involved. Work is underway to further develop the regional strategic case in support of the developing business cases across NoS Boards e.g. in support of the investment priorities identified by NHS Grampian and NHS Tayside.

There is an increasing requirement for working collaboratively across NoS for Radiology and Vascular surgery to sustain services on a North of Scotland basis, given extant workforce challenges.

In addition there is an opportunity to build on existing links with the University of Aberdeen's School of Medicine through the creation of a

new world-class clinical research facility. The new facility would replace discipline-specific research facilities including a Cardiac research unit with equipment, a diabetes research facility for complex clinical studies, and facilities for oncological trials. The facility would be available to all those who participate in clinical research between NHSG and the University of Aberdeen. This would allow staff to undertake clinical research in the facility whilst having their main clinical or laboratory area on the integrated Foresterhill campus. It is envisaged that the full feasibility, benefits and affordability of this opportunity will be ascertained during the OBC completion, and expanded upon at that stage of the proposal.

2.2.3 Associated buildings and assets

The range of services included within this proposal operates from multiple locations across Grampian, indeed often from multiple locations on the same site, which limits efficiency and synergy. There are significant backlog maintenance pressures and constraints which place limitations on service scope to modernise and deliver innovative healthcare services. This is true of outpatient, inpatient, diagnostic and community-facing services.

In order to overcome the resulting service limitations linked to the present infrastructure significant refurbishment and new construction would be required. Indeed, some accommodation is not judged fit for continued usage as clinical space even if refurbished; this is particularly true of some outpatient clinic environs.

In order to provide additional context to this section, service delivery locations, described per specialty, have been included at appendix T.

2.2.3.1 Accommodation condition and expenditure requirement

Table S6 outlines the current condition and performance of the accommodation likely to be affected by this capital development. The appraisals of the buildings noted below have been undertaken in accordance with the NHS Scotland property appraisal guidance “A risk based methodology for property appraisal”. These appraisals show that there are problems with the current accommodation in terms of physical condition, compliance with statutory standards, space utilisation and functional suitability. There is very little potential for developing either existing or new services within the existing facilities due to the physical condition of the existing facilities. The current design and functional suitability seriously compromises the provision of modern health and care services from these buildings in line with forecasted activity demand and modern pathways of care.

Table S6: Current Accommodation

	Current condition and performance of the Estate based on NHS Scotland National Standards				
	Existing areas sq.m	**Physical Condition**	**Statutory Standards**	**Space Utilisation**	**Functional Suitability**
Endoscopy Suite	328	Not satisfactory	Not satisfactory	Fully utilised	Satisfactory
Short Stay Theatre Suite	609	Satisfactory	Not satisfactory	Over-crowded	Satisfactory
Wards 301/302	1503	Not satisfactory	Not satisfactory	Fully utilised	Satisfactory
Clinic C	275	Not satisfactory	Not satisfactory	Over-crowded	Not satisfactory
Pulmonary Function Clinic	102	Satisfactory	Satisfactory	Fully utilised	Satisfactory
Burnside House	509	Satisfactory	Satisfactory	Fully utilised	Satisfactory
Ward 406	617	Satisfactory	Not satisfactory	Fully utilised	Satisfactory
Clinic A	378	Satisfactory	Not satisfactory	Fully utilised	Satisfactory
Pre-Operative Assessment Clinic	461	Not satisfactory	Not satisfactory	Over-crowded	Not satisfactory

The assessment detailed in the Table S6 above shows that there are problems with the majority of the accommodation that supports these clinical services.

Additionally Table S7 shows that the backlog maintenance expenditure requirement recorded for these buildings is around £1.5m and that 33% of this backlog is assessed as being of significant or high risk.

Table S7: Backlog Maintenance (Prime Cost)

	Backlog Expenditure Requirement by Risk Profile				
	Low	**Moderate**	**Significant**	**High**	**Total**
Endoscopy Suite	£15,535	£12,230	£43,720	£8,100	£79,586
Short Stay Theatre Suite	£100,423	£13,715	£17,465	£2,055	£133,657
Wards 301/302	£70,591	£267,790	£119,547	£45,804	£503,732
Clinic C	£51,504	£150,882	£82,695	£2,220	£287,301
Pulmonary Function Test (PFT) Clinic	£4,831	£3,803	£13,596	£2,519	£24,749
Burnside House	£20,202	£18,315	£32,745	£0	£71,262
Ward 406	£21,823	£28,630	£26,033	£28,770	£105,257
Clinic A	£20,821	£14,094	£50,426	£9,335	£94,676
Pre-Operative Assessment Clinic	£34,188	£161,450	£28,305	£2,220	£226,163
Total	**£339,918**	**£670,909**	**£414,533**	**£101,023**	**£1,526,383**

This backlog maintenance expenditure requirement is defined as the basic cost of works to bring the buildings back to an acceptable condition. This definition is in accordance with the Health Facilities Scotland Guidance on backlog costing and, as such, it excludes VAT, contractor's preliminaries, temporary re-housing costs etc.

Experience of undertaking backlog works in existing hospitals has shown that the final outturn cost of such works can be significantly higher than the basic backlog cost, often resulting in a doubling of the basic cost. To eradicate the backlog maintenance burden costs in these buildings would cost NHSG circa £3 million.

It should also be borne in mind that this backlog maintenance expenditure requirement is associated with the structure and physical condition of the buildings and, even if these monies were expended, it

would not address the space utilisation and functional suitability issues which currently exist in the buildings.

2.3 Why is this proposal a good thing to do?

As outlined in Section 2.1, a key aim of the elective care investment is the delivery of additional capacity to support meeting demand for elective care in future. This proposal supports delivery of improved capacity for delivery of care and the embedding of both the National and aligned Grampian Clinical Strategies. Furthermore, aspects of this investment proposal will help to secure the ongoing sustainability of services within the North of Scotland (NoS). In particular this pertains to cath-lab and Interventional Radiology facilities, which are of strategic importance to NHSG and NoS.

As well as the direct benefits related to elective care, the proposed capital investment will also yield significant added value to a wide range of other services i.e. the capital investment will:

- Complement the Elective Care redesign programme and help develop a “tiered” approach to elective care through the creation of community diagnostic and treatment hubs. Retaining activity in the community and focusing secondary care Elective Care facilities on activity which requires specialist skills and facilities
- Improved service performance and compliance with desirable Target Operating Models (TOM)
- Support the development of the NHS Grampian Strategy and Regional Workforce Plan
- Advance the agreed Foresterhill Campus Development Plan by creating an elective care focus on the Campus consistent with the clinical service blueprint
- Strengthen the research and development relationship between the University of Aberdeen and NHS Grampian through the creation of a clinical research facility (funding to be secured by the University)
- Contribute to the reduction in backlog maintenance

2.3.1 What is the need for change?

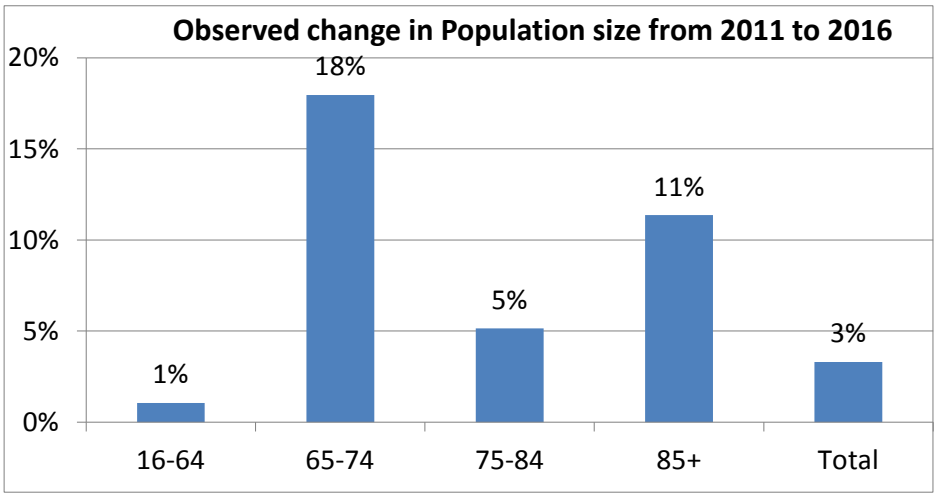
In clarifying the need for change, the process has involved extensive work by Health Intelligence colleagues to develop a detailed understanding of the challenges presented by demographic changes and associated increases in demand. With modelling undertaken on a local and regional basis, a clear picture has emerged of the need for change if NHS Grampian is to address the current and future need for elective care.

This section confirms the current and developing context for delivering elective services with the implications for future demand and capacity. Figure S8 illustrates this challenge, highlighting the increasing demand for services and the increasing capacity constraints as well as the associated gap between demand and capacity. Minimising this gap is a fundamental aim of the Elective Care Programme.

Figure S8: Illustration of elective care challenge

The changing demographic profile of Grampian is well publicised and our population, like the rest of Scotland, is ageing and growing. These changes are gradual and have been occurring for some time. Since 2011, the Grampian population has risen by 3.3%, an increase of 15,590 people. Unsurprisingly this increase is biased towards middle-age and older adults, where population groups between 65-74 and 75-84 years of age have grown by 18% and 5% respectively. Notably there has been an 11% increase in those aged over 85 years as is shown in figure S9.

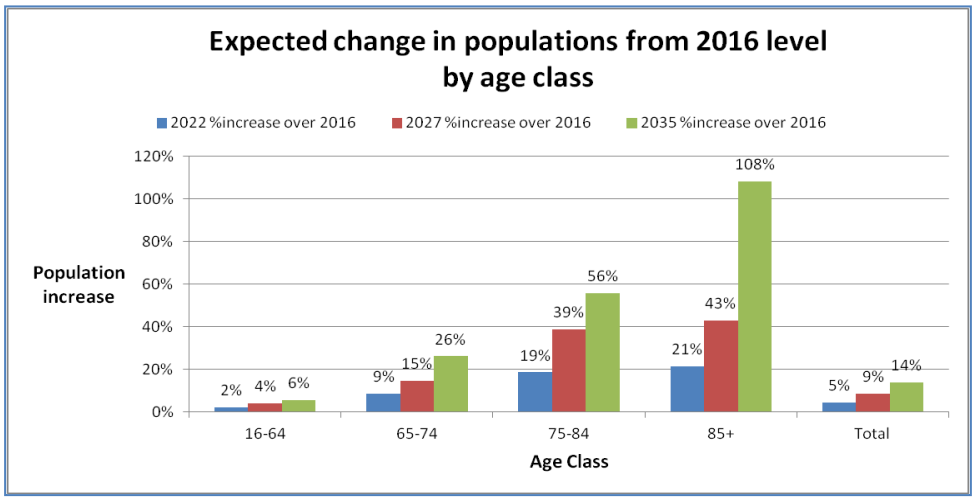
Figure S9: Grampian population increase between 2011/12 and 2016/17 by age band



Clearly this has an impact on health care need, particularly for conditions associated with ageing. In the past six years, specialties including Ophthalmology, Orthopaedics and Urology have seen

considerable rises in demand for care and in some specialties; this increase will be magnified over the next decade.

Figure S10: Expected Change in Grampian Population Age Classes by 2022, 2027 and 2035



The expected population growth is outlined in Figure S10, which shows anticipated growth over the next five and 10 years and onwards to 2035.

This demonstrates the challenge ahead given that in 10 years there will be 39% more 75-84 year-olds and 43% more 85+ year-olds, with an even more extreme change projected by 2035. It also highlights that the predicted growth of those of working age is negligible in comparison. These age classes may be subject to further impact linked to changes to the global downturn in the oil industry.

Key to describing the need for change is to discuss implications for demand for elective services. Future demand projections for new and return outpatient care, day case and inpatient care are noted below in Figures S11 to S14. These are followed by sub-sections exploring Endoscopy and Radiology demand. In the main these projections assume that demand scales in line with forecast population increases across the age classes above as per figure S10. These projections assume no change or improvement in referral or vetting practice, or improved efficiency or productivity.

Figures S11 to S14 below do not take into account the impact of new treatments which may become available, where there is potential to increase routine demand such as in relation to the development of injectable treatments for ophthalmic conditions. These figures are presented at Grampian level and are not split by site.

2.3.1.1 New outpatient demand

Figure S11: Potential Increase in New Outpatient Demand: 2027 & 2035

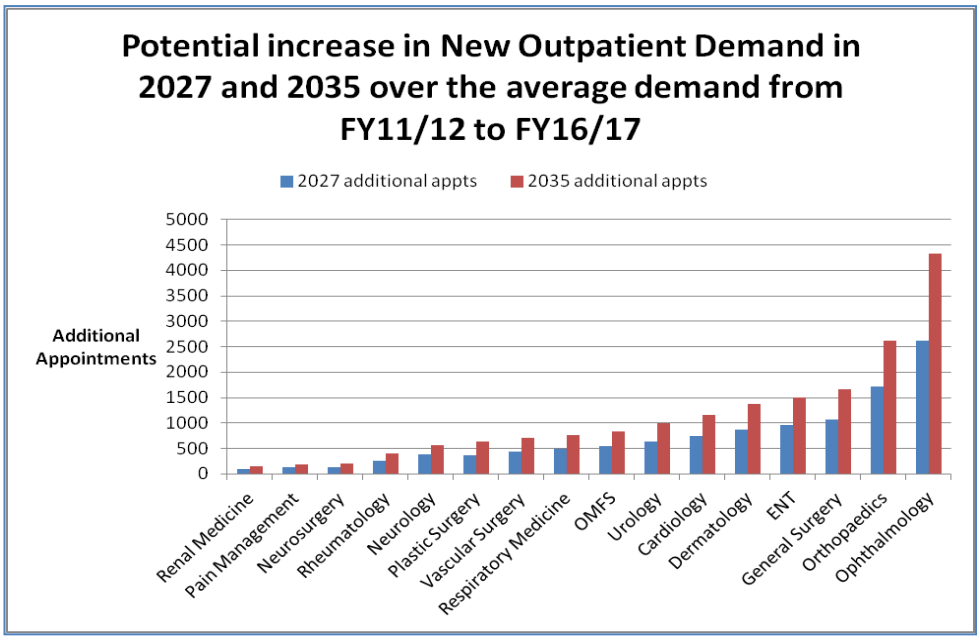
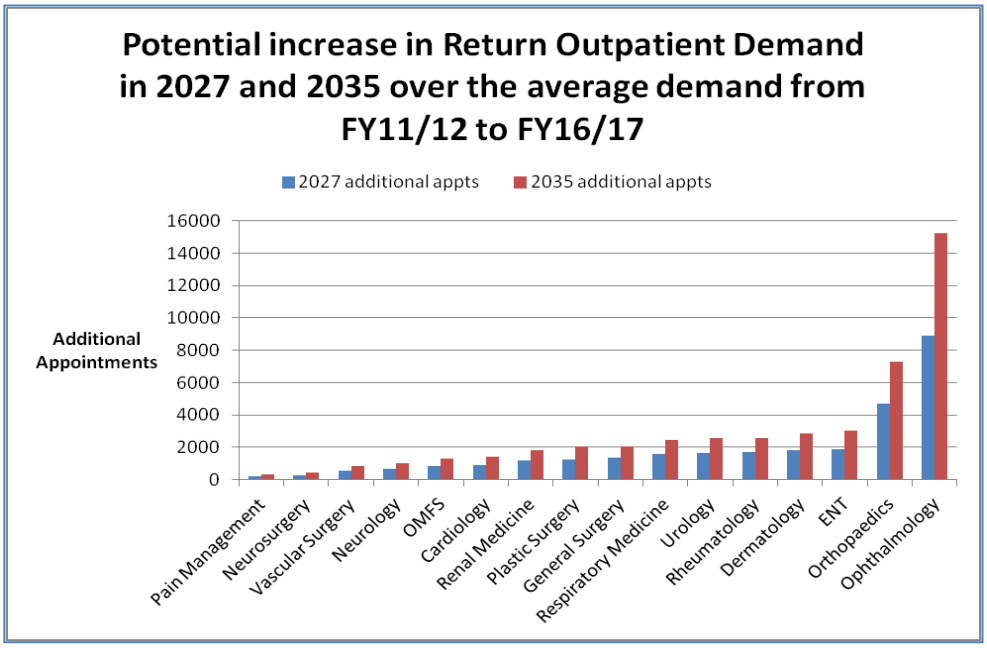


Figure S11 demonstrates acute adult specialties and their potential projected increase in demand, expressed as additional outpatient appointments required per year. Across all of these specialities approximately 11,500 more new outpatient appointments per annum could be required by 2027 if demand is not moderated or capacity redesigned. Again the increases are more marked by 2035. Differences between specialties occur as a consequence of their differing age profiles of patients treated. Ophthalmology has a high percentage of patients in the older age classes, where population growth is expected to be high.

2.3.1.2 Return outpatient demand

Recognising the difference in age profile for return outpatient appointments, the potential increases in demand are greater for return appointments than for new as is shown in figure S12.

Figure S12: Potential Extra Return Outpatient Demand: 2027 & 2035



Across these entire specialties approximately 29,000 more return outpatient appointments per annum could be required by 2027 were no change in culture, practice or optimisation to take place. Reducing variation in return appointments and review processes is a key NHS Scotland strategic principle as outlined in the aforementioned 'Modern Outpatient: A Collaborative Approach' (2017-2020). Specific local considerations and planning in relation to Orthopaedics and Ophthalmology are outlined in sections 2.3.4.2 and 2.3.4.3.

2.3.1.3 Day case and inpatient demand

The potential increase in day-case demand shows highest increases for Ophthalmology and Urology. Again, for Ophthalmology this is discussed further in section 2.3.4.3 in relation to the considerable efforts and pre-existing plans underway to moderate and provide increased capacity towards meeting this demand.

Figure S13: Potential Increase in New Day Case Demand: 2027 & 2035

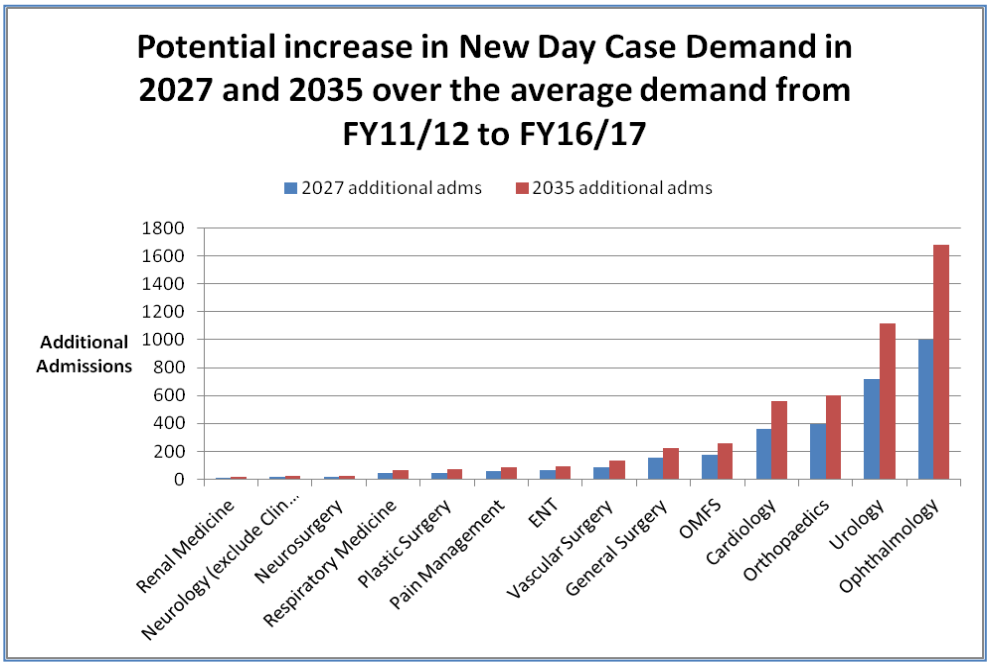
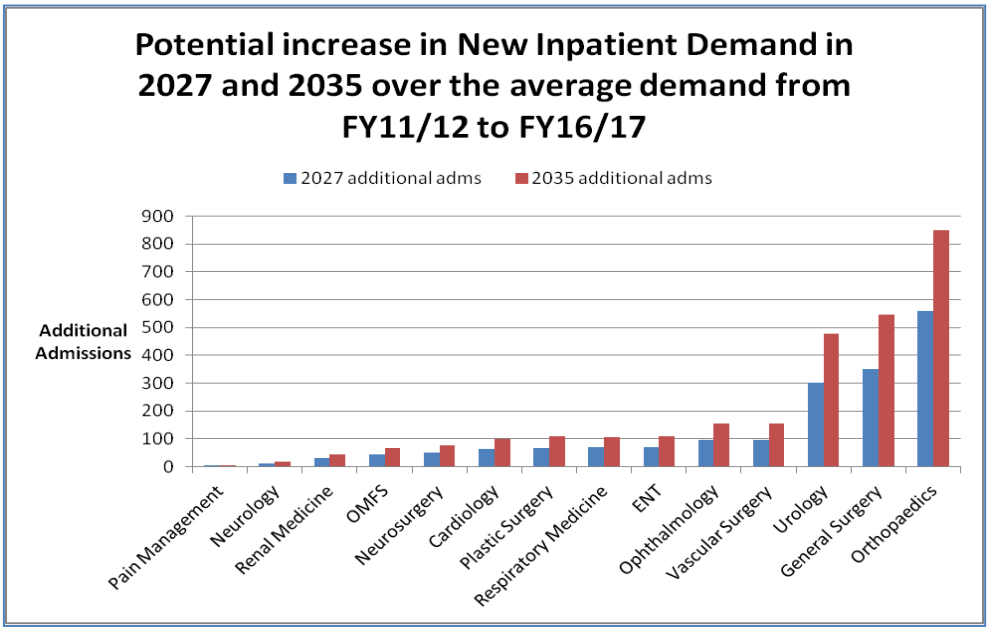


Figure S13 above outlines the projected potential increase in day case demand per specialty expressed as requirement for additional admissions per annum. Figure S14 shows the potential impact of demand growth on inpatient admissions which shows a different grouping of services.

Figure S14: Potential Extra Inpatient Admissions Required: 2027 & 2035



The reader is reminded that the above projections are based on average demand over the last six years activity, across age classes and assume no process change or efficiency gain. They therefore represent a 'do nothing' scenario in terms of scope to improve, which is presented for illustrative purposes.

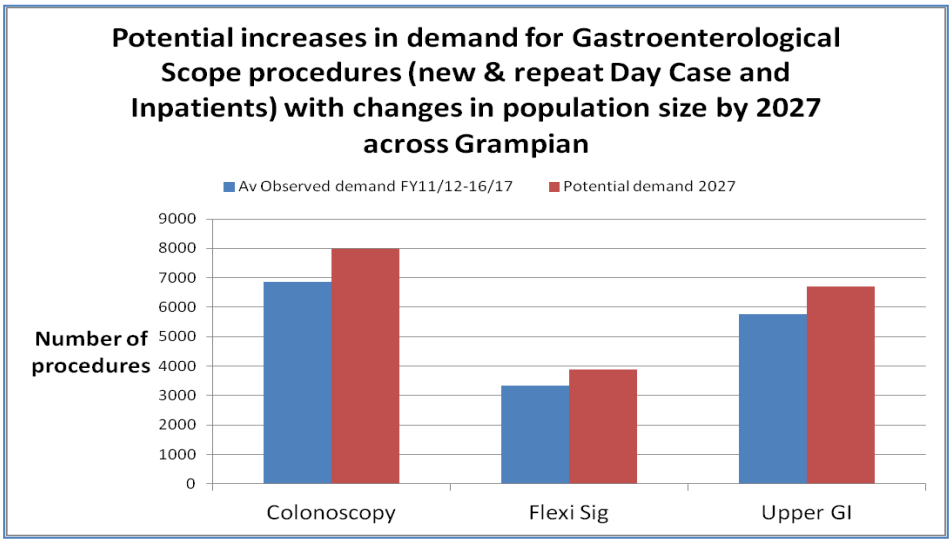
2.3.1.4 Endoscopy, Primary Care and Radiology need for change

Further to the system demand perspective presented in figures S11 to S14, while these pertain to most of the services with whom we have engaged, they do not include detail of the projected demand for Endoscopy and Radiology services, which is summarised below. Primary care is addressed separately.

<u>Endoscopy demand</u>

The demand for Endoscopy and interventional procedures is increasing. This is outlined in figure S15, which shows the projected demand for combined new and return procedures, and shows a 16% increase across the three main procedure domains.

Figure S15: Endoscopy Demand Projections for New and Return Procedures



As highlighted above in section 2.2.1.4, the current service arrangements are geographically fragmented and delivered over multiple sites. This is unfit for purpose in ways which impact in capacity, efficiency, supervision, productivity and patient satisfaction and dignity. There is also significant and costly reliance on private sector provision whereby NHS facilities are utilised by a third party provider to deliver elements of the endoscopy service.

Failure to provide adequate Endoscopy facilities will result in extended waits for diagnostic tests, poorer outcomes and cancer performance and poor compliance with diagnostic and other waiting time's targets. Health and safety requirements and compliance with JAG (Joint Advisory Group) standards for Endoscopy will be limited within current facilities.

2.3.1.5 Primary Care need for change

During the clinical and patient stakeholder workshops in 2017 the opportunity to deliver a range of services closer to home in community settings was a recurring theme. The need to understand better what could be delivered in the community was agreed by all, primary care, acute care clinicians and patients. A number of potential treatments and investigations that could be delivered in the community including e.g. a range of investigations, biologic treatments and intravitreal (IVT) eye injections were identified. The issue not yet fully understood is exactly what, by whom and from where. This is a substantial piece of work to make sure a community solution that meets the needs of patients and has a material impact managing demand and on patient pathways is agreed. During the period between IA and OBC NHSG will undertake a comprehensive piece of work to agree what services, and

where, likely using the existing primary and community hospital infrastructure differently for a range of services, allowing specific services to be delivered closer to patient communities, taking pressure off the acute sector and allowing patient to be seen and treated by the wider workforce closer to home.

As part of our engagement process there has been extensive dialogue with Primary Care colleagues. The current patient pathways drive inefficient levels of return contact with secondary care and blurred lines of responsibility across and between Primary and Secondary care. This is set against a backdrop of growth in demand for Primary Care service as well as that alluded to above for specialist services. Further information at a UK level can be found in relation to understanding pressures in General Practice at (www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/Understanding-GP-pressures-Kings-Fund-May-2016.pdf).

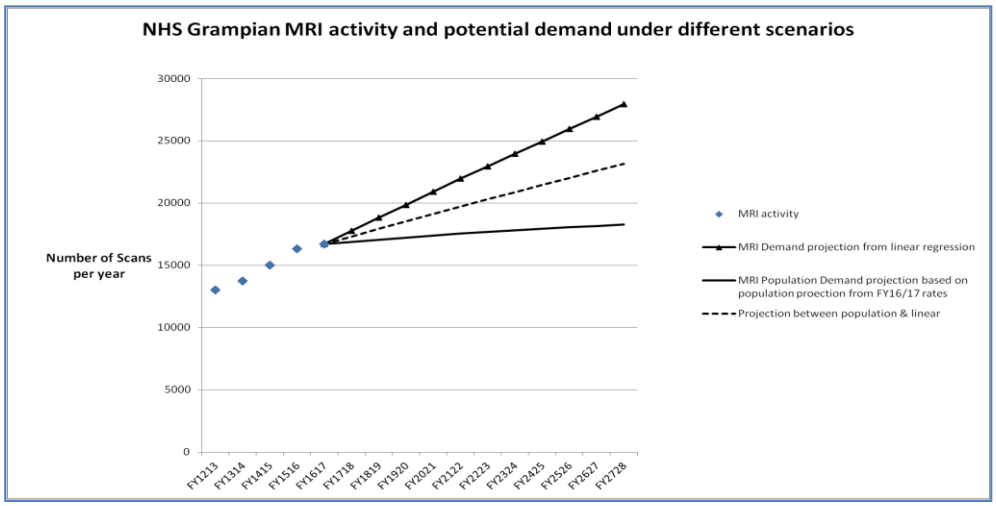
Ongoing recruitment challenges, an ageing workforce and shifting contractual arrangements are described as adding to service sustainability difficulties. The future role of GPs will become more focused on supporting the acutely unwell in the community, generating need for alternative workforce and service models for supporting chronic illness and planned care in future.

It has been identified that different approaches to supporting the delivery of diagnostic and treatment services in the community would help optimise the capacity of both Primary and Secondary care services.

2.3.1.6 Radiology demand

A modified approach has been taken when considering radiology demand. Here we have considered population change in the financial year 2016/17 given marked upward changes in demand and activity observed in recent years. In addition to forecasted demographic change, a regression line has been added in figure S16 to indicate a demand scenario for MRI whereby recent years demand increases might be continued, and a mid-point line indicated between that scenario and the population based projection.

Figure S16: NHS Grampian MRI Activity and Demand Scenarios



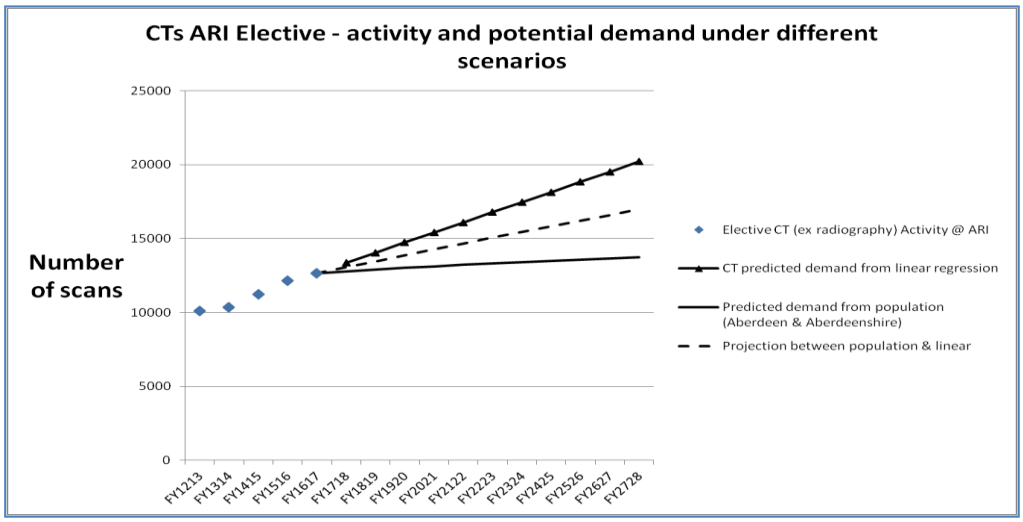
Recent increases in referral numbers and activity indicate that demand for MRI scanning is accelerating more rapidly than would be indicated by population increase alone and that new applications and increased therapeutic use must be considered when projecting future requirement for MRI.

The service describes an increasing indication for MRI within clinical guidelines for various patient groups for diagnosing, staging, treatment planning and monitoring disease progression. The increased demand for MRI has limited the development of the service in a number of important areas including:

- Complex orthopaedic joint imaging
- Cardiac MRI and stress testing for Ischaemic Heart Disease
- Brachytherapy
- Prostate MRI pre-biopsy and MRI guided biopsy
- Small bowel imaging for Inflammatory Bowel Disease diagnosis and treatment monitoring

The same approach has been taken to model demand scenarios for CT, as is shown in figure S17 for ARI only, though the increase in demand for CT scanning in Dr Gray's Hospital mirrors this picture.

Figure S17: ARI CT Elective Activity and Demand Scenarios



Again, recent increases in referral numbers and activity indicate that demand for CT scanning is accelerating more rapidly than would be indicated by population increase alone. In order to cope with the experienced increase in demand, the service has capped developments such as:

- CT Coronary Angiograms
- CT Colonography
- CT guided joint injections for complex joint disease

Through extensive engagement with the Radiology service it is believed that future demand will be closer to the regression line projections for both MRI and CT ahead.

In terms of CT infrastructure a comparative analysis of other teaching boards shows:

- NHS Tayside has 1 CT for every 125,000 people
- NHS Lothian has 1 CT for every 130,000 people
- NHS Grampian 1 CT for every 191,000 people

In Interventional Radiology, a growing number of procedures are being undertaken in IR theatres by appropriately trained Surgeons, in particular from the key specialities of Vascular and Urology. This is partly due to limitations with infrastructure and IR workforce and has some inherent inefficiencies. For example, for combined IR and Vascular procedures undertaken in the current IR theatres involving

Surgeons, a further operating theatre is reserved and transfer of patients between these locations can be required during the procedure. For management of complications this would necessitate rapid transfer of patients to that theatre, as the current IR theatre environs are not suitable for surgical intervention. This carries obvious patient safety and risk concerns and would be resolved with adequate 'hybrid' theatre facilities.

Currently there are two theatres for special Interventional Radiology (IR) procedures. These are not 'Hybrid' theatres and there is no recovery space associated with these theatres, which are not used to full capacity due to a lack of funding and staffing. There is a local business case being developed for Interventional Radiology which reflects this need for recurring funding.

2.3.2 What opportunities for improvement are there?

This section outlines the scope for improvement through improved regional collaboration and the optimising of services.

2.3.2.1 The Scottish Access Collaborative

This is a Scottish Government backed initiative which has established specialty sub-groups to share good practice and learning opportunities in relation to maximising service access with current resource. Through active participation in the collaborative there is scope to learn from impactful service improvements from elsewhere, and to contribute on the experience of the Grampian elective engagement process.

2.3.2.2 Implementing transformational aspects of the Target Operating Model (TOM)

Clinical teams have been asked to respond to capacity challenges by developing their own internal processes of challenge e.g. in relation to what could be done on a day case basis or might require a patient to be admitted prior to day of surgery. We have also recently benefitted from close working with the Scottish Government Access Team who have supported the development of a dedicated Day of Surgery Admission (DOSA) area, which is of sufficient capacity to widen this approach and modernise custom and practice across a broader range of services. Increasing DOSA rates is a key aim of the embedding the TOM.

2.3.2.3 Regional collaboration

Within the context of the NHS Highland IA, plans are in development for an Elective Care Centre, close to Raigmore Hospital, which will

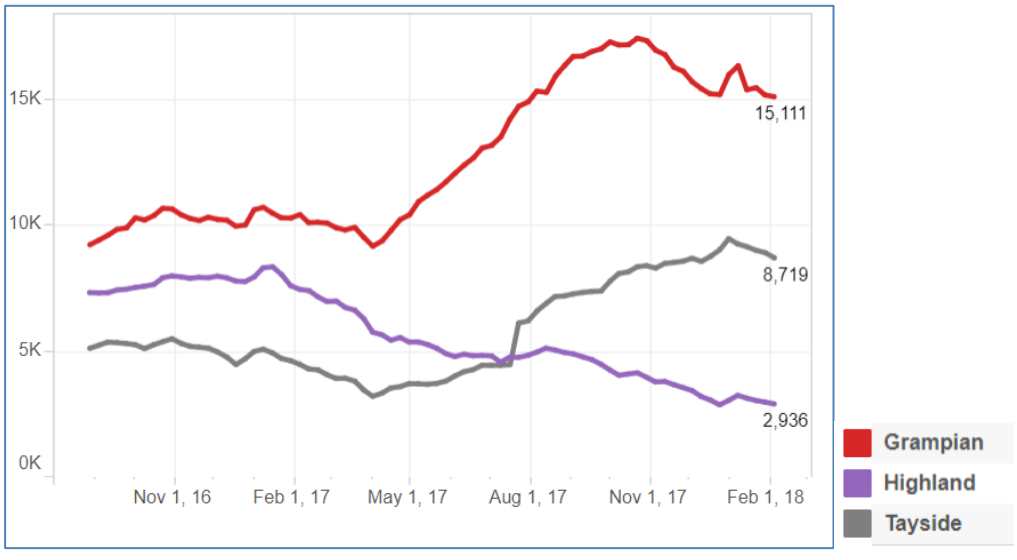
bring additional operative capacity into the NoS for Cataracts, Hips and Knees. Planning is being progressed with NHS Highland in anticipation of optimal patient pathways across the North to support patients to have access to these new facilities. Work to determine the detail of these pathway developments is ongoing on collaborative basis, and there are regional working groups exploring regional sustainability and access issues for Orthopaedics and Ophthalmology. This increase in capacity in NoS for these key specialties clearly provides opportunity, with pathways and resource implications to be determined.

In addition, cross-board links with NHS Highland and NHS Tayside are developing in relation to many (sub) specialties including: Upper GI Cancer Surgery, Radiology, Dermatology, Cardiology workstreams and the developing region approach to Laboratory Services.

2.3.3 What are the problems with the current arrangements?

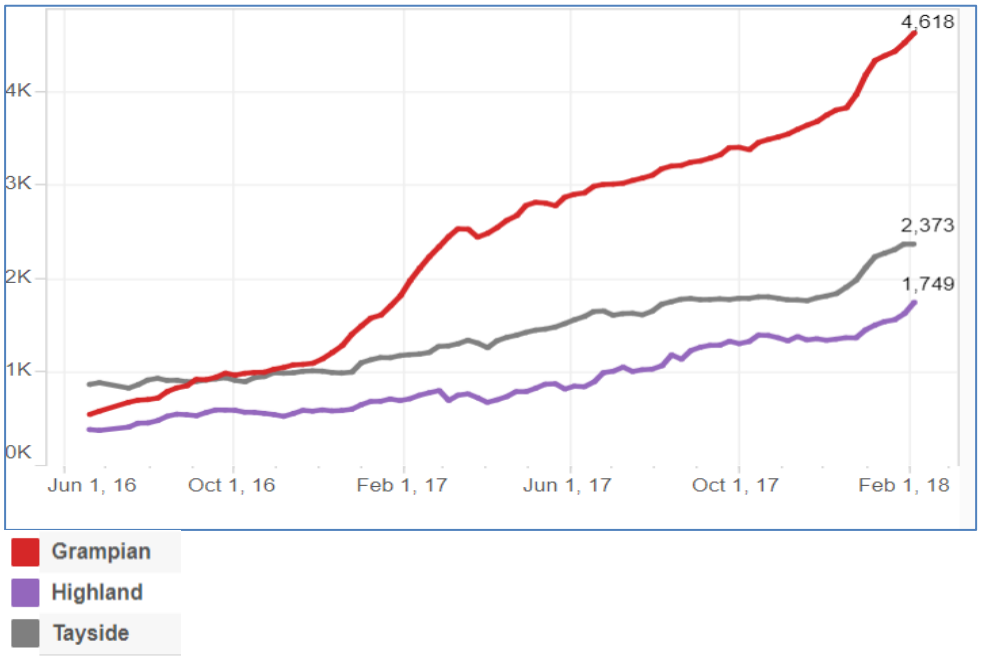
Currently, at the NoS regional level, the mainland Boards are experiencing significant challenges achieving waiting times targets. Figures S18 and S19 provide an overview of the current waiting times performance for NHSG, NHS Highland and NHS Tayside, this is inclusive of all specialities for which performance is reported, not all of which are in the scope of this project.

Figure S18: North Mainland Boards New Outpatient Performance (over 12 weeks)



In terms of compliance with the Treatment Time Guarantee, the picture is stark across the region, as is shown below in Figure S19.

Figure S19: North Mainland Boards TTG Performance (over 12 weeks)

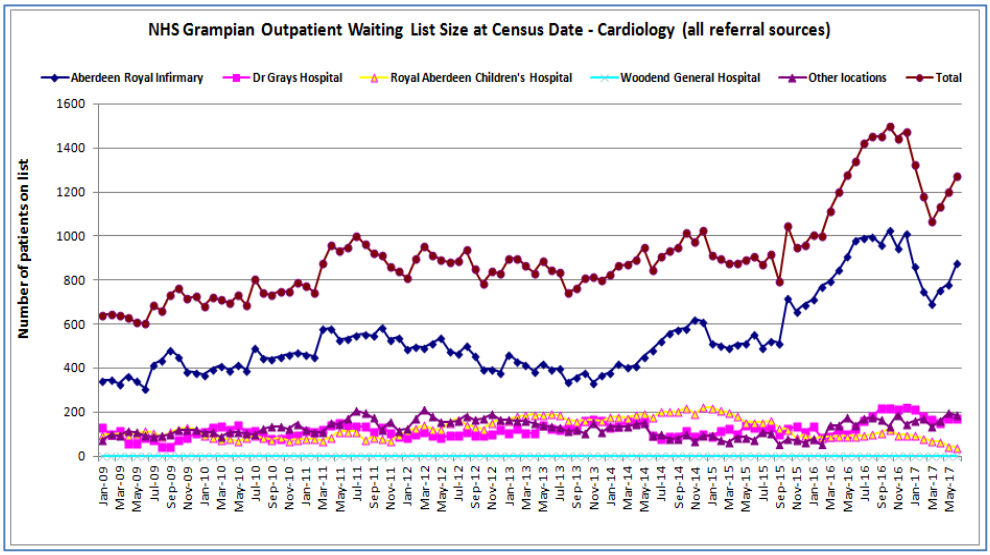


NHS Grampian will require to strengthen arrangements for providing services on a regional basis pertaining to modern IR theatres and Cath Lab activity in order to support retention and necessary development of services ahead. This is true for interventions such as TAVI and for ensuring regional elective Vascular surgery needs can be met in future, both electively and in terms of ARI as a Major Trauma Centre.

2.3.3.1 Cardiology service performance

Analysis of the return waiting list is shown in figure S20, this indicates an increasing return waiting list since December 2016 from over 2,000 to almost 3,000 by September 2017 – this is equivalent to around 10 months of return activity. Also, patients are waiting longer than recall point for Aberdeen– 47% 12 weeks past recall, 39% 16 weeks past recall, 24% 26 weeks past recall. Very few patients wait past recall point (7%) for Elgin service.

Figure S20: Cardiology Return Outpatient Waiting List Size



2.3.3.2 Transcatheter Aortic Valve Implantation (TAVI) and Interventional Radiology

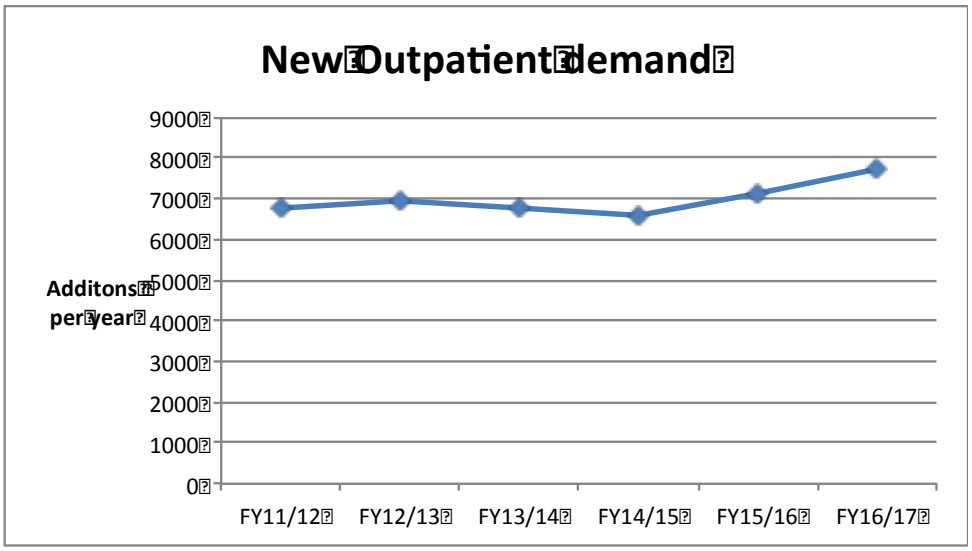
TAVI is currently only provided by NHS Lothian but there is growing clinical support locally and regionally for developing this service in the North, it is thought there may be an initial requirement for approximately 40 cases per year. It is very likely that there will also be change in the referral criteria supporting a broader application of TAVI ahead. These developments will place significant further demands on existing Cath Lab capacity, which is currently supplemented by a 3rd party provider. Our understanding of these capacity needs is being developed further in a regional context.

Feedback from the National Programme Board and Advisory Group for elective care has suggested that investment in additional Cath Lab capacity would be outwith the scope of the national programme. Therefore this IA has been amended to reflect this challenge, but its place in this strategic case is retained in order to stress the importance of investment to retain and develop services in NoS, including additional elective capacity, for cardiac services. If not enabled via the elective care centres programme, there will be a critical need to invest in Cath Lab facilities via another funding route.

2.3.3.3 Dermatology service performance

New outpatient demand has shown a 13.7% growth from 6,781 additions to the outpatient demand per year in FY11/12 to 7,709 in FY16/17. Figure S21 below shows the impact in terms of additions to the waiting list, and that service is not keeping pace with demand.

Figure S21: Dermatology New Outpatient Demand



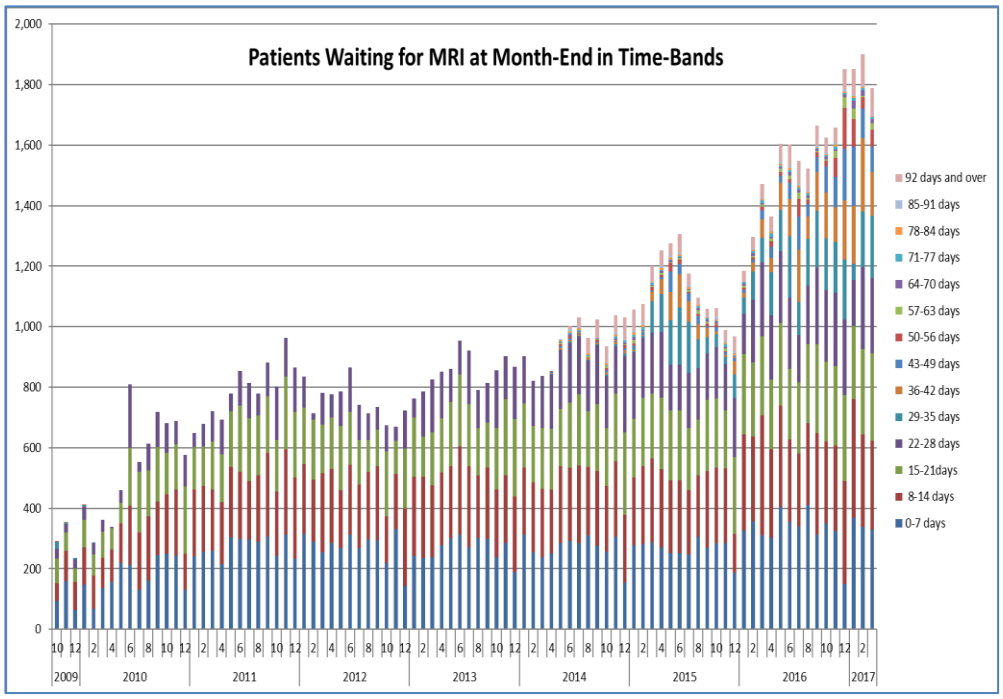
2.3.3.4 Endoscopy service performance

As outlined in section 2.2.1.3 the main procedure types are experiencing increased demand for repeat procedures across Colonoscopy, Flexible Sigmoidoscopy and upper GI. Activity is not keeping pace with this demand despite significant reliance on a 3rd party provider.

2.3.3.5 Radiology service performance

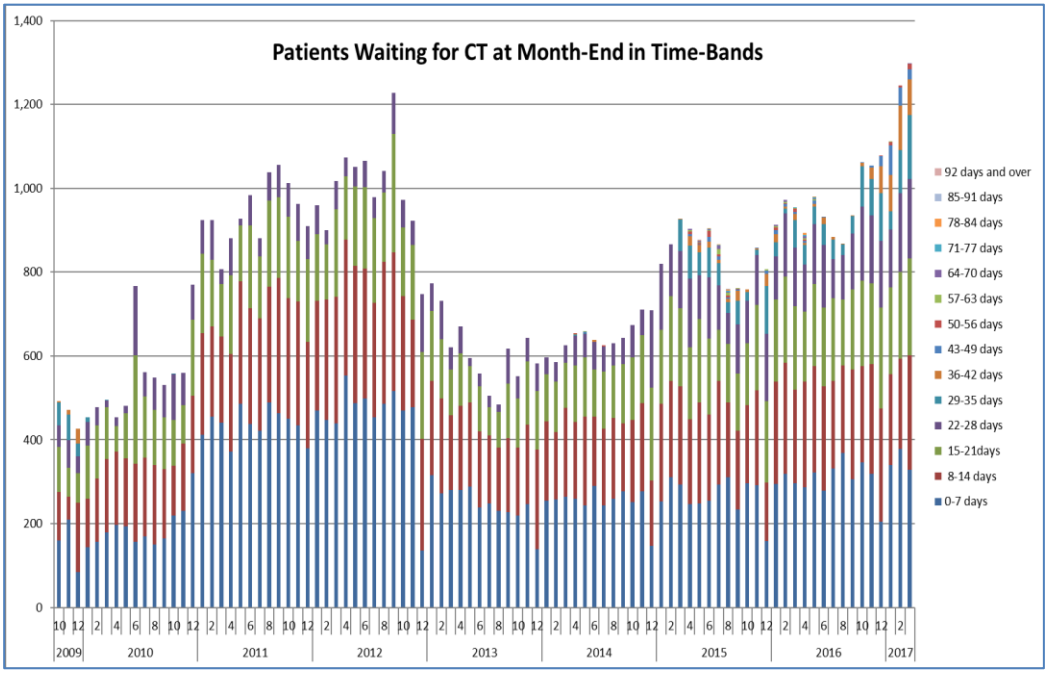
Figure S22 below indicates that increasing numbers of patients are waiting for MRI including a number waiting in time bands over 70 days; prior to February 2015 there were no patients waiting this long. The overall number waiting doubled from around 800 to over 1800 during this period.

Figure S22: MRI Waiting Times



Historically, CT waiting lists peaked in 2012; an increase in capacity reduced waiting lists from the 2012 high of 1,200 and maintained fewer than 800 waiting until December 2014. They have continued to rise steadily since 2014 to over 1,200 waiting. The time periods of waiting show increasing numbers of patients waiting over 70 days. This is shown in figure S23 below.

Figure S23: CT Waiting Times



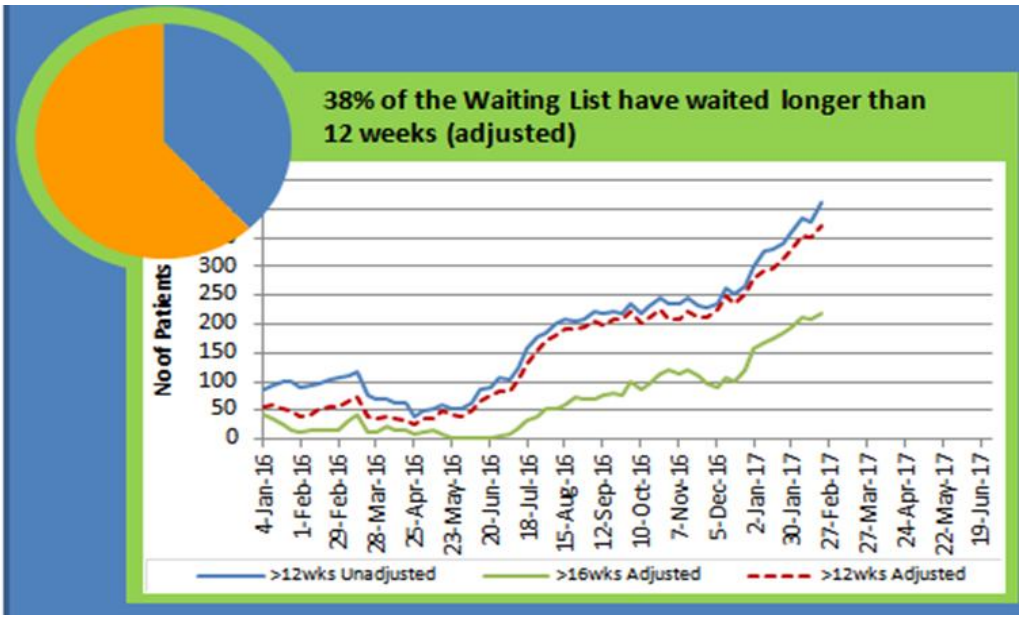
In NHS Grampian the two existing Interventional Radiology (IR) theatres are not 'Hybrid' theatres. A growing number of procedures are being undertaken in IR theatres by Surgeons. Currently, for combined IR and Vascular procedures, a further operating theatre is reserved and transfer of patients between these may be required during the procedure. This carries a degree of patient safety and risk concerns.

Feedback from the National Programme Board and Advisory Group for elective care has suggested that investment in additional IR Hybrid theatre capacity would be outwith the scope of the national programme. Therefore this IA has been amended to reflect this challenge, but its place in this strategic case is retained in order to stress the importance of investment to retain and develop services in NoS, including for supporting vital surgical services such as Vascular and Urology. If not enabled via the elective care centres programme, there will be a critical need to invest in NoS IR infrastructure via another funding route.

2.3.3.6 Respiratory service performance

The number of patients waiting more than 12 weeks (adjusted) for a new outpatient appointment is on a steady upward trajectory and was in excess of 400 in Feburary 2017, as shown in figure S24.

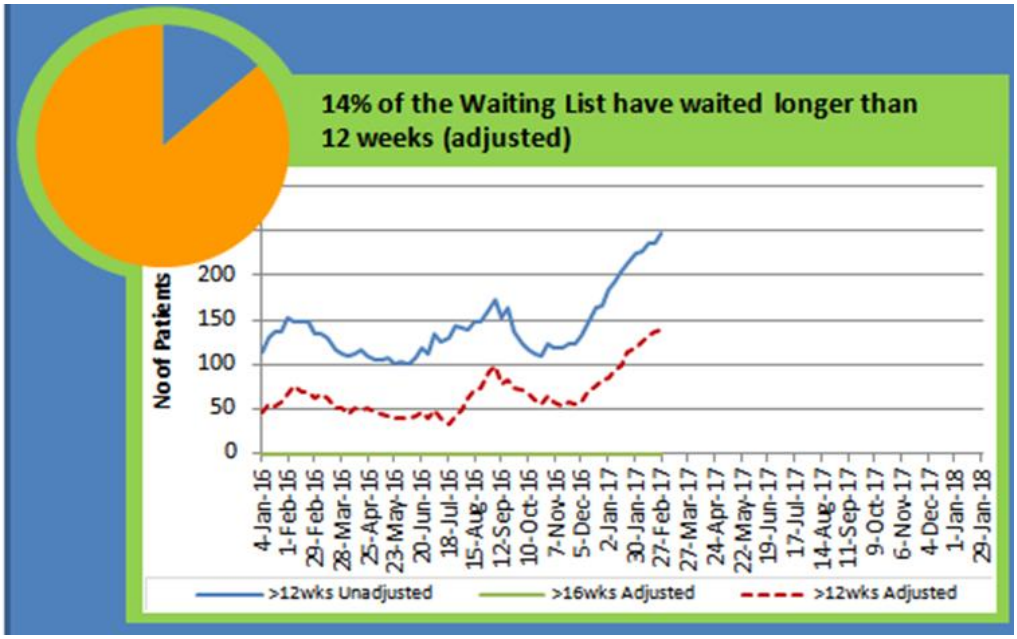
Figure S24: Respiratory New Outpatient Waiting Times Jan – Feb 2017



2.3.3.7 Urology service performance

Further to the information at section 2.2.1.9, the service is under great pressure in terms of inpatient waiting times, where the numbers of people in berach of TTG continue to increase, as shown in figure S25. In addition to concerns about TTG performance, Urology cancer performance is of growing concern with NHS Grampian failing to meet 62 and 31 day cancer treatment standards. Urology cancer performance at end of March 2018 for the 32 day standard was the second lowest of the Scottish Helth Boards.

Figure S25: Urology Inpatient Waiting Times



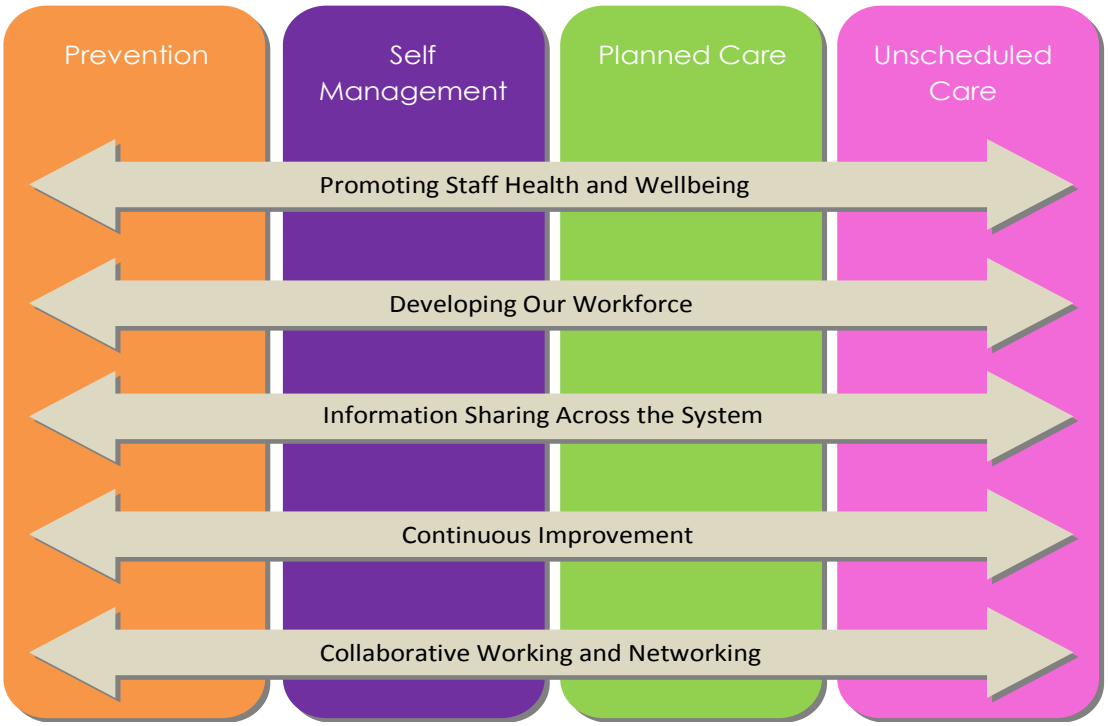
2.3.4 What other drivers for change are there?

The need for change from a strategic perspective was set out in the Health and Social Care Delivery Plan published in December 2016, which included a commitment to strengthen population-based planning arrangements for services, as part of the range of commitments to deliver the National Clinical Strategy (2016).

Contingent on any strategic redesign of elective services in Grampian is the requirement to align with the principles of the National Clinical Strategy and the Grampian Clinical Strategy (2016-2021). In addition, 'The Modern Outpatient: A Collaborative Approach' (2017-2020), and 'Realising Realistic Medicine' (2017) are highly relevant to planning future models of elective care.

Figure S26 outlines the strategic themes which are pivotal to the Grampian Clinical Strategy. The principles and delivery of these are central to our aims for developing elective services.

Figure S26: Strategic and Enabling Themes (Grampian)



2.3.4.1 Clinical Strategy

The NHSG Elective Care Programme recognises the need for a whole system view and approach to defining the optimal provision of elective care. Close engagement with our Acute, Primary and Health and Social Care partners, patient groups and the public is essential. The Elective Care Programme considers and reflects the themes and enablers listed in Figure S26 above, which are supportive of the Scottish Government's 9 national outcomes for Health and Social Care Partnerships (HSCPs) detailed in Table S8.

Table S8: 9 National Outcomes for HSCPs

Outcome 1	People are able to look after and improve their own health and wellbeing and live in good health for longer
	People, including those with disabilities or long-term conditions, or who are frail, are able to live, as far as reasonably practicable, independently and at home or in a homely setting in their community
Outcome 3	People who use health and social care services have positive experiences of those services, and have their dignity respected

Outcome 4	Health and social care services are centred on helping to maintain or improve the quality of life of people who use those services
Outcome 5	Health and social care services contribute to reducing health inequalities
Outcome 6	People who provide unpaid care are supported to look after their own health and wellbeing, including to reduce any negative impact of their caring role on their own health and well-being
Outcome 7	People using health and social care services are safe from harm
Outcome 8	People who work in health and social care services feel engaged with the work they do and are supported to continuously improve the information, support, care and treatment they provide
Outcome 9	Resources are used effectively and efficiently in the provision of health and social care services

This section further outlines a number of important issues which influence or impact on how the NHSG elective care programme is being progressed. These include consideration as to the requirement for capital investment in highest volume specialties, capacity challenges, and capital planning and governance arrangements. Significantly, consideration is given to the range of relevant major strategic and capital projects underway or recently completed.

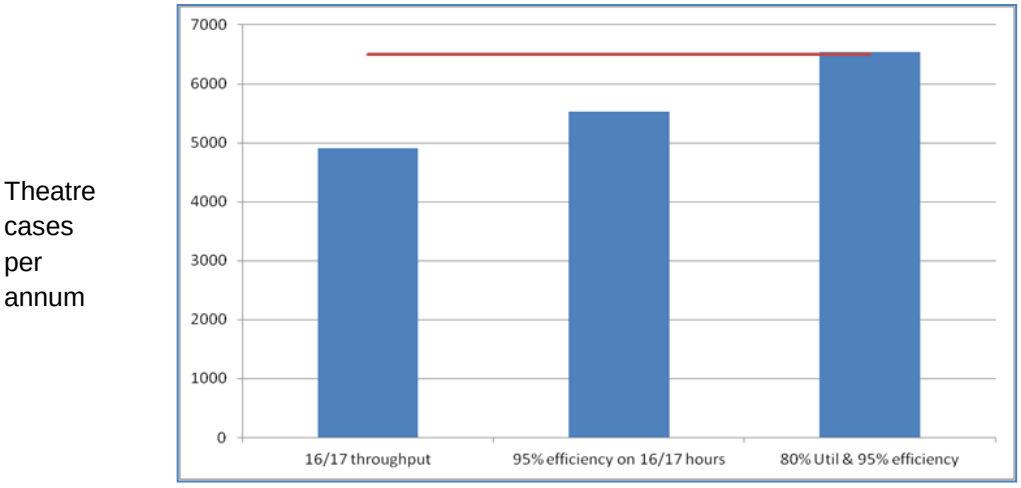
2.3.4.2 Elective Orthopaedics

The proposed investment for elective care in Grampian is influenced by previous infrastructure developments. For example, it is important to note that NHSG has previously invested in dedicated Orthopaedic elective infrastructure on the Woodend Hospital site and in doing so has achieved physical separation between elective and unscheduled patient pathways for this service. This investment included increasing the number of dedicated elective Orthopaedic theatres at Woodend Hospital from four to six in 2014. A number of other Boards are yet to achieve this and will seek to achieve similar elective and unscheduled flow separation via the elective care investment process. It is envisaged that the provision of elective Orthopaedic surgery on the Woodend site will require to be sustained for at least a further 10-15 years, or until long-term planning aspirations for the re-provision of the majority of the Aberdeen based surgical inpatient facilities are realised.

An assessment has been made as to the potential capacity of the Woodend Hospital theatre estate versus the projected demand in 2027, excluding considerations pertaining to bed availability and staffing constraints. This shows that the current six theatres, if sufficiently staffed, would have enough capacity to meet the 2027 and 2035 demand projections. Calculations show that demand could be met in 2027 by running the six theatres at Woodend Hospital for a combined total of 80% of their five-day week at 95% efficiency. This is illustrated in Figure S27.

Figure S27: 2027 Demand and Capacity Illustration – Woodend Hospital Theatres.

Red Line = 2027 Theatre Demand



The main current constraints on the Orthopaedic service operative capacity are heavily linked to workforce supply as opposed to physical infrastructure. The main consideration which poses risk to resilience of the physical theatres at Woodend Hospital is the outdated air-flow system servicing two adjacent theatres. This system requires to be run at high capacity to achieve acceptable air flow and is outdated, with the potential to fail critically and remove both theatres from service.

2.3.4.3 Ophthalmology

This proposal is also influenced by extant local plans for investing in Ophthalmology. NHSG has recently advanced plans to re-provide the ARI based Ophthalmology out-patient department in a refurbished location within existing space which is being redesigned to support modern ambulatory care.

Cataract capacity delivered via the planned new procedure room and limited GA theatre access required will be approximately 3000 cases per annum, with scope to optimise performance further to approximately 3500 through increased productivity. In broad terms this

will initially provide sufficient physical capacity to meet demand beyond the 5 year horizon. This facility is being developed with built-in infrastructure to establish a second dedicated cataract procedure room when required. This will allow further expansion of the physical operative capacity to cope with demand up to and beyond the 2027 modelling horizon, subject to workforce and revenue constraints. The new facility has been operational since early July 2018 and will further support the future-proofing of this important and high-volume specialty through providing one additional cataract procedure room.

There remains, of course, a significant workforce and revenue challenge associated with establishing such a further facility. NHSG is fully engaged in informing and developing local and national efforts to define optimal pathway standards for cataract procedures.

An important and wider redesign imperative associated with elective Ophthalmology is the requirement to future-proof for the increasing numbers of return outpatients who require repeat intra-vitreal biologic treatments for treatment for AMD (Age-related Macular Degeneration). Figure S28 outlines this imperative.

Figure S28: NHSG Intravitreal Injections Per Year

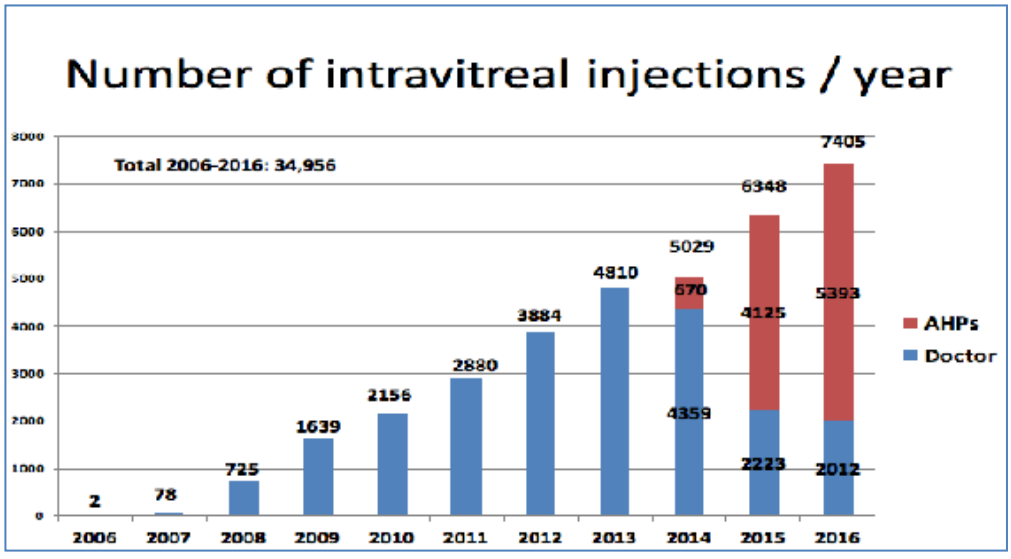


Figure S28 shows the exponential increase in the delivery of intra-vitreal injections over the last 10 years in NHSG and underlines the importance of planning for elective care needs in a manner that considers the non-operative and sight-saving needs for this growing patient group, as well as the service operative demand and capacity.

There is considerable scope for the development of community-based provision of these treatments, shifting from being acute-based, and

potential to involve existing competent practitioners in new ways in order to support this.

2.3.4.4 Workforce planning

The NHSG workforce plan (2017-2020) recognises the need for innovation in our models of healthcare delivery in the context of ongoing workforce supply constraints. The profile of our workforce is ageing, with 30% of Nursing and Midwifery aged over 50, 35% of Healthcare Scientists over 50% and 24% of Administrative staff aged over 55. A message heard consistently via our engagement process has been the requirement to innovate and adapt in relation to workforce strategy and availability. As described above, capacity constraints are heavily linked to workforce supply and frequently this is unrelated to the availability of financial resource.

In Grampian, there is a track record of innovating in workforce development, examples include the advancement of:

- The emerging Physician Associate (PA) role
- The Clinical Development Fellow (CDF) role
- Advanced Practice Nursing and AHP roles
- Return to practice programmes
- Developing the roles of Healthcare Support Workers
- Assistant Perioperative Practitioners (new band 4 theatre roles)
- GPs with Special Interest

The delivery of timely elective services is linked inextricably to issues of workforce supply; this is particularly evident in relation to nursing workforce gaps in theatres and in critical care. As an organisation, NHSG has embarked on a programme of overseas links and recruitment efforts, which are showing some positive early signs. In the interim, the procurement of supplementary nursing workforce will be difficult to avoid, and is therefore being addressed in a planned way via procurement routes in order to ensure quality, reliability and best value.

2.3.4.5 Capital asset planning

The preparation of capital plans to best enable elective care transformation will take account of other local asset developments,

some of which will see services vacating current accommodation, which may in turn provide refurbishment opportunities in support of optimising elective care. Key examples are noted below:

The Baird and ANCHOR project

The development on the Foresterhill Health Campus of a bespoke new facility supporting the delivery of maternity and predominantly women's health services is an important development for NHSG and the NoS. Services within the Baird Family Hospital are anticipated to be commissioned in late 2021. The human resource associated with these services will relocate into these new facilities along with the services.

These developments will have direct impact on aspects of the physical infrastructure and facilities at ARI. For example, in terms of removing a significant proportion of space from the current ARI outpatient and ward environs, short-stay theatre facilities, and releasing physical theatre capacity in the Main Theatre Suite. This release in unstaffed theatre capacity will equate to three theatres and requires to be fully evaluated in the context of the emergent service options outlined in the Economic case. The ANCHOR centre will bring about the provision of new and dedicated facilities for the provision of ambulatory Oncology and Haematology services and will further reduce pressure on currently utilised areas within ARI.

It is important to note that some of the spaces that will be vacated are not suitable for future use as clinical facilities, though implications of vacated space will be considered in the context of refurbishment potential, should such options exist in support of transforming future elective care.

The future re-provision of Phase 2 ARI

'Phase two' houses all ARI-based surgical inpatient environs and is approaching the end of its lifecycle, a replacement has been anticipated for some time as being approximately 10-15 years out in terms of the capital provision, by which time it will significantly near the end of its lifecycle. This will be a major capital project and has been discussed with Scottish Government over recent years and service engagement has taken place in relation to future inpatient care requirements. The NHSG elective care programme compliments this earlier work to engage services regarding their vision of inpatient services beyond the 10-year horizon. The broadness of the elective engagement will serve to inform this development ahead and any

investment in elective care facilities on the Foresterhill Campus will as far as possible take into account future adjacencies and links.

2.3.5 Summarising the need for change

Table S9 below summarises the preceding narrative in relation to cause and effect of the need for change and the need for investment.

Table S9: Summary of the need for change

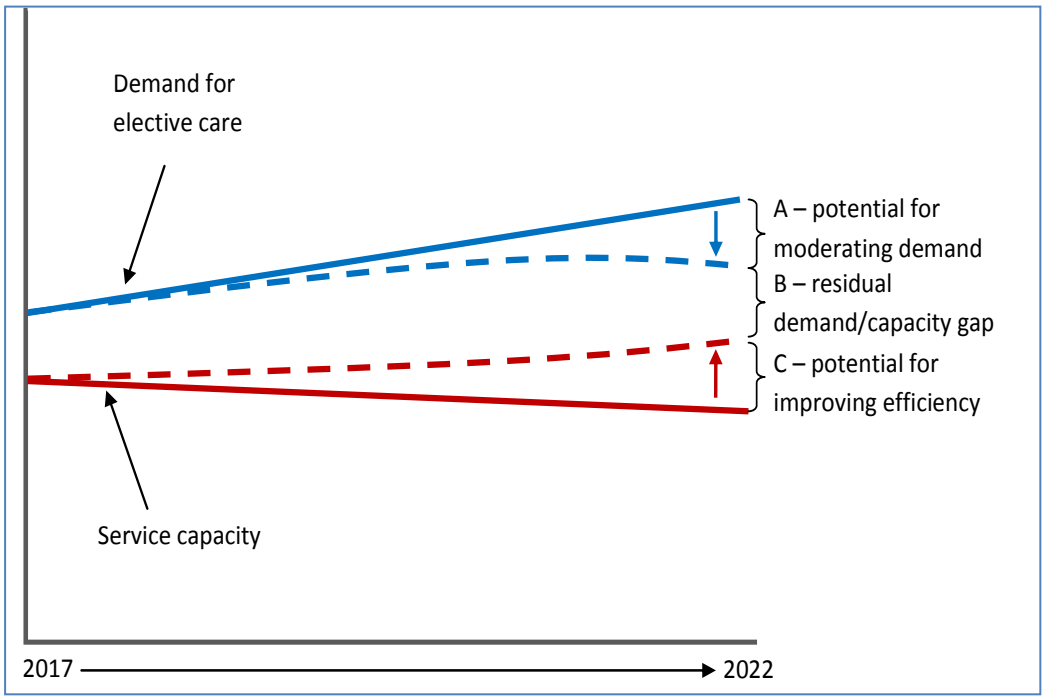
What is the cause of the need for change?	What effect is it having, or likely to have, on the organisation?	Why action now?
Current and projected future demand – linked to ageing population	Existing physical capacity is unable to cope with current demand, and future demand projections.	To improve service sustainability and access in future
Services are limited in their potential to implement desirable Target Operating Models	Service performance and efficiency is limited.	Continuation of current performance in unsustainable
Fragmented and ageing IT systems and equipment, and cultural aspects of embracing new ways of working which are enabled by technology	Sub-optimal use of, and access to, technology.	To maximise resource efficiency and support modern care models
Dispersed service locations and accommodation with unsatisfactory physical condition	Services are not sufficiently person centred.	To improve service quality, outcomes, patient dignity and satisfaction.
Sustainability of services is proving more challenging in terms of e.g. attracting and retaining skilled	Retention and sustainability of services and workforce in Grampian and NoS is challenged, with inequitable service	To promote equity of access and prevent situation from worsening in terms of staff availability, pressure, morale

What is the cause of the need for change?	What effect is it having, or likely to have, on the organisation?	Why action now?
workforce	access.	
Lack of suitability of accommodation, poor adjacencies, outmoded models of care	Avoidable admissions and outpatient attendances occur, or occur at wrong place/time.	Ongoing deterioration and performance impact unless acted upon

2.4 What is the organisation seeking to achieve?

This section develops the expression of the future state as outlined in the preface to the strategic case in section 2.1, which is envisaged in association with proposed preferred solution. The aims of elective redesign activities are illustrated in Figure S29 below, which demonstrates the required focus of efforts and initiatives to support the moderation of the future increase in demand, and the optimising of available resource and capacity.

Figure S29: Illustration of redesign efforts and residual/optimised gap



The proposed investment will be viewed as a first-phase of investment from a longer list of priorities which would enable additional elective

capacity through the application of capital funding. This will be pivotal to reducing the demand and capacity gap which is highlighted in figure S29 as far as possible, and in optimising service delivery.

2.4.1 Principles of elective care

To help articulate a future vision for elective care, the Programme Board has agreed the following principles which underpin the strategic approach to transforming elective care. These key principles for the future delivery of elective services, listed in Table S10, were developed via the broader engagement with specialties as shown at appendix Q.

Table S10: Principles of Elective Care

Elective Care Principles
Care is centred in the community setting as far as practicable and is provided as close to home as possible
Care and treatment is delivered as far as possible on a planned basis, is person centred and organised around individual needs
Primary Care colleagues are supported in having optimal access to diagnostics
Hospital attendances and admissions are minimised
Waiting times are equitable and optimised through efficient use of resource, technology and supporting processes
Services and workforce are planned locally and regionally, in order to sustain them in North Scotland
The promotion of self-management will have a significant impact on the relationship between the public and health & social care organisations

2.4.2 Investment Objectives

The strategic assessment (Appendix K) for this programme identified the need for change. During the Initial Agreement stage of the project investment objectives were developed in consultation with stakeholders and agreed by the Elective Care Programme Board. The investment objectives are set out in Table S11.

Table S11: Investment Objectives

	Effect of the need for change on the organisation:	What has to be achieved to deliver the necessary change? (Investment Objectives)
1.	Existing physical capacity is unable to cope with current demand, and future demand projections.	Improve future service capacity by improving supporting asset base.
2.	Service performance and efficiency is limited.	Improve service performance and efficiency by optimising service redesign.
3.	Sub-optimal use of, and access to, technology.	Service redesign is enabled by use of, and access to, technology.
4.	Services are not sufficiently person centred.	Meet user requirements for service by being more person-centred.
5.	Retention and sustainability of services and workforce in Grampian and NoS is challenged, with inequitable service access.	Improved and sustainable equity of local access to treatment as far as possible and regionally where required, with harmonised access agreements across NoS Boards.
6.	Avoidable admissions and outpatient attendances occur, or occur at wrong place/time.	Improved facilities in place to support modern outpatient care and optimised inpatient/day case activity.

2.4.2.1 Improve future service capacity by improving supporting asset base

Physical accommodation enables the transformation of elective care, to better meet demand. Capital investment is deployed as flexibly as possible through the creation of generic spaces which are future-proofed in terms of their potential to respond to changes in service and health care needs ahead.

2.4.2.2 Improve service performance and efficiency by optimising service redesign

Services innovate and adopt ways of working which support improved performance and efficiency. These optimised pathways are agreed in the form of Target Operating Models (TOMs). This will result in improving New: Return outpatient ratios, theatre productivity, reducing waits and achieving performance targets for day case surgery. Facilitating new and more person-centred models and locations of care

delivery are key to this objective e.g. in ways which minimise requirements for patients admission or attendance at hospital.

2.4.2.3 Service redesign is enabled by use of, and access to, technology

The delivery of person-centred care will benefit from the adoption of innovative technologies. For example, this will support high quality information for patients and referrers along with the development of digital solutions which facilitate optimal triage and patient flows. It will enable modern models of patient assessment and follow-up.

2.4.2.4 Meet user requirements for service by being more person-centred

Care is more person-centred, close to home and effectively programmed to achieve maximum benefit from each interaction with services. A strategic priority for the NHSG elective care programme is to scope and determine a proposed model of community diagnostic and treatment hub(s), in support of locally delivered care, as specialist as necessary.

Improved and sustainable equity of local access to treatment as far as possible and also regionally where required, with harmonised access agreements in NoS.

High-quality elective care is available locally and regionally as required, capacity will support the repatriation of out-of-area activity, e.g. from Golden Jubilee National Hospital.

Services will benefit from improved training opportunities, recruitment and retention of essential current and future health staff, and equity of thresholds for service access across NoS is promoted.

2.4.2.5 Improved facilities to support modern outpatient care and optimised inpatient/day case activity

This envisages the provision of co-located services where consultation and essential diagnostic tests can be delivered via ‘one-stop’ models of outpatient care, and by taking every opportunity to shift care from unscheduled to schedule. This objective is complemented by the Modern Outpatient strategic approach and implementing such processes as e.g. patient-triggered review appointments.

Reducing the instances of unscheduled attendances at wards through planning the delivery of high-quality care, as far as possible on an outpatient or day case basis will help reduce avoidable admissions to hospital.

2.4.3 What are the benefits and risks to success?

This section outlines the expected benefits associated with the project at a high-level, and identifies key risks, their management and constraints which are of bearing on the project delivery.

2.4.3.1 What benefits are to be gained from this proposal?

The preferred solution is detailed in the Economic Case. However, anticipated benefits are outlined below, associated with our desired future state. These are in alignment with the elective care principles expressed in table S10, the Investment Objectives in table S11 and the benefit criteria shown in table S13.

Development of one-stop model of outpatient and ambulatory care:

The preferred solution will allow some of our specialities which face the greatest predicted increase in demand or have best opportunity to transform and future-proof models of care.

Facilities will support one-stop and programmed approaches to ambulatory care which minimise the requirement to attend hospital and consolidate existing teams in ways which remove fragmentation, promote team working and enhance efficiency and productivity. This is particularly applicable to Dermatology, Urology and Respiratory services.

Increased efficiency and capacity for day case treatment and Endoscopy:

The creation of bespoke co-located facilities for day case surgery and Endoscopy will bring additional capacity to support efficient working and increased shift away from inpatient care. This will release ‘hidden capacity’, support reduced patient waits for treatment, increased compliance with key performance targets, and greater patient and staff satisfaction.

Development of alternatives to Hospital attendance/admission:

The concept of Community Diagnostic and Treatment Hubs has garnered much support via our engagement process, and requires significant work to articulate requirements, scope, number and locations by Outline Business Case stage. Their creation and benefit is anticipated to further minimise requirement for hospital attendance e.g. for medical procedures and treatments, phlebotomy, test results. One example would be for return Ophthalmology eye injections referred to at section 2.3.4.2, which would remove the need for a large and

growing number of patients to attend hospital appointment. It is anticipated that these will significantly help bring Primary and Secondary care sectors closer in their ways of working to best support patients and optimally utilise resource.

This concept links well with the 2018 General Medical Services Contract in Scotland. One of the key changes is the introduction of the "Community Treatment and Care Service" for 2021, a joint HSCP/NHS Board Service. The vision is that care will be delivered with a "collaborative approach and common vision". The need for Primary Care to build a wider multi disciplinary team is evident as well as a need to improve the Primary care and Secondary Care interface. The capital investment into community Diagnostic and Treatment Hubs would enable this change.

Improved access to diagnosis and treatment:

Our future state vision includes improved access to diagnostic tests such as MRI and CT scanning, which are key to many treatment pathways and is predicted to experience demand growth in excess of population growth. Investment in facilities and associated workforce at optimum locations across Grampian is anticipated to positively impact on treatment times and outcomes, as well as future-proof service delivery without requirement for 3rd party providers.

Improved service performance:

Implicit with all efforts to reduce the demand and capacity gap is the desire to ensure we provide treatments of clinical value in as timely a manner possible. Our proposal supports the improvement in service performance for many specialties, which is further described in terms of additionality in the Economic Case.

Improved separation of elective and unscheduled care:

Our vision for elective care includes the maximal conversion of unscheduled care into planned care. Providing appropriate infrastructure to support e.g. rapid access assessment clinics and alternatives to admission for treatments or procedures will optimise the delivery of elective and unscheduled care. This will also help negate the impact of surges in unscheduled care, which will less often result in any imposition on planned care.

Improved service and workforce sustainability:

Our proposal includes investing in services and facilities which face challenges in recruitment and retention locally and regionally, this will support making NHS Grampian and NoS employers of choice. A key priority has been to include elements of that solution which will enable the existing workforce to improve productivity without requiring workforce growth, taking a realistic approach and seeking to minimise revenue consequences.

This includes those aspects of our preferred solution which it has been suggested may not fit with the scope of the national programme. These are of particular importance locally and regionally, i.e. the Cath-Lab and IR Hybrid elements, which if unsupported will leave a critical need for investment in NHS Grampian/NoS.

Enhanced clinical research facilities:

Our proposal includes the development of new facilities for supporting clinical research, and jointly developing our capabilities in this regard in partnership with the University of Aberdeen. This would be achieved through the creation of a new world-class clinical research facility. The new facility would replace discipline-specific research facilities including a Cardiac research unit with equipment, a diabetes research facility for complex clinical studies), and facilities for oncological trials. The facility would be available to all those who participate in clinical research between NHSG and the University of Aberdeen. This would allow staff to undertake clinical research in the facility whilst having their main clinical or laboratory area on the integrated Foresterhill campus. It is envisaged that the full feasibility, benefits and affordability of this opportunity will be ascertained during the OBC completion, and expanded upon at that stage of the proposal.

Improved Achievement of Target Operating Models (TOMs)

As outlined in the preface to the strategic case, through the achievement of desirable TOMs at the system and specialty levels, steps can be taken to narrow the residual gap between elective care capacity and demand. Services will be supported to optimise performance as far as possible within current and anticipated future constraints. Informed by engagement, key features of a desirable TOM are outlined in Table S12.

Table S12: Target Operating Model Focus for Improvement

Target Operating Model Components
Increased use of referrer guidance and advice only referrals
Improved timeliness and quality of referrals
Reduced DNA rates
Optimised New:Return outpatient appointment ratios (upper quartile)
Modernised models of outpatient care e.g. One-stop and patient initiated
Embedded ERAS / Pre-habilitation approaches
Increased DOSA compliance
Increased achievement of BADS (British Association of Day Surgery) target compliance
Optimised theatre utilisation and productivity (e.g. upper quartile performance)
Reduced procedure cancellations
Optimised lengths of stay (e.g. upper quartile performance nationally)
Patient triggered / individualised follow-up
Improving patient experience and feedback

The SCIM process requires the development of non-financial benefit criteria, agreed by the Programme Board, against which service options for investment are scored. These are shown in table S13 below.

Table S13: Agreed Non-financial Benefit Criteria

Benefit Criteria
Optimised planning, person centred care and improved patient flow
Improved access to diagnosis and treatment
Optimised waiting times and resource utilisation
Improved self-management and delivery of realistic healthcare

Benefit Criteria
Sustain services and workforce to deliver care as locally, and within NoS, as far as possible
Improved performance against agreed TOM (BADS, DOSA, LOS, N2R, Day case rates)
Maximum separation of elective and unscheduled patient flows

Working with the project team and programme board, a register of benefits has been developed with the intention of supporting the rationale for investment through articulating the impact of the project. The benefits register can be viewed at Appendix A.

2.4.3.2 What risks could undermine the proposals success?

At this stage, key risks and their proposed mitigation and management are identified, a detailed risk register covering the main strategic risks included at Appendix B.

Effective management of project risks is essential for the successful delivery of any infrastructure project. A robust risk management process has been put in place and will be actively managed through the whole programme to reduce the likelihood of unmanaged risk affecting any aspect of the Project. Risk is managed within the Project Team and is led by the Project Director.

2.4.3.3 Are there any constraints or dependencies?

A number of constraints and dependencies are highlighted below, and these will require to be developed in subsequent stages of the business case process. At the initial stage, constraints and dependencies are identified as set out in the table below:

Table S14: Constraints and Dependencies

Area	Constraint/ Dependency	Impact	Mitigation
Funding	Availability and allocation of additional capital funding to the Project	Proposal and associated strategic intent for elective care will not be deliverable	Project will only proceed once funding received.

Area	Constraint/ Dependency	Impact	Mitigation
Funding	Revenue cost to support operational phase of the project are not sustainable	Investment will not deliver the anticipated service benefit	Financial planning and prioritisation of additional funding
Existing Infrastructure	Fitness of Purpose of Existing Infrastructure	Unanticipated cost of remedial work Inability to deliver demand moderation	Management of risk in physical solution development
Stakeholder	Delivery of elective care plan dependent on joint working between NHS Boards	Uncoordinated delivery of preferred service solution	Regular engagement and regional collaboration with North of Scotland Boards.
Stakeholder	Alignment of preferred service solution with national, regional and local priorities	Solution does not align to national aims and priorities	Regular engagement and cross check of proposed developments.
Stakeholder	Ensuring joint working with Health and Social Care partners	Incomplete scoping and developing priority areas of work e.g. establishing proposed models for sustaining and developing GP minor surgery	Regular engagement with representatives on key project groups.
Workforce	Recruitment and retention is not improved.	Full staffing, resulting in a better working environment and more patients able to be seen.	strategic initiatives to improve recruitment and retention
Service redesign	Service redesign does not optimise	Efficiency is not optimised which could impact benefits	Programme of Service Review and Redesign has

Area	Constraint/ Dependency	Impact	Mitigation
	efficiency.	anticipated	been identified.
Project Resources	The Board does not have the capacity or capability to deliver the Project.	The project is poorly specified and managed.	Appropriate Project Team identified and assembled, including external advisors.

3. The Economic Case

3 The Economic Case

The purpose of the Economic Case at the Initial Agreement (IA) Stage is to identify the preferred strategic or service solution which is suitable for further assessment at the outline business case (OBC) Stage.

It sets this out by considering:

- details of stakeholder engagement in developing the preferred solution
- a summary of the option appraisal process undertaken
- a summary of the appraisal of options against the investment objectives for the Project
- a recommendation for the preferred service solution
- Indicative costs.

3.1 NHS Grampian Approach to Economic Case

NHS Grampian have undertaken an extensive engagement process to review current service arrangements and consider the need for change. The products of this process have included a clinical output specification for each service which sets out the key anticipated activity, patient pathways, workforce and facilities challenges, and a redesign programme.

The key work streams associated with delivering this redesign programme are outlined below in table E1 and will be progressed in 3 main ways:

- as part of the wider NHSG elective care redesign programme
- as part of wider NHSG improvement plan
- as part of this capital investment Initial Agreement

Table E1: NHS Grampian Elective Care Workstreams

Addressed by:			
Workstream	Capital Investment	Wider EC Redesign	Other/ related
Ambulatory			
Facilities to support 'one-stop' approaches to outpatient care delivery for key high-volume specialties	√	√	
The development of community diagnostic and treatment centre concept, including for delivery of treatments/procedures e.g. biologic treatments	√	√	
Sustaining and developing community minor surgery		√	√
Developing pathway options for supporting those with Functional Disorders		√	
Implementing the Modern Outpatient Programme approach			√
Refreshing Grampian Guidance (re-launch of referrer guidance)			√
Surgery			
Provision of modern day surgery facilities for high volume specialties in order to deliver maximum additional capacity	√	√	
Implementing consistent approach to pre-operative assessment		√	
Embedding Enhanced Recovery after Surgery (ERAS) and pre-habilitation approaches		√	
Implementing Day of Surgery Admission as a matter of course		√	
Diagnostics (and treatment)			
Provision of modern and fit for purpose Endoscopy facilities	√	√	

Addressed by:			
Workstream	Capital Investment	Wider EC Redesign	Other/ related
Future-proofing the provision of CT and MRI	√	√	
Developing Interventional Radiology 'Hybrid' theatre resource	√	√	
One additional Cardiac Catheterisation Laboratory	√	√	
Supporting optimal Primary Care access to diagnostics		√	
eHealth			
Implementing an innovative off the shelf 'Skin App' to improve triage and access (subject to a separate business case)		√	
Supporting the development of a Patient/clinical portal			√
Embedding the Electronic Patient Record			√

This Economic Case considers only the capital investment work streams.

The process undertaken to identify the areas that would benefit from capital investment is set out in Appendix M & N with the key stages being:

- From the Clinical Output Specifications, a long list of themes, that could make up the programme of capital investment,
- Development of benefit criteria,
- Use of benefit criteria to score and prioritise the long list of themes,
- Use of the same approach to identify the specialities that would benefit most from investment in outpatient facilities,

- Bundles (Service Solution Options) of capital investment were created based on those themes and specialties with the highest score,

- Bundles were then scored against investment objectives.

The scoring of themes is set out in appendix O. The bundles (Service Solution Options) and their appraisal are set out in the following sections.

This approach has identified a prioritised programme of investment which will be undertaken in a phased manner as funding becomes available.

Each option will result in the delivery of facilities, however at this stage of the business planning process where and what these will be has not been fully developed. ppendix L sets out some initial images of these facilities.

3.2 Do Nothing Option

A summary description of the do nothing option is presented in Table E2. This table summarises the impact of the do nothing option on NHS Grampian.

Table E2: Do nothing

Strategic Scope of Option	Do Nothing
Service provision:	Existing service provision arrangements with no capital investment other than backlog maintenance to support service development. Limited moderation of the gap between service demand and capacity, inefficient and fragmented physical dispersal of services.
Service arrangements:	Existing service arrangements Limits the efficient deployment of workforce capacity and ability to address waiting time targets.
Service provider and workforce arrangements:	Existing workforce and current and further use of third party service provider arrangements with ongoing high levels of supplementary staffing, expenditure on private sector, use of mobile imaging etc. Continuing difficulty with staff recruitment and retention with risk of deterioration in staff

	morale. Opportunity for flexible use of staffing sub-optimal.
Supporting assets:	NHS Grampian owned equipment. Third Party Equipment Existing NHS Grampian facilities – multiple sites Backlog maintenance and poor functional suitability will needs to be addressed and equipment replacement requirements identified. Limits services abilities to achieve target operating models.
Public and service user expectations:	Efficient, effective person-centred care. Not achieved by this option.

3.3 Service Change Proposals

3.3.1 Engagement with Stakeholders

Development of this IA is the result of a significant stakeholder involvement process undertaken over nine months during 2017.

The engagement process involved clinicians, other staff, patient groups, patient representatives and the Scottish Health Council (SHC). To help inform this involvement process, a Stakeholder Analysis was undertaken and is enclosed as Appendix C.

This involvement process has been shaped by a Project Communication and Involvement Framework, enclosed as Appendix D. A Communication and Involvement Action Plan was produced to support the delivery of all agreed involvement activities and is updated on a bi-annual basis, a copy of the action plan is included in Appendix E. All communication and involvement activities are led by the Communication and Involvement Group which is a sub group of the Elective Care Redesign Programme Board and supported by the Elective Care, Communication Officer. A summary of the activities to date are included as Appendix F.

The involvement process has included a series of circa 90 multi-professional workshops involving 500 people, patient representatives, clinicians and other staff from across the health and care pathway including staff from the Health and Social Care Partnerships (HSCP),

primary care, secondary care and from Grampian and other North of cotland (NoS) Boards.

Additionally, the SHC participates in the Communication and Involvement Group. During recent months three specific meetings involving project team members and representatives from the SHC have been held to discuss the involvement process and emerging themes. The SHC confirmed that they are content with the process so far and that there are no issues to date that are likely to result in the need to pursue a major services change process. Now that the preferred solution is outlined in this economic case, a major service change questionnaire will be completed to formally confirm this position.

The involvement process resulted in the creation of clinical output specifications for 22 specialities, in relation to the delivery of Elective Care services looking forward to 2027. This process also informed and shaped the investment objectives and benefit criteria used to create and evaluate the service options considered in this economic appraisal.

The Elective Care Redesign Programme Board has been the main group involved in the providing governance relating to the engagement process, development and ranking of the investment objectives and benefit criteria and in short listing the, long list of service options to the four included in this economic appraisal.

The Elective Care Redesign Programme Board is made up of:

- Corporate representatives
- Acute Care (clinicians and managers)
- Health and Social Care Partnerships
- General Practice
- Public Representative
- Project Team

A list outlining the membership of the Elective Care Redesign Programme Board and their terms of reference is included as Appendix J.

3.3.2 Developing a 'long list' of proposed solutions

The consultation and involvement process identified a list of key themes to be addressed by NHSG to support the service redesign agenda required to achieve transformational change in the delivery of elective care services for Grampian and also the North of Scotland. These themes are outlined in the strategic section of this IA at 2.3.4.

Twelve possible service solutions associated with capital investment were identified by the Project Team during a series of evaluation workshops using the following benefit criteria:

- Optimised planning, person centred care and improved patient flow
- Improved access to diagnosis and treatment
- Optimised waiting times and resource utilisation
- Improved self-management and delivery of realistic healthcare
- Sustain services and workforce to deliver care as locally, and within NoS, as far as possible
- Improved performance against agreed TOM (BADS, DOSA, LOS, N2R, Day case rates)
- Maximum separation of elective and unscheduled patient flows

Those 12 solutions are set out in table E3 below, together with their relative ranking following scoring against the benefit criteria, as set out in appendix O & P.

Table E3: Long List of Service Solution Options

No	Description	Rank	Shortlist?
A	All priorities identified during consultation process	1	Excluded clearly unaffordable at this stage
B	Outpatient services, community hub/s, digital image app and IR theatre	10	Excluded Lesser degree of contribution to the benefits sought
C	Outpatient services, community hubs, CT and MRI	7	Excluded Lesser degree of

No	Description	Rank	Shortlist?
	imaging and image app		contribution to the benefits sought
D	Outpatient services, community hub/s, CT & MRI imaging, digital image app and clinical advice IT solution	9	Excluded Lesser degree of contribution to the benefits sought
E	Outpatient services, community hub/s, day surgery facilities (no theatres) and clinical/patient portal	6	Excluded Lesser degree of contribution to the benefits sought
F	Outpatient services, community hub/s, theatre, day surgery with theatres and CT & MRI imaging	9	Excluded Lesser degree of contribution to the benefits sought
G	Outpatient services, community hub/s, endoscopy facilities, IR theatre, day surgery(no theatres) and CT& MRI imaging	6	Excluded Does not fit with Board strategic plans
H	Outpatient services, community hub/s, endoscopy services, day surgery with theatres and CT & MRI imaging	5	Shortlist
I	Outpatient services, community hub/s, IR theatre, cath lab, digital image app, CT & MRI imaging and an integrated day surgery and endoscopy unit	2	Shortlist
J	Outpatient services, community hub/s, theatre, day surgery with theatres, CT & MRI imaging and digital image app	4	Shortlist
K	Outpatient services, community hub/s, digital image app, CT & MRI imaging and an integrated day surgery and endoscopy unit	3	Shortlist
L	Do nothing – Backlog Maintenance and Shortfall in Capacity Investment	12	Shortlist as the baseline to measure options

The Redesign Programme Board, including patient and staff-side representation reviewed the 'long list' and agreed the 'short list' which is outlined in Table E4.

Table E4: 'Short List' of Service Solution Options

Options	Description	Long list No
1	Outpatient services, community hub/s, endoscopy services, day surgery with theatres and CT & MRI imaging	H
2	Outpatient services, community hub/s, IR theatre, cath lab, digital image app, CT & MRI imaging and an integrated day surgery and endoscopy unit	I
3	Outpatient services, community hub/s, theatre, day surgery with theatres, CT & MRI imaging and digital image app	J
4	Outpatient services, community hub/s, digital image app, CT & MRI imaging and an integrated day surgery and endoscopy unit	K
5	Do nothing – Backlog Maintenance and Shortfall in Capacity Investment	L

Description of each option:

Service Solution Option 1

The service change proposed within this solution is based on the provision of the following elements:

- Modern and fit for purpose outpatient and ambulatory care facilities, supporting a 'one-stop' model of outpatient provision for three clinical specialties who have best demonstrated the scope and vision to transform elective care. These are: Urology, Respiratory and Dermatology

- The development of the concept of Community Diagnostic & Treatment Hubs. This element will require significant joint-working between Primary and Secondary Care in terms of scope and remit, and would be developed fully for Outline Business Case (OBC) stage

- The creation of bespoke day case surgery facilities, with three dedicated theatres, to support highly efficient day surgery

provision in Grampian. This will benefit multiple specialties including, but not limited to: General Surgery, Urology, ENT

- Investment in CT and MRI facilities which will be appropriately phased in order to future-proof against the forecast of increasing demand for specialist imaging over the next 10 years

Table E5: Service Solution Option 1

Strategic Scope of Option	
Service provision and arrangements:	As per narrative immediately above
Service provider and workforce arrangements:	New outpatient and ambulatory care facilities for Urology, Respiratory and Dermatology. No additional workforce is sought to facilitate these new models of outpatient care. New community-based hub facilities for the provision of TBC elective diagnostics & treatments Some workforce revenue implications, staffing model to be determined Provision of new Day Case Surgery facilities No additional workforce is sought to facilitate these new models of outpatient care CT and MRI Impact: CT and MRI facilities and equipment require revenue and workforce solutions
Supporting assets:	Buildings and facilities as highlighted above CT and MRI facilities and equipment, IR 'hybrid' theatre equipment
Public & service user expectations:	Minimised waits and minimal requirement to attend Hospital High quality of service accessible as locally as possible, as specialist as necessary

Service Solution Option 2

The proposed solution is noted below; areas of variance from **solution 1** are highlighted:

- Outpatient and ambulatory care facilities, as per solution 1
- Community Diagnostic & Treatment Hubs per solution 1

- The creation of bespoke day case surgery facilities, per solution 1
- Investment in CT and MRI facilities per solution 1
- It does include the addition of bespoke facilities for Endoscopy, to increase service capacity, reduce service fragmentation and drive up productivity and patient experience

Table E6: Service Solution Option 2

Strategic Scope of Option	
Service provision and arrangements:	As per narrative immediately above
Service provider and workforce arrangements:	As per Service solution Option 1 plus Provision of new bespoke Endoscopy facilities: Reduced reliance on private sector Increase efficiency and session throughput
Supporting assets:	Buildings and facilities as highlighted above CT and MRI facilities and equipment
Public & service user expectations:	Minimised waits and minimal requirement to attend Hospital High quality of service, accessible as locally as possible, as specialist as necessary

Service Solution Option 3

This proposed solution is noted below; areas of variance from **solution 1 and 2** are highlighted:

- Outpatient and ambulatory care facilities, as per solution 1 and 2
- Community Diagnostic & Treatment Hubs per solution 1 and 2
- Investment in CT and MRI facilities per solution 1 and 2
- The Interventional Radiology 'Hybrid' Theatre as per solution 1
- The addition of a single **Cardiac Catheterisation Laboratory.** This will allow for greater elective capacity and improved waiting times and clinical case mix, reducing reliance on private sector provider.

- This solution introduces the potential to **co-locate day surgery and endoscopy in a single new bespoke facility** to maximise flexibility in both space and workforce terms and future-proofing of investment

This solution would see investment in a larger number of the service options which were identified and prioritised as a result of the comprehensive clinical engagement process undertaken.

It also recognised the following:

- Interventional Radiology (IR) – two exisiting theatres are not 'Hybrid' theatres. A growing number of procedures are being undertaken in IR theatres by Surgeons. Currently, for combined IR and Vascular procedures, a further operating theatre is reserved and transfer of patients between these may be required during the procedure. This carries a degree of patient safety and risk concerns.

- Cardiac Catheterisation Laboratory capacity, TAVI (Transcatheter Aortic Valve Implantation) is currently only provided by NHS Lothian. There is growing clinical support locally and regionally for developing this service in the North, it is thought there may be an initial requirement for approximately 40 cases per year initially. It is very likely that there will also be change in the referral criteria supporting a broader application of TAVI ahead. These developments will place significant further demands on existing Cath Lab capacity, which is currently supplemented by a 3rd party provider. Our understanding of these capacity needs is being developed further in a regional context.

- NHS Grampian will require to strengthen arrangements for providing services on a regional basis pertaining to modern IR theatres and Cath Lab activity in order to support retention and necessary development of services ahead. This is true for interventions such as TAVI and for ensuring regional elective Vascular surgery needs can be met in future, both electively and in terms of ARI as a Major Trauma Centre.

Table E7: Service Solution Option 3

Strategic Scope of Option	
Service provision and arrangements:	As per narrative immediately above
Service provider and workforce arrangements:	**Provision of new and co-located Day Case Surgery facilities and new bespoke Endoscopy facilities**, support improved efficiency, flexibility and productivity and maximal shift from inpatient care **Endoscopy impact:** Reduced reliance on private sector **1 new additional IR 'hybrid' theatre facilities** Additional capacity will reduce number of patients having open procedures, improve outcomes and reduce los, reduce waits. Scope to develop regional contribution via this facility **1 new additional Cardiac Cath Lab facility** would allow Cardiology to provide NoS Regional service for TAVI, meet waiting times, stop ad hoc use of mobile Cath lab Greater likelihood of improved recruitment and retention for services affected
Supporting assets:	Buildings and facilities as highlighted above CT and MRI facilities and equipment
Public & service user expectations:	Minimised waits and minimal requirement to attend Hospital High quality of service, accessible as locally as possible, as specialist as necessary Gain for patients in improved outcomes due to earlier intervention, improved outcomes, psychological wellbeing and economic benefits Gain for Health Boards around less travel for patients, reduces costs of travel, costly flights Orkney/Shetland

Service Solution Option 4 - 'Do Nothing'

The 'Do Nothing' option provides an important opportunity to understand and assess the alternative solutions proposed, through comparing relative benefit of short-listed solutions versus the current arrangements. Through this option, there would be scope to improve

process and efficiency of service delivery to a degree through non-capital redesign, but to a far lesser extent than would be the case via the optimal deployment of capital investment. This option addresses none of the challenges that services face as a result of constraints imposed by sub-optimal facilities and adjacencies, asset base or technology.

Further details are set out in section 3.2.

Service Solution Option 5

A fifth option which is **solution 3** with the following items removed:

- The Interventional Radiology 'Hybrid' Theatre as per solution 1
- A single Cardiac Catheterisation Laboratory

This proposed solution is noted below; areas of variance from **solution 1 and 2** are highlighted:

- Outpatient and ambulatory care facilities, as per solution 1 and 2
- Community Diagnostic & Treatment Hubs per solution 1 and 2
- Investment in CT and MRI facilities per solution 1 and 2
- This solution introduces the potential to **co-locate day surgery and endoscopy in a single new bespoke facility** to maximise flexibility in both space and workforce terms and future-proofing of investment

This solution would see investment in a reduced number of the service options which were identified and prioritised as a result of the comprehensive clinical engagement process undertaken.

Table E7: Service Solution Option 5

Strategic Scope of Option	
Service provision and arrangements:	As per narrative immediately above
Service provider and workforce arrangements:	• Provision of new and co-located Day Case Surgery facilities and new bespoke Endoscopy facilities, ○ support improved efficiency, flexibility and productivity and maximal shift from inpatient

	care • Endoscopy impact: o Reduced reliance on private sector o Increase efficiency and session throughput Greater likelihood of improved recruitment and retention for services affected
Supporting assets:	• Buildings and facilities as highlighted above • CT and MRI facilities and equipment
Public & service user expectations:	Minimised waits and minimal requirement to attend Hospital High quality of service, accessible as locally as possible, as specialist as necessary • Gain for patients in improved outcomes due to earlier intervention, improved outcomes, psychological wellbeing and economic benefits • Gain for Health Boards around less travel for patients, reduces costs of travel, costly flights Orkney/Shetland

3.4 Indicative costs

This section considers the indicative costs of the short listed proposed solutions.

Relevant monetary costs and benefits are considered at this stage and an appraisal period of implementation and the 25 year of operation is used. The first full year of operation is assumed to be 2022/23.

Many costs associated with the proposed service solution will not be known until design development and market testing have been completed therefore optimism bias templates has been completed and applied to provide a cost range and are detailed in Appendix H.

VAT and inflation has been excluded from all costs in the economic case.

A summary of the indicative costs are set out in table E8, these are the output of the GEM (Generic Economic Model) analysis.

Table E8 – Summary of Indicative Costs – With Optimum Bias

	Option 1	Option 2	Option 3	Option 4	Option 5
(long list no)	H	I	J	K	L
	£000's	£000's	£000's	£000's	£000's
Capital cost (or equivalent value)*	39,233	46,201	46,584	3,151	41,253
Whole of life capital costs	49,041	58,101	58,629	3,939	51,567
Whole of life operating costs	140,230	101,073	197,730	182,409	93,127
Estimated Net Present Value of Costs	124,069	108,448	165,883	110,946	98,425
Optimism Bias %	26.50%	26.50%	26.50%	16.40%	26.50%

*NB: Exclusive of VAT and Inflation

Options	Description	Long list No
1	Outpatient services, community hub/s, endoscopy services, day surgery with theatres and CT & MRI imaging	H
2	Outpatient services, community hub/s, IR theatre, cath lab, digital image app, CT & MRI imaging and an integrated day surgery and endoscopy unit	I
3	Outpatient services, community hub/s, theatre, day surgery with theatres, CT & MRI imaging and digital image app	J
4	Outpatient services, community hub/s, digital image app, CT & MRI imaging and an integrated day surgery and endoscopy unit	K
5	Do nothing – Backlog Maintenance and Shortfall in Capacity Investment	L

Indicative Costs - Assumptions

The following reflects the approach taken in the development of the initial cost implication:

- Opportunity Costs – any new sites proposed for these developments are already in the ownership of NHSG on behalf

of the Scottish Ministers, and as such, the use of the land for this Project represents an opportunity cost. The land of the Board is valued annually and has been pro-rated against the footprint of each option to identify the opportunity cost. Where the facilities proposed to deliver this solution are already in use by services and will continue to be used for that purpose no opportunity cost has been identified

- Construction Costs: indicative capital construction costs equivalent to existing developments have been used. The backlog maintenance costs are taken from the NHSG Backlog Maintenance Register

- Financial Risk: At this stage Optimism Bias has been used to identify a provision for the, as yet, unquantifiable risk .

- Equipment Costs: there is a need to provide new equipment. Equipment lists will be developed but at this stage a provision has been included. Where possible, it is intended that existing equipment will transfer with services to assist in keeping the total cost of new equipment to a minimum.

- Project Development Costs: costs associated with a Project Team, a set of advisors and the procurement process have been identified.

- Commissioning Costs: a cost allocation for the commissioning of the facilities have been identified.

- Embedded Accommodation: University of Aberdeen (UoA) is a significant partner on the Foresterhill Health Campus and may have a presence in development. Embedded costs of this accommodation are reflected in the construction costs above. No investment associated with a clinical research facility has been identified at this stage.

- Lifecycle Costs - indicative lifecycle costs for the maintenance and replacement of assets during the appraisal period for each option have been used based on those associated with current developments

Whole life capital costs are set out in Table E8 below.

Table E9: Initial Cost Implication Summary - Short Listed Options

	Option 1	Option 2	Option 3	Option 4	Option 5
	£000's	£000's	£000's	£000's	£000's
Opportunity Cost	0	0	0	0	0
Initial Capital Costs					
Construction Cost	21,156	26,155	26,071	1,526	23,783
Site Specific Costs	0	0	0	0	0
Prelims, Fees, On-Costs	1,159	1,406	1,402	82	1,279
Risk (optimism bias)	6,384	7,742	7,717	280	7,040
Enabling Costs	0	0	0	0	0
Equipment	6,505	6,988	5,633	161	5,392
Client Costs	1,464	1,754	3,654	97	1,604
Project Development	1,906	1,906	1,906	906	1,906
Commissioning Costs	250	250	250	100	250
Transitional Period Costs	n/a	n/a	n/a	n/a	n/a
Cost of Embedded Accommodation	n/a	n/a	n/a	n/a	n/a
Total Initial Cost Implications	**39,233**	**46,201**	**46,634**	**3,151**	**41,253**
Life Cycle Costs	9,808	11,900	11,995	788	10,313
Whole of life capital costs	**49,041**	**58,101**	**58,629**	**3,939**	**51,567**

The following reflects the approach taken in the development of the recurring running costs associated with the investment cost:

- clinical service costs a number of areas in the options will need service developments to successfully deliver the investment objectives and these costs have been identified. The do nothing option will will attract demand pressures in relation to inpatient beds and use of third party providers and these are reflected in this option

- the non-clinical support service areas of change that are anticipated to have a material incremental financial impact refers to Equipment Maintenance

- Building Related Running Costs - as is the case with most projects that develop and replace existing buildings, it is anticipated that there will be a net increase in building related running costs. The reason for this is in relation to the modern space standards that new buildings are required to meet. The resulting increased floor area inevitably leads to increased costs for business rates, heating, lighting, cleaning, building maintenance etc

- Net Income Contribution (income generated from non-public sector organisation) - none is anticipated

- Embedded Accommodation – Revenue Costs – none are anticipated

- Displacement Costs - none are anticipated

Table E10: Additional Recurring Revenue Cost Implications – First Year of Operation (2022/23)

	Option 1	Option 2	Option 3	Option 4	Option 5
	£000's	£000's	£000's	£000's	£000's
Clinical Service Costs	4,000	2,100	6,000	7,100	2,100
Non-Clinical Service Costs	842	904	731	20	701
Building Related Running Costs	767	1,039	1,178	176	924
Net Income Contributions	0	0	0	0	0
Revenue Costs of Embedded Accommodation	0	0	0	0	0
Displacement Costs	0	0	0	0	0
Total Recurring Revenue Cost Implications	**5,609**	**4,043**	**7,909**	**7,296**	**3,725**
Whole of life	**140,230**	**101,073**	**197,730**	**182,409**	**93,127**

	Option 1	Option 2	Option 3	Option 4	Option 5
	£000's	£000's	£000's	£000's	£000's
operating costs					

3.5 Initial Assessment of Shortlisted Service Solution Options

3.5.1 The shortlisted service solution options have been assessed

Their relative advantages and disadvantage and impact on service delivery are detailed in Tables E11, E12 & E13 and have been used to support the assessment of each option.

Table E11: Appraisal of Short Listed Service Solution Options – Advantages

Advantages (Strengths and Opportunities)	Option 1	Option 2	Option 3	Option 4	Option 5
Project					
Project team in place	Y	Y	Y	N/A	Y
Contractual/ Governance					
Established project delivery arrangements	Y	Y	Y	Y	Y
Improved clinical governance, MDT and quality monitoring	Y	Y	Y	N	Y
Improved HEI and HSE compliance	Y	Y	Y	N	Y
Service Continuity					
Future-proofed investment in generic facilities	Y	Y	Y	N	Y
Technology enabled efficiencies	Y	Y	Y	N	Y
Improved morale	Y	Y	Y	N	Y
service will continue as currently and manage risks as per current arrangements	N	N	N	Y	N
Service Development					

Advantages (Strengths and Opportunities)	Option 1	Option 2	Option 3	Option 4	Option 5
Transformational ambulatory service redesign for Urology, Respiratory and Dermatology.	Y	Y	Y	N/A	Y
Create community hub model to support care close to home where possible and minimising hospital attendance.	Y	Y	Y	N/A	Y
Create model for ambulatory day case surgery and enabling improvement achievement of e.g. TTG and BADS.	Y	Y	Y	N/A	Y
Creating future-proof imaging capacity based on future demand	Y	Y	Y	N/A	Y
Creating increased IR capacity to support modern surgical techniques.	N	N	Y	N/A	N
introduce and implement new technology	Y	Y	Y	N/A	Y
Creating increased IR & Cath Lab capacity to support modern clinical techniques.	N	N	Y	N/A	Y
Creating integrated Endoscopy & Day Surgery unit to transform culture & service delivery models in how ambulatory care is delivered. Achieve maximum flexibility and efficiency of infrastructure & workforce sustainably for medium and long term.	N	N	Y	N/A	Y
Creating bespoke Endoscopy facilities to optimise productivity and patient experience.	N	Y	N	N/A	N
Service Demand					
Reduced demand for inpatient care	Y	Y	Y	N	Y
Some minimising of demand/capacity gap	Y	YY	YYY	N	YYY
provide flexibility to address future service demands as arise	N	Y	Y	N	Y
Service Performance					
shifting unscheduled care to scheduled ambulatory setting	Y	Y	Y	N	Y
improved flow	Y	Y	Y	N	Y

Advantages (Strengths and Opportunities)	Option 1	Option 2	Option 3	Option 4	Option 5
improved waiting times performance	Y	Y	Y	N	Y
Improved BADS	Y	Y	Y	N	Y
VFM					
Planned investment aligned to priorities	Y	Y	Y	N	Y
Improving our estate	Y	Y	Y	Y	Y
Reducing backlog maintenance burden	Y	Y	Y	Y	Y
Improving functional suitability	Y	Y	Y	N	Y
Reduced reliance on private sector, waiting list initiatives	Y	Y	Y	N	Y
Avoids lack of capital funding	N	N	N	Y	N

Table E12: Appraisal of Short Listed Service Solution Options – Disadvantages

Disadvantages (Weaknesses And Threats)	Option 1	Option 2	Option 3	Option 4	Option 5
Project					
Team capacity to progress	Y	Y	Y	N/A	Y
Contractual/ Governance					
Organisation Capacity	Y	Y	Y	N	Y
Increased patient safety, clinical and staff governance risks	N	N	N	Y	N
Service Continuity					
Risk of failure to achieve improved continuity	Y	Y	Y	N/A	Y
Identifying suitable locations	Y	Y	Y	N	Y
will not alleviate any pressure or reduce risk of service failure	N	N	N	Y	N
increased threat to morale	N	N	N	Y	N
Service Development					
resources focused on contractual arrangements	Y	Y	Y	Y	Y

Disadvantages (Weaknesses And Threats)	Option 1	Option 2	Option 3	Option 4	Option 5
limits service development opportunities for modernisation, for workforce development, sustainability	N	N	N	Y	N
Service Demand					
Failure to redesign and moderate demand, wider demand and capacity gap as a result	N/A	N/A	N/A	Y	N/A
Service Performance					
limits opportunity to deliver enhanced service performance and quality of service to Grampian and beyond	N/A	N/A	N/A	Y	N/A
VFM					
Capital allocation required	Y	Y	Y	Y	Y
Revenue affordability	Y	Y	Y	N	Y
Limited scope for service improvement and less coordinated use of scarce resource+.	N	N	N	Y	N

Table E13: Appraisal of Short Listed Service Solution Options – Impact

Impact on Service Provision	Option 1	Option 2	Option 3	Option 4	Option 5
Outpatient - Urology					
4200 (40%) avoided Return OP appointments for Urology per annum	Y	Y	Y	N/A	Y
600 (15%) increase in New OP capacity	Y	Y	Y	N/A	Y
Some current activity carried out as day case could transfer to new procedure suite releasing theatre capacity	Y	Y	Y	N/A	Y
Current waiting list backlog cleared by introducing new model	Y	Y	Y	N/A	Y
Compliance with waiting time targets	Y	Y	Y	N/A	Y
Outpatient - Dermatology and introduction of skin app					

Impact on Service Provision	Option 1	Option 2	Option 3	Option 4	Option 5
Skin app will allow early commencement of treatment to approx 20% of patients in primary care and prevent need for acute appointment. 1000 – 1300 New OP appointments avoided per annum	Y	Y	Y	N/A	Y
New one stop model will save 2000 return OP appointments avoided per annum	Y	Y	Y	N/A	Y
Downgrading of approx 33% (c360) of USC referrals through skin app technology solution and improved triage. This would in turn increase new appointments available and allow more rapid access, decrease cancer waiting time. All urgent excisions done on same day (current 1-3 appointments).	Y	Y	Y	N/A	Y
Melanoma QPIs will be achieved	Y	Y	Y	N/A	Y
Co-location with medical staff will support 15hrs more per week nurse specialist clinics without additional staffing. This would allow service to double capacity of patch testing and clear current two year wait in nine months	Y	Y	Y	N/A	Y
Enable introduction of nurse led laser clinic daily. This is currently undertaken by a Consultant, thus freeing senior medical capacity	Y	Y	Y	N/A	Y
Co-location of Consultant and Registrar grades with two procedure rooms would increase procedure lists by 50%	Y	Y	Y	N/A	Y
Outpatient - Respiratory					
New model of one stop would see up to 70% patients commence treatment and be discharged at first appoint. This would save 1700 return appointments which would allow capacity to meet 2027 demand for New OP (500 more per yr)	Y	Y	Y	N/A	Y

Impact on Service Provision	Option 1	Option 2	Option 3	Option 4	Option 5
Waiting lists would be reduced dramatically and consequently treatments commenced quicker as result of One Stop and urgent clinics. Positive consequence of less urgent admissions. It is estimated that we would avoid 960 occupied bed-days avoided per annum, 10% of current inpatient footprint	Y	Y	Y	N/A	Y
New community-based hub facilities for the provision of TBC elective diagnostics & treatments					
Examples may include delivery of biologics - Ophthalmology intravitreal injections in the community - approx 7,800 appointments in total p.a. currently, other “biologics” amount to approx 5,200 appointments p.a. - could deliver 20-50% (2600-6500) of total in community hubs and provide a local phlebotomy service, reducing pressure on Hospital infrastructure and provide care closer to home to a large number of patients.	Y	Y	Y	N/A	Y
Provision of new Day Case Surgery facilities					
Improved compliance with TTG	Y	Y	Y	N/A	Y
Improved compliance with BADS	Y	Y	Y	N/A	Y
BADS compliance with approx 1000 more Urology day case procedures per year with the avoidance of need for further inpatient beds by 2027	Y	Y	Y	N/A	Y
BADS compliance with 250 additional General Surgical day case procedures per year, and the avoidance of approx 800 occupied bed days and need for further inpatient beds by 2027	Y	Y	Y	N/A	Y
CT and MRI					
CT capacity for c6000 more elective scans	Y	Y	Y	N/A	Y
MRI capacity for approx 8000 more elective scans per annum	Y	Y	Y	N/A	Y

Impact on Service Provision	Option 1	Option 2	Option 3	Option 4	Option 5
Ability to meet 2027 demand and avoidance of imaging becoming greater bottleneck in patient pathways. Improving ability to meet waiting times targets and cancer performance targets	Y	Y	Y	N/A	Y
CT and MRI facilities and equipment require revenue and workforce solutions	Y	Y	Y	N/A	Y
New additional Interventional Radiology 'hybrid' theatre facilities					
Additional capacity will reduce number of patients having open procedures, improve outcomes and reduce los, reduce waits. Scope to develop regional contribution via this facility	N	N	Y	N/A	N
Buildings and facilities as highlighted above	N	N	Y	N/A	N
CT and MRI facilities and equipment, IR 'hybrid' theatre equipment	N	N	Y	N/A	N
Digital solution to support 'skin' pathway (impact included for Dermatology above but expect impact on Plastic Surgery also	N	Y	Y	N/A	Y
Minimised waits and minimal requirement to attend Hospital	N	N	Y	N/A	N
High quality of service accessible as locally as possible, as specialist as necessary	N	N	Y	N/A	N
Provision of new bespoke Endoscopy facilities					
Diagnostic colonoscopy – additional capacity for 2000 patients per annum – improved diagnostic and review capacity	N/A	Y	N/A	N/A	N/A
30-60% increase in ERCP capacity (160 additional procedures per annum)	N/A	Y	N/A	N/A	N/A
Improved repeat scope compliance and cancer monitoring	N/A	Y	N/A	N/A	N/A
Reduced reliance on private sector and	N/A	Y	N/A	N/A	N/A
Provision of new and co-located Day Case Surgery facilities and new bespoke Endoscopy facilities, to support improved efficiency, flexibility and productivity and maximal shift from inpatient care					

Impact on Service Provision	Option 1	Option 2	Option 3	Option 4	Option 5
Endoscopy impact:					
30-60% increase in ERCP capacity (160 additional procedures per annum)	N/A	N/A	Y	N/A	Y
Diagnostic colonoscopy – additional capacity for 2000 patients per annum – improved diagnostic and review capacity	N/A	N/A	Y	N/A	Y
Improved repeat scope compliance and cancer monitoring	N/A	N/A	Y	N/A	Y
Reduced reliance on private sector and	N/A	N/A	Y	N/A	Y
Day case impact:					
Improved compliance with TTG	N/A	N/A	Y	N/A	Y
Improved compliance with BADS	N/A	N/A	Y	N/A	Y
BADS compliance with approx 1000 more Urology day case procedures per year with the avoidance of need for further inpatient beds by 2027	N/A	N/A	Y	N/A	Y
BADS compliance with 250 additional General Surgical day case procedures per year, and the avoidance of approx 800 occupied bed days and need for further inpatient beds by 2027	N/A	N/A	Y	N/A	Y
1 new additional IR 'hybrid' theatre facilities					
Additional capacity will reduce number of patients having open procedures, improve outcomes and reduce los, reduce waits. Scope to develop regional contribution via this facility	N/A	N/A	Y	N/A	N/A
1 new additional Cardiac Cath Lab facility					
would allow Cardiology to provide NoS Regional service for TAVI, meet waiting times, stop ad hoc use of mobile Cath lab	N/A	N/A	Y	N/A	N/A

3.6 Preferred Strategic/Service Solutions

A summary of assessing each option against the investment objectives for the Project is set out in table E14 below. Option 5 has been

identified as a preferred option at this stage on the basis that it contributes more additional and/or redesigned capacity for the wider elective care system in Grampian and NoS.

Service Solution Option 3 which includes Interventional Radiology 'Hybrid' Theatre and Cardiac Catheterisation will deliver even more service benefits however NHS Grampian has been advised this is out with the scope of available funding and cannot be pursued, at this stage, until funding is identified.

With the exception of the 'Do Nothing' option, each of the service solution options either partially or fully support the achievement of Investment Objectives from investment. Service Solution Option 5 describes a broader 'basket' of investment in services and will deliver more service benefits.

Table E14: Appraisal of Short Listed Service Solution Options

Investment Objective	Option 1	Option 2	Option 3	Option 4	Option 5
Does it meet the investment objectives (fully, partially, no, N/A)?					
Improve future service capacity by improving supporting asset base.	Fully	Fully	Fully	No	Fully
Improve service performance and efficiency by optimising service redesign.	Fully	Fully	Fully	No	Fully
Service redesign is enabled by use of, and access to, technology.	Fully	Fully	Fully	No	Fully
Meet user requirements for service by being more person-centred.	Partially	Partially	Partially	No	Partially
Improved services and sustainable workforce and equity of local access to treatment as far as possible and regionally where required, with harmonised access agreements across NoS Boards.	Partially	Partially	Partially	No	Partially

Investment Objective	Option 1	Option 2	Option 3	Option 4	Option 5
Improved facilities in place to support modern outpatient care and optimised inpatient/day case activity.	Fully	Fully	Fully	No	Fully
Are the indicative costs likely to be affordable (yes, maybe, unknown, no)?					
Affordability	Unknown	Unknown	No	Maybe	Maybe
Benefit Criteria Scoring (points) (Appendix P)	5,185	5,202	7,128	0	5,606
Estimated Net Present Value of Costs (£000's)	124,069	108,448	165,883	110,946	98,425
Preferred/Possible/ Rejected	Possible	Possible	Outwith Funding Scope	No	Preferred

3.7 Design Quality Objectives

Design Quality Objectives will be developed for service solution 3. Prior to commencing the Outline Business Case (OBC) development phase of the project, a baseline Achieving Excellence Design Evaluation Toolkit (AEDET) of existing accommodation will be undertaken followed by a target score AEDET facilitated by HFS.

This exercise will be carried out by a multi stakeholder group. This work will inform development of design objectives which will be articulated in an National Design Assessment Process, Design Statement which will be developed with the support of Architecture Design Scotland and Health Facilities Scotland.

The AEDET workshops will be planned for October 2018 and the design statement workshops will take place following the site option appraisal. The site option appraisal is planned for after this Initial Agreement has been approved.

3.7.1 Design Assessment Process (NDAP)

The purpose of the NDAP is to promote design quality and the service outcomes realised through this. It does this by mapping design standards to the key investment deliverables, including Scottish

Government objectives and expectations for public investment, then demonstrating their delivery via self, and independent, assessments. The development of a Design Statement is the first step of the assessment process.

3.7.2 Achieving Excellence Design Evaluations Toolkit (AEDET)

In accordance with SCIM guidance and the investment objectives, Achieving Excellence Design Evaluation Toolkit (AEDET – HFS Refresh December 2014) will be used throughout the development of the Project to help NHS Grampian manage the design from initial proposals through to detailed design and will continue to do so through to Project Evaluation. In addition, the preferred options will be reviewed as part of NDAP.

The AEDET toolkit has three key dimensions (functionality, build quality and impact) and outlines 10 assessment criteria. Each of the 10 areas are assessed using a series of questions which are scored on a scale of 1 - 6. The standard required should result in all 10 dimensions of the AEDET toolkit scoring between 4 and 6 in line with the agreed target AEDET scores for each dimension agreed with key stakeholders before the design commences.

4. The Commercial Case

4 The Commercial Case

4.1 Overview

The purpose of the Commercial Case within this Initial Agreement (IA) is to provide a statement of the proposed procurement route for the preferred solution, supported by an outline Project delivery timetable.

4.2 Procurement Route

This Project is likely to be funded by means of a capital budget allocation and procured under the NHS Scotland Frameworks 2 (FS2) arrangement.

The following are the key features of the proposed procurement route for the delivery of this Project:

- The works will be procured using an existing contract under the national Framework Scotland 2 arrangements - Major Acute Services NHS Grampian FS2 – The appointed Principal Supply Chain Partner (PSCP) is Graham Construction
- The Framework Agreement is managed by Health Facilities Scotland (HFS) (a division of NHS National Services Scotland) on behalf of the Scottish Government Health Directorate (SGHSCD)
- The Framework embraces the principles of collaborative working, public and private sectors working together effectively, and it is designed to deliver on-going tangible performance improvements due to repeat work being undertaken by the supply chains
- The form of contract is likely to be the Engineering and Construction Contract (NEC3), Option C
- The general principle of the Framework is that risks are passed to ‘the party best able to manage them’, subject to value for money
- The PSCP will be invited to develop a design solution in conjunction with NHS Grampian (NHSG) once an IA approval is in place

This capital procurement route is consistent with the other elective care developments currently being progressed across Scotland as part of the national elective care programme.

In addition to the appointment of the PSCP, the FS2 Consultant Frameworks has also been utilised for the appointment of the Healthcare Planner.

4.3 EU Rules and Regulations

Under Frameworks Scotland 2 there is no need to advertise in the Official Journal of the European Union (OJEU). The five PSCPs on the Framework, have been selected via an OJEU tender process for capital investment construction schemes across Scotland up to 2019. Appointments under the Frameworks lists are thereafter conducted via a High Level Information Pack (HLIP) mini competition process.

4.4 Project Delivery Timetable

Table C1 sets out the likely Project Delivery Timetable for this Project:

Table C1: Project Delivery Timetable

	Milestone	Date
1	Strategic Assessment	Q3 2017
2	Initial Agreement (IA)	Q4 2017
3	IA Approval	Q3 2018
4	Outline Business Case (OBC)	Q2 2019
5	OBC Approval	Q2 2019
6	Full Business Case (FBC)	Q1 2020
7	FBC Approval	Q1 2020
8	Construction Commencement	Q2 2020
9	Construction Completion	Q4 2021

5. The Financial Case

5 The Finance Case

5.1 Introduction

The purpose of the Financial Case within this Initial Agreement (IA) is to consider the affordability and financial consequences of the Project. It sets this out by considering:

- A statement of the organisation's financial situation in relation to the proposal, including confirmation of its affordability
- Identification of resources proposed for the project, including their suitability and availability
- Any capital or revenue constraints on the project
- Description of any financial contributions to be made by external partners, and the current status of that commitment

The preferred service solution as set out in the Economic Case is:

- Option 5 - Outpatient Services (Urology, Respiratory and Dermatology), community hubs, and integrated endoscopy and day surgery unit, CT & MRI imaging.

The Scottish Government (SG) have indicated that capital funding could be provided.

Further details of the capital and revenue elements of the Project and sources of funding are provided in the following sections.

5.2 Statement of the Organisation's Financial Situation and Affordability of Project

Statement of the Organisation's Financial Situation

For the financial year 2018/19, the NHS Grampian Board had a revenue budget of approximately £1.1 billion, and core capital budget of approximately £13 million.

In 2017/18 the Board achieved all of its financial targets. The Board presented a fully financially balanced 1 year (2018/19) Local Delivery Plan (LDP) to the Scottish Government Health and Social Care Directorate in June 2018, which includes the Board's projected revenue and capital funding and expenditure.

Implementation of the preferred service solution would commence in 2018/19 and is expected to complete in 2021/22.

5.2.1 Overall Affordability of the Project

In summary, the investment required to deliver the Project are set out in Table F1 and the revenue implications in the first full year of operation (2022/23) are set out in Table F2. Appendix I provides a further breakdown.

Additional capital allocation of £52.0 million would be required to deliver the Project.

Table F1: Summary of Initial Capital Investment

	Option 5
	£million's
Enabling Projects	0.00
Construction Related Costs	43.00
Furniture and Equipment	7.00
Project Development and Commissioning Costs	2.00
Total Initial Investment	**52.00**

It is anticipated that this investment as well as delivering service development will address existing backlog maintenance of circa 15% of the total investment.

The capital investment will deliver and equip new and reconfigured facilities which will attract additional recurring running costs and depreciation of circa £5.2 million.

Table F2: Summary of Revenue Implications - First Full Year of Operation (2022/23)

	Option 5
	£million's
Revenue Costs	
Additional Depreciation	1.70
Additional Clinical Service Costs	2.10
Additional Non-Clinical Service Costs	0.70

	Option 5
	£million's
Building Related Running Costs	0.90
Total Costs	**5.40**

Additional clinical service costs of £2.1 million per annum as set out in table F3 below are anticipated as a consequence of the service developments associated with these facilities.

Table F3: Summary of Clinical Service Costs - First Full Year of Operation (2022/23)

	Option 5
	£million's
Clinical Service Costs	
Community Diagnostic and Treatment Hub including Biologic	0.50
CT Scanning Suite	0.60
MRI Scanning Suite	1.00
Total Costs	**2.10**

As set out in the economic case, should the capital investment not be made then it is anticipated that in 2022/23 additional clinical service demand pressure of £3.1 million (ex VAT) per annum would require to be addressed by the Board. These costs relate to inpatient bed capacity and use of third party providers.

These cost are further developed in Appendix I.

NHSG has included £40 million, all subject to additional funding allocation in its Infrastructure Plan for this Project. The revenue costs associated with the Project do not form part of the Board's financial plans for 2018/19 and future years, at this stage.

In assessing the overall affordability of the preferred service solution option the Board will consider the prioritisation of additional funding streams to address the recurring revenue costs of this Project. NHSG's Formula Capital Allocation is fully committed over the next five years as a result of the significant pressures around Equipment

replacement and backlog maintenance on its buildings, additional capital funding will be required allow the preferred option to proceed.

A further short listed option had been developed which added investment in Interventional Radiology 'Hybrid' Theatre and Cardiac Catheterisation Laboratory to that which is included in Option 5. To deliver would require a further £4.3m of capital investment and £4.4m of recurring revenue costs. NHS Grampian has been advised these items are out with the scope of the funding available.

5.3 Project Resources

The Project has an experienced multi-disciplinary team from across NHSG in place, with additional advice being provided by Health Care Planners and other 3rd party consultants. These costs form part of the Project cost.

5.4 Financial Risks and Constraint

The material financial risks and constraints associated with this Project are set out in Table F4 below:

Table F4: Financial Risks and Mitigation

Risk/Constraint	Mitigating Action
Securing capital funding	Additional Scottish Government capital allocation sought as part of this business case.
Affordability of revenue implications associated with project	Detailed cost development planned, to aligned to service redesign agenda
Initial Cost Estimates do not reflect developed physical solution	Use of optimism bias

5.5 Financial Contributions from External Partners

At this point in time, there are no other anticipated external partner financial contributions. However, the UoA is a significant partner on the Foresterhill Health Campus and will have a presence in the new buildings (e.g. research facilities). It is therefore not possible to rule out future contributions at this stage.

6. The Management Case

6 The Management Case

6.1 Overview

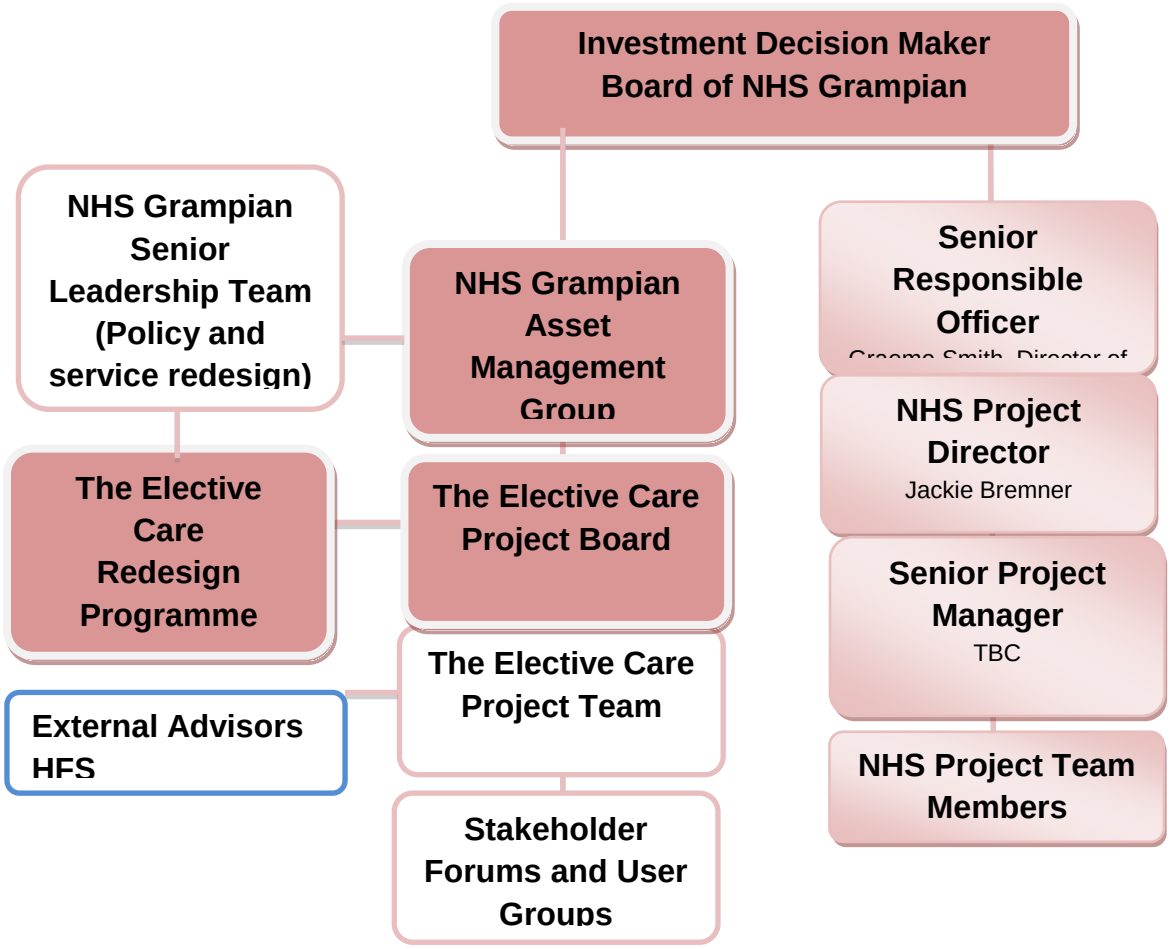
The purpose of the Management Case is to demonstrate that NHS Grampian (NHSG) is capable of successfully delivering this Project.

6.2 Reporting Structure and Governance Arrangements

The governance of the Project is consistent with the Scottish Capital Investment Guidance (SCIM). The Project governance arrangements described in this section seek to ensure that Scottish Government Health and Social Care Directorate (SGHSCD), National Elective Care Programme, Capital Investment Group (CIG) and Health Facilities Scotland (HFS), as well as the Board of NHSG are appropriately involved in the Project as it progresses through appropriate key gateways to completion, operation and evaluation.

In compliance with the Scottish Capital Investment Manual (SCIM), this Project will deploy a programme and project management approach with the management structure as shown in Figure M1.

Figure M1: Structure and Governance Arrangements



The investment decision maker is the Board of NHSG. The reporting and governance arrangements outlined in Figure M1 indicate the groups who will be involved in providing assurance to the Board as part of the governance process for the Project. They include:

The NHSG Asset Management Group (AMG)

The remit of the AMG is:

- To ensure system-wide co-ordination and decision making of all proposed asset investment/disinvestment decisions for NHSG, ensuring consistency with policy and the strategic direction of NHSG; and,
- The AMG works in conjunction with the NHS Board Senior Leadership Team to ensure consistency of approach consistent with policy and affordability.

The Project Board

The Programme Board is accountable through the AMG to the Board of NHSG.

Purpose

The main purpose of the Project Board is to support and supervise the successful delivery of this capital project to be delivered by the end of 2021.

Remit

1. To agree the scope of the Project, including the clinical service strategy and the benefits to be realised by the development with appropriate stakeholder involvement.

2. To ensure that the resources required to deliver the Project are available and committed.

3. To drive the Project through Initial Agreement (IA), OBC and FBC approval within NHSG and thereafter the CIG at SGHSCD.

4. To supervise the Framework Scotland 2 (FS2) NEC3 procurement process and appointment of the Principal Supply Chain Partner (PSCP), Joint Cost Advisor and CDM Advisor.

5. To assure the Project remains within the framework of the overall project strategy, scope, budget and programme.

6. To approve changes to the scope of the Project including e.g. time, cost and quality, within agreed authority.

7. To review the Risk Management Plan, ensuring all risks are identified; that appropriate mitigation strategies are actively applied and managed and escalated as necessary, providing assurance to the NHS Board that all risks are being effectively managed.

8. To ensure that staff, partners and service end users are fully engaged in designing operating policies that inform the detailed design and overall procedures that will apply, which in turn will inform the Works information i.e. ensuring that the facilities are service-led rather than building-led.

9. To ensure that the Communication Plan enables appropriate involvement of, and communication with, all stakeholders, internal and external, throughout the Project from conception to operation and evaluation.

10. To commission and participate in appropriate external reviews including e.g. Office of Government Commerce, Gateway Reviews and the Architecture Design Scotland, NHS Scotland Design Assessment Process (NDAP).

11. To ensure the Project remains within the affordability parameters set out by Scottish Government and NHSG.

12. To work with the PSCP to ensure that the completed facilities are delivered on programme within budget and are compliant with the Works Information and Board Construction Requirements.

13. To supervise the functional commissioning and bring the facilities post-handover and thereafter completion of the post project evaluation.

The NHS Project Team

The remit of the NHS Project Team is:

1. To coordinate the production of the Employers Works Information documents for the Project.

2. To coordinate the production of all technical and financial schedules from an NHS perspective.

3. To lead the PSCP and advisor procurement process.

4. To participate in e.g. Gateway Reviews and the NDAP, helping to ensure project delivery readiness at each key project gateway.

5. To lead and coordinate the production of the IA, the OBC and the FBC.

6. To work with the PSCP to ensure that the Project is delivered to cost, quality and programme.

7. To agree appropriate derogations.

8. To supervise the development of third party Occupation Agreement/s, as appropriate, with building users.

9. To ensure communication with all internal and external stakeholders and appropriate user involvement in relation to e.g. workforce planning, functional commissioning and relocation.

10. To ensure the development of all appropriate policies and procedures (clinical and Facilities Management) to ensure the smooth operation of the building once operational.

11. To commission specific redesign work associated with the redesign of services relocating to the new facilities.

12. To plan for the Project evaluation.

13. To lead the specification, procurement and commissioning of all group 2, 3 and 4 equipment.

14. To lead the specification of all group 1 equipment consistent with the Works Information.

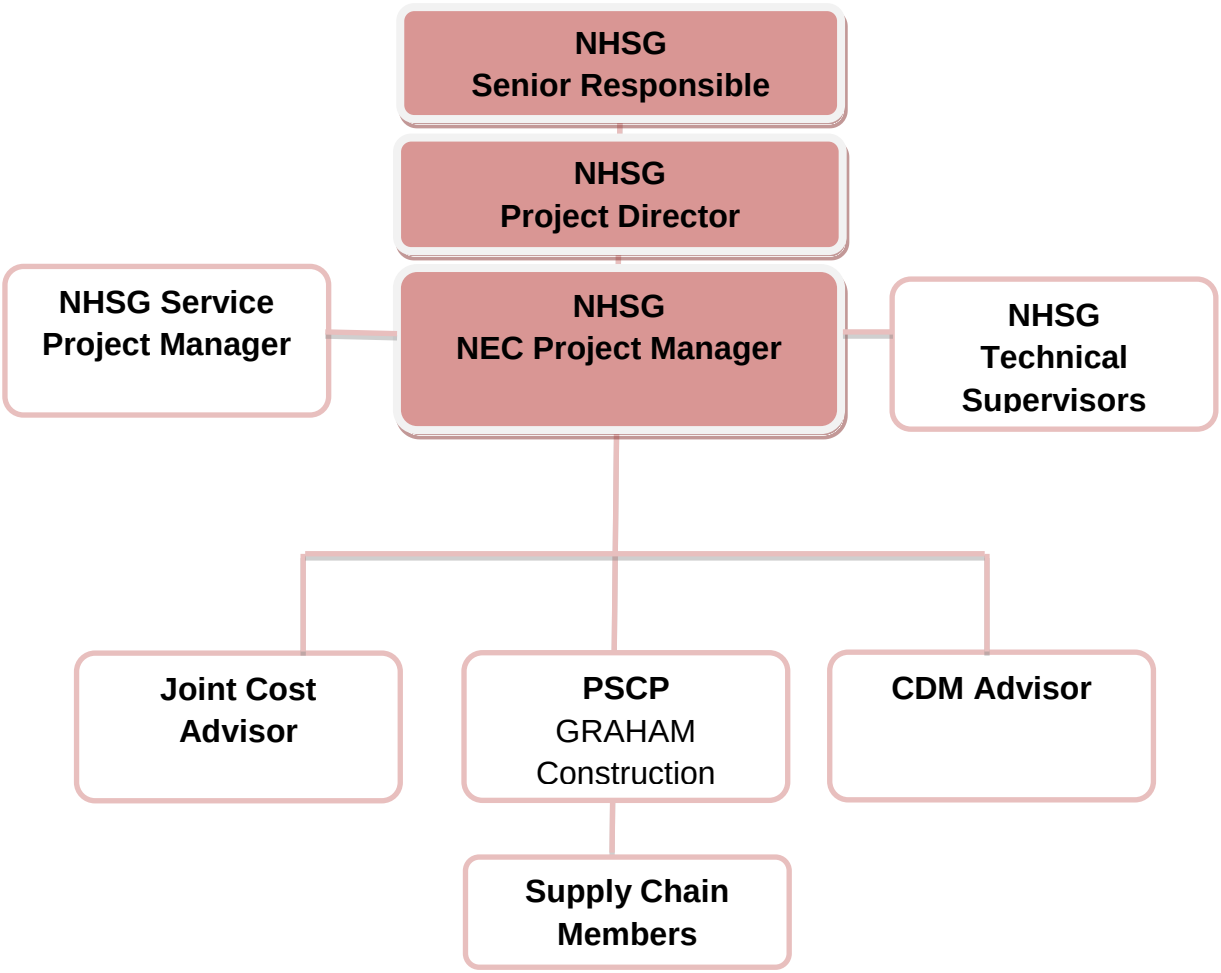
15. To ensure compliance with Employers Works Information requirements.

16. To ensure completion of the soft landings programme in advance of handover.

17. To lead development and implementation of functional commissioning programme, including service relocation, staff orientation and training etc.

6.3 Project Structure and Roles and Responsibilities

Figure M2: Project Team Structure



Roles and Responsibilities

Putting the right team together for this significant capital Project is key to the successful delivery of the Project. One of the recommendations resulting from the Review of Scottish Public Sector Procurement in Construction (May 2014) was the production of guidance on Baseline Skillsets for construction projects of different size and complexity, refer to Tables M1 - 4. This guidance has been used to assess the complexity level of the Project and to assess the experience and suitability of the lead officers, specifically the Senior Responsible Officer (SRO), Project Director (PD) and Senior Project Manager.

Table M1: Project Complexity

Project Complexity Criteria:	Level 1	Level 2	Level 3	Level 4
Value:	Up to OJEU threshold	Less than £10 million	Less than £15 million	£40m
Number of Organisations	1	1-2	1-2	Any
Number of User Consultees	1-5	1-5	1-12	13+
Number of Tier 1 Contractors	1	1-2	1-2	Any
Number of Design Teams	1	1-2	1-2	Any
Degree of Technical Complexity and/or Operational Risk	Low	Low or Medium	Low or Medium	Medium/ High

Table M1 indicates that using the Scottish Public Sector Procurement in Construction (May 2014) guidance the Project is assessed to be a Level 4 project in terms of complexity. Using the 'Baseline Skillset Matrix' from the guidance referenced above the following three Tables M2 and M3 demonstrate the experience level of the three lead officers, in line with the guidance for a Level 4 project.

The **Senior Responsible Officer** (SRO) for the Project is Graeme Smith, Director of Modernisation for NHSG, he is the person within NHSG with the authority to provide leadership and clear accountability for the Project's success. He has ultimate responsibility at Board Executive level for delivery of the Project's benefits and the appropriate allocation of resource to ensure its success. The SRO has led a number of similar major capital funded projects as Project Director in NHSG over the last 25 years.

Table M2: Senior Responsible Officer

Senior Responsible Officer (SRO): Graeme Smith		
Main Responsibilities:	The business sponsor who has ultimate responsibility at Board/Executive level for delivery of the Project's benefits and the appropriate allocation of resources to ensure its success.	
Experience and suitability for the role:	**Skillset Expected**	**Skillset of Individual**
Development Management	Experienced	Expert
Governance	Expert	Expert
Commercial Acumen	Expert	Expert
Project Management	Experienced	Expert
Stakeholder Management	Experienced	Expert
Procurement Management	Previous Involvement	Experienced
Construction Management	Experienced	Expert
Resource Commitment	25-75%	10 - 20%

The **Project Director** (PD) for the Project is Jackie Bremner, she is responsible for the ongoing day to day management and decision making on behalf of the SRO to ensure that the desired Project objectives are delivered. She is also responsible for the development maintenance, progress and reporting of the business case to the SRO. The PD has undertaken a similar role on a number of Framework capital and hub revenue funded health projects in NHSG and NHS Highland over the last 20 years.

Table M3: Project Director

Project Director: Jackie Bremner	
Main Responsibilities:	Responsible for the ongoing day-to-day management and decision making on behalf of the SRO to ensure that the desired Project objectives are delivered. They are also responsible for the development, progress and reporting of the business case to the SRO.

Project Director: Jackie Bremner		
Experience and suitability for the role:	Skillset Expected	Skillset of Individual
Development Management	Experienced	Expert
Governance	Expert	Expert
Commercial Acumen	Expert	Expert
Project Management	Experienced	Expert
Stakeholder Management	Experienced	Expert
Procurement Management	Previous Involvement	Experienced
Construction Management	Experienced	Expert
	25-75%	20%

The **Senior Project Manager** has not yet been appointed but will be appointed following approval of the IA.

This Project is complex and involves a large number of services, stakeholders and a significant service redesign agenda to be delivered to coincide with delivery of the new facilities. A complex project requires a Project Board to oversee the Project's successful delivery. The role and remit of the Elective Care Project Board is outlined in section 6.2. The Project Board will meet monthly and will be chaired by the SRO. Development of the IA has been overseen by the Elective Care Redesign Programme Board.

Independent Client Advisors

In addition, to the key officers outlined above a number of client advisors are to be procured to provide support to the Project Team to ensure the successful completion of all Project activities, to specification, on time and to cost. The advisors are listed in Table M4, with the exception of the Health Facilities Scotland (HFS) Equipping Services. The advisors will be procured via the Public Contract Scotland quick quote portal from the FS2 Framework. NHSG will enter into a service level agreement with the HFS Equipping Service consistent with earlier projects to support the specification,

procurement and deployment of most group 2, 3 and 4 equipment and the specification of group 1 medical equipment.

Table M4: Independent Client Advisors

Independent Client Advisors	
Senior Project Manager	TBC
Joint Cost Advisor	TBC
CDM Advisor	TBC
Healthcare Planner	Buchan + Associates
Equipment Advisor	Health Facilities Scotland (HFS) Equipping Service (not yet appointed)

6.4 Project Recruitment Needs

The Board of NHSG has invested significant financial and organisational resources in ensuring that it has sufficient capacity and capability to be able to effectively deliver and manage infrastructure Projects across the organisation.

The Project management structure was prepared from local experience and also taking advice from other similar projects in Scotland, refer to Figure M2. The cost of the Project Team over the life of the Project, including directly appointed project staff, together with external advisers will be funded from the capital funding allocation for the Project. NHSG is committed to this Project and will make sure it is resourced to ensure successful delivery of the investment objectives.

6.5 Governance Support for the Proposal

Table M5 sets out in summary how the proposals outlined in this IA have been developed in collaboration with key stakeholders and to confirm that they will continue help to shape and support further development of the proposals during the OBC and FBC stages of the Project.

Table M5: Summary of Governance Support for the Proposal

Governance Group and Stakeholder Engagement	Confirmed Support for the Proposal
Services/Departments	
A total of 22 clinical services involving around 400 patient representatives, clinical leads, service managers and staff from all professions across the health care pathway in the development of clinical output specifications for these services. This has informed an elective care strategy for Grampian which has in turn informed an emerging service redesign plan. The development of the service redesign plan has identified a number of elements which are dependent of capital infrastructure to support the successful delivery of our target operating model and the sustainable delivery of elective care services in Grampian and the North of Scotland.	The proposed solution was agreed by the Elective Care Redesign Programme Board on Tuesday 20 February 2018.
Scottish Health Council	
Three meetings have been held with the Scottish Health Council over recent months to ensure they are up to date with the project as it evolves. They are aware of the proposed service changes and the likely impact of these changes on patient care.	The Scottish Health Council have confirmed by email that they are content with the level of engagement carried out to date, and that it is in line with guidance. Further details on engagement are provided in the Economic Case of this IA.
The North Region CEs' Group	
The North Region CE's Group to consider the Elective Care IA in2018.	IA endorsed by Regional CE's Group in June 2018.
The Board of NHS Grampian	
Following consideration of the Initial Agreement by the Elective Care Programme Board, The NGSG Executive Senior Leadership Group and the Asset Management Group,	

Governance Group and Stakeholder Engagement	Confirmed Support for the Proposal
The Board of the NHS Grampian considered the Initial Agreement on 26 June 2018.	The Board of NHSG approved the Elective care Initial Agreement on 26 June 2018.
National Elective Care Programme Board	
IA to be formally considered on 18 September 2018.	
Capital Investment Group, SGHSCD	
IA to be formally considered on 25 September 2018.	

6.6 Project Plan and Delivery Timetable

Table M6 below describes a number of key Project milestones.

Table M6: Project Delivery Timetable

	Key Milestones	Date
1	Strategic Assessment	Q3 2017
2	Initial Agreement (IA)	Q4 2017
3	IA Approval	Q3 2018
4	Outline Business Case (OBC)	Q2 2019
5	OBC Approval	Q2 2019
6	Full Business Case (FBC)	Q1 2020
7	FBC Approval	Q1 2020
8	Construction Commencement	Q2 2020
9	Construction Completion	Q4 2021

Summary of Project Plan:

Table M7 outlines some of the key activities to be considered in relation to delivery of the Elective Care Project, notably constraints towards completing these key activities, and an overview of planned mitigation measures.

Table M7: Key Activities

Activity	Resource Plan	Constraints
Resource Recruitment	Recruitment of both the NHSG Project Team and supporting professional advisors has commenced and will be completed following approval on the IA.	Resources will be reviewed on a regular basis by the PD to make sure that all Project activities are successfully delivered.
Stakeholder Engagement	Stakeholder engagement is a key feature of all NHSG projects. The project has dedicated communication officer capacity to support the project team in organising appropriate stakeholder engagement and communication across the life of the project.	A communication and involvement group has been established and will coordinate communication and involvement across all stages of the project.
Site Purchase	The site of any new elective care facilities are likely to be in the ownership of NHSG on behalf of the Scottish Ministers.	In terms of the Foresterhill Health Campus it is jointly owned by The University Of Aberdeen. The location of any new facilities will need to be agreed with the University. The University will be represented on the Project Board and is represented on the Health Campus Forum which meets every six weeks to discuss joint issues relevant to this and other Projects on the Campus.
Site Constraints	A programme of site investigation surveys will be commissioned once the IA is approved and a preferred site/s have been identified. The aim of these surveys, to be led by the PSCP, is to assess the risks associated with delivering new facilities on the selected site/s.	Programme of surveys to be agreed with the PSCP once the preferred site/s is identified.
Construction Phase	NHSG has considerable experience of working collaboratively with external contractors in the safe, timeous and efficient delivery of major construction projects, with the Dr Gray's Hospital in	Construction activities will have to take account of both the risk of HAI, the operational constraints of construction on a live hospital Campus and the possibility of adjacent construction projects, e.g. The Baird and ANCHOR

Activity	Resource Plan	Constraints
	Elgin, Royal Aberdeen Children's Hospital, The Dental School and the Matthew Hay Building on the Foresterhill Health Campus being but four examples.	Project.
Equipment Procurement	Commissioning and Equipment management capacity will be identified 2019/20 to lead and functional commissioning activities and plan in detail the equipment any new facilities created. In addition, the HFS Equipping Service will be commissioned by NHSG to support the process of equipment specification, procurement and the commissioning of all new equipment. They will also agree with NHSG what existing equipment will be transferred.	The OBC will include a more informed budget cost for new equipment based on the completed room data sheets for each space created. During the OBC process. An assumption will be made regarding the level of transferring equipment as this analysis will not be complete at the OBC stage. An audit of existing equipment will be undertaken inform the list of transferring equipment in the FBC.
Hand-over	NHSG will work with the PSCP during the life of the project to deliver a detailed soft landings programme which will ensure readiness for commissioning and operation the new facilities.	A Soft Landings Champion and Soft Landings Coordinator will be identified to facilitate the successful delivery of the programme over the life of the Project. Helping to ensure a structured approach to bringing the buildings into use. In addition, a functional commissioning manager and equipment manager will be identified in 2019/20 to plan for functional commissioning and bring into operation.
Operational Change	To identify clinical, service and operational change objectives, circa 400 clinicians, operational staff and public representatives took part in circa 80 workshops co-ordinated by	The new elective care facilities will be developed in order to meet the operational change requirements identified in the Strategic Case of this IA. If these operational changes and service redesign objectives are not

Activity	Resource Plan	Constraints
	the Project Team, and supported by independent Health Planners, Buchan + Associates. As a result, a substantial service redesign agenda has been identified. Appropriate governance and delivery mechanisms are now being put in place to enable the strategic investment priorities and the service benefits outlined in the IA to be realised.	realised, the Project will not meet its investment objectives and optimum clinical care requirements will be left unfulfilled. An active service redesign agenda is being progressed and led by the Elective Care Redesign Programme Board and supported by appropriate operational management teams and the modernisation directorate.

6.7 Change Management Arrangements

The clinical strategies for the services to be delivered from the new facilities were developed during 2017 with the support of Health Planners, Buchan + Associates. Development of these clinical strategies involved circa 400 clinicians, operational staff and public representatives in circa 80 workshops. This work resulted in the production of clinical output specifications for 22 clinical specialties which in turn have informed emerging clinical briefs and schedules of accommodation. These will be further developed with clinicians and operational management teams in advance of the OBC submission. The development of these clinical output specifications are described in the Strategic Section of this IA and will result in a significant service redesign agenda which will be delivered in tandem with this capital project so that the overall elective care redesign programme is coordinated and integrated.

A key element of the redesign work to be completed during the OBC stage of the project will be the development of a workforce plan that supports the successful delivery of the elective care programme redesign activities and achievement of the benefits outlined in the project benefits register which will be more fully developed during the OBC stage of the project. NHSG is already working of a workforce plan that will address the current workforce challenges and additionally services being redesigned as part of the elective care programme.

This solution will provide opportunities to recruit and consider carefully the skill mix and competencies of the workforce and is aligned to NHS Grampian 2018 Workforce Plan. NHS Grampian recognises that a well qualified and adaptable workforce, will be pivotal to the changing model of care and opportunities of the Elective Care Programme.

This agenda will be delivered between now and 2021 to enable the strategic investment priorities and the service benefits outlined earlier in this IA to be realised.

A significant service redesign plan is now being developed and is described in more detail in the Strategic Section. This element of the programme will be led by the Elective Care Redesign Programme Board and supported by relevant operational management teams and the modernisation directorate. More detail regarding this programme will be outlined in the OBC.

Some of these service changes will deliver efficiencies however it is anticipated that some cost pressures may arise and these will have to be planned for and managed. Only the cost pressures from those initiatives that are as a direct consequence of the new facilities will be included in the OBC. The other redesign initiatives will be remitted to the Redesign Group to manage in conjunction with their operational management teams as part of normal business.

6.8 Is this still a priority?

The NHS Grampian Strategic Assessment for this project is included as Appendix K. It has been reviewed by the Elective Care Redesign Programme Board and remains relevant. Additionally, it is consistent with the Elective Care Strategic Assessment developed for the North of Scotland. Both Strategic Assessments are consistent with national and local strategy as outlined in A National Clinical Strategy for Scotland 2016 and the Grampian Clinical Strategy 2016 – 2021.