SRTP V1.0

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NHS National Services Scotland

Scottish Radiology Transformation Programme (SRTP)
Briefing to support Phase 2 Business Case

Introduction

This briefing document accompanies the SRTP Phase 2 Business Case. It summarises:

- what was delivered through Phase 1 of SRTP
- the case for further change
- what will be delivered through the proposed Phase 2 of SRTP
- the expected benefits of transformation in Radiology
- our confidence in delivering the Phase 2 Business Case

Background

The SRTP was set up as a 10-year programme to address the risk of service failure in Radiology. The drivers for change were increasing demand, failure to recruit to vacant posts and a falling available workforce.

Phase 1 of SRTP has delivered and tested the infrastructure required to allow transformational changes to Radiology provision in Scotland.

- **National IT Connectivity** through the Soliton Share+ platform. This allows images to be reported from sites distant from acquisition. It allows load balancing across Board and Regional boundaries and reporting from home. This national connectivity will also underpin future regional or national radiology networks which will be required for specialism areas.
- **National Radiology Information and Intelligence Platform (NRIIP)**. A datamart and dashboard for all the Scottish Health Boards facilitating operational management and radiology planning. This is also the first comprehensive benchmarking system for radiology in Scotland allowing the service to address unwarranted variation.
- Cross boundary reporting was successfully tested by a **Reporting Radiographer pilot**. Home working was successfully tested in a **Home Working pilot**.
- **Clinical Decision Support** requirements were specified and a pilot is currently being planned.
- Golden Jubilee will be piloting a **national reporting hub** from December 2019.
- **Workforce solutions**. Employment and productivity standards were agreed for reporting radiographers. Best practice job plans (based on Lothian and GG&C) and normal radiologist productivity were documented. A workforce planning model was developed and tested. A round of international recruitment was of limited success with 3 radiologists recruited and a number of potentials identified.
- An initial assessment of the **AI** timeline.

The case for change

Radiology is facing uncontrolled costs, uncontrolled demand and increasing workforce shortages. If we do nothing there is a high risk of radiology services failing in one or more Boards. The diagrams below illustrate the scale of the problem and why transformation is required to close the increasing gap in demand and capacity.

Figure 1:

Without transformation, radiology services are unsustainable

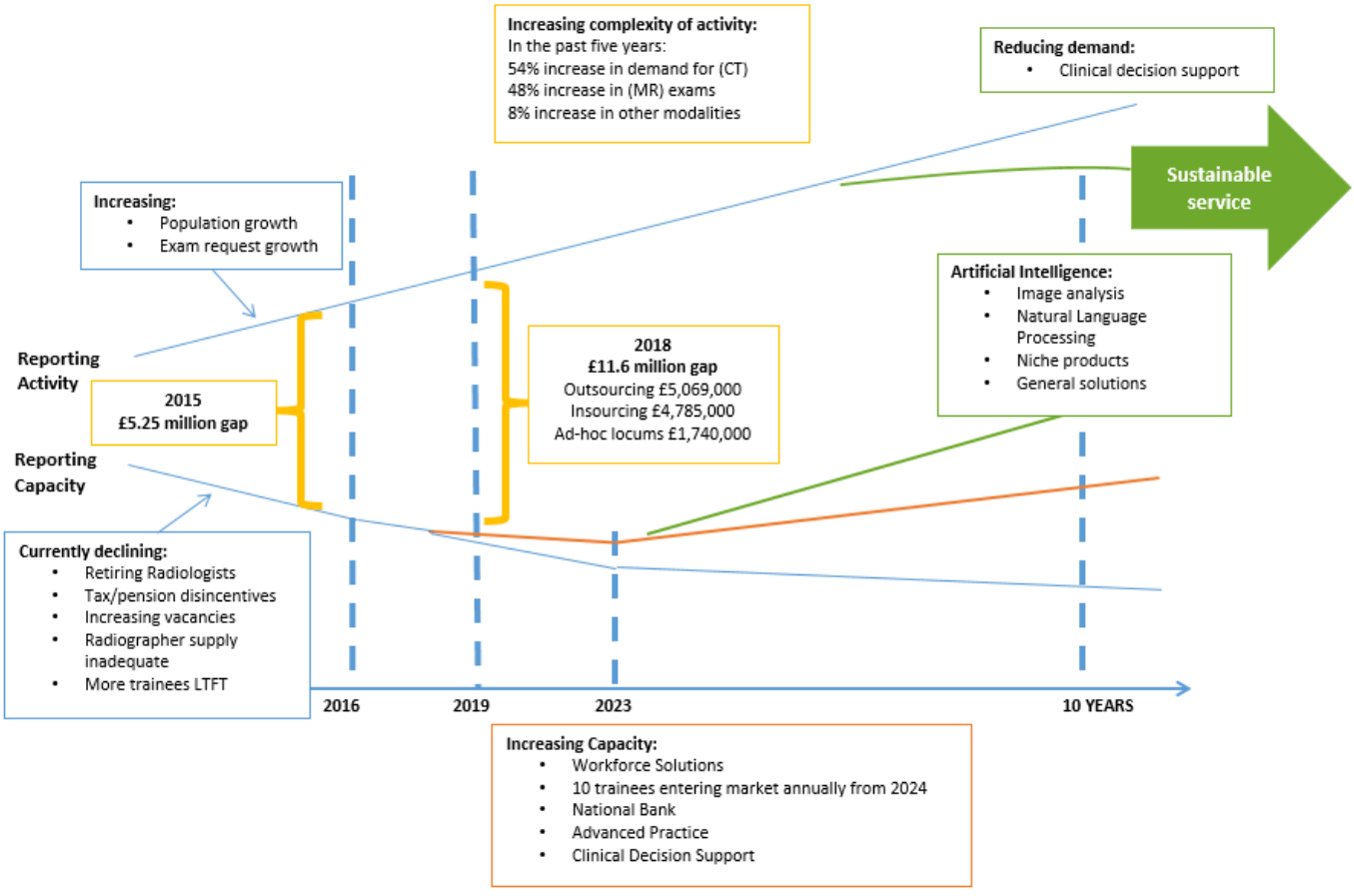
- Demand forecast to increase 3.4% pa – cost £1.2m pa
- Workforce not available to deliver the uplift in activity and unlikely that all of this workload can be outsourced
- Risk of doing nothing is radiology services will fail impacting patient diagnosis and treatment in acute and primary care
- Waiting times and costs are increasing
    - Rising to £13.5m additional pressure in the 10th year (on top of existing £11.6m existing gap)
    - Patients waiting over 6 weeks for radiology tests risen from 329 to 7,572 from Nov 2015 to Jan 2019 = 2,302% increase

Net cost of Radiology services in Scotland

- 2015/16 = **£221m**
- 2019/20 = **£244m**

Figure 2:

Case for change - Vision for radiology



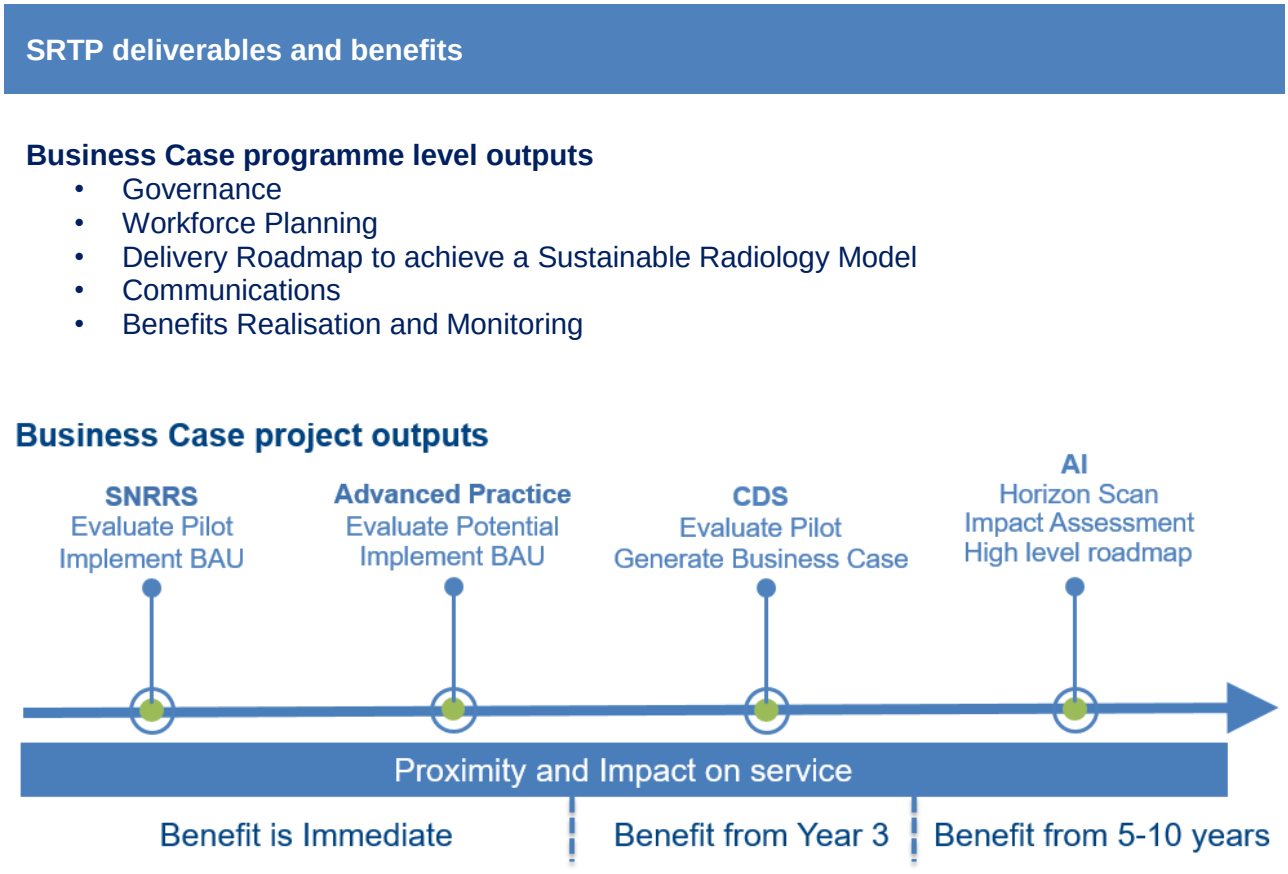
SRTP phase 2 Business Case – the preferred option

Option 2, the preferred option in the business case, proposes a 3 year programme of work as the next step towards a sustainable Radiology service in Scotland. It is proposed that this continues to be nationally coordinated under the SRTP. As such there are a number of programme level activities including benefits management, developing a roadmap to a sustainable Radiology service and enabling workforce planning. In addition, 4 main projects are proposed.

- Scottish National Radiology Reporting Service (SNRRS) based at GJNH
- Advanced Practice
- Clinical Decision Support
- Artificial Intelligence

The diagram below outlines the key deliverables related to the 4 specific projects within SRTP phase 2. These will be delivered over the 3 years covered by the Business Case. It is anticipated that the CDS project will generate a further business case for national rollout and that the AI project will generate proposals around piloting and adoption of technologies.

Figure 3:



Benefits expected through delivery of SRTP Phase 2

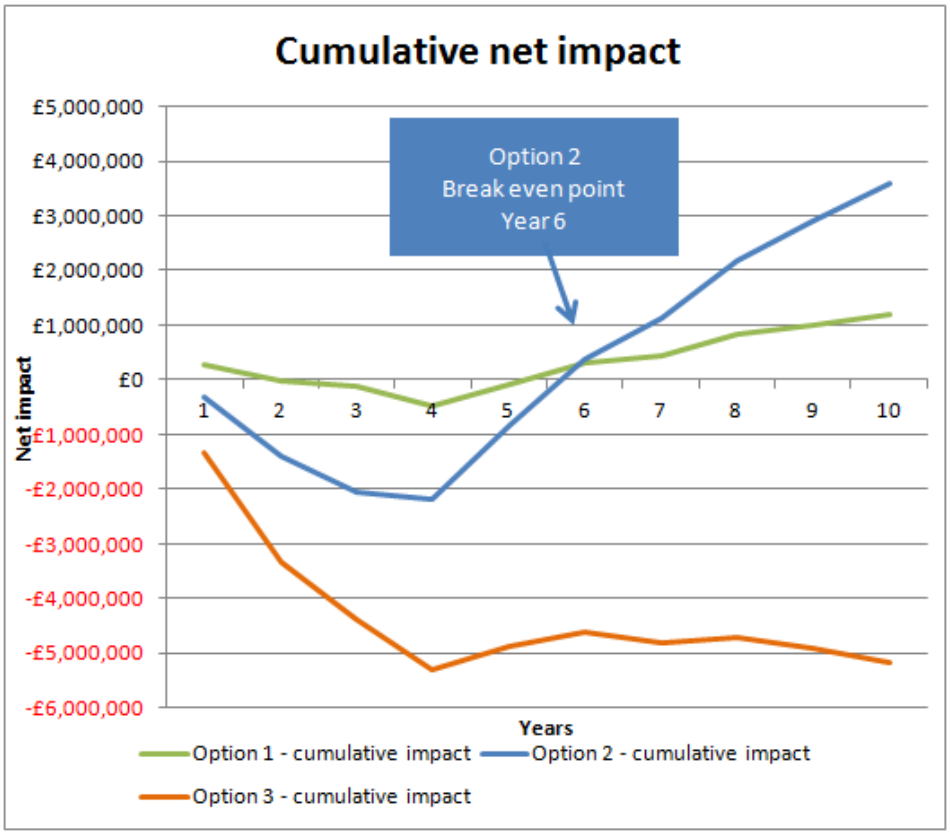
The impact of the SNRRS and of Advanced Practice commences immediately and the benefit is modelled as increasing over 5 years to a steady state. The SNRRS reporting bank only requires a modest commitment to premium rate reporting by the existing workforce of (currently circa 310 WTE radiologist and 35 reporting radiographers) in order to deliver the projected benefit. This is particularly the case in the early years. It is likely that in later years the current tax / pension disincentive to additional work will have been mitigated. The size of the workforce is also projected to increase. There is a high level of confidence that this volume of work can be delivered based on initial interest and projected workforce availability.

The purpose of SRTP is not primarily to generate cash releasing savings. The objective is to make Radiology sustainable and resilient. However, the projects in phase 2 deliver cost avoidance and are expected to break even in year six.

Figure 4:

SRTP Phase 2 - Preferred option break-even point

It is estimated that the breakeven point will be reached after 6 years and that following this there would be a **saving averaging £800k per annum** in line with recruitment projections from the Scottish Government.



Potential future benefits of CDS and AI

The scope of this business case does not include the national implementation of Clinical Decision Support software or AI. However, these technologies have the potential to be transformational in Radiology and deliver significant benefit in terms of productivity and demand management. The business case recommends work is taken forward in both of these areas in order to lay the foundations for national adoption.

Clinical Decision Support software has the potential to moderate demand, automate request justification and improve the quality of radiology requests. It is proposed to complete and evaluate a pilot of the Medcurrent Radiology CDS product to establish the true value of this potential within Scottish Radiology. The scale of potential benefit equates to approximately £2.5m per annum cost avoidance for each % point moderation of demand (CDS need only have a small impact on demand to be beneficial). The productivity value of automated justification is estimated at £1.7m per annum.

Artificial Intelligence is potentially a major disruptive change to current practice. One of the longer term aspirations of AI is image analysis. This may allow radiology reports to be generated, finalised and issued without human image interpretation or case by case checking. This is some way in the future (probably 5-10 years). Other less disruptive AI products are anticipated in the nearer term (less than 5 years). Scoping of the potential products and their likely place within the radiology infrastructure and business process is required now to maximise future benefit.

The following diagram outlines the potential scale of transformational change in Radiology.

Figure 5:

SRTP scale of potential benefits

Workstream	Description	Proximity	Scale of Benefits
Programme Activity	Underpins all project activity	Continuous throughout Business case period	Indirect
SNRRS and workforce improvements	National reporting service avoiding the cost of outsourcing	Continues from GJNH pilot	Cost saving average £1.5m/year over next 10 years
Advanced Practice	• Increasing Reporting Radiographer Service • Scoping and delivering increased Sonographers workforce • Supporting Breast advanced practice	Ramping up throughout business case period	Increasing the number of reporting radiographers Cost = 35 x £62k = £2.1m Cost saving in radiologist time = £7.1m
CDS	• Pilot • Pilot evaluation • Business Case	Year 1 - 2 Year 1 - 2 2 years Benefit from year 2 or 3	CDS saves Radiology Services £2.5m for each 1% reduction in demand Cost saving if 70% vetting done by CDS = £1.7m (7 radiologists and 22 radiographers)
AI	• Horizon scanning • Impact assessment • High level Roadmap	Year 1 Year 2 Year 3 Benefit from 5 -10 years	Savings per % activity reported by AI 1% = £169k (1.7 radiologists) 10% = £1.7m (17 radiologists) 50% = £8.4m (83 radiologists)

Summary

Radiology services were judged unsustainable in 2016 leading to approval of the SRTP Phase 1 Business Case. The deterioration in costs and performance that the original Business Case predicted has occurred.

The SRTP Phase 1 projects have been delivered or are due to complete this financial year. They are the building blocks for service changes aimed at sustainability and resilience in the long term.

The phase 2 Business case proposes the continuation of that service change over the next 3 years and aims to address:

- Capacity shortfall
- Demand constraint
- Productivity

It is anticipated that further programme activities will be required, particularly in relation to CDS, AI and collaborative working in order to fully address the challenges. However, Phase 2 will deliver early benefit and lay the foundations for this further transformational change.

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