

Borders NHS Board



THE ROAD TO DIGITAL PROGRAMME – UPDATE REPORT

Aim

The aim of this paper is to provide the Board with an update on the NHS Borders Road to Digital Programme including information on the design selection and the 2017/18 to 2020/21 financial investment plan required to deliver the programme.

Background

A root and branch review of IM&T undertaken in 2016 highlighted significant risks to the organisation due to ageing equipment and software. The outcome of the review and a proposed programme of work was considered by the Strategy and Performance Committee in November 2016. Further work to develop a roadmap and plan for mitigation of these risks was described in the paper 'Road to Digital, First Steps' which was approved by Strategy & Performance Committee in May 2017 and formally noted within the minutes of the Public Board meeting in June 2017.

The roadmap described a number of schemes designed to reduce the risk profile over a period of four years. Each scheme was positioned to deliver the minimum solutions needed to mitigate the immediate risks with aspirations for incremental improvement over the life of the roadmap. The roadmap solutions took cognisance of affordability of the overall programme within a tight financial climate.

Further work was required to determine the detailed solutions and cost of each scheme to finalise the plan and determine affordability.

The following updates have been provided to NHS Borders Board ensuring information on the programme has been shared through the development stages to confirm support to the direction of travel and that the intended programme will achieve the Board's strategic objectives for IM&T as noted in the Clinical Strategy.

Board review and approval timeline:

Timeline	Information provided	Board action
September 2016 - Board Development & Strategy Session	Initial findings of a review of IM&T	For noting
November 2016 - Strategy and Performance Committee	Written report on the outcome of the IM&T review	Noted the conclusion of the IM&T review and supported the programme and asked the Director of Finance, Procurement, Estates & Facilities to raise the IM&T review findings with the

		Scottish Government.
May 2017 - Strategy & Performance Committee	IM&T Roadmap report	Approval to direction of travel and the requirement to seek additional resources to support the Roadmap
June 2017 – Public Board meeting	Report on the Cyber Attack – May 2017	For noting
September 2017 - Board Development & Strategy Session	IM&T Roadmap presentation	Noted the update and the likelihood of additional Capital monies from Scottish Government which would impact on the design due to conditions attached to the funding.

Current status

Governance of the programme

A Programme Board has been established, chaired by the Director of Finance, Procurement, Estates & Facilities with representation from senior medical, nursing professionals and service managers. The board is supported by IT professionals including programme management and technical advisors.

The Programme Board oversees all aspects of the Road to Digital programme and will provide regular updates to Capital Management Team, Clinical Executive Strategy Group and the Board or escalate any significant changes / deviations for decision.

Finalised design selection

As described above work has been on-going to refine the technical solution design to deliver the infrastructure work within the overall Road to Digital Programme. The selected designs in the roadmap had been assessed by NHSS colleague Boards and eHealth Division of the Scottish Government acting as the Board's 'critical friends'.

The Scottish Government were supportive of the need for improvement described in the Road to Digital Programme and allocated an additional capital allocation in 2017/18 of £2m to help deliver the programme.

Following the NHS cyber-attack (Wannacry May 2017) the Scottish Government eHealth directorate specified that the funding should support enhanced and faster delivery of solutions that would provide early benefits linked to resilience and security. Review of those schemes within the programme linked to resilience and security resulted in a significant change in the solution design to meet that aspiration which will also substantially enhance the benefits to NHS Borders in a much shorter timescale than the original plan.

These specific conditions are noted below:

- refresh the estate of desktop devices
- provide robust file-storage, backup and recovery
- install new firewalls with security in line with high standards
- penetration testing of the security perimeter

- comply with all guidance from IT Security best Practice
- address the ability to support the above investment in terms of a combination of local and hired in support contracts to ensure service is made continuous
- have full Business Continuity Plans for new investment and to fully test them against business need.

Additionally the conditions state that the road map should deliver increased cyber security protection specifically in relation to:

- network perimeter
- patching & anti-malware regime
- ability to recover files – aiming for recovery in hours as per business continuity plans
- Compliance with Cyber Essentials (working with other NHS Boards to agree maturity)

The review of the technical solution design resulted in three areas which are significantly different from the original roadmap. These 3 areas are summarised below:

Programme element	Design solution - April 17	Finalised design - Nov 17	SG Conditions (17/18 £2m allocation)	Enhanced Outcome
Primary Cluster Replacement	Upgrade single current server cluster to provide additional storage space and replace End of Life switch controllers	New replication server infrastructure with two clusters in separate locations	Ability to recover files – aiming for recovery in hours as per business continuity plans	Significantly improved resilience with immediate switch over for critical systems in the event of failure. Reduced disruption to services for routine maintenance
Virtual Desktop Infrastructure	Upgrade desktop operating system to latest compatible version e.g. MS Windows 7/10	A new virtual desktop infrastructure designed to support up to 1500 concurrent NHS Borders users	Refreshing the estate of desktop devices Patching and anti-malware regime	Enhanced user experience with secure ID badge & PIN login, & follow me desktop to any device within BGH. Reduce cost & complexity of future upgrades & improve

				prevention & management of cyber-attacks.
Network Infrastructure	Part refresh of network – obsolete switches in a phased approach.	Full replacement of network- with added resilience and security	Relating to isolation and segmentation to increase levels of security across the full network	Modern infrastructure, high performing and resilient. Segmented to improve security and increase performance for systems

It has been necessary for NHS Borders to design a local technology solution as at the present time neither a regional or national solution is available.

The infrastructure solution design for the 2017/18 phase of the programme delivers a platform that will support delivery of local services but is consistent with technologies used within the region and will support future integration with regional and national solutions. This selection also provides the required level of resilience and security as required by Scottish Government.

In 2017/18 the programme focuses on underlying infrastructure solutions to deliver benefits earlier, in future years the Road to Digital programme investment will focus more on upgrading or replacing key clinical and organisational applications, software and systems.

In order to provide assurance that we are making the best choices, peer review of the revised designs was undertaken by the following: eHealth Division – Scottish Government, SEAT regional partners – Head of eHealth Operations (NHS Lothian) and Head of IT Operations (NHS Fife). We have also sought the opinion of Gartner analysts.

Delivery of this phase, including these revised designs, delivers an improved risk profile much earlier in the programme as well as greater benefits to services and users. The Risk Profiles of the Road to Digital Programme are attached as Appendix 1 & 2. The appendices notes the pull forward of a number of elements from future years of the programme to 2017/18 (App 1) and a corresponding diminishing level of risk being reported as the programme is progressed (App 2).

The design changes were presented to the Road to Digital Programme Board on the 23rd November 2017. The Programme Board reviewed the proposals and is supportive of them being presented to the Board as the correct solution for NHS Borders. The Director of Strategic Change & Performance, Head of IM&T and the Programme Board has concluded that the solution designs are the best options for NHS Borders given our needs and context.

Financial Investment Plan

The financial investment required to implement the Board's Road to Digital programme has been collated at each stage of the design process.

Appendix 3 details at summary level the 2017 to 2021 financial investment plan requirements for the Road to Digital Programme.

The financial investment plan is funded in 2017/18 (year 1) from the Board's Capital Resource Limit allocation and SG approved monies of £2m. A separate paper is being presented to the Board at its meeting in December 2017 which details the specific elements of the 2017/18 programme and the corresponding 2017/18 financial investment plan.

The financial investment plan includes an early indication (subject to confirmation) of the level of efficiency which could be delivered by the programme, However it should be noted that the profile for future years investment (years 2-4) requires additional recurring revenue funding, currently totalling £0.4m. It is planned that this amount will be mitigated by stakeholder engagement to explore the opportunities for benefits realization from service process redesign and efficiency. It is intended that each element of the programme will be reviewed as part of the implementation process to ensure delivery of agreed benefit and maximum efficiency is achieved.

In summary the infrastructure solution design changes have, together with review of obsolescence and maintenance arrangements, increased the one off costs of the Road to Digital Programme by £2.6m, to over £12m.

Future year's (after 2017/18) investment has not yet been secured. The Road to Digital full business case will be submitted to the NHS Borders Board and the Scottish Government's Capital Investment Group for approval in early 2018. The business case will fully detail the programme and the required financial investment plan.

Summary

The NHS Borders Board has been updated on a number of occasions during development of the Road to Digital programme. Scottish Government has confirmed an allocation of £2m capital funding in 2017/18 and confirmed their support of the design selection proposed by NHS Borders.

To meet the funding conditions of SG and as a result of more detailed design work the design solution has been amended. The infrastructure solution design addresses a number of key priorities of the Board including resilience and security, virtual desktop infrastructure and updating of the network infrastructure. It also accelerates a reduction of risk for the Board while providing enhanced benefits to services and users.

A revised financial investment plan has been completed detailing the funding requirements of the Road to Digital Programme. The additional funding requirements for the entire programme for the period 2017/18-2020/21 total £12.7m (one off Capital, obsolescence and non recurring revenue) and £0.4m (recurring revenue). It is planned that this amount will be mitigated by stakeholder engagement to explore the opportunities for benefits realization from service process redesign and efficiency. It is intended that each element of the programme will be reviewed as part of the implementation process to ensure delivery of agreed benefit and maximum efficiency is achieved.

The financial investment plan has increased from the position stated in May 2017 by a total of £2.6m to address the additional requirement agreed with SG relating to resilience, security and infrastructure replacement.

Investment beyond 2017/18 has not been secured. The Road to Digital full business case which will be submitted to the NHS Borders Board and the Scottish Government's Capital Investment Group for approval in early 2018. The business case will fully detail the programme and the financial investment plan requirements.

Recommendation

The NHS Borders Board is recommended to:

- **note** the update provided and **approve** the design changes detailed in this paper to deliver the NHS Borders Road to Digital programme;
- **note** the improved risk position much earlier in the programme;
- **note** the resource requirements of the 2017/18 to 2020/21 Road to Digital Financial Investment Plan including one off and recurring investment;
- **agree** to support the development of the Business Case to secure external additional resources for the period 2018/19 to 2020/21 to deliver the IM&T Road to Digital Programme.

Policy/Strategy Implications	Implementation of the Year 1 Road to Digital Programme in line with the Board's Clinical Strategy
Consultation	Board development sessions, Strategy & Performance Committee, SG & East Region colleagues
Consultation with Professional Committees	NSS National Procurement, National eHealth leads & SG Finance
Risk Assessment	Included within the paper
Compliance with Board Policy requirements on Equality and Diversity	Compliant
Resource/Staffing Implications	Included within the paper

Approved by

Name	Designation	Name	Designation
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Author(s)

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