Dear Colleagues,

Inquiry into Technology and Innovation in the NHS

Thank you for the opportunity to respond to this important consultation and inquiry on behalf of Edinburgh Medical School. We are very pleased you are taking an interest in this very important issue. We have addressed the consultation questions below and would be happy to provide further information on request.

1. What do you consider have been the main successes of the existing Scottish Government's eHealth and telecare/telehealth strategies and why?

The 2014-2017 strategy was ambitious and some targets have been missed. Nonetheless, although sometimes incomplete, there has been progress on several fronts

Telehealth

There have been some successes in the implementation of the eHealth and telecare/telehealth strategy.

- Scotland has been at the forefront of research into the efficacy of telehealth, with several major randomised controlled trials being conducted here (e.g. Telescot) during the time period of the strategy[1,2,3]. The results of this research have influenced the deployment of telehealth both in Scotland and internationally. In some conditions, for example asthma and COPD, where little evidence of efficacy has been established for telehealth, deployment has been rightly postponed until newer more effective interventions have been found. However, there is strong evidence from Scotland and elsewhere that telehealth is effective at both lowering blood pressure and improving control in diabetes.

- The Scottish TEC fund has concentrated its resources in supporting evidence based interventions. In Lothian over 1000 people now have their blood pressure managed telemetrically using low cost technology combined with bespoke software designed by NHS Lothian IT to provide easily accessible summaries to GPs. This is rapidly growing with many practices on board. Similarly, in Lanarkshire, many GP practices are using telemonitoring to diagnose and dose titrate new patients with high blood pressure. Recent funding obtained by NHS24 from the British Heart Foundation along with Lothian, Lanarkshire and Highland Health Boards, will be used to extend this to other
areas of Scotland. This will be one of the biggest deployments of telehealth in Europe and Scotland’s first truly ‘at scale’ deployment.

Telecare
- Scotland continues to show strength in the telecare sector. This is an area in which technology has been truly mainstreamed. Scotland’s initial lead in this area has, however, been eroded as equipment has aged. There are many bespoke stand-alone systems in operation which are not integrated. Progress in digitising these services has been hampered by poor national infrastructure. Digitization has great potential for more efficient surveillance in the future.
- Both DHI and the TEC Fund have funded several pilot projects exploring novel technology to monitor frail elderly and people with dementia, where there is a clear need to build in the future.

Prescribing
- The strategy called for The Hospital Electronic Prescribing and Medicines Administration (HEPMA) to be rolled out across Scotland by 2017. This development will enhance patient safety and provide vital information on medicines use across Scotland. It started in Ayrshire and Arran but has now been established in at least three other health boards. However, progress towards universal coverage in Scotland is slower than expected and the 2020 target may be missed.
- There has been good progress in providing electronic discharge letters to both general practice and pharmacy which has allowed simpler and safer reconciliation of medications in patients discharged from hospital. There is, however, still little progress towards an automatic reconciliation.
- Electronic transmission of prescription has been established across Scotland. This has been beneficial in terms of increasing efficiency for patients, but prescriptions continue to be printed on paper.

Secondary Care
- There has been considerable progress on moving towards electronic records in hospitals, but still Scotland lags well behind most industrialised countries in this respect.

Primary Care
- Access to the Key Information Summary has been widened.
- Almost all referrals to hospital are now electronic through SCI Gateway.
- In some boards laboratory results are automatically integrated with the electronic health record saving double entry.

Renal and SCI-Diabetes systems
- These are widely used by clinicians and not only enhance clinical care but provide exceptionally high-quality data for audit and research. Scotland is as a result recognised as a world leader in this area.

Health data
The following are highlights
- The formation of the Farr Institute and the recent addition of SPIRE GP data provide potential for world leading research.
- SHARE, the Scottish Health Research Register of patients willing to allow their data and spare blood to be used to identify them for research projects and for anonymised genetic research, continues to grow with more than 170,000 members. It is one of the world’s biggest such registers and has already attracted major research projects.[4]
- There has been good progress on identifying patients at risk of re-admission with a view to increasing input to these patients to prevent admission. Unfortunately, there is little evidence of the effectiveness of this approach. However, all datasets are only as good as the quality of the records

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they hold. Incentives to improve the quality of data recording both in hospital and general practice would greatly enhance their usefulness.

2. What do you consider have been the main failures of the existing Scottish Government’s eHealth and telecare/telehealth strategies and why?

Telehealth and Telecare
- Telehealth has been shown to be effective in the management of congestive cardiac failure and diabetes but progress in implementing these technologies for these conditions has been limited and patchy. Greater deployment may have been possible had the Scottish Parliament motion of March 2013 calling on the use of telehealth to be made a HEAT target been taken up by health boards.

Primary Care
- The number one complaint among general practitioners is the functionality of their IT systems. It is not clear if the contractual arrangements to replace the current systems are yet in place as proposed in the strategy
  - The target of single sign on to computers by 2017 has not been achieved in primary care with most general practitioners having to sign into five separate programs before they can start consulting.
  - Systems have become slower, and increasingly difficult to use.
  - Operating systems (Windows XP remains standard) are no longer supported and simple tasks such as internet searches have become increasingly difficult.

Supporting people to communicate with NHSScotland
- Improvements in this area have been modest. Some boards (Lothian) have started offering patients the opportunity to have their hospital letters by email. In Grampian patients can have information sent to them in advance of a consultation (Just in Time) about their condition to help improve their knowledge and increase involvement prior to this. Progress on enhanced communication between patients and primary care has been very limited.
- The proposed comprehensive patient portal has not been realised. The strategy called for improved electronic communication between patients and practices, but still very few patients can book appointments on-line, only some practices offer repeat prescribing requests on-line and these are on standalone software packages with no link to the electronic medical record.
- Some practices have introduced SMS appointment reminders and batch reminders for vaccinations on SMS. However more individualised messaging by SMS (which might for example enhance telehealth solutions for long term condition solutions) is not available from computer systems.
- There have been small scale experiments with video consulting with care homes and further experiments are underway. Projects have been severely hampered by equipment procurement regulations and bandwidth across the system is low, rendering video consulting very challenging particularly in primary care.
- Email consulting is rare.
- A very small number of practices have started to use web based enquiry/triage systems such as AskMyGP, but uptake has been poor by patients
- While some progress has been made with programs such as My Diabetes My Way, there has been poor uptake of these services with only around 3% of patients making use of the system. In part, this is because of complex sign on and its continuing PC based format. Plans are in place to consider apps which will make the sign on process simpler. Patient View is more frequently accessed, perhaps reflecting the more serious and symptomatic nature of the illnesses managed.
- Living it Up, the NHS wellbeing site, has not proved popular with the public with little usage of the site. NHS Inform, however, is more widely accessed.
- There has been little progress in linking third party health consumer products with NHS systems. Lothian’s Scale-Up BP system a collaboration between NHS Lothian and the University of Edinburgh is an exception.
3. How well does the Scottish Government's draft Digital Health and Social Care Strategy 2017-2022 address the future requirements of the NHS and social care sector? The overarching aims of the strategy are important. They are necessarily currently somewhat broad. More specific comments on the aims are mentioned in the section below.

4. Do you think there are any significant omissions in the Scottish Government’s draft Digital Health and Social Care Strategy 2017-2022.

- While many of the examples of eHealth good practice presented in the draft strategy show some promise, few have been rigorously evaluated particularly with respect to cost-effectiveness. Too often low-quality evaluations are conducted (often by those introducing the technology) pointing to patient satisfaction and dubious uncontrolled before and after studies demonstrating apparent efficacy and seldom costing the intervention correctly. One of the main reasons for failure of implementation at scale has been this failing. An essential part of the strategy must be a rigorous evidence base to support the introduction of novel technologies.
- There should be an explicit undertaking to widen bandwidth across the NHS. (Currently many community practices are struggling with 4MB download speeds)
- Inevitably the introduction of new technologies increases workload temporarily. Even if the technology promises to increase future efficiency hard pressed clinical staff cannot find time to introduce it. The strategy should recognise this and incentivise the adoption of technology through additional time so that frontline staff have time to adapt.
- Different information governance policies across Scotland’s 14 health boards has led to a piecemeal approach to implementation. There should be a national IT governance policy.

5. What key opportunities exist for the use of technology in health and social care over the next 10 years?

- There is a pressing need to simplify the linking of consumer electronic products with NHS and social care systems. However, such access must come with ways of preventing clinicians/social care being overwhelmed by data which needs to be summarised and scrutinised in a controlled way. While some telehealthcare systems have demonstrated improvements in care they have not reduced workload.
- Artificial Intelligent (AI) programs, linked to low cost monitoring devices which can provide automatic personalised advice to people with long-term conditions, could be used to both enhance self-care and potentially reduce workload. Such systems are controversial and present acceptability, safety and medicolegal challenges, but are an essential part of future care given the increase in demand and fall off in clinical and social care provision that demographic trends predict.
- Simplified communication systems which allow citizens to video-conference and enhance the ability of friends and families to support one another.
- Use of AI to explore large datasets to identify people with worrying clusters of symptoms and lab results
- Promote realistic care by use of big data to explore the utility of routine blood tests/x-rays (how often do they change management?) and determine for which groups they are more useful to

6. What actions are needed to improve the accessibility and sharing of the electronic patient record?

- Confidentiality is at the heart of medicine and patients expect their records to be protected from anyone not involved in their care. Easier access to records raises the risk of forced disclosure to those who may be in abusive or subordinate relationships and methods to minimise this must be sought.
- Simplified, but secure, sign-on methods need to be found e.g. mobile based solutions with fingerprint identification
7. **What are the barriers to innovation in health and social care?**

- Lack of time and training among staff to implement innovations. There needs to be recognition that the introduction of new systems inevitably comes with an initial increase in workload which must be factored in to any deployment.
- Poor usability at the clinical/social care back end. Systems are often designed with the patient in mind but are seldom tested with the professional end user.
- Lack of interoperability between consumer products and NHS/Social care systems.
- Low bandwidth in NHS particularly primary care.
- Multiple IT governance environments across health boards in Scotland.

Yours faithfully,

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References