Technology and Innovation in the NHS

Stirling Council

As part of its inquiry into Technology and Innovation in the NHS, the Health & Sport Committee have issued a general call for evidence seeking views on the Scottish Government’s approach to eHealth. This document outline’s Stirling Council’s response to the questions that were asked in the call for evidence.

**Question 1 - What do you consider have been the main successes of the existing Scottish Government’s eHealth and telecare/telehealth strategies and why?**

The main successes of the existing strategies have been in providing a clearer and more joined-up view with regards to technological direction than had previously existed. These were an important early step in supporting partner agencies to develop their individual strategies and approaches with a better understanding of what was happening in other agencies. This helped in providing a wider strategic context against which more localised strategies could be evaluated.

The existing strategy has also supported organisations in maturing with respect to their individual strategic approaches and this has allowed them to begin to align more. This in turn acts as a good foundation to build upon for the development of future strategy.

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

The existing strategies tended to focus more on the requirements within the health arena with limited exposure of these within local authorities. Whilst there has been some opportunity for strategic alignment there is scope for ensuring that the alignment happens much more fundamentally going forward.

The changing landscape of the public sector as a result of health and social care integration with the creation of the Integration Joint Boards, and a greatly increased focus on data sharing following the publication of the previous strategy have limited it’s effectiveness. So whilst the strategy was definitely correct for the time that it was published, a refresh of the strategy is required and this can be taken forward building on the good foundations of the previous strategy.

**Question 3 - How well does the Scottish Government's draft Digital Health and Social Care Vision 2017-2022 address the future requirements of the NHS and social care sector?**

Our view is that the draft vision for the Digital Health & Social Care Strategy 2017-2022 will address the future requirements well. The rate of evolution in the use of technology and data globally presents a risk that a vision statement can become quickly outdated however the consideration of this vision is that it offers flexibility to minimise that risk whilst succinctly expressing that the strategy will achieve.
Question 4 - Do you think there are any significant omissions in the Scottish Government’s draft Digital Health and Social Care vision 2017-2022.

There are no significant omissions from the draft vision for the Digital Health & Social Care Strategy 2017-2020 from our perspective.

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

The rate of change in technology, and in how data is used, is high which naturally means that there is a similar significant change for how individuals and society use these tools and an associated culture shift. A comparison of the use and acceptance of technology between 2007 and 2017 shows a level of change and acceptance that would not have been easily predicted in 2007. Similarly, it becomes difficult to predict, with confidence, what technology will be available in 2027 and therefore identifying opportunities further out is challenging.

With that in mind, there are a good number of opportunities to derive benefit through the use of technology in health and social care in the short to medium term. It is also felt that by improving our use of technology and making it the ‘norm’ that we will be better placed to take advantage of emerging technology in the longer term.

The Internet-of-Things and greater networked connectivity presents great opportunities to provide care and support to vulnerable people both within their homes and their communities. This technology will allow us, as professionals, to get access to data which can alert us earlier to potential crises supporting earlier interventions. This is beneficial for securing better outcomes for the service user but also minimising the cost of the intervention. Furthermore, this technology can also provide further and richer sources of data that we can then use in our analyses that underpin future service design decisions.

Related to this are the increasingly common voice activated personal assistant technologies. These can link to and control other devices within a home environment but can also provide advice to service users and act as an intelligent conduit for accessing more central services. For example, rather than phone calls being routed to generic contact centre agents there could be an opportunity to seamlessly and automatically triage the communication.

Machine learning and artificial intelligence will also play a crucial in supporting the development and effectiveness of these technologies. The opportunities these technologies will present are very broad and will likely grow as understanding and acceptance of how these can benefit professional decision making grows. Some of these opportunities will include automatic analysis of data that is capture from devices to support decision making and, increasingly, initiate automated interventions. Away from uses in front line service delivery, it would be anticipated that machine learning can provide evolving support to be better understand the increased levels of data about our services users that we will have access to. This, in turn, can help to drive service design decisions. It should be noted that these opportunities are considered in the context of supporting professionals through removing the need for professionals to carry out low-value manual or repetitive tasks, or in the development of approaches to analysing volumes of data that are unfeasible to do manually.
Robotics is another area where we view that there are opportunities to leverage technology. The most obvious uses would be around the home where robotic assistants could perform a number of lower level tasks. This could be seen as an extension of voice activated personal assistant technology moving into the physical realm. As the technology matures and with greater acceptance this could be expanded to provide support in the local community perhaps supporting people who would be historically house-bound to become more active members of their local communities. Combining robotics with artificial intelligence and we have read of some instances of where robotics are providing companionship to isolated and lonely service users. We are interested to see how this will develop but can also see opportunity for this technology to be used to support other types of interaction with service users. For example where there are additional support needs or where young people find it difficult to discuss trauma with social workers.

A common theme in the above areas is that of data. The use of data and its importance will continue to grow as more sources become available and is entirely consistent with evidence based practice principles. Another aspect of data that presents opportunity is the greater use of public data sources. Increasingly, there are additional rich sources of data that are generated by individuals based on their habits that are shared openly. There are also open data sources that are generated by companies or public sector organisations that can be used to enhance existing analyses or to inform new approaches. The qualifier on this is that care should be taken that the use of data supports our service delivery or design and is not simply “data for data’s sake”.

A final opportunity that we note for innovation is less technological and more on the culture of service delivery. Many of the above opportunities are dependent on the buy-in to the approach by members of the public with trust being central for the acceptance of the new technology and therefore realising benefit. There is an opportunity to change our organisational cultures and rebalance our relationships with service users; to essentially build on the good relationships and move further into a partnership approach for best meeting the needs of service users. The more collaborative the approach we can foster, the easier it will be to implement innovation and the more likely service users will want to engage.

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

The implementation of a national approach and agreement to support information sharing would be significant in providing greater accessibility and improved sharing of important information between partner agencies. The current arrangements are complex which can stifle the development of our working in this respect. Furthermore the complex landscape can hinder day-to-day operational practices as professionals will, in some circumstances, err on the side of caution when there is no requirement to do so.

Culture change across and within partner organisations is another key area for action at all levels from strategic leadership to frontline operational staff. This will support the breaking down of silos between teams, promote common understanding of priorities and challenges across teams, and encourage collaborative working based on shared understanding of service user needs and preferences.
More tangibly, there is a need to improve communications infrastructure in terms of fixed broadband connectivity and in mobile technology such as 3G and 4G coverage. This is especially important in more rural locations where limitations in connectivity can delay or entirely hinder access to information. The nature of rural communities and the availability of resources in these locations means that where the access to information is limited the impact is more acutely experienced.

**Question 7 - What are the barriers to innovation in health and social care?**

There are a number of barriers that inhibit innovation within social care and health. One of the most significant barriers to be addressed is that of the culture change within partner organisations. Using technology in new ways will, at times, challenge or alter long held working practices so for new practices to be adopted and embedded it will be important to move to a culture where evolution and change are seen as constant and beneficial for all stakeholders. This is important for all staff groups whether it is front-line operational staff, back-office support staff, development staff or managerial staff leading change or transformation activity.

Another barrier for partner organisations is ensuring that there are appropriate digital skills within the teams. Without these skills transformation will be more difficult to achieve and solutions which are developed and implemented may be sub-optimal or, in worst case scenarios, counter-productive. In common with the cultural barriers this is of importance to all staff groups although the nature of digital skills might differ. For example, frontline operational staff will need to develop practical hands-on skills where for strategic leads it will be important to develop an understanding of how digital technology can be effectively utilised within their sphere of responsibility.

Similar to the barriers for staff around culture and skills there is a requirement to address similar topics with services users. Whilst some service user groupings will be skilled digitally and have increasing expectation around how they can access service digitally, this will not be the case for all service users. It is important to ensure that measures are taken to address this through a variety of means including skills development, ensuring connectivity and promotion of benefits. Whilst there should be a drive towards universality of provision in the development of new solutions the meeting of individual needs should not be lost; ensuring that these solutions can be accessed widely will minimise the need for potentially expensive and bespoke services for those members of society that are unable to access a more universal solution.

Aligned with this is the requirement to build trust with service users and forge relationships that are collaborative in their approach. This will help address concerns of changes being “done to” service users as opposed to “done with”. Again, and in common with the previously discussed challenges of service user engagement, failure to do will lead to the development of solutions that are under-utilised and anticipated benefits and efficiencies will not be realised.