Enhanced care in the palm of their hand.
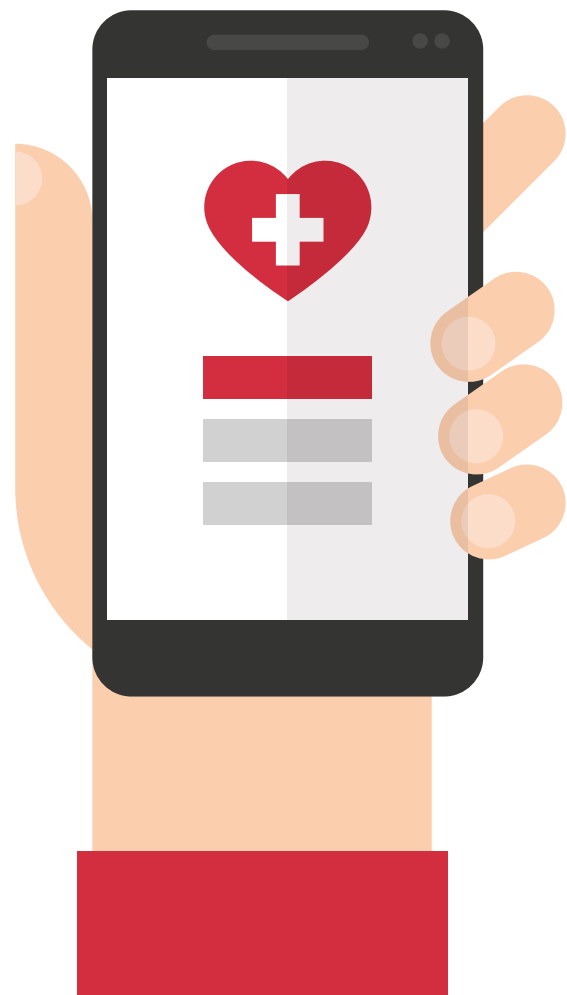
Developing mobile technologies for Scotland's district nursing teams.

Royal College
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Scotland

Introduction

Mobile technologies are increasingly important tools for nursing teams, supporting them to deliver effective and more responsive care and improved outcomes for people they work with. However, in Scotland, the development of fit-for-purpose technology for community nursing is still in its early stages in many areas.

The RCN Scotland 2016 election manifesto *Nursing Scotland's Future – Professional voices: practical solutions*[1] described an ambition for all health care staff to have access to, and to be able to use with confidence, the technology they need to deliver safe and consistent care. The manifesto called for digital technologies to be 'used to open up new, smarter ways of working for health care teams, especially those operating in the community'.

In district nursing teams, a core community workforce, use of mobile technologies is still low. In the latest evidence we have, only 26% of UK district nurses reported using mobile technology to record patient care while in their home.[2]

Many RCN members experience frustration in relation to IT systems and connectivity. Some report gaps in their knowledge and skills in relation to the use of new technologies, while others are impatient to see use of these technologies grow.

This report provides an insight into how mobile technologies can support district nursing teams to work more effectively with people in their own homes. It looks at where Scotland is today in the use of these technologies, and what needs to happen to make them a reality for nursing teams on the ground.

"In district nursing teams, a core community workforce, use of mobile technologies is still low."

The report also makes recommendations for what needs to happen next to progress this agenda, particularly in relation to the Scottish Government's *Digital Health and Social Care Strategy 2017-22*, which is currently under consultation and due to be published before the end of 2017.[3]

Up-to-date technological solutions are now essential for the delivery of high quality, well-integrated care. This report makes clear the urgent need for investment in, and systematic implementation of, mobile technologies for district nursing teams.

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RCN Scotland stakeholder interviews

This report shares detail collected by RCN Scotland in late 2016, through stakeholder interviews with district nurses and community nursing managers from seven NHS boards and with academics. All stakeholders were selected because of their interest in technology enabled care.

These interviews covered topics relating to technology and eHealth in district nursing. While technology-enabled care is much broader, this report focuses on what stakeholders shared with the RCN in relation to mobile technologies.

Questions were explored around the current use and awareness of mobile technologies by district nursing teams, barriers and facilitators to their more widespread introduction, and the perceived benefits of mobile technologies in the context of multidisciplinary and multi-agency team working and the integration of health and social care.

Throughout the report direct quotes about mobile technologies from people who participated in the stakeholder interviews, are used to illustrate key themes in the report.

Acknowledgements

Recommendations

RCN Scotland has found a clear consensus among those interviewed that mobile technologies can enable district nursing teams to deliver more effective and person-centred care in people's own homes.

As district nurses and the teams they work with are a key workforce for the delivery of the Scottish Government's strategic goals[4], the implementation of mobile devices for district nursing, along with applications to support improved decision making, should be a priority at all levels. A number of high level actions will be required:

1. The Scottish Government's digital strategy[5] includes an action to ensure community health workers have remote access to up-to-date information. As part of delivering this, the Scottish Government's upcoming *Digital Health and Social Care Strategy 2017-22* should prioritise and allocate funding for mobile technologies for district nursing teams.

2. Given the focus of the new Scottish Government Sustainability and Value Programme Board on improving procurement – and the opportunities available in the upcoming *Digital Health and Social Care Strategy 2017-22* – RCN Scotland urges the Government to consider how a 'once for Scotland' approach would support an efficient and co-ordinated approach to procurement of secure and coherent technology options for community nursing across Scotland.

3. Integration authorities are now responsible for the strategic commissioning of community services. To fast-track the implementation of mobile technologies in district nursing teams, NHS boards and integration authorities should work together to:
   - Develop a systematic approach to the rolling out of mobile devices and software to community nursing teams, ensuring these are interoperable with other systems such as GP patient records systems
   - Develop learning and development which supports staff to become confident in their use of mobile technologies
   - Agree sustainable arrangements for funding devices, software and staff training
   - Ensure nursing is involved in decision making about mobile technologies.

4. Access to patient records and relevant health and social care information in real time are significant benefits of mobile technologies for district nursing. In line with its investment in electronic records systems for Scotland's general practices, the Scottish Government should, in its *Digital Health and Social Care Strategy 2017-22*, build on the recent establishment of the national community systems project and commit to designated funding for the development, procurement, delivery and ongoing running costs of community IT systems. These must be fully interoperable with other relevant health and social care systems, and provide the applications that support evidence-based and timely clinical decision making and mobile ways of working.

Developing mobile technologies for Scotland's district nursing teams

The contribution of mobile technologies to improving care

There is evidence from the UK and internationally on how use of mobile technologies by health staff, including district nursing teams, can support system efficiencies, improved care and better health outcomes.

One systematic review on the use of smartphones and tablets in clinical practice found that health care professionals' use of these devices "may improve their information seeking, adherence to guidelines and clinical decision making ... [The devices] can provide real-time access to and analysis of clinical information."[6] Indeed, the review suggested that clinical decision support systems being integrated into mobile devices "offers clinicians the highest level of synthesised evidence at the point of care."

This latter point is important. All health professionals need to be able to access the information they need to make complex decisions about people's care. However, district nurses and members of their teams make those decisions as lone workers while working in people's own homes or care homes. Timely access to high level evidence can support this clinical decision making, alongside other important information such as where and how they can order equipment.

In England, the National Mobile Health Worker Project[7] was established across 11 test sites to understand the requirements of mobile working, and how increased productivity and efficiency can be achieved by making changes to working processes. A key finding of this research was that significant increases in productivity can be achieved through use of mobile technology, as demonstrated by an increase in time spent with patients following deployment of mobile devices and significant reduction in data duplication which in turn freed up clinical time.

There were a number of lessons from this research for future implementation of mobile technology in health, including:

• Where clinical engagement is achieved, benefits are delivered more consistently and to a higher level
• Organisational change will impact on the progress of a project and can affect the outcome, however a negative impact is not inevitable, and good planning and focus can limit the impact
• Accessible training to all users is essential and, in the long term, success requires solid, ongoing support to be in place.

For district nursing, where mobile technologies have been rolled out, reported outcomes have included: enhanced access to patient information, equipment, and time spent with patients; reduced risk; and increased efficiency.[8]

RCN Scotland's 2015 report *Going the Extra Mile* explored mobile working for delivering care in the community for older people in remote and rural Scotland.[9] The report described benefits of mobile technologies for rural and remote community nursing teams including building a more integrated service and connecting communities and services to support independent living. It also identified specific challenges around connectivity and in supporting both staff and service users to be confident users of technology.

The use of mobile technologies by district nursing is widely supported

A 2014 survey of 4,247 professionals, covering all professions and all NHS boards identified the top three priorities for future investment in eHealth in Scotland. One of these priorities was mobile devices, allowing professionals to work with their patients' electronic record anywhere, with keyboards and large screens available to connect to in appropriate places.[10]

Likewise, RCN Scotland's stakeholder interviews uncovered strong support for the development of mobile technologies for district nursing teams. Among the stakeholders RCN Scotland interviewed, there was a clear consensus that there are substantial benefits to be gained from adopting mobile technologies and, as one interviewee said, it is it is "only a matter of time before everyone will be working like this".

"Mobile technology has the potential to reduce travel time and costs, releasing resource to invest in direct patient care."

For stakeholders RCN Scotland spoke with, it was not a question of whether mobile technologies will be rolled out for all district nursing teams and other community nursing, but rather when and how they will be rolled out.

They identified a number of benefits of implementation, including greater efficiency, improved quality of care, and a safer service. These benefits were identified both by staff working in a locality or service where mobile technologies have been adopted, and by those working where mobile technologies have not (yet) been adopted.

Efficiency is key to this. Examples provided regarding the inefficiency of current arrangements included: duplication of effort (re-entering data

"Mobile technology offers nurses a great way to get access to the clinical and other information we need quickly and easily to care for our patients. It's also useful to record health information and ensure this is captured accurately on NHS systems to ensure health and social care teams can work together effectively to provide person-centred care."

or transferring data from paper-based to electronic systems); inefficient use of time in travelling 'back-to-base' to update records – this time could be spent with patients; and the non-availability of fully up-to-date information about the patient at the point of care.

However, many stakeholders felt frustration at the 'poor relation' status of district and other community nursing in regard to technology development both generally and specifically, in relation to the development of electronic record systems and mobile technologies.

A number contrasted the situation with the acute sector, noting that district nursing technology is not prioritised in the same way as technology for the acute sector. A comparison was also drawn between underinvestment in technology for district nursing and a national investment in electronic records systems for Scotland's general practices.

"As the nurses become more comfortable with the use of [mobile] technology, this will have a knock-on effect on their ability to think creatively about technology-enabled care, involving patients by showing them videos, apps etc., to help with health promotion, education and signposting and using technology to promote independence."

Using mobile technologies to support connected patient records systems

The introduction of mobile technologies for district nursing teams is not viewed in isolation by stakeholders and it cannot be divorced from wider issues about the development of electronic record systems.

For the stakeholders who spoke to RCN Scotland, the key considerations are:

- How to access patient records remotely
- How best to ensure that electronic record systems developed for use within community, GP practice and hospital settings are interoperable. This would allow relevant patient data to be available at the point of care. More recently, given the integration of health and social care, interoperability with social work systems is also under consideration in some integration authorities; however, this work is not widespread.

Stakeholders felt it was important that attention be given to which mobile platform/technology will be best suited to the implementation and roll out of the electronic record systems.

"Mobile technology has the potential to allow nurses to access patient records at point of care and lead to speedier, safer outcomes."

There is a broader concern among primary care stakeholders that record sharing is currently insufficient and does not meet patients' need for – and expectation of – relevant and up-to-date clinical information being shared with the people providing their direct care. RCN Scotland and colleagues from across the primary care professions have set out a shared position that 'read and write' access to relevant information in patient health records is an essential change required to enable informed and safer decisions to be made by primary care practitioners and patients.[11]

Scottish Government's policy vision for a digitally-enabled health and social care workforce

The Scottish Government has set out a policy vision which supports the use of mobile technologies by health professionals in primary care to deliver improved care.

The NHS Scotland eHealth Strategy 2014-2017[12] aimed to ensure people working in and accessing health care could use technological tools and information channels to improve health care and outcomes. It set out a vision that by 2020 eHealth in Scotland will "enable information sharing and communications that facilitate integrated health and social care across all settings from the patient's home to the hospital".

The 2014-17 strategy specifically addressed support for community staff and the introduction of mobile devices to facilitate access to patient records in their own home. It noted a gradual shift taking place in NHS boards towards mobile devices providing records access in patients' homes and local community facilities. The strategy proposed that by 2017 GP and community staff would have access to clinical portal information via mobile devices, and by 2020 all staff across health and social care would have electronic access to patient information.

A new overarching digital strategy *Realising Scotland's Full Potential in a Digital World*[13] was published in March 2017, which sets out an ambition from the Scottish Government to put digital technology at the heart of everything, including public services. A submission[14] to the consultation on this strategy was made collectively by the primary care professions, including RCN Scotland, in relation to record sharing across primary care services and on digital infrastructure.

A number of key actions in this strategy are relevant to mobile technologies for district nursing, in particular "design key public services in areas such as health and social care, justice and social security around the needs of their users" and "introduce shared technology platforms as a core part of the process of public service reform".

The new strategy refers directly to the opportunities digital technologies present for community-based health and social care services:

"Digital enables us to transform the delivery of health and care, giving real choice to people across Scotland. Benefits include the ability to manage your own care, have a video consultation or be supported in your own home by a care worker who can use mobile technology to access the data and records they need. This provides the opportunity to use remote monitoring to track your health condition and anticipate problems at the earliest possible stage."

Implementation of and investment in this vision has been slow

Moving to digital ways of working requires extensive investment and planning at multiple levels. A new briefing from Audit Scotland looks at some of the lessons learned from projects in which public sector organisations have implemented new digital technologies.[15] The briefing sets out five principles for success:

• Comprehensive planning setting out what you want to achieve and how you will do it
• Active governance providing appropriate control and oversight
• Putting users at the heart of the project
• Clear leadership that sets the tone and culture and provides accountability
• Individual projects set in a central framework of strategic oversight and assurance.

Despite the Scottish Government's strategic focus on digital technologies, and the number of policy levers designed to enable a digital health and social care system, on-the-ground investment and implementation of digital technologies for district nursing has been slow and patchy.

There are a number of examples of mobile technologies used by district nursing teams in Scotland. Examples stakeholders shared with RCN Scotland include a 'lone worker system' which helped to protect individuals conducting visits on their own; two digipen pilots (no rollout planned); tablets used as electronic diaries; and in one NHS board, a board-wide implementation of Microsoft tablets for its district nurses. However, beyond the latter example, there has not been concerted or widespread implementation of mobile technology for district nursing.

Stakeholders identified a range of barriers to implementation of mobile working. The main barrier noted was a lack of investment and availability of finance to support this work. However, there is also a strong view that the investment is necessary to achieve the benefits identified above and is, therefore, 'worth it'.

"When new systems are introduced we need to ensure that we have nurses involved who understand the impact that these will have on practising nurses [and] the importance of training and supporting staff using new technology. Often things are purchased and staff have to learn as they go along. We also need to ensure there is nurse leadership around purchasing equipment and devices which are practical to be used in the clinical settings."

There was a view that responsibility for investment in mobile working should be shared between departments. For example, a common scenario described by stakeholders was that an NHS board's eHealth department funds the

development and rollout of the electronic record system, and community nursing funds the devices.

Beyond lack of investment, other important barriers noted by stakeholders include:

- Lack of 'political will' behind making community nursing requirements a priority
- Enduring connectivity issues due to poor broadband, 4G and 3G coverage;
- The variable relationship between community nursing and IT/procurement departments
- The relatively small numbers of nurses actively involved in the 'technology development agenda'
- The complexity of the task in specifying what is required, especially in the new world of the integration of health and social care
- Reluctance on the part of some nurses to embrace technology as part of the therapeutic care and assessment process
- Concern about security, privacy and information governance issues
- Potential for wider understanding and sharing of what is happening examples of good practice across Scotland.

Stakeholders also emphasised the importance of ensuring that appropriate support and training was in place when mobile technologies were introduced; this was vital for securing staff support and for ensuring a smooth transition.

"With the introduction of EMIS web in general practice, the need for community nurses to have access to electronic devices becomes a priority. The electronic devices will ensure the patient's record is up to date as district nurses would be able to input information when doing home visits."

"If another professional has to visit the patient the same day or out of hours, the professional can see the most up-to-date assessment and information related to the patient. The biggest problem in remote areas is the WiFi access as the broadband connection in remote areas is not great. Also budget to replace equipment or upgrading existing equipment."

Stakeholders also discussed a number of practical issues which need to be taken into account in the selection of suitable devices. These included the weight of any mobile device, its battery life, the security/login procedures, the importance of a keyboard for data entry and the availability of offline as well as online facilities for data entry.

A comment from stakeholders which is worth noting was that so far, mobile phones issued by NHS boards that are used for arranging visits and for texting are often "extremely basic". Commonly, these phones cannot take photos – something that is useful if, for example, a wound needs to be discussed with a colleague, where there is consent of the person receiving care.[16] These phones also often do not have GPS tracking, which can be used to get directions and calculate mileage, as well as for the protection of lone workers.

Future challenges for the implementation of mobile technologies in district nursing

One of the key challenges for implementing mobile technology use will be ensuring that systems that streamline care processes do not, in doing so, impede person-centred care.

While participants were overwhelmingly positive about mobile technologies for district nursing, there was some concern that if these technologies are rolled out, people will no longer hold their own paper patient records at home. Patients being able to show records to relatives and carers was emphasised by some participants, and

consideration of how best to manage the reduction of paper patient-held notes should feature in discussions of the rollout of mobile technologies.

It was also noted that, while the expectation may be that data would be entered at the point of care, data input can occur in the car afterwards in some cases, and connectivity while in patients' homes was a key issue for many. In 2014, district nurses reported to the Queens Nursing Institute that inputting data within the home can affect their interaction and engagement with the patient.[17] Implementation of mobile technologies should consider how systems can act as an enabler rather than barrier to face-to-face care.

Integration is seen as an opportunity for enhancing the smart use of mobile technologies, but many stakeholders also see it as creating more variation. One issue raised was the still poor sharing of data between NHS boards and local authorities.

There is a large degree of variability across Scotland in relation to the progress of this agenda. The development of electronic record systems and the adoption of mobile technologies are described as fairly well advanced in some areas, at a 'tipping point' where progress is beginning to speed up in others, rather patchy and slow in some areas and to not have started in others.

Stakeholders felt that variation has increased following the integration of health and social care. Each integration authority is autonomous and is able to take its own decisions in relation to the adoption of mobile technologies. This means that within one NHS board area, a variety of solutions may be pursued.

There is also variation locally within integration authority areas. In one example provided, district nursing teams who were 'GP practice-attached' had access to GP clinical systems while those working in 'direct delivery' teams did not.

"For a sustainable district nursing service, it is essential that we have senior management support to allow us to introduce smart working including electronic patient records. This will improve continuity and safety for patients as well as releasing [staff] time currently spent duplicating recording of information and travelling … This way we can continue to cope with increasing demands."

Encouraging investment in mobile technologies for district nursing teams

There is a need for concerted investment into mobile technologies to support new and existing government strategy and enable staff to deliver better and more connected care in the home or homely environment.

There is evidence suggesting that mobile technologies enable district nursing teams to deliver improved care and better system outcomes. However, as described above, Scotland's district nursing teams are starting from a low level of digital technology use. To meet the requirements of a digitally-enabled and connected future, there is a need for extensive and concerted investment.

Now is a time of budgetary constraint for health and social care. However, investment in mobile technologies for district nursing is essential for future-proofing this key workforce and supporting them to deliver the high level of quality, joined-up care which people, rightly, expect.

Conclusion

In its new digital strategy, *Realising Scotland's Full Potential in a Digital World*,[12] the Scottish Government made clear that it expects that in the future, health and social care services in the community will use mobile technologies to deliver better and more person-centred care.

Mobile technologies can support district nursing to be more agile and responsive, enabling evidence-based decision making including through more accurate documentation and by saving time in accessing the information they need. However, creating widespread use of mobile technologies across the community nursing workforce will require change at all levels.

Future direction for the Scottish Government should include: supporting the further development of nursing expertise in technology-enabled care; working with NHS boards and integration authorities to understand local requirements; and investing in solutions that work for staff on the ground and the people they work with.

Likewise, there is a need for more strategic decision making by integration authorities and NHS boards in order to develop appropriate and fit-for-the-future technological solutions for district nursing teams. As commissioners and employers, they will require a clear understanding of the benefits of technologies as well as what learning and support is required to enable staff to use them effectively.

Nurse leaders with expertise in digitally-enabled care are required at both local and national levels, to ensure that software, devices and training are fit for purpose and practically useful. There are activities underway to develop this leadership. For example, the NMAHP eHealth Leadership Programme, led by NHS Education for Scotland, supports nurses, midwives and allied health professionals to develop leadership skills to influence the use of technology for the benefit of patients and staff.

The RCN is also supporting the development of a nursing workforce which has the right capabilities to take up opportunities in a changing digital environment and is confident in its ability to influence this environment at all levels through Every Nurse an eNurse.[18]

District nursing staff, who are digitally-capable and confident, with access to the right devices and systems, are necessary to create and drive effective care and better outcomes for the people they work with.

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