Can we Utilise Mobile Technologies to Improve our Service

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Introduction

In the UK training structure there is a frequent turnover of junior doctors in acute environments. In starting a new job doctors must learn the content of departmental guidelines, whilst simultaneously adjusting to new patient presentations. This transition is thought to correlate with increased risk to patient safety and has been widely documented. The traditional way to circumnavigate hurdles this presents is often with written guidelines or intranet based protocols.

Mobile technologies are ubiquitous in the modern world and are increasingly commonplace throughout the NHS. Practitioners at all levels are already using medical applications with minimal local guidance or validation. Less than 35% of some medical apps have a medical expert involved. However, the chronic mismatch between staff numbers and desktop/laptop interfaces within busy clinical areas means the role of smartphone or tablet devices is only set to increase exponentially over the coming years within global healthcare provision.

We set out to test the feasibility of offering medical apps to out of hours practitioners as an aid to clinical decision making at point of patient contact. Providing bedside evidence based medicine, allowing easier access to existing guidelines and protocols.

Aim

Our goal was to develop tools to aid the clinical decision making of junior doctors in acute environments. It was hoped the benefits would be three fold:

1. Training and education – aid clinical decision making and help protocol adherence
2. Administrative – ease of updating guidelines / communicating with staff / ensuring protocols exist
3. Audit – feedback on the most useful guidance.

Method

We provided 32 devices (30 iPod touches and 2 iPad minis) in our emergency departments and out of hours environments, along with three secure lockers for the devices to allow for storage and charging.

The devices were preloaded with developed applications alongside other applications such as Toxbase and the BNF which were approved by our medical education department. We also loaded the devices with pre-existing local protocols. Alongside the apps and protocols the devices were loaded with contact books containing internal extension numbers and bleep numbers.

The devices were set up to work offline. Data was collected throughout the pilot looking at use of applications, grade of users along with subjective and objective feedback from users.

Pre-pilot data

We surveyed 123 current clinical staff with levels of experience in our acute departments prior to the pilot, including advanced nurse practitioners, consultants, foundation doctors and middle grade doctors. Of the people spoken to we discovered:

- 93% of our staff had medical applications installed on their own mobile devices.
- 65% of our staff had used mobile applications at some point to aid their decision making process.

Results

During our project we saw the number of clinical users expand continuously from less than twenty to almost 100. 50% of users accessed a locally authored clinical handbook, whilst 55% of people also accessed applications providing guidance on management of presentations ranging from facial wounds to hip fractures. Reassuringly once people used the applications they continued to do so with 64% of users being returning users.

Subjectively the feedback we received was positive with comments including:

- “I never realized there was a protocol for this” – “This saved time and effort”
- “I have since downloaded the BNF onto my phone”
- “Convenient and accessible”.
- “I believe this is the way forward for both dissemination of information and ready access to a ‘portable brain’”
- “I really liked the devices and I use them frequently for access to guidelines/protocols”

Conclusion

Simple – this is a simple, easy to implement intervention, it is flexible and utilises existing protocols along with existing technology that is already used by many. It works alongside mediums already in place to provide easy access to best practice information.

Standardised – allows communication of, and rapid access to standardised protocols and guidance. There is the capacity for more senior doctors to update guidance in real time.

Safe – Improving patient safety by communicating guidance in time pressured situations augmenting decision making processes for junior doctors in acute environments.

Future Developments

There was huge demand and enthusiasm for the venture within our organisation and we hope to maintain a clinician led environment for development of this project.

We are working with specific departments to make the applications interactive, combining the capacity to communicate guidance with other features to facilitate more efficient communication of patient information. We hope to introduce a wifi network in clinical environments to improve functionality of the devices following feedback.

We are looking at options available to provide junior staff with devices or to develop an in house ‘app store’ where staff can download the health board developed and approved applications.

References