Reviewer's report

Title: Handheld Computers and the 21st Century Surgical Team: A Pilot Study

Version: 1 Date: 31 January 2005

Reviewer: Richard H Wiggins

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BMC Medical Informatics and Decision Making
Handheld Computers and the 21st Century Surgical Team: A Pilot Study

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General

1. The question posed by the authors is new and well defined.

2. The methods are appropriate but not well described, further details should be provided to replicate the work, in reference to the hardware used (both the specifications of the Palm W devices, pager used (text pagers? Alphanumeric text capabilities? Web paging capable? and specifics as to the prior PDA experience of the physicians.

3. The data may be as sound and well controlled as is possible in such a project. It may be helpful to include the normal workload and schedules of these physicians during the study, such as one physician may be more likely to call back in time when on rounds on the patient floors, but not when in a clinic seeing a patient or in the OR during a case.

4. The manuscript does adhere to the relevant standards for reporting and data deposition.

5. The discussion and conclusions appear to be well balanced and adequately supported by the data, with the exception of possible differences in the schedules of the physicians as described above.

6. The title and abstract do accurately convey what has been found.

7. The writing is acceptable.
Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Page 4:

"Palm W Tungsten PDA" (you might want to mention here that these devices are not actually still on the market, as Palm is moving back to the Treo handheld devices). It is also important with these devices to include specifications, such as: the Tungsten W's screen is a 320x320, with a 16-bit color TFT display, and a 1-cm long rounded antenna for a Class 10 GSM/GPRS radio, and it runs on a 33 MHz DragonBall VZ processor. The Tungsten W comes with 16 MB of RAM, with Palm OS 4.1. Are you planning on upgrading to the PalmOne Treo in future projects?

You should also mention the specifics of the cellular technology if you are discussing data transfer. Are you using the Vodafone 3G GSM/GPRS network? It may be helpful to many readers to give a brief description of what Global System for Mobile Communications (GSM), General Packet Radio Service (GPRS) is, and if you are using Enhanced Data Rates for Global Evolution (EDGE) technology for the network. EDGE is a 3G technology that delivers broadband-like data speeds to mobile devices. It allows subscribers to send and receive data, such as digital images, web pages and photographs, up to three times faster than with an ordinary GSM/GPRS network. GPRS speed rates are from 100kbps to 125kbps but with implementation of EDGE this may approach 300kbps to 400kbps. Were the digital reference materials the only other uses of the PDA device, or was Internet access also utilized for decision-making?

In waiting for 5 minutes for a return call, you should mention here the schedules of the 8 junior team members. Are these all general surgeons? Are they on the schedule similarly, such that they are all in the OR at the same time, or all in clinical or on rounds? This could make a significance difference in the call back times.

Page 8:

"Pagers and landline telephones". Vodafone UK began GPRS Internet access and voice 3G call in 2001, and surpassed 100 million customers in 2003, if cellular phone use is widespread in the UK, and acceptable within medical institutions, are they really not being used at all?

What kind of pagers are these? Are these alphanumeric text pagers? Is Internet text paging available? Are they alphanumeric 2-way communication devices? Who is the service provider for these devices?

It is important to address issues such as battery life and signal strength in such articles. You should include some information about the battery life of the Tungsten W devices: were they charged nightly? Was the internal battery acceptable for use throughout the day? How much actually were the devices actually used throughout the day? In terms of signal strength, were there areas in the institution where signal strength with the devices was an important issue, such as leaded walls in the Radiology department?

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Page 1:
has lead to the creation of many combined mobile phones

Page 2:
suggests that personal digital assistant and mobile phone combined devices may improve

Page 3:
has lead to many combined
information access, making it
include easy access to hospital address
textbooks, and electronic patient

As an international journal, you should include a short description here of the NHS, so that those across the pond and elsewhere will have a basic understanding of your health care circumstances, such as: The National Health Service (NHS) was set up on the 5th July 1948 to provide healthcare for all citizens in the United Kingdom, based on need, instead of the ability to pay. With the NHS now investing
it is conceivable that PDA technology
meaningful outcome.

Page 6:
response times to paging. Were you using the paging function of both the pagers and PDA/cell phones here? Were you actually calling the cell phones directly, or using their paging function?

disagreement regarding PDAs. Is this a general unwillingness to use technology? What does mean exactly in this sentence?

In the percentages listed, you should include information about how many of the junior doctors had previous PDA experience/ownership, and which OS (Palm vs PocketPC). You should expand this beyond stating that it was a diverse group.

Page 7:
Although this may be expected..

Page 8:
Suggesting that PDA and mobile telephone combined devices. You need to focus the discussion on comparing pagers to combination PDA and cell phone devices, unless you want to
expand this study to compare pagers, PDAs, cell phones, and combination devices.

Although we were unable to measure

Discretionary Revisions (which the author can choose to ignore)

You should include information in your future plans as to what they are: hardware, software, scope, multi-institutional, etc. The next logical step from your paper seems to be replacing all pagers with cell phones, for communication, and PDAs for portable reference material, and combined devices when possible. If all types of wireless communication (3G/GSM/GPRS/802.11b/Bluetooth) have been cleared for use around medical devices, this should obviously be the next step for the NHS.

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests