

**Internet Resources Digest**  
**August 2011**  
**American International Health Alliance**  
LRC project  
www.aiha.com

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***PDA Mobile Devices in Clinical Practice***

*“Personal digital assistant (PDA), also known as a palmtop computer, or personal data assistant is a mobile device that functions as a personal information manager. Current PDAs often have the ability to connect to the Internet. A PDA has an electronic visual display, enabling it to include a web browser, but some newer models also have audio capabilities, enabling them to be used as mobile phones or portable media players. Many PDAs can access the Internet, intranets or extranets via Wi-Fi or Wireless Wide Area Networks. Many PDAs employ touch screen technology. Today, almost all PDAs are smartphones.”*

*(From wikipedia - [http://en.wikipedia.org/wiki/Personal\\_digital\\_assistant](http://en.wikipedia.org/wiki/Personal_digital_assistant))*

***Medical Applications for PDA***

Many companies have developed PDA products aimed at the medical professions' unique needs, such as drug databases, treatment information, and medical news.

**WardWatch**

WardWatch has been designed specifically for the Palm Organizers to aid medical staff involved in ward rounds. It is intended to record investigations, medications and dosages, and consultations that are requested by the senior Consultant (Specialist) or Registrar during Ward round examinations and to record the results of these investigations for recall in later rounds. WardWatch v3.1.1 runs on all Palm devices. WardWatch consists of a application which runs on the PalmOS and an optional desktop companion. The desktop companion provides full access to the patient records on a windows based PC. Free trial version

**URL:** <http://www.torlesse.com/pilot/wardwatch/>

**Best Practice from the BMJ Group**

Healthcare professionals need ready access to reliable, up-to-date information when making diagnosis and treatment decisions. *Best Practice* can be accessed via any internet-enabled mobile phone, PDA or handheld device, providing quick and easy access to the full content of *Best Practice*, including expert opinion, guidelines and evidence, whilst on the move. Individuals can register online for a 30 day personal free trial

**URL:** <http://bestpractice.bmj.com/best-practice/marketing/best-practice-mobile.html>

**Differential Diagnosis iPhone Application**

Differential Diagnosis from the **BMJ Group** enables healthcare professionals to reach an accurate diagnosis quickly and efficiently by providing essential mobile decision support information from web tools *Best Practice* and *Clinical Evidence*. Version 2 now available for £5.49.

**URL:** <http://bestpractice.bmj.com/best-practice/marketing/differentials.html>

### *Software lists and guides*

#### **PEPID products**

PEPID electronic decision-support resources for health caregivers. PEPID utilizes PDA, online, and wireless technologies to deliver point-of-care access to fully-integrated medical, clinical, and pharmacological data; medical calculators, dosing calculators, drug interactions generator and illustrations. PEPID offers specialty programs for physicians, nurses, students, paramedics, emergency medical teams, pharmacists and consumers. Free 14-day trial available

**URL:** <http://www.pepid.com/products/all/>

#### **A-Z Free Mobile Device Resources**

Compiled by the Medical College of Wisconsin Libraries

**URL:** <http://www.mcw.edu/mcwlibraries/atozpdaresources.htm>

#### **Gallery of Mobile Apps and Sites**

Resources from the National Library of Medicine for the Mobile Clinician. PubMedR for handhelds Web site - a website for searching MEDLINER with the web browser of any mobile device. AIDSinfo's PDA Tools - the site includes the Antiretroviral Toxicity Tool for Pocket PCs; federally-approved medical guidelines for Palm Powered or Pocket PC devices; the HIV/AIDS Glossary for Palm Powered devices. Radiation Event Medical Management (REMM) Guidance on diagnosis and treatment for healthcare providers during radiation events. NCBI Bookshelf - downloadable versions of books from the NCBI Bookshelf for any mobile device. Embryo - Visually explore human embryo development with the Embryo app.

**URL:** <http://www.nlm.nih.gov/mobile/>

#### **iMedicalApps**

iMedicalApps is an independent online medical publication written by a team of physicians and medical students who provide commentary and reviews of mobile medical technology and applications

**URL:** <http://www.imedicalapps.com/>

#### **Mobile medicine guide**

The amount of medical information resources available for mobile devices seem to grow in depth and breadth exponentially every day. Some of the resources in this guide are available only for a specific device or a select few devices, some are available to any device that can access the internet.

**URL:** <http://beckerguides.wustl.edu/content.php?pid=92697&sid=690864>

#### **Handheld Resources**

Compiled by the Library of the Oregon Health & Science University

**URL:** <http://www.ohsu.edu/xd/education/library/research-assistance/handheld-pda-resources.cfm>

### *Examples of PDA use by clinicians*

#### **Use of PDA Medical Information Resources by Kenyan and Rwandan Residents to Answer Clinical Questions**

This presentation shows the potential for improving patient outcomes by using PDA-based medical information at POC, and explores the potential of PDA-based, synthesized knowledge management resources to provide decision support information to primary care health professionals

**URL:**

***<http://www.fmdrl.org/index.cfm?event=c.beginBrowseD&clearSelections=1&criteria=pda#2994>***

Grant L, Brown J, Leng M, Bettega N, Murray SA. **Palliative care making a difference in rural Uganda, Kenya and Malawi: three rapid evaluation field studies.** *BMC Palliat Care.* 2011 May 12;10:8.

Three palliative care programmes in Uganda, Kenya and Malawi were studied using rapid evaluation field techniques in each country, triangulating data from three sources: interviews with key informants, observations of clinical encounters and the local health and social care context, and routine data from local reports and statistics. In each country mobile phones enabled rapid access to clinical and social support networks. Staff and volunteers generally reported that caring for the dying in the face of poverty was stressful, but also rewarding, with resilience fostered by having effective analgesia, and community support networks.

#### **Africa: Mobile Technology Revolutionizes Healthcare. Interview with vice president of AED-SATELLIFE**

AED-SATELLIFE serves the urgent health information needs of the world's poorest countries through the innovative use of information technology. These services are available free of charge to health professionals in the developing world only.

**URL:** ***<http://allafrica.com/stories/201011180634.html>***

Morris J, Maynard V. **Pilot study to test the use of a mobile device in the clinical setting to access evidence-based practice resources.** *Worldviews Evid Based Nurs.* 2010 Dec;7(4):205-13. doi: 10.1111/j.1741-6787.2009.00171.x.

A pretest/posttest design was used with a convenience sample of 2nd- and 3rd-year preregistration undergraduate health care students in the United Kingdom. Questionnaires were used to measure (1) feasibility and acceptability of the mobile device and (2) perceptions of the development of EBP knowledge and skills. The study took place during the students' clinical practice and involved two meetings at the beginning and end of the placement period. A Web page was developed to support the process and provide links to key EBP resources. Nineteen undergraduate physiotherapy and nursing students took part in the study. The main findings indicated a generally low level of utilisation of the mobile device in the clinical setting, primarily due to practical difficulties associated with accessing the Internet and the small size of the screen. Consequently, the majority of the students used personal computers (PCs) to access EBP resources. Through the process, students reported improvements in their knowledge and skills in relation to EBP and the appraisal of clinical guidelines.

**URL:** ***<http://onlinelibrary.wiley.com/doi/10.1111/j.1741-6787.2009.00171.x/abstract>***

O. A. Alsos , B. Dabelow , A. Faxvaag. **Doctors' concerns of PDAs in the ward round situation. Lessons from a formative simulation study.** *Methods Inf Med.* 2011;50(2):190-200. Epub 2009 Nov 5.

„Healthcare professionals in hospital care increasingly use small-screen handheld computers. Studies that have investigated doctors' concerns about handheld usage have mainly focused on technical, organizational and performance issues. Very few have looked at the effects of Personal Digital Assistants (PDAs) on the interaction between physician and patient..Despite the many benefits, PDA usage at the point-of-care comes with the increased risk of distractions for physicians and can cause a negative patient experience. Designers of point-of-care systems need to be aware of, and address, the problems with handhelds and learn from the attributes and access capabilities of paper charts.“

**URL:** <http://www.schattauer.de/en/magazine/subject-areas/journals-az/methods/contents/archive/issue/1384/manuscript/12312/show.html>

Hyla H. Polen, Kevin A. Clauson, Wendy Thomson, et al. **Evaluation of nursing-specific drug information PDA databases used as clinical decision support tools.** *International Journal of Medical Informatics Volume 78, Issue 10 , Pages 679-687, October 2009*

„Seven nursing-specific PDA databases were evaluated for scope (absence or presence of an answer) and completeness (three-point scale) via the use of 80 general category and 80 subspecialty drug information questions. Erroneous information was also tracked. Individual scope and completeness scores were delineated by rank order and chi square was performed to determine differences in scope and completeness scores between the databases. Davis's Drug Guide for Nurses (DDGN) and Nursing Lexi-Drugs (NLD) tied for the highest scores for scope, including each answering 72.5% of the 160 evaluation questions. No significant differences existed between their scores and those earned by Nursing2008 Drug Handbook ( $p < 0.05$ ). The highest scores for completeness were earned by NLD with 58.1% and DDGN at 57.1%. Saunders Nursing Drug Handbook was the only database that showed a significantly lower score in completeness as compared to the other six databases ( $p < 0.05$ ). A 4.2% overall error rate was found among database answers... The availability of accurate and timely drug information at point-of-care can play a vital role in patient management and outcomes, but current resources that are available need to be improved.“

**URL:** <http://dx.doi.org/10.1016/j.ijmedinf.2009.06.003>

Eric W. Vogel, Edward J. Gracely, Young Kwon, Russell C. Maulitz. **Factors Determining the Use of Personal Digital Assistants Among Physicians** *Telemedicine and e-Health.* April 2009, 15(3): 270-276.

„Factors that might influence the use of personal digital assistant devices (PDAs) by resident physicians for assistance in the delivery of routine patient care were surveyed in a single institution. None of the baseline demographic characteristics measured was associated with whether PDAs were being used or not. Those who used their PDAs for medical purposes perceived more benefits associated with the use of PDAs and fewer barriers than did those who did not own a PDA, or owned one but did not use it for medical purposes. Some associations were also found between residents-self-reported standardized test scores and the type of information resources being used on their device. These results could be useful in helping medical leaders overcome barriers to more full adoption of PDAs as a tool for effective patient care.“

**URL:** <http://www.liebertonline.com/doi/abs/10.1089/tmj.2008.0112>

**Health Resources Digest -July 2008 Handheld Computers in Health Care**

*[http://www.eurasiahealth.org/attaches/99777/digest\\_July08\\_eng.pdf](http://www.eurasiahealth.org/attaches/99777/digest_July08_eng.pdf)*

**Health Resources Digest - May 2008 Information and Communication Technologies for HIV/AIDS Prevention and Treatment**

*[http://www.eurasiahealth.org/attaches/99726/digest\\_May08\\_eng.pdf](http://www.eurasiahealth.org/attaches/99726/digest_May08_eng.pdf)*

**Pestic O. Handheld Computers in Hospitals. Practice Standard Review. 2003**

The goal of the Review was to find out the published evidence about current trends and economic and clinical effectiveness of using this relatively new technology in hospital setting. Special emphasis was made on the possibilities of integrating this technology into hospital information systems

*<http://www.eurasiahealth.org/attaches/81474/0089.doc>*

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Internet Resources Digest Forthcoming Topics [Provisional]

- EBM Journal Clubs
- Palliative Care Resources

If you have a suggestion for a Digest topic, or would like to contribute information about Internet resources, then please contact [ibra\[at\]zadar.net](mailto:ibra[at]zadar.net)

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*<http://www.eurasiahealth.org/eng/misc/publication3/>*