

**WORKSHOP 4:****Integrating Handheld Devices into the Pharmacy Department****Bill G. Felkey, M.S.**

The purpose of this interactive workshop was to demonstrate how handheld devices (personal digital assistants [PDAs]) can enhance pharmacy operations and serve as powerful means of improving patient care. Software applications that may be downloaded and used on PDAs include drug information references, pharmaceutical calculator applications, clinical intervention tracking applications, and productivity management applications. Facilitator Bill Felkey is an associate professor at Auburn University School of Pharmacy in Alabama.

**Background**

Even though pockets of resistance remain, technology is a driving force in health care, according to Felkey. Technology provides many answers, but it is not the only answer. It can help solve problems only if appropriately used. Therefore, when considering PDA or any new technology, pharmacists should ask the following questions:

- What problem am I trying to solve?
- Is it my problem?
- Am I using the technology, or is it using me?
- By solving the problem, what new problems am I creating?

The last question may be particularly relevant. Computerized prescriber order entry for example, is a powerful new technology. Many hailed it as a technique that would put an end to faulty transmission of prescriber orders. Instead, it has in some cases simply created new sources of errors. The device leaves so little space between drugs that the prescriber can create, as Felkey put it, a perfectly legible order that just happens to be for the wrong drug. These “point and shoot” errors are equally as serious as those associated with handwritten orders.

**A Powerful Tool**

With the advent of PDAs, Felkey noted, it is now more than ever a wireless world. Around 750,000 units were sold in 1998. Some 9.6 million were sold in 2001, and sales are projected to reach 33 million in 2004.

In health care settings, PDAs have many advantages. They can bring good-quality information to the point of care and give health care professionals the infrastructure to do other things. PDAs can provide support for evidence-based pharmacy. They respond to the observation by David Eddy (1999), who has written that “the

complexity of modern American medicine is exceeding the capacity of the unaided human mind.” Another distinctive feature of the PDA is data delivery capability. It can deliver, to quote one manufacturer of PDA software, “the right information to the right people at the right time and place in the right format.” PDAs also offer the ability to move data to a network computer, where it may be accessed by anyone who has legitimate access to it.

The technology continues to develop. Currently gaining great interest is Bluetooth, a new short-range wireless technology that enabled users of cellular phones, pagers, and PDAs to integrate all mobile and fixed computer devices. At home, Bluetooth eliminates the jungle of cables needed to connect printer, PC, keyboard, fax, and mouse.

**Strategies for Clinical Implementation**

Because of its broad impact, implementing PDA technology must be a shared decision. Strategies for implementing PDAs or similar technology include the following:

- Study the problem. Identify your needs and resources.
- Gain clinical and administrative support.
- Comparison shop and visit sites.
- Write functional specifications and study matrices.
- Select a vendor short list.
- Negotiate the deal.
- Disseminate information and conduct training.
- Acquire and implement the technology.
- Measure the impact of the investment.
- Provide feedback for continual improvement.

**Comparing Products**

Today’s PDAs run on two operating systems: Palm (manufacturers include Palm, Handspring, Sony, Handera, Samsung, and Kyocera) and Pocket PC (Audiovox, Casio, Hewlett-Packard/Compaq, NEC, Toshiba, and Acer). Interoperability between the two systems can be achieved by use of a device called Peacemaker, which can move Pocket PC data to and from a Palm OS device, and vice versa.

The two operating systems may be compared on the basis of many factors, including size, screen resolution, memory, ease of operation, learning curve, number of preinstalled applications, medical applications, desktop interface, and security. A survey of health care professionals, Felkey noted, revealed that the Palm OS gets a slight nod overall. One of the reasons for this may be that

the Palm OS currently has more than 700 medical applications while the Pocket PC has only 200 or so. Palm also has an advantage over the Pocket PC with respect to software sharing.

**Other direct comparisons are as follows:**

- Palm OS is smaller.
- Pocket PC has more standard memory, generally 32 megabytes.
- Palm is easier to learn.
- Pocket PC has multitasking capabilities because of its Windows heritage. Palm OS does not truly multitask.
- Palm OS desktop software is easier to install, but Pocket PC desktop software has more functionality.
- Palm devices require third-party software for networking. Pocket PC OS devices have integrated support for virtual private networks.
- Palm OS devices have more available accessories.
- The Pocket PC has a shorter battery life.
- Palm OS devices are generally less expensive.

A great deal of information comparing the products and their features, their prices, and vendors is available online. One good source is [www.shopper.cnet.com](http://www.shopper.cnet.com).

## Types of Negotiating Styles

- Avoidance
- Accommodation
- Competition
- Collaboration
- Compromise

## Applications

Nearly two dozen top-class drug references, ranging from A to Z Drug Facts to Vitamins and Minerals and including ASHP's AHFS Drug Information, Clinical Pharmacology, and the Pharmacists' Drug Handbook, may be accessed on a PDA. Some of these programs, including AHFS, offer formulary-specific versions of their products. Disease references, lab references, pharmacotherapy calculators, record tracking, intervention documentation and patient education resources are available for use on PDAs.

The questions to ask in choosing an online reference are no different from those asked when selecting a print resource. They include the following:

- Who owns the product? Is it unbiased?
- Who wrote the information? What are the author's qualifications?
- Is the information current?
- Is the information referenced?
- What is the purpose and who is the intended audience?
- How easy is the product to use?

## Conclusion

In just five years, PDAs have earned a role in everyday pharmacy operations. They hold great promise for improving productivity, efficiency, and communications among pharmacists and other health care professionals.