

Community Psychiatry

Handheld Computer Use in a Psychiatric Outreach Program

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Abstract: Handheld computers are now being used in various medical applications. Surveys have shown that physicians are becoming increasingly comfortable with these devices and are adopting them in their daily practice routine. In psychiatry, the advantages of using a handheld computer may not be immediately obvious. However, these devices may provide psychiatric outreach programs with a digital solution to existing problems with information management and patient confidentiality. This paper describes the use of handheld computers by a psychiatric outreach team and discusses the benefits realized.

Résumé : Utilisation d'un ordinateur de poche dans un programme de dépistage psychiatrique

Les ordinateurs de poche servent désormais à diverses applications médicales. Les sondages indiquent que les médecins sont de plus en plus à l'aise avec ces appareils et qu'ils les adoptent dans leur pratique quotidienne. En psychiatrie, les avantages d'utiliser un ordinateur de poche ne sont peut-être pas évidents de prime abord. Toutefois, ces appareils peuvent fournir aux programmes de dépistage psychiatriques une solution numérique aux problèmes existants de gestion de l'information et de confidentialité des patients. Cet article décrit l'utilisation d'ordinateurs de poche par une équipe de dépistage psychiatrique et discute des avantages acquis.

Key Words: assertive community treatment, community psychiatry, psychiatric outreach, personal digital assistant, PDA, handheld computer

The handheld computer, or personal digital assistant (PDA), has become a ubiquitous device in the landscape of the modern medical office. In a 2002 survey by the Canadian Medical Association, 28% of Canadian physicians reported using a PDA—a 47% increase over the 2001 findings (1). In this survey, male physicians and those under age 35 years were more likely to use PDAs than were their female or older colleagues (30% vs. 24% and 44% vs. 12%, respectively). A survey of family practice residents in the United States yielded even more impressive numbers, with 67% of residency programs reporting the use of PDAs (2). It is clear that the trend is toward greater use of PDAs as younger physicians adopt the technology and more medical applications are developed.

Very little has been written about the specific use of PDAs in psychiatric practice. Dr. Harry Karlinsky has explored the potential use of wireless PDA

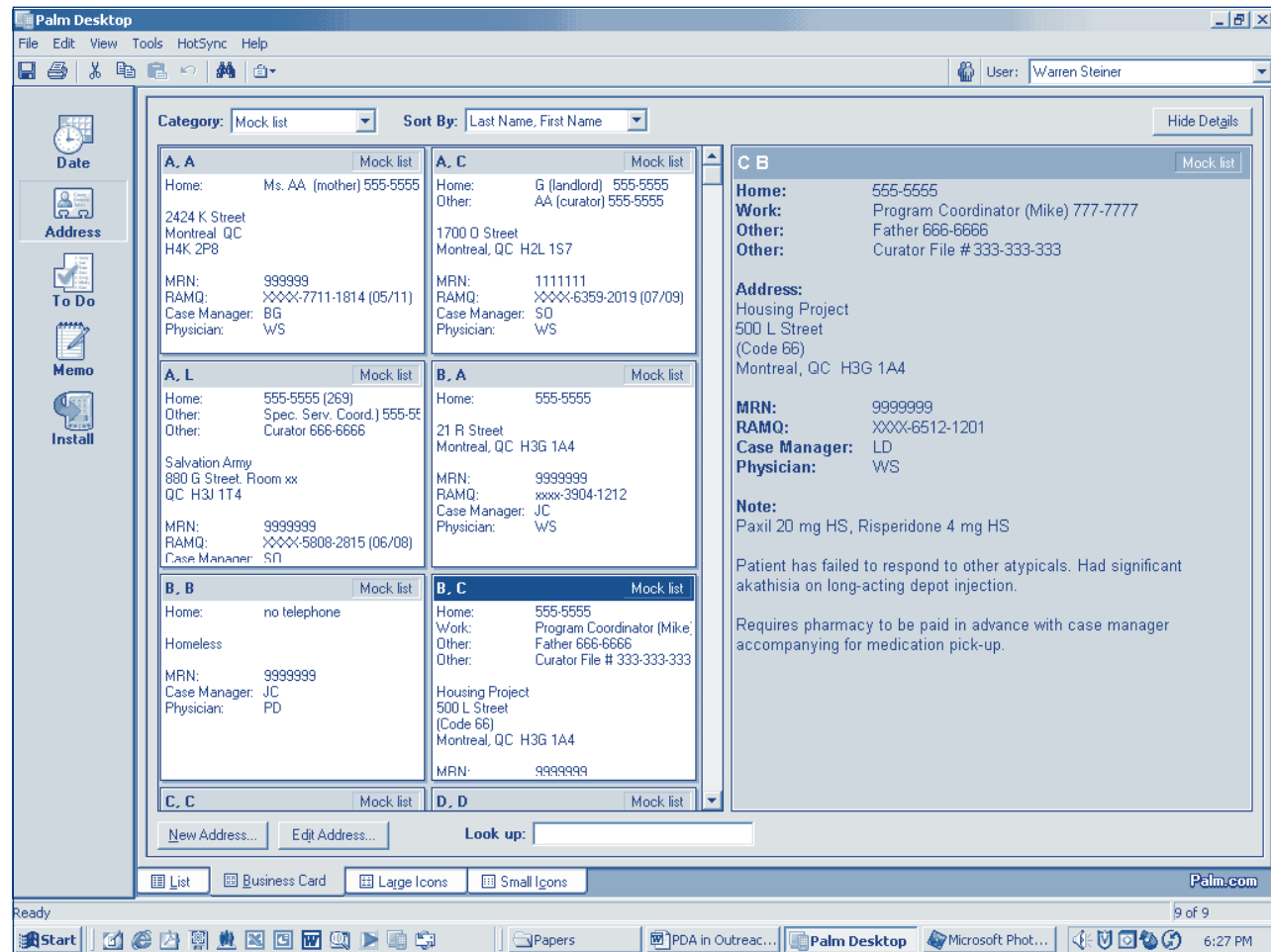
communication devices in psychiatry but more in terms of a review of available technology (3). This paper deals with a more specific use of PDAs in clinical practice; specifically, their use by a psychiatric outreach team.

The Outreach Service

Since 1995, the Community Link Service (CLS) of the Montreal General Hospital has provided home- and community-based care to those with severe mental illness. The team provides modified Assertive Community Treatment; it does not operate on a 24 hours daily, seven days weekly, basis. The team comprises two psychiatrists (1.2 full-time equivalent [FTE]) and several case managers (specifically, four nurses, 3.6 FTE; one full-time occupational therapist; and one part-time social worker, 0.4 FTE). The CLS treats approximately 65 patients, most of whom have schizophrenia or schizoaffective disorder. Care is frequently complicated by nonadherence to treatment, substance abuse, homelessness and poor attendance at follow-up appointments. The case managers usually see patients outside the office setting, with visits taking place in the home, in restaurants and in community centres or shelters.

The mobility of the CLS has presented difficulties on several levels. First, team members are not permitted to take charts outside the hospital. As a result, vital patient information has not been not accessible to the case manager during outreach visits, and confidential information, such as notes about injections due or medication dosages, has often been written down in daily planners. Second, the patient population is highly mobile, with patients often moving several times in a given year. The hospital database is seldom up to date with these moves, and again, daily planners were formerly quickly filled with such information as landlord names, entrance door access codes and multiple contact numbers. Prior to the adoption of PDAs, the team secretary created a database of this vital information for all the patients, including medication details; this database was updated at the weekly team meetings. In consequence, each team member carried a seven-page printout that had to be reprinted each week. Team members worried constantly about losing these printouts, which would have created a major breach of confidentiality. The third issue was increasing difficulty in coordinating joint appointments for team members and

Figure 1 Palm Desktop database



patients, especially for the two psychiatrists, who were not as available as the case managers. The secretary had no information about anyone's scheduling and time availability, and could not organize clinical appointments on short notice—a vital part of treating subacutely ill patients in the community.

PDA Digital Solution

Discussion with hospital administrators revealed that protecting confidential patient information had become a major risk-management issue. The need to have information at hand for outreach visits had to be balanced against the risk of losing the confidential printouts.

The problem was solved when the CLS team adopted PDAs for general data management. All members were given Palm handheld devices. Installed on the PDA was a patient list that included all demographic information, contact information, special notes and current medications for each patient (Figure 1). Additionally, a free Web-based pharmacopeia program (4) was installed on each device.

When the patient information list changed, the team member informed the secretary, who updated her PC and then pasted the new information into each Palm user's desktop

file. This procedure ensured that all team members shared the same updated patient information. Team members updated their PDAs daily, using a HotSync connection to the secretary's PC.

Various patient-management applications were tried, but the Palm Desktop program that came with the device was the easiest to use and adapt to the team's needs, an important one of which was simplicity in the PDA and the interface. Comfort with computers varied among the team members, and an earlier attempt with Pocket PC devices failed because of their perceived complexity.

Security issues were dealt with by purchasing an independent PDA security program. Rather than just locking the PDA with the pre-installed Palm Security Password program, we decided to use a commercial 128-bit encryption program (5) that makes it virtually impossible for anyone to obtain the patient data. If the wrong password is entered (beyond a user-determined number of attempts), all data on the PDA are erased and can only be recovered via a HotSync connection with the team PC. Thus, if a PDA were lost, no patient information would be vulnerable, as would be the case with a lost paper printout.

The issue of access to team members' schedules was more problematic. Through the Palm Desktop program, the team secretary had everyone's schedule on her PC, but each team member only had access to his or her own schedule. Appointments still had to be coordinated through the secretary, who could place tentative arrangements on each PDA. These would then be confirmed between team members. Some programs do allow for all team members' schedules to be viewed on each PDA; however, this was found cumbersome to use, and not everyone felt comfortable sharing such information. After two years, only one-half of the team use the PDA for scheduling; the rest use a regular day planner.

Team Satisfaction with the PDA

The satisfaction of the individual team members varied according to their level of comfort in using computers. The initial Pocket PC trial was short-lived because the operating system was thought to be complicated and unstable. After frequent software crashes, most stopped using the Pocket PCs. The Palm devices were found to be more stable and seemed to be more intuitive for the less experienced users. Initially, we chose an inexpensive model that did not have a backlit screen or rechargeable batteries (Palm M100). This was a mistake, because the screens were difficult to read and batteries had to be changed frequently. A change to a higher-end, rechargeable model with a backlit screen (Palm M130) resulted in higher user satisfaction, because the PDA could be seen more easily in the dark and did not require battery changes.

Satisfaction was highest with the PDA's data-management function. All team members found this to be a valuable application and a significant improvement over the previously used printouts. Specifically, the medication notes that were now available helped in medication management and administration. This was not surprising: PDA use has been found to decrease medication errors in discharged psychiatric patients (6). The two psychiatrists and three of the four nurses found the pharmacopeia application very useful, especially because of its included drug-drug interaction software. It was not used to any significant degree by the occupational therapist or the social worker.

Only one-half of the team continued to use the PDA's datebook function. Those who did not found it difficult to

enter data on the PDA and easier to use a regular daily planner. The purchase of a portable keyboard did not change this, although two team members began to use the keyboard to write patient notes on the PDA.

Other functions that were found to be useful included a street-finder application (Mapopolis) and downloaded city maps that helped team members navigate through different neighbourhoods on home visits. The Note Pad application was frequently used to jot down medication changes or changes in patient contact information. With this application, the user writes in longhand directly on the PDA screen, and the note is automatically transferred to the secretary's PC for transcription and entry.

Summary

Increasing sophistication and availability of handheld computers will allow for wider use of these devices in various clinical applications. Psychiatric outreach programs are an ideal clinical setting for PDAs. Although laptop computers may offer more functions, they are heavy, difficult to use in non-office situations and can intimidate patients and some staff. The PDA provides a wide range of clinical applications in a package that is convenient and easily adopted by most clinicians. Many impressive higher-end devices are now available for more sophisticated users. However, it is more likely that front-line clinicians will adopt a simpler device that is easier to use and provides the basic functions necessary for clinical work in outreach psychiatry.

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