5

What Floor Is Mrs. Jones on, and What Does Her CBC Look Like Today? Patient Records on Handheld Computers

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All of us have experienced the frustration of arriving at the hospital to make early-morning rounds and spending considerable time trying to find where a patient is located and what their latest lab work shows. Of course, if it's the weekend, this may be compounded by the fact that your partner's checkout list is completely illegible or, worse, lost somewhere in your trunk or laundry basket. Now imagine doing all this without the assistance of caffeine, as of course, the coffee cart is closed on Saturday mornings.

As a patient care provider, nothing seems more desirable than a handheld computer that manages all the data collection, note writing, and paperwork hassles. Now, imagine being able to do all this while walking into the hospital from the parking lot (this might allow time to stop somewhere for a cup of coffee). Indeed, current handheld technology begins to chip away at the current inefficiencies of medical record keeping, and lays the groundwork for what is rapidly becoming a reliable, secure, timesaving development. Certainly, as institutional capabilities advance, using these record-keeping devices will be natural extensions of the electronic medical record. There are programs for nearly every specialty, and all the basic programs can be tailored to individual practice preferences. The range of capacity goes from a simple census and "To Do" list to widely configurable platforms with multiple preset pull-down menus. The specialty-specific software often includes a combination of coding and tracking as well.

Palm OS and Pocket PC units have many similar offerings. For the purposes of this discussion, we'll look at one premade program for the Palm OS that is currently one of the most widely used. It is freeware, which is not an indication of its value; in fact, it seems to be among the most versatile programs available at this time. We also show you a roundup of all the various programs available for Palm and Pocket PC handhelds so that you can get rid of your index cards and start tracking patients using your handheld computer.

The Basics of Keeping Track of Mrs. Jones: Formats for Patient Trackers

There are two kinds of software for patient tracking: stand-alone programs or database templates. The database templates are exactly what they sound like—veritable tabulae rasae that require some work on the front end to make them what you want. HanDBase is one of the easiest database programs to use for this type of project. The software is available for both Palm and Pocket PC platforms and can be downloaded at www.handbase.com. We show you in Chapter 17 how to build a simple procedures log using this program, and you can also build your own patient tracker using the same basic skills. Other database programs are covered in more detail in Chapter 11.

The stand-alone programs also run the gamut of flexibility and capacity for customization, but are ready to use out of the box. Many are specific to a certain specialty, thus requiring little in the way of input for basic record keeping. The more general patient-tracking programs out there have similar format:

- A patient census
- Individual patient data
- Location
- Medications, labs, vital signs, studies, problem list, notes
- "To do" list

Depending on the other interfaces your handheld has, and the hospital information technology infrastructure where you practice, patient tracking on handhelds can range from complete manual input to generally "pushed" data that come magically from central databases every time you synchronize or enter the hospital's wireless network (if you're lucky enough to have one). Many of these programs can be linked into any hospital's legacy information databases (for a small fee, of course). Table 5.1 lists some common handheld programs for patient tracking, for Pocket PC and Palm handhelds.

Palm OS Software

PatientKeeper Personal is a Palm application that is a fun and fairly straightforward system for managing your patient list. It is one of the most versatile systems, and the most complex! It uses an open platform centered around a patient list that allows you to add programs from other developers. It comes with "modules" that run databases for labs, tests, notes, etc. The personal version is a free download available at the PatientKeeper website, www.patientkeeper.com. Look for the demos: they are a good introduction to the desktop systems that augment these packages tremen-

	Desktop version	Palm OS	Pocket PC	Cost	Site
TABLE 5.1. Palm OS and Pocket PC Programs for patient record keeping.					
PatientKeeper	+	+		Free	patientkeeper.com
PocketPractitioner 2002	+	+		$69.00	PalmGear.com
WardWatch		+		$29.95	pdaMD.com
Patient Tracker	+	+	+	Free	handheldmed.com
Mobile MedData Charts	+	+	+	$49.00 for handheld; $599.00 for desktop	medcomsys.com
DOXUITE			+	$49.00	Handango.com
Quick Rounds			+	$19.95	medicalpocketpc.com
Noteworthy Clinical Companion 2.2			+	$69.00	medicalpocketpc.com

dously. There is also a user manual that is downloadable in PDF format; the following discussion should clarify much of their text.

Getting Started: Logon Screens and the Mobile Patient Index

Select the PatientKeeper icon from the application/launch screen of your Palm (Figure 5.1). The main page in PatientKeeper is called the mobile patient index, or mPI, which is your patient census (Figure 5.2). From here, you enter or select an individual patient and start rolling. This is also the

FIGURE 5.1. PatientKeeper icon, Palm home page. (Reprinted with permission from patientKeeper, Inc.)
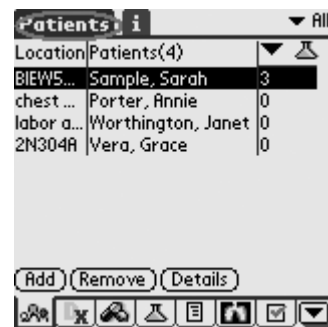
FIGURE 5.2. Mobile patient index screen (patient census). Tap on the menu bar at the top to access pull-down menus. (Reprinted with permission from patientKeeper, Inc.)

screen from which patient information is shared with other users via beaming or printing. Filters can be applied to the patient list so that only certain populations pop up for a given selection, and patients can be sorted from this screen into various categories. PatientKeeper is based on several modules centered around each patient, from notes to labs to demographic data. Everything is accessed from this mPI page.

Hands Off! Logon Security

With all the Health Insurance Portability and Accountability Act (HIPAA) regulations and confidentiality needs of medical record keeping, it's a good idea to make the use of your device secure. PatientKeeper has a security code option. From the mPI screen, tap on the menu bar at the top (Figure 5.2, circled) to access the pull-down menus (Figure 5.3). Under "Configure," go to "User Settings" and type in your username. You'll be "queried" about setting a password on next startup; say "yes," and then the next time you boot up PatientKeeper, you will enter a PIN that you need to remember. PatientKeeper has a few additional preferences for programming and memory use.

Memory Use

PatientKeeper has an optional Cache Framework component that maintains information from the program in memory even when the program itself is not being used; this increases the speed of starting the program, but requires extra memory. To use the feature, access the Menu pulldown as above. Under "Configure," go to "Framework Preferences" (Figure 5.4), and select "Cache Framework."

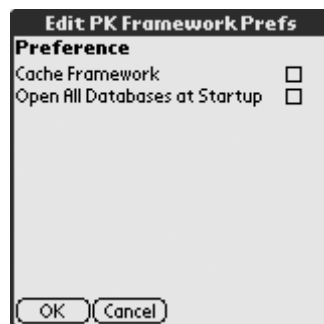FIGURE 5.3. User Settings. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.4. Preferences for memory use. (Reprinted with permission from patient-Keeper, Inc.)

Power Users Tip

This feature must be unchecked if you need to install a new version onto your Palm at a later time, or if you want to add new modules as they come out. The other selection in this screen allows all the modules to be booted up at startup, making it faster to use the program once you are in it (but slower to start). This feature cannot be used if Cache Framework is enabled.

Power Users Tip

If you toggle frequently between programs on your Palm during the day, use the Cache Framework setting, but if you get into PatientKeeper and stay there while you're rounding, the extra time on the front end to boot up the modules saves you a lot of time while you're in the program.

Programming Preferences

This feature allows you to make advanced programming options in the NoteKeeper module, linking data from individual modules such as vitals or test results to daily notes. Access this from the NoteKeeper screen (Figure 5.5). Use the Menu Pulldown (Figure 5.6), and choose "Options," then "Preferences." Select the box for Advanced Mode (Figure 5.7) then tap OK.

For the hands-on exercises in the rest of this chapter, we highly recommend that you download a demo version of Patientkeeper (if you have a Palm handheld, of course), and try these tasks yourself.
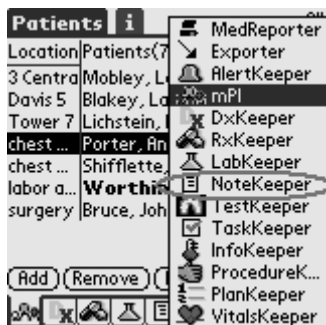
FIGURE 5.5. Programming in advanced mode. Access this feature via the NoteKeeper module. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.6. In NoteKeeper mode, choose Preferences. (Reprinted with permission from patientKeeper, Inc.)
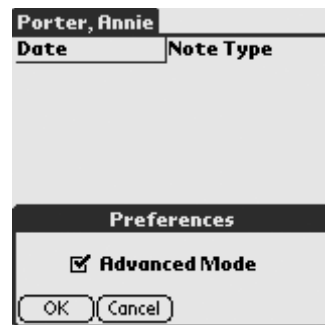
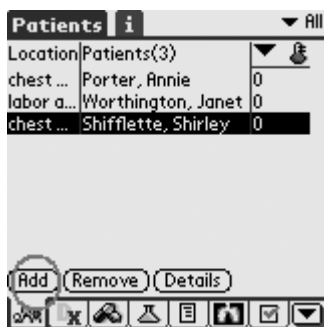FIGURE 5.7. Preferences: Advanced mode. (Reprinted with permission from patient-Keeper, Inc.)

FIGURE 5.8. Mobile Patient Index: Add a new patient. (Reprinted with permission from patientKeeper, Inc.)
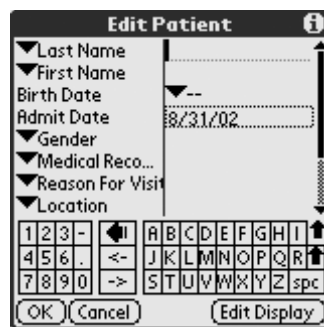

FIGURE 5.9. mPI: Edit patient screen. (Reprinted with permission from patientKeeper, Inc.)

HANDS-ON EXERCISE 5.1. FROM NOTECARDS TO THE PALM OF YOUR HAND

Your patient list is displayed in three columns: location, name, and a customizable column that you can change by using the pull-down arrow (this helps to avoid that "confused where-are-my-patients" physician look). After we try entering a patient, we'll get to the more fun stuff. Let's walk through adding a new patient first.

From the main screen of PatientKeeper, select "Add" to begin adding a new patient to your list (Figure 5.8). The "Edit Patient" screen appears (Figure 5.9), where you can either type data in or use drop-down menus that you have customized to enter patient information.

HANDS-ON EXERCISE 5.2. HIERARCHICAL PICKER

PatientKeeper uses the interestingly named Hierarchical Picker as the basis for editing and customizing pull-down menus for each field. In entering patient data, you first notice it in the Last Name field.

Getting There

Let's try using it to customize the Reason For Visit field. As you enter a patient's information, select "Edit" from the Reason for Visit pull-down menu (Figure 5.10). The Hierarchical Picker screen is displayed, which gives you several options (Figure 5.11). For all customization, the Hierarchical Picker allows both "branches" and "leaves." This field already comes with some preset "leaves," but we can try adding a branch and then some leaves of a common admission diagnosis. Tap "New Branch," and use the free text site to enter a branch (Figure 5.12). Pneumonia then shows up in the main Hierarchical Picker screen with an arrow to the right. This arrow allows you

FIGURE 5.10. mPI: Edit reason for visit. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.11. mPI: Hierarchical Picker: Customize your data entry fields. (Reprinted with permission from patient-Keeper, Inc.)

to access the "Leaves." Tap Pneumonia again, and then open, and let's add some leaves (Figures 5.13, 5.14). Tap "New Leaf" from the main screen to enter a common diagnosis without subheadings, such as Fever of Unknown Origin.

   Each of the drop-down menus for patient data entry has the capacity for customization. An initial investment of thought and time will make later patient entry much quicker. As you are getting started, go through each of the fields and set it up according to your preference, if you have the time.

   You can now "clean up" your patient information display by selecting "Edit Display" to change the fields that are presented (Figure 5.15). Let's change it to reflect what we really want to know. By unselecting the fields, you decrease unnecessary information and fields you have to scroll through (Figure 5.16). Finally, tapping OK on the Edit Patient display gets you back to the mPI where you see your list (growing!).

FIGURE 5.12. Hierarchical Picker: New branch. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.13. Hierarchical Picker: New leaf. (Reprinted with permission from patient-Keeper, Inc.)

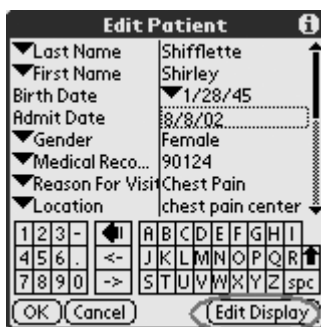FIGURE 5.14. Hierarchical Picker: New leaf. (Reprinted with permission from patient-Keeper, Inc.)

FIGURE 5.15. mPI: Edit display. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.16. mPI: Edit details view. (Reprinted with permission from patientKeeper, Inc.)

HANDS-ON EXERCISE 5.3. FURTHER CUSTOMIZATION OF THE MPI (FURTHER REFINEMENT OF THE "CONFUSED-WHERE-ARE-MY-PATIENTS" AVOIDANCE SYSTEM)

There are a few other ways to customize the mPI screen. You can hide patients who you might have discharged but know might "bounce back" (Figure 5.17). From the mPI screen, highlight the patient you want to hide, and then tap the Patients dropdown. Select "Un/Hide Selection," and that patient will be stored on a hidden list. To recover them to the main screen, go to the upper-right dropdown (Figure 5.18) and select Hidden. While in the Hidden mPI screen, selecting the Un/Hide Selection will put that patient back in your active list.
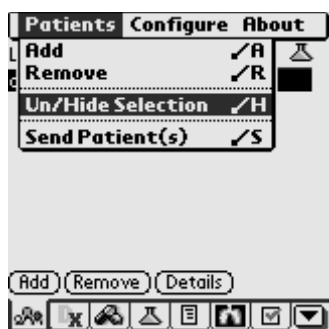
FIGURE 5.17. mPI: Un/Hide patients. (Reprinted with permission from patientKeeper, Inc.)
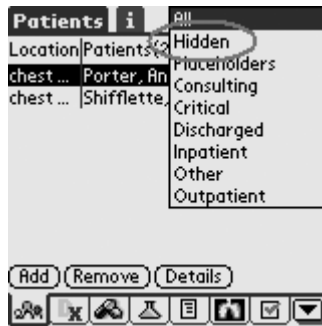
FIGURE 5.18. mPI: Recover
hidden patient. (Reprinted
with permission from patient-
Keeper, Inc.)

FIGURE 5.19. mPI: Add a
filter. (Reprinted with permis-
sion from patientKeeper, Inc.)

FIGURE 5.20. mPI: Editing
filters. (Reprinted with per-
mission from patientKeeper,
Inc.)

FIGURE 5.21. mPI: Editing
filters. (Reprinted with per-
mission from patientKeeper,
Inc.)

You can use the Filters option under the Configure dropdown (see Figure
5.3) to change how you view your patient list. Let's say you have a busy
obstetric practice in addition to all your critically ill patients, and you'd
occasionally like to see only your OB list. From "Edit Filters," tap "Add"
(Figure 5.19) and then, on the "Edit a Filter" screen, highlight "Unnamed
Filter" and type OB (Figures 5.20, 5.21). By editing the filter properties, you
can identify OB patients by calling them *inpatient* and *other* (Figure 5.22)
under the "Patient Type" drop-down menu. In the "Edit Patient" screen
from the mPI, all your OB patients can be entered as *inpatient* and *other*
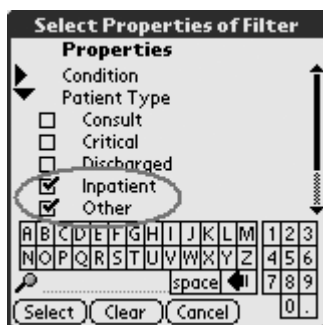and they will be filtered as OB patients (Figure 5.23).

Figure 5.22. mPI: Identifying patients for a new Filter. (Reprinted with permission from patientKeeper, Inc.)
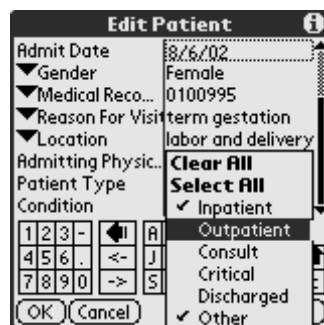

Figure 5.23. mPI: When entering patient data in the mPI, use the identifiers shown to select them for your new filter. (Reprinted with permission from patientKeeper, Inc.)

HANDS-ON EXERCISE 5.4. EXPLORING MODULES: WHAT, WHERE, AND WHEN SANS PAPER

The modules in PatientKeeper are a smorgasbord of data. There are 14 possible features that you can display, 8 of which can be accessed at any time from the toolbar at the bottom of the mPI. Learning the symbols is fairly intuitive. Edit the modules on the toolbar by visiting the "Configure" drop-down menu (Figure 5.24). Learn what the individual icons in this display mean (Figure 5.25) by tapping the "Information" button (i) at the upper right corner of the screen (Figure 5.26).
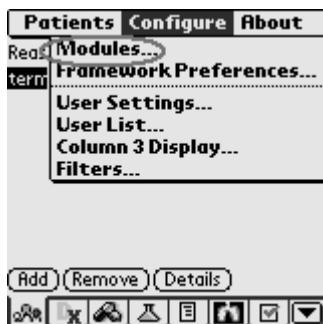

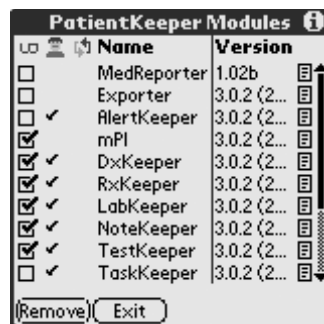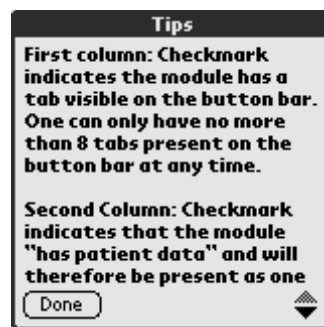Figure 5.24. mPI: Edit module display. (Reprinted with permission from patient-Keeper, Inc.)

Figure 5.25. mPI: Edit module display. (Reprinted with permission from patient-Keeper, Inc.)

Figure 5.26. mPI: Information about the icons in the Edit module display. Access from the icon in the upper right corner of the screen. (Reprinted with permission from patientKeeper, Inc.)

Power Users Tip

Be careful when you're in this editing site: the "Remove" feature deletes modules from the program, and will clear the contents of any stored patient data in that module! You can add the module back, but this requires rebooting the whole program.

HANDS-ON EXERCISE 5.5. DIAGNOSISKEEPER: THE PROBLEM LIST

Sally "I-think-I'm-in-labor-again" Smith is finally admitted and is in active labor. As you admit her, use the DiagnosisKeeper to house an active problem list and link to tasks (Figure 5.27). DiagnosisKeeper allows you to enter free text or to select from drop-down menus (Figure 5.28). For this
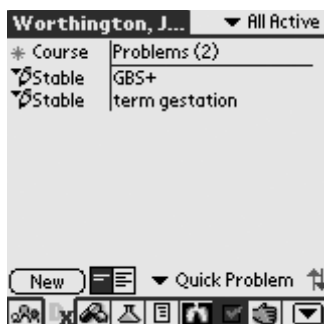

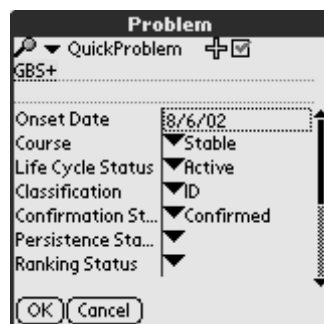Figure 5.27. DiagnosisKeeper main screen. (Reprinted with permission from patientKeeper, Inc.)

Figure 5.28. New diagnosis: Tap "New," then enter free text. (Reprinted with permission from patientKeeper, Inc.)
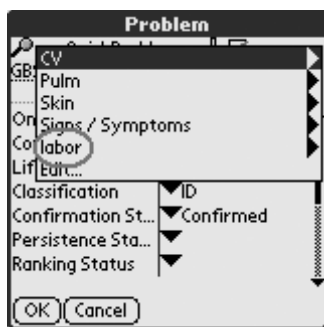
FIGURE 5.29. Diagno-
sisKeeper: QuickProblems.
(Reprinted with permission
from patientKeeper, Inc.)

FIGURE 5.30. Hierarchical
Picker of QuickProblems.
(Reprinted with permission
from patientKeeper, Inc.)

patient in labor, an additional problem is her previously diagnosed Group
B Strep (GBS) infection. This factor can be added as free text, or can be
accessed from a customized QuickProblem drop-down menu, under labor
(Figures 5.29, 5.30). A great feature of this module is the ability to link to
TaskKeeper. Use the box to identify tasks, which then can be accessed from
either TaskKeeper or DxKeeper (Figures 5.31, 5.32). To save a free text
entry as a QuickProblem, enter it (Figure 5.33) and then click on the "plus"
icon (Figure 5.34). You'll be prompted to select a branch under which to
store the new QuickProblem leaf (Figure 5.35).

FIGURE 5.31. Link to
TaskKeeper using the check
box in the Problem Edit
screen. (Reprinted with per-
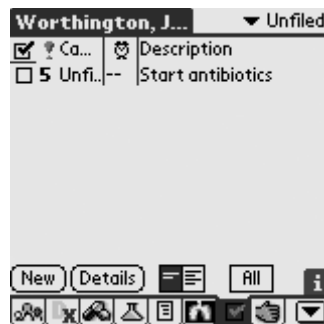mission from patientKeeper,
Inc.)

FIGURE 5.32. View tasks from
TaskKeeper module, as
entered in DxKeeper.
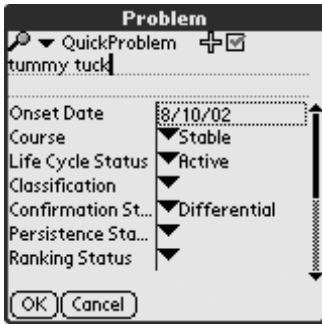(Reprinted with permission
from patientKeeper, Inc.)

FIGURE 5.33. Store free text as a QuickProblem. (Reprinted with permission from patientKeeper, Inc.)
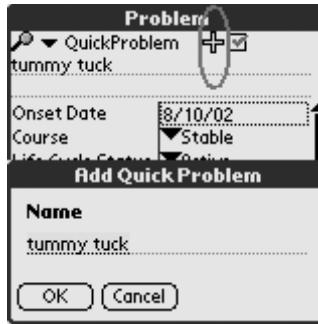
FIGURE 5.34. Store free text as a QuickProblem. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.35. Store free text as a QuickProblem. (Reprinted with permission from patientKeeper, Inc.)

HANDS-ON EXERCISE 5.6. PRESCRIPTIONKEEPER

Billy-everything-is-wrong, who was just discharged from his most recent 200+-day inpatient hospitalization, is on the phone. As the funny sinking feeling in your chest mounts, he relates the story of how his overjoyed dog slobbered on the 30 written prescriptions you gave him and he needs them redone. Smiling to yourself, you open your handheld and remember how much you hated these calls 6 months ago: "Where do you want me to call these in?"

This is a neat module that allows you to track meds, link them to problem lists, write prescriptions, and record events such as when meds are stopped or started or when you last wrote a prescription.

Getting There

From the mPI, tap the RxKeeper icon (circled) and you come to the main page, where all the medications are listed (Figure 5.36).
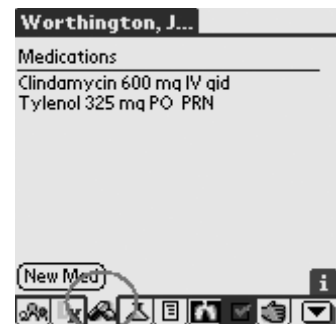

FIGURE 5.36. RxKeeper: Toolbar icon and main screen. (Reprinted with permission from patient-Keeper, Inc.)
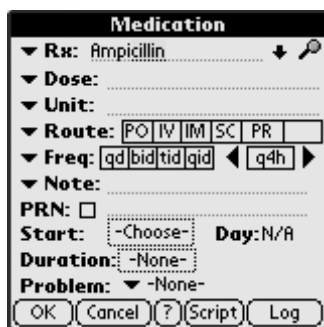
Figure 5.37. RxKeeper: Adding meds. Note the magnifying glass in the upper right. Use that to get to the macro (see Figure 5.39). (Reprinted with permission from patientKeeper, Inc.)

Figure 5.38. RxKeeper: Pull-down menus of common meds. (Reprinted with permission from patientKeeper, Inc.)

Adding New Meds

To add a new med, tap "New Med," and an edit screen appears. Patient-Keeper has a great database of medications. As you type, several medication names will try to fill in your Rx field. Just typing "Amp" gets you Ampicillin (Figure 5.37). There is a drop-down menu as well for common meds (Figure 5.38). From the medication edit screen, a searchable macro is accessed from the magnifying glass at the upper right. Enter the med name to access the alphabetical list (Figure 5.39a). This is a handy dosing guide for many common medications. You cannot add medications to the list, but you can alter the dosing regimen to suit your style. Let's say you generally order acetaminophen as a PRN for patients. Under the standard listing, the dose is 325 mg. To change this to 650 mg, go to the macro (see Figure 5.39a), and select acetaminophen. Acetaminophen will appear in the medication screen; from here, tap the menu button. Select "Update Current Med Macro" (Figure 5.39b). You then get a screen of categories to choose from that you can edit (Figure 5.39c). Select PRNs, Tylenol (Figure 5.39d). The screen will revert to the Medication screen; type in the dose you prefer in the highlighted dose field (Figure 5.40) and this will be saved as your new acetaminophen PRN dose.

Deleting a Med

Delete a current medication by selecting "Delete Med Record" from the screen in Figure 5.39b. The program will ask you to confirm the deletion (Figure 5.41).

FIGURE 5.39a. RxKeeper: Search medications with a dosing guideline. (Reprinted with permission from patient-Keeper, Inc.)

FIGURE 5.39b. RxKeeper: Select Update Med Macro. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.39c. RxKeeper: Update Med Macro. Customize PRN order set. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.39d. RxKeeper: Update Med Macro. Choose PRNs. (Reprinted with permission from patientKeeper, Inc.)
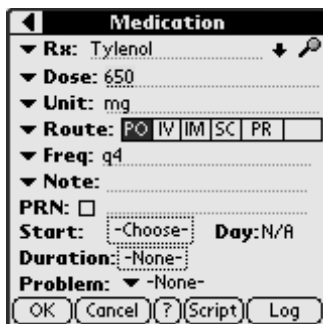

FIGURE 5.40. RxKeeper: Screen reverts to Medication screen. Customize highlighted dose. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.41. RxKeeper: Delete med from Macro. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.42. RxKeeper: Event log for medications. Access using the Log icon in the lower right of the Medication edit screen. (Reprinted with permission from patient-Keeper, Inc.)

FIGURE 5.43. RxKeeper: Medication Log screen. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.44. RxKeeper: Prescription feature. (Reprinted with permission from patient-Keeper, Inc.)

FIGURE 5.45. RxKeeper: Event log of an Rx dispensation. (Reprinted with permission from patientKeeper, Inc.)

Event Recording

RxKeeper also has a log feature to record events such as prescription dispensation or hold times (Figures 5.42, 5.43). The prescription feature (Figure 5.44) lets you record when you've given a prescription to a patient. It then automatically stores this as an event (Figure 5.45).

HANDS-ON EXERCISE 5.7. VITALSKEEPER

Although most practicing physicians rely on bedside charts and nurse's reports for vital signs, hark back to your days as a medical student when not having the excruciating details of each and every vital would be your downfall during "Dr. Jones-the-nasty-attending-pimping-rounds."

FIGURE 5.46. VitalsKeeper.
(Reprinted with permission
from patientKeeper, Inc.)

Although you may not want to hand enter vitals in the program, synchronizing with a hospital information system to get this information is possible. Recording vitals for your patients in this program serves many functions. Once this information is stored, it can be accessed by the notewriting program and directly linked to your text.

Getting There

The data entry page is found after tapping the "New" icon. From the main vitals screen, the date and data can be accessed by scrolling with the arrows (Figure 5.46).

Recording Vitals

Tap "New" in the VitalsKeeper main module screen (Figure 5.47), or tap on a recorded item to edit it in the "Detail" view (Figure 5.48).

FIGURE 5.47. Scroll with the
arrows in VitalsKeeper.
(Reprinted with permission
from patientKeeper, Inc.)

FIGURE 5.48. VitalsKeeper:
Edit in the Detail View.
(Reprinted with permission
from patientKeeper, Inc.)

HANDS-ON EXERCISE 5.8. LABKEEPER: HAVING FUN BEING A GEEK

Similar to VitalsKeeper, this is one feature that will certainly delight the most obsessive-compulsive medical students. Of course, if these data were uploaded automatically, any physician would welcome it with open arms.

In the LabKeeper module, patient labs can be entered into standardized panels, which are then displayed by date from the main screen of the module. Once again, the information from this module will be accessible for the note-writing function, so you never have to write things twice!

Getting There

From the mPI, access LabKeeper from the pull-down menu. In the main screen, labs can be viewed in simple list form (Figure 5.49), or a more detailed view can be accessed from this screen (Figure 5.50). This is a feature similar to the DxKeeper main screen. To toggle between these, simply click the box in the lower-left corner of the screen (Figure 5.50).

New Patient Entry

Data entry is very straightforward. From the New Panel pulldown in the main screen of LabKeeper, select the type of lab to be added (Figure 5.51). Enter the data either by tapping on the part of the stick diagram where the information goes or by using the written prompts (Figure 5.52). Once entry is complete, click "Done" to return to the main screen.

FIGURE 5.49. LabKeeper: Main module screen. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.50. Details View of LabKeeper. Toggle using the icon in the lower left corner of the screen. (Reprinted with permission from patient-Keeper, Inc.)

FIGURE 5.51. LabKeeper: Add a new lab. (Reprinted with permission from patient-Keeper, Inc.)

FIGURE 5.52. LabKeeper: Enter lab values on the stick figure or on the line. (Reprinted with permission from patientKeeper, Inc.)

Editing Patient Data

Once data are recorded, editing is possible by selecting the lab to be edited from the main LabKeeper screen. Once you are in the panel view, click on the pencil icon at the bottom of the screen (Figure 5.53) so that the red line is not apparent in the box; this transforms the lab from a read-only screen to one that can be edited.

Highlighting Important Labs

While still in the panel view, you can highlight or annotate labs that will make it obvious in the main LabKeeper screen. To do this, you can't be in edit mode, so make sure that the pencil icon at the bottom of the screen has the red line through it. From the Panel view, click on the result you want to highlight (Figure 5.54); this will take you to a *Result* page in which you
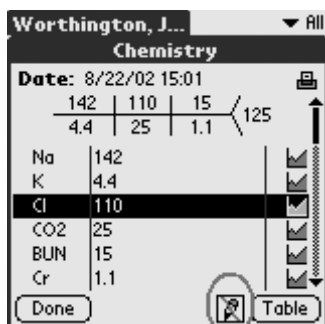

FIGURE 5.53. LabKeeper: Pencil icon. Change from read-only to edit mode. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.54. LabKeeper: Flagging important labs by highlighting the lab. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.55. LabKeeper: Click on the flag to mark it as important. (Reprinted with permission from patient-Keeper, Inc.)
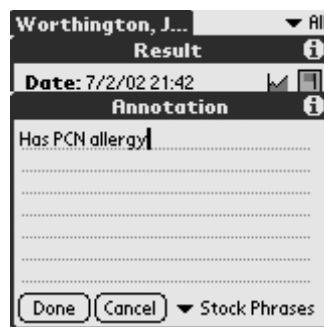

FIGURE 5.56. LabKeeper: Use the annotation pulldown to make notes. (Reprinted with permission from patient-Keeper, Inc.)

can click on the flag to note importance, or use the pulldown at the bottom to enter any pertinent data (Figures 5.55, 5.56). Any lab highlighted as important will then move to the top of the list (Figure 5.57).

Deleting Patient Data

Labs are also deleted from the panel view. Click on the menu button (Figure 5.58) to a pulldown where you can select *Delete Panel*.

Graphing Patient Data

This module's most respectable feature is graphing, but it also has a table form for those of you who remain unimpressed. Can you believe it? You can look at the sodium rise and fall in fantastic detail. To use the graphing
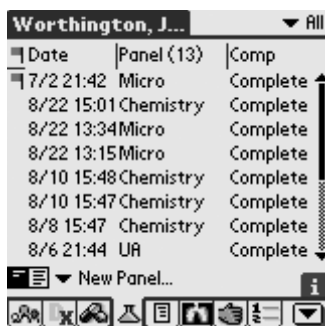

FIGURE 5.57. LabKeeper: Main screen view with important lab flagged. (Reprinted with permission from patient-Keeper, Inc.)
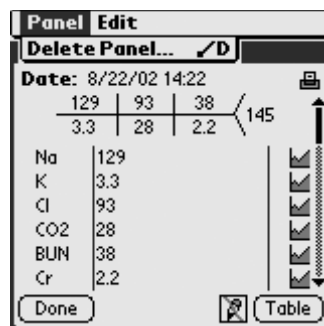

FIGURE 5.58. LabKeeper: Delete a lab from the list. (Reprinted with permission from patientKeeper, Inc.)
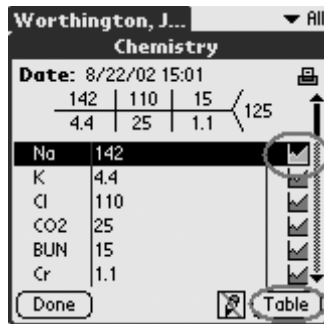
FIGURE 5.59. LabKeeper: Graph icon (upper circle) accesses graphing function, or click on Table to view table form (lower circle). (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.60. LabKeeper: Access graphing function from individual result view. (Reprinted with permission from patientKeeper, Inc.)
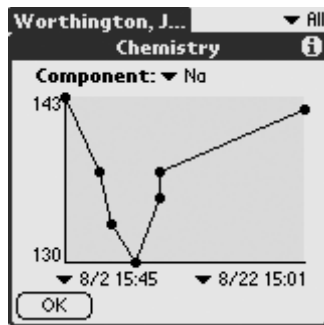

FIGURE 5.61. LabKeeper: Graph view. (Reprinted with permission from patient-Keeper, Inc.)
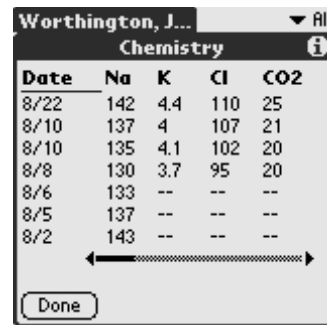

FIGURE 5.62. LabKeeper: Table view. (Reprinted with permission from patient-Keeper, Inc.)

function, click on the graph icon from the panel view (Figure 5.59). You can also view the graphing feature by clicking on the result itself (the same page where you can highlight information and make annotations) (Figure 5.60). Finally, the graph is booted up and Voila! Impressive, eh? (Figure 5.61). Table view, accessed from the panel view, will load a table with dates and results (Figure 5.62). Even the "infogeeks" are impressed now, right?

Printing Patient Data

Print individual labs from the printer icon in the upper right of the panels.
By now, all your colleagues may think you've been reduced to a giddy hand-held computer-addicted fiend, but wait until they see these other features!

FIGURE 5.63. Procedure-
Keeper: Access from the mPI
pulldown. (Reprinted with
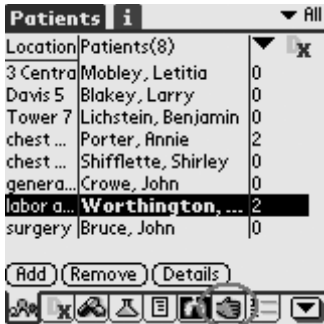permission from patient-
Keeper, Inc.)

FIGURE 5.64. Access Proce-
dureKeeper from the Toolbar.
(Reprinted with permission
from patientKeeper, Inc.)

HANDS-ON EXERCISE 5.9. PROCEDUREKEEPER

ProcedureKeeper is a really useful module for those of you who need to
keep track of your procedures. It is customizable and can store a lot of detail.

Getting There

Access ProcedureKeeper from the mPI screen (Figure 5.63). Alternatively,
select it from the Toolbar at the bottom of the screen (Figure 5.64).

Customizing

From the main screen of ProcedureKeeper, tap "New," and select "Edit
Procs." (Figure 5.65). Tap "New," and use the free text entry line to enter
the procedure (Figure 5.66). Tap "Add," and then you will be asked to enter

FIGURE 5.65. Procedure-
Keeper: To Edit Procedures
from the main screen, tap
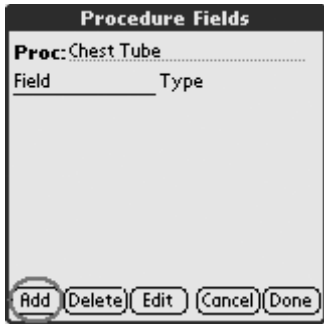"New." (Reprinted with per-
mission from patientKeeper,
Inc.)

FIGURE 5.66. Procedure-
Keeper: Use "Add" enter a
new procedure in the Proc.
Field. (Reprinted with permis-
sion from patientKeeper, Inc.)

FIGURE 5.67. Procedure-Keeper: Enter Fields regarding procedure that you want to track. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.68. Procedure-Keeper: Also track numeric fields. (Reprinted with permission from patientKeeper, Inc.)

a field, which is any information about the procedure that you wish to record, such as Attending physician, which is a Text entry (Figure 5.67), or Date, which is a Numeric entry (Figure 5.68). Although you are editing your procedure list within an individual patient area, the list is available for any patient in your census.

Entering Procedures

Once you have entered your procedures and fields, select the patient for whom you will record a procedure. Tap "New," and select the procedure you've done. The screen will then come up with the name of the procedure and the fields that you already entered (Figure 5.69). From here, you can either manually enter data in a free text screen, by tapping the + sign to the right of the center column, or you can access a Hierarchical Picker and enter

FIGURE 5.69. ProcedureKeeper: Screen view of the newly entered procedure. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.70. Procedure-
Keeper: Tap Summary to
enter details of the procedure
in a Hierarchical Picker.
(Reprinted with permission
from patientKeeper, Inc.)

FIGURE 5.71. Procedure-
Keeper: Delete a procedure.
(Reprinted with permission
from patientKeeper, Inc.)

common themes (Figure 5.70). See the tutorial for the Hierarchical Picker
(Hands-on Exercise 5.2) for more information.

Deleting Procedures

Delete a procedure from the patient's list by selecting it from the main
screen in ProcedureKeeper. Tap the Menu pulldown, then choose "Delete
Record" (Figure 5.71).

TestKeeper

TestKeeper is straightforward and allows you to input data that can be
viewed in list format with a brief summary of results. It can also be linked
to your notes.

Getting There

Select from the mPI toolbar or the pulldown menu to the bottom right of
the mPI screen (Figure 5.72).

Customizing Tests

Select "New" from the main TestKeeper screen, and then select "Edit Tests"
(Figure 5.73). In the Tests screen, you can add a new test and specify other
fields of information pertinent to that test.

FIGURE 5.72. TestKeeper: Access from the mPI pull-down. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.73. TestKeeper: Edit a test. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.74. TestKeeper: Add a new test and access the drawing feature. (Reprinted with permission from patient-Keeper, Inc.)
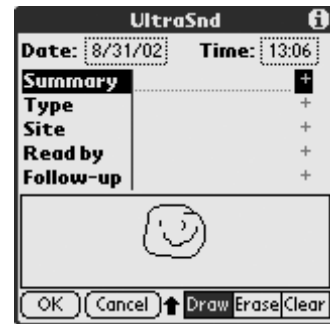

FIGURE 5.75. TestKeeper: Use the drawing feature. (Reprinted with permission from patientKeeper, Inc.)

Adding Tests

From the main module screen of TestKeeper, select "New," and then pick a test from the pull-down menu (Figure 5.74). What follows is another of those features in this software that will delight the gadget geeks: the drawing feature (Figure 5.75).

Power Users Tip

Remember that as in the ProcedureKeeper module, once the Test is added, there will be a Summary field with a Hierarchical Picker in which you can enter other data. For instance, if a V/Q scan is ordered, in the Edit mode,

you enter Probability, and then in the Summary Hierarchical Picker, enter Low, Intermediate, or High (see the tutorial on Hierarchical Pickers earlier in this chapter).

HANDS-ON EXERCISE 5.10. NOTEKEEPER: GETTING THE MOST OUT OF DOING THE LEAST

Notes in PatientKeeper are combinations of pull-down menus and free text entry that can make quick work of admission and SOAP note writing once you've customized your data sets. All the data entered in other modules can be accessed from the NoteKeeper for your notes by using links. Your free text entry can be augmented by Qbuttons, which are customizable text buttons that allow common word entry by a simple tap of a button.

Getting There

From the mPI, access the NoteKeeper from the icon (Figure 5.76).

Editing Note Types

From the main screen in NoteKeeper, you can create and delete note types by using the Menu button on your Palm (Figures 5.77, 5.78). The program comes with the standard note types: Admit, H&P, and Progress Note. Depending on your practice, you can make detailed note types with links to data that are very specific to your work. (See the following step-by-step explanation.)

Getting back to our patient Sally "I-think-I'm-in-labor-again" Smith, let's make a note format for her admission. From the main NoteKeeper page, tap the Menu pulldown. Select "Edit Note Types" under Options. A list of current note types is shown; to add a note, choose "Add" (see Figure 5.78).

FIGURE 5.76. NoteKeeper: Access from the mPI Toolbar. (Reprinted with permission from patientKeeper, Inc.)
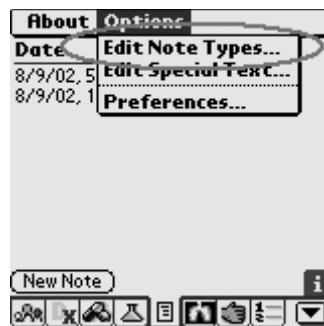
FIGURE 5.77. NoteKeeper: Access the Edit Note Types feature. (Reprinted with permission from patientKeeper, Inc.)
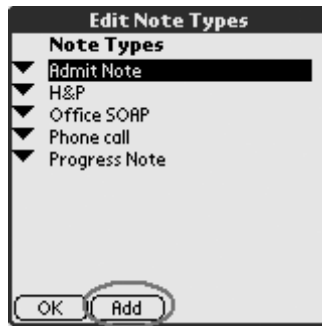
FIGURE 5.78. NoteKeeper: Select "Add" to make a new note type. (Reprinted with permission from patient-Keeper, Inc.)
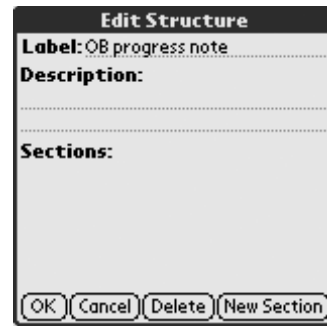

FIGURE 5.79. Edit Structure: Making a new note type. (Reprinted with permission from patientKeeper, Inc.)

An "Edit Structure" screen appears, and you can choose the note type you want to make. We're making an OB progress note (Figure 5.79). For this note type, we use the basic SOAP format (Figure 5.80) but tailor it to laboring OB patients. Under Subjective, we've typed in a thumbnail of the patient (Figure 5.81). For each section, we can customize the prompts that will show up in the NoteKeeper view.

Writing Notes

Now, let's see how it looks as we use the template for Sally's admission. From the Note Type pull-down menu, select "OB progress note" (Figure 5.82). It then starts with the first section that you entered in the note you created (Figure 5.83). You can then manually insert her age and weeks of
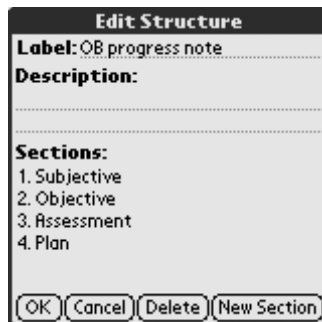

FIGURE 5.80. Edit Structure: Add new sections and customize the wording. (Reprinted with permission from patientKeeper, Inc.)
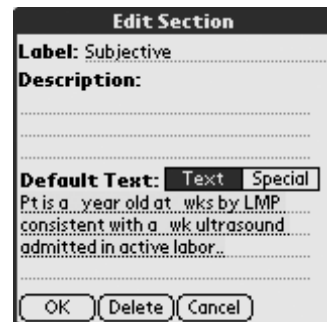

FIGURE 5.81. Edit Structure: Customize the default text. (Reprinted with permission from patientKeeper, Inc.)

Worthington, J...	
Date	**Note Type**
8/9/02, 5:55 pm	Admit Note
8/9/02, 11:39 pm	Progress Note

Choos...
Note Type:
Date:
Time:
OK   Can...

Admit Note
H&P
OB progress note
Office SOAP
Phone call
Progress Note
Edit...

FIGURE 5.82. Writing notes: Choose the new note type from the New Note menu pulldown. (Reprinted with permission from patient-Keeper, Inc.)

OB progress note: 8/10/02
Section: ◀ ▼ Subjective ▶
Pt is a 36 year old at 40wks by
LMP consistent with a 20 wk
ultrasound admitted in active
labor..

Done   ▼ Insert Text   🖴 Details

FIGURE 5.83. Writing notes: See your default text and fill in the blanks. (Reprinted with permission from patient-Keeper, Inc.)

OB progress note: 6/3/02
Section: ◀ ▼ Progress reco ◀▶
Active fetal movement
Contractions
Edema
Fetal heart tones
Cervical exam
Blood pressure
Urine

Done   ▼ Insert Text   🖴 Details

FIGURE 5.84. Writing notes: For next section, use the arrows to advance. (Reprinted with permission from patient-Keeper, Inc.)

gestation. By tapping the arrow in the upper right, corner of the screen you advance to the next section (Figure 5.84). In this screen, you can use Qbuttons to speed up the text entry. These are the fields at the bottom of the page that can be modified. For instance, you can set up your QButtons so that to say "Mrs. S is a 39 yo WF admitted in active labor" you only need to write in the name and age, and tap QButtons for the rest. If you can master the Special Text feature, you don't even need to do that!

Editing Qbuttons

Starting from the template for an Admit Note, access the Qbutton edit screen from the section page (e.g., progress record) where you want the specific information (Figure 5.85). For Sally Smith and other OB patients, your

Options **Edit** **About**
Edit QButtons... ress record ▶
Export to Memo t
Contractions
Edema
Fetal heart tones
Cervical exam
Blood pressure
Urine

Done   ▼ Insert Text   🖴 Details

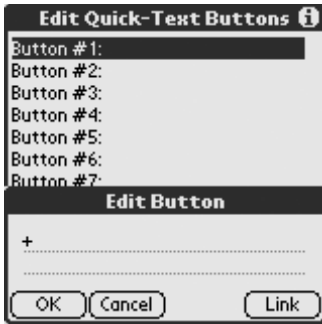FIGURE 5.85. Edit Qbuttons. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.86a. Edit Qbuttons: Enter free text for Button #1. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.86b. Edit Qbuttons: Customize your text to speed data entry. (Reprinted with permission from patient-Keeper, Inc.)

FIGURE 5.87. Edit Qbuttons: Main screen view of Qbutton text. (Reprinted with permission from patientKeeper, Inc.)

QButton set can really make short work of note writing. Up to 11 Qbuttons per page (i.e., Subjective, Objective . . .) can house short bursts of text. Select "Button #1," and an Edit Button screen (Figure 5.86a) appears. Put a "+" in, which can then be inserted into the programmed text of the section (Figures 5.86b, 5.87).

Advanced Programming

You'll note that in the Edit Qbutton screen there is an icon for inserting a Link. To access this feature, go back to the main screen of NoteKeeper and use the menu pulldown to change your preferences (Figure 5.88). Select "Advanced Mode" to insert links from other modules into your notes (Figure 5.89).

FIGURE 5.88. Preferences: Go to advanced programming to add links to other modules. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.89. Preferences: Check Advanced Mode. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.90. Qbutton link: Pick the test. (Reprinted with permission from patient-Keeper, Inc.)

FIGURE 5.91. Qbutton link: Appearance in the text. (Reprinted with permission from patient-Keeper, Inc.)

Link to other modules now that you're in Advanced Mode so that information stored there can be easily and automatically inserted into your notes. In the Edit Qbutton mode, the link to the right of the screen allows you to select the module from which you want to link information. In our case we want to link to an ultrasound, so we select the test we want inserted into the text (Figure 5.90), and when the QButton is selected again, it inserts the summary of the test as well as when it was performed into the body of the text (Figure 5.91).

Power Users Tip

Leave a space before or after the Qbutton text to avoid having to put it in yourself as you enter data.

Inserting Text

At the bottom of the section screens, you have an opportunity to build an Hierarchical Picker. (See Hands-on Exercise 5.2 on the Hierarchical Picker, earlier in this chapter.) Click on "Insert Text," then "Edit," and use the "trees" to input information that you anticipate frequently entering.

Special Text

This is a way to link other data such as first and last name, age, gender, and billing information to Qbuttons, not just items in the modules. In the Edit Qbutton screen, select "Link" (Figure 5.92), and from the pull-down menu, choose "Edit." In the "Edit Special Text" screen, now you can enter information about fields you normally track (Figure 5.93a). In this instance, these are fields that will automatically appear in the note that you are making: age in years, gender, and reason for visit. Let's add to the preset fields a link for other diagnoses. Tap ⟨LINK⟩, which will add a link to the data (Figure 5.93b). Go to "Edit Links" in the bottom right of the screen (Figure 5.93c). Link #4 is undefined. By highlighting Link #4, you are asked to "Select Message Type" (Figure 5.93d). This gets a little complex, so hold on to your stylus! The modules contain four types of data.

1. Snippets are messages that are unchanging values for a given patient in this recorded event, such as first name, last name, age, gender. Links 1 through 3 are snippets.
2. Get Data messages come from ancillary data collected in the modules, such as tests, labs, and diagnoses.
3. Embedded modules allow you to type a new value into the note body, which will then appear in the module that you linked to, such as a new diagnosis that then ends up in DiagnosisKeeper as well.

FIGURE 5.92. Edit Special Text: Get there via the link in Edit QButtons. (Reprinted with permission from patient-Keeper, Inc.)
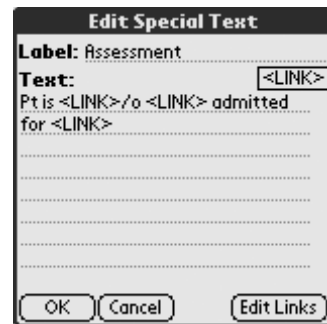
FIGURE 5.93a. Edit Special Text: Click Edit Links to customize. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.93b. Edit Special Text: Click <LINK> to add a link. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.93c. Edit Special Text: Preset fields. (Reprinted with permission from patient-Keeper, Inc.)

4. Summary Info is printable information that will be used by other programs.

For the preset fields, the messages should already be set. In the link we are creating. Let's use a *Get Data* message that links additional diagnoses to the patient's assessment (Figure 5.93e). This takes you to a screen where you use the pull-down menu to access the module to which you want to link (Figure 5.93f). Select DxKeeper, then Selected Diagnoses. After this, you end up in the Special Text Links page again, where Link #4 shows that it is "Select Diagnoses" (Figure 5.94).

FIGURE 5.93d. Edit Special Text: Select Message Type. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.93e. Edit Special Text: After choosing Get Data, select module from which to link information. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.93f. Edit Special Text: Pull-down menu for options from which to link information. (Reprinted with permission from patient-Keeper, Inc.)
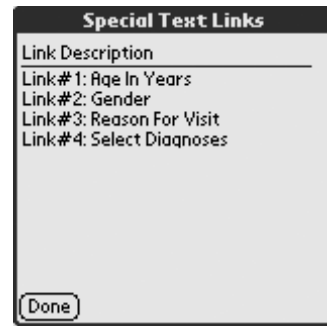

FIGURE 5.94. Edit Special Text: Link #4 is now set for Select Diagnoses. (Reprinted with permission from patient-Keeper, Inc.)

HANDS-ON EXERCISE 5.11. BEAM ME UP!

Getting and giving sign-out has never been easier or more confidential using the beaming function on your Palm! No more papers to get lost, no more wasted time looking for the shredder. This feature allows your Palm to "talk" to another one equipped with the current PatientKeeper program and get its data. When you beam, you have the option of sending or receiving lists, small groups or individual patients, and then merging data to update patient progress. With your infrared (IR) port, you can directly beam to a printer if your institution has that capacity.

Getting There

From the mobile patient index (mPI), access the beaming feature from the menu pulldown (circle, Figure 5.95).
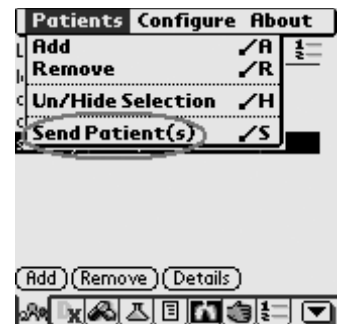

FIGURE 5.95. Send Patients: Menu pull-down. (Reprinted with permission from patient-Keeper, Inc.)
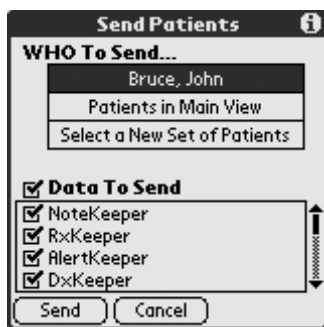
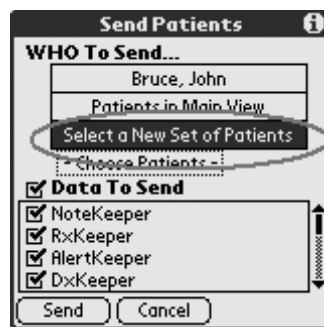FIGURE 5.96. Send Patients: WHO To Send. (Reprinted with permission from patient-Keeper, Inc.)

FIGURE 5.97. Send Patients: Select a new patient to send. (Reprinted with permission from patientKeeper, Inc.)

Sending Patients

In sending patients, you have several options. First, make sure the recipient is using the same version of PatientKeeper. Line up your IR ports. Access the Send Patient(s) icon from the pull-down menu (see Figure 5.95). When you tap this icon, you are presented with a screen giving you several options (Figure 5.96). Send a single patient by selecting that person in the main mPI screen before pulling down the Send Patient(s) icon. It will then be in the top window of the selections of "WHO To Send." Alternatively, send all the patients in your mPI screen by selecting "Patients in Main View," or select individual patients by tapping on "Select a New Set of Patients" (Figure 5.97). Select the box to send those patients (Figure 5.98), or use a filter to select patients based on properties that you choose (Figure 5.99).

FIGURE 5.98. Send Patients: Choose by box, or use a filter. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.99. Filter patients: Use the filters you designated when you entered raw patient data. (Reprinted with permission from patientKeeper, Inc.)
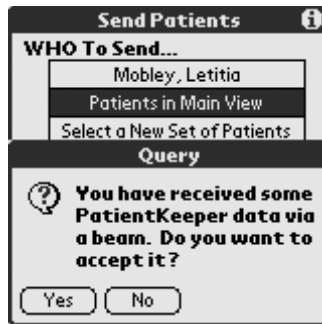
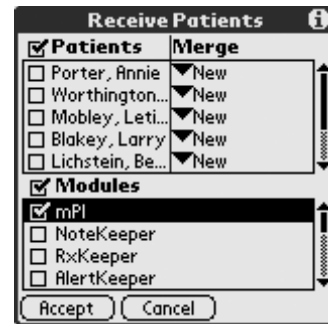FIGURE 5.100. Receiving Patients: Accept prompt. (Reprinted with permission from patientKeeper, Inc.)

FIGURE 5.101. Receive Patients: Select information to be received. (Reprinted with permission from patient-Keeper, Inc.)

Receiving Patients

To get a patient summary from another user, line up your IR ports, and let the Palm handhelds "shake hands." It takes a few seconds to organize the data, and then your screen will "Query" you about accepting the information (Figure 5.100). Accept the patients, and you will see a screen that lets you choose which patients you want and what information regarding each one you wish to store (Figure 5.101). There are three ways of accepting data: New, Update, and Data-Only (Figure 5.102). For the New option, if you already have a patient in your list by the same name, selecting New patient will put that patient on your list twice. In Update mode, the information in the mPI screen will be changed in addition to the information from the individual modules that are selected. In Data-Only, only the information from the individual modules will be added.
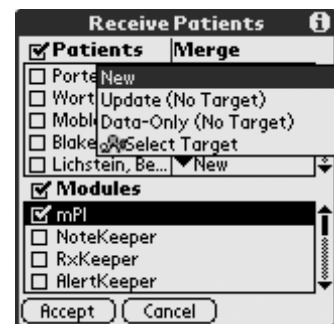

FIGURE 5.102. Receive Patients: Select mode of accepting data. (Reprinted with permission from patientKeeper, Inc.)

Pocket PC Software

The offerings for Pocket PC's, although fewer in number, are very similar. There are a few listings here with regard to patient records software. Now that you've worked your way through PatientKeeper, these other programs will be a snap. If you have a Pocket PC, many of the documents for Palm software can also be read by the Pocket PC by purchasing some additional software. Peacemaker is a program that allows you to transmit documents between a Palm OS and Pocket PC unit fairly seamlessly. Unfortunately, the programs themselves cannot be translated yet. HanDBase, one of the database template-type programs, is available on both the Palm OS and Pocket PC platforms, and other ready-made software for both platforms is increasingly available (see Table 5.1). Other software available for Pocket PC includes Quick Rounds, Noteworthy Clinical Companion 2.2, and

FIGURE 5.103. DOXUITE program. Quick text buttons prompt data entry. (Reprinted with permission from Cross Enterprises ON-CALL, INC.)

FIGURE 5.104. DOXUITE program. Data entry fields are shown. (Reprinted with permission from Cross Enterprises, ON-CALL, INC.)

DOXUITE. We'll look at a few screens of two of these programs so you can see how they function.

DOXUITE

DOXUITE is a collection of programs that links an information input program with a calculator and print-friendly module. The text is prompted by quick buttons of broad-ranging text, which you can then edit (Figure 5.103). Included are all the general components of a history, physical, labs, and notes (Figure 5.104). It has numbered fields that you can customize to the right of the screen (see Figure 5.103).

Quick Rounds

Quick Rounds completes the field as an abbreviated program that lists patient names and diagnoses (Figure 5.105), with an ICD-9 field and several
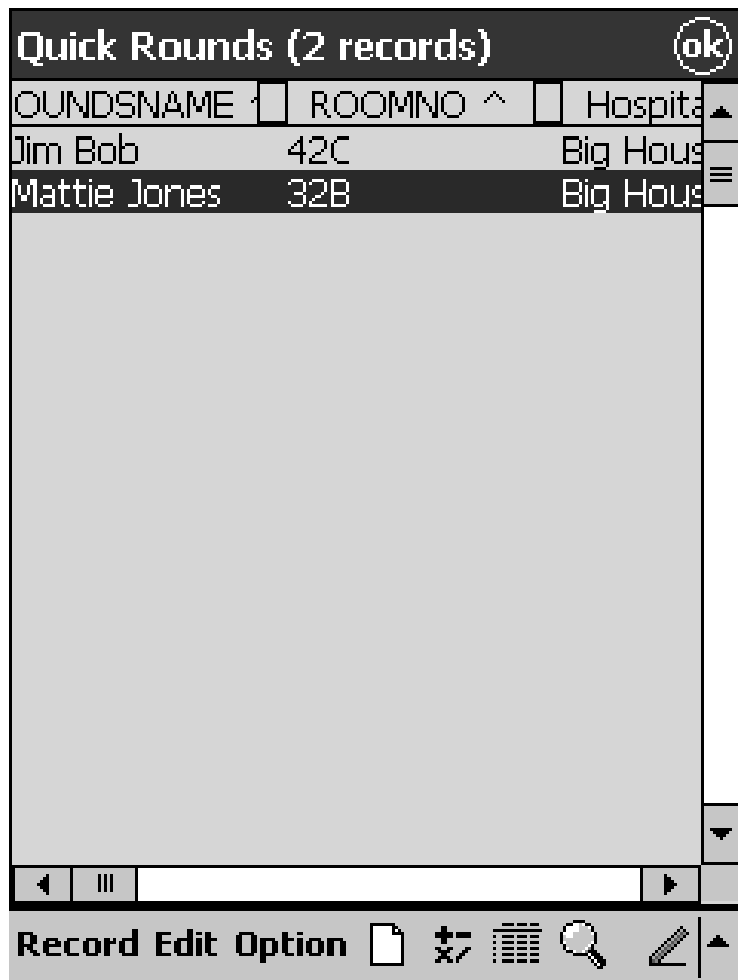
FIGURE 5.105. Quick Rounds PC program. Patient list screen with filters. (Reprinted with permission from SuiteMD)

FIGURE 5.106. Quick Rounds PC program. Pull-down menus grow as you use it more. (Reprinted with permission from SuiteMD)

other fields that you can customize. It has a handy toolbar with search functions and easy new patient entry. When you enter data, the pull-down menu remembers what you've entered before, making data entry faster as you use it more (Figure 5.106).

Spend some time doing demos from these and other types of programs to see which one suits your needs, and then stop wasting all that paper and time as you begin rounding with your handheld!

Summary

Well, now you have it. . . . You can finally get rid of those pesky index cards and start doing all your patient tracking on a handheld computer. In this chapter, we talked about the various options available for patient tracking and showed you how to use one of them in great detail. Then, we showed you patient trackers available for Pocket PC's, and also an example of a simple patient tracker that could be used on both Palm and Pocket PC platforms (using HanDBase).