



# The National Drug Information Center

A project of the Department of Health – Bureau of Food and Drugs and the World Health Organization in collaboration with the Department of Pharmacology, College of Medicine, University of the Philippines Manila

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## ELECTRONIC PPDF USER'S GUIDE

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## I. Introduction

### a. What is the electronic PNDF?

The electronic PNDF is a software application or program designed to run on handheld computers (also called personal digital assistants or PDAs) operating under the Palm OS. It contains the information obtained from the printed version of the Philippine National Drug Formulary 5<sup>th</sup> edition and allows the user to retrieve and display it on the screen of a PDA.

The electronic PNDF is the product of a research project entitled “*A Survey of Physicians’ Experience Using an Electronic Version of the Philippine National Drug Formulary (PNDF) for Handheld Computers*”. The project is being conducted by a team of investigators from the National Drug Information Center and the Medical Informatics Unit of the University of the Philippines Manila College of Medicine with the support of the National Institutes of Health. The aim of the study is to determine if an electronic version of the PNDF developed by the investigators would be functional and have a positive impact on physician behavior for information-seeking and decision-making, his efficiency in conducting his practice, as well as on overall patient care. Data would be obtained from a cross-sectional survey on medical students and physicians who are already familiar with the operation of handheld computers running under the Palm OS platform after using a beta-version of the program. This data will then be used to further enhance the electronic PNDF software program.

Ultimately, the electronic PNDF project aims to provide adequate, up-to-date and easy-to-use drug information for physicians and other health professionals. A recent study presented to the American Medical Informatics Association revealed that the use of a drug information database for handheld computers running the Palm OS could result in a significantly lesser number of medication errors committed by physicians. The electronic PNDF, which currently provides the routes of administration and formulation of essential drugs, can possibly prevent medication errors if it also contained additional drug information such as dosages and adverse effects. Other data that would also most likely be helpful are brand names and retail prices. Future versions of the software program are now being designed to address these identified needs.

## II. System requirements

### **Palm OS – based handheld device or personal digital assistant (PDA) with:**

- version 3.x of the Palm OS
- at least 500 kilobytes (500K) of free memory

### **Personal computer with:**

- email and web access
- web browser that supports cookies (Internet Explorer, Navigator, Opera, etc.)
- Palm Desktop software

## III. Disclaimer

Before using the product, please read the following disclaimers:

If you have any suggestions about this product or questions about the clinical content in this application, please write us at [destrada@cm.upm.edu.ph](mailto:destrada@cm.upm.edu.ph)

The investigators do not assume, and expressly disclaim, any obligation for misuse of a product due to typographical or other errors in the drug database, user negligence or otherwise.

The user agrees to use the electronic PNDF only as a reference aid, and that such information is not intended to be (nor should it be used as) a substitute for the exercise of professional judgment. In view of the possibility of human error or changes in medical science, the user should confirm information in the drug database through independent sources.

The user further agrees and acknowledges that he shall at all times advise patients to seek professional diagnosis and treatment for any medical condition and to discuss information obtained from the electronic PNDF with other healthcare providers.

This software is provided without warranties of any kind, expressed or implied, and the authors disclaim any liability, loss, or damage caused by its contents.

If you do not wish to be bound by the foregoing cautions and conditions, you may refrain from using the application at this time. By continuing to use the application, you indicate your acceptance of these terms.

#### IV. Copyright

Data included in the electronic PNDF software program was derived from the 5<sup>th</sup> edition of the Philippine National Drug Formulary (PNDF) Essential Drugs List, with the expressed written consent of the Philippine Department of Health who holds the copyright for the formulary.

The source code for the electronic PNDF program remains the sole copyright of the developer, Eric Pareja.

Palm, Palm Desktop, and Palm OS are registered trademarks of Palm Corporation. The investigators as well as the institutions that they represent are not in any way affiliated with the Palm Corporation.

#### V. Installation

Upon successfully downloading the PNDF executable zipfile – pndf.exe, copy it into any directory or folder and execute the program. Two files will be extracted into that folder:

- **PNDF-PDA.prc**
- **Core-PNDF.pdb**

Remember the directory or folder where these two files are located.

To install the electronic PNDF on your handheld device, you will need to use the install feature of the Palm Desktop software, which is provided with your handheld device.

**a. Palm Desktop installation procedure:**

1. Open the Palm Desktop application on your PC.
2. Click on the “Install” icon located in the left sidebar (See figure 1).

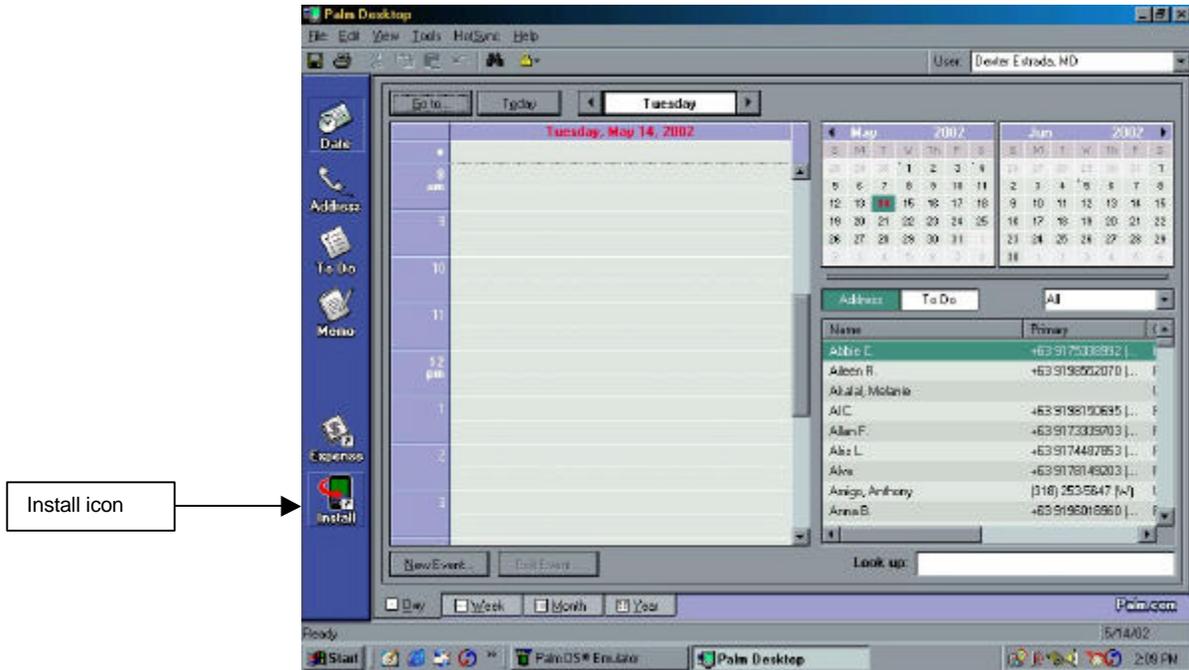


Figure 1. Palm desktop window showing install icon

3. In the “Install Tool” window, choose the user to whom the handheld device is registered.
4. Click on the “Add” button (See figure 2).

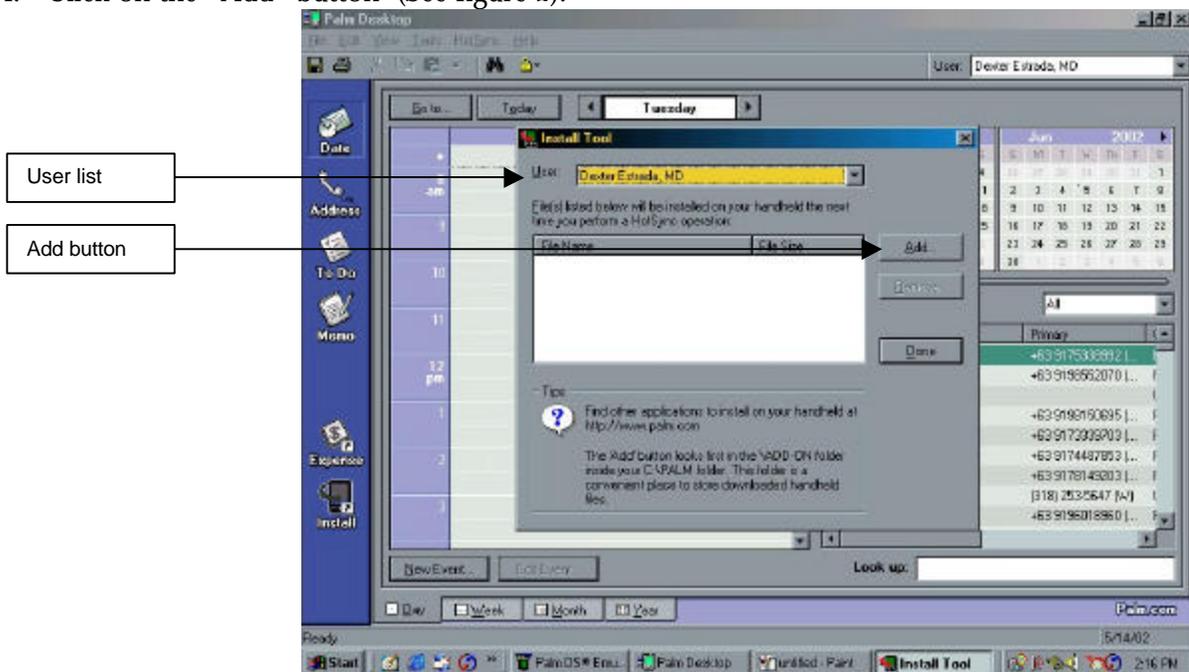


Figure 2. Install Tool window

5. Locate the two files that were extracted previously (PNDF-PDA.prc, Core-PNDF.pdb) by clicking on the “Look in:” drop down list and browsing in the appropriate directory or folder (See figure 3).
6. Once you have located the two files, select them both by clicking on their filenames while holding down the “Ctrl” key. Make sure that both filenames are highlighted (See figure 3).
7. Click on the “Open” button and wait for the window to close.

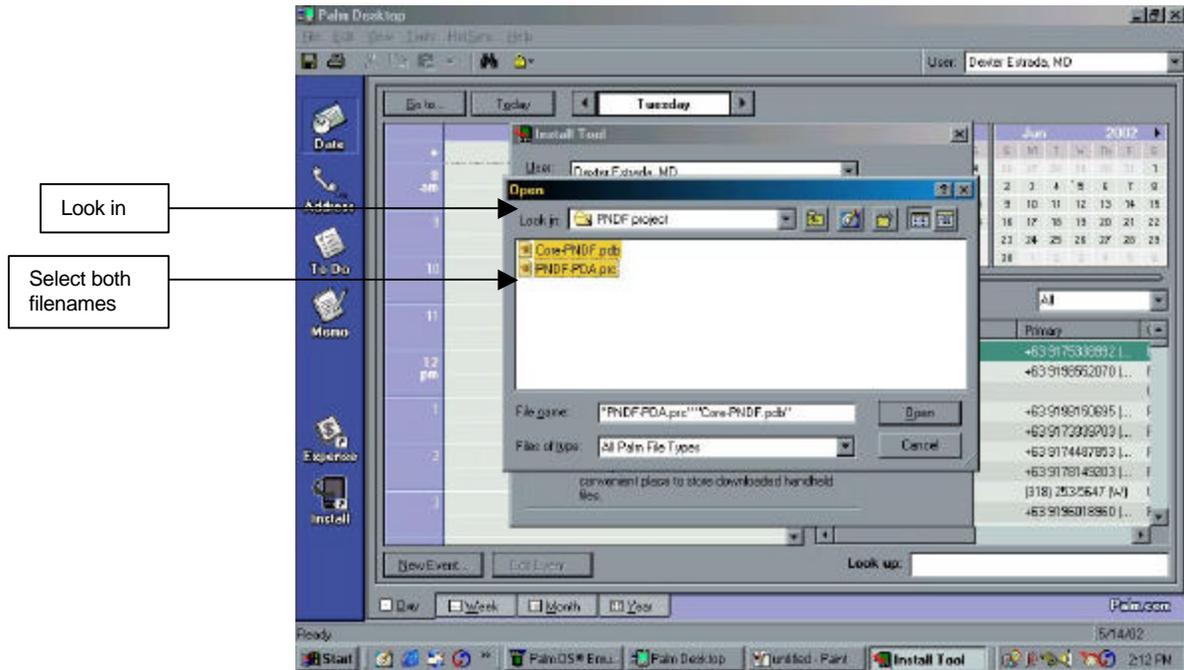


Figure 3. Select both files in the folder or directory where they were extracted

8. Click on the “Done” button. A message will appear onscreen informing you that the programs will be installed upon your next Hotsync (See figure 4).

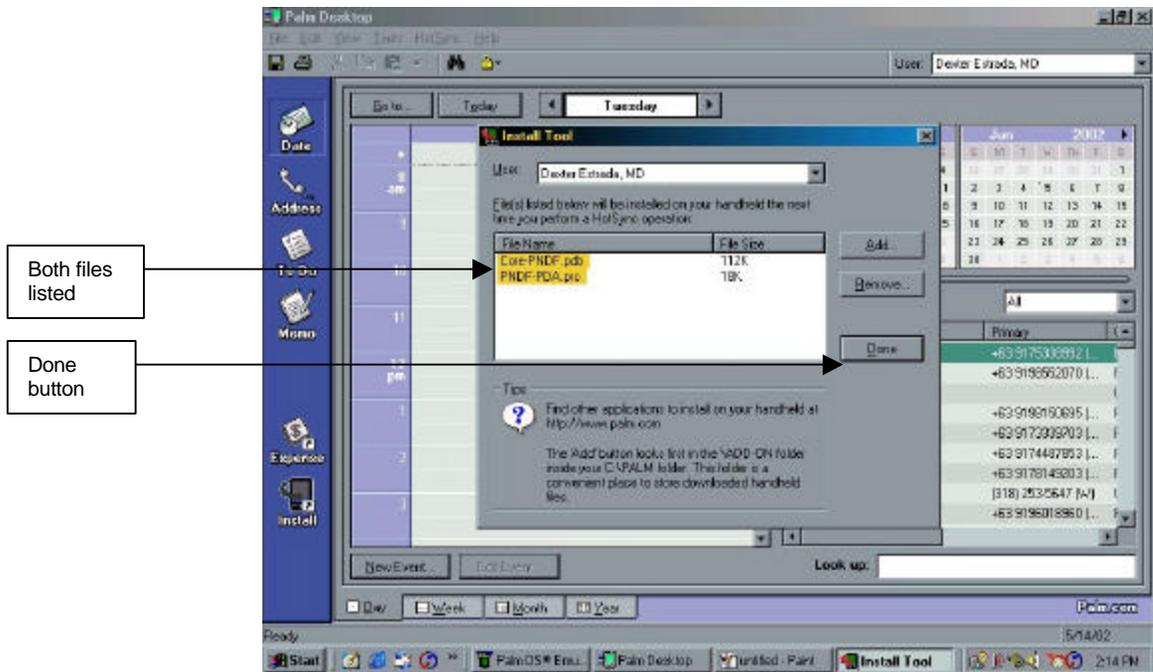


Figure 4. Install Tool window showing both files selected

9. Perform a regular Hotsync of your handheld device.
10. After the Hotsync operation, you should see an icon shaped like a capsule in your handheld device with the label "PNDF Beta", indicating a successful installation.



Screenshot 1. PNDf Beta icon in handheld

Note:

If you cannot see the PNDf Beta icon, be sure to check first under the "Unfiled" application category of your handheld device.

If you still cannot find the PNDf Beta icon in any of the application categories. Repeat the Palm Desktop installation procedure from step 1.

## VI. Tutorial

The following section will walk you through the basic operation of the electronic PNDF. We will start the tutorial with the “initial screen” which is the first screen that appears upon tapping the PNDF Beta icon.

### a. Initial screen



Screenshot 2. Initial screen

The initial screen announces that the program you are about to run is a beta version intended for evaluation purposes. Tapping on the “OK” button at the lower left corner of the screen will bring you to the main therapeutic categories screen.

### b. Main therapeutic categories screen



Screenshot 3. Main therapeutic categories screen

Once you tap on the “OK” button on the initial screen, you will be brought to the “Main Therapeutic Categories” screen (See screenshot 3). In this screen, you will see a list of therapeutic categories as they are outlined in the printed version of the PNDF. You may scroll through the list by tapping on the up or down arrows located in the upper and lower right hand corners of the list. Alternately, you may also use the physical “Up” and “Down” buttons of your handheld device to scroll through the list.

### **i. Tapping on a main therapeutic category**

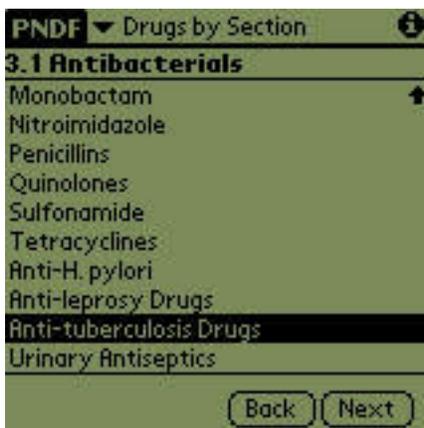
Upon tapping on a main therapeutic category, you will be brought to a new screen, which is a subcategory list.

### **c. Subcategories**



Screenshot 4. First level subcategory screen

Depending on the selected main therapeutic category, there may be one or several subcategories. Tapping on a subcategory will bring you to a deeper subcategory until a drug list screen is finally reached.



Screenshot 5. Second level subcategory

You may scroll through the list by tapping on the up or down arrows located in the upper and lower right hand corners of the list. Alternately, you may also use the physical “Up” and “Down” buttons of your handheld device to scroll through the list.

### **i. The “Back” and “Next” buttons**

The “Back” and “Next” buttons are present in all subcategory screens (See screenshots 4 and 5). Tapping on the “Back” button brings you to the higher or preceding subcategory. If

you are already in the highest subcategory, which is the one immediately below a main therapeutic category, tapping on “Back” will bring you to the “Main Therapeutic Categories” screen.

Tapping on the “Next” button in a subcategory screen brings you to the next lower subcategory, or if there are no more lower subcategories, to the drug list screen.

#### **d. Drug list**

The drug list screen displays the drugs classified under a specific subcategory.



Screenshot 6. Drug list screen

You may scroll through the list by tapping on the up or down arrows located in the upper and lower right hand corners of the list. Alternately, you may also use the physical “Up” and “Down” buttons of your handheld device to scroll through the list.

#### **i. Core or complementary**

Drugs are displayed in the drug list screen in all capital letters or small letters (See screenshot 6). Drugs listed as “Core” essential drugs are capitalized whereas those listed as “Complementary” drugs are in small letters.

#### **ii. The “Back” and “Next” buttons**

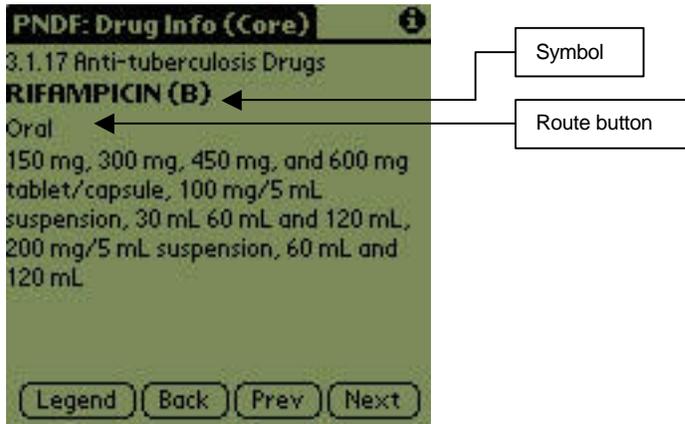
Tapping on the “Back” button in the drug list screen will bring you to the immediate subcategory screen to which that drug belongs.

Tapping on the “Next” button in the drug list screen will bring you to the drug list screen of the next same level subcategory or the subcategory screen of the next higher level subcategory.

#### **iii. Tapping on a drug in the drug list screen**

Tapping on a specific drug in the drug list screen will bring you to the drug information screen.

## e. Drug information screen



Screenshot 7. Drug information screen

The drug information screen contains detailed information about a specific drug listed in the PNDF. The header of the screen displays whether the drug is listed as a core or complementary drug

The first line/s of the screen displays the immediate subcategory to which the drug belongs.

The next line/s of the drug information screen displays the complete name of the drug. The name is in all caps if the drug is included in the core PNDF list or in small letters if it is included in the complementary list.

### i. Route button

The route button is displayed immediately after the drug name (See screenshot 7 labeled arrow). Tapping on the route button displays all available routes for the drug. Tapping on a specific route in the route button list displays the corresponding text information for that specific route.

### ii. Text information

Text information for a particular route of a drug is displayed immediately below the route button.

You may scroll through the text information by tapping on the up or down arrows located in the upper and lower right hand corners of the list.

### iii. Legend

Some drugs may have additional information regarding their regulatory status, availability, limitations, or restrictions. If a drug has additional information available, a symbol is displayed before and/or after the drug name (See screenshot 7 labeled arrow).

An additional button becomes available at the bottom of the drug information screen labeled as “Legend”. Tapping on the “Legend” button will bring out a popup screen that displays the additional information available for the given drug.

To close the “Legend” screen, you must tap on the “OK” button.

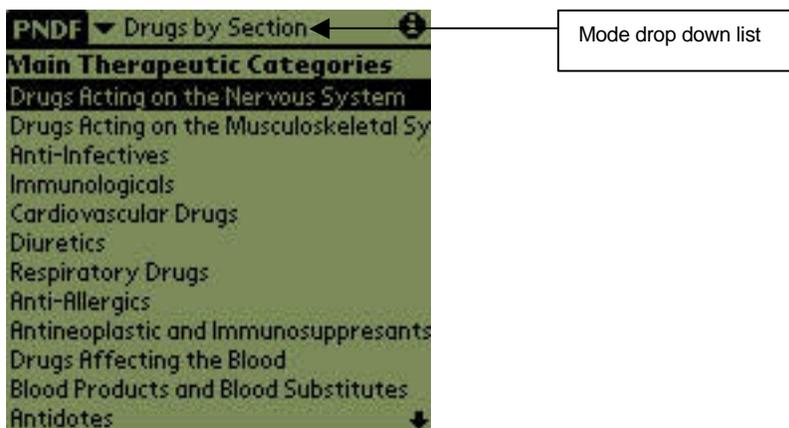
#### **iv. The “Back”, “Previous”, and “Next” buttons**

Tapping on the “Back” button in the drug information screen will bring you to the drug list to which that particular drug belongs.

Tapping on the “Previous” button (if present) will bring you to the drug information screen of the preceding drug in the same drug list. The “Previous” button is absent when you are in the drug information screen of the first drug in the drug list.

Tapping on the “Next” button (if present) will bring you to the drug information screen of the succeeding drug in the same drug list. The “Next” button is absent when you are in the drug information screen of the last drug in the drug list.

#### **f. Mode drop down list**



Screenshot 8. Main therapeutic categories screen showing “Mode” button

The mode drop down list is present at the top of all screens except the drug information screen (See screenshot 8). Tapping on the mode drop down list while in the main therapeutic categories, subcategories, or drug list screens will give you the option to go to the full drug list screen.

#### **g. Full drug list screen**

The full drug list screen displays all the drugs listed in the PNDF in alphabetical order.



Screenshot 9. Full drug list screen

You may scroll through the list by tapping on the up or down arrows located in the upper and lower right hand corners of the list. Alternately, you may also use the physical “Up” and “Down” buttons of your handheld device to scroll through the list.

### **i. Core or complementary**

As in the drug list screens, individual drugs are displayed in the full drug list screen in all capital letters or small letters. Drugs listed as “Core” essential drugs are capitalized whereas those listed as “Complementary” drugs are in small letters.

### **ii. Tapping on a drug in the full drug list screen**

Tapping on a drug in the full drug list screen brings you to the drug information screen for that particular drug.

The drug information screen has already been discussed previously. (See drug information screen above)

### **iii. Mode drop down list in the full drug list screen**

Tapping on the mode drop down list at the top of the full drug list screen will give you the option to go to the main therapeutic categories screen if no drug has previously been selected from the full drug list screen.

The main therapeutic categories screen has already been discussed previously. (See main therapeutic categories screen above)

If a drug or several drugs have already been selected while in the full drug list screen, tapping on the mode drop down list and selecting “Drugs by section” will bring you to the drug list screen of the last drug selected.

## h. Searching for a particular drug

The electronic PNDF allows you to quickly search for a particular drug from the 718 drug entries in its database.

To search for a drug in the electronic PNDF, tap on the “Find” icon (See figure 5), which is located at the lower right hand corner of the writing area of your handheld device. You may do this at any screen.

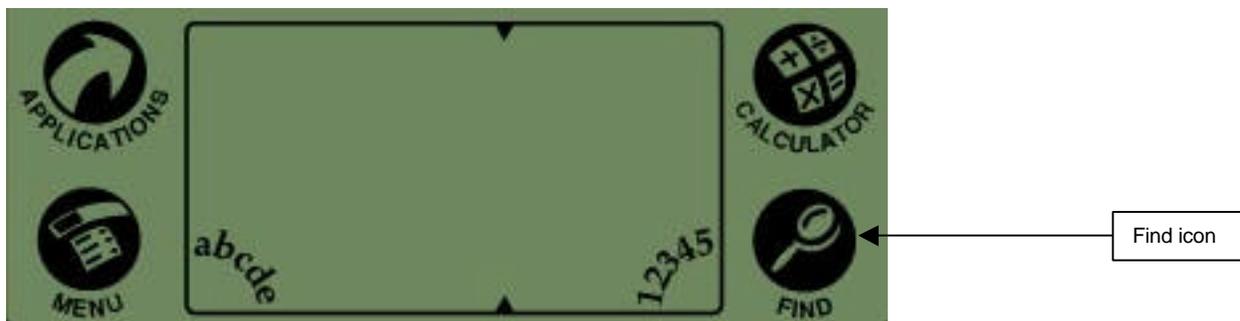


Figure 5. Writing area showing Find icon

Tapping on the “Find” icon brings out a popup screen labeled as “Find” (See screenshot 10). Tap on the blank after the word “Find:” and enter the drug name or first few letters of the name of the drug you wish to search for. Then tap on the “OK” button.



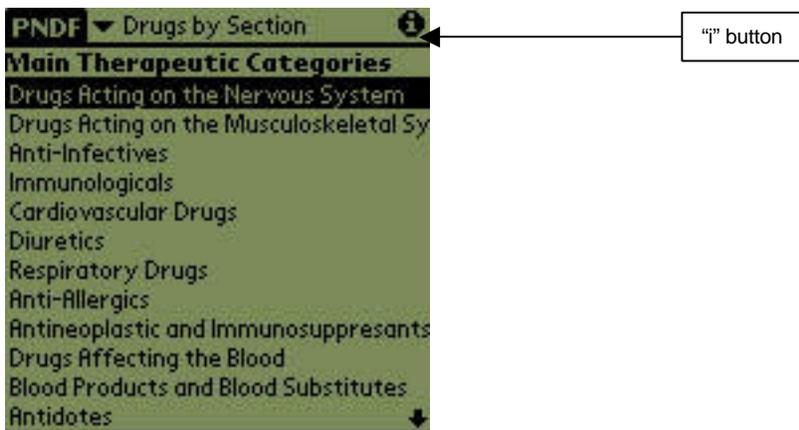
Screenshot 10. Find popup screen

A list of drug names fulfilling your search criteria will be displayed (See screenshot 11). Tap on a drug name and you will be brought to the drug information screen of that particular drug.



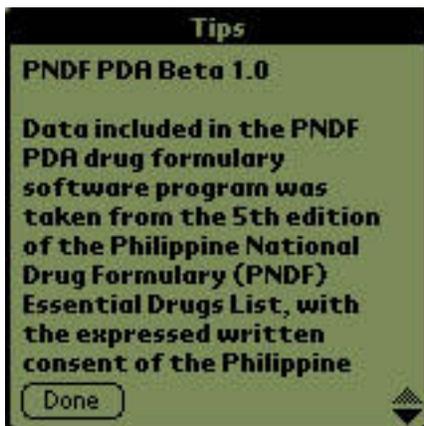
Screenshot 11. Find results screen

### i. About screen



Screenshot 12. "i" button in main therapeutic categories screen

The about screen is displayed when you tap on the button labeled as "i" located on all screens except the drug information screen (See screenshot 12).



Screenshot 13. About screen

The about screen contains copyright, as well as other information about the electronic PNDP software (See screenshot 13).

To exit from the about screen, you must tap on the “Done” button.

#### **j. Exiting from the electronic PNDF program**

To exit from the electronic PNDF program, tap on the “Applications” icon (See figure 6) that is located at the upper left hand corner of the writing area of your handheld device. You may do this at any screen.

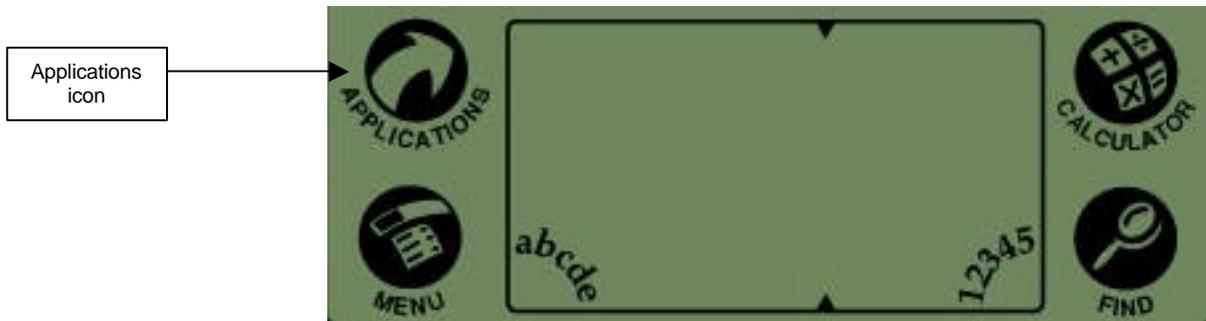


Figure 6. Writing area showing applications icon

#### **VII. Comments and suggestions**

Comments and suggestions are welcome. Please address them to the electronic PNDF investigators via email at [destrada@cm.edu.ph](mailto:destrada@cm.edu.ph). You may also call the National Drug Information Center at (02) 400-4611 or send a fax to (02) 526-4384.

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