Infectious disease guides
For users of hand-held computers

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Treating infections is such an important part of the practice of family medicine that several infectious disease guides are now marketed for users of hand-held computers. For this article, three were assessed for cost, comprehensiveness, and ease of use: the Sanford Guide, ePocrates ID, and ABX POC-IT Guide.

Sanford Guide

The Sanford Guide to Antimicrobial Therapy has been a popular handbook on infectious diseases for more than 30 years. It was created by Dr Jay P. Sanford when he was Professor of Medicine and Chief of the Infectious Diseases Service at the University of Texas Southwestern Medical School. Dr Sanford single-handedly edited the guide until shortly before his death in 1996. An editorial board now revises the manual twice yearly.

The software is available from **www.sanfordguide.com** and costs $25 (US). Inexplicably, the hand-held and on-line editions are more expensive than the print versions, even though the content is reportedly identical. There are versions for Pocket PC and Palm OS devices (including those using Macintosh computers to synchronize). One-time registration on the Sanford website is required.

The download requires just over 1.5 MB, but it takes surprisingly long to install the device on a hand-held computer. Even a Universal Serial Bus (USB) connection can require 20 minutes, so ensure your batteries are fresh.

The Sanford Guide can be run from compliant memory cards, but performance can be slowed when you use the index. You can make some modifications after installation to correct this slowing by moving files to the main memory. Instructions for modifications come with the package, as does the file move utility.

The opening screen in the Sanford Guide presents two options. The first is a Rapid Reference section. It includes 19 topics on pharmacology, resistant pathogens, pediatric doses, and the like.

The second option is the alphabetical index. There is such a large volume of material that it typically takes navigation through several screens of options to find what you are interested in. Tapping a letter brings up headings on the top half of your screen, with subtopics on the bottom. Selecting from the bottom could bring up yet another screen of options. For instance, selecting Acute Otitis Media provides an additional list with six subtopics, including Otitis Externa and Prophylaxis. Once you get to the final section on empiric treatment, there is a fair bit of material to review: commonly implicated pathogens, literature citations, and clinical notes. The empiric therapy on otitis media comprised seven screens of information on my version. Extensive recommendations help you tailor therapy appropriately, even down to taste preferences for medications.

Because of the wealth of information, navigation buttons are provided at the top of each Sanford Guide screen to move forward, backward, one level up, and home. This is helpful when you discover that the section you picked was not what you wanted. For instance, if you follow the Endocarditis heading to find prophylaxis guidelines, you end up with a statement questioning the value of prophylaxis for dental procedures. No actual regimens are listed in that section. I eventually found regimens under the Prophylaxis heading. You can also look up treatments by anatomic system.

To save space, the Sanford Guide editors have employed several contractions and acronyms. A key is available on each page near the navigation buttons.

As an independent, stand-alone publication, the Sanford Guide does not interface with any current pharmaceutical programs.

My colleagues have reported finding the Sanford Guide for personal digital assistants difficult to navigate, and this was my experience as well. I often ended up bypassing the index to go directly to the tables where specific treatments were detailed.

ePocrates ID

The ePocrates ID™ program (**www.epocrates.com**) is a much more compact guide, taking less than 500 KB of memory. Yet it too can take 20 minutes to install on your hand-held computer because

it uses many small files. It works only on Palm OS devices. The ePocrates ID program claims to cover "350 bugs and 250 drugs." You can look up topics by organ system or by pathogen. Again, you will need to select several screens of options to get specific information. Results are organized as Empiric Therapy, Specific Tx (by organism), Other Info (which includes some clinical notes and references), and finally, Notes, which you can create and save. Recommended treatments include drugs, dosages, and duration of therapy. Typically, several options are listed: for acute sinusitis, seven regimens were offered, all listed as generic drugs. Nondrug therapies are also cited.

When a class of drugs is recommended, pop-up menus give examples of drugs in that class. Diagnostic and therapeutic suggestions (eg, when consultation is recommended) are also provided, but these are not as extensive as those in the Sanford Guide. For instance, under Pediatric Otitis Media, the Sanford Guide cited circumstances where symptomatic therapy alone could be considered. There was no such guidance in ePocrates ID except for the obvious case of respiratory viruses.

As with the Sanford Guide, ePocrates ID is useful if you have a positive culture. It is easy to get specific therapeutic recommendations tailored to the organism and the type of infection. The program lists organisms by name and by class.

The ePocrates ID program is terser than the Sanford Guide. While the former recommends only the high-dose amoxicillin regimen (80 mg/kg) for otitis media, the Sanford Guide explains when to use high doses and when to use the usual dose.

The ePocrates ID program is a companion to the popular ePocrates Rx™ drug database, so you can switch from the ID application to the pharmacy program. Simply tapping on any underlined drug name opens the corresponding monograph in the drug application. I have found that this function does not work if the two programs are on different memory types (eg, the ID program is in main memory and you have stored the drug program on a memory card).

There are some non-intuitive anomalies in ePocrates ID. For instance, I was unable to find the endocarditis prophylaxis guidelines despite a time-consuming search. I eventually found it, not in the ID guide, but the Tables section of the drug program.

There is no cost for ePocrates ID, although the website does make it plain that the company collects data on how its subscribers use their programs. This program, as currently configured, does not auto-update. The ePocrates company receives pharmaceutical sponsorship, but states that their ID guidelines are from peer-reviewed literature and are reviewed by an expert panel. Curiously, one reference cited frequently is the Sanford Guide.

Antibiotic POC-IT Guide
The Infectious Diseases Division of Johns Hopkins University also has an entry in this field. They launched an antibiotic reference in spring 2001. It is offered on their website (http://www.hopkins-abxguide.org/main.cfm), and they make versions that will run on all hand-held platforms, including Palm, Pocket PC, and Research In Motion Blackberry devices. The application is called Antibiotic (ABX) POC-IT (for Point Of Care Information Technology) Guide.

This program claims to update itself when you synchronize. The information is said to be peer reviewed and updated monthly.

As in the other programs, you can search by diagnosis, by drug, or by pathogen. These tabs are always on the screen, so you can switch around fairly easily. I found it generally easy to navigate; I found endocarditis prophylaxis guidelines very quickly. The navigation buttons were scanty, having only a Home icon and a Back button. Disclaimer and copyright buttons were of little use and should be dropped in favour of a "Level up" navigation button for when you want another topic in the current section.

Diagnostic as well as treatment information is provided. Fairly extensive drug data are also provided, which eliminates the need for a separate application, at least for anti-infective agents.

Development of ABX POC-IT Guide was sponsored by pharmaceutical companies. No advertisements are evident, and the website maintains that there was no corporate interference in the decisions of the editorial board. Like ePocrates, this program tracks how you use it and reports your use to its home office.

Despite claiming to be aimed at primary care physicians, ABX POC-IT Guide does not provide pediatric information. It also appears to cover fewer conditions and pathogens than the Sanford Guide, or even ePocrates ID. For example, under gastrointestinal conditions, only hepatitis, *Helicobacter pylori*, and diarrhea are included. Diverticulitis and peritonitis are confusingly listed in the Surgical Infections subsection, not under gastrointestinal conditions. The pneumonia section is also very scanty; I was unable to find any information on aspiration pneumonia.

Summary
The Sanford Guide is an independent, comprehensive, authoritative reference on treatment of infectious disease. It can be difficult to navigate, and it costs $25 (US). The ePocrates ID program is smaller but is quicker to use. It also interfaces with a drug database. The ABX POC-IT Guide is well designed and includes antibiotic monographs but currently has the least extensive disease database of the three programs, and furthermore, it lacks pediatric data. All three programs appear to use evidence-based recommendations. ❖

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