

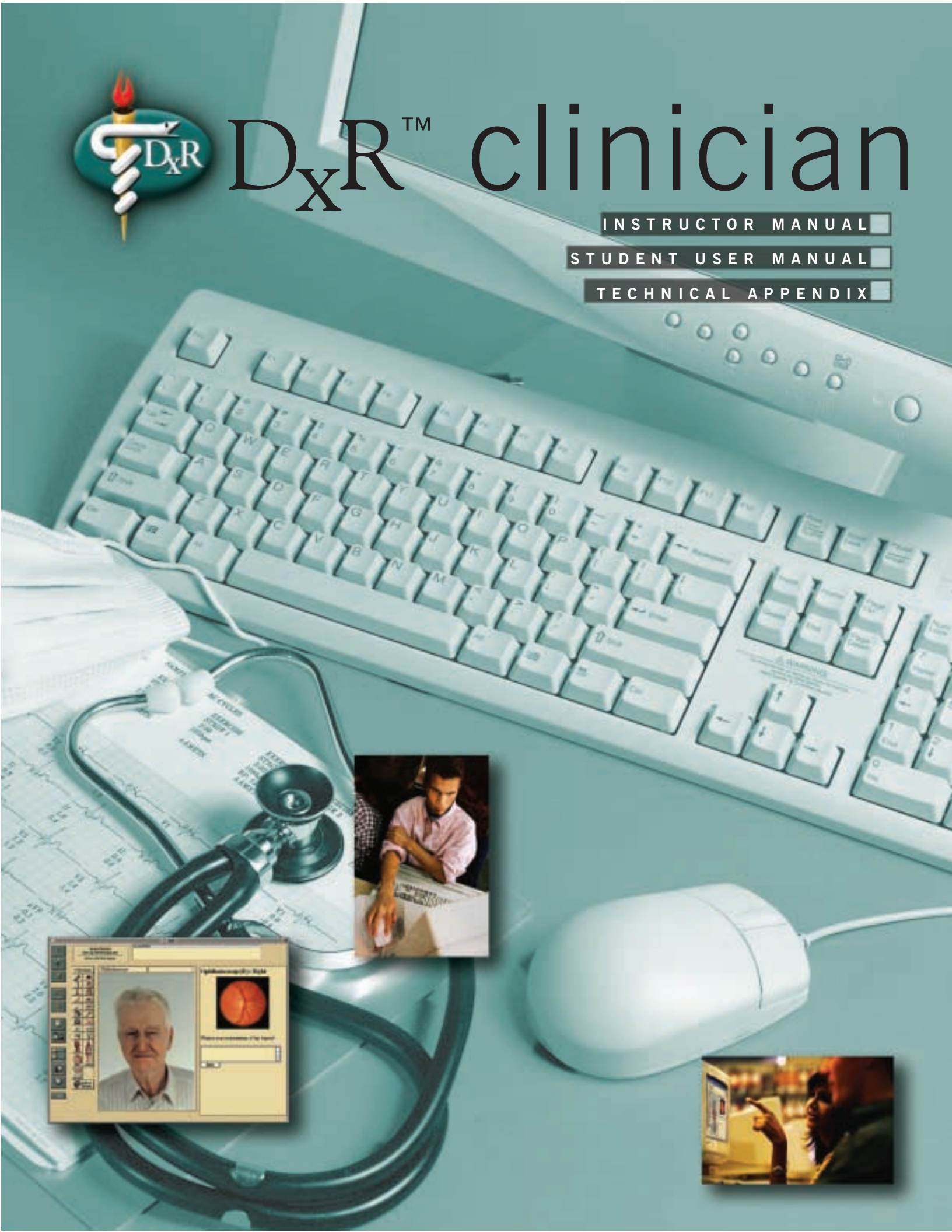


# DxR™ clinician

INSTRUCTOR MANUAL

STUDENT USER MANUAL

TECHNICAL APPENDIX



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### Accessing a DxR Patient Case

1. Make sure you have the Web site location and the name of the case you have been assigned to work on. Navigate to that location in your browser.
2. Find the case on the Web site address provided by your instructor or in DxR's waiting room. Click on the case file [See Figure 1].
3. Enter your name and assigned password in the spaces provided. Click Enter. If there has been a log-in error, a warning message will appear. Check to make sure your name and ID are entered exactly as your instructor requires. Once your name and ID are properly entered, click Start. (If this isn't the first time you've accessed this case, follow the steps above and click Continue Case.)



Figure 1: DxR's Waiting Room with patient files.

As you enter a DxR Clinician case, keep in mind, instructors and case authors can design cases and criteria as they wish. The following instructions take into account all case options available to the instructor. Your instructor may have chosen some or all of those options for this case.

### The Patient's Presenting Situation

This window introduces you to the patient and the patient's stated reason for seeking medical attention [See Figure 2]. Read the information carefully, then click one of the three buttons under "What would you like to do next?" Your choices are: the Interview button for asking the patient questions; the Exam button for conducting a physical exam; or the Lab button for ordering lab tests. **You can access these sections in any order you like.**

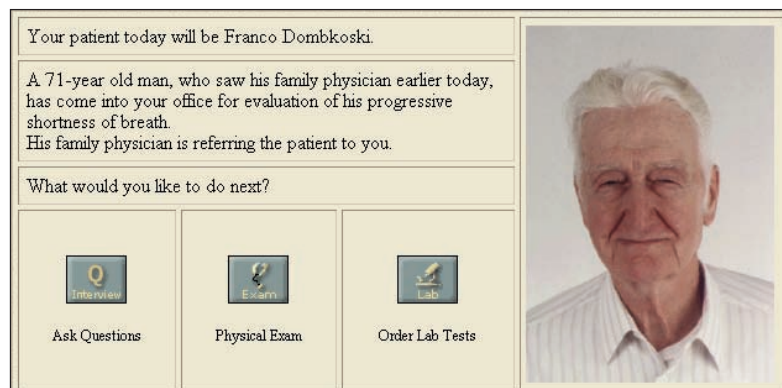


Figure 2: DxR Clinician's Presenting Situation Screen

## Common Buttons & Exam Buttons

### Common Buttons

Before you start your clinical investigation, review the buttons common to all screens within a DxR Clinician case as well as the exam buttons shown on the right of this page.



These six buttons (Interview, Exam, Lab, Hypothesis, Diagnosis, and Management) appear at the top of most screens and allow you to access the major portions of the DxR case. Click one of those buttons to go to the corresponding section of the case.

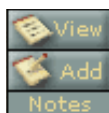
**Management Note: You can enter Interim Management Items after you enter an active hypothesis up until you enter a final diagnosis and treatment. See page 8 for instructions.**



The Interpret button allows you to see a list of the questions, exams, or lab tests that you selected which require an interpretation.



The Consult button allows you to see a list of the items (questions, exam, lab, or management) that have been interpreted and which have a consultant text associated with them.



On the Notes button, click the View section to see your notes or to manually type in notes (Click Save). The Add section of the button allows you to Add selected text to your notes. To add on-screen text to your notes, highlight the text and then click the Add portion of the Notes button.



The Learning button allows you to make note of any learning issues you would like to further study or investigate after completing a DxR case. Categories include Anatomy, Behavioral and Social Science, Biochemistry, Clinical Medicine, Microbiology, Pharmacology, and Physiology. Type your entries into the appropriate text box.



The SOAP button allows you to enter notes for Subjective Data, Objective Data, Assessment Data, and Plan. Type the text in the appropriate box and click SAVE.



When the Learning Resources button is displayed, Web-based information sources are available to assist you as you work through the patient case. Click Learning Resources, then click the link text to open a new browser window displaying the information.



Click the HELP button to access online help.



Vital signs

flashlight/ view

Ophthalmoscope/ feel

Otoscope/ motion tool

blade/ Percussion

thermometer/ stethoscope

sphygmomanometer/ hammer

stopwatch/ pin

position sense/ cotton balls

speculum/ tuning fork

Body View Buttons - Select the view that shows the body part you want to examine.

Other Exams

### CAUTION

Some browsers don't support the one-step ADD function for your notes. If your browser has problems completing this task, select the text you want, copy it to the computer's clipboard, open the Notes window and paste the text into the window.

### Interim Management

You may enter Interim Management at any point after you enter your first hypothesis until the time when you enter your final diagnosis and final treatment.

Click the Management button to access this option, then follow the instructions listed on page 8.

To discontinue an interim management item, click the Management button, select the category of treatment you want to discontinue and select Discontinue from the list of choices. Type in the management order that you want to discontinue. In the Medications category, choose Miscellaneous and then choose discontinue.

### Entering a Hypothesis List

You may be asked to supply a list of diagnostic hypotheses before you are allowed to proceed in your investigation.

#### If you are **not** ready to supply a hypothesis list

You will be advised to go to the Interview section (using the Interview button). In the Interview section, you may ask the patient questions **ONLY** from the Present Illness category prior to entering a hypothesis list. This is the only section of the case you will be able to access prior to entering at least one diagnostic hypothesis.

#### If you believe you **can** provide an initial hypothesis list

Type the patient problem in the text box marked "Concise statement of the patient's major problem." Then type each "new hypothesis" in the window provided and click ADD to place the hypothesis in your list [see Figure 3]. You may prioritize your hypotheses by highlighting the item and using the UP and DOWN buttons to move the item in the list. Highlight a hypothesis and click DELETE if you want to remove an item from your list.

Click DONE when you are finished entering diagnostic hypotheses. The Hypothesis screen may appear after each section of the DxR case. You may also access the Hypothesis screen from any section of the case by clicking the DDX (Hypothesis) button.

Concise statement of the patient's major problem.  
shortness of breath on minor exertion

Type in new hypothesis...

Add

Your list of Diagnostic Hypotheses...

copd  
Lung cancer  
Pneumonia

Arrange hypotheses... Up Down Delete Done

Add hypothesis to Notes...  
Add DDX To Notes

Hypothesis Added: Pneumonia

Figure 3: Diagnostic Hypothesis screen.

## Interview Section

Questions in the Interview section are divided into 20 different categories listed on the left side of your screen. Depending on your instructor's choice, you may not be able to access questions in categories other than the HPI Summary or the Present Illness until after you've entered or reviewed your diagnostic hypothesis(es).

To pose a question, select the interview category. A list of questions within that category appears. Select your question and the hypothesis you are investigating (see note). Click ASK to see the patient's response to your inquiry. Repeat this process for each interview question you would like to pose. When you are done with the Interview section, click the button corresponding to the portion of the case you would next like to access.

## Exam Section

Most physical exams are defined by the body part being examined and the exam tool you use. [See Figure 4.]

- 1) Select the hypothesis you are investigating for each exam item, or select SCANNING if you aren't investigating a particular hypothesis.
- 2) Click an exam tool from the buttons on the left side of your screen. The left window just above the patient picture displays the name of the exam tool you have chosen.
- 3) Click the body view that shows the body part you would like to examine. Click the specific body part in the patient picture. The right window just above the patient picture displays the body part your cursor is positioned to select.
- 4) Review the results that appear in the window to the right of the patient picture. Some results may be text only, some may be graphics, and still others may be heart or breath sounds for you to listen to. Such sounds are best heard through headphones.
- 5) A question may appear just below the patient response, prompting you to interpret the result. Type your interpretation into the space provided.

Repeat the process described above for each exam you would like to conduct. When you are finished conducting exams, click the button corresponding to the section of the case you would like to access next.

## ASSOCIATING HYPOTHESES

You may be asked to select a hypothesis associated with each of the interview, exam, and lab items you include before you can add that item to your list. If you are not investigating a particular hypothesis, select SCANNING from the hypothesis list at the top of each screen. To select more than one hypothesis associated with an interview question, exam, or lab test, press the command (Ctrl) key while clicking on the hypotheses you would like to associate.

### Efficiency Warning

**You will see a warning when you are within 3 of the total number of questions, exams or lab tests deemed necessary to complete this case efficiently. You will be warned again when you are within 1 of that number. You may continue requests in that category, beyond the limits, but if you do so you will not be able to reach the highest level of performance.**



Figure 4: Exam screen.

## Lab Section

### Lab Section

On the Lab screen you may order lab tests to further your clinical investigation of a patient case. You have three methods of ordering lab tests. Each is described and pictured below. You will also be able to see the results of the labs you order. Some results will be available immediately, while others will be Delayed until after you enter your final management plan. You may also be asked to justify your lab requests and/or interpret lab results.

#### Common Lab Tests

CBC	Bilirubin	Sodium	Glucose
Sedimentation Rate	Alk. Phosphatase	Potassium	BUN
Urinalysis	LDH	Chloride	Creatinine
Occult Blood	SGOT (AST)	Carbon Dioxide	
	SGPT (ALT)	Calcium	Protein, Albumin
EKG	GGT	Phosphorus	Protein, Total
Chest X-ray			Uric Acid
Gram Stain	Prothrombin Time	Cholesterol	T4
Throat Culture	PTT	Triglycerides	TSH

To get information about one of these tests, click  then click the test name.

To find a particular test enter a keyword or phrase and click Search.



#### Ordering with the Common Lab Test buttons

1. Look for the lab test you want to order in the list of 32 common labs [see Figure 5, upper] displayed on your screen when you enter the lab section. (You may also access this list by clicking Common Tests in the lab categories list.)
2. (optional) To get information (a test description, normal values, what Abnormal Indicates, and the relative cost) on a Common Lab before you order it, click Test Info and then click the name of the test.
3. To select a lab in the Common Tests list, first select the hypothesis you are investigating, then click the button corresponding to your chosen lab test. The selected test will appear in the field labeled Proposed Lab Orders. If you want to order all labs in your Proposed Lab Orders list, click Submit Labs. If the results of your chosen lab(s) are not delayed, you will be able to access the lab results (see page 7).

Figure 5: Common Labs buttons and the Search function for labs.

### Search

If the lab you want to order isn't in the Common Lab tests list and you don't know which category it would be listed under, use the search function [see Figure 5, lower].

1. Enter a key word or phrase in the space provided and click SEARCH (or Return/Enter).
2. Select the hypothesis you are investigating, then select your selected test in the window showing your search results.
3. Click TEST INFO (for a test description, normal values, what Abnormal Indicates, and the relative cost), or click ORDER to order the test immediately. The test name will appear in your Lab List and results will be available for review unless the lab results are designated as Delayed.

Figure 6: Selecting lab tests from the categories and lists.

### Categories & Lists

If you know what category your lab test is likely to be listed under, use the Categories option to find your lab test [see Figure 6].

1. Select the category most likely to contain your lab test.
2. Find the specific test in the list that appears to the right of the category list. (optional) Click TEST INFO to see a test description, normal values, what Abnormal Indicates, and the relative cost.
3. To place the selected lab test in your Proposed Lab Orders list, select the test. When you are satisfied with your proposed lab list, you can click Submit Labs to order the lab tests and review results of lab tests that are not designated as Delayed (see Page 7).

## Lab Results & Entering a Diagnosis

### Justifying Lab Test Orders

After ordering a lab test, you may be asked to justify your request before you can see the test results. Type in your justification and then click Enter. You will then be allowed to access the lab results.

### Reviewing Lab Results

When you are satisfied with your lab list, click Submit Labs. In the Lab List window that appears, select a lab and then click View Results. (**Note: Some lab results may be delayed until after you have entered your final management plan.**) Some results will consist only of text that you should review carefully. Other lab results may include graphics, such as x-rays [see Figure 7] or other pictures that you should also review carefully. You may choose to make notes on what you see. Make note of anything you think is important. While reviewing your lab results, click TEST INFO to see the normal values/responses for that test.

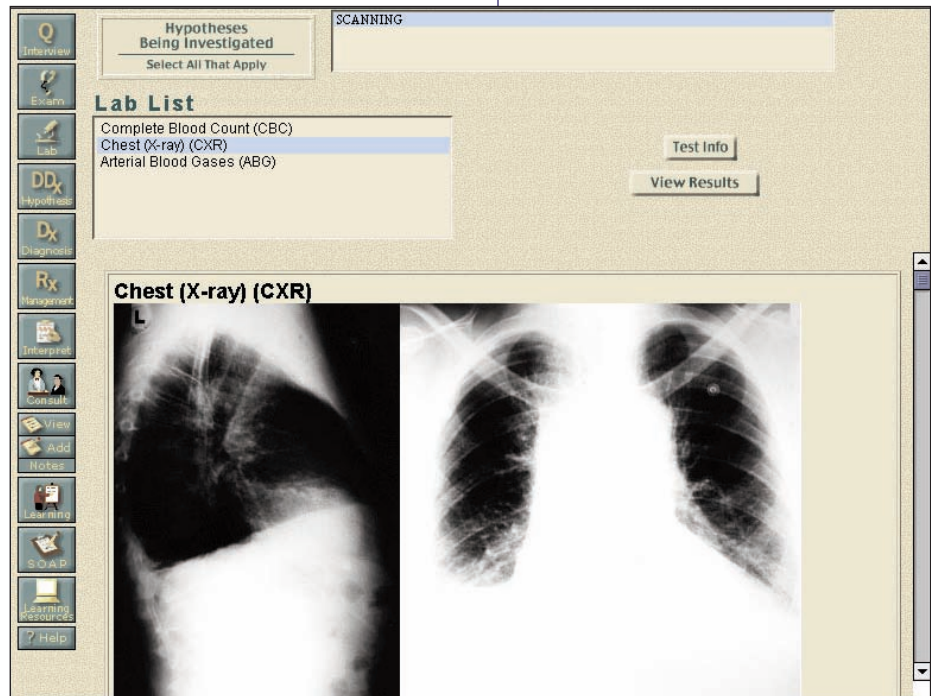


Figure 7: Reviewing Lab results.

### Interpreting Lab Results

You may be asked to interpret the lab results after you access them. You may need to use the scroll bar next to the lab results to see if there's a request for an interpretation. If so, type your interpretation into the space provided and click Enter. When you are finished ordering lab tests, click the button corresponding to another section of the DxR case.

### Diagnosis Dx

Click the Dx (Diagnosis) button when you are ready to make a final diagnosis. Once you enter your final diagnosis, you will no longer be able to access the patient history, exam, or lab sections. Follow the steps below [see also Figure 8].

1. In the text field at the top of the screen, you will see your list of diagnostic hypotheses. Select one or more that most closely match your final diagnosis. To select more than one hypothesis as your final diagnosis, hold down the command (Ctrl) key as you select the desired hypotheses from your list, then click Select.
2. In the second text box, expand on your hypotheses to phrase your final diagnosis in pathophysiologic terms.
3. Type in a justification for your diagnosis.
4. Are you very confident, confident, somewhat confident, and not at all confident in your diagnosis? Click the radio button corresponding to the most appropriate response.

Click Cancel to cancel your entries and close the Diagnosis screen. Click Enter Final Diagnosis to save and enter your diagnosis(es).

The screenshot shows a form for entering a final diagnosis. It contains four numbered instructions: 1. Select one or more of your diagnostic hypotheses below that form the basis of your final diagnosis. To select more than one hypothesis, control+click (Windows) or command+click (MacOS) on each one. When the correct hypotheses are highlighted, click the Select button. Below this is a list box containing 'copd', 'Lung cancer', and 'Pneumonia', with a 'Select' button. 2. Use this space to expand your selected diagnostic hypotheses into a complete but concise pathophysiologic diagnosis. Below this is a text box containing 'copd' and a vertical scroll bar. 3. Justify your diagnosis with supportive findings from history, physical exam, and lab. Below this is a text box containing 'Xrays provide evidence of copd' and 'Xrays do not indicate lung cancer' with a vertical scroll bar. 4. Select your level of confidence in your diagnosis. Below this are four radio buttons: 'Very confident', 'Confident', 'Somewhat confident' (which is selected), and 'Not at all confident'. To the right of these buttons is a note: 'Once you have entered your final diagnosis, you will not be able to access the patient history, exam, or laboratory sections.' At the bottom right are 'Cancel' and 'Enter Final Diagnosis' buttons.

Figure 8: Entering a final Diagnosis.

## Patient Management

### Problem List

You may be prompted to enter a list of all issues that should be taken into consideration in the holistic healthcare of the patient. Type in your list of all pertinent problems, numbered in order of importance, and then click Save. This information will be available to you as you develop your final management plan.



Figure 9: Ordering Medication as an Interim Management.

### NOTE

If you ordered a lab test that is marked as Delayed, you will be able to review results after you enter your final diagnosis and final management plan. After reviewing delayed lab results, you will have a n opportunity to reevaluate your Diagnosis and Management Plan.

1. Are there any concerns you want to follow-up on with this patient?  
If so, briefly describe them in the space below.

2. Have you seen a patient like this before?  
 Yes  
 No

3. Have you read about a patient like this before?  
 Yes  
 No

4. Indicate your level of confidence in your clinical care of this patient.  
 Very confident  
 Confident  
 Somewhat confident  
 Not at all confident

Done

Figure 10: Entering a management confidence level

### Management Rx

Click the Rx (Management) button to begin ordering a management plan for your patient. You can choose from ordering Interim Management or entering a Final Diagnosis and Final Management. Management items are divided into ten categories. But before you have access to those categories, you may also be asked to select whether treatment should occur on an outpatient basis or in a hospital setting. For certain types of management, you may be prompted to provide specifics of your management orders. For example, if you select follow-up and order a return visit, you will be prompted to specify, meaning you should explain when or under what conditions the return visit should be scheduled. Type the information in the text box and click OK to enter it, or click Cancel to

close the Specify window. You may also be challenged with content-related questions about specific management selections or about management in general.

**Interim Management.** Click Order Interim Management to order management items before you enter a final diagnosis. Click the icon that represents a category of management items. Select the specific management choice from the list that appears. Click Order when you are satisfied with your entries. Click the return arrow (go back) to proceed with your case investigation.

**Final Diagnosis and Final Management.** Click Enter Final Diagnosis and Final Management to go to the Diagnosis (Dx) screen described on Page 7. After you complete all fields on the Final Diagnosis screen, click Enter Final Diagnosis. When the Diagnosis has been recorded, click Continue. On the Patient Management screen, click the icon that represents a management category. Select the specific management choice from the list that appears. Click Order when you are satisfied with your entries.

**Ordering Medications.** If you choose Medications, you will be prompted to select a drug type and a class of drug within that type [see Figure 9]. Click Order when you have made your selections. A box will appear prompting you to enter the name of the drug, the dosage, the route of delivery and the interval. Click Order again when you are satisfied with your entries.

**Discontinuing Management.** To discontinue a selected management choice, go to Management, select the Management category and select Discontinue from the list of choices. Type in your orders for discontinuing a treatment choice.

### Management Confidence

When you click Evaluate on the Patient Management screen, the Management Confidence window appears. [see Figure 10]. Answer the four questions posed about your concerns for follow-up for this patient, whether you've seen or read about a patient problem like this one before, and designating a confidence level in your care of this patient. Click Done when you've completed all questions.

**Congratulations! You have completed the DxR Clinician case. To see an assessment of your entries, follow the steps under Initial Self-Assessment.**

# Initial Self Assessment

## Initial Self-Assessment

When you leave the Management Confidence screen, you will see a screen advising you the computer has completed its initial assessment (evaluation) of your entries. Click Review Results to access the Index screen for the Initial Self-Assessment of your choices in the patient case investigation. At the top of the Initial Self-Assessment screen, you will see names corresponding to each category of the patient case [see Figure 11]. The same categories are also listed in the window below. A star next to the category name indicates you successfully completed that task. Click a category name at the top of the screen to see criteria items and/or discussion text of the items within that category. Most category windows (except for Diagnosis and Management) will display a list of the required items within that category. Criteria items that you included will be preceded by a star. The category windows for Diagnosis and Management will differ slightly from the other category windows. For example, instead of a list, the Diagnosis category will include discussion text of what should have been included in the Expected Outcome, followed by a statement on whether you completed the task successfully. The assessment screen for the Management category will include the criteria items for Required, Recommended, Related History and Physical Exam, and Related Labs, as well as discussion text.

Click Category Definition on any of the category screens to see the meaning of the category title. Click Category Definition again to hide the definition window.

**Please note, your initial self assessment doesn't provide a score on the DxR Clinician patient case. If you are being graded on performance in a case, your score won't be available until after your faculty member reviews your entries.**

Close the window when you are finished reviewing your initial self-assessment.

You have completed the DxR Clinician case and the Initial Self Assessment process.

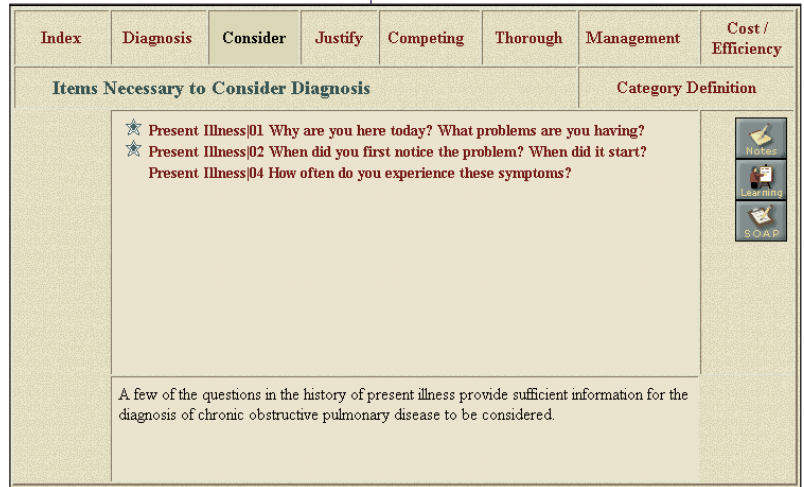


Figure 11: The Initial Self-Assessment screen showing detail of the Consider category.

### Browser Requirements

Cookies and Javascript must be enabled. Your browser must also have Apple Computer's QuickTime 5.0.2 or greater plug-in installed. **Make sure you select a full install of QuickTime.** Also make sure your browser preferences are set to allow the page to specify the colors and fonts. The following browsers are compatible with this program.

Using a browser and/or browser version other than one of the following may cause browser crashes and other unpredictable results when using this program.

#### Windows®

Microsoft® Internet Explorer version 6.0 or higher

Safari® 3.1 or greater

Firefox® version 1.5 or higher

### Screen Size and Monitor Resolution

DxR Clinician requires a minimum monitor resolution of 1024 x 768 pixels. If your monitor is not set for 1024 x 768 pixels or higher resolution, portions of your screen may be cut off and a warning message may appear when you try to log in to the case.

Your monitor must also be set display at least 16 bit color (thousands of colors). If your monitor is not set to display 16 bit or higher color, images and movies may appear distorted, pixelated, or washed out on your screen.

### Sound

Your computer must have a sound card installed. Heart and breath sounds will sound best when heard through headphones.

#### Can't hear sounds?

1. Make sure QuickTime is installed. When QuickTime is installed, you should see this controller when you select an item that has a sound as a result.



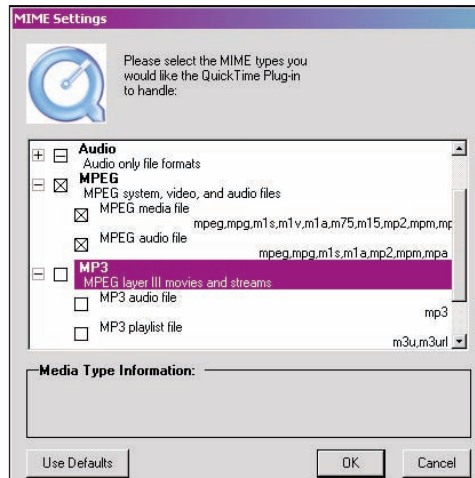
2. If you are using Windows® and see the controller shown below, QuickTime's ability to play embedded MP3 files has been disabled. You must enable it. For instructions, see page 11 or use the Help button on the DxR Clinician case screen.



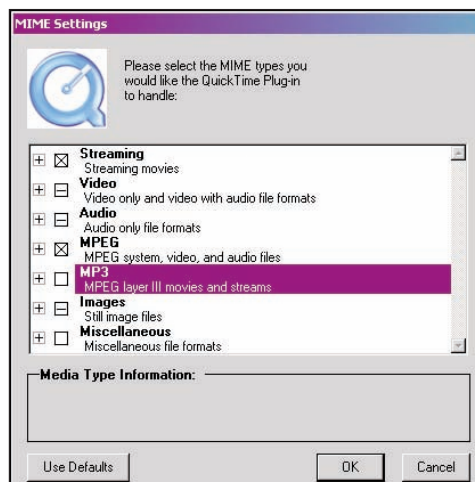
### Re-enabling QuickTime's MP3 Player in Windows

If QuickTime's ability to play MP3s has been disabled in Windows®, the following directions will help you restore it.

1. Locate the Start Menu icon in the menu bar across the bottom of your screen.
2. Click the Start Menu icon to open it.
3. Select the Settings menu item, and open it.
4. Click the Control Panel menu item. A Control Panel window should appear on your screen.
5. Locate and open the QuickTime control panel. A QuickTime Settings window should appear on your screen.
6. On the QuickTime Settings window, click the menu and select Browser Plug-in. A set of Browser Plug-in choices will appear in the window.
7. Click the MIME Settings button at the bottom of the QuickTime Settings window. The MIME Settings window will open.
8. Scroll to the bottom of the list. You should find two entries for MP3s.



Both entries should have a "+" beside them. If they don't, double click on them to produce the "+". Once the "+" appears they are enabled.



9. QuickTime has now been re-enabled to play MP3s. Click OK to close the window.

### Changing QuickTime Connection Settings

D<sub>x</sub>R Clinician cases can include various media, including QuickTime movies. With slower dial-up Internet connections, you may experience a degradation in the viewing quality of the movies. By manually overriding the connection speed setting for QuickTime, it is possible to improve the viewing quality of the QuickTime movies. However, you should expect it to take substantially more time to download movies when set at a higher connection speed setting.

To manually override the Connection Speed settings in QuickTime, follow these steps.

1. Open your computer's control panel.
2. Open the QuickTime settings.
3. Use the pull-down menu at the top of the QuickTime settings window to select Connection Speed.
4. When the Connection Speed settings appear, select a connection that is faster than the one you are using to access the Internet. However, keep in mind, the faster the connection speed you select, the longer the download time for the QuickTime movies in the case.
5. Close the window.

