



## Introduction

*D<sub>x</sub>R Clinician* is an all-inclusive computer patient simulation package, consisting of 1) prepared patient cases, 2) management tools for editing patient content, setting evaluation criteria, analyzing student records, and enriching the program with learning resources and content questions, and 3) optional authoring tools for developing new patient cases for delivery using the *D<sub>x</sub>R Clinician* case framework.

*D<sub>x</sub>R Clinician* software was developed in part to help medical educators quantify the clinical reasoning skills of healthcare profession students. The current method of observing and mentoring students during preclinical patient encounters and clinical clerkships provides considerable insight into the clinical reasoning process but does not provide any means of quantifying specific skills. *D<sub>x</sub>R Clinician*, on the other hand, is designed to monitor each decision the student makes during the “patient” encounter and to provide a report, illustrating the level of clinical reasoning he or she has demonstrated.

*D<sub>x</sub>R Clinician* found additional application when traditional teacher-centered methods of instructing healthcare professional students gave way to patient-centered, student-centered learning experiences. Under this newer approach, students working in small groups engage in problem-based or team-based learning activities using computer patient simulations and internet-delivered interactive educational content. *D<sub>x</sub>R Clinician* provides virtual patient cases that students can ‘work up’ and then discuss in a group or classroom setting. Individual students who want or need more practice ‘working up’ patients with a number of different clinical problems can access these virtual patients at any time from any location with an Internet connection.

This manual provides detailed instructions for how to use the *D<sub>x</sub>R Clinician* management tools. These instructions explain how to edit patient content (i.e., responses to history questions, physical examination findings, and lab results) and change the evaluation criteria for any *D<sub>x</sub>R Clinician* case. There are also instructions for how to collect and import student data into the Record Utility, which can analyze an individual student’s record as well as summarize performance data for a group of students who completed the same case.

Each clinical problem brings with it a set of issues that may stimulate a student’s need for basic information and clinical content. We have designed *D<sub>x</sub>R Clinician* with a Web Links feature that provides the student with “just-in-time” access to relevant Web-based information without ever leaving the patient case study.

Another important feature of the *D<sub>x</sub>R Clinician* software is the Query function, for attaching multiple choice, true/false, and/or short answer questions to a given case. This feature lets you test the student’s content knowledge in the context of the problem-solving task.

The purpose of the Management Utility is to give you, the instructor, control over both the content of the case and the way in which the evaluation criteria are set, so you can provide the best educational experience for your students.



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## Getting Started

DxR Clinician consists of a powerful set of tools designed to make the classroom experience a valuable and pleasant one for both faculty and students.

The DxR Clinician package includes three basic components.

- The DxR Clinician Management Utility enables you to control who gains access to a DxR case or cases and what the users see when they enter a DxR case. You can edit patient data, edit evaluation criteria, or decide to proceed without changing the data and/or evaluation criteria that the case author created. The criteria set by the instructor and/or case author form the basis for evaluating student performance in investigating the case and reaching a diagnosis. DxR Management also includes tools for maintaining files for students who are assigned to work through a DxR case.
- The DxR Clinician cases consist of data collected by our case authors based on real patient encounters. Rather than conducting an in-person investigation, students will open a DxR case and will begin a simulated clinical investigation using the tools available in the DxR case. Students will have access to the same basic clinical investigative techniques that are available to a healthcare professional dealing with an actual patient. Using the DxR case information, students will be able to question the patient, conduct a simulated physical exam, and order lab tests. The student will also be able to see and review the results or responses before making a diagnosis and management choices. At the end of the case, the student will be able to access an initial assessment of his or her performance compared to the instructor's expected responses.
- The DxR Clinician Record Utility — the only component of the DxR package which isn't Web-based— is where the instructor can review and evaluate student and group performance on a DxR case. The Record Utility also allows instructors to change the evaluation criteria set earlier in DxR Management or override the computer's evaluation. The Record Utility is also the only place that instructors can evaluate the student's management plan. Data from the Record Utility can be printed for student or faculty use.

DxR Clinician is a Web-based application that can be hosted either on a Web site at your institution or by DxR Development Group. If your institution is hosting the Web site, the first step in using the DxR Clinician tool is to make sure your Webmaster and/or technical support personnel know how you intend to use the program (i.e. coursework, exams) and are aware of any special technical needs you may have. For those hosting DxR Clinician on a Web site at their institutions, technical requirements are listed in the Technical Appendix manual.

## Preparing to Work Through a DxR Case Yourself

We recommend that you start using DxR Clinician (DxR) by working through a patient case just as you would ask students to do. This will help you become familiar with the structure and presentation of DxR cases.

Before you assign a case for your students to complete, it's important that you work through the case just as students would. This process will allow you insight into the difficulty of the case, the key findings in the case, and the criteria that you might want to change or add.

Before you can start working through a case, you must select a case or cases from the catalog and install the case(s) into a directory that's specific to you. This is accomplished through using the DxR Clinician Management Utility. You should be provided a user ID and password to access the DxR Management Utility by either your Webmaster or by DxR Technical Support, depending on where your site is hosted. Once the case is installed, you may use the Management Utility to make a "student" login for yourself in one of the cases. After you have allowed yourself access to a DxR Clinician case you will be ready to work through the case just as a student would. Follow the steps in the Case Quick Help in the back of this manual.

As you move through a selected case, be careful to note case data that you want to change. Most text data can be edited. You should also take careful note of the Initial Assessment that appears at the end of the DxR Clinician case (when you click the Evaluate button). The Initial Assessment provides a first look at how student performance is assessed. It may provide you with the first indications of how you would like to change evaluation criteria before administering a DxR Clinician case to your students. Keep in mind the educational level of your students and any specific teaching objectives as you complete the DxR case. After your case review, you will know whether or not you would like to edit patient data and/or evaluation criteria.

## Accessing the DxR Management Utility

If your school is hosting your site, your Webmaster or system administrator will provide a user ID and password, as well as the address of the site. The DxR Management Utility is installed at a location that will look like the example below. Please note that this address is case sensitive.

[http://your\\_site/DxR/DxRManag](http://your_site/DxR/DxRManag)

If your site is hosted by the DxR Development Group, we will have given you a user name and password to allow you to access the DxR Management Utility. You can navigate to your school's site and click the Management Utility link, or you can type in the URL to the Management Utility, that will look like the example below. Please note that this address is case sensitive.

<http://yourschool.dxrclinician.com/DxR/DxRManag>

The log-in window for the DxR Management Utility will ask for your user ID or user name and password. When you are successfully logged in, you will see the DxR Management Index screen.

*Figure 1. The Management Utility Index screen.*

**Case Management**

[Install, Show or Hide Cases](#)  
Install cases into existing directories, create new directories, control visibility of directories and cases.

[User Names/Passwords](#)  
Assign user names and passwords to students.

[Student Record Files](#)  
Export student records for evaluation in the DxR Record Utility. See [download link to the right](#).

**Case Editing/Authoring**

[Edit Case Data](#)  
Edit case data, case evaluation, or case delivery preferences.

[Create New Case](#)  
Begin the case authoring process by installing a DxR Clinician case template.

[Return to Front Page](#)

**DxR Record Utility and Manuals**

[Click to download from the DxR Development Group website...](#)

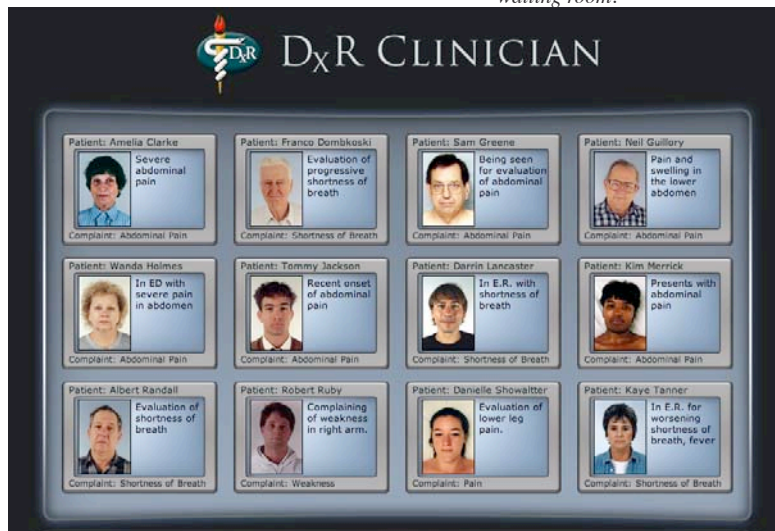
**Contact Us**

- Telephone Technical Support
  - 9 a.m. - 5 p.m. CT
  - 800 453-8040 Toll Free
  - 618 453-5287
- Fax your questions to 618 453-5309
- Email your questions to [support@dxrgroup.com](mailto:support@dxrgroup.com)

Figure 2. The DxR Clinician waiting room.

## Creating Directories and Installing Cases

DxR Clinician cases are installed into directories. If you are teaching a particular set of diagnostic skills or are covering specific subject matter you may choose to name your directories after the skill or subject matter. If you teach more than one class or students at varying levels of education, you may choose to name your directories after the classes. You can install the same case in multiple directories and set different grading criteria for each instance.



You can provide students with access to the entire set of cases, or you can provide HTML links from your own Web pages directly to specific cases.

You may begin creating directories and installing cases within them any time after your site is placed on the server and the server is properly configured.

1. Open the DxR Clinician Management Utility and click Install, Show, or Hide Cases. A screen will appear, displaying any directories that have already been created on your site.
2. Type the name of the directory you would like to create into the space labeled 'Directory.' Click Create when you are done. A screen will appear, displaying the list of cases that are available for installation.
3. If you want to install only **some** of the cases in the list, click inside the box preceding the names of all cases you would like to install into this directory, and then click Install Cases. Click Continue to verify your choices.
4. If you want to install **all** the cases in the list, click Toggle All Cases and then click Install Cases. All the cases in the list will be installed into your directory.

Note: Each directory can contain only 12 cases. If you install more than 12 cases into a single directory, the program will divide the cases into groups of 12 for display.

- If you choose to have a technical support person install your cases into directories, you will need to provide that person with the names of the directories you would like to create and the cases that should be contained in each directory.
- Directory names may be chosen by case subject, course number, or almost any other cue that will help you remember the directory and its contents.
- Cases that are available for installation are arranged into categories by Presenting Situation. Any cases that you edit and save to the core of your site will be saved in the 'Custom' cases category.

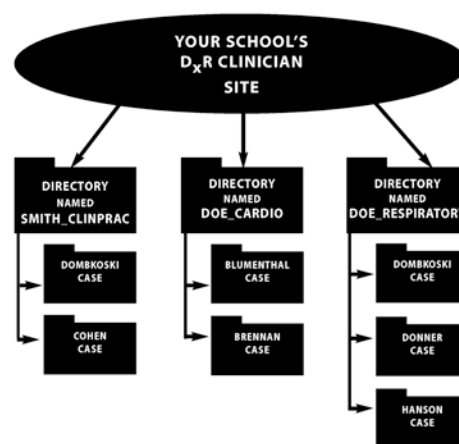


Fig. 3: DxR Patient cases installed in directories.

### ALERT

You should not use "DxR" as the complete name of any of the directories, although you can include "DxR" as part of the directory name.

## Adding Cases to an Existing Directory

After you've installed your initial cases into a directory, you may decide later that you would like to add another case to the same directory. To do this, follow these steps.

1. Click the Install, Show, or Hide Cases link on the Management Utility Index screen. On the Directories screen, scroll down to see the list of directories and cases installed on your site. Find the directory to which you want to add cases.
2. Click the Add Cases to this Directory button at the bottom of the case list.
3. Select the cases you'd like to add and then click Install Cases or click Toggle All Cases and then click Install Cases to install all available cases.

*Note: When you add a case or cases to an existing directory, they will remain 'invisible' on your site until you mark both the directory and case as 'visible' and then click Save Changes to this Directory.*

## Hiding/Showing Directories and Cases

After you create a directory or directories on your DxR Clinician site, you can also determine whether the directories or the cases within them are visible to those who gain access to the site. For example, using the Show/Hide features, you can install all the cases you plan to use during a semester with your class and then make those cases visible only when you are ready for students to enter and access them. To hide or show a directory on your DxR Clinician site, follow the steps listed below.

1. From the DxR Management Utility Index screen, click the Install, Show, or Hide Cases link. When the directories screen appears, you will see a list of all the directories that exist on your site and a list of the cases installed within them. A checkmark in the box preceding the directory or case name means that directory or case is visible to students on your DxR Clinician site.
2. To change whether a directory or a case is visible on your site, click inside the box. Next, click Save Changes for this Directory. If your directory or case was previously visible, it will now be invisible to those who access your DxR Clinician site. If the case or directory was previously invisible, it will now be visible.



If you edit an existing case or create a new case and save the case to the core of your site, the case will be saved in the Custom Cases category and can be installed into other directories on your site. See pg. 32 for instructions on using the 'Save to Core' function. See the Authoring Quick Help Guide if your site includes the authoring function.

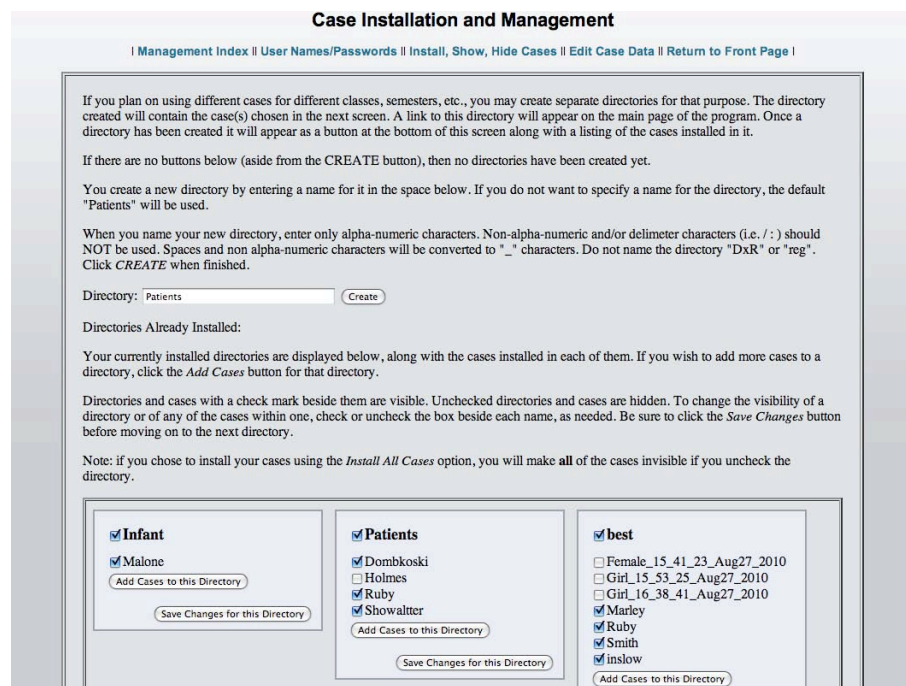


Figure 4. The Install, Show, Hide screen of the DxR Clinician Management Utility.

## User Names and Passwords

To allow yourself and/or your students access to a DxR case, you should first click the User Names/Passwords link to enter approved user names and passwords.

Using care in how you enter the names and passwords will ease the process of logging on to a case. User names are NOT case sensitive, but passwords ARE case sensitive. Each time a user (either you or a student) accesses a case, he/she must type in a user name/password that is among those entered for that case (See Note).

Users who deviate by including extra spaces or by changing the case of a character in the password case won't be able to access the patient case, so it's important that you make students aware of the format for their user names and passwords.

### Step 1. Creating an access list for users

When giving a group of students access to a case or group of cases, we recommend that you create your lists of user names and passwords using a plain text editor such as Word Pad® or SimpleText® following the format specified below. Save the file as plain text. If you use a word processor such as Microsoft® Word® or Pages®, enable the feature that allows you to see spacing and other formatting marks that would otherwise be invisible. (See Helpful Hint) You can then copy and paste your list into the Add Users to Case field.

### Step 2. Formatting User Names & Passwords

The format for entering user names and passwords is as follows:

Jennifer Johnson/456-abc

- Any letter, uppercase or lowercase, or any number may be used. Hyphens such as in an ID number are permitted, but slashes may only be used to separate the user's name from his/her password. A forward slash (/) must separate the user name from the password in your list.
- Press Enter (Return) after each user name/password combination since each combination must be on its own line.
- Names should use only regular letters and/or numbers. A space between the first and last name is OK.
- Names must be unique.
- Passwords can contain letters, numbers and hyphens but no other non-alphanumeric character.
- Passwords do not need to be unique, though this is preferable.
- A password can be the student's ID number, complete with dashes. Out of concern for the user's privacy, however, some instructors may choose to use only the last four digits of the student's ID number.

#### HELPFUL HINT

Most word processing applications include a function that allows you to see markings, such as spaces, that are not otherwise visible. (This function may be accessed under the preferences settings for the word processing application.) Choose this option to help determine if you've included extra spaces in your User names and Passwords format. We also recommend that you keep your formatting as simple as possible. Avoid any tabs or extra spaces within the password.

#### NOTE

DxR Clinician cases are shipped with the Require Passwords preference in the Case Options section turned ON. If you don't want to force students to enter a password in order to enter the case, you can turn this preference OFF in setting Case Options.

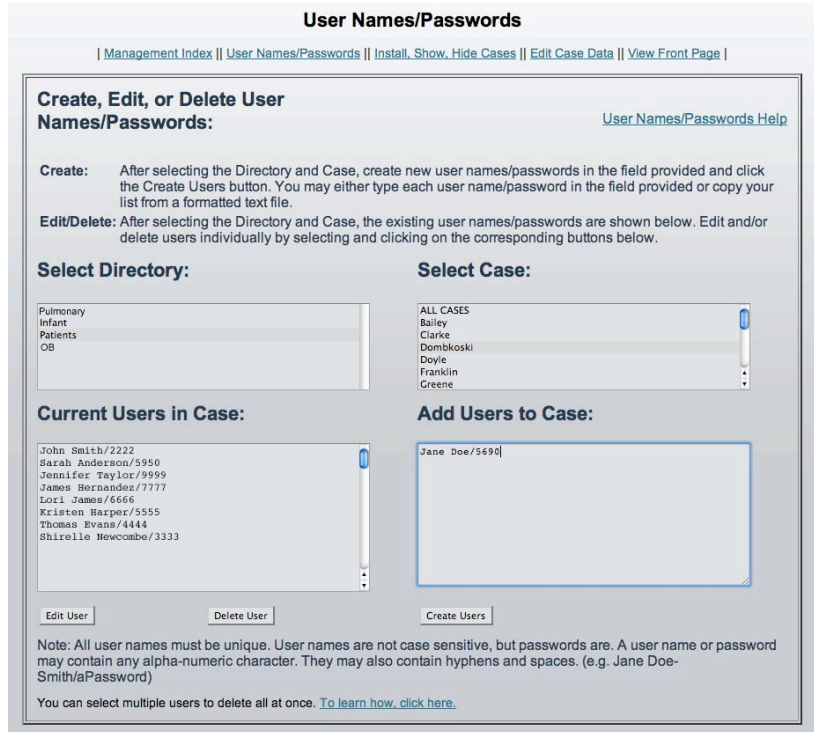
**Step 3. Entering your user names/passwords**

Navigate to the Index screen of the DxR Clinician Management Utility and click User Names/Passwords to go to that screen.

A. To enter new user names for either a single case or for all cases in a particular directory, follow these steps:

- Select the directory containing the case(s) for which you want to add users.
- Select the individual case or click ALL CASES (to add your user list to all cases in that directory). A list of existing users will appear in the field labeled Current Users In Case.
- If you are adding a list of user names, go to your text editor, copy the list you've created, and paste it into the field labeled Add Users to Case (shown in Figure 5). If you are adding a single user, type the user name and password into the field labeled Add Users to Case.
- Click Create Users to create the user name(s) and password(s) you just entered.

Figure 5. The User Names and Passwords screen.



B. To change an individual user name/password that is already entered for a case, select the directory name and then select the case name. Select the name you want to edit from the Current Users field and then click Edit User. Type in your changes and click OK.

C. To permanently delete a user name/password, select the directory and then the case. In the Current Users field, select the user name you want to delete and click Delete User.

*Caution: Deleting a user name/password is a permanent action that discards both the user name/password and the student record associated with it.*

**Note:** You can select multiple user names/passwords for deletion.

*PC users:* Hold down the control key while clicking on the names you want to select and then delete, or press the shift key to select a string user names.

*Mac users:* Hold down the Command key while clicking on the names you want to select and then delete, or press the shift key to select a string user names.

## Editing Case Data - Changing Evaluation Criteria

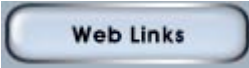
After going through a case, you may decide to change the evaluation criteria or perhaps replace patient responses within the case. DxR Clinician cases allow you, the instructor, to modify the cases to better fit your teaching needs. The Edit Case Data link on the DxR Management Utility Index screen allows you to customize DxR Clinician patient cases by editing patient data, altering student evaluation criteria, selecting case options, and questioning students on-line as they complete the DxR case.

To begin editing case data:

1. Click Edit Case Data on the DxR Management Utility Index screen.
2. Select the directory containing the case you want to edit, and then select the name of a case from those listed. Click Edit Case.
3. Choose the type of information you would like to edit. The Patient Image, Patient Chart, Patient Intro, Patient Appearance, HPI, Interview, Exam, Lab, and Management (Rx) buttons allow you to edit patient information and how it's presented within the case. The Case Editors allows you to type in information about yourself or others who collaborated on editing the case information. The Evaluate button allows you to edit the criteria used to evaluate student performance. The Case Options, Query, and Management Query buttons allow you to manipulate how the case content is delivered to the student. The Web Links button allows you to make Web-based learning resources available to students as they work through a case. The Print Case Data button displays the case information in a form that you can copy and paste into a text file for printing. Save to Core allows you to save your case edits to your core of cases for future use.

### Editing Patient Data

Almost all text data within the cases can be edited. Each time you select a question, lab, or exam, you will have the opportunity to change the text response or result (See Note).



#### Web Links

#### Web Links

You can add links to Web-based learning resources to provide your students with more information while they work through a DxR Clinician case. These electronic learning resources (such as Web sites, etc.) can be made available in the Interview, Exam, Lab, and Management sections of the case. Students will be able to click the link to access these resources directly from within the program. You can choose to link a resource to a particular item within the case, or you can make the electronic resource available from anywhere within the case.

For example, if the patient is experiencing shortness of breath, you could type in the Web address link for a Web site that provides the student more information on that problem.

To add a Web Link to a particular item in a DxR Clinician case, follow these steps:

1. Choose the item from the Interview, Exam, or Lab categories to which you would like to link a resource. Scroll down to the Web Links fields.
2. In the first field, type a word or a phrase that will appear to the students after the patient results/response which can be clicked to directly access the learning resource. In the second field, type in the URL (this is the Internet address) of the resource you want to make available. Click Save Changes in the window.

#### NOTE

Some patient results may contain formatting for tables. It's important that you do not remove formatting or markers, since they are required to access graphics, links, and tables associated with a response or result.

To add a Web Link that students will be able to access from anywhere within a DxR Clinician case:

1. Click Web Links. In the space provided, type in the URL (this is the Internet address) of the resource you want to make available.
2. Also type in a word or phrase that will appear to the students which can be clicked to directly access the resource and click Add. You can add multiple links using this same method. Each link will be listed on a separate line.
3. When you are finished adding Web Links, the link(s) will be created. Click the link to open the new location(s) in a new window.

Figure 6. Adding Web Links to a DxR Clinician case.

To remove a Web Link shown in the Existing Links field, select the link(s) to be removed by clicking inside the checkbox and then click Remove Selected Links.

## Adding Media

You can add your own properly formatted graphics, sounds, or movies to a DxR Clinician case. These would include such things as X-rays, CT scans, and photographs. Audio files can be used to allow a student to hear a patient's heart and breath sounds. In some cases, there might also be value in using audio files to present some portion of the Interview (such as to demonstrate slurred speech) that supports a certain diagnosis. Navigate to the client data item to which you want to add media and click the Add New Media button. A dialog box will appear.

1. Make certain that any file you wish to upload conforms to the specifications listed in the Media Files Note.
2. Click the "Browse..." button below and navigate to the media file on your computer you wish to upload.
3. Click the "Upload File" button.

Once the file is successfully uploaded it will appear in your "Available Media List."

*Note: Once a file has been successfully uploaded it cannot be removed by anyone but your system administrator, and even then it is not recommended.*

To add a graphic, a movie, or a sound:

1. Order the question, exam, or lab to which you would like to add media.
2. Scroll down to the Insert/Change Media items, then select the graphic, movie, or sound file from the Available Media list that appears (see Media Files Note). Click Preview Media if you want to see/hear the media as students who select this item will. Click Add to attach the media file to the interview question, exam, or lab test that you're editing. The name of your graphic, movie, or sound will automatically appear in the Media field.
3. Click Save Changes to preserve this link.

To remove the link to a graphic, simply highlight the media file name from the Media field and delete it. Click Save Changes.

## MEDIA FILES NOTE

- If you are looking for a movie, the file name will end with  
.mov
- If you are looking for a graphic, the file name will end with  
.jpg .png or .gif
- If you are looking for a sound, the file name will end with  
.mp3

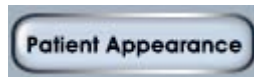
## Helpful Hint

*If you give students access to the Consultant text by activating this function in the Case Options, any media accompanying the item result will also accompany the Consultant Text.*



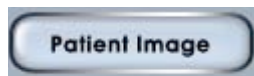
**Patient Intro Button**

This function allows you to change the text of the Presenting Data displayed when students first enter the case and in the Install, Show, Hide portion of the Management Utility. Click Save Changes when you are done editing this information.



**Patient Appearance Button**

This feature allows you to type in and save a text description of the patient. The information will appear to the student as he/she enters the exam portion of the case.



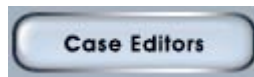
**Patient Image Button**

This function allows you to change the patient image displayed in the case. Select from the gallery of Male, Female, or Pediatric images available. Click Change Picture under the Current Image to save your changes.



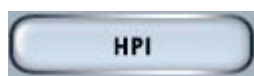
**Patient Chart Button**

This feature allows you to enter text that will appear on the patient chart, including the chief complaint and a case description. Click Save Changes to preserve your edits.



**Case Editors Button**

This feature allows you to type in and save the name, title, and affiliation of yourself and the collaborators who helped to edit the patient case data.



**HPI Button**

This button displays a field where you can edit the text that describes the history of the present illness. This information will appear to students only if you've marked History of Present Illness in the Case Options.



**Interview Button**

In this section, you may change the patient's responses to questions. You may also require students to justify certain requests for information or to interpret the patient's response. You may provide students with an expert opinion in the form of Consult Text after they make the interpretation or attach a learning resource to an item.

1. Select a category, and when the list of questions appears, select a question.
2. Click Ask to see the existing response.
3. Change the patient response in the Result Text field as desired. You may also:
  - Add Media as the patient result.
  - Check the box marked Ask User to Justify Request to explain why they requested this information. If the "justify request" box is already marked, click inside the box if you want to remove the prompt to justify the selected item.

**HELPFUL HINT**

You may ask students to justify interview, exam or lab items, or you may remove a request to justify that is already included for those items. You may check the Justify box to gain insight into a student's clinical reasoning. The case author may have included a request to justify certain items. If you disagree with this request, click the checkmark in the Justify box to remove the request.

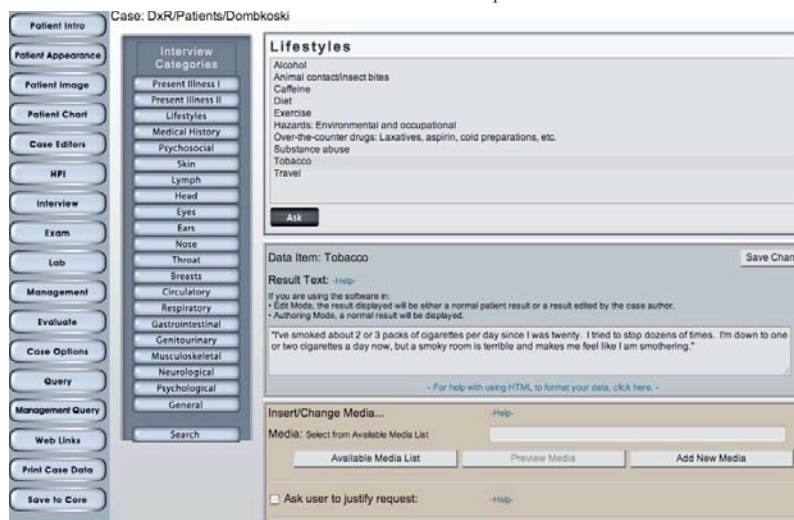
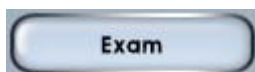


Figure 7. Editing data for the patient Interview.

- Click inside the Interpret box to require the student to type in an interpretation for the patient's response.
  - Optional: Type the text of an expert opinion in the field marked Consultant Text. Students will be allowed to access the information from this text field only after they enter an interpretation of the interview response associated with the text.
  - Determine whether this question should be one of the criteria items to evaluate student performance in either the Diagnostic Process evaluation or the Management Plan (see Criteria Note).
  - Add Web Links to supplement the student's learning as needed. (See pp. 12-13.)
4. Click Save Changes to write your modifications into the patient database.

### Criteria Note

Click the See Other Criteria Items button below each of the evaluation points to see a list of the items already selected as criteria for that node. You can also use this button to make the item you are editing equivalent with a criteria item already in the list.



### Exam Button

In the exam section, you may change the patient's physical exam results as well as ask the students to justify their exam choices. You may also require the students to interpret the patient's exam results and provide them with an expert opinion in the form of Consult Text.

To edit exams, follow these steps.

1. Click the body view (using the small patient icons) that includes the body part you want to examine.
2. Click the exam tool you want to use.
3. Select the body part from the list that appears.
4. When the exam results appear, make changes in the field labeled Result Text. You may also:
  - Add Media as the patient result.
  - Check the box marked Ask User to Justify Request to explain why they requested this information. If the "justify request" box is already marked, click inside the box if you want to remove the prompt to justify the selected item.
  - Click inside the Interpret box to require the student to type in an interpretation for the patient's response.
  - Optional: Type the text of an expert opinion in the field marked Consultant Text. Students will be allowed to access the information from this text field only after they enter an interpretation of the exam result associated with the text.
  - Determine whether this exam should be one of the criteria items to evaluate student performance in either the Diagnostic Process evaluation or the Management Plan.
  - Add Web Links to supplement the student's learning as needed. (See pp. 12-13.)
5. Click More Tests & Exams, select an item from the three lists (Observations, Maneuvers, and Mental Status) then change the results as desired for the chosen exam in the field labeled "Result Text". Also under More Tests & Exams, select Vital Signs from the list to edit the patient's vital signs. Change the results for these values in the Result Text field as desired and click Save Changes. Please note that making changes under Vital Signs will not change patient data for other exams displaying the same information. Edit them separately.
6. Click Save Changes when you are done making changes to this exam.

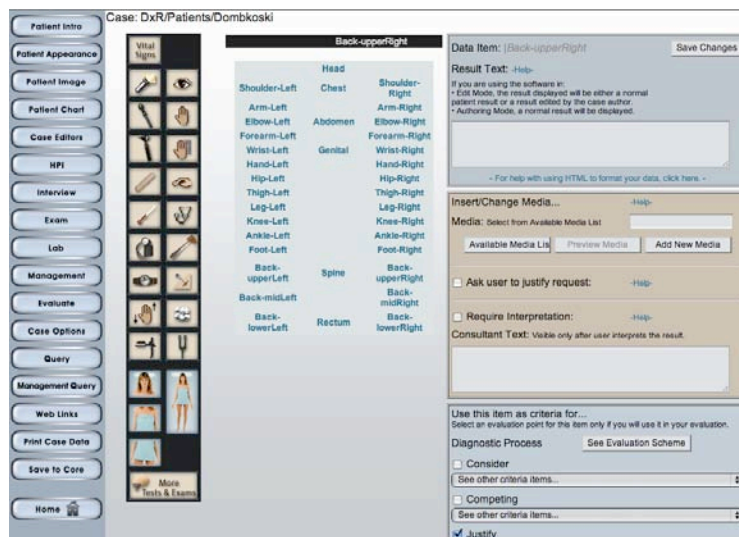
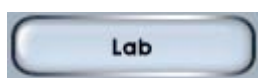


Figure 8. Editing physical exam results.

### NOTE

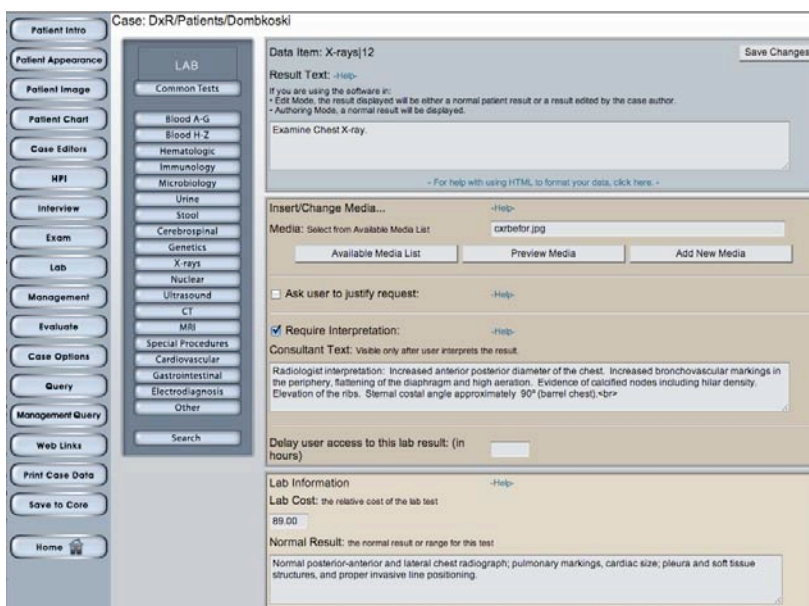
If you edit results that would show up in more than one exam, (i.e. vital signs), you must edit the same values in all applicable exams. Example: Heart rate would show up under vital signs and in several individual exams. Such results should be edited in all exams where they would appear.



**Lab Button**

Here you may change the patient's lab results. Follow the steps below.

1. Select a lab category.
2. When the list of labs appears, select the lab you want to view/edit.
3. Click Order to go directly to the patient's results.
4. Edit the text results in the field labeled Result Text as desired and click Save Changes. You may also change other parts of this result (see below).



- Determine whether to include media for this lab result.
  - Check the box marked Justify to ask students to justify their request for this lab test. If the "justify request" box is already checked, click on the checkmark if you want to remove the prompt to justify the selected item (see Justify note).
  - Determine if the student must type in an interpretation of this result when it becomes available.
  - Optional, when an interpretation is required: Type the text of an expert opinion in the field marked Consult. A student will be allowed to view the information from this text field only after he/she enters an interpretation of the lab item associated with the text/media result.
  - Determine whether the result of this lab test should be delayed until after the student enters a final diagnosis and management plan. If you decide to delay the lab results, you must also activate this function in the Case Options portion of editing this case.
  - Edit as needed the text displayed in the Normal Result field. This text will be displayed to students when they click the Test Info button or the Normal button when selecting lab tests.
  - If you want to change Lab Cost, edit that information in the field labeled Lab Cost. The editable text in the Lab definition field includes a description the lab test and what it is used for, followed by what an abnormal result might indicate. The text that appears in the Definition field will have a pipe symbol | following the description of the lab. To change the Test Description, edit the text before the pipe symbol. Edit the information after the pipe symbol | to change what a lab result of Abnormal Indicates. Please do not remove the | symbols.
  - Determine whether this lab test should be one of the criteria items to evaluate student performance in either the Diagnostic Process evaluation or the Management Plan.
  - As needed, add Web Links to appear when students order this test. See pages 12 & 13.
5. Click Save Changes after you've made all the desired changes.

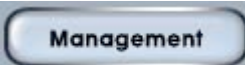
Figure 9. Editing patient Lab results.

**Criteria Note**

Click the See Other Criteria Items button below each of the evaluation points to see a list of the items already selected as criteria for that node. You can also use this button to make the item you are editing equivalent with a criteria item already in the list.

**JUSTIFY NOTE**

Most requests to justify a particular item will occur in the lab category, often to prompt the students to weigh the potential benefit of ordering a lab test. If you want students to justify requesting a lab, you must select the lab test, and then click inside the Ask User to Justify box. When the checkmark appears, the Justify prompt has been activated.


**Management**
**Management Button**

The Management button allows you to enter questions that will appear when the student makes certain management selections.


Please note that this button doesn't allow you to edit the management plans. To edit the management plan, use the evaluate button and then locate the item you would like to edit.

The Management Section contains no responses/results to edit, but it does allow you to enter questions that will appear when the student makes certain selections.

1. Select the category from the list on the left. A list of available management options within that category will appear.
2. Highlight the option that you are interested in and click Edit. You will now see a list of Question Options.
3. If you select No Question, the student will not be prompted with any question when selecting this item. If you leave the Default Question marked, then the question "What would be the purpose of this?" will appear if the student chooses this item. The cases are preset with the Default Question selected unless the case author has entered a Custom Question in its place. You may select Custom Question to enter your own question. If you make changes, click Save.
4. Determine whether the management item that you've selected should be a criteria item for the management plan. To make the item a Required item, click the Required box. To make the item a Recommended management item, click the Recommended box..

(Optional) To make the item equivalent to one of the existing management criteria items, click the Required or Recommended menu and select the management item that your new item equates to. Make sure the appropriate Required or Recommended box is also checked.

After you are satisfied with your changes to patient information in a DxR case, you may select another type of information to edit or return to the DxR Management Index screen.


**Evaluate**
**Evaluate Button: Editing Evaluation Criteria**

Before you edit the criteria for evaluating student performance, it's best to understand what is being assessed at each evaluation point, how it's being assessed, and how your changes may affect student scores. The pages that follow first deal with how student performance is evaluated (pages 19-23) and then with editing the criteria that provide the basis for the evaluation (pages 24-28).

## How DxR Clinician Evaluates Students' Performance

DxR Clinician provides you with both qualitative and quantitative evaluations of a student's performance in working through a simulated patient case. For example, the student's Level of Diagnostic Reasoning performance is expressed as a qualitative description as well as a numeric value. Additionally, DxR Clinician renders numeric scores for Clinical Reasoning, Management, and Content Knowledge. These four scores are weighted and then combined to produce the **Overall Performance Evaluation Score**. (See the Record Utility section of this manual for more information.)

The **Level of Diagnostic Performance** is a descriptive, qualitative measure based on the items the student includes in his/her investigative inquiry. The Diagnostic Performance Level evaluation is governed by a paradigm that eventually classifies a student's performance by one of ten descriptions. Each of these descriptions is assigned a value between zero and 100.

For the **Clinical Reasoning Score** (CRS), students will receive points for achievements in the clinical investigation, including considering the correct diagnosis as part of their listed diagnostic hypotheses, arriving at the correct diagnosis, and selecting the investigative items from the patient information needed to justify the correct diagnosis and rule out competing hypotheses.

Please note the student's performance in selecting **Management** items for the patient case is scored separately on a numerical basis in five subcategories. Later in the Record Utility, you may assign a numeric value to the subcategories of Required, Recommended, Related H&P, Related Lab and Problem List, based on the relative importance of each category.

The student's performance in developing their **SOAP Notes** is based on the instructor's assessment of the student's entries for Subjective, Objective, Assessment and Plan notes while working through the case.

The student's performance in the **Content Knowledge** score is based on the instructor's assessment of performance in five areas: Statement of problem, Dx justification, interpretations, rationales, and the case questions. This quantitative and qualitative evaluation allows the instructor to grade student responses in these areas and then weight them to produce a Content Knowledge Score.

These five scores — Diagnostic Performance, Clinical Reasoning Score, Management, SOAP, and Content Knowledge — are weighted and then combined to form the **Overall Performance Score**.

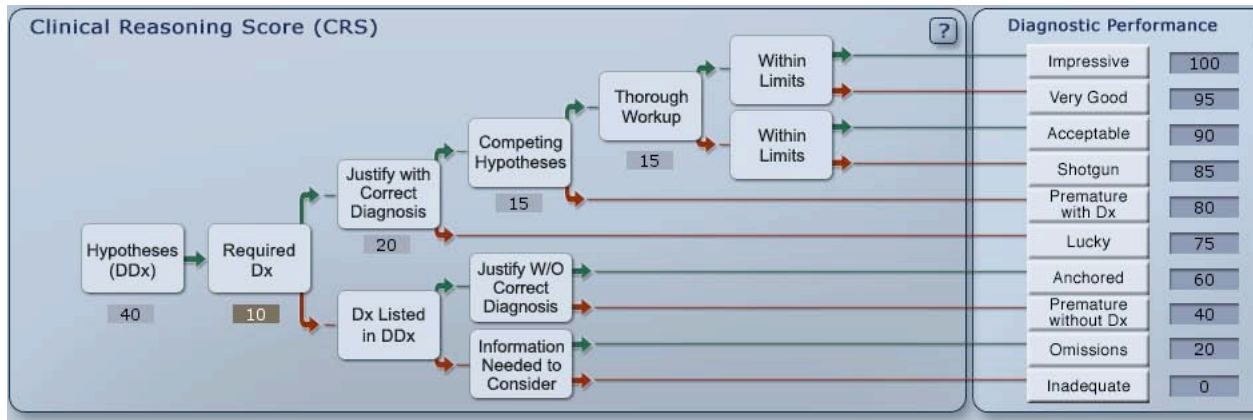


Figure 10. The Scoring Paradigm governing the determination of the Clinical Reasoning Score and the Level of Diagnostic Performance.

## How Criteria Work in Evaluating Student Performance

The **Scoring Paradigm** represents a decision tree used to evaluate student performance. While the student's hypothesis list is scored initially, the evaluation of student performance begins in earnest at the Required Diagnosis node.

To arrive at a **Level of Diagnostic Performance** students will move through a yes/no decision tree. In each branch of the tree, a student will move up only if he/she selected all the items designated as criteria for success at that node. The student will move 'down' if he/she failed to enter/select all items designated as criteria for success at that node. Depending on their entries at the Required Diagnosis node, students move either 'up' the paradigm toward the highest performance level (Impressive), or 'down' the paradigm toward the lowest performance level (Inadequate).

The criteria for each node are set initially by the case author, but can be changed using the DxR Management Utility, or the Record Utility.

The **Clinical Reasoning Score** is derived from points assessed for achievements at five different nodes. They include an evaluation of the student's hypothesis list compared to the case standards, arriving at the correct diagnosis, justifying the diagnosis, ruling in and out competing hypotheses, and doing a thorough workup within the efficiency limits set by the case author. The case author and/or instructor select the items the student must include at each node to receive full credit. At the Hypotheses node, the student will receive credit only for the hypotheses that match the author/instructor's criteria. At the Required Diagnosis node, the student will receive either all the possible points for that node or none of the possible points. At the Justify, Competing, and Thorough nodes, students who include some but not all criteria items will receive partial credit. This scoring method allows the possibility of a reasonable score for students who reach the incorrect diagnosis, but are otherwise thorough.

In describing each node in the next several pages, we've outlined how the student's Level of Diagnostic Performance and the Clinical Reasoning Score would be affected.

### Definition: Criteria Items

Criteria items are responses that the case author and/or instructor designate as key items in evaluating the student's performance on the DxR Clinician case. Criteria are patient items the student must list to receive full credit for that node of the scoring paradigm.

**Hypotheses Node**

At this node, the question is "What percentage of the author/instructor's expected hypotheses did the student include in his/her hypothesis list?"

At the hypothesis node, the student will receive credit only for the Hypotheses that match the author/editor's criteria. For example, if the student lists two of the four hypotheses in the case criteria, the student will receive 50% of the points assigned to this node for the Clinical Reasoning Score. (It is assumed that if the student arrived at the correct Required Diagnosis, he/she also included the correct diagnosis in the hypothesis list, because the Diagnosis is derived from one or more items in the hypothesis list.)

**Required Diagnosis Node**

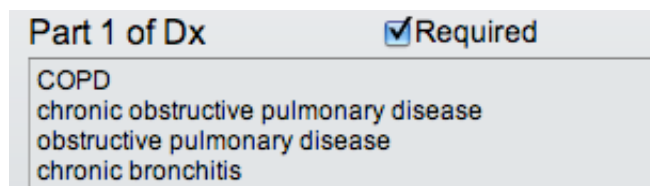
At this node, the question is "Did the student include all the required Parts of the correct diagnosis?"

Within the DxR program, students enter their Diagnosis by selecting one or more of their Hypotheses and then expanding on the text as needed. The software searches the text of the students' entries for key words and phrases that match the case author's/instructor's standards. Since some diagnoses are complex or multi-faceted, the software allows the case author or instructor to enter up to five sets of synonyms (key words or phrases) to define the diagnosis. All are considered 'Parts' of the diagnosis, but some may be considered more significant than others in describing the diagnosis. You must mark **at least** one of the parts of the correct diagnosis as Required. A student must include one of the synonyms for **all** required parts of the correct diagnosis to move up the evaluation paradigm. (Parts which aren't marked as required are evaluated in the Thorough Workup node.) Depending on the educational level of students, you may choose to require only certain Parts at this point in the evaluation process.

**For the Level of Diagnostic Performance:** To move up the paradigm students must include in their diagnosis at least one synonym from all required Parts of the correct diagnosis. If so, the student will move up the evaluation paradigm to the 'Justify with Correct Diagnosis' node.

If the student failed to list at least one synonym from each required Part of the correct diagnosis, he/she will move down the evaluation paradigm to the 'Dx Listed in DDx' node.

Figure 11. A required part of the correct diagnosis.



Student's Diagnosis	Program's Evaluation	Explanation
"The patient seems to have chronic obstructive pulmonary disease."	Accepted	This diagnosis is accepted because it matches one of the equivalents entered by the case author or instructor.
"This patient has chronic asthmatic bronchitis leading to pulmonary hypertension, causing right atrial enlargement, and right ventricular hypertrophy."	Rejected	Rejected because there is no reference to chronic asthmatic bronchitis in the equivalents entered by the case author or instructor. Chronic bronchitis is listed as an equivalent, however, chronic asthmatic bronchitis is not. Instructors can use the Record Utility to correct a student's score to account for alternate wording.
"The patient has a emphasema."	Rejected	The diagnosis is correct, but it is rejected because of a misspelling. Instructors may use the Record Utility to correct a student's score to account for spelling errors.

Fig. 12: An example of how the DxR Clinician program evaluates the diagnosis.

**For the Clinical Reasoning Score:** Students who select all required Parts of the diagnosis from their hypothesis lists will receive the points assigned for the 'Required Diagnosis' node (default total points possible = 10).

A student who fails to enter all required Parts of the correct diagnosis won't receive any of the points assigned to the Required Diagnosis node, but would move down the decision tree to the 'D<sub>x</sub> Listed in DD<sub>x</sub>' node.

### **Dx Listed in DDx Node**

*At this node, the question is "Did the student list ALL required Parts of the Required Diagnosis in his/her list of diagnostic hypotheses?"*

Here the student's complete hypothesis list is examined to see if the student considered all required parts of the Required Diagnosis in his/her hypothesis list.

**For the Level of Diagnostic Performance:** If the student considered all required Parts of the Required Diagnosis, he/she will next move to the 'Justify Without Correct Diagnosis' node.

If the student failed to do so, he/she will move down the decision tree to the 'Information Needed to Consider' node.

**For the Clinical Reasoning Score:** There are no points assigned to this node, because the student's hypothesis list was evaluated and scored at the 'Hypotheses' node.

### **Information Needed to Consider Node**

*At this node, the question is "Were there sufficient clues to enable the student to consider the correct diagnosis?"*

If the student neither chose nor considered the correct diagnosis in his/her hypothesis list, the student's record is examined at the Information Needed to Consider node for key elements that should have led the student to at least consider the Required Diagnosis. Information used to answer this question comes from the student selections for history, physical, and lab which should clearly lead an investigator to consider the correct diagnosis as a diagnostic hypothesis. This list of clues should not be exhaustive. It should, however, contain the fundamental items that together point to the correct diagnosis.

**For the Level of Diagnostic Performance:** If the student **didn't** select the items that would have provided sufficient clues to consider the Required Diagnosis, the student's performance may result from an inability to frame the problem, usually associated with a cognitive knowledge deficit. His or her Level of Diagnostic Performance would be labeled 'Inadequate.'

If the student included items that would have provided sufficient clues to consider the required diagnosis but he/she still failed to consider it, his/her Level of Diagnostic Performance would be described as having 'Omissions.' The failure to consider the correct diagnosis could point to a misinterpretation of the available clues. Such misinterpretations may point to a cognitive knowledge deficit and/or a lack of competence with specific performance objectives (e.g. interpreting heart sounds).

If the student correctly interpreted the available clues but still didn't consider the correct diagnosis, then his/her error probably results from ignorance of the disease process and/or a processing error (omission, inadequate synthesis, wrong synthesis). The student's free text responses to key items may provide insight in pinpointing the cause of the error.

**For the Clinical Reasoning Score:** There are no points assigned to this node for the Clinical Reasoning Score.

## Justify Node

*At this node, the question is “Did the student include all questions, physical exams, and lab data necessary to justifiably arrive at the correct diagnosis?”*

The Justify node appears at two nodal points on the evaluation paradigm -- ‘Justify With Correct Diagnosis’ and ‘Justify Without Correct Diagnosis.’ The questions, physical exams, and lab data listed as criteria at this node should represent the basic information necessary to justify the Required Diagnosis. The data assessed here do not represent the ideal workup.

**For the Level of Diagnostic Performance:** If the student’s choices **are** sufficient to justify the correct diagnosis, but if the student failed to reach that diagnosis, his/her Level of Diagnostic Performance would be ‘Anchored.’

If the student choices **aren’t** sufficient to justify the correct diagnosis and if the student failed to arrive at the correct diagnosis, his/her Level of Diagnostic Performance would be ‘Premature without Diagnosis.’

Students who reached the correct diagnosis but whose investigative choices didn’t justify those conclusions would see their Level of Diagnostic Performance described as ‘Lucky,’ meaning he/she arrived at the Required Diagnosis by a lucky guess.

Students whose investigative choices provided a sound basis to justify their selection of the correct diagnosis move “up” the Scoring Paradigm to the ‘Competing Hypotheses’ node.

**For the Clinical Reasoning Score:** Students will receive credit based on the number of the designated criteria items for this node that he/she included. For example, if the student included two of the four criteria items listed for the ‘Justify node,’ he/she would get half the possible points for the ‘Justify’ node (default total points possible = 20).

## Competing Hypotheses Node

*At this node, the question is “Did the student include all criteria items needed to rule out competing hypotheses?”*

The paradigm works best if the criteria set for this node evaluate a student’s choices in investigating the most important or most likely other hypotheses or diagnoses. If students are expected to consider or rule out all possibilities in a complete differential diagnosis, virtually no student would successfully pass through this filter.

*Example: In the case of a boy with knee arthritis, the Required Diagnosis might have been juvenile rheumatoid arthritis. Other diagnoses for consideration might have been Lyme disease and rheumatic fever. Criteria entered at this point could reasonably include questions about exposure to insects, a question about the presence of a rash, an ASO titer, a Lyme titer, questions about fever and taking the boy’s temperature as part of the physical exam.*

**For the Level of Diagnostic Performance:** If the student included all criteria items in ruling out competing hypotheses, the student moves ‘up’ the paradigm to the ‘Thorough Workup’ node.

If the student failed to include all the criteria items in ruling out competing hypotheses, the student will attain a rating of ‘Premature with Diagnosis’ for his/her Level of Diagnostic Performance.

**For the Clinical Reasoning Score:** Students will receive credit based on the number of the designated criteria items for this node that he/she included. For example, if the student includes half the criteria items, he/she would receive half the points possible for the ‘Competing Hypotheses’ node (default total possible = 15 points).

### Thorough Workup Node

The question at this node is, “Did the student’s selections include all other criteria items that haven’t been evaluated elsewhere, but which are deemed essential for a thorough workup?”

The evaluation standards set for a thorough workup are usually what would be expected of a resident completing a primary care residency. The information evaluated at this node assesses the questions, physical exams, laboratory tests, and ancillary diagnoses considered essential for a thorough workup. Items evaluated here should include questions, exams, labs, and diagnoses that are expected, but which haven’t been previously selected at other nodes. This includes one synonym from all other parts of the diagnosis that weren’t marked as “required” for the Required Diagnosis.

**For the Level of Diagnostic Performance:** If the student entered all the criteria items for this node and all the parts of the diagnosis (required and non-required), the student will have the opportunity to move “up” the paradigm to the highest performance level, depending on his/her rating at the ‘Within Limits’ node.

If the student failed to include all the criteria items for this node all the parts of the diagnosis (required and non-required), he/she won’t be able to attain the highest level of performance on this particular DxR case. In this case, the student’s Level of Diagnostic Performance also depends on how he/she is rated at the ‘Within Limits’ node.

**For the Clinical Reasoning Score:** Students will receive credit for the number of the designated criteria items for this node that he/she included. For example, if the student includes half the criteria items, he/she would receive half the points possible for the ‘Thorough Workup’ node (default total possible = 15 points).

### Within Limits Node

At this node, the question is “Did the student stay within the efficiency limits set by the case author and/or instructor?”

One characteristic of an expert clinician is the ability to arrive at a correct diagnosis efficiently. To discourage an unfocused approach to the clinical investigation process, you may place limits on the numbers of questions that should be asked, exams that may be performed, and lab tests that may be given in a particular case.

**For the Level of Diagnostic Performance:** If the student stayed within the set efficiency limit and still conducted a thorough workup, he/she will achieve the highest Level of Diagnostic Performance, which is Impressive. If the student exceeded limits but conducted a thorough workup, his/her Level of Diagnostic Performance will be ‘Very Good.’

If the student stayed within the efficiency limits but didn’t achieve a thorough workup, his/her Level of Diagnostic Performance will be ‘Acceptable.’ If the student exceeded limits and failed to conduct a thorough workup, his/her Level of Diagnostic Performance will be described as ‘Shotgun,’ denoting a “shotgun” approach to the clinical investigation.

**For the Clinical Reasoning Score:** If students exceed efficiency limits, points will be deducted from their Clinical Reasoning Scores. See the chart at the right. Deductions are proportional to the extent to which students exceed limits.

	Exceeding the Limit on Interview Items	Exceeding the Limit on Exam Items	Exceeding the Limit on Lab Tests
	1 point off plus 1 for every 3 questions over the limit	1 point off for exceeding limits and a one-point deduction for every 3 question over the limit.	2 points off for every lab over the limit
	Max deduction: 5 points	Max deduction: 5 points	Max deduction: No limit

Figure 13. How the diagnosis is evaluated

## Editing Case Data - Changing Evaluation Criteria

### Evaluate

#### Evaluate Button: Editing Evaluation Criteria

You can change the evaluation criteria for a case online just as you can edit patient data. The following pages explain the process of changing the online evaluation criteria for a DxR case. (You can also change evaluation criteria in the Record Utility while analyzing student records. See the Adjust Criteria section of this manual for more information.) On the DxR Management Utility Index screen, click Edit Case Data. Select and enter the case you would like to edit. Click Evaluate. You will see a row of buttons, corresponding to each part of a DxR Clinician case. On the next few pages we explain how to edit criteria for each section.

### Paradigm

#### Paradigm

Paradigm values affect only the Clinical Reasoning Score portion of the evaluation of students' performance (components of the CRS should total 100 points).

Preset point values for the nodes included in the student's Clinical Reasoning Score are shown (see Detail Note). You may change the numbers in the Management Utility or in the Record Utility. Click Save Changes when you are satisfied with your entries.

See the Adjusting Evaluation Criteria section of this manual for information on changing paradigm values in the Record Utility. (See p.35-36)

### Hypotheses

#### Hypotheses Button

Click Hypotheses to review and edit the criteria for the hypotheses (differential diagnoses) that you would expect your students to consider for this case. Student hypothesis lists are scored against the criteria list, so it is important for you to review the default criteria and edit it for your level of students. For example, a student whose list contains two of the four hypotheses in the criteria would receive 50% of the points assigned to this node. The more exhaustive the list of expected hypotheses, the more difficult it will be for students to score well in this part of the evaluation.

### Diagnosis

#### Diagnosis Button

Click Diagnosis to set the criteria for the Required Diagnosis. The Required Diagnosis should include the diagnosis, but may also include other information the case author deemed important.

1. Edit as need the concise diagnosis, which includes all components of the diagnosis. This information is displayed to the student during the Initial Self-Assessment at the end of the case.
2. List each component of the Required Diagnosis separately in the fields marked Part 1, Part 2, etc. (5 or fewer parts). Most cases will have only one or two parts to the correct diagnosis, but space is provided for up to five.
3. Add any acceptable synonyms to each Part, listing each synonym on a separate line. Include as many synonyms or equivalents as possible. This will give the student greater latitude in having a diagnosis scored correctly. For scoring purposes, each synonym is considered equivalent to all other items in that Part. The student's diagnosis must contain one of the synonyms listed for that Part to receive credit.

### DETAIL NOTE

Hypotheses = 40 points  
 Required Diagnosis = 10 points  
 Justify Diagnosis = 20 points  
 Competing Hypotheses = 15 points  
 Thorough Workup = 15 points.

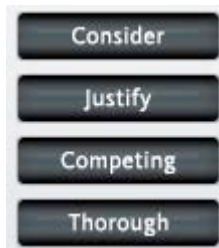
### PRINT CRITERIA

You can click the Print Dx Criteria button to print all criteria associated with the Diagnoses, including your edits.

Click Print Rx Criteria to print all criteria associated with treating the patient (management), including any changes that you've made.

- To edit any part of the Required Diagnosis, highlight the text you want to change, delete it, and type in the new text. Click Save Changes.
- Indicate each Part of the diagnosis that will be Required. The Parts checked as Required will be used in evaluating the first node, the Required Diagnosis. The others become part of the criteria for the Thorough node. You must check Required for at least one Part of the Diagnosis. If you do not check at least one component of the diagnosis as Required, then any diagnosis entered by the student will be scored as correct.

*Optional: You can provide students immediate feedback at the end of the case in the form of a brief discussion of the diagnosis if you wish. You may edit the existing text or simply add your discussion text in the field labeled 'Required Diagnosis.' Students can access this information by clicking the Required Diagnosis button on the Initial Self-Assessment screen which appears after they have completed the case.*



### Consider, Justify, Competing, and Thorough Buttons

To review the existing node criteria, click the button for the node you want to review. A screen will appear, displaying the evaluation criteria as provided by the case author. Decide whether you want to modify any of these criteria.

To select items to add, follow these steps.

- Click the appropriate Interview, Exam Tools, or Lab Category (top of the screen) to see the pull-down menu for each.
- From these menus, select the proper category (e.g., from Interview you could select the category of questions you want to view. From Examination you could select the exam tool that you want the students to use).
- Click Get Questions for the Interview section or Get Lab List in the Lab section. Choose the specific question, body part, or laboratory test you want to add. Click Retrieve...from Case. You will see the patient response or the test result specific to that case.
- You have two options in adding material to the node criteria. By clicking Add you add material as a new, separate item; by clicking 'Or' Add you add material as an equivalent. (See Helpful Hint.) If you enter many items as equivalents, the text will wrap to the next line, but all items are considered to be synonymous.
  - Option 1: Type your discussion text in the field labeled "Why this item is important." Students will see this text, along with the patient data when they view detail of this criteria item in the Initial Assessment at the end of the case.
  - Option 2: You can provide comments to your students explaining the evaluation criteria for a node in the 'Category Discussion Text.' To edit any existing text, highlight and delete the text you want to change and then type in the new information.
- After editing the criteria for each node, click Save Changes. The evaluation information for the node will be written to the evaluation database on the server.

### HELPFUL HINT

How do you decide whether items should be listed as equivalents? We suggest the following rule of thumb. If the student can gather the same information from several different items in the case, each item should be listed on the same line, separated by commas. For example, "Blood A-G|20," "Blood A-G|46," and "Blood A-G|54" all refer to blood sugar or glucose. If you felt that a measure of blood sugar were required you could list all three measurement methods as equivalents. If the student includes any one of these equivalents he/she would receive credit for having gathered the required information.

## Efficiency

**Efficiency Button**

One characteristic of an expert clinician is the ability to arrive at a correct diagnosis efficiently. To discourage the student from an unfocused approach to the clinical investigation, a limit is set regarding the number of interview questions, exams, and lab tests that may be ordered before an 'efficiency warning' is given. Cases include default limits for all these items. The limit should be broad enough to allow for a reasonable, thorough investigation, but confined enough so that a student merely going down the list of available choices would encounter dialog boxes warning, 'You have \_\_\_ more questions (exams, labs) before your overall efficiency will be affected.' Students will be allowed to request additional questions, exams, and lab tests beyond the efficiency limit. However, it will affect a student's efficiency scores if he/she exceeds the limits. Efficiency scores may affect the Level of Diagnostic Performance that the student achieves, as well as the Clinical Reasoning Score.

**Criteria Count:** If you have added or deleted any criteria items from the various nodes (Consider, Justify, Competing, and Thorough), change the criteria count of interview questions, exams, and lab tests to reflect your changes, making sure to exclude duplicates. Click Save Changes when you are finished editing.

**Note:** The information entered in the Criteria Count at the time the student completes the case will determine the information displayed to the student in the Initial Self-Assessment at the end of the case, so it's a good idea to make these adjustments before you make the case available to students. (These values are rechecked and automatically set by the Record Utility when records are imported.)

**Student Maximum:** Preset counts are shown but may be edited.

1. Enter the total number of interview questions, exams, lab tests, and management options that students will be allowed to request before exceeding the efficiency limits.
2. Click Save Changes when you are finished editing.

**Item Count:** The Item Count entries show the total number of items available in the DxR Clinician database. Do not change these numbers.

**Lab Cost Allowance:** This is the total dollar amount allowed for lab tests ordered by a student. The preset amount is shown and can be edited. Remember that all lab tests count as individual items. There are no 'panels' of lab tests that can be ordered in the DxR Clinician database. The information on whether students exceed the lab cost allowance will be reported to you in the Record Utility.

*If you have added labs or changed the costs of lab tests, you may want to adjust the Lab Cost Allowance.*

Click Save Changes when you are satisfied with your entries.

**Efficiency****Interview**

Student Maximum	100
Criteria Count	11
Item Count	241

**Exam**

Student Maximum	100
Criteria Count	10
Item Count	452

**Lab**

Student Maximum	50
Criteria Count	6
Item Count	674
Lab Cost Allowance	506.00

Figure 14. Editing the Efficiency Limits.

**Management**

- Problem List
- Required
- Recommended
- Related H&P
- Related Lab

**Management**

In this section, you may set the criteria that will be used to evaluate the student’s patient management plan. Patient management items are divided into five categories. They are Problem List, Required, Recommended, Related H & P, and Related Lab. Students will be evaluated based on entries that match the criteria you set for each category. Later, in the Record Utility, you will set point values for each of the five categories of the management plan. The preset point values total 100. Below is a discussion of the types of items that you should list for each of the five areas. (For instructions on editing the point values assigned to the four management areas, see the instructions for Adjusting Evaluation Criteria on p. 36.)

**Problem List Button**

If you intend to grade the students’ problem lists, you should type in the list of problems that you expect your students to include in their list. If you do not intend to grade the student’s problem list, you may leave this field blank.

**Required Button**

This area should contain only the treatment criteria items that you would consider necessary for a student to receive a satisfactory score on his/her treatment plan. Select only items from the Management pull-down menu.

**Management Discussion Text**

In the Management Discussion Text field that appears below the criteria for Required, Recommended, Related H&P, and Related Lab, you can type in text that explains the issues in managing this patient’s problems. This discussion text may explain why certain management choices are appropriate or inappropriate for this patient.

**Recommended Button**

This area should contain additional treatment criteria items that would be included in a more complete treatment plan. Select only items from the Management pull-down menu.

**Related H&P Button**

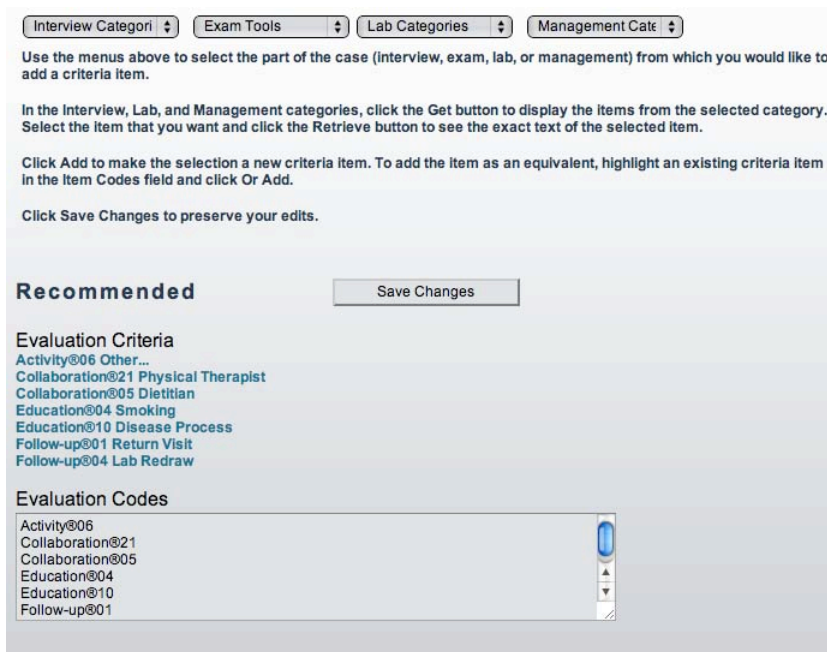
The criteria listed here should include Interview and Exam items that the student needs to investigate in relation to the management items selected. For example, if the student were prescribing medication for the patient, he/she would need to ask about allergies, current prescriptions, and over the counter medications currently used. These items may or may not be considered when the student is making his/her diagnosis.

**PRINT CRITERIA**

Click Print Rx Criteria to print all criteria associated with treating the patient (management), including any changes that you’ve made.

You can click the Print Dx Criteria button to print all criteria associated with the Diagnoses, including your edits.

*Figure 15. Editing the criteria for the Recommended Management node.*



**Related Lab Button**

The criteria items listed here should include all items from the lab section that the student needs to investigate in relation to the management items selected. For example, you may think it's important to order an EKG or CXR before consulting with a cardiologist. These items may or may not be considered when the student is making his/her diagnosis.

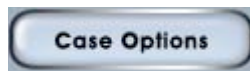
***Deleting Management Criteria***

To delete a management criteria item, click the appropriate Required, Recommended, Related H&P, or Related Labs button. In the field labeled Evaluation Codes, highlight the code of the item that you want to delete, delete it and then click Save Changes.

When you are satisfied with your changes to each section of the evaluation criteria, click Save Changes. You can return to the DxR Management Utility Index screen (click Home) or continue the process of editing case data by changing how the case is presented to students.

## Edit Case Data - Case Options

You can use the Case Options, Query, and Management Query buttons to determine how the case is presented to the student. From the DxR Management Utility Index screen, click Edit Case Data and then click one of the three buttons.



### Case Options Button

#### Access Preferences

**Interview:** Check to allow access to the interview section of the case.

**History of Present Illness:** Check this box to allow users to review the HPI information, replacing the entire Present Illness category in the Interview.

*Note: If you use this option, make sure your HPI Summary text includes all pertinent information that students could gather if they had access to the Present Illness questions.*

**Exam:** Check to allow access to the exam section of the case.

**Lab:** Check to allow access to the lab section of the case.

**Show Normal:** Check this box to automatically display the normal values along with the result of each lab ordered. If you don't check this box, students will still have access to normal results by clicking the Normal button.

**Delayed Labs:** Check the Delayed Labs box if you would like the results of some lab tests to be delayed, simulating what happens in a real clinical setting. The results of these tests will be given to students once they make their final diagnosis. They are then given the opportunity to change their diagnosis and management based on the results of the delayed tests.

**Lab List:** Click Lab List to allow students to select a series of lab tests and order them all at once.

**Management:** Check to allow access to the management section of the case.

**Treatment Categories:** Check this option to allow access to the ten treatment categories used to develop a management plan. Users must select a treatment mode (In Hospital or Out Patient) before treatment categories are available. If you turn off access to the Treatment Categories, students have access only to the treatment mode and any Management questions you enter.

**Consultants:** Check to allow access to consultant information contained within the case.

**Evaluation:** Check to allow access to the initial assessment at the end of each case.

Figure 16. The Case Options screen.

Case: DxR/Patients/Dombkoski

**Case Delivery Options** -Help-

Save Changes

Access Preferences	Hypotheses Preferences
Interview [?]	Associate Hypotheses [?]
History of Present Illness [?]	Review at Interview [?]
Exam [?]	Review at Exam [?]
Lab [?]	Review at Lab [?]
Show Normal [?]	
Delayed Labs [?]	
Lab List [?]	
Management [?]	
Treatment Categories [?]	
Consultants [?]	
Evaluation [?]	
	<b>Other...</b>
	Require Passwords [?]
	Problem List [?]
	SOAP Notes [?]
	Currency Modifier [?] x 1
	Currency Units: \$

Click on a question mark to view a description below.

## **Hypotheses Preferences**

**Associate Hypotheses:** Check Associate Hypotheses if you want the students to specify the hypothesis they are pursuing each time they request an interview, physical exam, and lab item. The ability to force the students to associate each inquiry item with a specific hypothesis may provide insight into the student's clinical reasoning.

**Review at...:** For each Review At box you check, students must enter or review their diagnostic hypotheses and problem statement before beginning that area of the investigation.

If you check the Review at Interview box, students will be allowed access to questions in the first Interview category ("Present Illness" or the summary of the History of the Present Illness). However, they must enter their diagnostic hypotheses before accessing other categories in the Interview section.

### **Other...**

**Require Passwords:** Check Require Passwords if you want students to enter an assigned User Name and Password to be able to enter a DxR Clinician case.

**Problem List:** Check this preference to require students to make a list of all issues that are pertinent to the holistic care of the patient, other than the chief complaint. If you check this option, students will be able to enter their problem list at any time while working through the case, but they will not be prompted to enter their problem list until they are preparing to enter a final management plan for the patient.

**SOAP Notes:** Check this preference to prompt students to review and enter notes under the following headings: Subjective Data, Objective Data, Assessment Data and Plan. If this option is activated, SOAP notes will be available throughout the students' work in the case, and they will be prompted to enter data into at least one of the fields before entering a final diagnosis. SOAP notes will also be available in the management (treatment) section of the case.

**Currency Modifier** - The current lab list contained in this program has a relative cost for each lab test, displayed in US dollars. Use this option to alter the dollar amounts by a multiplier. For example, if you would like to increase the lab costs contained in this program by 50%, you would type in a multiplier of 1.5 and click Save Changes. The updated cost will be displayed when the student requests Lab Info and listed on their case evaluation.

**Currency Units** - If you are teaching students who are not accustomed to expressing costs in US dollars, you may change the units to something more readily understandable. In the Currency Modifier field, enter the current exchange rate for one US dollar. In the Currency Units field, type in the currency symbol. Click Save Changes. The new listings will be displayed when the student requests Lab Info and the cost in your chosen monetary units will be listed in the student's case evaluation.

### **NOTE**

When adjusting the cost/currency please remember to adjust the lab cost allowance displayed when you click Evaluate/Efficiency, since these costs will be reflected in the Record Utility. However, neither method will reflect updated numbers/currency under labs in the management utility.



## Query and Management Query Buttons

You may wish to ask students questions at various points in their investigation to enrich their experience in working with a DxR Clinician case and to stimulate their diagnostic thinking. You can link your questions to specific investigation items using the on-line query utility. When the student selects an item linked to your question, the patient's response (or test result) will be displayed first and then the student will be alerted that your question will appear. If the student does not select the investigation item to which your question is linked, the question will still be asked, but it will appear immediately before the student enters a diagnosis.

If the student is required to make an interpretation of the data, the prompt to answer your question will precede the student's interpretation.

Query allows you to link questions to the interview, lab, or exam sections of the case.

Management Query allows you to link questions to the items in the management section of the DxR Clinician cases, to the Management section in general, or to one of the two treatment modes (In Hospital or Outpatient).

Follow the steps below after clicking either the Query or Management Query button.

**Query List**

### Query List Button

After clicking on Query or Management Query, click Query List to see what questions are linked to the case you are editing. From this screen you will be able to see and remove existing questions and links. If you remove a question, the link must also be removed. If you wish to add questions, follow the steps described below.

**Multiple Choice**

### Multiple Choice, True-False, or Short Answer Buttons

**True/False**

Choose the type of question you want to ask ( Multiple Choice, True-False, or Short Answer).

**Short Answer**

a) Enter a unique Question Identifier (name or title) for your question. This can be anything that you choose.

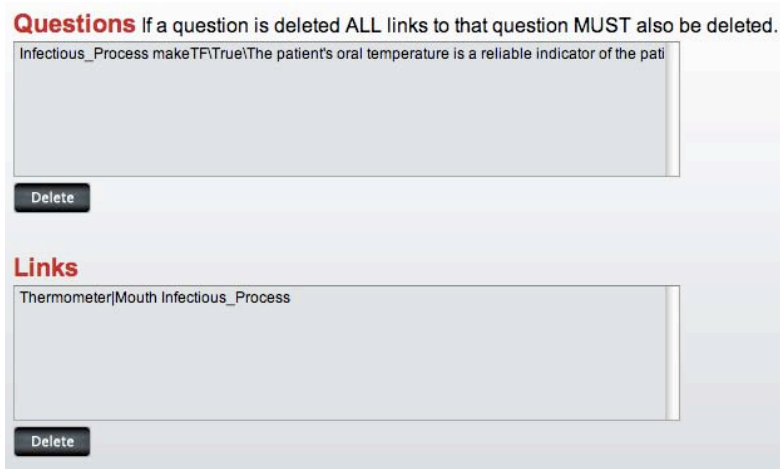
b) To create links, select the desired category or exam tool from the pull-down menu(s) at the top of the screen. If you select from the Interview or Lab categories, highlight the specific question/lab and click Get Questions/Lab List to display your options.

*Note: If you are adding a Management Query to a specific item, select the treatment category and then the item. Select Treatment Area if you want to attach your question the Management section in general or to a treatment mode (In Hospital/Outpatient).*

c) Select the question, body part, lab test or treatment option to which you want to link a question.

d) Click Create First Link and the appropriate DxR Code will then be displayed

Figure 17. Query List displaying a question for a DxR Clinician case.



in the links box. If you wish to create additional links to the same question, select the next treatment option and click Add Additional Link. If a student selects multiple items linked to the same question, the query will not be repeated.

Figure 18. Entering a question linked to an item in a case.

e) Type your question in the Question box.

- *For multiple choice questions:* Enter up to five possible answer choices. Click the radio button corresponding to the correct answer (A, B, C, D, or E).

- *For true-false questions:* Indicate which of the two answer options is the correct choice by clicking the appropriate radio button.

- *For short-answer questions:* You will have to evaluate the student responses individually from the student record in the Record Utility.

f) Optional: To provide students with comments about the question after they have answered it, enter your comments into the Comments box. Students will be able to view this information after answering the question.

g) Click Done to finish creating your question and link.

Case: DxR/Patients/Dombkoski

Query List   Interview Categories   Exam Tools   Lab Categories

Create First Link   Thermometer   Armpit-Left

Add Additional Link   Back-upperLeft   Eye-Left   Head   Mouth

Abdomen	Back-midLeft	Eye-Right	Heart-Aortic	Neck
Abdomen-lowerLeft	Back-lowerLeft	Face-Left	Heart-Mitral	Nose
Abdomen-lowerRight	Back-upperRight	Face-Right	Heart-Pulmonic	Rectum
Abdomen-upperLeft	Back-midRight	Foot-Left	Heart-Tricuspid	Scalp
Abdomen-upperRight	Back-lowerRight	Foot-Right	Hip-Left	Shoulder-Left

Question Identifier...  
Infectious\_Process

Links...  
Thermometer|Armpit-Left

Question...  
The patient's oral temperature can be an indicator of the infectious process.

TRUE  
 FALSE

Comment...  
Temperature can be a clue to an infectious process causing an acute exacerbation of symptoms

Done

Save to Core

## Save to Core

The Save to Core function allows you to save your edits to a DxR Clinician case study so your edited case can be installed into any directory on your DxR Clinician site. **The Save to Core function should be used only AFTER you've completed ALL your edits to the desired case study.** Follow the steps below:

1. Review the case to make sure all patient data and scoring criteria edits are complete.
2. Click Save to Core.
3. You will be prompted to edit or enter the last name of the patient. This is the name your case will be saved under. The text is case sensitive, so type in the last name exactly as you want it to appear.
4. Click Save to Core.
5. Your edited case will be saved in the Custom Cases category and will be available for installation into any directory on your site, using the Install, Show, Hide function.

## Analyzing Student Records in the Record Utility

DxR Clinician's Record Utility provides you with a detailed analysis of your students' performance and investigative process. Each Student Activity Record includes data on the student's selections in the various parts of a DxR Clinician case. We encourage you to review the student responses, as well as the computer's analysis of the student's diagnosis and diagnostic hypotheses list. The review will help you gauge the degree of conformity between your evaluation and the computer's initial evaluation based on the case author standards. A careful review will enable you to give students more meaningful feedback on their performance. You can change the evaluation criteria and then reevaluate student performance using the revised criteria. You can also print reports for your review and for students. In addition, the Record Utility can generate statistical information regarding items in the DxR Clinician database.

### Export Records

Since student records are created on the Web server but evaluated in the Record Utility which is not a Web-based application, you must export records to your local computer for evaluation. Go to the DxR Management Utility at

<http://website/DxR/DxRManag/index.html>

- Click Student Record Files. Select the directory and the case within it from which you wish to retrieve records.
- In the lower portion of the screen, you will see an area labeled Record Status where you can select an individual record in your chosen directory and case.

To view the status of a specific record, select it in the Select User field, then click View Record.

- To delete a specific record, select the user name in the Select User field, and then click Delete Record. This deletes only the record and not the user name and password associated with it. You might use this feature if you are allowing students to use the case as a practice case and want to allow them to re-enter the case after they've completed it once.
- Click Export Records and then right click (Mac users: Click and hold) the link in the middle of the screen to download student records. Records will be saved by the case name. The link to the page where you can download the Windows Version and the Macintosh Version links of the Record Utility is available on the Management Utility Index screen.

### Download the Record Utility

From the Management Utility Index screen, you can click a link to access a download of the Record Utility for grading your student records. Select either the Macintosh® or Windows® version of this utility. This will download, decode, and unstuff the utility on the Macintosh® version. For the Windows® version, a setup will be copied to your hard drive. Follow the directions in the setup to install the Record Utility on the computer. Now you are ready to use the Record Utility.

### HELPFUL HINT

If you want to save and review student records which have previously been edited in the Record Utility, you should download a new copy of the record utility for each new group of student records that you intend to review.

Figure 19. Exporting Student Record Files for import into the Record Utility.

The screenshot shows the 'Student Record Files' interface. At the top right, there are links for 'Return to Management Index' and 'Record Files Help'. The main section is titled 'Export Records:' and contains instructions: 'Select Directory and Case and click the Export Records button to download the record file to your computer. You may also view Record Status below before exporting records.' and 'The Clinician Record Utility may be downloaded after records are exported'. Below this are two dropdown menus: 'Select Directory:' with options 'Best', 'Infant', 'Patients', and 'test'; and 'Select Case:' with options 'Bailey', 'Clarke', 'Dombkowski', 'Doyle', and 'Franklin'. An 'Export Records' button is to the right. The 'Record Status:' section contains instructions: 'You may determine the status of any record from this list by selecting and clicking the view record button.' and 'You may delete any test records from this list by selecting and clicking the delete record button.' Below this is a 'Select User:' dropdown menu with a list of users and their record IDs (e.g., Andrew Howard rec68, Avery Porter rec30, Beth Hart rec24, Beverly Johnson rec51, Blaine Howerton rec36, Brandon Harrison rec31, Carol Irving rec54, David Everett rec49, Diane Evans rec4, Emily Trevillion rec47, Gozje Rivera rec43, Heather Proctor rec16). 'View Record' and 'Delete Record(s)' buttons are to the right. A note at the bottom states: 'Note: No Record indicates that the case has not been started by that user.'

## Importing Student Activity Records

1. Open the Record Utility and click Import SAR. The Import screen allows you to control how you import student records into the Record Utility for review and evaluation. The steps you follow will differ depending on whether you are importing records for an initial review or whether you are opening the utility to review records that you have already imported.
2. Click the File menu at the top of your screen and select one of the options listed below.

Figure 20. Importing student records into the Record Utility.

- **Import student names list.** Use this option to import your properly-formatted student roster. The list will appear in the top field on the right side of your screen. Select Clear Student Names List to remove your student roster from the Record Utility.

- **Clear Records.** This option allows you to remove from the Record Utility records that were previously imported. Use this function if you have previously imported SARs for a group or a case and want to start anew in reviewing records from a different group or a different case.

- **Import Records (Web).** Use this function to import student activity records that were captured using the Web-based version of the DxR Clinician software.



- **Add Records.** Do not use this option if you are importing records from the CD version. This function works only with records captured with the Web version of DxR Clinician. Select this import option when you want to add student records from a DxR Clinician case to those already imported into the Record Utility from the same case. Any SARs you add must come from the same case and must be captured from the same version of the program. For example, if the records already imported are from the Dombkoski case captured from the Web version, any records you add must also be from the Web version of the Dombkoski case.
  - **Open Scored Records.** Select this option to navigate to and reopen records that you've previously scored and saved.
  - **Save Scored Records.** Create a folder on your computer where you want to save your records after you've scored them. Then, select this option to navigate to this folder and save your records.
  - **Export Scores to Tab Delimited File.** This option allows you to export the scoring data for all records in the Record Utility to an application that accepts tab-delimited formatting. This option may be useful in making spreadsheets for displaying student scores that can be used in a gradebook application.
  - **Export Data to tab-delimited file.** This option allows you to export every piece of data from a DxR Clinician case into an application that accepts tab-delimited formatting.
3. When you have imported a student list and then selected Import SARs, a dialog box will appear, prompting you to review the evaluation criteria for the case. Click OK to go to the Scoring Paradigm screen in the Adjust Criteria section.

## Adjust Evaluation Criteria Screen

The Adjust Evaluation Criteria screen gives you control over each of the types of student performance evaluation (Diagnostic Performance, Clinical Reasoning, Management, and Content Knowledge). It also allows you to control how those component scores figure into the Overall Performance Score.

**Changing Paradigm Values:** Click Adjust Criteria at the bottom of any screen in the Record Utility to go to the Scoring Paradigm. On this screen, you can type in values that will

- change the point values assigned to the various nodal points in the **paradigm** (these values should total 100)
- customize the values assigned to each of the ten **Levels of Diagnostic Performance** (Inadequate through Impressive – highest individual value no greater than 100)
- set the **Minimum Pass Level** for each type of score (Overall Performance, Diagnostic Performance, Clinical Reasoning, Management, SOAP score and Content Questions). This number represents the minimum score the student needs to receive a satisfactory performance rating for that component of the evaluation.
- set values for the five management score components (Problem List, Required, Recommended, Related H&P, and Related Lab) to total 100.
- designate point values (scores) for the four qualitative descriptions of the student’s Content Knowledge (highest value possible is 100)
- set the weights (between zero and 100%, with all five weights totaling 100) to be applied to the five components of the **Content Knowledge** score (Statement of Problem, Dx Justification, Interpretations, Rationales, and Questions).
- determine the relative weights (between zero and 100%) for each of the five component scores that result in the Overall Performance score. (Diagnostic Performance, Clinical Reasoning Score, Management Score, SOAP score and the Content Knowledge Score. The weights must total 100%.)

Figure 21. The Scoring Paradigm screen in the Record Utility.

**Example:** To emphasize Diagnostic and Clinical Reasoning skills and exclude the Management component from scoring, you might set your weights as follows:

<b>Diagnostic Performance</b>	<b>55%</b>
<b>Clinical Reasoning</b>	<b>30%</b>
<b>SOAP</b>	<b>10%</b>
<b>Management Score</b>	<b>0%</b>
<b>Content Knowledge</b>	<b>5%</b>
<b>Total</b>	<b>100%</b>

**Adjusting Evaluation Criteria:** Click one of the buttons at the top of the Scoring Paradigm screen to see the criteria items listed for the corresponding category or node. (You can also use the buttons within the Paradigm to navigate to the corresponding category or node.)

- Click Diagnosis to see and/or edit the text of the required diagnosis and its Components. If you edit this list, it will alter the criteria used to evaluate all student records for this case. If you choose, you can mark additional parts of the Diagnosis as 'Required' or remove the 'Required' designation from those you previously marked as required. You can also add synonyms to any parts of the diagnosis.
- Click Consider, Justify, Competing, Thorough, Limits or Hypotheses from the top of the Paradigm screen to see the criteria for the corresponding category or node. Change the evaluation criteria as necessary. You may alter any of the criteria, but you must be careful to use the correct form. Choose one of the two methods shown below for adding criteria items.

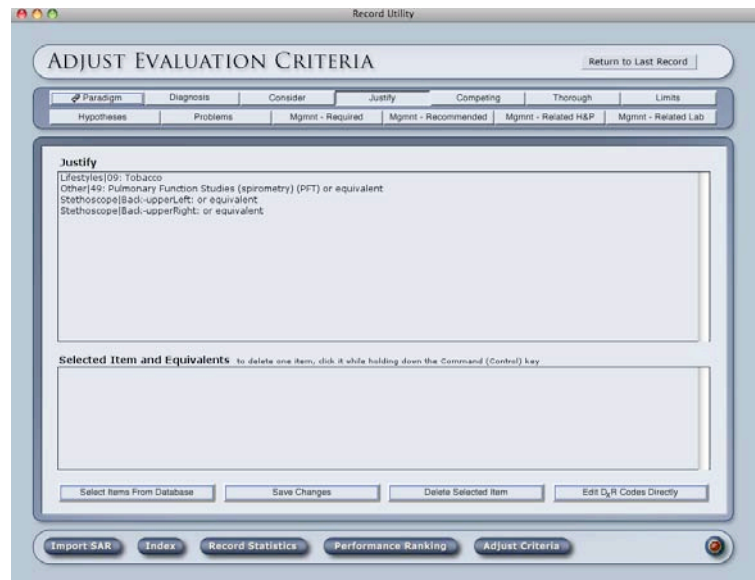


Figure 22. Adjusting evaluation criteria for the Justify node.

#### Select Items From Database

Click the Select Items from Database button, then select a pull-down menu from the top of your screen. A list of the items in the database for that category and/or tool will appear. Select the appropriate item from the pull-down menu. The item will be preceded by its item code. Click New to list the item as a separate new entry, or Equivalent to list the item as an equivalent of an item already listed. Click Save Changes to permanently save your edits.

#### Edit DxR Codes Directly

Click the Edit DxR Codes Directly button to add items by free text entry. Use this option only if you are familiar with the appropriate DxR item code. Most Exam codes are the name of the exam tool followed by the appropriate body part. However, other codes are a bit less predictable. Make sure you have entered the proper code before you save changes. Each criteria item should be listed on a separate line. You should list Equivalents on the same line, separated by commas. Click Save Changes to permanently preserve your edits.

You may move items between nodal points by cutting and pasting them. Delete items by selecting them and clicking Delete Selected Item.

**Management:** Click Problems, Required, Recommended, Related H & P, or Related Labs to change criteria items within each of those categories of the Management section by the two methods explained above (Select Item from Database or Edit DxR Codes Directly). Remember, Required and Recommended categories should contain only management items from the patient case. Related H & P may contain Interview and Exam items, while Related Lab should contain only Lab items.

**Limits:** Click Limits on the Adjust Evaluation Criteria screen to see the Criteria Counts for each node. You can also change the lab cost allowance by typing in a new value. Click Update Criteria Counts to update the number(s) to reflect the

criteria changes you have made in adding or deleting criteria items from the various nodes. (This information will also be updated on the Student Record screen.)

## Index Screen

The Index screen can be used to navigate to a specific student's records or to print the records of individuals or groups of students.

- On the Index screen, the Complete Record List includes the names of all students whose records have been imported into the Record Utility.
- Check the Hide Names box if you do not want students' names to be displayed on the Student Record Screen.
- To navigate to an individual student's record, click the student's name in the Complete Record List. The program will go to the Student Record screen for that student.
- At the top of the Complete Record List, click the Print menu to select from several printing options that apply to all records in the Record Utility or to email reports to all users in the Record Utility (see Emailing note).
- The Selected Records window will display the names of students that you have selected for printing or emailing. To place a student record in the Selected Records list, click the student's name in the Complete Record List while holding down the ALT (option) key. The student name will appear in the Selected Records field.
- At the top of the Selected Records list, a print menu allows you to select from several printing and emailing options that apply only to the records in the Selected Records list.

Note: See page 46 for a list of and description of the printing options.

Figure 23. The Index screen of the Record Utility.



## Emailing Reports

Click the Email button.

On the Email Configuration screen, type a valid email address into the 'Mail From' field. This should be the email of you or another faculty member to be listed as the 'sender' of the email report.

In the large field on the right, type in your student names list and email addresses or click the Import Email Addresses button to import a text file that contains a list of student names and email addresses following the format below.

Student Name (tab) studentemailaddress

On the Index screen, in the Complete Records List or the Selected Records, click the Print menu and Control+click the type of report you want to email. The Email Configuration screen will reappear and tell you the status of your email report attempt.

## Examining an Individual Student's Record (Student Record Screen)

Each Student Activity Record (SAR) contains a complete record of that student's patient investigation as well as the computer's evaluation of that record. To navigate to an individual Student Record Screen click the Index button at the bottom of any screen in the Record Utility. You will see a list of the student records currently in the utility.

Click the name of the student whose record you want to see. Use the arrow keys on the keyboard or the arrow buttons at the bottom of the screen to move from one record to another.

### Sections of the Student Record Screen (descriptions through page 42.)

#### Student Record Information and Summaries

Use the buttons at the top of the screen to display the following information:

**Complete Record:** A complete item-by-item list of the student's investigation, including the time of each selection or entry.

**Items RE: Diagnosis:** Items linked to the Diagnostic Hypotheses and eventually chosen as the basis of the diagnosis.

**Items RE: Hypotheses:** All inquiry items listed according to the Diagnostic Hypotheses the student associated with that hypothesis.

**Missing Items:** The evaluation criteria that the student did not request/select. Click the specific category to see the specific criteria items within that category that the student omitted.

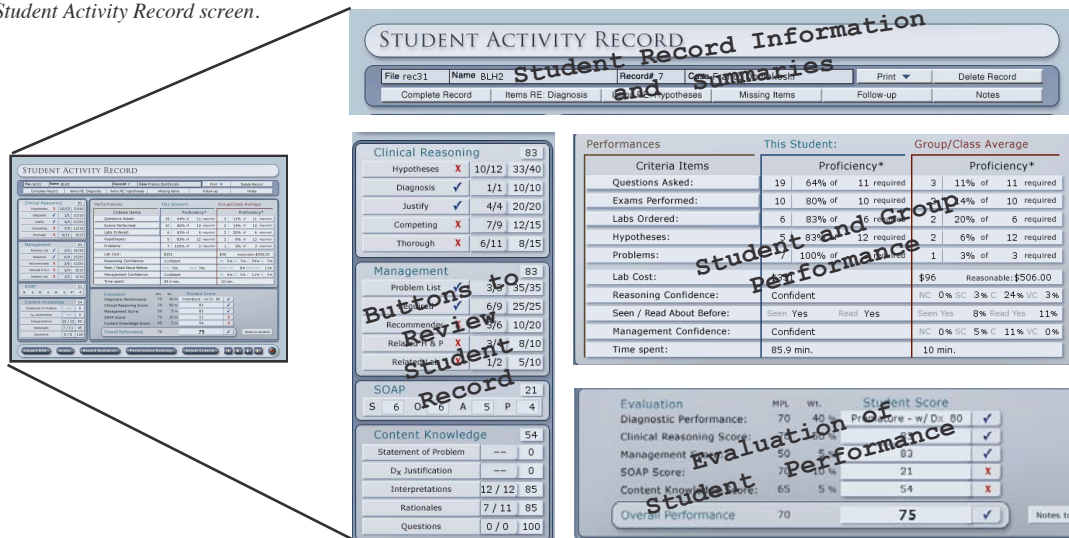
**Follow-up:** The issues recorded by the student on the management confidence screen.

**Notes:** The student's personal notes and learning issues notes.

**Print:** Click Print to see/select your printing options. See page 45.

**Delete Record:** Click Delete Record to remove the student record from the Record Utility. You can download the record again from the DxR Management Utility if you choose.

Figure 24. The sections of the Student Activity Record screen.



**Buttons to Review Student Records**

Hypotheses	X
Diagnosis	✓
Justify	✓
Competing	X
Thorough	X

**Clinical Reasoning Score**

Click **Hypothesis** to see a list of the diagnostic hypotheses the student considered and the hypothesis criteria for this case. Hypotheses scored as 'correct' will appear in bold type. You can click on an item in the instructor criteria list to change whether that item is

scored as 'correct' or 'incorrect' for this student. (Note: You can delete a hypothesis from the criteria list by going to the Adjust Criteria screen and selecting Hypotheses. In the Hypotheses List field, select the hypothesis you want to remove and click Delete Hypothesis.)

Click **Diagnosis** to see the student's final diagnosis and the Required Diagnosis. If there are ancillary diagnoses, they will be listed under Additional Diagnosis Components.

This screen will display both required components and non-required components. The Components (parts) of the correct diagnosis which are matched in the student's diagnosis are displayed in bold text. If the student fails to arrive at the correct diagnosis, his/her Diagnostic Performance Ranking will fall below 'Lucky.'

Click the appropriate button (**Consider, Justify, Competing, and Thorough**) to reveal the criteria items necessary to receive a satisfactory evaluation for that node. The items in bold were selected by the student. Note that all the items must be bold (selected by the student) to result in a satisfactory evaluation for that node.

Optional: You may make changes to the computer evaluation for these paradigm categories (nodes) by changing the criteria. (See instructions for the Adjust Criteria screen, pg.35.) Any changes in criteria you previously made in DxR Clinician online will automatically be reflected in the Record Utility.

<b>Management</b>	
Problem List	✓
Required	✓
Recommendec	X
Related H & P	X
Related Lab	X

**Management Items Buttons**

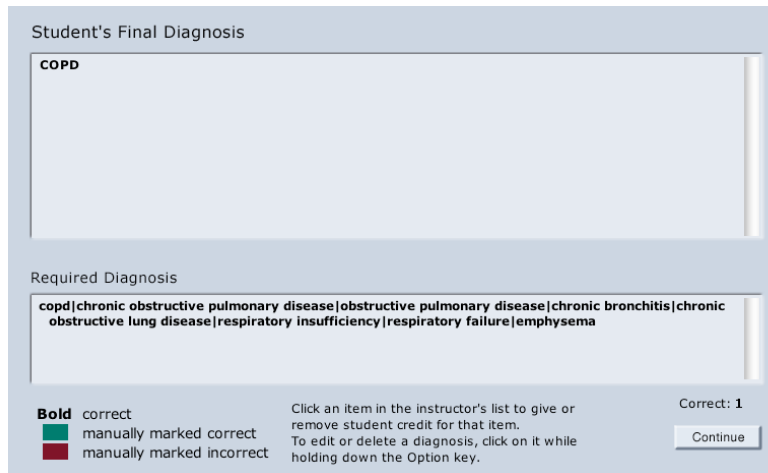
The **Problem List** -- when it is scored -- is based on a the number of the problems in the instructor's criteria for the problem list that the student includes in his/her problem list. (Example: If the student's problem list includes two of the five problems listed in the instructor criteria, the

student will receive 40% of the points assigned to the Problem List.) Problems scored as 'correct' will appear in bold type. You can click on an item in the instructor criteria list to change whether that item is scored as 'correct' or 'incorrect' for this student.

**HELPFUL HINT**

If you want to give a student credit for a diagnosis or hypothesis despite a misspelling or alternate wording, you can override the computer's evaluation clicking on the criteria item in the instructor list.

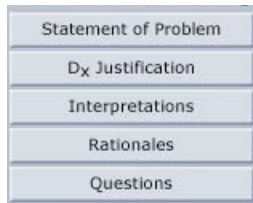
Figure 25. Evaluating the student's Final Diagnosis.



DxR Clinician cases do NOT include criteria for the Problem List. If you intend to grade this part of the case, you MUST supply the criteria in the Management Utility on your DxR Clinician web-site.

The other buttons (Required, Recommended, Related H&P, Related Lab) reveal the instructor's criteria for that part of the Management section. The items in bold were selected by the student. Note that all the items must be bold (selected by the student) to result in a satisfactory evaluation for that part of the Management section. You may enter your evaluation of the student's entries in the Required and Recommended categories, using the Satisfactory and Unsatisfactory buttons. In other categories, you may make changes to the computer evaluation by changing the criteria. (See information on the Adjust Criteria screen, pg.35-36.)

### Content Knowledge Buttons



**Statement of Problem:** This button reveals the statement of the problem(s) as listed by the student. The statement of problems is not graded by the computer, so it will be designated as Not Assessed. You may wish to grade this information by clicking one of the radio buttons. If you entered point values for the various ratings (outstanding, acceptable, incomplete, and not acceptable), the points will be applied to the Content Knowledge score when you select a rating.

**Dx Justification:** This button reveals the student's justification for the chosen diagnosis. You may wish to grade this information by clicking one of the radio buttons.

**Interpretations:** All interpretations the student made for items within the case can be viewed by clicking this button. These interpretations are not assessed by the computer but are available for your review and assessment. Click the words Not Assessed preceding each item once to assess that interpretation as satisfactory, or twice for an unsatisfactory assessment. If any of the items for interpretation are included in the case criteria, you will see a breakdown of which criteria items were interpreted by the student and which weren't.

**Rationales:** Click this button to see, review, and if you choose, assess the student's stated reasons for ordering certain items: lab tests, interview questions, exams, or management items. These Rationales are not assessed by the computer, but they are available for your review and assessment. Click the words Not Assessed preceding each item once to assess that rationale as satisfactory, or twice for an unsatisfactory assessment.

**Questions:** Answers to any questions that you included in the case can be viewed here. If the student's answer isn't assessed by the computer (example: short answer questions) or if you want to change the computer assessment, click the assessment description (Not Assessed, Correct, Incorrect) preceding each item until the desired assessment appears.

**Student and Group Performance**

This area of the student record screen displays basic information about the student’s investigation and how it compares to the performance of the group or class as a whole.

Figure 26. The individual and group Performances section of the student record screen.

The rows marked Questions Asked, Exams Performed, Labs Ordered, Hypotheses, and Problems show the number of items the student included in each category, the percent of the criteria items the student included (got correct), and the class averages. Click the specific criteria button (e.g. Questions Asked) to see a complete list of the items the student requested for that section.

Performances	This Student:			Group/Class Average		
	Criteria Items	Proficiency*		Proficiency*		
Questions Asked:	19	64% of	11 required	3	11% of	11 required
Exams Performed:	10	80% of	10 required	2	14% of	10 required
Labs Ordered:	6	83% of	6 required	2	20% of	6 required
Hypotheses:	5	83% of	12 required	2	6% of	12 required
Problems:	7	100% of	3 required	1	3% of	3 required
Lab Cost:	\$351			\$96	Reasonable: \$506.00	
Reasoning Confidence:	Confident			NC 0% SC 3% C 24% VC 3%		
Seen / Read About Before:	Seen Yes	Read Yes		Seen Yes 8% Read Yes 11%		
Management Confidence:	Confident			NC 0% SC 5% C 11% VC 0%		
Time spent:	85.9 min.			10 min.		

- The screen also shows the relative cost of the labs ordered and the time spent in investigating the case.
- Data on whether the student has seen or read about a problem like this before are also shown, compared with percentages for the class.
- The student’s confidence in his/her diagnosis and management are reported, along with the percentage of the group that selected each option (Very Confident, Confident, Somewhat Confident, or Not Confident).

**Evaluation of Student Performance**

**Diagnostic Performance:** This displays both a qualitative rating of the student’s diagnostic performance and also the numeric value assigned to that rating. Click Adjust Criteria to see how Diagnostic Performance was determined using the Scoring Paradigm.

**Clinical Reasoning Score (CRS):** This is the computer’s assessment based on how the student performed at the hypotheses, required diagnosis, justify diagnosis, competing hypotheses, and thorough workup nodes. The point values the student achieves for these nodes is based on the percentage of criteria items the student included for that node (except for the Required Diagnosis, where students’ entries are scored on an ‘all-or-nothing’ basis). For example, at the Justify node, where 20 of the 100 points have been assigned, a student who entered 50% of the ‘Justify’ items would get 10 points.

**Management Score:** The management score is based on the number of criteria items the student included in his/her management plan and problem list.

Evaluation	MPL	Wt.	Student Score	
Diagnostic Performance:	70	40 %	Premature - w/ Dx	80 ✓
Clinical Reasoning Score:	70	50 %	83	✓
Management Score:	50	5 %	83	✓
SOAP Score:	70	10 %	21	✗
Content Knowledge Score:	65	5 %	54	✗
<b>Overall Performance</b>	<b>70</b>		<b>75</b>	<b>✓</b>

Figure 27. The component scores that make up the Overall Performance score.

**SOAP Score:** If you choose to score your students' SOAP notes, you will enter a score for each of the four areas of the SOAP note: Subjective, Objective, Assessment, and Plan. These scores will be weighted and combined to render an overall SOAP Score. If you choose NOT to score the SOAP note, you should go to the Adjust Criteria screen and reduce its weight to zero.

**Content Knowledge Score:** The Content Knowledge Score is based on your assessment of the student's performance on the following task: Statement of Problem, Dx Justification, Interpretations, Rationales, and Questions.

**Notes to Student button:** Click this button to open a screen for writing comments to the student.

### ***MPLs***

In DxR Clinician cases, there are five component scores that make up the Overall Performance score for the case.

For each score in a DxR Clinician case, you can set a Minimum Pass Level. This score represents the minimum score the student needs to be rated as satisfactory on that scoring component. You can change the Minimum Pass Level scores on the Adjust Evaluation Criteria screen.

### ***Weights***

The Weights assigned to the Diagnostic Performance, Clinical Reasoning, Management, SOAP and Content Knowledge scores represent that score's importance in arriving at the Overall Performance Score. These values, expressed as a percentage, total 100%. They are set on the Adjust Criteria screen.

### **Overall Performance**

The Overall Performance score is a numeric value derived from the Diagnostic Performance Score, the Clinical Reasoning Score, Content Knowledge, SOAP and the Management Score. When you weight each of the component scores, you determine each component's percentage of the Overall Performance score.

## Collecting Statistical Data (Record Statistics Screen)

You may want to collect several types of statistical data that can be gleaned from the student records of a DxR Clinician case. The Record Statistics screen provides detail on how the students in a group performed in the various evaluation nodes. The data from this screen can be useful in determining if a particular criteria item proved problematic for a large number or a small number of students. The screen will also display the number and percentage of students who were evaluated as “satisfactory” in that category or node. The “Statistics” buttons at the bottom of the screen allow you to see an overview and spreadsheets detailing group performance on each interview, exam, lab, and management item within a DxR Clinician case.

- Click Record Statistics at the bottom of any screen in the Record Utility. The criteria categories are listed on the left.
- Click the category for which you want to review statistics (Hypotheses, Consider, Justify, Competing and Thorough, or the Management categories of Problem List, Required, Recommended, Related H & P or Related Lab). The screen will display all criteria items listed for that node/category and the number of students who included each item.
- Click a criteria item in the list to display the names of the students who did and did not request the item. Click Continue to return to the Record Statistics screen.
- Click Print in the lower right of the screen if you want to print information in these fields. To see a print preview, hold down the option (alt) key while clicking Print.
- Click Return to Last Record if you want to see the student record you last viewed.
- The Statistics buttons in the lower left of the Record Statistics screen provide you greater visual detail of student performance in the various categories and on specific items in a DxR Clinician case.

Figure 28. The Record Statistics screen in the Record Utility.

Category	# of Students	Criteria Item	# of Students Satisfactory	18%
Hypotheses	11	Present Illness 01 Why are you here today? What problems are you having? or equivalent	7	18%
Consider	8	Present Illness 02 When did you first notice the problem? When did it start? or equivalent		
Justify	8	Present Illness 04 How often do you experience these symptoms? or equivalent		
Competing				
Thorough				
Problem				
Required				
Recommended				
Related H&P				
Related Lab				
Overview Statistics				
Interview Statistics				
Exam Statistics				
Lab Statistics				
Management Stats				

### Overview Statistics

The Overview Statistics screen allows you to detect patterns in your students' clinical problem-solving processes, determine the most likely approach to the clinical problem, and identify students who may need additional instruction in a particular area.

Click Overview Statistics to see a color-coded timeline of each student's actions as he/she worked through a DxR Clinician case. At the top of the screen, the legend displays the colors representing each of the interview question categories, along with gray and white color bars representing the physical exams and laboratory tests, respectively. As you review the color bars corresponding to each student name, you will notice that the relative length of each colored section reflects the number of items the student included from that part of the program at that partic-

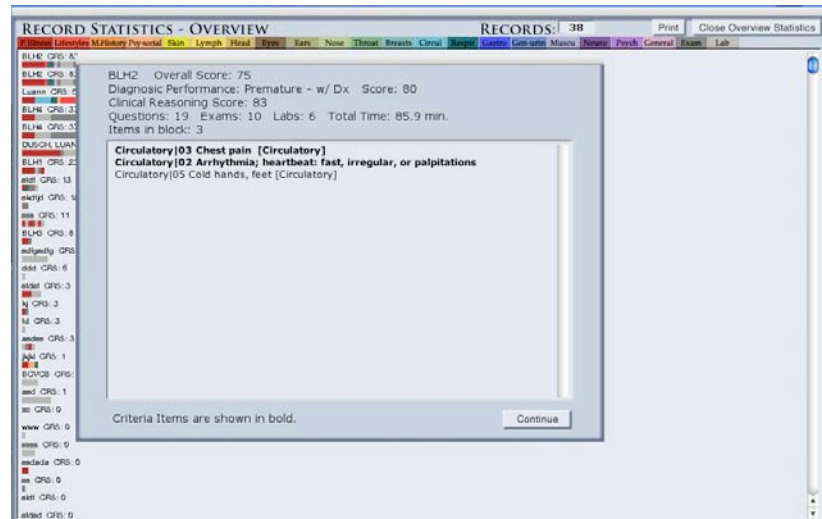
### NOTE

Depending on the number of students in your group and the speed of your computer, it may take several minutes for the Overview Statistics screen to appear.

ular point in the investigation. For example, a short bright red bar indicates that the student asked very few questions about the patient's lifestyle, while a relatively long white bar would indicate that the student ordered many lab tests at that point in the clinical investigation. By comparing the color bars for the students in a group, you may be able to detect patterns in your students' problem-solving processes. For example, if all or most students arrived at the correct diagnosis and followed a similar pattern in arriving at that diagnosis, you may determine this is the most likely approach to the clinical problem. However, if a student's problem-solving pattern appears atypical, you may determine there's a need for a closer review of the student's performance in selecting the criteria items and of the student's diagnostic and clinical performance.

Figure 29. The Overview Statistics screen.

The Overview Statistics screen can also provide detail on the specific items the student included in each step of his/her inquiry. Find a student whose record you would like to inspect more closely, and then click a section of the color-bar to display a list of the specific items the student included from that category (interview, exam, lab) at that particular point in the clinical investigation. A scoring summary and the total number of items the student selected in that part of the program will appear above the list.



The items displayed in bold type were designated by the case author/instructor as criteria items. You will see a scoring summary for that student at the top of the window.

Because the Overview Statistics screen is a color-coded chronological display of each student's actions in a case, you can learn whether the student followed a logical problem-solving process. For example, if you notice that a particular student ordered lab tests (represented by white on the color bar) early in the clinical investigation and then ordered more labs later on, you can see detail of what labs the student ordered initially compared to the labs ordered later in the investigation. A review of the student's investigation leading up to each lab session may indicate whether the student was engaged in a focused inquiry or merely scanning in hopes of arriving at the correct diagnosis.

### Interview, Exam, Lab, and Management Statistics

These statistics screens — accessed from the Record Statistics screen — allow you to explore in greater detail the questions, exams, lab tests, and management options the students in the group included and omitted from the clinical inquiry. Examination of this screen may alert you to specific areas in which the group needs additional instruction or it may help you identify individual students who are having difficulty. Click one of these buttons (Interview Statistics, Exam Statistics, Lab Statistics, or Management Statistics) to see a spreadsheet view of student performance in the selected part of the DxR Clinician case. The spreadsheet view

uses color bars to provide detail on how students performed on each item in the database. Above each color bar, the number on the left represents the DxR Code for the item, while the number on the right is the number of students in the group who included that item in their investigation. Click any color bar to reveal the numbers and the names of the students in the group who did and did not include that item. Click Instructions to return to the color bar screen.

- A blue color bar corresponds to non-criteria items that at least some students in the group requested. Your examination of this detail may lead you to more closely inspect the students' individual records for an indication of whether the individual students were engaged in a reasonable inquiry rather than simply "scanning" the patient database.
- A green color bar represents a criteria item that at least some of the students in the group included. Examination of the numbers of students who did include the case criteria items versus the number of students who did not include the items may help you assess whether most students in the group were on the right track in including the key items in diagnosing and /or treating the patient.
- A red color bar alerts you to a criteria item that none of the students in the group included. This may point to an area in which students need additional instruction, or it may indicate a criteria item that is beyond the scope of the students' current educational level.
- A tan color bar represents non-criteria items that no students included.

The length of the color bars corresponds to the proportion of students in the group who included that item in their investigation. When you are finished reviewing this information, click Instructions to return to the Statistics screen.

## Performance Ranking Screen

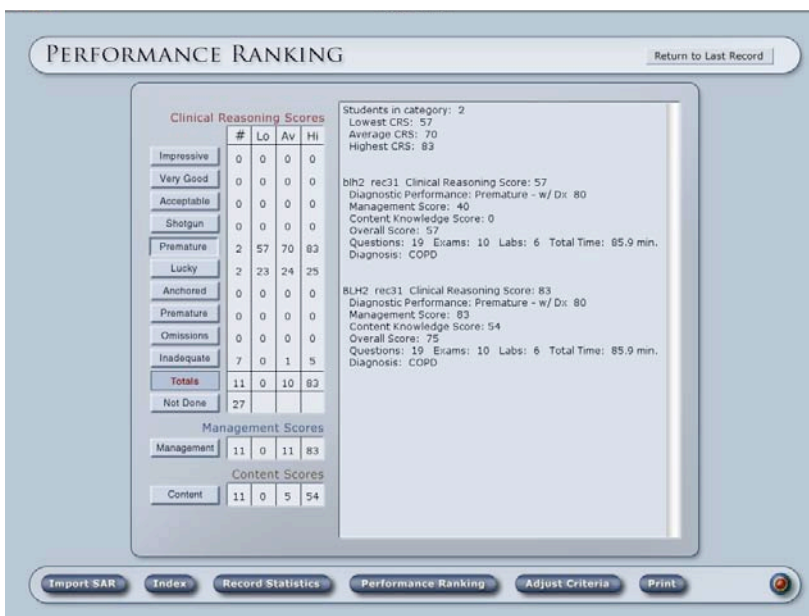
You can review the overall performance for the class in conjunction with the statistical information to gain insight into whether changes in the scoring paradigm are needed, and if so, how such changes would affect the students' performance.

- Click Performance Ranking at the bottom of any screen in the Record Utility to go to the Performance Ranking screen. The Overview displays the number of students achieving each of the 10 Levels of Diagnostic Performance – Impressive to Inadequate – as well as the scores for the Management section and Content Knowledge. The first column of numbers (# – next to the performance ranking) represents the number of students in each performance category. The numbers under Lo, Av, and Hi are the lowest, average, and highest Clinical Reasoning Scores (CRS) recorded in that group.
- Click a Performance Level category or click Management or Content Knowledge to view detail of student performance in that particular category. Information exhibited for each student in that Performance level will include: the student name, Clinical Reasoning and Management Scores, Content Knowledge score, the number of Questions, Exams, Labs and total time recorded, and the diagnosis entered by the student. Choose a different category to hide the field.

### Print: Performance Ranking Data

Click Print at the lower right of the Performance Ranking screen if you want to print the information shown in these fields. To see a print preview press the option (alt) key while clicking Print.

Figure 30. The Record Utility's Performance Ranking screen.



**Printing**

This function allows you print various types of reports on student performance.

The Complete Student Records list will include the names of all students for whom you have records in the Record Utility. The Selected Records list will be empty until you add student names to the list. You can direct the Record Utility to print different data for students in each of these two lists.

Click Index to go to the Index screen. Click the Print pull-down menu to see your print options. Select the type of data you would like to print for each of the lists.

To enter student names into the field marked Selected Records, click the student's name in the Record List field while holding down the Option (Alt) key. To remove a name, click the name in the Selected Records field.

On the Student Record Screen clicking Print and then selecting SAR screen in the menu produces a printed picture of the Student Record screen as you are seeing it.

**HELPFUL HINT**

On the Record Utility's Import screen you can also export student performance data to a data analysis program. In the SAR Files pull-down menu (top right of the screen) select Export to a tab-delimited file. This function allows you to export data in two files: a Key List file that contains a list of all the items in the DxR databases that were applicable to your case; and a case data file that contains your student list and data on student performance. **To export data, you must use data analysis software that imports data in tab-delimited format.**

<p><b>Common Information</b></p> <ul style="list-style-type: none"> <li>• Student Name/ID • Performance Rating • Case Name</li> <li>• Clinical Reasoning Score • Management Score • Computer Evaluation</li> <li>• Faculty notes to student (if any) • Content Knowledge Score • SOAP Notes Scores</li> </ul>
<p><b>Basic Student</b></p> <ul style="list-style-type: none"> <li>• All common info • Student DDx List • Labs ordered • Scoring Explanation</li> </ul>
<p><b>Complete Report</b></p> <ul style="list-style-type: none"> <li>• All common info • Start/stop times • Student notes</li> <li>• Chronological log of all student activity</li> </ul>
<p><b>Items by Hypothesis Report</b></p> <ul style="list-style-type: none"> <li>• All common info • Student hypothesis list and all items associated with it</li> </ul>
<p><b>Items for Diagnosis</b></p> <ul style="list-style-type: none"> <li>• All common info • Student Dx and all items associated with it</li> </ul>
<p><b>List of Labs Ordered</b></p> <ul style="list-style-type: none"> <li>• All common info • All student-ordered labs</li> </ul>
<p><b>Content Knowledge Report</b></p> <ul style="list-style-type: none"> <li>• All common info • Student Dx Justification • Student Rationales</li> </ul>
<p><b>SOAP Notes</b></p> <ul style="list-style-type: none"> <li>• All common info • All student SOAP notes and SOAP Notes scores</li> </ul>
<p><b>Notes</b></p> <ul style="list-style-type: none"> <li>• All common info • All student general notes and learning issues</li> </ul>
<p><b>SAR Screen</b></p> <ul style="list-style-type: none"> <li>• Prints a picture of the student record screen</li> </ul>
<p><b>Management Plan</b></p> <ul style="list-style-type: none"> <li>• Prints a list of the Management items that the student ordered</li> </ul>

## Technical Requirements

### 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.

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, pixilated, 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 48 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.

### Windows® XP

1. Go to the Start menu, open the Control Panel (make sure it displays in Classic View mode), and select QuickTime.
2. Click the File Types tab.
3. Check the checkbox for .mp3, save, and Apply your changes.

### Windows® Vista

1. Go to the Start menu and click Default Programs. Click Set Your Default Programs.
2. Select QuickTime.
3. Click Set this Program as Default and click OK.

### Windows® 7

1. Go to the Start menu, open the Control Panel, select All Control Panel Items, and then choose QuickTime.
2. Select the Browser tab
3. Click the Mime Settings button.
4. Check the checkbox for .mp3 and click Save.

## Changing QuickTime's Connection Settings

DxR 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.

## Working Through a Case: Quick Reference


### 1. STARTING

- Follow the URL or Link provided by your instructor to the desired case. You will access the patient case either directly by clicking the DxR Clinician opening screen, or through a waiting room.
- Enter your assigned name and password. After name/password are verified, click Start.
- Review the information on the patient's Presenting Situation. Answer the question "What would you like to do next?" Click Interview, Physical Exam or Lab to begin your investigation.


### 2. INTERVIEW PATIENT

- Click Interview . Initially you may be able to see only the Present Illness category questions or to review a summary of the History of the Present Illness (HPI). Select any questions appropriate for that category as directed below (2c).
- Follow the on-screen instructions to enter a Diagnostic Hypothesis and access other categories.
  - After you enter your Diagnostic Hypothesis, you will need to select the hypothesis you are investigating from your list at the top of the screen before you can ask a question. If you aren't investigating a particular hypothesis, select Scanning.
  - To associate a question with more than one Hypothesis, hold down the CTRL (Command) key while clicking the appropriate hypotheses.
  - To associate multiple questions with the same hypothesis, hold down ALT (Option) while highlighting the questions.
- Click the category for the question you want to ask. Questions are listed in the box in the upper half of your screen. Highlight the question and click Ask. The response appears in the box below.
- To find a question among the various categories, click Search at the end of the category list and enter a keyword or phrase in the box that appears.


### 3. STATEMENT OF PROBLEM AND DIFFERENTIAL DIAGNOSIS

- At some point in your investigation of the patient case, you will be asked to frame the patient's problem and form a list of diagnostic hypotheses in order of importance. When you have completed your initial list, click DONE to return to the patient. If you would like to gather more data from the patient before entering this information, close the DD<sub>x</sub> window. Depending on your instructor's preferences, you may not be able to investigate areas other than the Present Illness without entering your hypotheses.
- If you would like to change or rearrange your list of diagnostic hypotheses, click the Hypothesis (DD<sub>x</sub>)  button.
  - To edit your statement of the patient's main problem, type changes in the text field at the top of the message box.
  - To add a diagnostic hypothesis, type it in the middle text box, then click ADD.
  - To delete a diagnostic hypothesis, select it and click DELETE.
  - To change the order of the diagnostic hypotheses, select the one you want to move and click UP or DOWN. It will move one position in the list.
  - When finished, click DONE.

### 4. Perform A Physical Exam (When you first enter the Exam screen, you will see a description of the patient's appearance.)

- Click EXAM  button. If you are prompted with the Hypothesis Screen, make any changes you wish and click Done when you are satisfied with your entries.
- Specify the diagnostic hypothesis you are investigating.
- Select the appropriate tool, then click the body part you want to examine.
- Click the button for the Body View you wish to examine (i.e., head, chest, abdomen). The name of the tool and the body part that your cursor is positioned to select will be displayed above the patient picture. Click Other Exams to access Observations, Maneuvers, or Mental Status exams. Click Vital Signs to see a list of the patient's vital signs.
- Some exams will yield audio, graphic, or text data that you must interpret before you can enter a diagnosis. (Heart sounds are soft, you may need to use headphones to hear the clearly. QuickTime is required to play sounds.) Enter your interpretation in the text field provided, then click Enter. Click the CONSULTANT button to view any available information from a professional consultant.


### 5. Order Laboratory Tests Depending on your instructor's choices, you will be able to order labs either individually or as a group.

- Click the LAB  button. If you are prompted with the Hypothesis screen, edit as you wish and click Done.
- Each time before selecting a lab test, specify the diagnostic hypothesis you are investigating.

NOTE: Some lab tests results are delayed. If you select a lab test with delayed lab results, your order can be submitted with a group of lab tests, but you won't be able to see its results until after you enter the Final Management phase of the case and click the Continue arrow. If you need to change your diagnosis and treatment after viewing delayed lab results, you will have that opportunity.

- To get additional information about a lab test before ordering, click the TEST INFO button, then select the test. To search the database for a specific test, enter the test name or related keyword, and click the SEARCH button. Search results appear in list form. Select a lab from the search results to order it immediately or to place it in your Proposed Lab Orders list.
- To order a test from the group of 32 common tests click the name of the desired test.
- To order tests not listed in the common group, select a category of tests, then select the test from the list of available tests for that category.
- When ordering lab tests as a group, make sure you are satisfied with the selections in your Proposed Lab Orders list, then click Submit to order those lab tests. Once your orders have been submitted, click a specific lab test and click View Results.
- View and interpret all available consultant information as described above (4e).

6. Enter DIAGNOSIS

Click the DIAGNOSIS  button. (You may be prompted to enter/complete your SOAP notes before entering your final Dx.) On the Diagnosis window, click the diagnostic hypothesis that most closely matches your final diagnosis and click SELECT. In the next text field, edit this hypothesis to express your final diagnosis in pathophysiologic terms. Justify your diagnosis and select your confidence level. When you are satisfied, click ENTER FINAL DIAGNOSIS, then click CONTINUE. After you commit to a final diagnosis, the investigation phase of the case is complete.

7. MANAGEMENT AND PROBLEM LIST

You may be prompted to type in, prioritize, and save a patient problem list. Select where treatment should take place (in hospital or outpatient). Select the aspects of management you wish to prescribe by clicking the specific buttons and detailing the treatment you desire. After you have entered your final management plan, results for delayed labs will be available for review. When finished, click EVALUATE to have your performance evaluated. Answer the Management Confidence questions and click Done.

8. INITIAL SELF-ASSESSMENT 

The initial self-assessment provides information about your investigation of the case. Click one of the categories at the top. A star next to the category indicates you completed the task successfully. On each screen, items you requested during your workup of the patient are marked with a star. Click an item to review the patient results.

Quick Tips

NOTES 

You may use two methods to record text to your personal NOTES.

- a. To record data while interviewing a patient, conducting a physical exam or ordering lab tests, select the text you want, copy it to the computer's clipboard, open the Notes window, and paste in the text. You may also type directly into the field provided on the Notes window. You must click the Save button in the Notes screen to preserve your changes.
- b. To print your notes, click the VIEW PRINTABLE button on your Notes window. When the new browser window appears, click Print on the browser's button bar.
- c. At the top of the Notes window, you can see and review a list of all the investigation items you've selected for this case. (Please keep in mind, this list is NOT printable.)





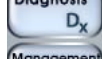








LEARNING ISSUES 

SOAP NOTES 

and WEB LINKS: If you wish to make note of learning issues encountered within the program or make SOAP notes, click the appropriate button. You must click the Save button to preserve your changes. Web Links allows access to Web pages that may provide you with valuable additional information related to the case content.

**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 collecting patient data after the warning, but if you do, you will not be able to reach the highest level of performance.

**Case Investigation**


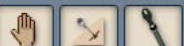

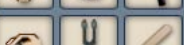


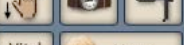
-  Interview
-  Physical Exam
-  Laboratory
-  Hypothesis (DDx)
-  Diagnosis
-  Patient Management
-  Interpretation
-  Consultant
-  Notes
-  Learning Issues
-  SOAP Notes
-  Problem List
-  Online Help

 Web Links

**Examination Tools**




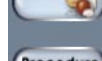



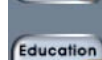

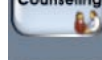



Body View Buttons - Select the view that shows the body part you want to examine.

-  View/ Hammer/ Flashlight
-  Feel/ Pin/ Ophthalmoscope
-  Motion/ Cotton ball/ Otoscope
-  Percussion/ Tuning fork/ Blade
-  Stethoscope/ Sphygmomanometer/ Thermometer
-  Position sense/ Stopwatch/ Speculum
-  Vital Signs/ More Tests & Exams

*HINT:*  
To measure temperature sensation on various parts of the body, such as the foot, ankle, hand, etc., use the tuning fork. This measures response to a cold tuning fork.

**Patient Management**

-  Nursing Care
-  Activity
-  Diet
-  Procedure
-  Collaboration
-  Medications
-  Education
-  Counseling
-  Community Resources
-  Follow-up
-  Evaluate Performance

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