EPINet™

FOR **MICROSOFT**® ACCESS

EXPOSURE PREVENTION
INFORMATION **NETWORK**

U.S. Version 1.2a

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What is Access/EPINet?

Access/EPINet is the third edition of the Exposure Prevention Information Network, a computer program that tracks sharp-object injuries, blood and body fluid exposures, and post-exposure follow-up. EPINet was developed by Janine Jagger, M.P.H., Ph.D. (International Health Care Worker Safety Center, University of Virginia) in association with Becton Dickinson and Company (BD). This update in the EPINet series is a Microsoft Office Access-based program. Data from previous versions—the DOS version (EPINet/Epi Info, released in 1992 and revised in 1997) and EPINet for Windows, released in 1999—can be incorporated into Access/EPINet to provide reports that include your facility's first recorded incident. Access/EPINet comes with pre-programmed report forms, data entry screens, report formats, and graphs. Once you have entered the data, Access/EPINet allows you to view and print reports and graphs with a few clicks of your mouse. You can also run reports of customized subsets of your data.

By using a standardized surveillance system such as EPINet, you can easily compare your data to other health care facilities that use the same program. More than 1,500 hospitals in the United States now use EPINet; at the International Health Care Worker Safety Center, we collect data on a quarterly basis from approximately 70 of those facilities (the number fluctuates somewhat from year to year) that participate in the network on a voluntary basis. You can compare your data to our national network by visiting our web site at www.med.virginia.edu/epinet. Click the "About EPINet" button on the first page, and then the "EPINet Data" icon on the second page.

When a sharp-object injury or blood and body fluid exposure occurs, the appropriate EPINet reporting form is completed by the injured/exposed worker, usually with the assistance of personnel from the occupational safety or employee health department. Post-exposure protocol is initiated at that time. Information on the report form is entered through preprogrammed data entry screens into the EPINet database in a process that usually takes one to two minutes per incident to complete.

In all versions of EPINet, each injury or exposure is recorded as one incident in the database. Records are aggregated to produce summary reports. Reports can be generated for exposures occurring within any range of dates you specify. Reports can also be created for exposures associated with a specific department, job category, location, procedure, or device, among other categories. These options are selected from drop-down menus and require no programming expertise.

EPINet reports provide you with the information you need to identify injury and exposure patterns in your facility. Once you identify problem areas, you can determine appropriate corrective actions. You can also monitor the results of the corrective actions through on-going evaluation of your data.

What's different about Access/EPINet?

The first version of EPINet, programmed in Epi Info, a DOS program, was released in 1992. That program was revised in 1996. It has proved flexible and is still being used by many hospitals. This original version of EPINet provided the first, and still the largest, standardized surveillance system in the world for tracking needlestick and sharp-object injuries.

In 1999, EPINet for Windows was released on CD-ROM. In addition to using the popular Windows platform, several questions were added to the program, and reporting and graphing capabilities were enhanced. However, because of limitations with EPINet for Windows, we recommend that all new users adopt Access/EPINet.

In Access/EPINet, users have the convenience of a Windows-based system that is faster and more flexible than EPINet for Windows. The enhancements provided by Access/EPINet are listed below.

1. **"Facility Type" is a new variable.** It enables hospital networks to track events by specific hospital and by type of hospital within the network. Facility Type is selected at the time the Facility ID is established, but does not appear on the data entry screen or single incident report. Facility types include: *Non-teaching Hospital, Teaching Hospital, Long-Term Care Facility, Dialysis Clinic, Ambulatory/Outpatient Surgery Facility, Blood Services Facility, Home Care, Physician's Office,*

Health Department, Correctional Institution, Clinical Laboratory, and *Other*. Facility Type and Facility ID counts appear at the end of the Summary Reports.

2. **Three levels of password security provided**. The "**Read Only**" logon allows the user to review data and generate reports only; it does not allow the user to enter or change data in any fields. Therefore it should be the default logon. The **"Data Entry"** logon allows the user to enter data, change previously entered data, and generate reports. The "**Administrative**" logon allows the user to view and change Access computer code and set up passwords, in addition to entering or editing data and generating reports. The administrative logon should be required only rarely. A single user can have several levels of security.

3. **Customized questions can be added.** Each facility can add up to four questions to the Access/EPINet program and report forms—two questions each to the Sharp-Object Injury and Blood and Body Fluid report forms. The user enters the new questions that will appear on the screen and on the printed reports and the responses that will appear on the drop-down menus. These questions and responses will automatically appear on the summary reports but will not be exported during data exports.

4. **Reports can be exported to either Excel or Word files**. The Word file can then be edited to provide better pagination or customized formatting. The Excel file can be used to create graphs that are not available within the existing graph options. 5.

5. **Data within a specified date range can be exported to another Access database or to an Excel file.** If exporting to another Access file, names of the injured/exposed health care workers can either be included or, to ensure confidentiality, excluded.

6. **Users can define the acceptable range of responses for certain questions.** These response choices appear in drop-down menus when the question is highlighted. This feature allows customization while promoting consistency of responses. The questions that allow user-defined response choices include: (1) department where injury occurred; (2) name of home department; (3) medical specialty of physician; and (4) manufacturer of device causing injury. Users can also define response choices to questions they have added to the report forms. Different institutions may use different terminology for these items.

7. **All new Sharp Object Injury Log and Blood and Body Fluid Exposure Log Reports.** These newly designed reports help you meet the latest OSHA record-keeping requirements (29 CFR Parts 1904 and 1952, Federal Register, 1/19/01; vol. 66:5916-6135). They provide the information for all incidents or specific types of incidents on a per incident basis, including the home and injury departments, job, procedure, purpose, device, body part, manufacturer, days away, days restricted, and the text description of the incident provided by the injured health care worker.

Program requirements for running Access/EPINet

Required Software: Microsoft Office Professional for Windows, version 8.0 (Access97, Word97, and Excel97) or 9.0 (Access 2000, Word2000, and Excel2000). Microsoft Access is a relational database created by Microsoft Corporation. Microsoft Access requires Windows 95 or higher as the operating system. It will not work with earlier versions of Microsoft Access.

Required Hardware: IBM-compatible PC with a Pentium processor, 16MB RAM or greater, at least 7MB of free hard disk space, and a VGA monitor.

Recommended Hardware: 64 MB RAM and a Pentium III processor of at least 450MHz.

How to install

1. Copy the Access/EPINet program file **Access EPINet US1-2.exe** to directory **c:\epinet.** If this directory does not exist, create it and copy the file to it.

   Network administrators: see Appendix 2, Tips for Networking, for instructions.

2. Since it is a self-unzipping executable file, simply double click on the file named **Access EPINet US1-2** to open the program. It will open as six files. Three of the six files are Word documents that are the reporting forms to be used with Access/EPINet. Two of the six files, **EPINetFull.mdb** and **EPINetConfidential.mdb**, will be empty databases for the export features of Access. Do not delete these files. These files must remain at **c:\epinet**. A third file, **Access EPINet US1-2.mdb**, can be left at **c:\epinet** or moved to any convenient location. You can create a shortcut to it to place on your desktop. (See Microsoft Windows documentation if you need help with creating shortcuts.) Double click on **Access EPINet US1-2.mdb** to open the program.
   Note: If you receive Access/EPINet in a zipped format that is a *.zip* instead of an *.exe* file, you will need to perform the extra step of unzipping the file. If you currently have Winzip® software installed on your computer, simply double click on the **AccessEPINetUS1-2.zip** file and select the **Extract** option. The program will unzip to the designated location, usually to your *Desktop.*. Note the designated location, go there and move the files to **c:\epinet**. If you do not have Winzip®, you may download an evaluation version free of charge from the website www.winzip.com.

   Microsoft 2000 users will need to convert all three databases to 2000 format. You may contact Access/EPINet technical support for Access/EPINet version 1.2 that has already been converted to 2000 format.

3. When the login box appears, enter the appropriate log-on name and password from the list below. Contact Access/EPINet for the administrative username and password. To change the password, see Changing User Passwords at the end of this document.

   Current, case-sensitive passwords are:
   Read only access: Name: Read Only   Password: read
   Data Entry access: Name: Data Entry   Password: edit

You will then see the Program Opening Screen:
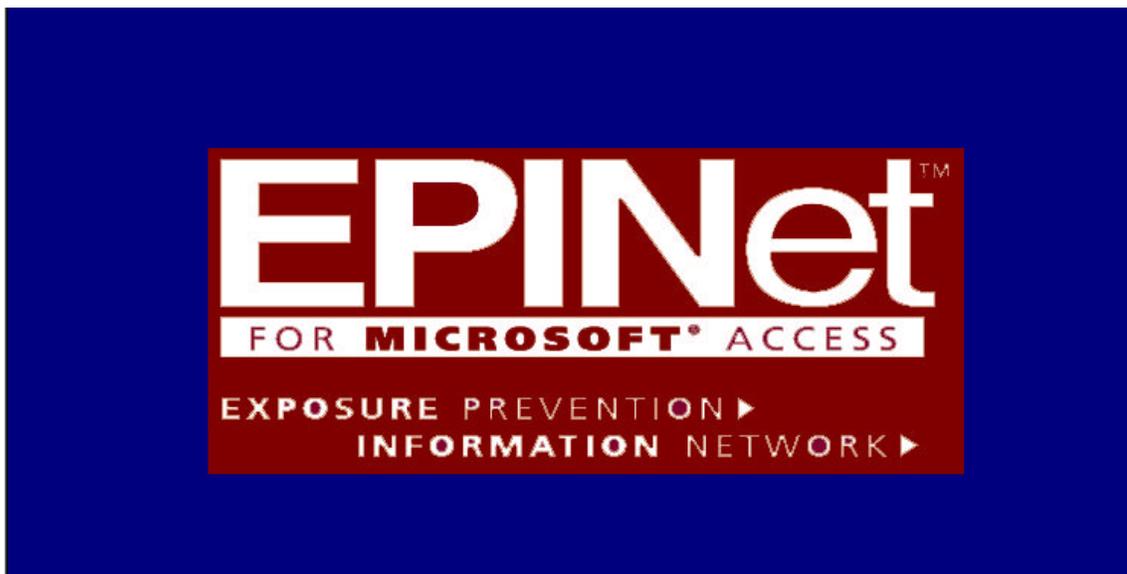
Toolbars

The two toolbars, also called menus, across the top of the screen display customized buttons that allow you to add new records, delete records, find records, navigate through the records, sort/filter records, print forms, and select the forms, reports and graphs that you need.

If you are at the main screen, clicking the **CLOSE** button, on either toolbar, will exit the program. If you have a form, report, graph, etc., open, clicking either **CLOSE** button will take you back to the main menu.

Not all buttons function at all times. A "grayed out" button indicates that it is not currently accessible.

Set Up *(this will speed data entry later)*

If you are upgrading from an earlier version of EPINet, please skip this until you have reviewed Appendix 1, <u>Importing Data From Other Versions of EPINet Into Access/EPINet</u>.

In Set Up you will need to designate the **Facility ID** and **Facility Type** and put in response choices for four of the questions. This is also where you can add questions, if you choose to do so.

You can begin entering data and using Access/EPINet before completing these set up procedures; however, your data will be incomplete. Should you realize that you need these data later, it is a cumbersome process to edit each record.

You do not need to assign an **Incident ID**; Access/EPINet is designed to automatically generate the Incident ID number for each record. Once a record number has been used, even if you later delete it, that Incident ID number cannot be re-used for another record.
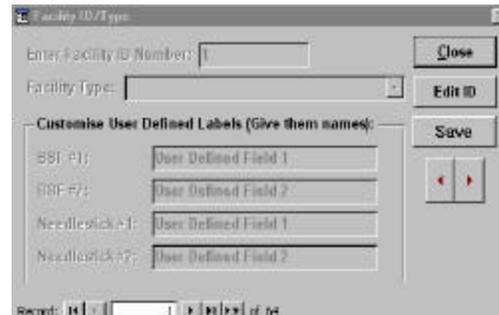
Designating Facility ID and Facility Type

Facility ID: Facility ID appears on each incident record. If you are a single institution, you need to designate the Facility ID during set up, and it will then be entered automatically on the forms when you are entering data. If you are part of a network, the network administrator will assign the Facility ID; then, when entering data, you will need to select your ID from the drop-down box on the data entry form. The system defaults to the first ID in the table.

To designate the **Facility ID**, click **<Forms Menu>** on the main menu then select **Modify Tables** and **Facility ID/Type/User Defined Labels**. Click **<Edit ID>** on the right side of the box, type in your **Facility ID** number over the default of "unknown" and press **<Enter>**.

Any combination of letters and numbers can be used; however, if you plan to share your data you may want to choose an ID that does not reveal your hospital's name. If you select an abbreviation of the facility name, others will be able to easily identify your data. "Unknown" is the default Facility ID if you choose not to enter one.

To change, edit or add to the Facility ID, use the same procedure used to designate it initially. That new Facility ID will be reflected on all future incidents, but will not change any data that was previously entered.

Facility Type: Click the down arrow in the lower right-hand corner of the **Facility Type** box. A list of facility types will appear; highlight then click on your facility type**.** Click **<Save>** then **<Close>** unless you plan to add questions to the report forms.

Note for network administrators: you may need to set up a number of **Facility IDs** and **Facility Types**. To add additional facility IDs, click the tab with the right-pointing arrowhead ( ) in the lower left-hand corner of the box. Tab to the **Facility ID** and repeat the procedure followed to enter the first Facility ID.

In a group or network of hospitals, if data are sent to and entered at one site for all of the hospitals, and if the network wants to add customized questions, then all the hospitals in the group must ask the *same* customized questions on their paper report forms. If the data are entered on-site and later exported to a network administrator, each facility may ask different customized questions, since data in the user-defined fields are not exported.

Setting up response choices for Home Department, Injury Department, Manufacturer List and Medical Specialty

To make data entry simpler and faster, and to standardize your data, it is best to define the response choices for **Home Department**, **Injury Department** (Department Where Incident Occurred), **Medical Specialty**, and **Manufacturer List**. These lists of choices are called tables. Only the response choices you designate will be allowed when entering data. The response choices can be easily amended or updated as needed. If you elect not to enter response choices for one of these questions, the program will still work correctly; however, if there are no response choices listed, you will NOT be able to enter data in the box for that question.

Home Department is the department that employs the health care worker or is responsible for that health care worker being on site. Home departments may include areas such as volunteer services or nursing schools, in addition to the traditional departments within the facility. Often the home department is also the department where the incident occurred—but not always. For example, if a health care worker from Respiratory Therapy sustained a needlestick injury while performing a blood gas procedure in the Cardiac Intensive Care Unit, then the "Home Department" would be Respiratory Therapy, and "Where the Incident Occurred" would be CICU. Home departments may also include housekeeping, maintenance, food services, and other non-clinical departments.

Injury Department is the department where the incident occurred.

Manufacturer List is a list of manufacturers of products used in your facility with potential to cause blood or body fluid exposures. The list you enter initially does not have to be exhaustive.

Medical Specialty is the physician's specialties. If, on question 5 (Job Category), either "doctor (attending staff)" or "doctor (intern/resident/fellow)" is selected, a Medical Specialty box will automatically appear.

To enter response choices into a table, click **<Forms Menu>** in the main Access/EPINet menu, select **Modify Tables**, then a category (**Home Department**, **Injury Department**, **Manufacturer List**, **Medical Specialty**, **User Defined Table Values**, or **Facility ID/Type**). Once the table is open, type in the box and hit **<Enter>** to go to the next field. To delete a choice from the list, highlight the entry and press the delete key, or type another entry over it. Note: DO NOT delete the word "**ALL**" if it appears in the table. The responses you enter will appear in alphabetical order in the drop-down menus. If you want the responses to appear in a particular order, precede the response with the order number. For example, if the responses are the days of the week, according to the default, Friday will appear first in the drop-down menu, Monday second, and Saturday third. To have them appear in day-of-the-week order, enter the responses as: (1) Sunday, (2) Monday, (3) Tuesday, etc. Note: Adding, deleting or changing items in a table will not alter data already entered in the database. For example, deleting Company X from the Manufacturer's List table will not affect any records where Company X has been selected as the manufacturer. However, in the future you will not be able to select Company X as a manufacturer, unless you again add it to the table.

IMPORTANT! If you are entering an incident and you need to add a category to the table, don't leave the record entry screen. Simply move the cursor to another field, then click **<Forms Menu>**, then select **Modify Tables**, the desired table, and add the entry. After clicking **<Close>**, the information will

be automatically saved and the list updated. When you return to the record entry screen, move the cursor back to the appropriate field and make the desired selection.

Customizing Access/EPINet
Adding customized questions
If you want to add questions to the EPINet report forms, some or all of the four blocks shown in the *Facility ID/Type* box on the page above, under *Customize User Defined Labels*, need to be completed. Tab to the first block beside BBF #1 that says *User Defined Field 1* to enter the first Blood and Body Fluid question that you are adding to the screens and reports. You may use abbreviations to fit the question into the box, but on the hard copy report form that the injured/exposed worker completes, your questions can be much longer. Press **<Enter>**, and go to the block beside BBF #2 that says *User Defined Field 2* if you have a second question to add.

Repeat the procedure to add custom Needlestick questions, going to Needlestick #1 – *User Defined Field 1* and Needlestick #2 – *User Defined Field 2*. Historically, few facilities have added questions to the forms, but this feature is an enhancement requested by some EPINet for Windows users (the original version of EPINet had this feature). Click **<Save>,** then **<Close>**.

To add these additional questions to the report form that will be completed by the injured/exposed worker, open and edit the appropriate Word file—**US Uniform Needlestick and Sharp Object Injury.doc**, or **US Blood and Body Fluid.doc**. If you are unfamiliar with inserting check boxes into your documents, simply copy a section from elsewhere in the report that is formatted the way you want, replace the words, and adjust the tabs for proper alignment. Be sure to save your work, and save the original copy of the report form in a back-up folder along with the original *.exe* or *.zip* file e-mailed to you.

Entering response choices for added questions
To enter the valid/allowed responses to the added questions, click **<Forms Menu>**, then select **Modify Tables**, then **User Defined Table Values**. Highlight and click the appropriate report form and question number (for example "**BBF User Defined Table 1 Values**"), then enter the responses that should appear in the drop-down menu. RESPONSES ENTERED IN THIS WAY WILL BE THE ONLY RESPONSES ACCEPTED BY THE PROGRAM.

Entering New Records
Click **<Forms Menu>**, select **New**, and then either **Blood and Body Fluid Incident**, **Needlestick and Sharp Object Incident**, or **Post Exposure Incident**. A blank record will appear and the cursor will be in the box for *Last Name*. Type the last name and either press **<Enter>** or the tab key to go to the next field, *First Name*. Type the first name and press **<Enter>** or the tab key to go to the *Facility ID* box. If you do not wish to enter names, press the tab key twice to go directly to the *Facility ID* box.

If the correct **Facility ID** is displayed, simply tab again. If not, either type in the correct Facility ID, or click the down arrow in the box and select from the list displayed.

The program will automatically enter **Incident ID** numbers. Incident ID numbers cannot be reused; if you either accidentally or deliberately delete a record, the ID number for that record will not be used again. If you enter part of the incident information and do not complete the entry, that information will be saved. You may later edit or delete that record, or type over the information. Unlike the DOS versions of EPINet, once deleted or written over, a record cannot be recovered.

Date is entered with two digit numbers for month and day, and four digits for year. A slash (/) should appear as you type the first number. Allowed date values are today's date and earlier. You cannot enter a date after the current date. If you make an error and the date is not accepted or needs to be changed, you must re-enter the entire date.

Time is entered in a four-digit, 24-hour format. The colon (**:**) will appear as you type the first number. Midnight is entered as 00:00, instead of 24:00.

The next tab takes you back up to the **Entered By** field. You can type the name or initials of either the person who filled out the form or the person who entered the data. If you use the initials of the person who filled out the form and have questions later, you will know whom to see. If data entry is assigned to several people, you may want to use this field to track data entry. This field does not appear on any reports and data cannot be sorted on it. It is visible only by viewing the individual record.

The program has been designed to speed data entry. To enter data, tab through the blocks on the screen that correlate to the information on the printed report form, entering the responses by number or by highlighting, then left clicking, on the indicated response in the drop-down boxes. For questions that have numbered responses on the paper report form, simply enter the correct response number from the report form. Yes/No responses *must* be entered by number: **1** for **Yes, 2** for **No, 3** for **Unknown,** and **4** for **Not Applicable**, or by the drop down boxes. A simple **Yes** or **No** is not accepted. Responses without numbers must be entered exactly as listed in the drop-down boxes or selected from the drop-down boxes. For questions with drop-down boxes: If you enter the first letter of the response, the drop-down box will appear listing the responses beginning with that letter. "**Describe**" boxes allow any response.

To go to the next page of the record, either press tab until you get to the right-pointing arrow and press **<enter>**, or use your mouse to move the cursor to the arrow or to the appropriately labeled tab under the date and time entries, then click.

To enter a new record, either click **<Add New Record>** on the toolbar or use the mouse to go to the lower left corner of the screen. Click the right arrow button ( ) and a new blank record will appear. You will be at the same tab in the blank record that you were at in the prior record. Enter the information in the top panel that is always visible and click the first tab to go to Question 3. NOTE: You must first be in the record category to which you wish to add a record. For instance, if you wish to add a record to the Blood and Body Fluid category, you must first click on that category. To switch to another category, you must return to the main menu.

To end data entry, click the **<Close>** button on either menu bar. Your input is saved automatically and you will return to the main menu.

Post-Exposure Follow-Up records correspond to records previously entered in either the Blood and Body Fluid or the Needlestick and Sharp Object data files.

Adding post-exposure follow-up data: When entering post-exposure follow-up data, click **<Forms menu>**, select **New**, and click **<Post Exposure Incident>**. Then, in the upper-left corner of the post-exposure form, you must select the correct data source to locate the record of the original incident. For example, if the original incident was recorded as a blood and body fluid (BBF) exposure, you must select "BBF" when starting the record. If you search the needlestick data file, no match will be found. After you click on the round BBF or Needlestick button, the drop-down box will fill with information; click on the down arrow to select the desired incident. Once you select a data source, any post-exposure data you enter subsequently will be linked to that same data source. To change the data source, close the record, reopen it and select the desired source. It is easiest to enter all the post-exposure records under each of the data sources at one time (for example, enter all the post-exposure data for BBF records, then all the data for needlestick records), rather than switching back and forth.

Tips and handy notes for entering new records
The only field that has to be filled in to create a record in Access/EPINet is the date. If, after entering the date, you close the record or go to another record using the arrow keys in the lower left corner, the previous record is saved automatically, even if all the other fields are blank. To fill in that "blank" record and enter data from the next report form, use the edit function.

If you enter data in ANY field (even if you subsequently delete what you put in that field), but do **NOT** enter a date, you will receive the following warning: "*The field 'xxx.Date' can't contain a null value…*" . Click **<OK>**. You will receive a second error message: "*You can't save this record at this time.*" If you click **<Yes>** to the message, the data will **not** be saved even though an **Incident ID** has been assigned, and you will not be able to access that record again.

If you wish to save the information entered in the record, click **<No>** to the "*You can't save this record at this time*" message, then enter the correct injury date in the date field, and then the rest of the information. (If you do not have the injury date—for example, if the person completing the report form wrote their date of birth instead of their injury date—choose a fictitious date that you will always use for such cases. We recommend 01/01/1990; once you get the actual date, you have a great search key, as well as a way to keep track of other records that need further attention. Until the correct date is entered, this record would be included in reports <u>only</u> when the "all data" option is selected.)

An **Incident ID** (record number) is not re-used by Access/EPINet. If no date was entered, whatever information might have been entered in that record will not be lost. Also, the **Incident ID** number will not match the total number of records in the database shown in the lower left of the screen. This is not a cause for concern.

If you click **<Forms Menu>**, then select **New**, and **Blood and Body Fluid Incident** or **Needlestick and Sharp Object Incident** and just look or tab through a blank record, an **Incident ID** number will not be assigned. An **Incident ID** is assigned only after you enter a blank space or value in any field.

If you want the numbers to match, do not delete the record. Overtype the incorrect date with the new, correct date. Complete the data entry for that record, and the numbers should match again. Once a record has been deleted, the incident number will never again match the total number of records.

When you select the option to enter a <u>new</u> record, the number of records shown in the lower left corner of the screen will be "1." If you then add 5 records, the number "5" will appear in the corner. This is only the number of records you've added, not the total number of records in the database. When you select the option to edit, the actual number of total records will appear in the lower left corner. The Incident ID can be a larger number than the number of records in the database.

The paper report forms have a blank for the **Facility ID** and **Incident ID** numbers. It is a good idea to note these numbers on the paper report form. If you hand-write the Access/EPINet generated **Incident ID** number on the report form when you enter that data into the system, you can easily locate the record to make changes. It is also an easy way to track which incidents have been entered into the database.

Editing Records

The first step in editing a pre-existing record is to locate it. Once it is located, tab to the desired box and enter the revised information. The new information will replace the prior information as soon as you leave the record.

There are two ways to locate a record. Which method to use depends on the information you have available about the record.

In any case, first click on **<Forms Menu>**, select **Edit**, and then either **Blood and Body Fluid Incident**, **Needlestick and Sharp Object Incident**, or **Post Exposure Incident**. Note that Post Exposure records are located in a different manner from the others. See directions below.

(A) Searching for records using page Up/ Page Down or Navigation buttons: If there are only a small number of records in your database, simply press the *Page Down* key until the desired record appears. If you are looking for a recently entered record, it is easiest to go to the end of the file and press the *Page Up* key. Alternatively, you can use the lower toolbar: click on **Record Navigation**, then

Last; or, using the navigation buttons on the bottom left of the record screen, click the button with the right arrow followed by a vertical line (   ), which will take you to the last record in the database. Click the left arrow button ( ) until you locate the record going backwards through the database. To go to the first record, click the button with the vertical bar followed by a left arrow (   ). The button with the right arrow followed by an asterisk (∗) will take you to a new, blank record.

(**B) Searching for records using the "find" button:** If you have a large number of records, search for a record using the find button. First select a field to search on; if you

have the name, date or Incident ID, it is best to search on these fields. Click on the field you've selected, click the **<binoculars>** on the toolbar, fill in the appropriate information in the **"Find What"** box, then click **<Find First>**. If you search on the last name or date rather than incident ID number you may
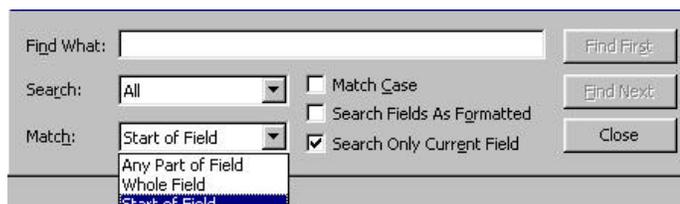
need to click the **<Find Next>** button to continue searching for the record. The record you are looking for should eventually appear. You can also search on other fields, using the same procedure.

Review the choices in the **"Match"** box. If you are seeking a specific **Incident ID**, you want to match the whole field. If you are unsure of the spelling of the name, select **<Any Part of Field>,** or **<Start o*f***

Field> for the **"Match"** box. If that doesn't locate the record, try highlighting the entire search field before clicking the binoculars. Be sure you enter the search words in the **Find What** box, not the **Name**, **Date**, or **Incident ID** box on the form. Whatever you type into the box on the form will be saved automatically as the correct value for that box and you will have unintentionally edited a record.
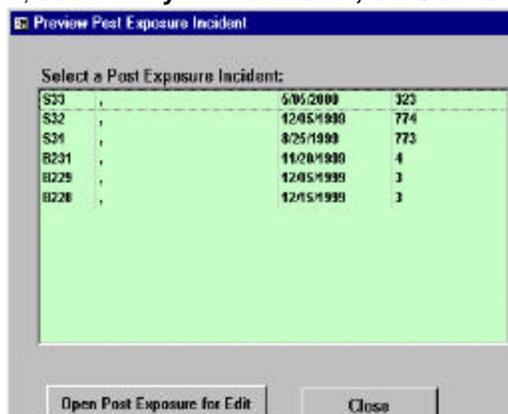
When editing records in the **Post Exposure** data file, you can *only* search in the list box that contains Incident ID, Name, Date, and Facility ID**.** Highlight then click on the desired record, then click **<Open Post Exposure for Edit>**. The record is now available for editing. You can only edit one record at a time. The record must then be closed to return to the Post Exposure Edit screen to select another record to edit.

Generating Reports
Access/EPINet allows you to produce a variety of reports for either the Needlestick and Sharp Object or the Blood and Body Fluid databases. Post Exposure Follow-up is available only for a single incident.

Single incident reports
Single incident reports show the data entered for one selected record. It should be identical to the original report form. To quickly check the accuracy of the data entered, view this report. You will note that names do not appear on the single incident report, in order to protect confidentiality. To identify the individual, go to the Incident ID in the database. To view a single incident report, click on **<Report Menu>**, select **Single Incident**, and then either **Blood and Body Fluid**, **Needlestick and Sharp Object** or **Post**
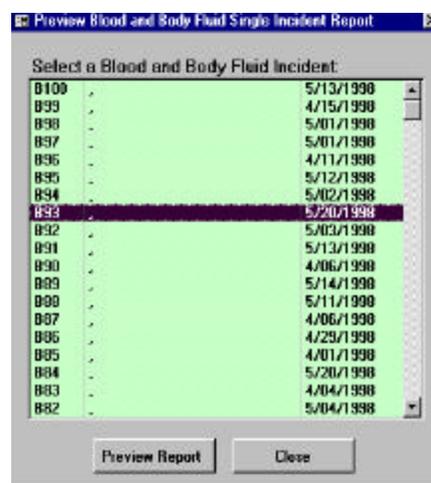
Exposure. When the selection screen opens, highlight and click on the record you want, and click on **<Preview Report>**.

If you have not entered names in your records, there will be a comma in the name field, as shown in the example to the right. In that case, you will need to select by Incident ID.

To print the report, click **<Print>** on the Menu Bar and **<Print>** (printer icon) in the drop-down box.

You may print this report in MS Word by clicking the **<Print>** button on the Menu Bar, and then **<Publish It with MS Word>**. After another brief wait, your document will appear in Word. Make the desired changes in Word and print using your standard Word commands. Changes made in Word do not change data in the database.

At this point, MS Access is in the background and MS Word is operating in the foreground. Once you make the changes, you can save the file in Word under any name you choose by using the **<Save As>** feature. By default, the document is saved as either **rptNeedleSummary.rtf** or **rptBBFSummary.rtf** in the *"My Documents"* folder on your computer. (Note: It will be saved as a Rich Text Format (RTF) file, NOT in the default document (DOC) format of Microsoft Word.) The computer will prompt you before it overwrites any previous report by the same name. When you close the Word document, you will again be in Access/EPINet, previewing the report.

To return to the Main EPINet screen, click the **<Close>** button on the toolbar to exit the previewed report. Then click the **<Close>** button beside the preview button on the selection screen.

Summary/custom reports

You can produce a variety of reports under the **Summary** option of the **Report Menu**. Most of the reports give you a number of options, selecting all records in the database, records within a range of dates, or records meeting the criteria you select from drop down menus.

When you click **<Report Menu>** then **<Summary>**, the first two reports in the list, *Blood and Body Fluid* and Needlestick and Sharp Object are the traditional EPINet Summary reports. They provide an accounting of the combined records within the database, or just the records you specify. These reports condense a large amount of information into numbers and percentages that are easily understood and provide you with information on injuries occurring within each location, procedure, and job category in your institution as well as many other categories.

The Needlestick and Sharp Object by Device report provides a count of the injuries caused by each device. You may generate this report for all injuries, injuries occurring within a period you specify, or for hollow-bore devices only.

The Blood and Body Fluid Exposure Log and the Needlestick and Sharp Object Injury Log provide information on a per case basis as required by OSHA. You can select all records for this report or just the records that meet the criteria you select from drop down menus. Records are displayed beginning with the most recent record. You may view this report where either the text of the variable is displayed or the numeric value in EPINet is displayed. These reports display the incident description text provided by the injured health care worker. Incident ID's, not health care worker names, appear on these reports to prevent unwitting breach of confidentiality. If you wish to add names, you may export the report to Word and add the names that match the incident ID's.

The last report, the Preventable Injury Report, is most useful if you have entered cost data. This report provides a count of all injuries with a given device and the number of those injuries that could have been prevented by using a safety device, along with the costs of those injuries that could have

been prevented. The report is requested for a range of dates entered as numbers in the format *mm/dd/yyyy*. AN explanation of what constitutes preventable injuries is printed at the top of the report.

When you click **<Custom Dates>** a box will appear in which to enter the beginning and ending dates for your report. If you click on **<Show All>,** the **From** and **To** query will not appear and your report will include all records in your database.

To run a **Limited Selection** report, you must enter **custom dates**, and select the desired criteria. To do so, click on the down arrow to show the available choices under each category, then click on the criteria you want in your report. If you know the number of the response choice you want in a given category (for example 4 for Nurse under Job Category), you may enter it without using the drop-down boxes.
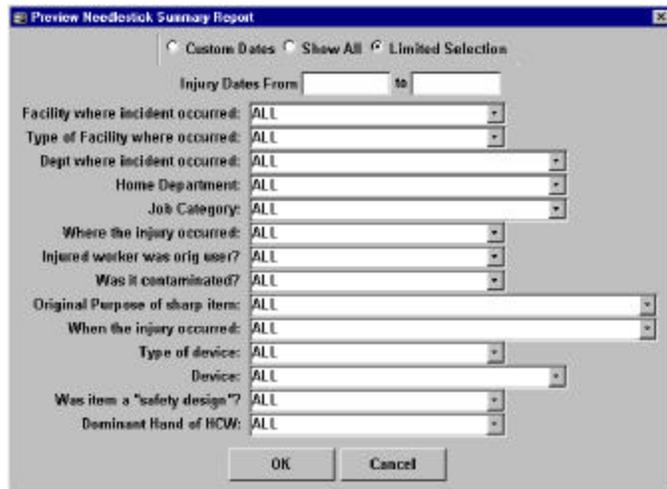
The criteria in the Limited Selection screens for Blood and Body Fluid and Needlestick and Sharp Object Injury reports are different. By selecting different combinations of criteria, a variety of reports can be generated, which in turn allow you to better target areas for implementing exposure prevention measures.

Once you've selected all your criteria, click **<OK>**. The computer will then process the report. This may take anywhere from a few seconds to a few minutes, depending on the speed of the computer, the size of the database, and the number of criteria you've selected. If you select more than three or four criteria, it will take longer to process.

When the computer has processed the report, click **<Print>** on the Menu Bar and **<Print>** (printer icon) in the drop-down box. Again, the printing request can take a while to process, depending on the specifications of the report.

You may wish to revise the formatting of the report, not print all the sections, or give it a different title. If so, click **<Print>** on the Menu Bar, then **<Publish It with MS Word>**. After another brief wait, your document will appear in Word. Make the desired changes in Word and print.

At this point, Access is still in the background. Word is operating in the foreground. (If you have an older computer, and you don't have enough memory, this may crash your computer.) Once you make the changes, you can save the file in Word under any name you chose by using the Save As feature. By default the document is saved as **rptNeedleSummary.rtf**, **rptNeedleLogrpt.rtf**, **rptNeedleNumberrpt.rtf**, **rptBBFSummary.rtf**, **rptBBFLogrpt.rtf**, or **rptBBFlogNumberrpt.rtf**, depending on the report requested, in the *"My Documents"* folder on your computer. (Again, Note: the format is rich text, not a document in Microsoft Word.) It will prompt you before it overwrites the previous report. When you close the Word document, you will again be in Access/EPINet previewing the report.

To return to the Main EPINet screen, click **<Close>** on the toolbar.

There is no summary report for **Post Exposure Follow-up.** Each post exposure entry is tied, by **Incident ID**, to a Blood and Body Fluid Exposure record or a Needlestick and Sharp Object Injury record.

 If you click **<Analyze It with MS Excel>** from the **<Print>** menu bar, the file names will be like above except the file type will be .xls instead of .rtf.

To return to the main EPINet screen, click **<Close>** on the toolbar. The file will be saved automatically. If a file already exists with that name, you will be given the option of writing over it or providing a new name.

Creating Graphs
Graph Options within Access/EPINet

Access/EPINet allows you to create bar graphs using data from either the Blood and Body Fluid Exposure or Needlestick and Sharp Object Injury data sources. The variables you can select differ for the two data sources. Click **<Report Menu>**, select **Graphs**, then **Blood and Body Fluid** or **Needlestick and Sharp Object**, and click **<Preview>**.

To access the data for your graph, you must click on either **<Custom Dates>** or **<Show All>**; if you select *Custom Dates*, you must fill in the date ranges.

If you are creating a graph using the **Device** category under Needlestick and Sharp Object, click **<Device>** then select a device type from the drop-down menu (**Needle**, **Surgical**, or **Glass**.) Be sure you also select either **<Show All>** or **<Custom Dates>** and again, if you select *Custom Dates*, fill in the date ranges. The graph will show all of the devices for the type of device selected, whether *needle*, *surgical*, or *glass*. There is no graph option that will show all these device categories.

You may print the graph by clicking **<Print>** on the top menu bar, then click **<Print>** in the drop down box. The options "**Analyze It with MS Excel**" or "**Publish It with MS Word**" cannot be selected for graphical data, and thus the graph data cannot be exported to an Excel or Word format.
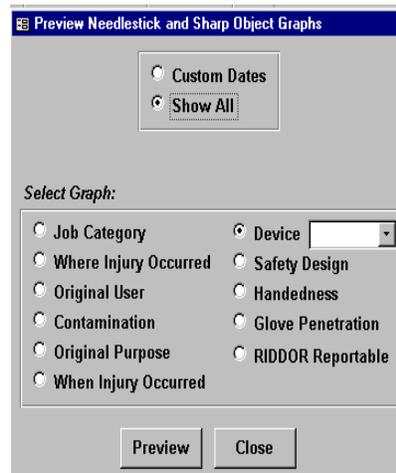
Custom graphs: graphing more than one variable

The graph feature in Access/EPINet does not allow you to select more than one variable (for example, Job Category). To create graphs with more than one variable (for example, nurses [Job Category] injured in patient rooms [Where Injury Occurred] using disposable syringes [Device]), you need to create a limited selection report, export that report to Excel, and then create your graph in Excel. First, click **<Report Menu>, <Summary Report>,** and **<Blood and Body Fluid>**, or **<Needlestick and Sharp Object>.** Click **<Limited Selection>**, fill in the dates, and click on the variables you want in your graph, and click **<OK>**. Export the report to Excel by selecting **<Print>** from the top menu bar, then click **<Analyze It with MS Excel>**. A file will be created and Excel will open to that file. Locate on the Excel worksheet the variables you want to graph, and then follow Excel's procedure for creating a chart. (If you need help with creating charts in Excel, refer to the help feature of Excel.)
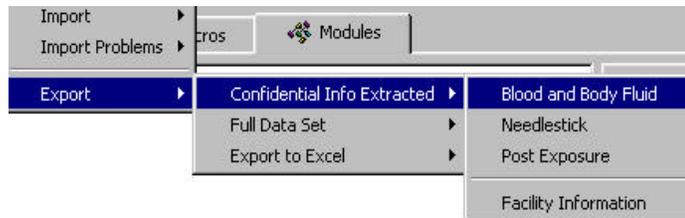
If you did not specify a *Facility Type* when you set up the program, you may receive on *Overflow* error when exporting to Excel. To prevent the error, specify a *Facility Type* according to the directions in section of this document titled "Set Up".

Rows 1 and 2 of the Excel file will list the variables from the selection screen and the value you selected for them. After those are all listed, the report data will appear in column format: value, number of occurrences, and that number's percentage of the total, in the order they appear on the summary report. You may either delete or retain the data from the unused sections of the report.

Remember, when you close the Excel file it will be saved under the name "**rptBBFSummary.xls**" or "**rptNeedleSummary.xls**" and placed in your *"My Documents"* folder, unless you specify otherwise. When you exit Excel you will return to the Access/EPINet program. If your computer is low on memory or space, save and then close the Excel file, return to Access/EPINet and close it, and then reopen the Excel file from the "My Documents" folder to do further work.

Exporting Data

Data can be exported in two ways. The "raw" data (listed by record number in spreadsheet format, with every field included) can be exported to another Access database, or to an Excel file, through the **Import/Export** menu. The Summary Report data can be exported to Excel or Word files through the **Print** command. Exporting the Summary Reports makes it easy to enhance the format of the reported data.

Exporting data to the network administrator

To export raw data for data-sharing between hospitals in a network, click **<Import/Export Menu>,** select **Export** and then choose the desired format: **Confidential Info Extracted** will export the data *without names,* while **Full Data Set** will include names in the exported data. Click the desired data source, **<Blood and Body Fluid>**, **<Needlestick>,** or **<Post Exposure>.** A box labeled "*Enter Parameter Value*" will appear telling you to "*Enter Start Date,*" in the format **mm/dd/yyyy** (where month and day are two digits, and year is four digits, separated by slashes). Click **<OK>**. A second "*Enter Parameter Value*" box will appear prompting you to "*Enter End date.*" After entering the dates, click **<OK>** again. Each table must be exported separately.

The data are exported to a file in the **C:\epinet** directory named either "**EPINetConfidential.mdb**" or "**EPINetFull.mdb**." Blood and Body Fluid Exposure data will be in the BBF table and Needlestick and Sharp Object Injury data will be in the Needlestick table. When you double click on the file, Access will open and the files will appear under the *Tables* tab with only the exported tables listed. Both tables may appear but only the ones you have exported data to will have data in them. Once data are exported, the security feature of the Access/EPINet program is no longer in effect. Please be sure to protect the confidentiality of your data.

Each time you export to the Full or Confidential Access database, any data previously in that database will be overwritten. Only the most recent export will appear. If space is tight on your computer, delete the table WITHIN the Access file after use. DO NOT delete the Access database files (the files named "**EPINetFull.mdb**" or "**EPINetConfidential.mdb**").

To delete these tables, first open each database separately and follow these steps: click the **<Tables>** tab, highlight the table (either BBF or Needlestick) and press **<Delete>**. You will be prompted, "*Do you want to delete the table BBF?*" (or "*table Needlestick*"). Click **<Yes>**. Go to the toolbar and click on **<Tools>**, **<Database Utilities>, <Compact Database>**; the database box will blink then reappear. When it reappears, click **<Tools>**, **<Database Utilities>, <Repair Database>**. The box will blink again and you will get a message confirming the database has been repaired. The compact and repair commands will reduce the size of the "empty" database. As stated before, you may delete the tables in this manner but DO NOT DELETE THE DATABASES.

To export your database to an Excel file, go to the **<Import/Export Menu>**, select **Export**, then click **<Export to Excel>,** and choose **<Blood and Body Fluid>**, **<Needlestick>,** or **<Post Exposure>**. Enter the dates in **mm/dd/yyyy** format as described above. The data is exported to a file called either "**EPINetBBF.xls**" or "**EPINetNeedle.xls**," depending upon your selection, and will be placed in the **C:\epinet** folder.

Exporting summary report data

An option under the Print command allows you to export any of the Summary Reports to either Word or Excel. This option exports only the data in the report, not the raw data used to generate the report. Generate the desired summary report, then select **<Print>**, and click on the format of your choice—**<Print>**, **<Analyze It with MS Excel>**, or **<Publish It with MS Word>.** The file goes either to your printer or to the *"My Documents"* folder. The program uses only one name, "**rptBBFSummary.(xls or rtf)**," for Blood and Body Fluid reports, and one name, "**rptNeedleSummary.(xls or rtf),"** for Needlestick and Sharp Object reports, but will query you before it overwrites a pre-existing report. If

you wish to save more than one Blood and Body Fluid or Needlestick and Sharp Object report, we suggest you rename the report or move it to another folder.

Changing User Passwords

Access/EPINet allows users to manage user accounts. Users with "**Read Only**" and "**Data Entry**" logons can change their own password, but can't change others' passwords. Administrators can add users. To add or change passwords, click **<Forms Menu>**, select **Modify Tables** and click **<Manage User Accounts>.**
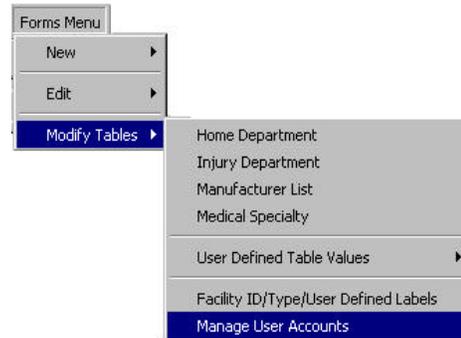
The box below will appear. To add a new user and password, click on **<New>**. The boxes will be empty; fill in the user name, the password, and select the level of security desired. You must click **<Save>** to have changes take effect. Only the administrator can add or change user security levels.

The user name for the administrator is "*Admin*"; the password is "*epinet*." We do not recommend that you change the administrator's user name, but you can change the password. If you change from the default password and forget it, you will have to reinstall EPINet. For this reason, we recommend that you assign two users administrative-level security.

For routine review of the database and report generation, use the "read only" logon. To enter data, use the "data entry" logon. The administrative logon should be required only rarely. A single user can have several levels of security.

Help!

If you have problems or questions, please contact Ginger Parker at the International Health Care Worker Safety Center, University of Virginia. Telephone: (434) 982-0702; e-mail: gingerparker@virginia.edu.

Appendix 1:
Importing Data From Other Versions of EPINet Into Access/EPINET

You can import data into Access EPINet from all three previous versions—DOS, Windows, and test versions of Access/EPINet. If you have data in both EPINet for Windows and EPI Info/EPINet 2.0 (DOS), contact Ginger Parker and she can discuss the best way to get all of your data imported (phone: (434) 982-0702; e-mail: gingerparker@virginia.edu).

When importing data from any of the EPINet versi ons, the first step is to create a folder with back-up program and data files of your existing EPINet version in another location on your computer. This is essential to prevent an accidental overwrite of existing data. **ONCE FILES HAVE BEEN OVERWRITTEN, THERE IS NO WAY TO RECOVER THE ORIGINAL FILES!**

Note that after importing data from previous EPINet versions, a screen will appear prompting you to set the Facility ID, Facility Type, and the Label for the user-defined questions. The screen appears after importing the Blood and Body Fluid data and after importing the Sharp Object Injury data. Click on **Edit ID** and enter the appropriate data in each of the boxes. The allowed Facility Types appear in a drop-down box. Please continue to use the Facility ID you used in the past, if it appears on the list. If you enter data for a network of hospitals, see Appendix 2, Tips for Networking.

Importing data from a previous version of Access/EPINet
If you have used an earlier version of **Access/EPINet** and need to bring that data into the latest version, click **<Import/Export Menu>**, select **Import**, then **Previous Access Versions** and click **<Blood and Body Fluid>**, **<Needlestick and Sharp Object>**, <**Post Exposure>**, OR **<Facility Information>**, and it will do the work for you. You must import the Blood and Body Fluid, Needlestick and Sharp Object and Post Exposure data separately— just click on the appropriate button. Clicking *Facility Information* will import the **Facility ID**, **Facility Type**, and the **User Defined Questions** from the previous version.
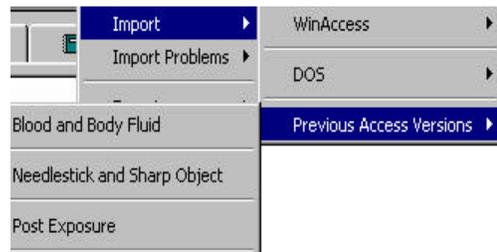
IMPORTANT NOTE: The file for the earlier version must be located in the directory **c:\epinet** and must be named **epinet** for this feature to work. If you changed the location of the earlier version, you *must* move it to **c:\epinet\epinet.mdb** to import the data from it. This means that the latest version must have a different name than the earlier version, or be in a different location. To avoid confusion, we recommend that the latest version retain its original name "Access EPINet US.mdb" and not be named "epinet.mdb". If your computer system's network constraints limit the file name to 8 characters, rename "Access EPINet US.mdb" to "AcEPIv1.mdb", or something similar. The new name should include some indication that it is an Access version, plus EPI (to designate EPINet) and v1 or 1 to denote version (in the event you upgrade at a later date.)

Importing data from Epi Info/EPINet 2.0 (DOS)
Importing data from the DOS version of EPINet is a two-step procedure. The data must first be exported into a dBase III format file by Epi Info 6.04/EPINet 2.0. Then, in Access/EPINet, you can select the DOS import.

Step 1: Close Access/EPINet and open the DOS version of EPINet. From the main EPINet 2.0 menu bar, select **Help,** then **Epi Info 6**. At the Epi Info 6 main menu screen, click **<Programs>**, then **<Export>**. Enter the location of your DOS **bbf.rec** file, *including the path,* as the input file name, select **dBase III** as the output format, enter **c:\bbf.dbf** as the output file name, and click **<OK>**. Follow any additional instructions. The number of records exported will appear in a box when the procedure is complete. Repeat these steps for **soi.rec**.

Exit the DOS EPINet program and open Access/EPINet. Click **<Import/Export Menu>**, and select **Import**, then **DOS**, and click **<Blood and Body Fluids>** OR **<Needlestick and Sharp Object>**. It will ask you to supply your **Facility ID**. If you did not enter names in the earlier version of EPINet, you may

be prompted for **last name** and **first name**. <u>Whatever you enter will appear on every record, so we recommend that you not enter anything</u>. Simply click **<OK>** to continue. You may also be prompted for other values, if you left all of them blank in the earlier database. Simply click **<OK>** to continue. Import the **Needlestick and Sharp Object** and **Blood and Body Fluids** data separately.

After the DOS records have been imported, the import feature should not be used again or you will create a duplicate of every record you imported.

You can check for DOS import problems by clicking **<Import/Export Menu>** on the toolbar, then selecting **Import**

Problems, then clicking **<DOS>**. The records that did not import will be displayed. You can append these records after you've corrected them. Usually records do not import because the **Facility ID**, **Incident ID**, or **Date** was not entered in the record in the DOS EPINet version. You will need to study the data and make your own determinations. If you cannot determine the problem, you will need to contact the network administration for help, or you may later reenter the "bad" data as new records if the list is short.

The screen showing records that did not import is in spreadsheet format, with each incident, or record, on one line, and values going across the screen. Use the arrow keys to go across the screen to view/edit the data. The variable names, which describe the contents of each column, appear in row number 1. Delete any records that do not need to be added back into the database. If you can't finish correcting all the records in one session, you can exit and save what you've done and continue the process later.

To delete records that you can't correct or that are a duplicate, click on the bar to the left of the first item, then press **<Delete>** on your keyboard (or go to the tool bar and select **<Record Navigation>**, **<Delete record>**). You will be asked to confirm whether you want to delete that record. Verify that you highlighted the proper record and confirm the delete by clicking **<Yes>**. Be sure to verify that the correct record is highlighted because, once deleted, the record cannot be recovered and the delete cannot be undone. Once all corrections have been entered and unnecessary records deleted, select **<Append Corrected Records>**. This will append all records left in the file, even those that have not yet been corrected.

Do NOT, I repeat, **DO NOT** select **<Append Corrected Records>** more than one time. It appends, or adds, all of the records each time you run it and will result in duplicate records.

You can also use this feature to identify records with import problems and retrieve the original incident report then reenter the data in Access/EPINet. In this case, do not follow the "**Append Corrected Records**" procedure.

Importing data from EPINet for Windows (WinAccess)
If all of your EPINet data was entered into the EPINet for Windows version, go directly to the *Data Import* section below. If you imported your DOS EPINet version data into Windows, please go to the *Data Cleanup* section and follow the instructions before completing the *Data Import* procedure.

Data Import
Select **WinAccess** to import data from the Windows CD-ROM version of EPINet. This program must be located in **C:\program files\epinet**, the default directory used during the installation of Windows EPINet. If the program was installed elsewhere, such as a shared network drive, you must create this directory on the computer and move the Windows program there. To import your Windows EPINet data into the Access version, Click **<Import/Export Menu>**, then select **Import** then **WinAccess,** and click either **<Needlestick and Sharp Object>** OR **<Blood and Body Fluid>**. The password, *epinet*, will need to be entered several times during the import process for each file. The password must be entered in *lower case* letters.

Import the **Needlestick and Sharp Object** and **Blood and Body Fluids** data separately. Records that do not import must be entered as though they are new records. There is no feature to append these records.

Do not attempt to import the **Blood and Body Fluid** or **Needlestick and Sharp Object** data a second time or you will create duplicate records for each data source.

Data Cleanup
If some of your Windows data was imported from the DOS version of EPINet (EPI Info 6.0/EPINet 2.0), you may have imported records into the Windows version you thought you had deleted.

The DOS version never actually deleted a record; the delete command simply "turned off" the record so that it would not be counted in the reports. On occasion you may have "turned off" records to run some special reports; you may or may not have "turned on" those records again later. That feature has not been retained in later versions. In some cases, these "turned off" records have been imported into the EPINet for Windows version. If so, they usually appear as a second record with the same ID number, but the series number will be greater than 0.

It is a good idea to review your EPINet for Windows data before importing it into Access/EPINet. This must be done from within EPINet for Windows. It may be time consuming if you have a slow computer and a large database; then again, it may take only a few minutes. It is definitely worth the effort to have clean, reliable data.

To check for deleted DOS records, or possible duplicate records, open EPINet for Windows. Select **<Data Entry>**, **<Edit>**, **<Uniform Blood and Body Fluid Exposure Report>** or **<Uniform Needlestick and Sharp Object Exposure Report>***.* Click the box **<Select all Records>**, then click **<Rebuild>**. In a few minutes, the box will fill with the "rebuilt" records in the database. Column 3 is labeled *Series*. Each record with a series value greater than 0 is a possible duplicate.

Click the **ID** label at the top of the list to bring all the records into ID order. Since the ID numbers are not truly "numbers," but alphanumeric characters, the records will appear in alphanumeric order. Let's say you have four records: one of them has no ID number assigned; the others are 3, 15, and 1257. Since they are in "numeric order by digit," and one record has no ID number, it will appear first. The records with 1 in the first column will appear next. Since both numbers have 1 in the first column, the system then sorts by the second column of digits. Since 2 is before 5, record 1257 will appear before record 15. Record 3 will appear last.

Using the sliding arrow tab on the right of the screen, scan down the list of series numbers searching for a number greater than 0. Click **<OK>** to view the information on the "original" entry (series=0) for that record number. Use the up and down arrow keys in the lower *left*-hand corner of the record screen; go forward or backward to the record with a series number of 1 or higher. You can toggle back and forth with the up and down arrow keys to see if it is a duplicate or empty record. If it is a duplicate record or empty, click **<Delete the Full Incident>**. You will be prompted "*Are you sure you want to delete this incident and any associated follow up report?*" Change the highlighted word "**No**" in the box to "***Yes"***, and click **<OK>.** The delete will be confirmed.

Repeat this procedure for each record with a series number greater than 0. You may have to rebuild the database each time. If the database is very large and it takes more than a minute or two to rebuild, rebuild it a year at a time. This procedure should be completed for both the **Blood and Body Fluid** data and the **Needlestick and Sharp Object** data.

After data cleanup is complete, go back to the ***Data Import*** section listed above.

Appendix 2:
Tips for Networking

Access/EPINet recognizes two types of networks: computer networks within individual hospitals or facilities, and multi-hospital networks where data is shared among the member hospitals.

Multi-hospital networks
Data can be shared in a network in two ways. The data can be entered into computers at each individual hospital, then "exported" to a network administrator at a central location who adds the data to an aggregate database; or, the printed report forms can be sent to the network administrator by each member hospital for entry into the database.

In the first case, each hospital manages its own Access/EPINet system. Each collects and enters its own data and can generate its own reports and graphs. Data is periodically exported to the administrator, who can then generate reports and graphs based on the aggregate data to send to participants for comparison purposes. Each participating hospital can compare its performance with that of the network overall.

The following issues will need to be addressed with multi-hospital networks.

Issue 1: DATA CONFIDENTIALITY
To insure data confidentiality, it is essential that the **Facility ID** be a number rather than the name of the facility or an abbreviation of the name.

Issue 2: FACILITY ID
If each facility in the network enters its own data, the only **Facility ID** to be listed through the Modify Tables command is that single facility ID. The default facility number that will appear on each record will be correct.

The network administrator will have all **Facility ID**'s in their Access/EPINet program. If all the network data is entered in a central location, each time a record is entered the data entry person must specify the appropriate facility ID, either by entering it or selecting it from the drop-down menu.

Issue 3: FACILITY TYPE
(a) For summary reports, the **Facility Type** will have a *#Num* error if no Facility Type was entered during set up. This error does not affect other information in the report, and does not cause the program to crash.

(b) **Facility Type** is entered along with **Facility ID** during set up; it is not associated with individual records. If you change the **Facility Type** for a **Facility ID** (for example, if a hospital goes from teaching to non-teaching), summary reports will not distinguish between the old and new facility types. If you want to distinguish between the old and new records, create a new **Facility ID** for the new **Facility Type** by adding another letter or number to the original **Facility ID**. For example, the old facility ID, 237, was identified as a non-teaching hospital. A medical school was added; the facility ID was changed to 237-a and the facility type to teaching hospital to distinguish incidents occurring before and after students were added to the health care worker pool. Subsequent data will appear to have occurred at two different facilities.

Issue 4: INCIDENT ID
In a departure from all earlier versions of EPINet, Access/EPINet automatically assigns the **Incident ID**. This reduces the likelihood of duplicate records in the database. It also assures consistency of ID numbering, and eliminates the loss of confidentiality when a record is entered under an exposed or injured worker's social security number. To determine whether an individual worker has sustained multiple exposures or injuries, search on their name using the **Navigation** menu, making sure you logon to the system with the "**Read only**" username.

Issue 5: CURRENCY SYMBOL AND DATE FORMAT (FOR INTERNATIONAL USERS)

Access/EPINet has been programmed to display whatever currency and date format is established in the "*Regional Settings*" menu of the computer's Control Panel. When data is imported into the Access/EPINet database, those same settings are used. These settings CANNOT be changed once data is entered or imported into Access/EPINet. Therefore, if you plan to use this program on computers in different countries, change the Regional Settings *before* using Access/EPINet. Always keep an "unused" version of the program saved in an easily identified, but secure, location as a back up.

Issue 6: PASSWORD

Use the administrative logon if you want to change user security or programming code. When logging on, type: Admin for name and epinet for the password.

Issue 7: IMPORTING FACILITY INFORMATION

If Access/EPINet is re-installed after all **Facility IDs** and **Facility Types** have been assigned, you can import that table of information from the earlier version. Click **<Import/Export Menu>**, then select **Import**, followed by **Previous Access Versions** and click **<Facility Information>**. The previous version of Access/EPINet must be named c*:/epinet/epinet.mdb* in order for this series of commands to import the facility information.

Issue 8. COMPACTING AND REPAIRING THE DATABASE

As data is imported from hospitals within the network and the database grows in size, you may need to "compact" your database. Using the administrative logon, click **<Modify EPINet>**, then click on the **<Tools>** menu at the top of the screen, select **Database Utilities**, and click **<Compac**t **Database>**. When prompted, logon as the administrator. After compacting, you will need to repair the database. Repeat the above procedure but select **<Repair Database>**. When prompted, logon as administrator.

Computer networking issues

Access/EPINet can be installed on a network drive with minor alterations.

Issue 1: LONG FILE NAMES

Many network drives only accept file names of 8 characters or less, and do not allow spaces and some other characters, such as periods, within the name. If this is the case with your system, rename the Access/EPINet file as specified on page 18.

Issue 2: REQUIRED FILE LOCATIONS

Data being imported must be placed in the default locations specified earlier. Exported data is placed in default locations (also specified earlier). Even if the main database is located on a network, or shared, drive, the default locations for the import/export files must still be located on the C: drive location of the computer from which the user is working.

Issue 3: CUSTOMIZATION

The Access/EPINet programmer can customize Access/EPINet for your network for a fee. See Network Technical Support below for contact information. Some customizing issues, such as file-naming conventions, may be resolved via e-mail or telephone, without charge.

If you change the Access/EPINet code and problems arise, we won't be able to offer technical support. The International Health Care Worker Safety Center, Becton, Dickinson & Company, Data Services, or their respective employees can be held liable for errors caused by coding changes.

Corrupted data (for example, if you create a new data file over an existing data file) are difficult to correct and may be impossible to recover. If you change the program and it doesn't work properly, you may, in some cases, be able to import the data into a backup copy of the original program with reasonable results. If you change the table values on the reports (for example, the response choices under job category), this can easily result in corrupted data or a crashed program. Deleting the value **ALL** from any table, even if it does not appear visible to the user, can cause the system to crash.

Issue 4: DATABASE SHARING

In order for multiple users to share a single copy of Access/EPINet, you can place it on a shared, or network, drive. To confirm that the program defaults to shared/network capability, open Access/EPINet with the administrative logon procedure. Select **<Modify EPINet>**, **<Tools>**, **<Options>**, **<Advanced>**, and confirm that **Default Option Mode:** is "**Shared**".

Network Technical Support:

If you have problems or questions, please contact Ginger Parker at the International Health Care Worker Safety Center, University of Virginia (phone: (434) 982-0702; e-mail: gingerparker@virginia.edu.)

Appendix 3:
How to Calculate Needlestick Rates

We are often asked the question, "What is the correct way to calculate needlestick rates?" In fact, there is more than one correct way to calculate these rates, depending on the types of comparisons you want to make. Three different methods for calculating rates are presented below.

The data you collect on reported needlestick incidents can be used to calculate rates that will allow some important comparisons to be made among different hospitals, different professional groups, or different device categories. Rates consist of a numerator and a denominator. In the three methods of rate calculation that follow, the numerator always consists of the number of needlesticks that occurred over a specific time period. The denominator is either the number of occupied beds, the number of full-time equivalent employees in a specific professional group, or the number of particular devices used during a given time period. The time period corresponding to the numerator and denominator should always be the same.

Calculating rates based on number of occupied beds

The simplest rate to calculate is the total number of needlestick injuries (NSI) reported during a specific time period (numerator) over the number of occupied hospital beds in an institution for the same time period (denominator). The average daily census of occupied hospital beds for the same year as the reported needlesticks is the relevant number to use in the denominator, since it corrects for unused hospital beds. A realistic example would be:

$$\frac{350 \text{ NS per yr.}}{800 \text{ beds}} \times 100 = 44 \text{ NSI per 100 occupied beds per yr.}$$

This gives a rough idea of the institutional needlestick experience, which can then be compared to other institutions. This rate will be affected by the level of underreporting of needlesticks, and also by the types of patients treated in the hospital. A regional medical center is likely to treat a higher proportion of patients requiring intensive care than a community hospital, and may therefore have a higher needlestick rate per bed because more needles are used per patient.

Calculating rates based on a job category

Needlestick rates can also be calculated for different professional groups, such as nurses, physicians, laboratory technicians, housekeepers, and laundry workers. With this method, the numerator is the total number of needlesticks reported by a specific professional group during a specific time period. The denominator is the total number of full-time equivalent (FTE) employees of a specific professional group during the same time period. Using nurses as an example, the rate would be calculated this way:

$$\frac{250 \text{ nurse-reported NSI in 1 yr.}}{1,000 \text{ FTE nurses employed that yr.}} = .25 \text{ NSI per FTE nurse per yr.}$$

"Full-time equivalent" means that if, for example, you have 50 part-time nurses, they count as 25 full-time equivalent nurses. This method gives a more accurate denominator than simply counting the number of nurses employed. For some occupational categories, it may be difficult or simply impossible to calculate an accurate rate. For instance, in some hospitals contract workers who provide services such as phlebotomy are technically not considered employees of the hospital. If those workers report their injuries to their contracting agency, the hospital may not have a record of all or any of their incidents. Furthermore, in many private hospitals physicians are not employed by the hospital they practice in, and their injuries might not show up in hospital records. For other groups such as medical residents, whose working hours may be extremely erratic, it may not be possible to obtain a reasonable full-time equivalent estimate for a denominator. When using this method of calculating rates, it is better to limit the calculations to occupational categories for which a reliable numerator and denominator can be obtained.

Calculating rates based on type of device

Finally, rates can be calculated for specific devices. Rates of needlesticks for specific types of needles are necessary when comparing needlestick risk from different devices and for evaluating the effectiveness of products designed to prevent needlesticks. To calculate device-based rates, a health care worker must accurately identify the type of needle involved when reporting his or her needlestick injury. The numerator consists of the number of needlesticks with a particular device during a specific period of time, and the denominator consists of the number of devices used during the same time period. A device-based needlestick rate, using syringes as an example, would be calculated in the following way:

$$\frac{\textbf{100 NSI from disposable syringes during given time period}}{\textbf{1 million disposable syringes used or purchased during same period}} = .0001 = 10 \text{ NSI per 100,000 syringes}$$

If a trial of a safety syringe were carried out, the above rate would be compared to:

$$\frac{\textbf{\# NSI from safety syringes during given period}}{\textbf{\# safety syringes used or purchased during same period}}$$

It may be difficult to find out exactly how many devices have been used in direct patient care. Usually, the number of devices purchased is the closest approximation that can be obtained, so the denominator for calculating device-based rates must be obtained from the purchasing department. For devices like IV catheters that are used for one purpose, all devices purchased can be included in the denominator. Some devices, such as disposable syringes, are used for many purposes, not all of which are patient-related. If large numbers of a given device category are not used for patient care, such as syringes used by pharmacy for mixing drugs, then the devices not used for patient care should be excluded from the denominator when calculating the injury rate.

To determine which rate you need to calculate, decide which questions you want to answer. Do you want to compare your hospital to other hospitals? Compare exposure risks of different professional groups? Compare the injury risk of different devices? Make sure that denominator data is available for the kind of rate calculation you want to make. Following these steps will help you to calculate meaningful rates and make optimum use of your hospital's data.