

Critical Care EEG Database – Public Edition

User Manual

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Overview

The Critical Care EEG Database (CCEEG DB) is a database system for storing data on EEG monitoring sessions, created by the Critical Care EEG consortium and made available to the public. While it is oriented toward capturing data on long-term critical care EEG monitoring, it can record data on other types of EEG monitoring as well. EEG data is recorded in days, each of which has one or more epochs. Once approved by the assigned attending physician, the data for a day can generate a report which can be appended to, or copied into, an electronic medical record or other document.

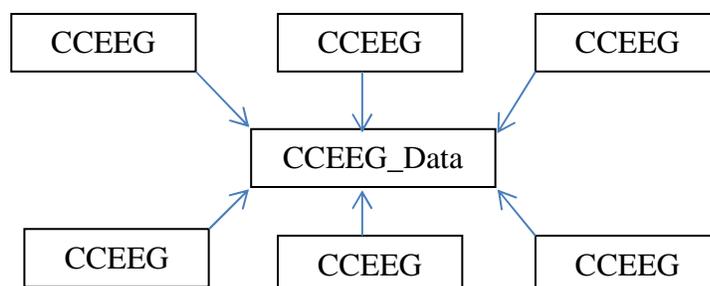
CCEEG DB data is collected via a network of Microsoft Access files. Each site's installation consists of a single data file (CCEEG_Data.accdb) to store the information for the site, along with one or more interface files (CCEEG.accdb), which contain data entry screens and other utilities. Each user or workstation should have its own copy of the interface file, so that no interface file is used by more than one person at the same time. In contrast, several different copies of the interface file may be used to view or enter data at the same time.

Installation

Basic Structure

The CCEEG database is a distributed database application created in Microsoft Access 2010. It can be used on computers running MS Access 2010 or later. The database is designed to be used by multiple users simultaneously. All users within a given participating site can have access to the same data, and all the data entered by users at a single site can be aggregated in a single repository. This is accomplished by separating the application into two (at least) MS Access files: a data file (CCEEG_Data.accdb) and an interface file (CCEEG.accdb). The data file stores all data for a site, including EEG data, system settings, security information and site information. The interface file contains screens (MS Access forms), utilities and programming to allow users to manipulate the data stored in CCEEG_Data. Users should never open CCEEG_Data directly – it is, in any case, encrypted and password-protected. All access should be via CCEEG interface files.

In order to avoid duplication, and to ensure that there is a single reference copy of all records, each site using the CCEEG system should have **one and only one copy** of CCEEG_Data. In contrast, each user – or at least each workstation – using the CCEEG database should have their own copy of the CCEEG interface file. In addition, care should be taken to avoid have a given patient edited by more than one user at the same time – this can result in concurrency conflicts and resulting error messages.



Each site should designate a system administrator. This system administrator will be responsible for installing the CCEEG DB system, configuring it for use, and maintaining the list of authorized users. The data file will be distributed with a single user account for the system administrator.

Installing the Files

To install the CCEEG DB system at a site, the site's system administrator must obtain the latest version of the interface file and the data file. The CCEEG_Data file should be placed in a network location where it can be accessed directly by the CCEEG interface file(s). This can be done in several ways:

- CCEEG_Data is placed on a shared network drive or folder with read/write access granted to all necessary users, while CCEEG files are placed on individual workstations/desktops with access to the share.
- CCEEG_Data is placed on a remote server accessed via Citrix, Windows Remote Desktop or other remote-control software, while CCEEG files are also placed on the remote server with one copy for each user profile.
- Some combination of the previous configurations: CCEEG_Data is placed on a shared network drive or folder while CCEEG files are placed on a remote server with access to the share; CCEEG_Data is placed on a shared network drive or folder while some copies of CCEEG are placed on individual workstations/desktops with access to the share and others are placed on a remote server with access to the share; etc.

The CCEEG DB system configuration is flexible and may be adapted according to the needs of each individual site. There are two principles which must be observed in all configurations: Each CCEEG interface file must have direct network access to the CCEEG_Data file; and no individual CCEEG interface file can be used by more than one person at the same time. (It is acceptable for a single CCEEG interface file to be used by multiple people over time, so long as they do not access the file at the same time.)

In order to function properly, the Microsoft Access installation running the CCEEG interface file must "trust" the file. There are several ways of doing this – you can trust the file specifically (Access 2010 and later), or you can place the file in a trusted location. For more information, see the relevant topics in the Microsoft Access online help.

One final caveat: it is not recommended to run the CCEEG interface files themselves over a network share. In other words, CCEEG should be installed locally on the computer running Microsoft Access, whether that is a workstation or a remote session. Running the CCEEG interface file over a network may result in severe performance degradation.

Connecting to Data

Before the CCEEG interface file can be used, it must be able to access the CCEEG_Data file. The first time each interface file is opened, the user will be prompted for the location of the CCEEG_Data file. If the data file is moved or is otherwise unavailable, the user will likewise be prompted for the location of the data file.

To connect the CCEEG interface file to the CCEEG_Data file:

1. Open the CCEEG interface file using Microsoft Access 2010 or later.
2. When prompted, navigate to the CCEEG_Data file.
3. Select the CCEEG_Data file, and press OK.

Once the data file is located, the user will be prompted to enter their user name and password. If a valid user name and password are entered, the user will be granted appropriate access to the database.

Initial USERNAME: CCEEGAdmin

Initial PASSWORD: Admin

Please change this password with your first login.

Note that this process must be repeated for each copy of the CCEEG interface file. The remaining configuration tasks need only be completed once.

Configuration

Once the system administrator has obtained and installed the system files and connected at least one interface file to the data file, they can begin to use the database. However, before the CCEEG DB system is used to record EEG data, the system's settings should be set to reflect the needs and preferences of the site.

System configuration settings are accessed by clicking the Settings button at the bottom of the main screen. Only users designated as administrators have access to this button.

There are four categories of system settings, each displayed on a separate tab in the Settings window: System settings, default values, reporting requirements and users.

System Settings

System settings must be set for four areas:

- The list of research studies in which patients may be participating.
- The list of referring physicians who may refer patients for EEG monitoring.
- The default directory for saving reports.

- Whether or not informed consent is required from patients for submitting de-identified data to the CCEEG consortium

You can record which patients participate in individual research studies.

To edit the list of research studies in which patients may participate:

1. Click the Settings button at the bottom of the main screen. (This button is only visible to system administrators.)
2. Select the System Settings tab in the Settings window.
3. Locate the list of studies under the Research Studies heading.
4. To add a new research study, type the name of the study into the blank row at the bottom of the list.
5. To edit the name of a study, simply type the correct name in place of the existing name.
6. To delete a study, click on the row you wish to delete and press Delete on your keyboard. Note that deleting a study does not affect the data of any patient recorded as participating in the study.

The list of referring physicians is used to populate a list from which you can choose the referring physician for each monitoring session.

To edit the list of referring physicians:

1. Click the Settings button at the bottom of the main screen. (This button is only visible to system administrators.)
2. Select the System Settings tab in the Settings window.
3. Locate the list of studies under the Referring MDs heading.
4. To add a new referring physician, type their name into the blank row at the bottom of the list.
5. To edit the name of a physician, simply type the correct name in place of the existing name.
6. To delete a physician, click on the row you wish to delete and press Delete on your keyboard. Note that deleting a physician does not affect the data of any patient recorded as having been referred by the physician.

The report for each monitoring day can be saved as a .pdf file – this directory specifies the location to which the files will be saved. The setting applies system-wide, so if a network location is chosen, all reports will be saved to the same folder, regardless of the CCEEG interface file from which the report is generated; if a local folder is chosen, the reports will be saved to the same local folder on all workstations.

To set the directory into which reports will be saved:

1. Click the Settings button at the bottom of the main screen. (This button is only visible to system administrators.)
2. Select the System Settings tab in the Settings window.

3. Type the full path of the directory into the Default Directory for Reports box, or click the button to the right of the box to select the folder by navigating to it.

Some IRBs require informed consent to share de-identified data with the CCEEG consortium. If consent is not required, all eligible data will be transmitted to the central database. If consent is required, only days for which it is indicated that consent is obtained will be transmitted.

To whether or not informed consent is required to submit data to the CCEEG consortium:

1. Click the Settings button at the bottom of the main screen. (This button is only visible to system administrators.)
2. Select the System Settings tab in the Settings window.
3. If informed consent is required to submit de-identified data on EEG monitoring, check the EEG Monitoring box; otherwise leave it un-checked.
4. If informed consent is required to submit de-identified data on post-EEG follow-up, check the Post-EEG Follow-up box; otherwise leave it un-checked.

Default Values

When entering data on EEG monitoring, the process can be made more efficient by setting default values for items that rarely change. Defaults can always be over-ridden in individual cases, and a default is not required for all items.

Most default values are dependent upon the EEG type. The only items which are not EEG-type-dependent are the default start time for reporting days and the default age category for patients. All other defaults must be set for each EEG type. To speed up entry, the defaults from one EEG type can be copied to all of the others.

To set default values for the database:

1. Click the Settings button at the bottom of the main screen. (This button is only visible to system administrators.)
2. Select the Default Values tab in the Settings window.
3. Enter the default reporting day start time by selecting the hour and minutes of the usual start time.
4. Select the default patient type (age category) from the drop-down list.
5. Select an EEG type from the drop-down list, then enter the desired default values for that type.
6. Repeat for each EEG type.

Reporting Requirements

In order to generate a final report for a day of EEG monitoring, the attending physician assigned to the patient must approve the data entered for the day. Before an attending can approve the data for a day, all required items must be completed.

Only a few items are required for all sites:

- Day start date/time
- Day end date/time
- EEG type
- Attending physician
- Primary neurological diagnosis
- Primary indication for monitoring
- Any definite epileptic seizures
- Any rhythmic/periodic patterns

However, sites may require additional items to be completed before days can be approved for final reporting.

To require additional items to be completed for reporting:

1. Click the Settings button at the bottom of the main screen. (This button is only visible to system administrators.)
2. Select the Reporting Requirements tab in the Settings window.
3. Check each item you wish to require for completion before final reporting.

Note that changes to reporting requirements only affect current and future days which are not yet approved for final reporting. Days which have already been approved are not affected by any changes to required items made subsequently.

Users

Only authorized users can access the CCEEG DB system. Each site's copy of the CCEEG_Data file is issued with one user account, for the system administrator. The system administrator must then add accounts for other users as necessary.

To modify the list of authorized users:

1. Click the Settings button at the bottom of the main screen. (This button is only visible to system administrators.)
2. Select the Users tab in the Settings window.
3. To add a new user, type a unique user ID into the User ID column in the blank row at the bottom of the list of users (scroll down to the bottom if necessary).
4. Enter a password, first and last name, and staff type for the new user. For attendings, enter the level of certification obtained.
5. If the user will be a system administrator and have access to the system settings, check the Admin box.
6. If the user is currently active and should appear in the list of technicians, fellows/residents or attendings (depending on the staff type), check the Active box.
7. Inform the user of their User ID and password.

Be sure to use secure passwords when adding new users. A random string of capital and lower-case letters with at least one number and at least one non-alphanumeric character, at least 8 characters in length, is best. Users can change their passwords to something more personal and memorable when they log in for the first time.

To change your password:

1. Click the Password button at the bottom of the main screen.
2. Enter your current password into the Old Password box.
3. Enter the new password into the New Password box, and re-enter it into the box below.
4. Click the Change button.

The system administrator should take care to keep the list of authorized users current. As attendings achieve higher levels of certification, this should be recorded in their user record. If a user is no longer active in EEG monitoring, the Active box should be un-checked. This will remove their name from the list of technicians, fellows/residents or attendings (depending on the staff type). If a user was added in error, or played no part in any monitoring day recorded in the CCEEG DB (i.e. was never recorded as a technician, follow/resident or attending), their account may be deleted. If you attempt to delete a user who has been recorded as a technician, follow/resident or attending, you will receive an error message.

To edit or delete user accounts:

1. Click the Settings button at the bottom of the main screen. (This button is only visible to system administrators.)
2. Select the Users tab in the Settings window.
3. Select the row for the user you wish to modify or delete.
4. To edit a user account, simply alter the data in the selected row as necessary.
5. To delete a user account, press the Delete key on your keyboard. If you attempt to delete a user who has been recorded as a technician, follow/resident or attending, you will receive an error message – mark them as inactive instead.

Entering Data

All users marked as active can view and edit all data at a site.

Basic Structure

The basic unit of data in the CCEEG DB system is the patient. All data is accessed via the patient record. Patients are identified by their medical record number (MRN). Each patient must have a unique MRN. Once created, patients may be recorded as participating in research studies and, most importantly, have data on EEG monitoring. Post-monitoring follow-up is recorded separately from EEG monitoring data.

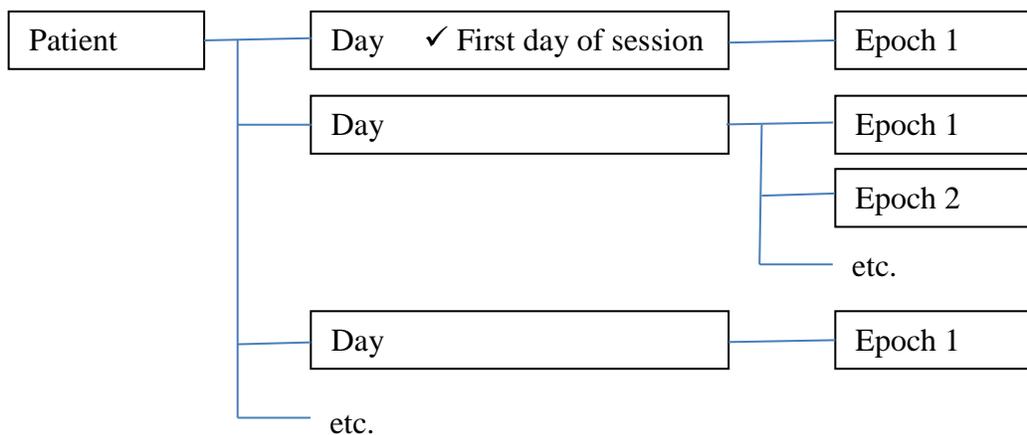
The unit of recording EEG monitoring for patients is the day. Each day record corresponds to a report for the patient's medical record. Days (in the CCEEG DB sense of the word) need not

correspond to calendar days, or even to 24-hour periods. For the purposes of the database, a day is simply a period which results in a single medical record report. In general, days will be 24 hours long or less. However, it is possible to have summary day records which can be longer.

Within each day the nature of the EEG monitoring is assumed to be consistent. Patient location, EEG technician, patient medical history, electrode types and other technical details, as well as primary diagnosis and indication for monitoring are all assumed to be consistent within each day. Monitoring within a day need not be continuous, however; you may record as many interruptions of monitoring as necessary within a day.

Often, EEG monitoring will span several days (calendar or otherwise). Since a report must be generated once per day, in such cases a single monitoring session may be recorded as several day records. You may indicate whether a day is the first day of a monitoring session; subsequent days not so indicated are assumed to be part of the same session. When adding new days to the database, you may copy the data from the last day for the patient, so as to increase consistency and avoid unnecessary data entry. Unless there is an interruption in monitoring or data collection, subsequent days in a monitoring session should begin at the same day and time that the previous day in the session ended.

Within each day, EEG findings are recorded in one or more epochs. Epochs are generally considered to be a period of (more or less) consistent EEG activity. Each day must have one epoch, although days which see changes in EEG results may have more than one. The start date and time of the first epoch should coincide with the start date and time of the day, and the end date and time of the last epoch should correspond to the end date and time of the day.



Patients

The main window of the CCEEG interface application, displayed once you have logged in successfully, lists all patients entered at your site. If the list is long, you can scroll through the list using the scroll bar at the right of the window. You can also filter the list in several ways. Selecting options in the View box at the top of the window limits the list of patients according to your choice:

- All: Displays all patients at your site.
- Incomplete: Displays patients who have at least one day which is missing one or more required items.
- Needs approval: Displays patients who have at least one day for which all require items are completed, but which has not yet been approved for final reporting by its attending physician.
- Approved: Displays patients who have at least one day which has been approved for final reporting by its attending physician.

Within each view option, you can further filter the list by selecting an attending from the drop-down list, displaying only patients with at least one day assigned to the selected attending. Days not yet assigned to an attending physician can only be viewed when the “All” option is selected from the attendings drop-down list.

You can also navigate the list of patients using the buttons at the bottom-right of the window.

- You can sort the list in ascending alphabetical order by clicking on a box in the column by which you want to sort (any row will do), then clicking the A-Z button.
- You can sort the list in descending order by clicking in box in the column by which you want to sort, then clicking the Z-A button.
- You can search for a value, or a portion of a value, by clicking in box in the column you want to search, then clicking the binoculars.
- You can filter for all rows that match a particular value (i.e. all patients with last name = “Smith” or all patients where gender = male) by clicking on the value by which you want to filter, then clicking the funnel with the lightning bolt. Note that filters are additive – you can apply multiple filters in turn.
- You can remove all current filters by clicking the funnel with the X.

To add a new patient:

1. Click the Add button at the bottom of the main CCEEG window.
2. Enter a unique MRN into the prompt that appears, then press OK.
3. A new row with the new MRN will appear in the list of patients.

Most items pertaining to the patient record (name, gender, etc.) can be edited directly in the patient list. In addition, patient-level items can be viewed and edited in the EEG monitoring days window. The sole exception to this changing a patient’s MRN, which can only be edited from the patient list.

To edit a patient’s MRN:

1. Click the button to the left of the MRN you want to edit.
2. Type the new MRN in the prompt that appears, then press OK.
3. The new MRN will appear in the patient list, as well as on all monitoring days.

Days

EEG monitoring day records are accessed from the patient list. Each patient row has a drop-down list displaying entered days, along with the status of each day.

To create a new day record for a patient:

1. Locate the patient in the main CCEEG window.
2. To create a new day with no data other than default values, select “Add New.” To create a new day based on the previous day in the monitoring session, select “Copy Last.”
3. The data window for the new day will appear.

To view or edit the data for an existing day record for a patient:

1. Locate the patient in the main CCEEG window.
2. Select the day you want to view or edit.
3. The data window for the new day will appear.

Note that the list will only display days which correspond to the view which is selected. For example, if a given patient some days which have been approved for final reporting as well as some which have not yet been approved, the only way for all days to appear in the patient’s drop-down list is for All to be selected under View; if Approved is selected, only approved days will appear in the drop-down list. Similarly, only days assigned to a particular attending will appear in the list if that attending is selected in the Assigned to Attending drop-down list. If a patient does not have any days which match the criteria selected in the View and Assigned to Attending options, the patient will not appear in the patient list at all. If you cannot find a patient you believe has been entered, or if a day you believe to have been entered does not appear in the patient’s drop-down list, change View and Assigned to Attending to “All.”

Data Entry Basics

Other than basic patient data, all data entry is performed at the day level. Each day records basic data on patient background, clinical information, EEG technical details and the basic information of the reporting day. All fields required for final reporting (including those so designated by a system administrator) are highlighted in red. At the bottom of the day window are summary text boxes to be completed at the conclusion of the reporting day (or, in the case of final summaries, at the conclusion of EEG monitoring.)

In the middle (vertically) of the day window, the data for epochs is displayed. Each day contains at least one epoch. Only one epoch can be displayed at a time. Select a row in the epoch list to change the epoch currently displayed. Epochs are ordered by time, and there should be no gaps between epochs; that is, the start date and time of the second epoch should be the same as the end date and time of the first epoch. When new epochs are added, the start date/time will automatically default to the end date/time of the previous epoch.

Pressing the Add Epoch button creates a new epoch after the last epoch, with no data save the default start date/time and any default values set by the system administrator. Pressing the Copy Epoch button creates a new epoch after the last epoch, with the same data as the last epoch save for new start and end date/times. This is useful when only a few details change from one epoch to the next.

Like required items on the day level, required items on the epoch level are highlighted in red. However, these items may not always be visible because they are displayed on a tab other than the current one, or on a pop-up window. In addition, required fields on the epoch level are required for all epochs, so it may be necessary to view each epoch in turn to locate a missing required item.

In order to make data entry more convenient (and to save screen space), many items are not located on the main day window but in pop-up windows. The day window contains a text box which displays a summary of the data entered into each pop-up; to the right of each text box is a button which opens the pop-up data entry window. If you encounter a text box which is not greyed-out but which you nevertheless cannot edit, this will be one of those summary boxes – click the button to the right of the box to view and edit the data. Note that some pop-up windows themselves have pop-up windows. Pop-up windows must be closed before you can return to the underlying window.

Some pop-up windows can record multiple instances of an item: multiple seizure types, rhythmic/periodic patterns, multiple interruptions in monitoring, etc. In most cases, the multiple instances are displayed as multiple rows in a list. In the case of seizure types and brief rhythmic discharges (BRDs), however, there is too much data to efficiently display the items in a list, so they are displayed one at a time, like epochs. Click on the list of items on the left side of the pop-up window to navigate between seizure types and BRDs. In all cases, you can add and delete instances by clicking the Add and Delete buttons. Clicking the Copy button copies the data from the selected (current) item into a new item.

Unlike many other programs, where you can edit a document and then save the changes all at once, Microsoft Access does not contain a built-in facility for saving data as a discreet step. All data is saved to the database when you leave the record you are editing. This has the advantage of saving you a step: you don't have to do anything extra to save your data. However, this also means that you cannot retrieve old data once you make changes to it, so take care when editing data.

Data Quality

The CCEEG DB system enforces data quality in a number of ways. Drop-down boxes are implemented whenever possible. Text boxes validate entries for data type (numbers, dates, etc.) and allowable range of values, and you will receive an error message if you attempt to enter an invalid value. The system also enforces skip patterns, disabling items which are not relevant given other entered data.

However, for ease of data entry, the system does not enforce consistency in all cases. In particular, it is up to users to ensure that dates and times are consistent. Users should take care to ensure the following date-related principles are upheld:

- Patient Date of Birth should be before any other date related to that patient
- The start date/time of each day should be before the end date/time of that day.
- All other start date/times – for epochs, interruptions, seizures, rhythmic/periodic patterns, etc. – should be before the end date/time.
- All dates and times pertaining to a day – interruption start and end date/time, epoch start and end date/time, etc. – should be between the start and end of the day.
- The end date/time of the last epoch in a day should be the same as the end date/time of the day itself.
- All dates and times pertaining to an epoch – seizure start and end date/time, rhythmic/periodic pattern start and end date/time, etc. – should be between the start and end of the epoch.

Finally, care should be taken to note the beginning and end of continuous, multi-day monitoring sessions by checking the First Day of Session box for the first day, while leaving the box unchecked for all subsequent days in the continuous session.

Summary Option

While the CCEEG DB system is created to record data on long-term EEG monitoring in days, creating a report for each day, some sites may in some instances wish to record summary data only, recording information on an entire monitoring session regardless of length. Sites can indicate that this is how they are using the database by checking the Summary Data Only box at the top of the day window for sessions they report this way. Checking this box will limit the entire monitoring session to a single day record (even though the session may have been several calendar days long) and a single summary epoch covering the entire session. All other data are entered normally, with the assumption that data refer to the monitoring session as a whole.

Research Studies

You can record the participation of patients in research studies. The data is limited to which patients participated in which study – there is no way to record status, participation dates, etc.

To record the participation of a patient in a research study:

1. Locate the patient in the list of patients on the main window. If necessary, remove all filters by setting the View to All, selecting All in the Assigned to Attending drop-down box, and clicking the Remove All Filters button (the funnel with the red X).
2. Click the Studies button to the right of the desired patient.
3. Check the boxes corresponding to the studies with which the patient is associated, then click the Close button.

To add studies to the list, see System Settings, above.

Post-monitoring Follow-up

For those patients who have given informed consent for post-monitoring follow-up (or for those for whom informed consent is not required), information on follow-up visits can be recorded. Outcome measures are dependent on the patient type; inappropriate measures will be automatically disabled based on the patient type for the last day recorded for the patient.

To enter data on post-monitoring follow-up:

1. Locate the patient in the list of patients on the main window. If necessary, remove all filters by setting the View to All, selecting All in the Assigned to Attending drop-down box, and clicking the Remove All Filters button (the funnel with the red X).
2. Click the Follow-up button to the right of the desired patient.
3. If necessary, add a new follow-up contact by clicking the Add button.
4. Enter the data for the follow-up contact, then click the Close button.

Approving Data and Generating Reports

The CCCEG DB system can generate a report for each day. A draft of the report can be generated at any stage, but a final report can only be generated once all required items have been entered and the attending physician to which the day has been assigned has approved the data for final reporting. Once the attending has approved the data, a final report can be saved to an external .pdf file or printed. The text of reports can also be highlighted in the report window, copied, and pasted into other applications, including electronic medical records.

Approving Data

Only the attending physician assigned to a day can approve the data for a day for final reporting. Once logged in, an attending can easily see which days are assigned to them by selecting their name from the Assigned to Attending drop-down box at the top of the main window. An attending can limit the display to days which are ready to be approved (or at least have all required items completed) by selecting Needs Approval under View at the top of the main window.

To approve a day for final reporting:

1. Locate the patient for whom you want to approve a day. If necessary, select your name in the from the Assigned to Attending drop-down box and select Needs Approval under View at the top of the main window.
2. In the EEG Monitoring Days drop-down list, select the day to approve – it should say Needs Approval next to the date.
3. Thoroughly review the data entered for the day. You can do this by navigating the data entry window – make sure to review all tabs for each epoch – or you can generate a draft report by clicking the Generate Report button at the top of the day window.
4. Modify the data as necessary until it meets with your approval.

5. Click the Approve Data for Reporting button at the top of the day window.

If you attempt to approve a day which is missing required items, you will receive an error message listing the missing items. For more information, see System Settings, above.

Once a day has been approved for final reporting, users can generate a final report and print it or export it to a .pdf file.

Once a day has been approved for final reporting, no changes should be made to the data for the day. It is important to note, however, that there is nothing to prevent changes to approved data. Rather, it should be site policy to avoid changes to approved days unless a final report has not yet been generated, or steps are taken to make sure that all external versions of the report on the day (external files, medical records, etc.) are updated to reflect the post-approval changes.

Generating Reports

While only attendings can approve data for final reporting, and then only for days to which they are assigned, all users can generate reports for any day in the CCEEG DB system. Reports are generated in real time, and reflect the data in the system at the time the report is generated. Days with extensive seizure, rhythmic/periodic pattern, etc. data may take 20-30 seconds to be generated. A progress bar in the lower right corner of the Access application window displays the progress of the report generation process. Once generated, the report appears in a window. From the report window the report can be copied to the computer clipboard, printed, or saved as a .pdf file.

To generate a final report:

1. Locate the patient for whom you want to generate a report. If necessary, select Approved under View at the top of the main window.
2. In the EEG Monitoring Days drop-down list, select the day whose report you want to generate – it should say Approved next to the date.
3. Click the Generate report button at the top of the day window. After processing, the report window will appear.
4. To copy the report text, click on the report window and highlight the text you wish to copy. Press Control-C on your keyboard to copy the text to the computer clipboard. The text can then be pasted into another document.
5. To Save the report to a .pdf file, click the Save button. Enter the name and path to which you would like to save the file then click Save.
6. To print the report to your default printer, click the Print button.

You can also generate draft reports for days which have not yet been approved. To do this, follow the same steps as for generating a final report. When the report window appears, you will be able to view and copy the draft report, though you will not be able to print or save the report to a file.

Querying Site Data

System administrators can create Microsoft Access queries to view the data from their site.

Queries are run on live data and give information on the current state of the data in a site's CCEEG DB system. Query definitions are stored as MS Access objects in the local interface file of the user running the query. Query results are dynamic data sets generated at the moment the query is opened, and are not stored.

To create a query:

1. Click the Queries button at the bottom of the main screen. . (This button is only visible to system administrators.)
2. Click the Add button at the bottom of the Queries screen. The MS Access query design screen will appear.
3. Create and save the query. For more information, see the MS Access documentation. Saved queries will appear in the list of queries on the Queries screen.

In addition to creating new queries, existing queries can be opened (i.e. result sets generated for them), edited (i.e. the design of the query changed) and deleted via the Queries window.

Because queries are stored within the local interface file, they are unavailable to other users using other files, and will be eliminated if the local interface file is replaced, i.e. through an upgrade. Users can share queries with other interface files and keep a permanent copy of queries by using the query library. The query library is a collection of queries stored in the data file rather than in any interface file. Queries cannot be run from the query library, but must be imported to the interface file first. Queries in the query library are available to any user with system administrator permissions using any interface file.

Queries in the query library are first created in a local interface file, then uploaded to the library.

To upload a file from a local interface file to the query library:

1. Click the Queries button at the bottom of the main screen. . (This button is only visible to system administrators.)
2. Select the query to be uploaded in the list of queries.
3. Click the Share button at the bottom of the Queries screen. The query will then appear in the list of library queries on the Query library tab.

In order for queries in the query library to be run, they must be imported to a local interface file.

To import a query from the query library to the local interface file:

1. Click the Queries button at the bottom of the main screen. . (This button is only visible to system administrators.)
2. In the Queries screen, select the Query Library tab.

3. Select the query you wish to import from the list of queries in the library.
4. Click the Import button. The query will then appear in the list of local queries.

WARNING: Access to queries is limited to system administrators because queries can modify data, either through an action query (insert, update, etc.) or through user interaction with an updateable data set. Inadvertent or inappropriate altering of data via queries can interfere with the proper operation of the CCEEG DB system. Use extreme care when viewing or manipulating updateable data sets.

Maintaining the Database

Microsoft Access database files require periodic maintenance in order to minimize file size and maximize performance. The process of compacting the data file removes unnecessary space within the file and re-organizes the table indexes. System administrators should compact the every few months, or more often as necessary.

In order to compact the data file, all connections to the file must be close. In practice, this means that the only interface file that is open at a site should be the file used by the system administrator performing the maintenance. If you attempt to compact the data file with other interface files open or in use, you will receive an error message.

To compact the data file:

1. Make sure that all interface files other than the one you are using are closed.
2. Click the Maintenance button on the main screen. This button is available only to system administrators.
3. Click yes to agree to be logged off of the database. The Database Maintenance screen will appear.
4. Click the Compact Data File button, then click Yes to proceed.

You will be notified when the database file has been successfully compacted – this could take from a few seconds to a few minutes, depending on the size of the file. Once the data file has been successfully compacted, the login screen will appear so you can log back in and resume work.

In addition to periodically compacting the data file, system administrators should back up the data file regularly and secure access to the system files in a way that conforms to general site policies for data security and disaster recovery.

