

NATIONAL ALZHEIMER'S COORDINATING CENTER

MRI Submission System manual

December 2012

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Contact us

If you have questions or comments or would like to obtain the access needed to submit APOE data, please contact NACC:

email naccmail@uw.edu

phone (206) 543-8637

Introduction

With NACC's MRI Data Submission System, Centers can contribute MRI images and form data for any UDS subject whose ID has already been entered into the UDS database. Forms and/or images can be either uploaded or entered directly. Because a given ID may have more than one MRI scan, each scan must be identified by date as well as the unique patient ID. Scans are indexed by scan date.

Requirements

The following are recommended for use of the MRI Submission System:

- **Hard-wired internet connection.** A modem can be used instead of a hardwired connection but may be slow and tedious.
- **Browser:** Microsoft Explorer (version 8.0 or later) or Firefox (version 1.0 or later). Other browsers and versions will work, but the displays may be difficult to use.
- **Screen size of at least 17 inches.** Smaller sizes will work but will be more difficult to use.

Description of the software

The data are stored in Oracle 10g. SAS 9.3 is the front-end software, and so most of NACC's programs for web data entry, file uploading, error checking, and data access are written in SAS. An automated data element dictionary has been written into the database, along with version control and error checking.

Backups

All data are backed up every night, and monthly backups are archived. Backups are stored offsite in case of disaster.

Security

Only authorized personnel have access to the system. To be authorized, users must be approved by their Centers and then obtain a user name and password from NACC. Users have access only to data from their own Center, not data from other ADCs. All data transmitted across the Internet is encrypted with at least a 256-bit encryption suite.

MRI scans to be submitted

NACC would like each Center to submit data for all MRI scans held at the Center for UDS IDs. This information is used to further research by investigators using the NACC database.

MRI data

We invite Centers to submit MRI data in two forms:

- an uploaded DICOM scan of the MRI
- a form containing specified data on the MRI

Ideally, NACC would like Centers to submit both the scan and the form, but either one alone is acceptable.

Methods of submitting data

FOR FORM DATA:

NACC currently accepts form data from Centers in two ways:

- by web data entry on the NACC website; and
- by file upload on the NACC website.

Uploaded files must be in one of the following formats:

- the specified ASCII fixed-field format*
- comma-delimited
- Excel
- SAS version 7, 8, or 9
- SPSS sav files
- tab-delimited files

**see the Data Element Dictionary in the "Documentation" section of the MRI Submission System*

FOR IMAGES:

Images are uploaded in DICOM format as .zip files. These images are stored and can be viewed using DICOM software on local PCs. Each image must have an associated **image date**, which is the date the MRI scan was done. For ease in submitting large batches of images, NACC can work with Centers to set up an sFTP site. Images should be cleaned of all identifying tags before uploading. NACC will perform its own cleaning of images once they are received.

Database storage

The database is divided into three parts:

- **Working Database:** holds data when first uploaded or entered; may have errors
- **Current Database:** holds error-free data
- **Frozen Database:** an archival copy of the current database, for research and reports

Images are stored as they uploaded (i.e., they are not error checked).

Steps involved in submitting data via file upload

Following is an outline of the process; for more detailed instructions, see the section "Upload the pre-process data" below, on page 6.

- Create file from Center's local database using the Data Template (available on MRI Submission System's Documentation page) for guidance.
- Upload the file to the NACC website using the **UPLOAD FILES** process.
- Correct file if prompted to do so during pre-processing; repeat until accurate.

Disclaimer

Because all websites are dynamic by nature, the sample screens provided in this manual may not be an exact representation of the most current page on the NACC website itself. Although details may change, the sample screens still provide the user with a visual companion to the written instructions, as well as navigational orientation.

- Using the **ERROR CHECKS** process, execute **FORM CHECK** and correct any errors. Forms may be corrected using web data entry, or you may correct them within your local database and re-upload the files to NACC.
- Re-run error checks until all forms are accurate.
- Using the **FINALIZE** process, execute **FINALIZE DATA** to move the IDs to the current database. If an ID has an error, correct the error and then re-finalize.

Steps involved in submitting data via web data entry

- Select **WEB DATA ENTRY**
- Select **EDIT ID**
- Select the ID to edit
- Input the requested data and click **SUBMIT**

Sequence of data submission for MRI Images

- Select **UPLOAD FILES**
- Select **UPLOAD IMAGE**
- Select the Patient ID
- Select the date of the Image
- Use the **BROWSE** button to find the image on your local computer
- Click **UPLOAD**

General operation of the MRI Data Submission System

Accessing the system

- Go to <https://www.alz.washington.edu>
- Click **ADCS**
- Click **DATA CORES/DATA MANAGERS** (left side of page)
- Click **BIOMARKER AND IMAGING DATA**
- Enter your username and password
- Find and click the name of your Center
- Click **MR IMAGE DATA**

Navigating the system

The first page of the system will be shown (see Figure 1, below):

NACC The NIA Alzheimer's Disease Centers Program
National Alzheimer's Coordinating Center
 RESEARCH | DATA | CONSULTATION | COLLABORATION

INVESTIGATORS / RESEARCHERS ADC ADMINISTRATION DATA CORES / DATA MANAGERS INTERVIEWERS / CLINICIANS FAMILIES / CAREGIVERS

BIDSS

NACC Biomarker and Imaging Data Submission System

Research Structural MRI Data Submission System

MRI Home

UPLOAD and PRE-PROCESS FILES

WEB DATA ENTRY

ERROR CHECK

FINALIZE DATA

REPORTS

DOWNLOAD DATA

FORMS AND DOCUMENTATION

HELP

Sample Center

Welcome to the Research Structural MRI Data Submission System

NACC's structural MRI data submission system is designed to capture and store the following data on UDS Clinical Core subjects:

- Quantitative measures from structural MRI, including intracranial, total brain, and hippocampal volumes, when available
- DICOM images, including 3DT1, FLAIR, and DTI, when available

Quantitative data may be entered into the system without associated DICOM files, and DICOM images may be uploaded to NACC without associated quantitative data. When both are available, MRI data and DICOM images are linked using subject ID and MRI acquisition date.

Please refer to the "FORMS AND DOCUMENTATION" menu on the left for help in navigating the system and uploading data. For more assistance, contact NACC at NACCmail@uw.edu, or (206) 543-8637.

Data submission timing

Submitting MRI data and DICOM files is optional for Centers but highly encouraged. We ask that all data available on UDS subjects be uploaded initially and that subsequent scan sessions be uploaded at least twice a year.

Viewing DICOM Images

Visualization software is required to view DICOM MRIs. Many software packages are available on the web as freeware or free trials, and can be located by doing a web-search for "DICOM viewer".

FIGURE 1
 MRI Submission System main page

From this menu, the entire MRI Submission System can be accessed. The buttons down the left side of the page (**UPLOAD AND PRE-PROCESS FILES**, **WEB DATA ENTRY**, etc.) represent the major sections of the system.

Once a button is clicked, either more buttons will be displayed, or the page requested will be displayed.

The buttons at the very top of the page access various other parts of the NACC website.

Upload files

To upload data files from your local computer to the NACC database, click **UPLOAD AND PRE-PROCESS FILES**. The following page will be displayed (Figure 2). Note the drop-down sub-menus under the clicked button. To upload quantitative data, click on that button. The page below is shown (Figure 2):

BIDSS
NACC Biomarker and Imaging Data Submission System

Research Structural MRI Data Submission System

MRI Home

UPLOAD and PRE-PROCESS FILES

- Quantitative Data
- Upload DICOM Image Files
- View Batch Processing Log

WEB DATA ENTRY

ERROR CHECK

FINALIZE DATA

REPORTS

DOWNLOAD DATA

FORMS AND DOCUMENTATION

HELP

Sample Center

Upload MRI Data Files to the Working Database

Files uploaded must be in the correct format and with the correct column alignment, as described in the template and the data element dictionary. Only the following file types, with the extensions shown, are accepted:

Format	Extension
ASCII	.txt
comma-delimited	.csv
SAS	.sas7bdat
tab-delimited	.tsv

File to upload:

FIGURE 2
Upload files

The **VIEW BATCH PROCESSING LOG** button will display a list of uploads and finalizations that are still in the queue to be uploaded.

Files uploaded must be in the correct format and with the correct column alignment, as described in the template and the data element dictionary. Only the following file types, with the extensions shown, are accepted:

FORMAT	EXTENSION
ASCIItxt
comma-delimitedcsv
SASsas7bdat
tab-delimitedtsv

To upload a file, type in the path and name of the file in the box or click **BROWSE** to look for files on your local computer. Once the file is found, double-click the file name. When the file name is displayed in the box, click **UPLOAD!** below, and the file will be uploaded and preprocessed.

Pre-processing

Once a file is uploaded, the software will verify whether it is in the correct format and whether the IDs involved are already in the UDS. It will also test for nonnumeric characters in numeric fields, characters where blanks should be, and illegal characters. When pre-processing is complete, a report page is displayed. If there are no errors, click **SUBMIT**, and add the uploaded data to the Working Database. If there are any errors, the file will be unusable, and the user will have to correct the file and upload again. Below is an example of a pre-processing report (see Figure 3, next page).

BIDSS
NACC Biomarker and Imaging Data Submission System

Research Structural MRI Data Submission System

MRI Home

UPLOAD and PRE-PROCESS FILES

WEB DATA ENTRY

ERROR CHECK

FINALIZE DATA

REPORTS

DOWNLOAD DATA

FORMS AND DOCUMENTATION

HELP

Sample Center

MRI Upload Data Files to the Working Database

The data from file: **mricomma1.csv** has been uploaded.

PRE-PROCESSING REPORT for uploaded file.

Total MRIs Uploaded = 8

1. Checking ADCID and Data Type in uploaded data file:

LINE 1 data item SMRIMO (col 26-27) is not in correct range 1-12 data =
 LINE 1 data item SMRIDY (col 29-30) is not in correct range 1-31 data =
 LINE 1 data item SMRIYR (col 32-35) is not in correct range 1980-Current Year data =
 LINE 3 data item SMRIMO (col 26-27) is not in correct range 1-12 data =
 LINE 3 data item SMRIDY (col 29-30) is not in correct range 1-31 data =
 LINE 3 data item SMRIYR (col 32-35) is not in correct range 1980-Current Year data =
 LINE 5 data item SMRIMO (col 26-27) is not in correct range 1-12 data =
 LINE 5 data item SMRIDY (col 29-30) is not in correct range 1-31 data =
 LINE 5 data item SMRIYR (col 32-35) is not in correct range 1980-Current Year data =

2. Checking if PTID is in UDS

No illegal PTIDs.

3. Checking Number of Commas

*** Number of Commas are all correct ***

Structural MRI Pre-Processing Report completed on 03/18/2014

Please correct the errors listed above in your data file and re-upload the file. Click the button below to return to the Upload File Page.

FIGURE 3
A pre-processing report

Common pre-processing errors are:

- Missing data elements
- Extra data elements
- Wrong type for data
- Wrong Center number (ADCID)
- Data in separator columns (applies to ASCII files only)
- IDs not in the UDS

These errors must be corrected before the file can be uploaded. If there are no errors, a message to that effect will be displayed. Click **SUBMIT** once again, and the following will be displayed (Figure 4).

FIGURE 4
Enter email address

In the box provided, type the email address where you would like the report sent, and then click Start Batch Job. The beginning page will be displayed. You should receive an email in a few minutes describing the file uploaded. If the server is very busy, this could take longer.

If **UPLOAD IMAGE** is selected, then the page below will be displayed (Figure 5):

Select the UDS patient ID for the image, followed by the scan date. Next use the **BROWSE** button to find the image on your local computer. For uploading, the image must be in DICOM format and be in a .zip file. PLEASE BE SURE TO REMOVE ALL PATIENT IDENTIFIERS FROM THE IMAGE BEFORE UPLOADING. When you are ready to upload the image, click **UPLOAD!**. The page shown in Figure 6 (see next page) will be displayed when the image has been uploaded.

The screenshot displays the BIDSS (NACC Biomarker and Imaging Data Submission System) Research Structural MRI Data Submission System interface. The page is divided into a left-hand navigation menu and a main content area. The navigation menu includes links for MRI Home, UPLOAD and PRE-PROCESS FILES (with sub-links for Quantitative Data, Upload DICOM Image Files, and View Batch Processing Log), WEB DATA ENTRY, ERROR CHECK, FINALIZE DATA, REPORTS, DOWNLOAD DATA, FORMS AND DOCUMENTATION, and HELP. The main content area is titled 'Sample Center' and 'Upload a DICOM Image'. It shows a successful upload for the file 'mri1866.zip' with PTID: 0 and Date: 01/01/2013. A red message states 'DICOM Image File Not Uploaded. Duplicate PTID, Date, and Scan'. Below this, the 'Scan Types in Uploaded File' are listed as T1, DTI, and FLAIR.

Navigation Menu	Main Content Area
MRI Home	Sample Center
UPLOAD and PRE-PROCESS FILES	Upload a DICOM Image
Quantitative Data	DICOM Image File Not Uploaded. Duplicate PTID, Date, and Scan
Upload DICOM Image Files	File: mri1866.zip
View Batch Processing Log	PTID: 0
WEB DATA ENTRY	Date: 01/01/2013
ERROR CHECK	Scan Types in Uploaded File .
FINALIZE DATA	T1
REPORTS	DTI
DOWNLOAD DATA	FLAIR
FORMS AND DOCUMENTATION	
HELP	

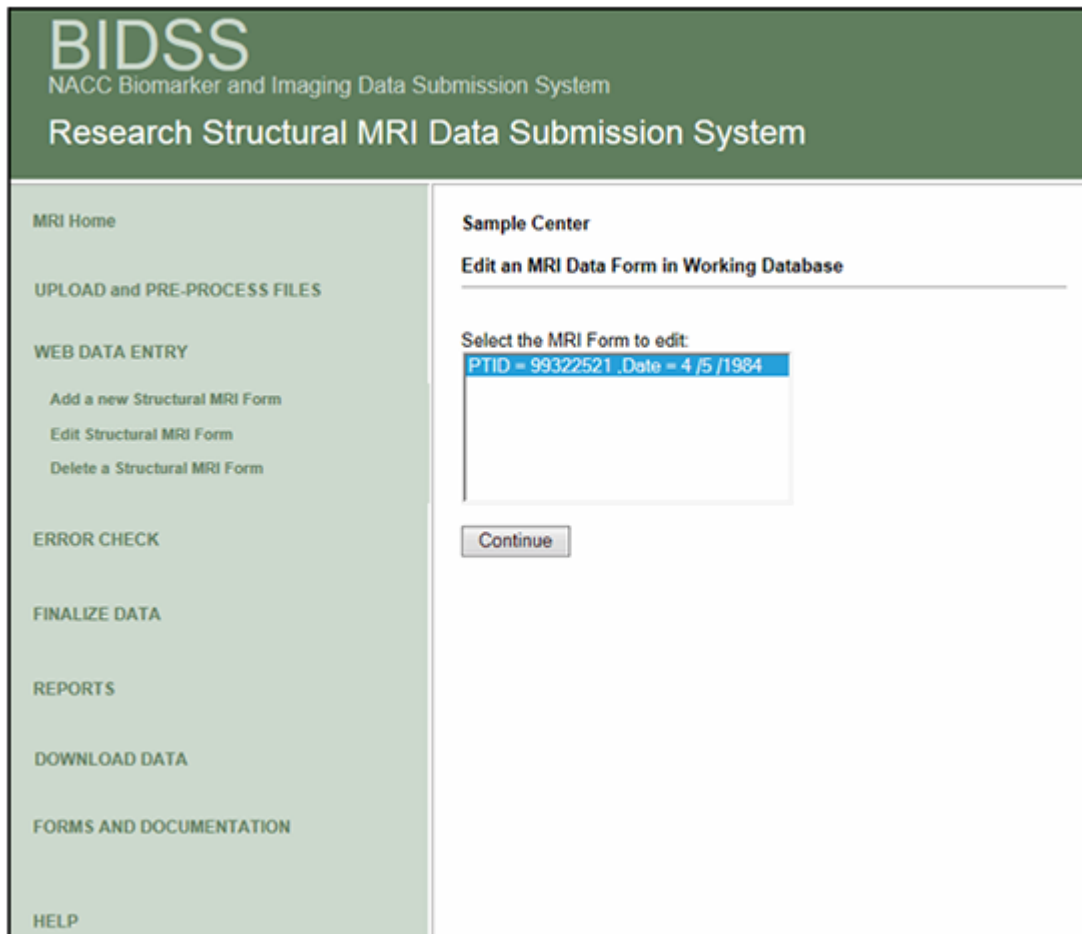
FIGURE 6
Image has been
uploaded

Web data entry

With the **WEB DATA ENTRY** button, Centers can add, edit, and delete MRI data. This accesses all the form data in your working database — both data you have uploaded from files and data entered by web data entry.

Editing an ID

Click Edit Structural MRI Form, and all of your IDs the working database will be displayed for editing (Figure 7):



The screenshot displays the BIDSS (NACC Biomarker and Imaging Data Submission System) Research Structural MRI Data Submission System interface. The page is divided into a left sidebar and a main content area. The sidebar contains a navigation menu with the following items: MRI Home, UPLOAD and PRE-PROCESS FILES, WEB DATA ENTRY (with sub-items: Add a new Structural MRI Form, Edit Structural MRI Form, Delete a Structural MRI Form), ERROR CHECK, FINALIZE DATA, REPORTS, DOWNLOAD DATA, FORMS AND DOCUMENTATION, and HELP. The main content area is titled 'Sample Center' and 'Edit an MRI Data Form in Working Database'. It features a section 'Select the MRI Form to edit:' with a dropdown menu showing 'PTID = 99322521 .Date = 4 /5 /1984'. Below the dropdown is a 'Continue' button.

FIGURE 7
Editing an ID

To edit an MRI entry, first select the MRI you want to edit, and then click **CONTINUE**. The following page will be displayed (Figure 8):

BIOSPECIMEN AND IMAGING DATA SUBMISSION SYSTEM
Form eE5: Structural Research MRI

Center: Sample Center Subject ID: 003wd Scan date: 4 /2 /2012
Form date: May 1 2012 Examiners initials: KEB

NOTE: A data file should be uploaded directly to the BIDSS, or web data-entry should be completed by ADC or affiliated laboratory personnel. For additional clarification and examples, see BIDSS Coding Guidebook for Form eE5: Research Structural MRI.

1. Quantitative image analysis and MRI details		
1a.	Intracranial volume (cm ³)	1082 (9999 = Unknown)
1b.	Brain volume (cm ³)	861 (9999 = Unknown)
1c.	Hippocampal volume (cm ³)	4.7 (99.9 = Unknown)
1d.	Image analysis software and version used	unknown
1e.	Electronic image format	<input checked="" type="radio"/> 0 No <input checked="" type="radio"/> 1 DICOM <input type="radio"/> 8 Other electronic format (SPECIFY FORMAT) <input type="radio"/> 9 Unknown
1f.	Was ADNI protocol used?	<input checked="" type="radio"/> 0 No <input checked="" type="radio"/> 1 Yes ADNI Version <input type="text"/> <input type="radio"/> 9 Unknown

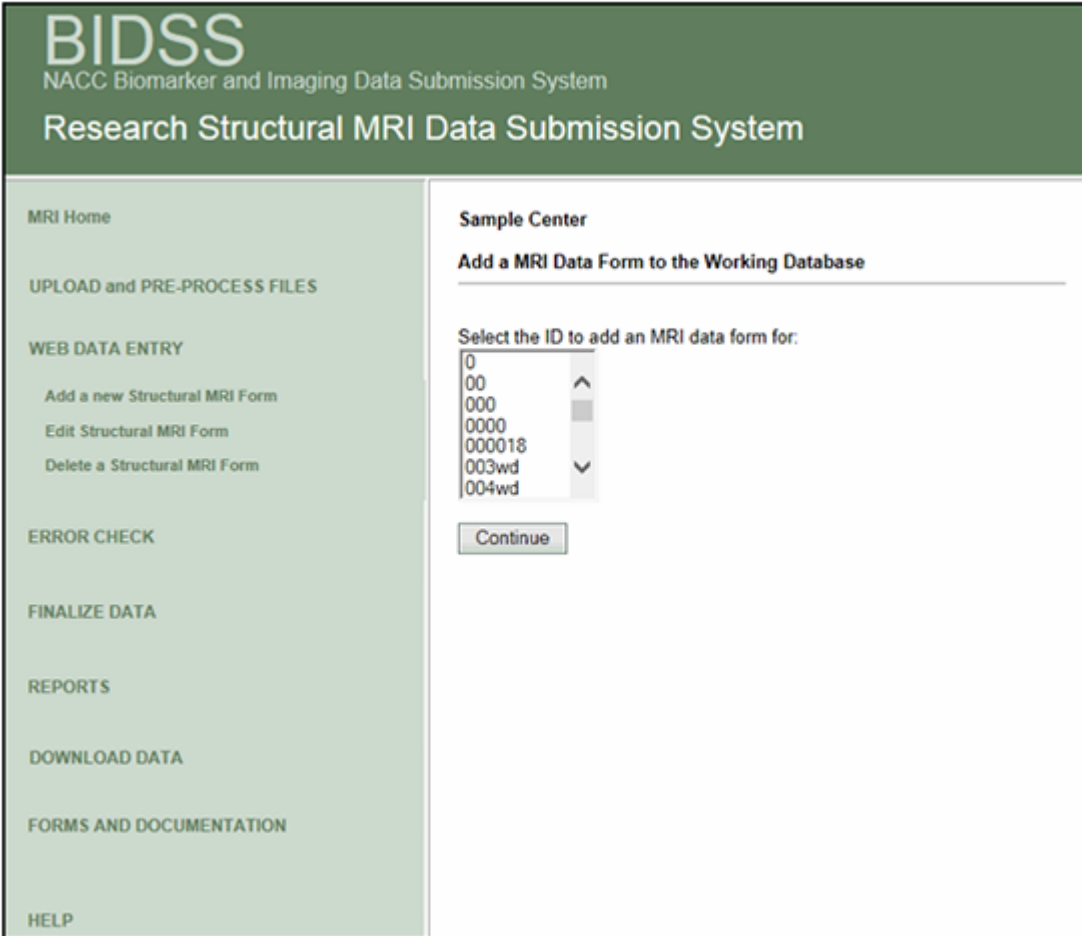
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NACC Biospecimen and Imaging Submission System • December 2012

FIGURE 8
Editing MRI data

To edit, click the box under the data element to be edited. Click the value desired, or if necessary use the scroll bars to display the value wanted, and then click the value.

When complete, click **UPDATE STRUCTURAL MRI FORM** at the bottom. This will range-check and then update the data in the working database.

To add a new MRI, click **ADD A NEW STRUCTURAL MRI FORM**.
This will display the page in Figure 9:



The screenshot displays the BIDSS (NACC Biomarker and Imaging Data Submission System) Research Structural MRI Data Submission System interface. The page is divided into a left sidebar and a main content area.

Left Sidebar:

- MRI Home
- UPLOAD and PRE-PROCESS FILES
- WEB DATA ENTRY
 - Add a new Structural MRI Form
 - Edit Structural MRI Form
 - Delete a Structural MRI Form
- ERROR CHECK
- FINALIZE DATA
- REPORTS
- DOWNLOAD DATA
- FORMS AND DOCUMENTATION
- HELP

Main Content Area:

- Sample Center**
- Add a MRI Data Form to the Working Database**
- Select the ID to add an MRI data form for:
 - 0
 - 00
 - 000
 - 0000
 - 000018
 - 003wd
 - 004wd
- Continue

FIGURE 9
Adding form data

All IDs in the UDS are displayed (since MRI data can be added for only ID in the UDS). Select an ID and then click **CONTINUE**. The following page will be displayed (Figure 10):

BIOSPECIMEN AND IMAGING DATA SUBMISSION SYSTEM
Form eE5: Structural Research MRI

Center: Sample Center Subject ID: 00 Scan date:

Form date: Examiners initials:

NOTE: A data file should be uploaded directly to the BIDSS, or web data-entry should be completed by ADC or affiliated laboratory personnel. For additional clarification and examples, see BIDSS Coding Guidebook for Form eE5: Research Structural MRI.

1. Quantitative image analysis and MRI details		
1a.	Intracranial volume (cm ³)	<input type="text"/> (9999 = Unknown)
1b.	Brain volume (cm ³)	<input type="text"/> (9999 = Unknown)
1c.	Hippocampal volume (cm ³)	<input type="text"/> (99.9 = Unknown)
1d.	Image analysis software and version used	<input type="text"/>
1e.	Electronic image format	<input type="radio"/> 0 No <input type="radio"/> 1 DICOM <input type="radio"/> 8 Other electronic format (SPECIFY FORMAT) <input type="text"/> <input type="radio"/> 9 Unknown
1f.	Was ADNI protocol used?	<input type="radio"/> 0 No <input type="radio"/> 1 Yes ADNI Version <input type="text"/> <input type="radio"/> 9 Unknown

FIGURE 10
Adding form data

Click each box and select or fill in the values. A Date of MRI must be provided in order to add a new MRI. Next, click **ADD STRUCTURAL MRI FORM**. The new MRI form will be added. The form data can be modified later using the **EDIT MRI** functions.

To delete an MRI, click **DELETE A STRUCTURAL MRI**. The following page will be displayed (Figure 11):

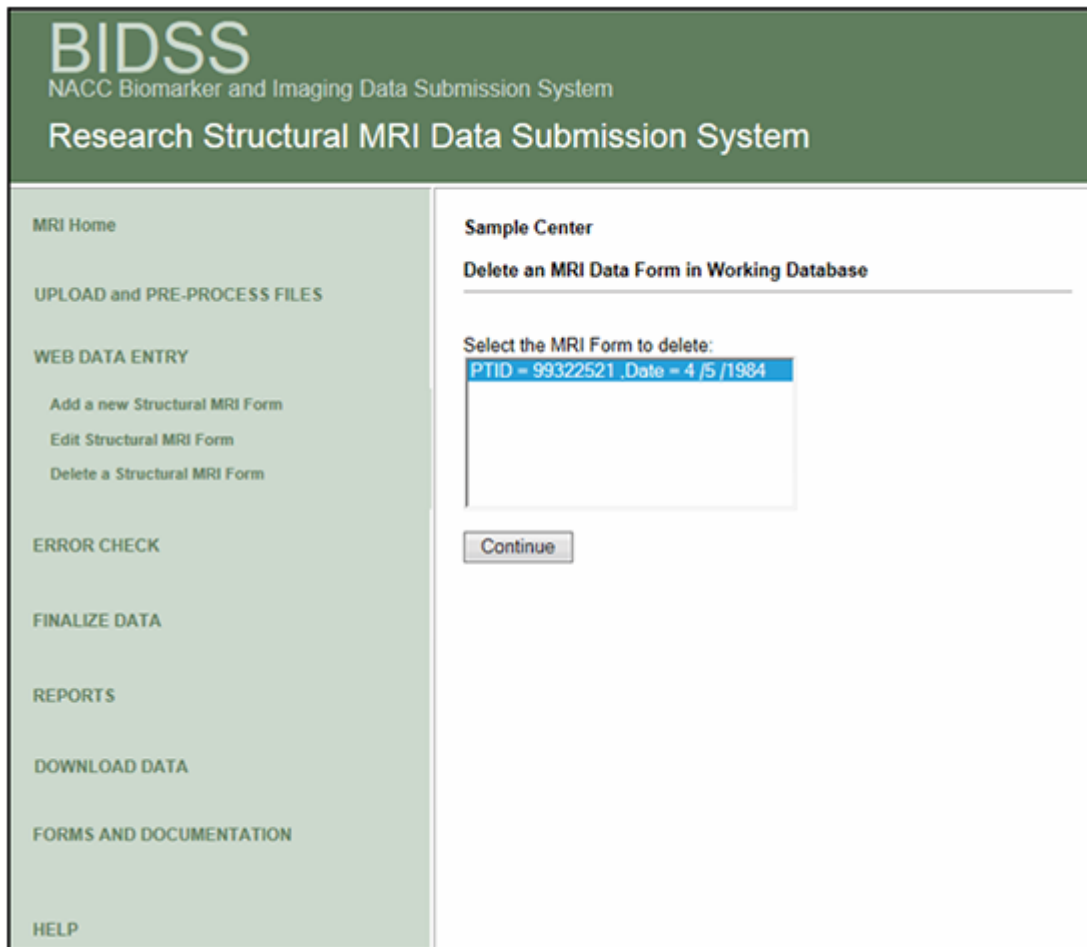
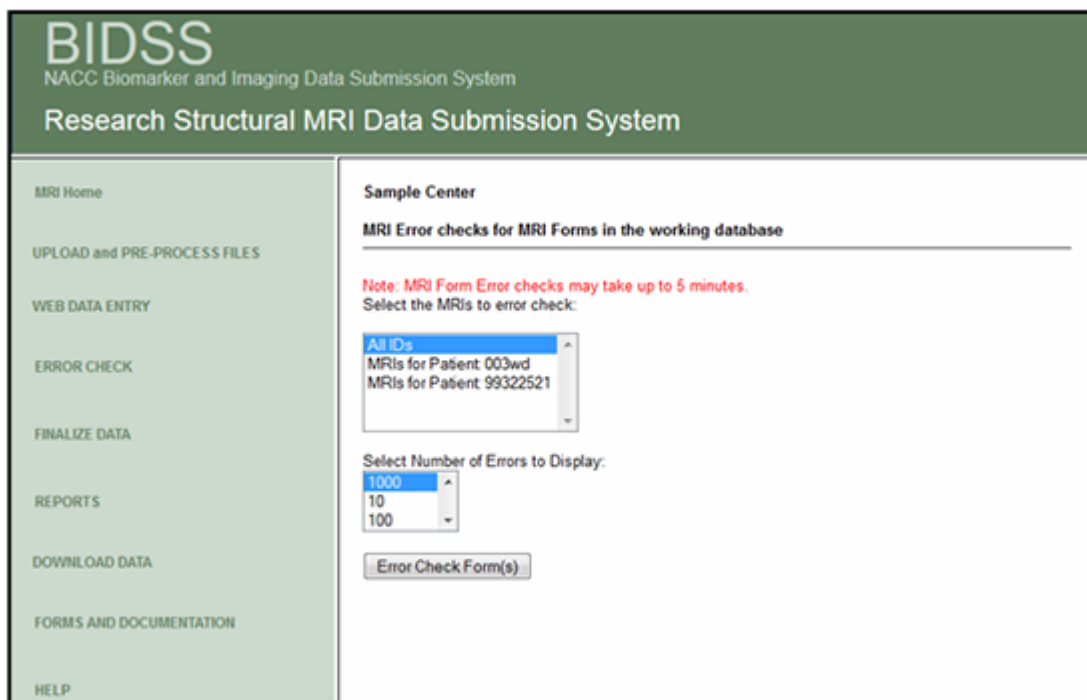


FIGURE 11
Deleting an MRI

To delete an MRI, first select the MRI you would like to delete, then click **CONTINUE**. A message will be displayed stating that the MRI was deleted, and the **DELETE MRI** page will be displayed.

Error check

Click **ERROR CHECK**, and the following page will be displayed (Figure 12):



The screenshot shows the BIDSS (NACC Biomarker and Imaging Data Submission System) interface. The header includes the BIDSS logo and the text "Research Structural MRI Data Submission System". A left-hand navigation menu lists various options: MRI Home, UPLOAD and PRE-PROCESS FILES, WEB DATA ENTRY, ERROR CHECK, FINALIZE DATA, REPORTS, DOWNLOAD DATA, FORMS AND DOCUMENTATION, and HELP. The main content area is titled "Sample Center" and "MRI Error checks for MRI Forms in the working database". It features a red note: "Note: MRI Form Error checks may take up to 5 minutes. Select the MRIs to error check:". Below this is a dropdown menu with options: "All IDs", "MRIs for Patient: 003wd", and "MRIs for Patient: 99322521". Another dropdown menu is labeled "Select Number of Errors to Display:" with options: "1000", "10", and "100". At the bottom of the main area is a button labeled "Error Check Form(s)".

FIGURE 12
Error check

Before an MRI can be moved to the current database, all errors must be corrected.

Click the ID to be error-checked or click **ALL IDS** to check all available IDs. Each ID's MRIs are checked for data-element range errors and other inconsistency errors. Following are examples of errors and alerts (Figure 13):

BIDSS

NACC Biomarker and Imaging Data Submission System

Research Structural MRI Data Submission System

<p>MRI Home</p> <p>UPLOAD and PRE-PROCESS FILES</p> <p>WEB DATA ENTRY</p> <p>ERROR CHECK</p> <p>FINALIZE DATA</p> <p>REPORTS</p> <p>DOWNLOAD DATA</p> <p>FORMS AND DOCUMENTATION</p> <p>HELP</p>	<h3 style="margin: 0;">Sample Center</h3> <hr/> <p>MRI Error Checks</p> <hr/> <p>Patient ID = 99322521 ,4 /5 /1984 VISITMO out of range. Must be 1 - 12. Value is missing VISITDAY out of range. Must be 1 - 31. Value is missing VISITYR out of range. Must be 1980 - 2013. Value is missing. SMRIBVOL out of range. Must be 800-1800, 9999. Value is missing. SMRICVOL out of range. Must be 1000-2000, 9999. Value is missing. SMRIHVOL out of range. Must be 1-15, 99.9. Value is missing SMRIDIC out of range. Must be 0, 1, 8, or 9. Value is missing SMRIADNII out of range. Must be 0, 1, or 9. Value is missing</p> <hr/> <p>All MRIs processed for all IDs Total MRIs in the working database = 2</p> <hr/> <p>Print File - Please note latest print file may NOT be displayed. Once the file is shown press F5 or Refresh to get latest file.</p> <hr/> <p>All errors and alerts are shown. Total Errors = 8 All Errors must be corrected before an ID may be moved to the current database.</p>
--	---

FIGURE 13
Examples of errors and alerts

Finalize data

When all errors have been corrected, the data can be finalized. This involves moving the data from your working database to the current database. Click **FINALIZE**, and the following page will be displayed (Figure 14):

BIDSS
NACC Biomarker and Imaging Data Submission System

Research Structural MRI Data Submission System

MRI Home

UPLOAD and PRE-PROCESS FILES

WEB DATA ENTRY

ERROR CHECK

FINALIZE DATA

REPORTS

DOWNLOAD DATA

FORMS AND DOCUMENTATION

HELP

Sample Center

Copy Research Structural MRI Forms from Working to Current Database

[If you are having issues with the finalization not completing, please click here.](#)

Select the ID for the MRI data you would like copied to the current database. Selecting all MRIs will check all MRI data for errors.

All MRI data must be error free before it can be finalized, and IDs with errors will not be moved to the current database. A report that details which IDs were moved and which were not due to errors is generated in the following step.

All MRIs
MRIs not already in the current database
003wd
99322521

Select number of errors to display:

1000
10
100

FIGURE 14
Finalize data

To move the data to the current database, click **FINALIZE DATA** at the bottom of the page.

IDs with errors in any form will not be moved. A list will be generated showing the number moved and the number with errors (Figure 15):

The screenshot displays the BIDSS (NACC Biomarker and Imaging Data Submission System) Research Structural MRI Data Submission System interface. The left sidebar contains navigation links: MRI Home, UPLOAD and PRE-PROCESS FILES, WEB DATA ENTRY, ERROR CHECK, FINALIZE DATA, REPORTS, DOWNLOAD DATA, FORMS AND DOCUMENTATION, and HELP. The main content area is titled 'Sample Center' and 'Finalize Structural MRI Data'. It shows 'Total MRIs in the working database = 2'. A 'Print File' link is provided with instructions. A list of errors for Patient ID 99322521 is shown in red text, including missing values for VISITMO, VISITDAY, VISITYR, SMRIBVOL, SMRICVOL, SMRIHVOL, SMRIDIC, and SMRIADNI. Below this, it states 'The following MRIs have not been moved to the current database!' and lists Patient ID 99322521 with Date 4 /5 /1984. Summary statistics are provided: Total Errors = 8, Total Clean MRIs = 1, and Total Rejected MRIs = 1. It also lists MRIs to be copied to the current database for Patient ID 003wd on Date 4 /2 /2012. At the bottom, there is a button 'Copy Packets using Batch Input' and a note that clicking it will ask for an email and execute a batch processing task.

FIGURE 15
Result of finalize data

For MRI forms with no errors, the MRI form data may be copied to the current database by clicking **COPY PACKETS USING BATCH INPUT**. Once the button is clicked, a page will be displayed asking for your email address (Figure 16):

The screenshot shows the BIDSS (NACC Biomarker and Imaging Data Submission System) interface. The main header is green with the text "BIDSS NACC Biomarker and Imaging Data Submission System" and "Research Structural MRI Data Submission System". On the left is a vertical navigation menu with the following items: MRI Home, UPLOAD and PRE-PROCESS FILES, WEB DATA ENTRY, ERROR CHECK, FINALIZE DATA, REPORTS, DOWNLOAD DATA, FORMS AND DOCUMENTATION, and HELP. The main content area is titled "Sample Center" and "MRI Finalize Forms". It contains a paragraph of text: "The File will be finalized and an finalize report will be created by submitting a batch job. Once complete the report will be sent to the E-Mail given below. Length of time to finalize the data and receive the report will vary by how busy the server is. It will usually take somewhere between 5 minutes and 1 hour." Below this text is a text input field for an email address and a button labeled "Start Copy MRI Batch Job".

FIGURE 16
Provide email address

Provide the email address where you would like to receive a report that details the MRIs finalized to the current database. It is recommended that you keep these emails. The programs are normally completed within 10 minutes, although completion can take as long as two hours when the system is busy. You will receive your email shortly thereafter.

Reports

Click **REPORTS** to display the reports page (Figure 17):

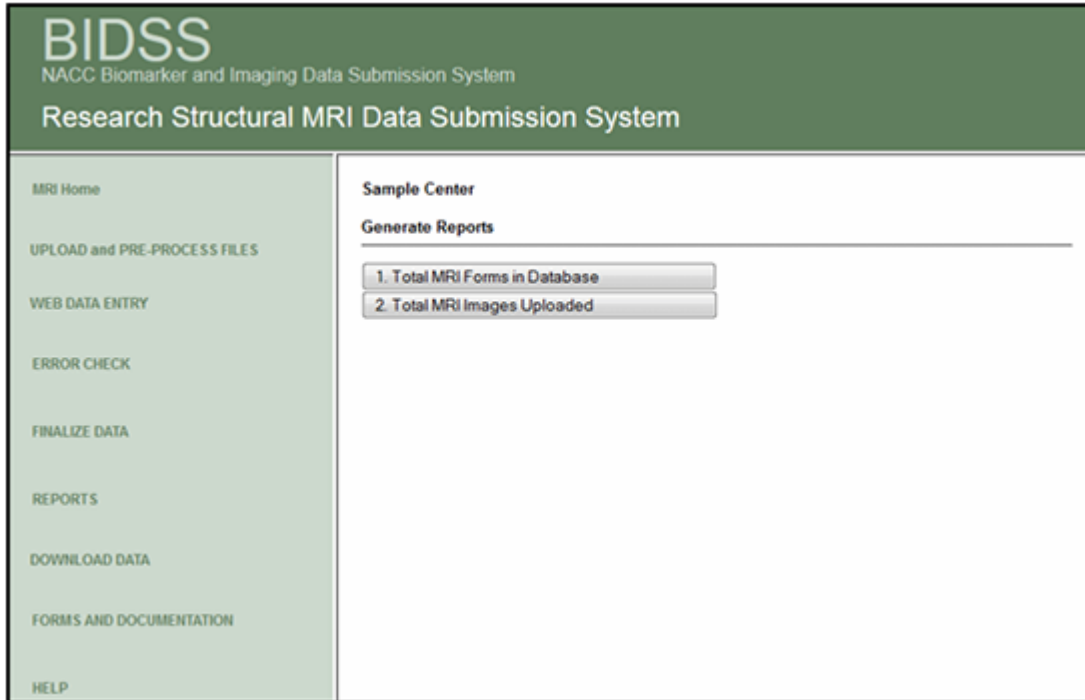


FIGURE 17
Reports page

These reports will help you manage your MRI data:

Report 1: Total MRI Forms in Database — Also indicates whether the MRI forms are in working or current database and whether associated DICOM scans have been uploaded.

Report 2: Total MRI Images Uploaded — Also shows whether an image has an associated form.

Download data

Click **DOWNLOAD DATA**, then **DICOM IMAGES**, and the following page will be displayed (Figure 18):

The screenshot shows the BIDSS (NACC Biomarker and Imaging Data Submission System) Research Structural MRI Data Submission System interface. The left sidebar contains navigation links: MRI Home, UPLOAD and PRE-PROCESS FILES, WEB DATA ENTRY, ERROR CHECK, FINALIZE DATA, REPORTS, DOWNLOAD DATA (selected), DICOM Images, ASCII Files, CSV Files, SAS Files, Excel Files, SPSS Files, TSV Files, FORMS AND DOCUMENTATION, and HELP. The main content area is titled 'Sample Center' and 'Download DICOM Images'. It explains that DICOM image files uploaded as .zip files are available for download. A note states that visualization software is required to view DICOM MRIs. Below this, it prompts the user to 'Select the MRI DICOM Image to Download:' and lists 18 items, each with a filename and patient ID (PTID) and MRI date. The filenames are: 1. [Filename = BRAINIX.zip_PTID = 0_05/22/2012.T1.No_DTI.No_Flair.No_T2.No](#), 92. [Filename = BRAINIX.zip_PTID = 0_05/22/2012.T1.No_DTI.No_Flair.No_T2.No](#), 95. [Filename = BRAINIX.zip_PTID = 0_01/05/1980.T1.No_DTI.No_Flair.No_T2.No](#), 99. [Filename = BRAINIX.zip_PTID = 0_01/01/1980.T1.Yes_DTI.No_Flair.No_T2.No](#), 2. [Filename = BRAINIX.zip_PTID = 0000_01/01/2004.T1.No_DTI.No_Flair.No_T2.No](#), 96. [Filename = BRAINIX.zip_PTID = 0000_04/01/1980.T1.No_DTI.No_Flair.No_T2.No](#), 93. [Filename = BRAINIX.zip_PTID = 000018_01/01/1982.T1.No_DTI.No_Flair.No_T2.No](#), 94. [Filename = BRAINIX.zip_PTID = 000018_01/01/2010.T1.No_DTI.No_Flair.No_T2.No](#), 4. [Filename = BRAINIX.zip_PTID = 000021_01/01/2008.T1.No_DTI.No_Flair.No_T2.No](#), 31. [Filename = BRAINIX.zip_PTID = 000024_04/10/2012.T1.No_DTI.No_Flair.No_T2.No](#), 5. [Filename = BRAINIX.zip_PTID = 000042_06/01/2012.T1.No_DTI.No_Flair.No_T2.No](#), 3. [Filename = BRAINIX.zip_PTID = 15746_06/23/2012.T1.No_DTI.No_Flair.No_T2.No](#), 97. [Filename = BRAINIX.zip_PTID = 951076_01/01/1980.T1.No_DTI.No_Flair.No_T2.No](#), 98. [Filename = BRAINIX.zip_PTID = 951094_01/17/2013.T1.No_DTI.No_Flair.No_T2.No](#)

FIGURE 18
Download data

Click the image to download. Images are sorted by patient ID and MRI date. The image will download as a zip file. You will need image visualization software to view the scan. Open-source and free-trial versions of the software can be found online by doing a search for “DICOM viewer.”

Click the **ASCII** button, and the following page will be displayed (Figure 19):

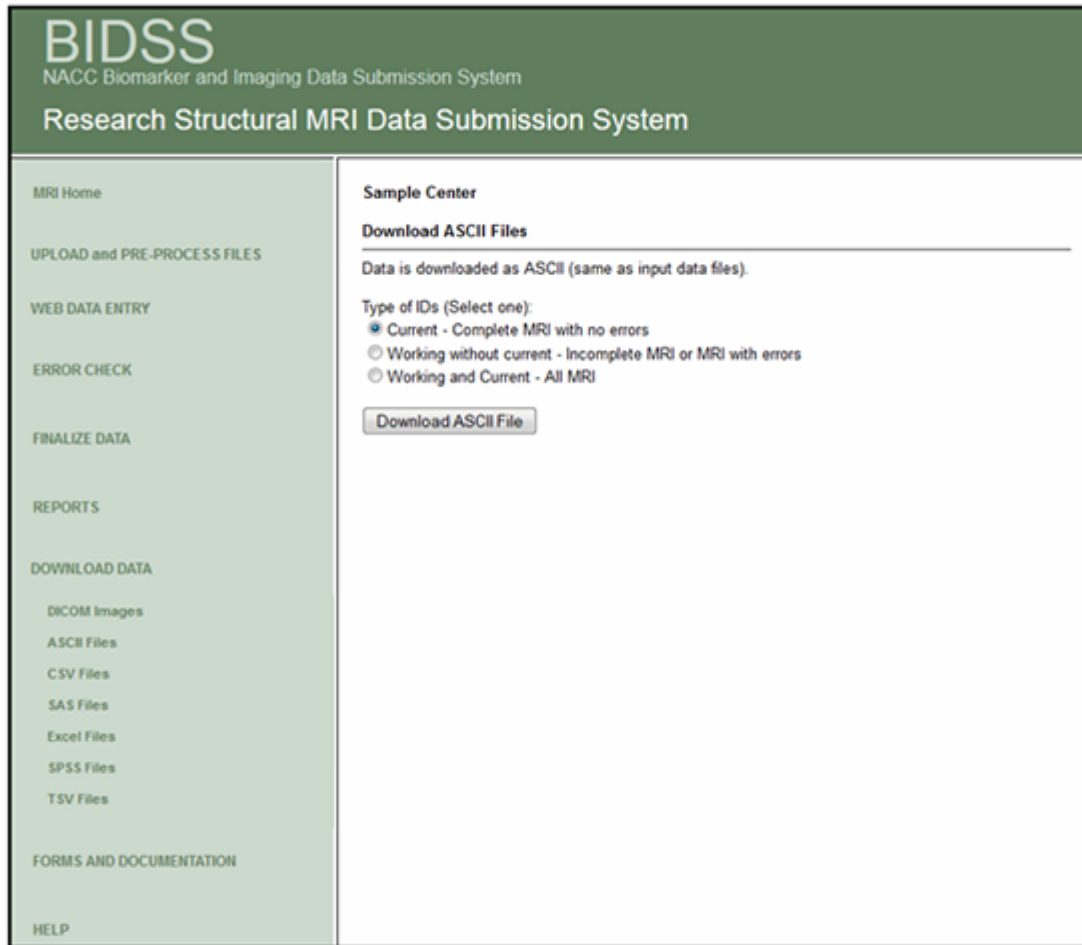
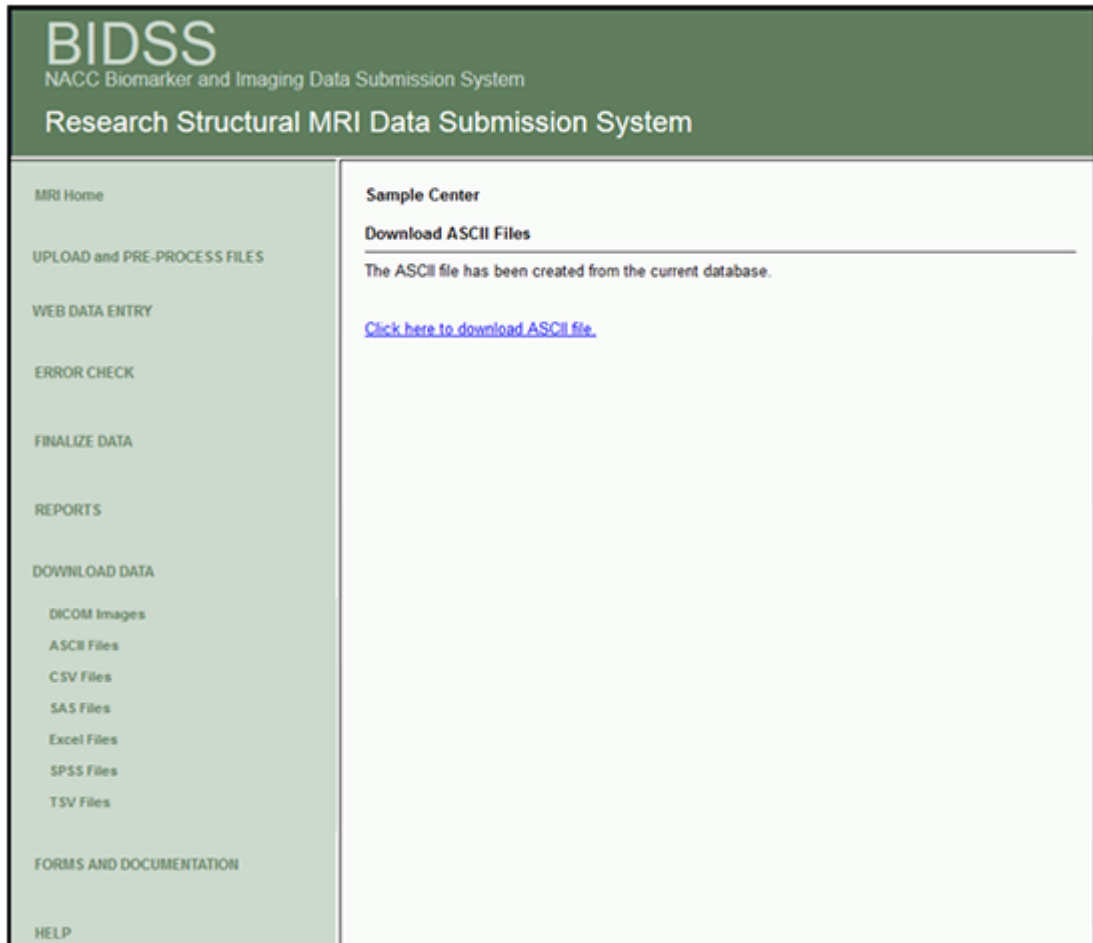


FIGURE 18
Download ASCII file

NOTE: The ASCII button is used here as an example; however, all of the download file procedures are the same except that different types of files will be created and downloaded.

Once selections have been made, click **DOWNLOAD ASCII FILE**, and the following is page displayed (Figure 20):



BIDSS
NACC Biomarker and Imaging Data Submission System

Research Structural MRI Data Submission System

MRI Home

UPLOAD and PRE-PROCESS FILES

WEB DATA ENTRY

ERROR CHECK

FINALIZE DATA

REPORTS

DOWNLOAD DATA

- DICOM Images
- ASCII Files
- CSV Files
- SAS Files
- Excel Files
- SPSS Files
- TSV Files

FORMS AND DOCUMENTATION

HELP

Sample Center

Download ASCII Files

The ASCII file has been created from the current database.

[Click here to download ASCII file.](#)

FIGURE 20
ASCII file created

Click the link to download your file. You will be asked whether you want to save or open the file. If you have the necessary software on your local computer, opening the file is a good way to check it. Otherwise, just save the file.

Documentation

Click **DOCUMENTATION**, and the following page will be displayed (Figure 21):

The screenshot shows the BIDSS (NACC Biomarker and Imaging Data Submission System) Research Structural MRI Data Submission System interface. The page is divided into a left sidebar and a main content area. The sidebar contains a vertical list of navigation options: MRI Home, UPLOAD and PRE-PROCESS FILES, WEB DATA ENTRY, ERROR CHECK, FINALIZE DATA, REPORTS, DOWNLOAD DATA (with sub-items: DICOM Images, ASCII Files, CSV Files, SAS Files, Excel Files, SPSS Files, TSV Files), FORMS AND DOCUMENTATION, and HELP. The main content area is titled 'Sample Center' and 'MRI Documentation'. It features a horizontal line and several blue hyperlinks: 'MRI Guidebook', 'MRI Forms Data Element Dictionary', 'MRI Form Template', 'MRI Forms', and 'MRI Submission Manual'. Below these links, a text block provides contact information: 'Please contact NACC at naccmail@u.washington.edu or 206-543-8637 for questions/comments.'

FIGURE 21
Documentation

The buttons on the page provide access to the MRI Submission System documentation, which is in the form of PDF files for easier printing.

