



MONAHRQ Host User Guide

Version 1.0

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TABLE OF CONTENTS

INTRODUCTION	2
PART I: DOWNLOADING MONAHRQ	3
Check that Your System Meets Hardware and Software Requirements.....	3
Step-by-Step Installation	4
PART II: BUILDING YOUR MONAHRQ WEBSITE	6
Preparing Your Data	6
Comparing Quality Indicators between MONAHRQ and SAS	7
List of AHRQ Quality Indicators available in MONAHRQ.....	7
Building Instructions – Running the Software.....	19
PART III: CUSTOMIZING WEB PAGES	48
Introduction to MONAHRQ Website Architecture.....	48
Folder Structure of the Website	48
Adding/Removing Content.....	49
APPENDIX: REPORTING QUALITY OF CARE TO CONSUMERS	52
FREQUENTLY ASKED QUESTIONS	62

INDEX OF TABLES

Table 1: Preparing Your Data.....	9
Table 2: Present on Admission Coding	18
Table 3: Navigation and Content Page Structure.....	49

INTRODUCTION

MONAHRQ is a free Windows-based software product that enables host users—such as State and local data organizations, chartered value exchanges, hospitals, and health plans—to input their own raw inpatient hospital administrative data and generate a data-driven Website. This tool was developed by the Agency for Healthcare Research and Quality, the Federal Government’s lead agency for health care quality in the United States. MONAHRQ is based on two of AHRQ’s most popular and widely respected tools, the Quality Indicators (QIs) and HCUPnet, and it incorporates several other AHRQ tools as well.

This innovative tool allows users to navigate through a series of simple steps to ultimately generate powerful Web-based reports. This Website, with reports in HTML-pages, will help health care professionals and consumers make informed decisions about health care quality and performance.

MONAHRQ analyzes, summarizes, and presents the information in an evidence-driven, easy-to-understand format that can be easily hosted on an organization’s Website and is instantly ready for use internally by the organization or externally by consumers and other decision makers.

This user documentation is designed to help host organizations create their own MONAHRQ-generated Website. The instructions provided in this document will guide users through the process step-by-step to facilitate the installation and implementation of MONAHRQ specific to the needs of each host organization. The document is organized by “user type” to guide the implementation process and allow for a team of specialized personnel to work together while crafting the tool according to the needs of each organization.

- **Download.** Information for **System Administrators** regarding system requirements and instructions for downloading MONAHRQ and any necessary supplemental software (e.g., SQL).
- **Build.** Details for **Programmers** on how to prepare data and load it into MONAHRQ. This process will involve mapping your data elements, uploading hospital data, conducting analyses, and understanding various implications.
- **Host.** Guidelines and suggestions for **Web masters** on hosting the tool on your organization’s Website. This involves learning the many customization options available to users, evaluating output pages, and ultimately refining the pages to meet the organization’s primary data interests.

MONAHRQ can be used in a variety of ways to meet the interests of your organization. Here are some examples of how MONAHRQ can be used:

- Within your organization to generate reports and statistics you use internally
- To create a limited-access Website for member organizations
- To create an open-access Website to be used by consumers and other decision makers to compare various facilities in an area or to present health care outcomes in a geographic region.

In addition, this document provides guidance to host users in reporting hospital quality. This memo was developed by Shoshanna Sofaer for users of the AHRQ QIs. It not only provides guidance on quality reporting, but also describes the context for development and testing of the QI consumer pathway in MONAHRQ.

The choice is yours as to how you would like to use MONAHRQ – *your* data on *your* Website.

For more information, please visit <http://www.monahrq.ahrq.gov> or contact us by email at MONAHRQ@ahrq.gov.

PART I: DOWNLOADING MONAHRQ: INFORMATION FOR A SYSTEM ADMINISTRATOR

This section provides directions for installing MONAHRQ and describes system requirements. MONAHRQ needs .NET and SQL to run successfully, and these instructions will help you determine if you need to download a free version of SQL or .NET. We also provide some helpful hints for system administrators.

Important: MONAHRQ CANNOT be downloaded onto a server. Please load it directly onto your PC. The HTML pages created by the software can later be moved to a server to display on your organization's Website.

Before you begin, make sure that you have the appropriate Administrator permissions to install software on your computer. If a system administrator downloads the software on behalf of another user, ensure that the appropriate access privileges are granted. This is only required during the installation. You should also make sure your Windows operating system has the latest Service Pack and updates applied.

If you have any previous versions of MONAHRQ on your computer, you need to uninstall using **Add/Remove Programs**.

1. Open the **Windows Control Panel** and use the **Add or Remove Programs** utility to get a list of software programs installed on your PC. You can access the Control Panel from the Windows Start button via the "Settings" option.
2. Scroll down the alphabetical list of Programs until you get to MONAHRQ; select MONAHRQ and then select the Remove button.
3. When the program has been removed, close all windows.
4. Restart the system before installing the updated MONAHRQ.

This section will walk you step-by-step through the process of:

1. Determining whether your system meets hardware and software requirements for MONAHRQ.
2. Installing Microsoft .NET Framework (if needed).
3. Installing Microsoft SQL Server Express (if needed).
4. Installing the AHRQ Quality Indicator Risk Adjustment.
5. Installing MONAHRQ.

Check That Your System Meets Hardware and Software Requirements

MONAHRQ runs on computers with Windows XP, Windows Vista, Windows Server 2003, or higher operating systems. The following software is required before installing MONAHRQ and can be downloaded from the MONAHRQ download Website (<http://www.monahrq.ahrq.gov>):

- Microsoft .NET Version 2.0 or higher.
- Microsoft SQL Server Express if a local database is used.

Approximate disk **space requirements** for the three components are:

- Microsoft .NET – 300 MB.
- Microsoft SQL Server Express – 600 MB.
- AHRQ Quality Indicator Risk Adjustment – 2 MB.
- MONAHRQ – 50 MB.
- MONAHRQ data – Requirements vary depending on the number of discharges you wish to process. About 100 MB is typical, but this can be up to 4GB.

MONAHRQ is a single-user desktop application **that requires a SQL Server database** to store data. It has been tested on two versions of Microsoft SQL Server (2005 and 2008). Each of these versions of Microsoft SQL Server has several editions ranging from the free edition that is provided (SQL Server Express) to the Data Center version. Microsoft SQL Server can be installed on your PC or accessed over a network. Most users prefer to use SQL Server 2005 Express Edition installed on their PC unless local IT policies prohibit this setup. If you have an especially large dataset, it will be more efficient to use the full SQL Server rather than the free Express Edition.

Existing SQL Server

If you choose to use an existing SQL Server, contact your database administrator for the connection host name, login, and password that will be required by the MONAHRQ installer.

Free SQL Server

Microsoft SQL Server 2005 Express Edition is the current free database from Microsoft. This edition can be downloaded from the same site as MONAHRQ.

Step-by-Step Installation

Step 1

Check that the Microsoft .NET 2.0 Framework is installed on your computer. Open the **Windows Control Panel** and use the **Add or Remove Programs** utility to get a list of software programs installed on your PC. You can access the Control Panel from the Windows Start Button via the "Settings" option. Scroll down the alphabetical list of Programs until you reach Microsoft programs. The image below shows .NET Framework with a service pack. Please note that any service pack level will work.



If you do not have the Microsoft .NET 2.0 Framework installed, then download the correct install package (32-bit Microsoft .NET 2.0 Framework or 64-bit Microsoft .NET 2.0 Framework). Most users have a 32-bit version of Windows on their computers, which will use the 32 bit link. If the computer uses a 64-bit version, then the 64-bit version of Microsoft .NET 2.0 Framework must be installed. Select and save the correct version and then run the file.

To check the version of Windows, right-select the **My Computer** icon on your desktop and select **Properties**. You can also select My Computer from the Start Menu and select View System Information. A pop-up box displaying your version of Windows will appear. If it does not say 64 bit, then your system is 32 bit. Below is an example of the Properties dialog box for a system that uses the 32-bit version.



Step 2

Because the software will need to set up a Microsoft SQL Server database, an instance of Microsoft SQL Server 2005 will need to be accessed. If you have access to a copy running on a database server in your network then that instance can be used. If not, a free version of Microsoft SQL Server Express can be obtained from the MONAHRQ Website. As with the .NET framework, the 64-bit version will need to be used if you are running a 64-bit version of Windows. Step 1 describes how to check your version of Windows. Select and save the correct version and then run the program.

Step 3

The third step is to download and install the AHRQ Quality Indicator Risk Adjustment. MONAHRQ requires that this file be downloaded to correctly calculate the analyses. Select and save the AHRQ Quality Indicator Risk Adjustment file.

Step 4

The final step is to download and install MONAHRQ. The install package will prompt you with several questions. If you are using a network copy of Microsoft SQL Server, you will need to know the correct network name of the instance. If you set up a local copy of Microsoft SQL Server Express, you can use the default answer when prompted.

The install process will first load the MONAHRQ software on your PC, then access the Microsoft SQL Server instance and create your MONAHRQ database, and finish by loading baseline data into the database. The process will take up to 15 minutes, depending on the speed of your PC. Progress meters keep you informed on the progress of the setup process.

Additional Information

If the person installing the MONAHRQ software is *not* the person who will be using MONAHRQ or if there will be more than one MONAHRQ user on the machine, then the **System Administrator** will need to add users to the "MONAHRQ" database. This can be done with a remote SQL Server Manager or by installing a local copy of the SQL Server Management Studio Express Edition and using it to add the required users.

You can download the free SQL Server Management Studio Express Edition from <http://www.monahrq.ahrq.gov>.

PART II: BUILDING YOUR MONAHRQ WEBSITE: INFORMATION FOR A PROGRAMMER

This section will provide programmers with the critical information they need to **prepare** the data and **run** the software. This easy step-by-step process is demonstrated in a series of basic instructions. We also include detailed screenshots and data tables so that you can incorporate your organization's inpatient administrative data the way you want to present it.

More specifically, this process will involve:

- Understanding the data elements needed for the analyses, as well those that are optional.
- Knowing the implications of missing data elements and how this will affect output pages.
- Developing custom dictionaries.
- Building a Website for your organization.

Preparing Your Data

MONAHRQ uses hospital inpatient administrative data that provides demographics on the patient and the provider, diagnosis codes, procedure codes, and information about the admission, payer(s), and discharge. The software is designed for processing one calendar year of data at a time. The software will walk you through a very simple, "point and click" process for mapping your data elements and value codes. The software is designed to be easily usable on raw (i.e., source) administrative data.

The software accepts three common formats for your data:

1. Text (comma-separated values, CSV).
2. Microsoft Access table.
3. Microsoft Excel spreadsheet.

Two key formatting issues are:

- Each row of data represents a separate discharge record.
- Each column of data represents a single variable for all discharges.

CSV files use commas to separate the data values. If you have commas within any data values (for example, "Private, incl. HMO"), you will need to put double quotes around each data element. An exception is the variable "Total Charge" (refer to attached table). Many data elements in hospital inpatient data have leading zeros; if you are working from Excel, we recommend that all appropriate fields/cells be formatted as text to ensure full conversion of the data.

Input data have specific meaning according to the coding conventions in your organization. The data need to be mapped to the specific meaning used by MONAHRQ. The data elements in MONAHRQ are based on the coding specifications used in the State Inpatient Data (SID) in the Healthcare Cost and Utilization Project (HCUP), which are similar to the Uniform Bill (UB-92/04), but not identical. MONAHRQ's Crosswalk Screen provides the opportunity to map your variable values to the values used in the software. Present on Admission is the only variable with values that are automatically mapped. Please review Table 2 to ensure that your data are coded correctly. You may prepare your dataset in advance by using names and codes that match those in MONAHRQ so that the software will automatically recognize data element names and value codes.

Because MONAHRQ is designed to recognize HCUP formatted data, if you are using HCUP formatted data, most data elements and data values will be mapped for you when you load the software. HCUP formatted data are not a requirement of the software. If you would like to further prepare your data, refer

to Table 1. If your data elements used the same names and coding values as shown in Table 1, the process of identifying and mapping data elements will be quicker. Table 1 also identifies which data elements are required and what happens if an optional element is missing.

When you prepare your data, it is not necessary to create "dummy variables" or fill in missing values. Your input file may contain extra data that are not required; you do not need to remove extra variables. Any variables that are not used in the Data Mapping Screen will not be imported with your data.

Comparing Quality Indicators between MONAHRQ and the SAS Version

If you would like to compare the quality indicators produced by MONAHRQ with the SAS version of the QIs then you will need to do the following:

- First run your data through MONAHRQ and save your MONAHRQ generated dataset (screen 14 has directions).
- MONAHRQ assigns a DRG for each discharge. The MONAHRQ assigned DRG should be used when you run the QI SAS programs. In the MONAHRQ generated dataset, there are two DRG data elements. When the DRG value is equal to or less than 24, the data element DRGVER should be used for the SAS program. When the DRG value is greater than or equal to 25, the data element DRG_VER should be used for the SAS program.
- We also recommend that you subset the data loaded into the SAS programs to those discharges that were included in MONAHRQ (some discharges may be excluded from MONAHRQ).
- Note that MONAHRQ and SAS round statistics to different levels.

For additional information about the AHRQ SAS QI programs, please visit

<http://www.qualityindicators.ahrq.gov/>.

List of AHRQ Quality Indicators Available in MONAHRQ

The following indicators are included in MONAHRQ:

Prevention Quality Indicators (17 indicators)

- Diabetes, short-term complications (PQI 1)
- Perforated appendicitis (PQI 2)
- Diabetes, long-term complications (PQI 3)
- Chronic obstructive pulmonary disease (PQI 5)
- Hypertension (PQI 7)
- Congestive heart failure (PQI 8)
- Low birth weight (PQI 9)
- Dehydration (PQI 10)
- Bacterial pneumonia (PQI 11)
- Urinary infections (PQI 12)
- Angina without procedure (PQI 13)
- Uncontrolled diabetes (PQI 14)
- Adult asthma (PQI 15)
- Lower extremity amputations among patients with diabetes (PQI 16)
- Prevention Quality Indicator Composite - Overall
- Prevention Quality Indicator Composite - Chronic Conditions
- Prevention Quality Indicator Composite - Acute Conditions

Inpatient Quality Indicators

1. Mortality Rates for Medical Conditions (4 Indicators)

- Acute myocardial infarction (AMI) (IQI 15)
- Congestive heart failure (IQI 16)
- Stroke (IQI 17)
- Pneumonia (IQI 20)

2. Mortality Rates for Surgical Procedures (5 Indicators)
 - Esophageal resection (IQI 8)
 - Abdominal aortic aneurysm repair (IQI 11)
 - Percutaneous transluminal coronary angioplasty (IQI 30)
 - Carotid endarterectomy (IQI 31)
 - Hip replacement (IQI 14)
3. Hospital-level Procedure Utilization Rates (3 Indicators)
 - Laparoscopic cholecystectomy (IQI 23)
 - Incidental appendectomy in the elderly (IQI 24)
 - Bi-lateral cardiac catheterization (IQI 25)
4. Area-level Utilization Rates (4 Indicators)
 - Coronary artery bypass graft (IQI 26)
 - Percutaneous transluminal coronary angioplasty (IQI 27)
 - Hysterectomy (IQI 28)
 - Laminectomy or spinal fusion (IQI 29)
5. Volume of Procedures (4 Indicators)
 - Esophageal resection (IQI 1)
 - Abdominal aortic aneurysm repair (IQI 4)
 - Percutaneous transluminal coronary angioplasty (IQI 6)
 - Carotid endarterectomy (IQI 7)

Patient Safety Indicators

1. Hospital-level Patient Safety Indicators (13 Indicators)
 - Death in low mortality DRGs (PSI 2)
 - Iatrogenic pneumothorax (PSI 6)
 - Postoperative hip fracture (PSI 8)
 - Postoperative physiologic and metabolic derangements (PSI 10)
 - Postoperative respiratory failure (PSI 11)
 - Postoperative pulmonary embolism or deep vein thrombosis (PSI 12)
 - Postoperative sepsis (PSI 13)
 - Postoperative wound dehiscence in abdominopelvic surgical patients (PSI 14)
 - Accidental puncture and laceration (PSI 15)
 - Birth trauma -- injury to neonate (PSI 17)
 - Obstetric trauma -- vaginal delivery with instrument (PSI 18)
 - Obstetric trauma -- vaginal delivery without instrument (PSI 19)
 - Death in surgical inpatients (PSI 4)
2. Area-level Patient Safety Indicators (7 Indicators)
 - Foreign body left in during procedure (PSI 21)
 - Iatrogenic pneumothorax (PSI 22)
 - Selected infections due to medical care (PSI 23)
 - Postoperative wound dehiscence in abdominopelvic surgical patients (PSI 24)
 - Accidental puncture and laceration (PSI 25)
 - Transfusion reaction (PSI 26)
 - Post-operative hemorrhage or hematoma (PSI 27)

Table 1: Preparing Your Data

MONAHRQ Variable Name	Description	Required/Optional	Ramifications of Exclusion	Default Element Coding	Data Preparation
Age	Age in years at admission	Required	If this data element is missing, the discharge record will not be loaded.	Source value	Numeric. Convert to years; if age <365 days, set value to 0. If variable does not exist, it should be calculated from Admission Date and Date of Birth.
Sex	Gender of patient: male/female	Required	If this data element is missing, the discharge record will not be loaded.	1: Male 2: Female Other values mapped to <Exclude from dataset>	No data preparation needed. Source values, alpha or numeric, will be mapped to accepted numeric value (1, 2) or excluded during data load.
Hospital ID	Data source hospital number	Required	Data element used to facilitate data exploration and as a stratifier for provider-level indicators (in the QI reports section). If this data element is missing, the discharge record will not be loaded.	Source value	No data preparation needed. Source values, alpha or numeric, accepted.
Year	Calendar year of patient's discharge	Required	Data element used to apply the proper fiscal year coding (e.g., ICD-9, CPT) and to assign the APR™ DRG Grouper used. Discharge year should be within the range of 1997 to present year. If this data element is missing, the discharge record will not be loaded.	Source value, YYYY	Numeric: YYYY Discharge year should be within the range of 1997 to present year.

MONAHRQ Variable Name	Description	Required/Optional	Ramifications of Exclusion	Default Element Coding	Data Preparation
Discharge Quarter	Calendar quarter of the patient's discharge	Required	Data element used to apply the proper fiscal year coding (e.g., ICD-9, CPT) and to assign the APR™ DRG Grouper used. If this data element is missing, the discharge record will be not be loaded.	1: January-March 2: April-June 3: July-September 4: October-December	If data element does not exist, it should be calculated from discharge date. Value must be numeric (1, 2, 3, 4) with no leading alpha characters.
Principal Diagnosis	ICD-9-CM diagnosis code without decimal points. Diagnosis 1 is the principal diagnosis.	Required	If this data element is missing, the discharge record will be not be loaded.	Source value; string value more than 5 characters will be shortened.	Decimal points, if any, must be removed before loading data. Do not remove leading or trailing zeros. Similarly, you should not include additional digits when they are not required. Diagnosis codes are always 3, 4, or 5 characters long. For example, a diagnosis code of 005.89 would be coded as 00589 in MONAHRQ
Key	Unique case identifier	Optional	If this data element is not available, users cannot link the discharge records in the Patient-Level Report back to the input data file.	Source value	Maximum length: 20 characters
Age in Days	Age in days at admission (coded only when the age in years is less than 1)	Optional	Used in the inclusion and exclusion criteria for indicators addressing neonates or neonatal conditions and in the Pediatric Quality Indicators (PDIs). If this data element is missing (and age is 0), generally, an alternative specification applies.	Age in days only applies for age < 1. If value is greater than 365, value will be changed to Missing.	Numeric: 0-364

MONAHRQ Variable Name	Description	Required/Optional	Ramifications of Exclusion	Default Element Coding	Data Preparation
Race	Race of patient	Optional	Used to stratify the AHRQ QI rates. Records with this data element missing will be retained and the value set to Other. The rates and utilization paths will not be stratified by race if the data element is completely missing.	1: White 2: Black 3: Hispanic 4: Asian or Pacific Islander 5: Native American 6: Other 0: Missing 99: Retain value <Exclude from dataset >	Source values, alpha or numeric, can be mapped to accepted numeric value (1-6) or excluded during data value mapping.
Primary Payer	Expected primary payer	Optional	Used to stratify the AHRQ QI rates and utilization statistics. Records with this data element missing will be retained and the value set to Other.	1: Medicare 2: Medicaid 3: Private/HMO 4: Self-pay 5: No charge 6: Other 0: Missing 99: Retain value <Exclude from dataset >	Source values, alpha or numeric, can be mapped to accepted numeric value (0-6, 99) or excluded during data value mapping.

MONAHRQ Variable Name	Description	Required/ Optional	Ramifications of Exclusion	Default Element Coding	Data Preparation
Patient State/County Code	Federal Information Processing Standard (FIPS) State/county code of patient's residence	Optional	If this data element is missing, the discharge record will be excluded from area rate calculations and the Website Wizard cannot create maps by showing rates of preventable hospitalization by area. If patient codes are not available, hospital's codes can be loaded. We recommend that you analyze the area rates at the State or metro area level. Otherwise, patients who reside outside the same county as the hospital will be included in the numerator but not the denominator. The larger the geographic unit of analysis, the less likely it is that this situation will occur. If the hospital FIPS codes are used instead of the patient FIPS codes, the area rates must be interpreted with caution.	Source value	We recommend that you use the patient FIPS State/county code. FIPS codes may be obtained at http://www.census.gov/popest/geographic/codes02.html .

MONAHRQ Variable Name	Description	Required/Optional	Ramifications of Exclusion	Default Element Coding	Data Preparation
Discharge Disposition	Disposition of patient	Optional	Used in the inclusion and exclusion criteria for several Prevention QIs (PQIs), Patient Safety Indicators (PSIs), and Inpatient QIs (IQIs). For indicators that rely on this field, records with this data element missing will be excluded from the denominator.	1: Routine hospital 2: Short-term hospital 3: Skilled nursing facility 4: Intermediate care 5: Another type of facility 6: Home health care 7: Against medical advice 20: Died in the hospital 0: Missing <Exclude from dataset> 99: Missing <Exclude from dataset>	No data preparation needed. Source values, alpha or numeric, will be mapped to accepted numeric values (0-7, 20) or excluded during data load.
Admission Type	Admission type	Optional	Used in the inclusion and exclusion criteria for several PQIs, PSIs, and IQIs. For indicators that rely on this field, records with this data element missing will be excluded from the denominator.	1: Emergency 2: Urgent 3: Elective 4: Newborn 5: Trauma center 6: Other 0: Missing <Exclude from dataset>	No data preparation needed. Source values, alpha or numeric, will be mapped to accepted numeric values (0-6) or excluded during data load.

MONAHRQ Variable Name	Description	Required/ Optional	Ramifications of Exclusion	Default Element Coding	Data Preparation
Admission Source	Admission source	Optional	Used in the inclusion and exclusion criteria for several PQIs, PSIs, and IQIs. For indicators that rely on this field, records with this data element missing will be excluded from the denominator.	1: Emergency room 2: Another hospital 3: Another facility, including long-term care 4: Court/law enforcement 5: Routine/birth/other 0: Missing <Exclude from dataset>	No data preparation needed. Source values, alpha or numeric, will be mapped to accepted numeric values (0-5) or excluded during data load.
Length of Stay	Number of days from admission to discharge	Optional	Used in the exclusion criteria for several PSIs and PDIs; not used in PQIs or IQIs. If this data element is not available, indicators that rely on this field will be excluded from the denominator. In the utilization pathway, statistics by length of stay will be excluded if the data element is missing.	Source value	Calculate if needed, from discharge data and admission date. Same-day stay should be set to 0.
Days on Mechanical Ventilator	Number of days the patient spent on a mechanical ventilator	Optional	Optional data element is passed directly to the APR™ DRG Grouper. If this data element is not available, value will be set to default in the grouper software.	Source value	

MONAHRQ Variable Name	Description	Required/Optional	Ramifications of Exclusion	Default Element Coding	Data Preparation
Birthweight in Grams	Birthweight for newborns	Optional	Optional data element that is passed directly to the APR™ DRG Grouper. If this data element is not available, value will be set to default in the grouper software. This field is not used as stratification criteria; ICD-9-CM diagnosis codes are used to indicate birthweight.	If value greater is than 7,000, value will be changed to Missing because higher values are considered invalid birthweights.	
Total Charge	Total charge associated with hospital stay	Optional	If this data element is not available, cost savings associated with reducing the level of potentially avoidable hospitalizations will not be included in summary report, costs and charges will be excluded from the utilization path, and cost will be excluded from the rates.	Source value. Must be integer (i.e., whole numbers only).	Must be integer: remove dollar signs and decimals (i.e., whole numbers only).
Diagnosis Code 2 – Diagnosis Code 35	Codes 2-35 are secondary diagnoses and would include any External Cause of Injury codes (E-codes).	Optional	Used in the inclusion and exclusion criteria for multiple indicators. The number of reported codes will affect rates.	Source value; string value more than 5 characters will be shortened.	Decimal points, if any, must be removed before loading data. Do not remove leading or trailing zeros. Similarly, you should not include additional digits when these are not required. Diagnosis codes are always 3, 4, or 5 characters long. Secondary diagnosis codes may include External Cause of Injury codes (E-codes).
Principal Procedure	ICD-9-CM Procedure Codes without decimals. Procedure code 1 is the principal procedure.	Optional	Used in the inclusion and exclusion criteria for several indicators.	Source value. String value more than 4 characters will be shortened.	Procedure codes are always 2, 3, or 4 characters. As with diagnosis codes, you should remove any decimal points and you should not add or remove characters on the left or ride side of the code.

MONAHRQ Variable Name	Description	Required/Optional	Ramifications of Exclusion	Default Element Coding	Data Preparation
Procedure Code 2 – Procedure Code 30	ICD-9-CM Procedure Codes without decimals. Procedure codes 2-30 are secondary procedures.	Optional	Used in the inclusion and exclusion criteria for multiple indicators. The number of reported codes will affect rates.	Source value. String value more than 4 characters will be shortened.	Procedure codes are always 2, 3, or 4 characters. As with diagnosis codes, you should remove any decimal points and you should not add or remove characters on the left or ride side of the code.
Days to Procedure 1 – Days to Procedure 30	Days from admission to procedure. Procedure 1 is the principal procedure; procedures 2-30 are secondary procedures.	Optional	Used in several PSIs and PDIs. If this data element is not available, an alternative logic applies.	Source value. It is expected that the number of Days to Procedure variables agrees with the number of procedure codes present.	If the data element does not exist, it should be calculated from the admission data and the procedure date(s).
Custom Stratifier 1 - Custom Stratifier 3	Custom stratification values	Optional	Custom stratifiers can be used in the reports section of the software (e.g., a user could stratify by type of hospital – teaching or nonteaching). This data element has no effect on the generated HTML pages.		
Present on Admission 1 - Present on Admission 35	Flag indicating whether diagnosis was present on admission	Optional	Present on admission (POA) data elements may eliminate false positives from PSI results. IMPORTANT: If you use these present on admission fields, a different set of risk adjustment covariates and reference population rates will be applied.	1 = present at the time of inpatient admission 0 = not present at the time of inpatient admission	Present on Admission flag (POA) should be included for all records or none of them. Mixing records with and without POA could adversely affect the expected rates. Please see Table 2 for a more detailed coding explanation for POA.

MONAHRQ Variable Name	Description	Required/ Optional	Ramifications of Exclusion	Default Element Coding	Data Preparation
Patient ID	Patient ID or medical record number for identification purposes only	Optional	None	It is recommended that you DOT NOT USE this field unless required for external analysis.	It is recommended that you DO NOT USE this field.
Date of Birth	Patient date of birth for identification purposes only	Optional	None	It is recommended that you DOT NOT USE this field unless required for external analysis, MM/DD/YYYY	It is recommended that you DO NOT USE this field, MM/DD/YYYY.
Admission Date	Date of patient admission for identification purposes only	Optional	None	It is recommended that you DOT NOT USE this field unless required for external analysis, MM/DD/YYYY	It is recommended that you DO NOT USE this field, MM/DD/YYYY.
Discharge Date	Date of patient discharge for identification purposes only	Optional	None	It is recommended that you DOT NOT USE this field unless required for external analysis, MM/DD/YYYY	It is recommended that you DO NOT USE this field, MM/DD/YYYY.

Table 2: Present on Admission Coding

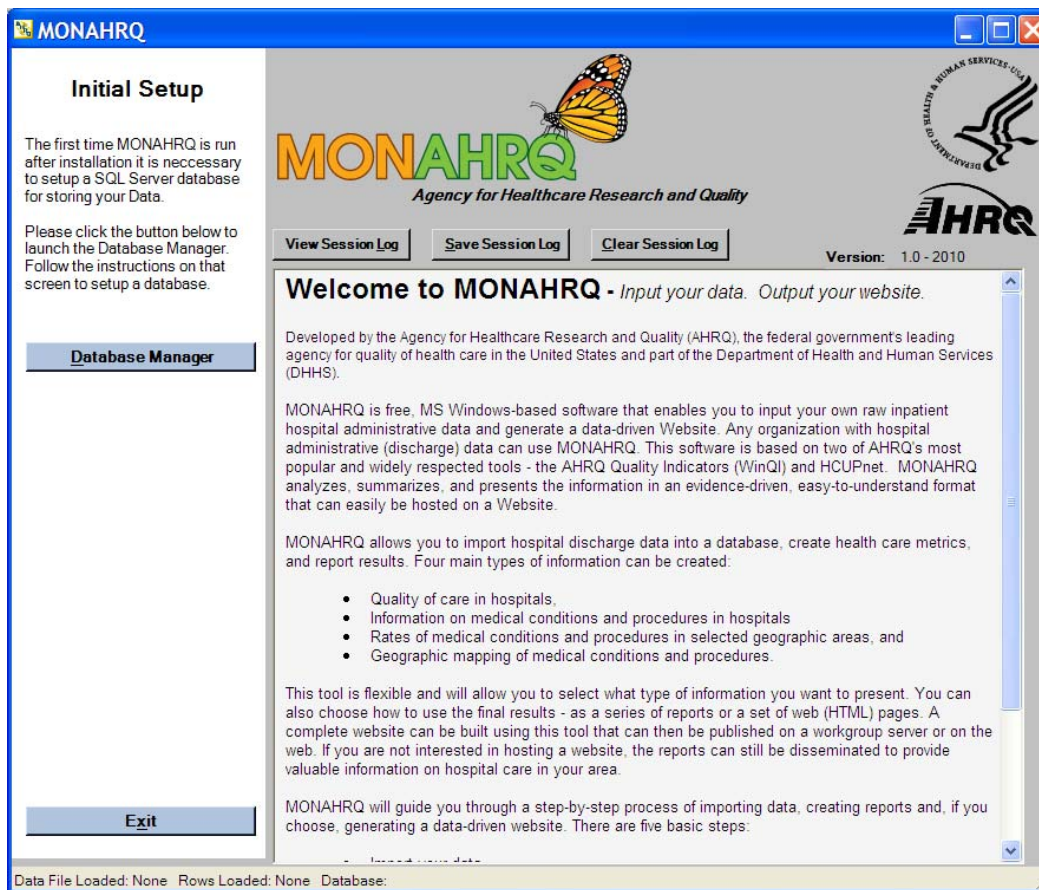
ICD-9-CM Guidelines	ICD-9-CM Description	HCUP Data Element	HCUP Description
Y - Yes	Present at the time of inpatient admission.	1	Diagnosis present at admission.
N - No	Not present at the time of inpatient admission.	0	Diagnosis not present at admission.
U - Unknown	Documentation is insufficient to determine if condition is present on admission.	0	Diagnosis not present at admission.
W – Clinically undetermined	Provider is unable to clinically determine whether condition was present on admission or not.	1	Diagnosis present at admission.
E - Unreported/Not used	Exempt from POA reporting.	1	Diagnosis present at admission.
1 - Yes	Present at the time of inpatient admission.	1	Diagnosis present at admission.
0 - No	Not present at the time of inpatient admission.	0	Diagnosis not present at admission.
Blank	Missing	Blank	Missing

Building Instructions – Running the Software

This section includes screenshots of the software with helpful hints and background information under each screenshot. This will walk you through the process of loading your data, conducting analyses, and generating a Website.

NOTE: The building instructions use Maryland as an example State. These data do **NOT** reflect Maryland discharges – the discharge and hospital data have been randomly generated for testing purposes only.

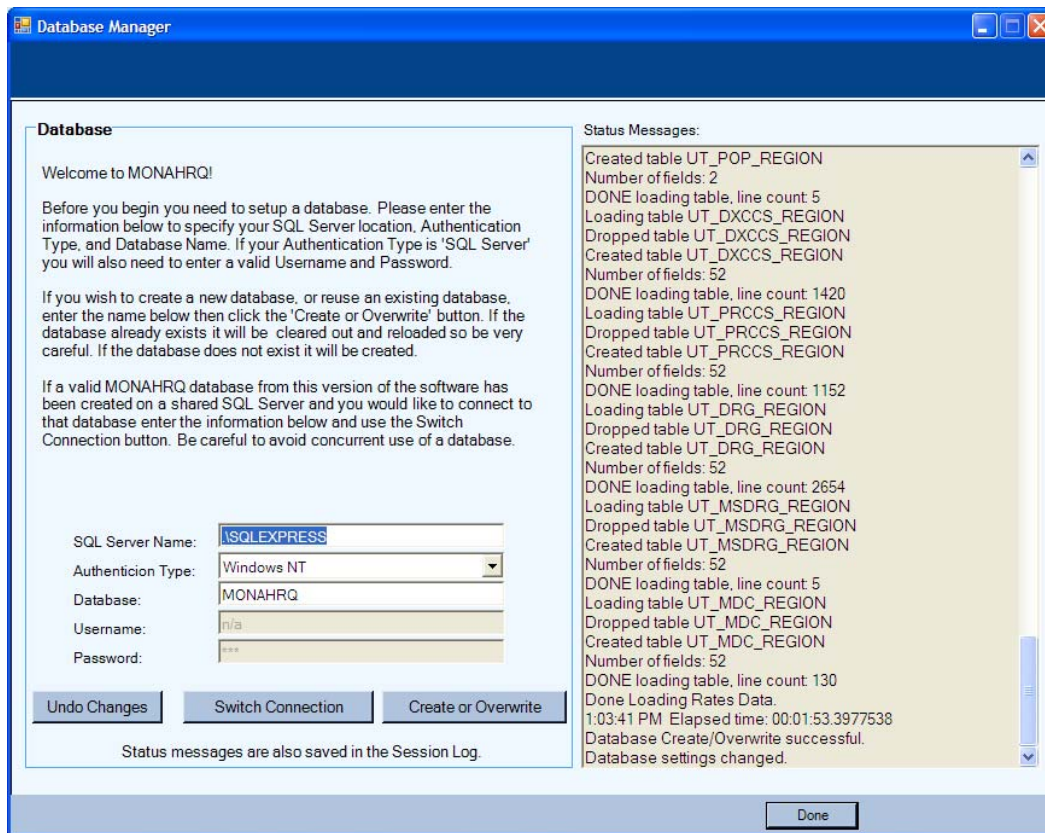
Screen 1 – AHRQ MONAHRQ Welcome Page



1. Once MONAHRQ has been loaded and the data have been prepared, you will be able to build the Website. On the first screen, select **View Session Log** before choosing an option on the Task Menu. This log will help you or MONAHRQ technical support identify any errors or problems you may have while creating the Website. Please note that you will not be able to access the log once the program, also called a wizard, starts.

Begin by viewing the log session and then select the **Database Manager**. You must identify or create a SQL database before beginning the data import process.

Screen 2 – Database Manager



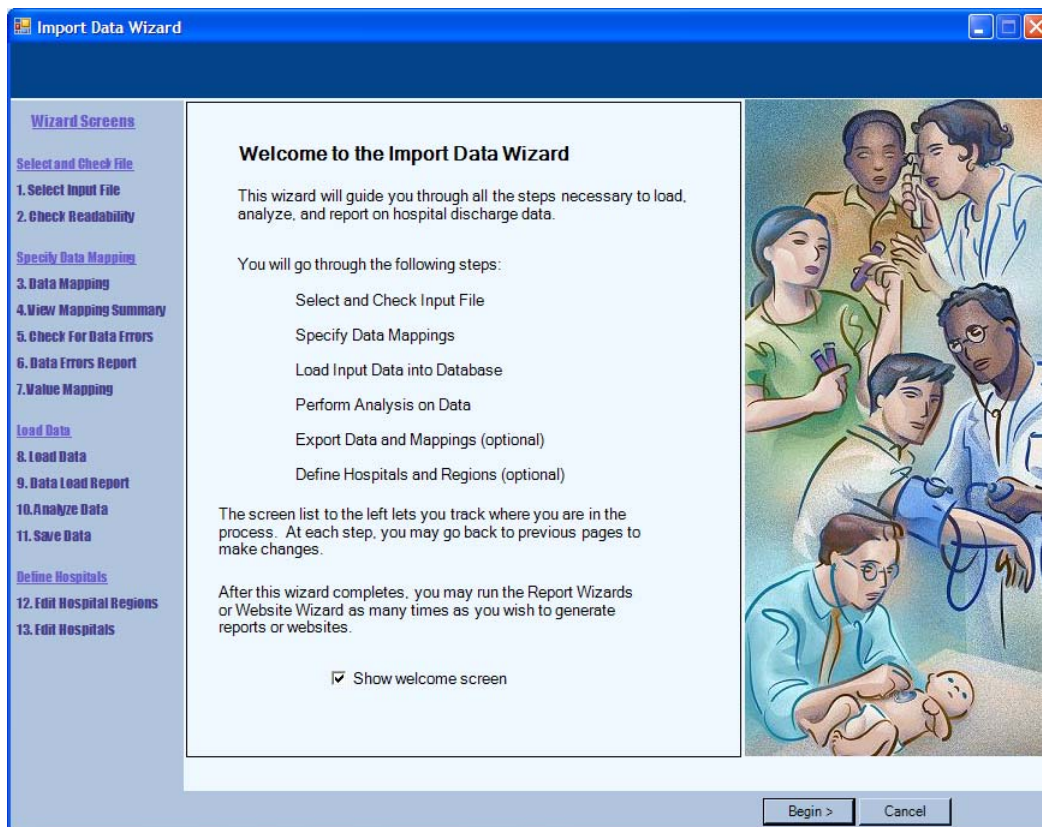
2. You must first create your MONAHRQ SQL database. If you are using SQL Express, the server name and authentication is pre-filled for you. If you are using SQL Server, you will need to alter the server name and enter a username and password.

Once you have provided the database information, select **Create or Overwrite** to create a new database. When the process has finished, you may select **Done**.

Each time you generate a different MONAHRQ Website that you would like to potentially alter at a later time, we suggest you create a new SQL database. For example, if you would like to create a MONAHRQ Website for 2006 and another Website for 2007, you would create distinct SQL databases (e.g., MONAHRQ_2006 and MONAHRQ_2007). When you would like to alter a previous Website, you will type in the name of the database and select **Switch Connection** and then **Done**.

Once you have created a database, you will return to the MONAHRQ Welcome Page and can select **Import Data** to continue. Follow the data steps in the order shown on the left side of the page. If you have a particularly large dataset with greater than 400 hospitals then you will need to select the Program Options before proceeding to the Import Data Wizard, screen 25 provides more detail.

Screen 3 – Import Data Wizard



3. This screen explains the Import Data process – select **Begin** to continue.

Screen 4 – Select Input File

Select Input File

Use the Browse button to locate the data file you want to import. It may be a text file of comma separated values (.csv), a MS Excel file (.xls), or a MS Access Database file (.mdb). You may also directly enter in the specific path to your data file and press TAB.

(Example: C:\data\mydatafile.xls)

Import Data File Options (Specific to File Type)

No File Selected

Data Mapping and Crosswalk

Data Layout Unknown [Edit Mapper Shortcuts](#)

Use Mapping File: [Browse...](#)

Skip validation and mapping screens (jump to Data Load)

< Back Next > Cancel

4. Select the **Browse** button to locate the discharge data file to be loaded. Once you have found the appropriate file, check an option in the **Import Data File Options (Specific to File Type)** box:

- If applicable, check **First row contains column headings**.
- If you are unsure of data format, check **Values are enclosed in quotes**.

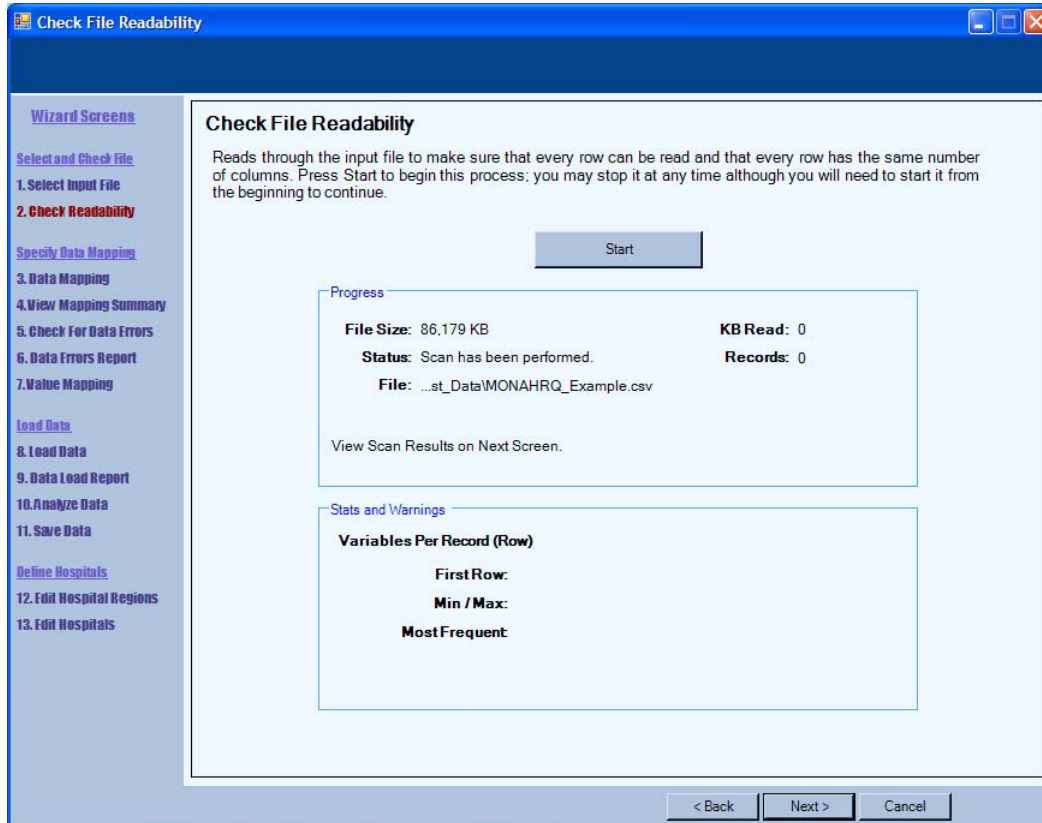
There are three types of files that MONAHRQ currently accepts: CSV, XLS (Excel), and MDB (MS Access). Users have experienced difficulty using Excel files due to how Excel handles character fields and leading zeroes; we recommend that you confirm that the Excel file has maintained the original data values before loading the file into MONAHRQ.

Then select an option in the **Data Mapping and Crosswalk** box:

- If this is the first time you are loading the data (i.e., you do not have a previously created data mapping file from MONAHRQ), select **Data Layout Unknown**.
- If you previously loaded your data and created a data mapping file in MONAHRQ, select **Browse** to locate the .qim mapping file.
 - If you are using a .qim file, you can check **Skip data validation and mapping screens**.

Once you have completed this page, select **Next**. You can return to the previous page by using the Back button, which appears on the bottom of this page and subsequent pages.

Screen 5 – Check File Readability



5. Select a file that contains one calendar year of administrative data. MONAHRQ only allows one calendar year of data to be analyzed at a time. If you have fiscal data that span two calendar years and would like to include all records in your analysis, the values in the source data for the variable **Year** will need to be manipulated before loading the data. You may alter the fiscal data to reflect either the later or former calendar year (e.g., 2006-2007 fiscal year data would need to be coded as either 2006 or 2007).

MONAHRQ will check to ensure that the data are legible and that each row has the same number of columns. On the Check File Readability screen, verify the file selection shown. If correct, select the **Start** button. The data will automatically start loading. You may select **Stop** to terminate the process (the Start button will change to Stop once the checking process begins).

When the check is complete, the **Status** message will read **Finished**.

Select **Next** to continue.

Screen 6 – Data Mapping

Data Mapping
Map as many MONAHRQ variables to input file variables as possible to optimize results.

Input File Variables <- Drag and Drop Variables **MONAHRQ Variables**

Input Variable (Column Number: Name)	Maps To MONAHRQ Variable
1: AGE	Age
2: AGEDAY	Age in Days
3: ASOURCE	Admission Source
4: ATYPE	Admission Type
5: AWEEKEND	
6: BWT	
7: DIED	
8: DISPUNIFORM	
9: DQTR	Discharge Quarter
10: DSHOSPID	
11: DX1	Principal Diagnosis
12: DX2	Diagnosis Code 2

Required

- Sex

Optional

- Key
- Patient State/County Code
- Hospital ID
- Discharge Disposition
- Point of Origin
- Days on Mech Ventilator
- Birth Weight Grams
- Diagnosis Code 10
- Diagnosis Code 11
- Diagnosis Code 12

Sample View of Input File Data

Age	Age in Da	Admissio	Admissio	- 5 -	- 6 -	- 7 -	- 8 -	Discharge	- 10 -	Princi
AGE	AGEDAY	ASOURC	ATYPE	AWEEKE	BWT	DIED	DISPUNI	DQTR	DSHOSP	DX1
66		5	3	1		0	6	1	123502	V584
78		1	1	0		0	6	1	123502	4280
44		1	1	0		0	1	1	123502	4111
95		1	1	0		0	6	1	123502	486

< Back Next > Cancel

6. Once the data have been loaded, you will be asked to map your dataset to the MONAHRQ variable names. MONAHRQ’s Crosswalk Screen (above) provides the opportunity to map your data elements to the data elements used in the software. While a sample of your dataset is provided on the screen, it is useful to either know your element names or have access to your data dictionary.

Drag and drop the **MONAHRQ Variable** boxes to the **Input Variable** columns (right to left). All of the required MONAHRQ variables must be linked to an input file variable. MONAHRQ will not run without all required variables. The optional fields are not required, but as many variables as possible should be mapped to optimize the output. MONAHRQ has been programmed to “automatically guess” some of the mapping options, so it is important that you check these to make sure they are correct.

Data elements in your discharge data that have the same name as MONAHRQ data elements will automatically be mapped for you. Variable names used in MONAHRQ are the same as those that appear in HCUP’s State Inpatient Databases (SID). If a variable is mapped incorrectly, simply drag the mapped variable to the correct input file element or drag it back to the MONAHRQ variable column on the right side of the screen.

Please refer to Tables 1 and 2 for a complete listing of variables names, descriptions, and coding. Note that Present on Admission (POA) is automatically mapped by MONAHRQ.

Once you have finished mapping elements, select **Next**.

Screen 7 – Variable Mapping

The screenshot shows the 'Data Mapping Quick Check' wizard window. The left sidebar lists 13 wizard screens, with '4. View Mapping Summary' selected. The main area displays a 'Summary of Variables' report. The report includes a summary of POA value mappings and a table of variables.

Summary of Variables
This report summarizes the Data Mapping between the input file and the MONAHRQ Dataset that you assigned on the previous screen. Certain variables are required to continue with the data analysis. See the Host User Guide for more detailed information.

Values for Present on Admission (POA) will be automatically mapped by MONAHRQ as follows:
"Y", "W", "E", or "1" map to "1" (Present);
"N", "U", or "0" map to "0" (Not Present);
A blank value maps to a blank value (Missing).
See the MONAHRQ User Guide for details.

Variables in Input File:	42
Input Variables Mapped to MONAHRQ Variables:	38
Unused Input Variables:	4
Unmapped Required MONAHRQ Variables:	0
Unmapped MONAHRQ Variable Warnings:	0

Variables

MONAHRQ Variable	Input Variable(column #)
Key	ID (41)
Age	AGE (1)
Age in Days	AGEDAY (2)
Race	RACE (39)
Sex	FEMALE (25)
Primary Payer	PAY1 (28)
Patient State/County Code	PSTCO2 (38)
Hospital ID	DSHOSPID (10)
Discharge Disposition	DISPUNIFORM (8)
Admission Type	ATYPE (4)
Admission Source	ASOURCE (3)
Point of Origin	PointOfOriginUB04 (37)
Length of Stay	LOS (26)
Discharge Year	YEAR (42)
Discharge Quarter	QTR (9)

Buttons at the bottom: Save Report, < Back, Next >, Cancel.

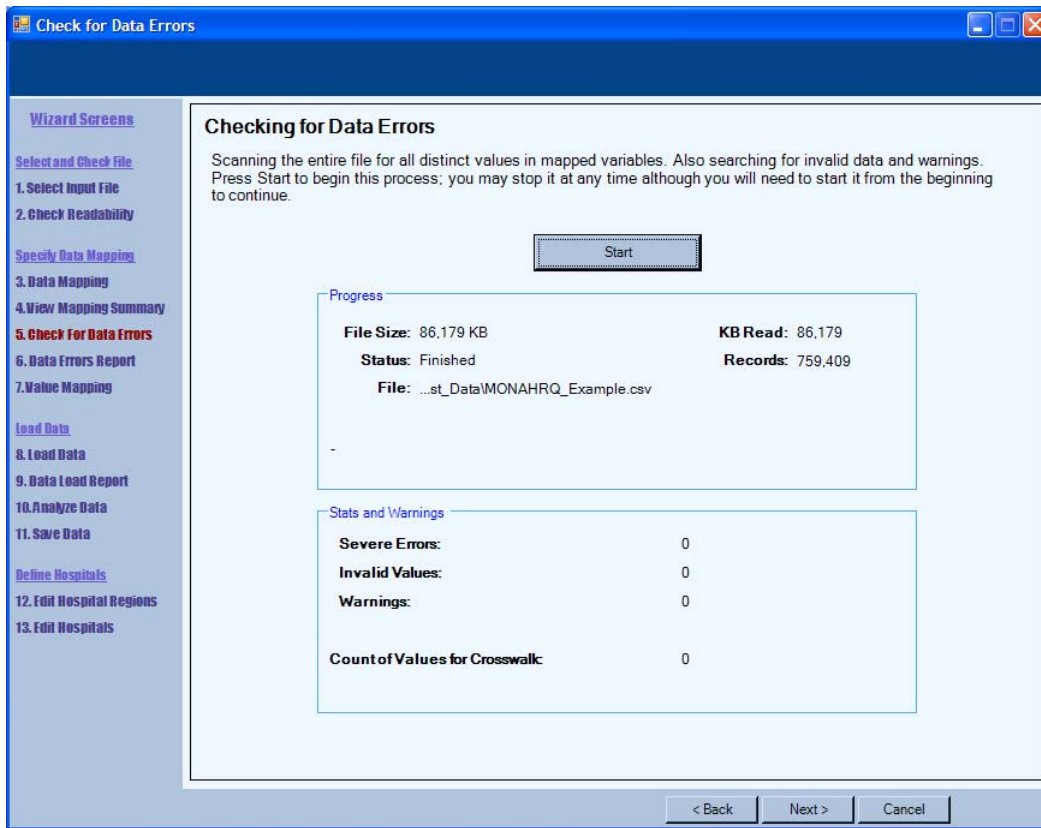
7. On the Summary of Variables screen, it is important to focus on the number of unmapped required variables. **Unmapped Required MONAHRQ Variables** should have a value of zero. If there was a data load error or if you did not crosswalk all of the required variables, it will be another number.

Once the Unmapped Required MONAHRQ Variables number is at zero and the number of variables in the input file match, you may select **Save Report** to create an .rtf file of information on the screen.

Note that the POA value mappings are provided on this screen.

Select **Next** to continue.

Screen 8 – Check for Data Errors

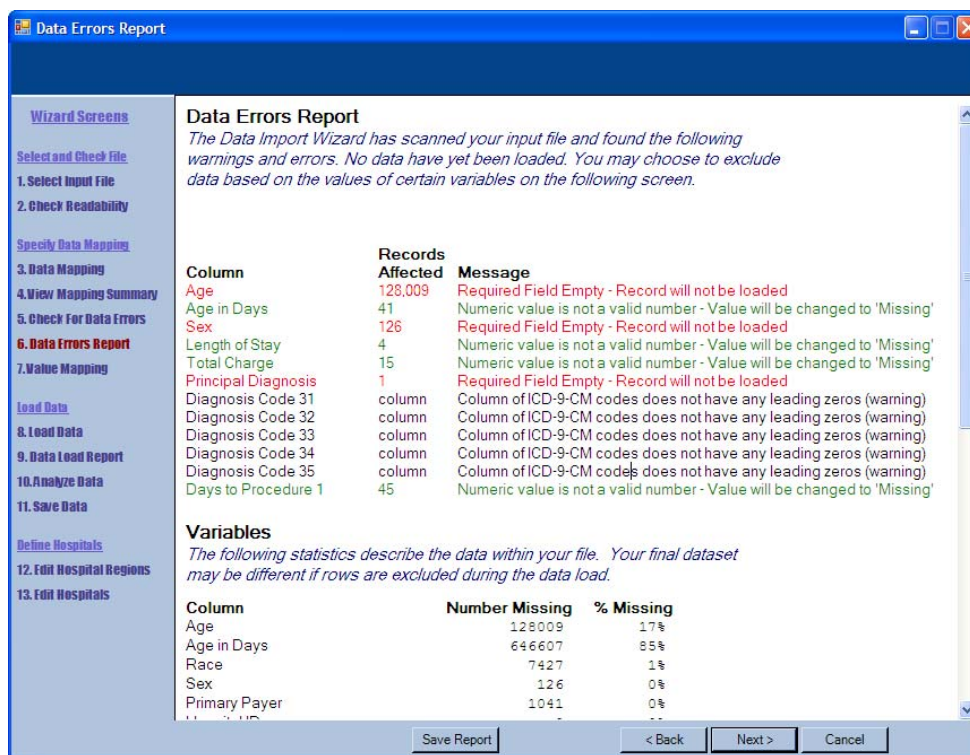


8. To check for errors within the mapped dataset, select the **Start** button. You may select **Stop** to terminate the process (the Start button will change to Stop once the checking process begins).

When the check is complete, **Status** changes to **Finished**.

Select **Next** to continue.

Screen 9 – Data Errors Report



9. The Data Errors Report will show the number of records affected by data errors. If a data error occurs in a required field and affects a large number of records in your data file, the Web pages produced may be incomplete.

Some errors may be acceptable. For example, if the **Age in Days** element is greater than 365, the software uses the **Age** variable. For other elements, the acceptability of an error is based on host user discretion, such as if the error only affects a small number of records or if it occurs in a variable that is not required for the analysis. Finally, some errors may require research and/or manipulation of the input data file. If you manipulate the input data file, you will need to start the data load from the beginning. Below are four common errors and guidelines on checking them:

1. **Required field empty – record will not be loaded.**
Verify that the count is a small percentage of your discharges. If the error affects a large number of records, make sure that the variable mapping was correct (use the Back button).
2. **Diagnosis Codes/Procedure Codes: Invalid value. Valid codes must be at least 3 characters.**
Verify that the count is a small percentage of your discharges and investigate the input data values. For example, how are missing values identified?
3. **Birth Weight Grams: Value less than 200.**
Value will be changed to 'Missing' and/or Value greater than 7,000.
4. **Age in Days: Age is greater than zero.**
Age in Days only applies for Age less than 1 year. If the value is greater than 365 days, it will be changed to 'Missing.'

To correct errors, use the **Back** button to return to the Data Mapping screen to review and correct the mapping of MONAHRQ variables to input file variables. Once the results are to your satisfaction, select **Save Report** if you would like to create an .rtf file of information on the screen.

Select **Next** to continue.

Screen 10 – Crosswalk Values

Crosswalk - Map Input Values to Value Meanings

The values of the following variables have specific meaning. Choose the description that indicates the meaning of each value in your input file.

Values for Present on Admission (POA) will be automatically mapped by MONAHRQ. See the Mapping Summary screen or the MONAHRQ User Guide for details.

Input: "ASOURCE" --> Dataset: "Admission Source"

Input Value	Count	Value Meaning	
	187509	0 : Missing	Indicators that rely on this field set to missing for these cases
1	263066	1 : ER	
2	30386	2 : Another hospital	
3	3925	3 : Another fac. incl. LTC	
4	866	4 : Court/Law enforcement	
5	273656	5 : Routine/Birth/Other	

Input: "ATYPE" --> Dataset: "Admission Type"

Input Value	Count	Value Meaning	
	793	0 : Missing	Indicators that rely on this field set to missing for these cases
A	1	0 : Missing	Indicators that rely on this field set to missing for these cases
1	368454	1 : Emergency	
2	128887	2 : Urgent	
3	155745	3 : Elective	
4	97274	4 : Newborn	
5	8254	5 : Trauma Center	

Input: "DISPUNIFORM" --> Dataset: "Discharge Disposition"

< Back Next > Cancel

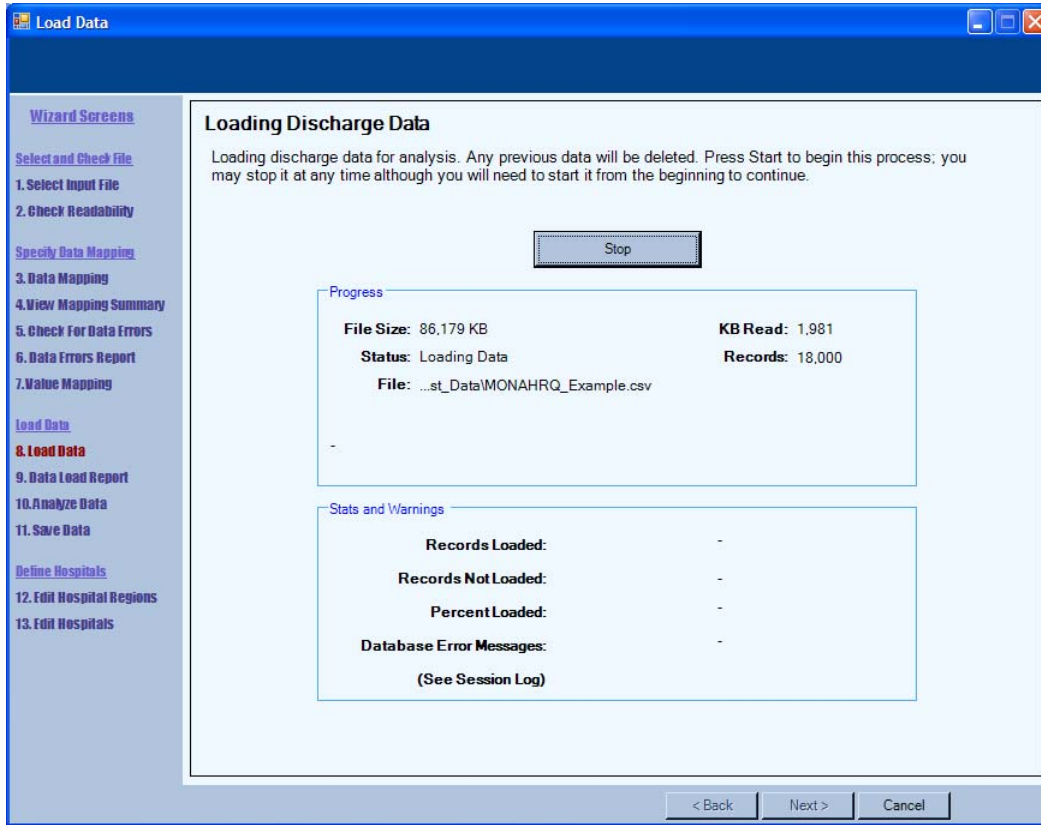
10. Once the data elements are loaded, the values for each element will need to be determined. Use your own data documentation to indicate the value label. We recommend that each input value be reviewed to ensure the correct value meaning was assigned to your data.

If your data are formatted in the HCUP standard or you have altered the data according to Table 1, the software will crosswalk values and meanings for you. You should still review the values and meanings for accuracy.

Please note that Present on Admission is automatically mapped by MONAHRQ. Refer to Table 2 for detailed coding information.

Once all variables have been coded, continue by selecting **Next**.

Screen 11 – Load Discharge Data



11. To begin loading your discharge data, select the **Start** button. You may select **Stop** to terminate the process (the Start button changes to Stop once the load process begins).

Depending on the number of records, the data load process can take a longer amount of time. When the loading process is complete, the **Status** changes to **Finished**.

Select **Next** to continue.

Screen 12 – Data Load Report

Data Load Report

Wizard Screens

- Select and Check File
 - 1. Select Input File
 - 2. Check Readability
- Specify Data Mapping
 - 3. Data Mapping
 - 4. View Mapping Summary
 - 5. Check For Data Errors
 - 6. Data Errors Report
 - 7. Value Mapping
- Load Data
 - 8. Load Data
 - 9. Data Load Report
 - 10. Analyze Data
 - 11. Save Data
- Define Hospitals
 - 12. Edit Hospital Regions
 - 13. Edit Hospitals

Data Load Summary

Data have been loaded from your input file and are ready for analysis. The following shows descriptive statistics for the loaded data. You may go back and change any of your data mapping and crosswalk options and reload the file to correct any errors.

Total Rows Loaded	366,325
Total Rows Excluded	393,083
Number of variables per record	42
Records with extra values (more than 42)	759,408

Record Warnings

Column	Records Affected	Message
Age	128,009	Required field empty - Rows not loaded
Race	2,851	Value mapped to null based on crosswalk (info)
Sex	265,073	Rows excluded because the value a crosswalk selection
Primary Payer	375	Value mapped to null based on crosswalk (info)
Admission Type	704	Value mapped to null based on crosswalk (info)
Admission Source	153,990	Value mapped to null based on crosswalk (info)
APR-DRG	49,867	Invalid discharge status (Grouper)
	100,826	Record does not meet criteria for any DRG (Grouper)
	19	Gestational age/birth weight conflict (Grouper)
	1,740	Invalid principal diagnosis (Grouper)
Total Charge	4	Numeric value is not a valid integer - changed to blank
Principal Diagnosis	1	Required field empty - Rows not loaded
Days to Procedure 1	22	Numeric value is not a valid integer - changed to blank

File Warnings

Column	Message
Diagnosis Code 31	Column of ICD-9-CM codes does not have any leading zeros (warning)
Diagnosis Code 32	Column of ICD-9-CM codes does not have any leading zeros (warning)
Diagnosis Code 33	Column of ICD-9-CM codes does not have any leading zeros (warning)
Diagnosis Code 34	Column of ICD-9-CM codes does not have any leading zeros (warning)
Diagnosis Code 35	Column of ICD-9-CM codes does not have any leading zeros (warning)

Save Report < Back Next > Cancel

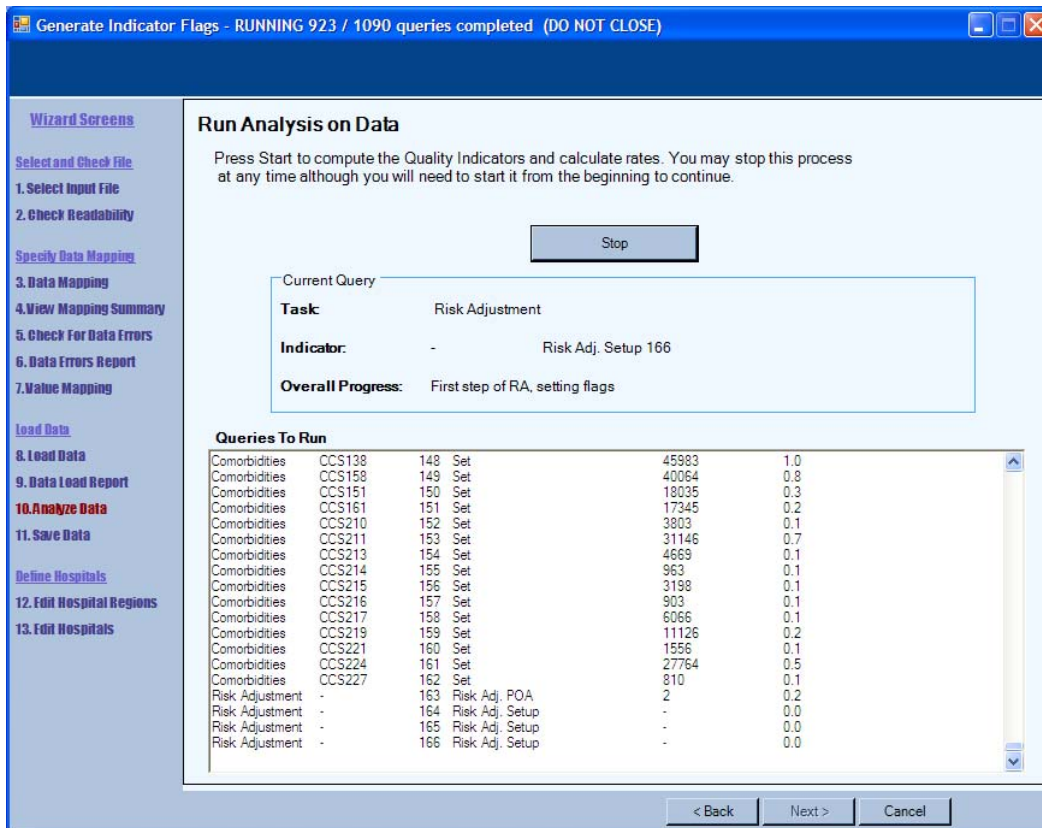
12. Once your data have finished loading, you will be taken to a **Data Load Summary** page. Warning messages are shown in red and green font and indicate inconsistencies with the loaded data that may affect the quality indicator calculations. To ensure that your data will load correctly, you'll need to review all messages in red.

In addition, the number of records with **Required field empty – Rows not loaded** should be low. If there are substantial amounts of missing data for any given (or combination of) variables, the overall number of discharges will decrease accordingly. For analyses with small populations, the results may be statistically unreliable.

Select **Save Report** to create an .rtf file of the Data Load Summary information.

Select **Next** to continue.

Screen 13 – Generate Indicator Flags

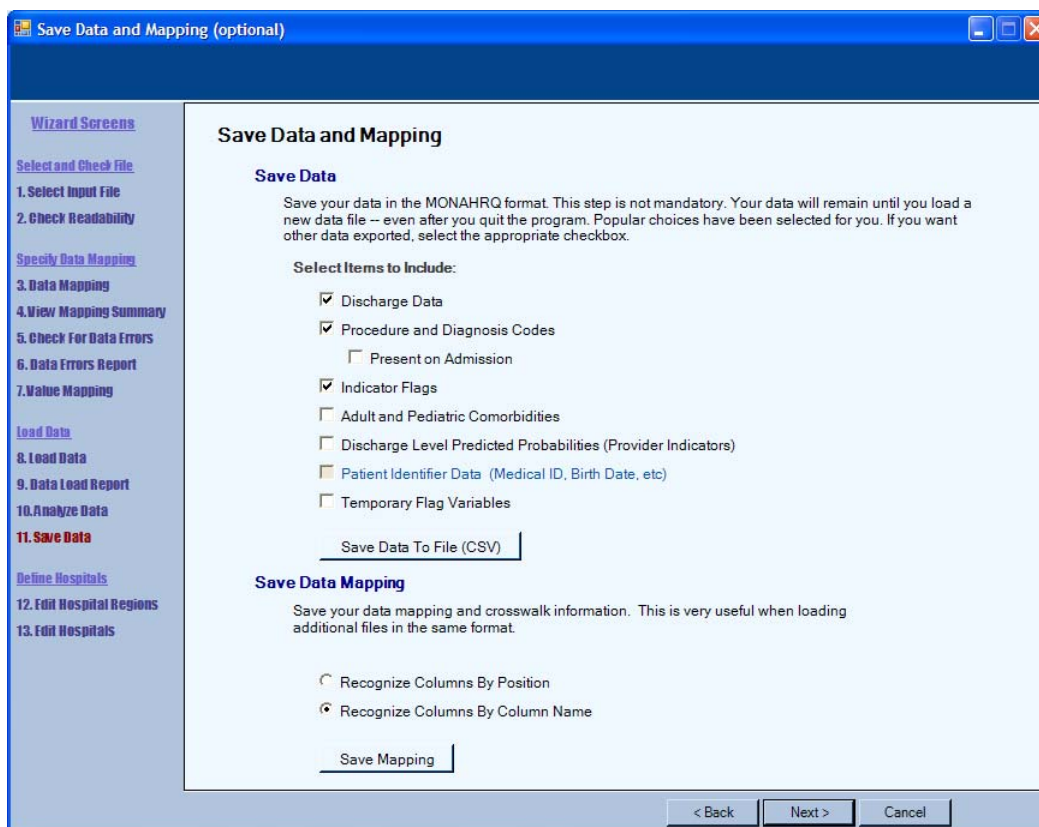


13. To run the analyses on loaded data, select the **Start** button. You may select **Stop** to terminate the process (the Start button will change to Stop once the load process begins).

Please note that the analyses may take a *significant* amount of time to run (this varies given the size of the input file – but it may be multiple hours). You may leave MONAHRQ running in the background of your computer and perform other tasks during this time. Certain queries (especially those related to the QI risk adjustment) may take more than an hour to process on a large dataset and it may falsely appear that the software has stalled. For most datasets, the analyses will run within 6-7 hours. If you have a large data set, it may take *25-30 hours* to run the analyses and compute the risk-adjustment. When the analyses are complete, the Overall Progress line will read “All 1090 queries completed.”

Select **Next** to continue.

Screen 14 – Save Data and Mapping



14. MONAHRQ allows users to save the data, but this step is not required. If you would like to save your MONAHRQ data in a comma-separated values (CSV) format for use outside the tool, select the variables you would like to include and select **Save Data To File (CSV)**. This dataset will contain the QI flags (a binary coding for each QI) that show if discharges were included or excluded from the specific measures. This can be particularly helpful if you are interested in exploring how the QIs are calculated and the criteria used for indicator inclusion by discharge.

Please note that MONAHRQ can only load data with fewer than 200 variables. If you are saving data for future use with MONAHRQ, it is recommended that you use the default options as shown. If you choose all checkbox options, the dataset created will have more variables than can be loaded in MONAHRQ.

If you would like to save your data variable and value mappings, select **Recognize Columns by Position** or **Recognize Columns by Column Name**. This will create a .qim file for future use with MONAHRQ. It is recommended that you use default options as shown above. When you have selected an option, select the **Save Mapping** button.

Select **Next** to continue.

Screen 15 – Define Hospital Groupings

Define Hospital Groupings

Hospitals can be grouped into regions by using the Dartmouth Atlas predefined Hospital Service Areas (HSAs) or the Health Referral Regions (HRRs), by grouping all into one region, or by custom regions you create manually. You may alter the list of Dartmouth HSAs or HRRs after you have chosen the grouping. Select your state and region method to begin.

Choose your state
Maryland

Use Dartmouth Atlas HRRs as Regions
 Use Dartmouth Atlas HSAs as Regions
 Group All Hospitals into One Region
 Manually Define Regions

Choosing a region method above will populate the right hand column below. If you choose to use HSAs or HRRs you can then exclude or select areas with the arrow buttons. If you choose to group all hospitals together you will get one region named All and all hospitals will be grouped into this region. If you choose manually defined regions you will get one region named Unknown (that will not be included in reports) and all hospitals will be grouped into this region. Use the text field to add regions to your desired list. You will use the next screen to assign hospitals into regions.

NOTE: Changing your state or region method will delete any previously defined regions!

Excluded Regions

Selected Regions
Unknown, XX

Select All Excluded Regions

Region Name:

Load Regions From File Add Named Region

Press the Control or Shift key and click to make multiple selections.

< Back Next > Cancel

15. Users may define hospital groupings by Dartmouth Atlas Hospital Service Areas (HSAs), Dartmouth Atlas Health Referral Regions (HRRs), by a single region, or by customized regions. Customized regions may be loaded from a CSV file or you may identify the custom regions by manually mapping hospitals to regions. Begin by selecting a State from the **Choose your state** dropdown box. Then select the button indicating how you would like to group hospitals into regions.

If you would like to manually define regions, type the name into the **Region Name** field and select **Add Named Region**. Repeat this process until all regions have been added. If you would like to remove a region after adding it, select the region and select the left arrow. If you chose to **Load Regions from File**, refer to Screen 15B for detailed instructions.

If you would like to learn more about Dartmouth Atlas HRRs or HSAs, visit <http://www.dartmouthatlas.org/>.

Select **Next** to continue.

Screen 15B – Define Hospital Groupings; Load Regions From a File

Load Regions Table

Use the browse feature to locate the regions file. This file must be a comma separated text file (.csv). (Example: c:\data\regions.csv)

Clear existing regions before loading file.

File Format

Regions must be on separate lines with region ID, region title, 2-letter state code, and active flag (Y/N) on each line. The title field must be enclosed in double-quotes if it can contain commas. All fields must be present.

Example

```
0, Unknown, XX, N
1, North, MN, Y
2, South, MN, Y
```

15B. If you chose to load your regions from a CSV formatted external file in **Screen 15**, you will be taken to this screen to load the file.

There are four fields on each line of the CSV file. The first field must be a number that is the Region ID. The next field is the title of the region and must be enclosed in double-quotes if commas appear in this field. The third field is the two-letter State code. The fourth field must be a Y or N to indicate if the region is *selected* for reporting. This last value can be changed on the **Website Builder Wizard**.

A checkbox allows the user to clear existing contents.

Select **Browse** to find the appropriate file and then select **Load File**.

Once this step is complete, select **Close**.

Screen 16 – Define Hospital Groupings

ID	Name	ZIP	County Name	Region	Discharges	Cost to Charge Ratio	CMS Provider ID
123456					8588	0.0000	
123457					10684	0.0000	
123458					8941	0.0000	
123459					2524	0.0000	
123460					969	0.0000	
123462					2856	0.0000	
123463					430	0.0000	
123464					16079	0.0000	
123465					14575	0.0000	
123466					10638	0.0000	
123467					3165	0.0000	
123469					36089	0.0000	
123470					20298	0.0000	
123471					2719	0.0000	
123472					3921	0.0000	
123473					18859	0.0000	
123474					6826	0.0000	
123475					12851	0.0000	
123476					17162	0.0000	
123477					35921	0.0000	
123478					12613	0.0000	
123479					20226	0.0000	
123480					25587	0.0000	

16. This screen allows you to alter the hospital assignment to region. If you chose Dartmouth HSAs or HRRs (as in the above screen), the hospital will already be assigned to a region; however, you may reassign to a different region if you would like. If you chose to load custom regions (manually or with a file), you may use the **Region** dropdown box to assign each hospital to a region. The **County Name** and **Region** dropdown boxes are pre-filled; all you need to do is select your mapping choice. You may also edit the hospital **Name** and **Zip Code**.

You may assign a Centers for Medicare & Medicaid Services (CMS) provider ID manually (or by using the option to load from a hospital file), which will allow you to assign the all-payer (based on HCUP methodology) cost-to-charge ratios using CMS data from the Medicare Cost Reports. Once the CMS provider ID has been provided, select the **Assign Cost to Charge Ratio** button. We strongly suggest that you review the assigned cost-to-charge ratios and make any appropriate adjustments – these ratios do not limit the range of acceptable values. A ratio of zero (0) will be treated as missing on the Web pages. Alternatively, you may manually (or by using the option to load from a hospital file) assign custom cost-to-charge ratios. In the **Website Wizard**, you will select to display costs or charges as available in the Web pages.

If you would like to randomly assign a masked hospital name, select **Mask Hospital Names** – this option will reassign all hospitals to a blinded or masked name (e.g., Hospital 1, Hospital 2). If you would like to unmask, select **Unmask Hospital Names** (which will appear once you have chosen to mask). Select **Display Hospital List** for a crosswalk of the original hospital names and the masked hospital names. You may want to print this list for future reference or to provide limited access to the MONAHRQ-generated Website.

As an alternative, you may load hospital data from a previously created external file that maps the hospital identifier in the discharge data to hospital demographic data. If possible, load the information from a CSV file that lists the Hospital ID, FIPS county code, hospital name, ZIP Code, cost-to-charge ratio (if desired), region (if desired), and CMS provider ID (if desired). The Dartmouth Atlas HSAs will automatically assign county names and regions. To do so, select the **Load From File** button at the bottom of the screen. A window will pop up as shown on **16B**.

Once you have finished altering this page, select **Save** to continue.

Screen 16B – Define Hospital Groupings; Load From a File

Load Hospital Table

Use the browse feature to locate the hospital information file. This file must be a text file with comma separated values (.csv). (Example: C:\data\hospital_info.csv)

Options

Overwrite existing hospital table entries.

Cleanup hospital table. (Remove entries with 0 discharges.)

File Format

Hospitals must be on separate lines with these fields on each line: hospital ID, FIPS county code, hospital name, ZIP code, cost to charge ratio, region code, and CMS provider ID. The name field must be enclosed in double-quotes if it can contain commas. Cost to charge ratio, region code, and CMS provider ID are optional. Include commas for missing fields.

Example

```
VA10322,51013,General Hospital,22201,0.88,1,2088902
VA10333A,51013,"Arlington Med Ctr, Wing A",22002,,1,208890
```

16B. Once the hospital groupings have been defined, the Load Hospital Table screen will appear. This section provides host users the opportunity to apply demographics to each hospital in the data, such as facility names, counties, ZIP Codes, cost-to-charge ratios, CMS provider ID, or regions. Information must be in a CSV-formatted file. Select the **Browse** button to locate the hospital file to be loaded.

Detailed instructions for the CSV file format are provided on the software screen.

Select options on how to load the file. We recommend always checking the **Overwrite existing hospital table entries** box. Overwriting is important if you are loading a hospital table for a different dataset where the hospitals may be different.

If you would like to use all hospitals in your dataset, select Load entire file, including those with 0 discharges. If you prefer to only include hospitals with discharges, choose **Cleanup hospital table**.

Once this step is complete select **Load File**. You will get a message listing the number of records loaded. Then choose **Close** to return to the previous screen, where data will be loaded automatically.

Screen 16C – Define Hospital Groupings; Return to Edit Hospital Table

ID	Name	ZIP	County Name	Region	Discharges	Cost to Charge Ratio	CMS Provider ID
123503	Hospital 1	21801	MD - Wicomico	Salisbury, MD	23062	0.0000	
123504	Hospital 9	21804	MD - Wicomico	Salisbury, MD	111	0.8491	210006
123502	Hospital 39	21740	MD - Washington	Washington, DC	18480	0.6181	210054
123498	Hospital 6	21601	MD - Talbot	Baltimore, MD	10464	0.6951	210038
123506	Hospital 14	21817	MD - Somerset	Salisbury, MD	131	0.8474	210048
123457	Hospital 35	20650	MD - St. Mary's	Washington, DC	10684	0.9013	210035
123459	Hospital 16	20706	MD - Prince George'	Takoma Park, MD	2524	0.6530	210013
123463	Hospital 23	20744	MD - Prince George'	Washington, DC	439	0.0000	
123462	Hospital 28	20735	MD - Prince George'	Washington, DC	2856	0.0000	
123464	Hospital 32	20785	MD - Prince George'	Takoma Park, MD	16079	0.8242	210004
123460	Hospital 8	20707	MD - Prince George'	Takoma Park, MD	969	0.8071	210060
123466	Hospital 13	20832	MD - Montgomery	Takoma Park, MD	10638	0.7749	210023
123465	Hospital 15	20814	MD - Montgomery	Washington, DC	14575	0.7481	210028
123469	Hospital 40	20910	MD - Montgomery	Takoma Park, MD	36089	0.7927	210017
123467	Hospital 46	20850	MD - Montgomery	Washington, DC	3165	0.7311	210015
123470	Hospital 47	20912	MD - Montgomery	Takoma Park, MD	20298	0.8194	210032
123500	Hospital 11	21620	MD - Kent	Baltimore, MD	3855	0.8184	210018
123472	Hospital 31	21044	MD - Howard	Baltimore, MD	3921	0.7613	210024
123474	Hospital 21	21078	MD - Harford	Baltimore, MD	6926	0.7138	210025
123471	Hospital 7	21014	MD - Harford	Baltimore, MD	2719	0.7935	210011
123497	Hospital 19	21560	MD - Garrett	Morgantown, WV	3067	0.8899	210012
123501	Hospital 34	21701	MD - Frederick	Washington, DC	19650	0.8564	210029
123499	Hospital 27	21613	MD - Dorchester	Salisbury, MD	3410	0.8303	210051

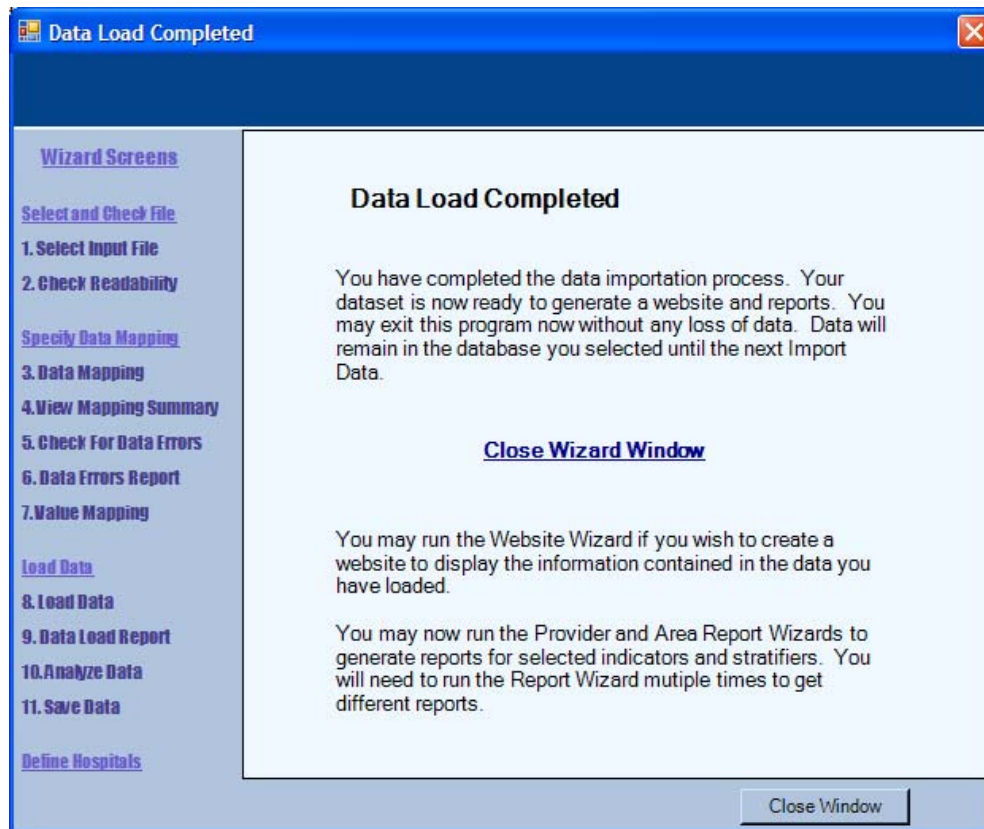
16C. Once you have loaded the hospital demographics from a file, you will return to the Edit Hospital Table. This table will now have the information from the loaded file prefilled. You may edit the facility name, ZIP Code, cost-to-charge ratios, and CMS provider ID. We recommend that you review the county and region assignment for accuracy; some users prefer to slightly alter the assignments.

You may assign a CMS provider ID manually, which will allow you to assign the all-payer (based on HCUP methodology) cost-to-charge ratios using CMS data from the Medicare Cost Reports. Once the CMS provider ID has been provided, select the **Assign Cost to Charge Ratio** button. We strongly suggest that you review the assigned cost-to-charge ratios and make any appropriate adjustments – these ratios do not limit the range of acceptable values. A ratio of zero (0) will be treated as missing on the Website. Alternatively, you may manually (or by using the option to load from a hospital file) assign custom cost-to-charge ratios. In the **Website Wizard**, you will select to display costs or charges as available in the Web pages.

If you would like to randomly assign a masked hospital name, select **Mask Hospital Names** – this option will reassign all hospitals to a blinded or masked name (e.g., Hospital 1, Hospital 2). If you would like to unmask, select **Unmask Hospital Names** (which will appear once you have chosen to mask). Select **Display Hospital List** for a crosswalk of the original hospital names and the masked hospital names. You may want to print this list for future reference or to provide limited access to the MONAHRQ-generated Website.

Once you have finished altering this page then select **Next** to continue.

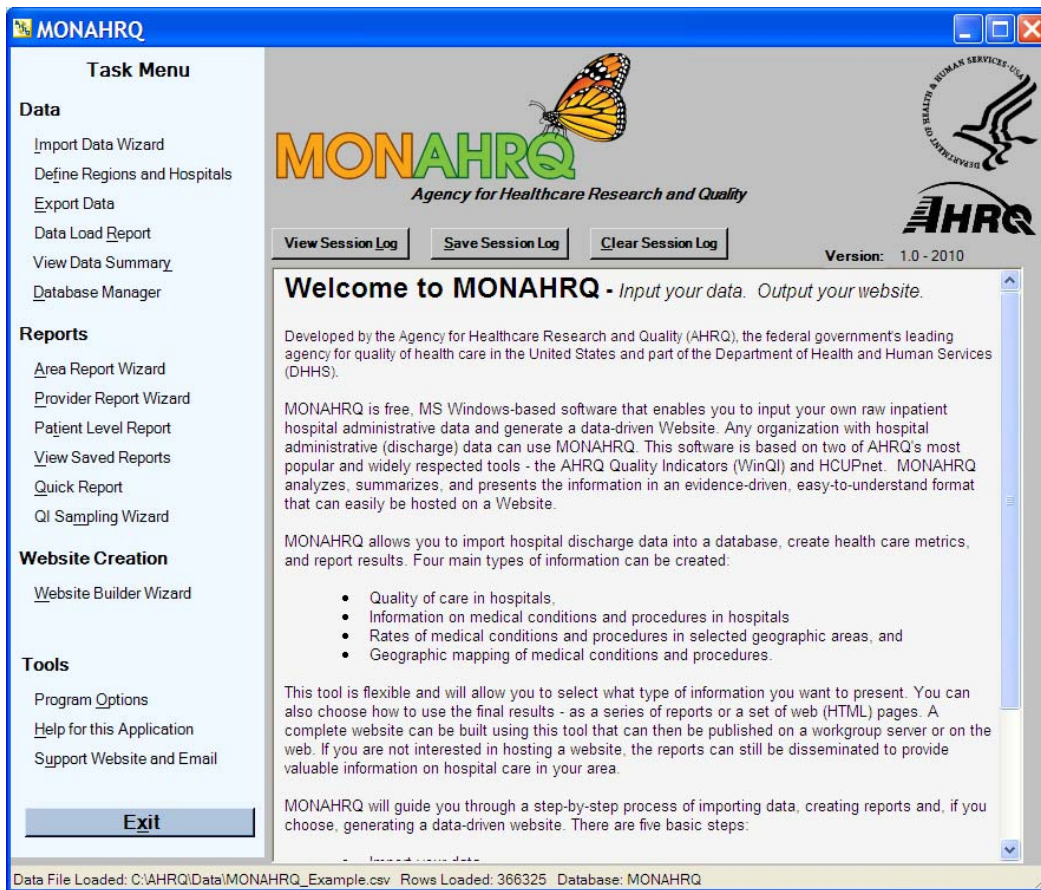
Screen 17 – Data Load Completed



17. Once the data load process is complete, a notification screen will appear.

To continue, select **Close Window**.

Screen 18 – AHRQ MONAHRQ

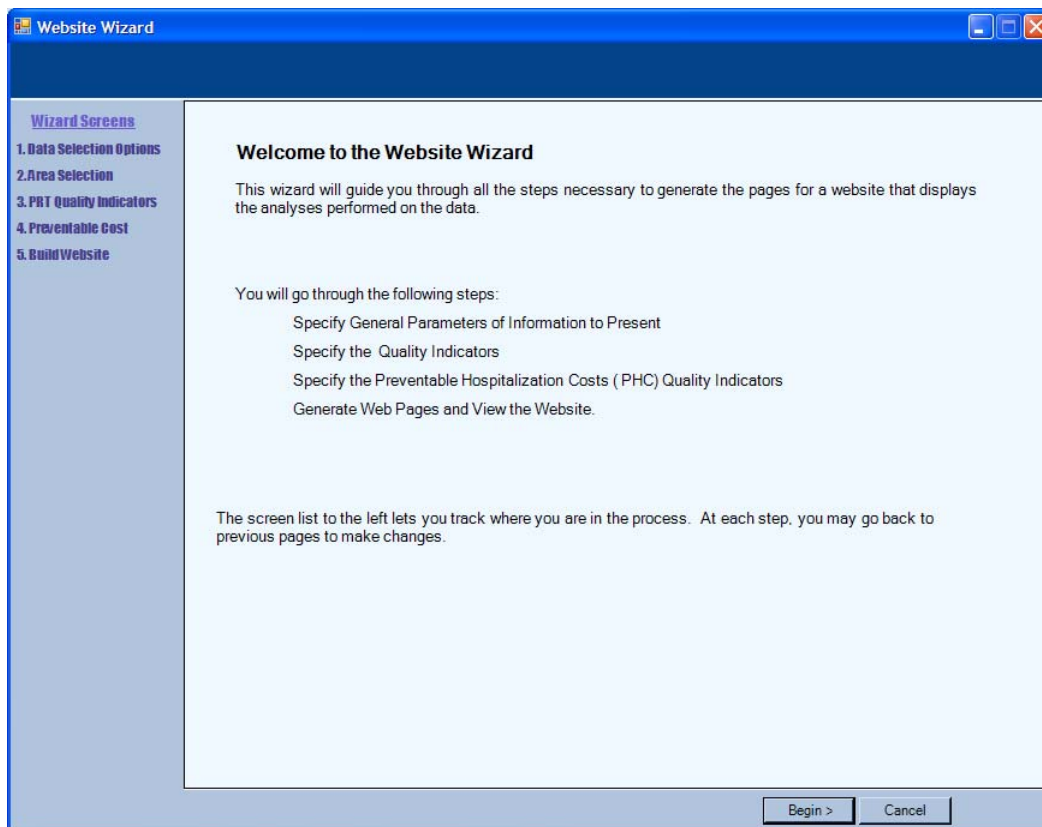


18. After you have completed the data load and analysis process, you will return to the MONAHRQ home screen. From this screen, you may choose to generate a Website or reports.

The reports are those found in the AHRQ WinQI software. For more information about the WinQI reports, please visit: <http://www.qualityindicators.ahrq.gov/software.htm>.

The following screens will show you the process for creating a MONAHRQ Website. Select **Website Builder Wizard** on the left hand side of the page to continue.

Screen 19 – Welcome Screen



19. The Website Wizard Welcome screen briefly outlines the process of building your MONAHRQ Website.

Select **Begin** to continue.

Screen 20 – Data Selection Options

Website Wizard

Wizard Screens

- 1. Data Selection Options
- 2. Area Selection
- 3. PRT Quality Indicators
- 4. Preventable Cost
- 5. Build Website

Set General Parameters of Information to Present on Website

MD State (Use for area level reporting.)

2006 Year (Reference data year.)

Select the denominator you would like to use in the prevalence of diseases and procedures rates.

1,000 10,000 100,000

Discharge Display Suppression Threshold (Enter zero (0) to disable display suppression.)

Cost to Charge Ratios on Edit Hospital Screen Are Valid

Show Charges

Show Costs

Enter a phrase to describe the timeframe of your data to appear on reports. For calendar year 2006 this would be "in 2006". It may also be a specific date range like "from June 1, 2006 through May 31, 2007".

in 2006

Regions defined for your data

Region ID	Region Title	Selected*
112	Wilmington	Y
113	Washington	Y
223	Baltimore	Y
225	Salisbury	Y
226	Takoma Park	Y
445	Morgantown	Y

* Change Selected value to 'N' to remove regions from web pages.

< Back Next > Cancel

20. On the Data Selection Options screen, you will make several selections that will affect the generated Web pages.

First, you should select a State and year for reporting. If you would like to report on discharges that reside (based on the Patient State County Code, PSTCO, data element) in a different State, you should select **Other** as your State. This selection will allow you to analyze any border crossings that occur within your dataset and report those findings in the Website; if you would like to restrict reporting to one State (based on PSTCO), you should select the appropriate State.

You should enter a phrase to describe the year of data analyzed by MONAHRQ (e.g., in 2006, from June 2006 to May 2007). This phrase will appear throughout the generated Website.

If you would like to suppress small discharge cell sizes or hospital display thresholds, you may enter the threshold number (e.g., enter 15 in the discharge display to suppress any discharge cell sizes with 15 or fewer cases).

You may select the denominator you would like to use in the rates and utilization pathways as 1,000, 10,000, or 100,000. It may be more appropriate to use larger denominators for larger datasets.

If you either loaded custom cost-to-charge ratios or used the embedded CMS-based cost-to-charge ratios, you should select that the ratios are valid. You may then choose to display costs or charges on the generated Web pages.

You may also remove regions from the Web pages by changing the value in the **Selected** column from **Y** to **N**.

Select **Next** to continue.

Screen 21 –Quality Indicators

The screenshot shows a window titled "Website Wizard" with a sidebar on the left and a main content area. The sidebar lists "Wizard Screens" with five numbered options: 1. Data Selection Options, 2. Area Selection, 3. PRT Quality Indicators (highlighted in red), 4. Preventable Cost, and 5. Build Website. The main content area is titled "Select Public Reporting Template Health Topics and Quality Indicators". It features a horizontal menu with tabs for "Other Operations", "Operation Complications", "Medical Complications", "Heart", "Childbirth", "Hip", "Brain+Nervous System", "Esophagus+Pancreas", and "Other Conditions". Below the menu, five quality indicators are listed, each with a checked checkbox: "Death rate for heart attack patients", "Death rate for patients with congestive heart failure*", "Death rate for patient having a coronary artery bypass graft (CABG)", "Death rate for patient having a percutaneous transluminal coronary angioplasty (PTCA)", and "Rate of cardiac catheterization procedures on both sides of the heart*". At the bottom of the main area, there is a note: "*These indicators are endorsed by the National Quality Forum (NQF). Visit [www.qualityforum.org](\"http://www.qualityforum.org\") to learn more. Note: This version of MONAHRQ does not include all quality indicators. A future release of MONAHRQ will include the remaining quality indicators." Below the note are three buttons: "< Back", "Next >", and "Cancel".

21. This screen provides you with topics from the **AHRQ Public Reporting Template and Quality Indicators**. All of the indicators for each topic are preselected. Remove the check from the box for indicators you **do not** wish to show on your MONAHRQ Website. All items endorsed by the National Quality Forum (NQF) are marked (*). You can learn more about the AHRQ Public Reporting Template and Quality Indicators development by reviewing the memo provided by Shoshanna Sofaer in this user guide.

Select **Next** to continue.

Screen 22 – Preventable Costs

The screenshot shows a software window titled "Select Potentially Avoidable Hospitalizations". On the left is a "Wizard Screens" sidebar with five steps: 1. Data Selection Options, 2. Area Selection, 3. PBT Quality Indicators, 4. Preventable Cost (highlighted in red), and 5. Build Website. The main area has tabs for "All Indicators", "By Condition", "By Demographic", "By Module", "By Procedure Type", and "Composites". The "All Indicators" tab is active, showing a list of three items, each with a checked checkbox: "All Inpatient Quality Indicators", "All Prevention Quality Indicators", and "All Patient Safety Indicators". At the bottom, a note states: "These indicators are endorsed by the National Quality Forum (NQF). Visit www.qualityforum.org to learn more." Below this, it says "28 Area Level Indicators Selected" and "Clear All". A red note at the bottom reads: "Note: This version of MONAHRQ does not include all quality indicators. A future release of MONAHRQ will include the remaining quality indicators." Navigation buttons at the bottom are "< Back", "Next >", and "Cancel".

22. This screen provides a set of tabs for reporting **Potentially Preventable Hospitalization Information** in the Website for each indicator. All of the items are preselected. Remove the check from the box for indicators you **do not** wish to show on your MONAHRQ Website. All items endorsed by the National Quality Forum (NQF) are marked (*).

Select **Next** to continue.

Screen 23 – Build Website – Generate Web Pages

The screenshot shows the 'Generate Web Pages' window. On the left, a sidebar lists 'Wizard Screens' with steps 1 through 5, where '5. Build Website' is highlighted. The main area is titled 'Generate Web Pages'. It features a 'Target Folder' field with a 'Browse...' button. Below this is the 'Pages To Generate' section, which includes checkboxes for 'Home Pages', 'Create Images Folder', 'Utilization and Rates Pages', 'Compute Medians (Very Time Consuming)', 'Quality Indicators Pages', and 'PHC Maps'. A 'Set QI Benchmarks' button is located next to the 'Quality Indicators Pages' checkbox. The 'Web Page Options' section contains a font dropdown menu set to '1. All sans-serif font', radio buttons for 'Fixed Size Page - Centered' (selected) and 'Fluid Page', and a 'Show Style Models' button. To the right is the 'Web Color Chart' section, which includes color pickers for 'Page background color' (hex #FFFFFFC6), 'Banner background color' (hex #5D88C7), 'Banner text color' (black), and 'Sidebar background color'. A note below this section states: 'Leave sidebar background color blank to use default graphic background.' Below the color chart are input fields for 'Entity Name in Site Header', 'Browser Title', and 'Logo Image' (with a 'Browse...' button), and a numeric input for 'Image Size - Height' (112) and 'Width' (127). At the bottom is the 'Area Description' field with a note: 'Include any preposition, for example: "in My-State"'. The bottom of the window features a 'Progress Status' field, 'Show Site' and 'Create Pages' buttons, and '< Back' and 'Done' buttons.

23. The Generate Web Pages screen allows you to choose the look and feel of your MONAHRQ-generated Website. To begin, select the **Browse** button to locate the folder to store the Web pages once produced.

Next, check the pages you would like to have included on your Website in the **Pages To Generate** section. If you generate utilization and rates pages, you may choose to compute the medians by checking the **Compute Medians** box. Note that the median computing process may take some time to complete (this option may increase processing time by 50%).

MONAHRQ will use default settings for the QI benchmarks. The default setting is to use the input file average to classify hospitals as better than average or worse than average (this classification includes a basic significance test). If you use the default benchmarks, the **Area Description** you provide on this screen will be used to describe the data. You may choose to use custom benchmarks by selecting the **Set QI Benchmarks** button. A window will pop up and allow you to set new benchmarks, as shown in 24).

If you want to change the default settings for the font, Web page colors, or page styles, you can choose new options in the **Style Sheet Options** section by using the dropdown box and selecting the button that corresponds to the desired layout. For examples of the possible layouts, select the **Show Style Models** button. The fluid style will adjust based on the web site user's computer settings and type of browser while the fixed style will remain more constant across different computers and browsers.

To change the color, select the **Color Chart** button for examples of the colors available. Cut and paste one of the codes, including the # symbol, into the color field box. Alternatively, you may use the color name that is shown beside the color swatch in the table below the color chart.

In the **Header and Footer Options section**, enter the name you would like to appear in the banner across the top of your page in the **Entity Name in Site Header**, and then enter the name you would like to appear in the browser in the **Browser Title** section.

Next, select the **Browse** button to locate a picture of a logo that you would like to appear. The program will use the default setting for **Logo Image** and **Image Size – Height**. The page can be customized by changing these settings. You may upload any image (png, jpg, bmp, or gif) and designate the desired size. Files that are not compatible will not show in banner/header.

The **Area Description Name** is inserted into the narrative text throughout the Web pages; type in the name that you would like to appear in the text.

The look of the pages can be tested by creating a shell of the Web pages before creating the content pages. This can be done by selecting the following checkboxes in the Pages To Generate section:

- Home Pages,
- Create Images Folder,
- Style Sheet, and
- Header and Footer.

This step will allow you to modify the Web page style without spending a lot of time generating QI result pages; simply return to this screen and alter your previous selection before regenerating the Website.

Once you have chosen the elements and design of your page, select **Create Pages**. This process may take a considerable amount of time—upwards of 1.5 hours, depending on the size of the dataset. You can monitor your status in the Progress Status box. When completed, the progress status of **All Pages Written** will appear.

If you would like to further customize the Website, you may alter the generated HTML pages. Introductory information is provided in Part III of this user guide.

Select **Show Site** to check the Website. You may review pages at any time by opening the **home.html** page in the directory where you saved the created Web pages. If you are using Internet Explorer, you will need to allow it to display blocked content.

Your MONAHRQ-generated Website has now been created.

Screen 24 – Set QI Benchmarks: Hospital Rates Benchmarks (optional)

Set Rate Benchmarks

Set Benchmarks for Hospital Rates

Set the benchmark values for each indicator here. You may use the predefined average value from the reference population, you may use the weighted average from your input data, or you may manually override the value here. The benchmarks will be used to classify each hospital. If you use a custom benchmark, the number you enter will be divided by the number in the "Rates Per" column when classifying each hospital. For example, if you enter a 20 for IQI 8 (esophageal resection mortality rate), 20/100 or .2 will be used as the benchmark comparison.

Benchmark/Reference Population Description:

Indicator	Rates Per	HCUP All-State Average	Input File Average	Custom Benchmark
All Indicators		<input type="radio"/> Use All	<input checked="" type="radio"/> Use All	<input type="radio"/> User Defined
IQI11-AAA repair mortalit...	100	4.890845	0	<input type="text" value="0"/>
IQI12-CABG mortality rate	100	2.928662	0	<input type="text" value="0"/>
IQI13-Craniotomy mortalit...	100	6.073791	0	<input type="text" value="0"/>
IQI14-Hip replacement mor...	100	0.1483274	0	<input type="text" value="0"/>
IQI15-Acute myocardial in...	100	6.872478	0	<input type="text" value="0"/>
IQI16-Congestive heart fa...	100	3.44607	0	<input type="text" value="0"/>
IQI17-Acute stroke mortal...	100	9.841038	0	<input type="text" value="0"/>
IQI18-Gastrointestinal (G...	100	2.400525	0	<input type="text" value="0"/>
IQI19-Hip fracture mortal...	100	2.915649	0	<input type="text" value="0"/>
IQI20-Pneumonia mortality...	100	4.091565	0	<input type="text" value="0"/>
IQI23-Laparoscopic cholec...	100	81.96555	0	<input type="text" value="0"/>

Buttons: Save, Cancel

24. The default QI benchmarks in MONAHRQ are the input file average. This number is used to classify hospitals as average, better than average, or worse than average. The QI input file averages are filled when you create pages (these analyses are conducted at that time). The benchmark population descriptor will, by default, be prefilled with the area descriptor you entered on screen 22; you may alter this text if you would like.

There are two other options for the QI benchmarks. You may use the HCUP All-State Average, which is based on HCUP data for nationwide comparisons. If you select the HCUP All-State Average, the benchmark population descriptor will be prefilled with this text (HCUP All-State Average); you may alter the text if you would like.

You may also manually provide custom benchmarks. If you use a custom benchmark, the number you enter will be divided by the number in the "Rates Per" column when classifying each hospital. For example, if you enter a 20 for IQI 8 (esophageal resection mortality rate), 20/100 or .2 will be used as the benchmark comparison. If you provide custom benchmarks, you will need to provide a benchmark population descriptor. This descriptor is used in the Web pages to describe the reference population.

Once you have entered your new benchmarks, select **Save** to return to screen 23 and create your Website.

Screen 25 – Program Options (optional)

Logging

Disable Save Session Log to Log File if you do not want session log messages written to the Log File.

Changing the active Log File name will switch files.

This setting remains in effect when you end this program.

Save Session Log to Log File Select File

Log File:

Maximum log file size (at program start):

Error messages to print per column:

Total error messages to log:

Frequency of "rows loaded" messages:

Log report generation queries. (not recommended)

Log Verbosely (for trouble shooting)

Text Files

Column Separator Character

Hospitals

Maximum Number of Hospitals for Report Selection

Performance

		Default
Indicator Flag Query Timeout:	<input type="text" value="43200"/>	43200
Short Query Timeout:	<input type="text" value="60"/>	60
Long Query Timeout:	<input type="text" value="600"/>	600
Max Rows in Readability Check:	<input type="text" value="0"/>	no max (0)

You should use the default values unless advised to edit these timeouts by a Support Team member.

APR(tm) DRG

Birth Weight Option for Grouper

Global Settings

Readability scan of input file has been performed.

Error scan of input file has been performed.

Load of input file has been performed.

Run of analysis queries has not been performed.

Save Cancel

25. The Program Options in MONAHRQ are set based on a typical State's dataset. If your dataset has greater than 600 hospitals then the Maximum number of hospitals should be increased. If the dataset is quite large then the analyses and queries may need additional time to compute. Under the **Performance** section, you can increase these defaults.

The Logging section allows you to automatically save the session or log file.

Once you have finished altering the program options, select **Save** to return to the main MONAHRQ screen and proceed to the Import Data Wizard (screen 3).

PART III: CUSTOMIZING WEB PAGES: INFORMATION FOR A WEBMASTER

Many host users may want a more customized MONAHRQ Website than is possible using the basic functions included in the software. This section details the architecture of the MONAHRQ-generated Website and provides a few helpful hints for organizations wanting to enhance the customization of the Website. The first step is to identify a Webmaster within the organization; this is typically the person responsible for creating and maintaining Websites. This section will provide a base knowledge of the Website, allowing a Webmaster to further customize the MONAHRQ-generated pages.

Introduction to MONAHRQ Website Architecture

There are two basic types of pages, *navigation* and *content*. The *navigation* pages allow the Website user to go down the different paths that lead to the different types of *content* pages. The navigation pages start with the *home* page, which provides links to the pages for the four main paths. The navigation pages are created from templates that contain the static text and images of the pages, as well as *tags* for dynamic elements. The pages are converted into the final navigation pages by replacing the tags for the dynamic elements of the pages with the appropriate element. The content pages have no templates; they are created from scratch as they contain few images and little static text (these pages contain mostly tables of data).

Under the *Website Root* are three folders (*images*, *qual*, and *util*) and a set of files with extensions .html, .css, and .js. The .html files are the navigation pages and the .css and .js files are the building blocks for both content and navigation pages (discussed further below). All content pages live in content folders three levels down from the *Website Root*. Content is broken down into two main categories - quality (*qual*) and utilization/rates (*util*) with each of these further divided into two more levels.

Folder Structure of the Website

Website Root = the target folder from the MONAHRQ Website Wizard

- Navigation Pages and Building Blocks (created from templates)
- **images** = folder for graphics used on the site
- **qual** = high-level folder for quality content pages
 - **det** = midlevel folder for quality detail pages
 - **reg = content pages by region**
 - **PHC** = midlevel folder for Preventable Hospitalization Maps
 - **maps = content pages with PHC map images**
 - **PRT** = midlevel folder for Public Reporting Template content pages for hospital compare tables and bar charts.
 - **reg = content pages by region**
- **util** = high-level folder for utilization and rates content pages
 - **rav** = midlevel folder for rates and volumes pages
 - **agg** = content-level folder for aggregate detail pages
 - **cnty** = content-level folder for county detail pages
 - **cnty*** = content-level folders for county by code detail pages
 - **std** = midlevel folder for standard utilization pages
 - **agg** = content-level folder for aggregate detail pages
 - **hosp*** = content-level folders for hospital detail pages
 - **reg*** = content-level folders for regional detail pages

It is important for all content pages to exist at a consistent folder depth so that they have homogeneous callouts to the building blocks. Editing the content pages should never be necessary; therefore, all edits should be limited to files in the *Website Root*. The following is a list of the major navigation pages:

- home.html – the home page for the Website with links to the four main paths.
- qualpath.html – the first page of the Quality path.

- PHCMaps.html – the only navigation page of the Preventable Hospitalization Costs path.
- ratespath.html – the first page of the Rates of Conditions path.
- utilpath.html – the first page of the Utilization path.
- definitions.html – the common definitions pagged referenced by other pages
- site.html – the site map page.

The building blocks for a MONAHRQ Website are cascading style sheets, JavaScript files, and a folder of images. All pages, whether *navigation* or *content*, use these building blocks. For navigation pages, the building blocks are called out from within their templates; for content pages, the callouts to the building blocks are created as the page is written. Navigation and content pages use different sets of building blocks. The table below shows this structure.

Table 3: Navigation and Content Page Structure

Navigation Pages		Content Pages	
main.css		control.css	Content.css
fixed.css	fluid.css		
JavaScripts: header0.js, footer0.js, sidebar.js		JavaScripts: Head.js, header.js, footer.js, sortable.js ,stripetable.js, noData.js	
images folder			

The main.css file holds the styling for navigation pages and is created from either the fixed.css or fluid.css template style sheets depending on the choices made within the Website Wizard. The content.css file holds the styling for content pages and is created from a template of the same name. The control.css file is used to make MONAHRQ data paths invisible if the host user does not generate those pages. It holds the styles for the home page and sidebar links. JavaScript is used to generate the common header and footer; however, navigation and content pages each have sets of these script files as the content differs.

These template versions of the building blocks are stored in the HTML folder under the application folder for MONAHRQ [C:\Program Files\AHRQ\MONAHRQ]. These are converted as needed and placed in the target folder when MONAHRQ creates a Website. Edit the navigation pages and building block files in the target Website root folder after the Website has been generated. Edits cannot be viewed in the HTML template until after the Website has been generated.

Adding/Removing Content

The page styling of MONAHRQ is done entirely in the main.css file. This is demonstrated when trying to view a page in the browser without style sheets. To change colors, fonts, bullet style, or widths make the changes in the main.css file. To change the actual content of a navigation page, edit the html file for that page (check page names in the browser's address bar). Common page elements such as the header and the footer are not stored in each page; they are stored in JavaScript files that are used by all pages. This makes editing these common elements much easier. To add some advanced content to the common page header, edit the file header0.js. Below is a printout of the top of the home page and the entire header0.js file. Note how the main.css style sheet is referenced and the header0.js file is called out.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 ...
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en"><head>
<title>Title for Web Browser</title>
<link rel="stylesheet" type="text/css" media="all" href="main.css" />
```

```
</head><body>
```

```
<div id="wrapper">
```

```
  <script language="JavaScript" type="text/JavaScript" src="header0.js"></script>
```

```
document.write('<div id="header"> <h1>State Healthcare Reform Agency</h1></div>');
```

Every navigation page starts with these same lines. The header on the navigation pages is just a division with one line of text. The background and size of the header is governed by a section in main.css that applies styles to #header. Here is that section of main.css.

```
#header {
    background: #DDDDDD;
    height: 40px;
    width: 888px;
    padding:0;
}
#header h1 {
    text-align: left;
    vertical-align: middle;
    color: black;
    font-family: Arial, Helvetica, sans-serif;
    font-size: 1.4em;
    font-weight: bold;
    margin: 0;
    line-height: 40px;
}
#header img {
    margin: 8px;
    background: transparent;
    float: right;
}
}
```

The styles above demonstrate that images can be added to the header and will be floated to the right end of the header. This can be done within MONAHRQ, but to add more than one image and to create a special layout for those images, edit both the header0.js and main.css files. Be sure to edit the header.js and content.css files used by content pages to keep the headers in sync. Remember that content pages are three directories below the navigation pages, so reference to elements such as images will need to include a relative path that looks like this: **../././images/**.

Another common customization is adding items to the sidebar menu. This is contained in the SideBar.html file. The menu is actually two unordered lists of hyperlinks, one list is for links within the Website and the other list is for related links. To add a link, just add a new list item with the desired text and link destination (URL). The following is an example where a Contact Us link has been added (in red text). You will need to regenerate all Web pages if you change the SideBar.html file since it is included verbatim in all Web pages with a sidebar menu. If you would like the sidebar to be dynamic, edit SideBar.html to have only a single line that calls the sidebar.js script (you will see a comment of how to do this on the last line of the SideBar.html file). You can then edit sidebar.js and the changes will be immediately shown. The sidebar.js JavaScript file is included with the system and it creates the same content as SideBar.html, but does it dynamically. You must edit SideBar.html before you generate Web pages.

```
<div id="sidebar">
```

```

<a href="#nonav" class="SkipLink">Skip Navigation Links</a>
<ul>
  <li id="InkH"><a id="home" href="home.html">Home</a></li>
  <li id="InkQ" class="Qlpath"><a href="qualpath.html">Quality Indicators</a></li>
  <li id="InkU" class="UTILpath"><a href="utilpath.html">Utilization Statistics</a></li>
  <li id="InkM" class="PHCpath"><a href="PHCmaps.html">Maps</a></li>
  <li id="InkR" class="RATESpath"><a href="ratespath.html">Rates</a></li>
  <li id="InkS"><a href="site.html">Site Map</a></li>
  <li id="InkD"><a href="definitions.html">Definitions</a></li>
  <li><a href="contacts.html">Contact Us</a></li>
</ul>
<ul class="rl">
<li class="hd">Related Links</li>
  <li><a href="http://www.qualityindicators.ahrq.gov" target="_blank">AHRQ Website for<br>Quality Indicators</a></li>
  <li><a href="http://www.nlm.nih.gov/medlineplus/mplusdictionary.html" target="_blank">Medical Dictionary</a></li>
</ul>
</div>
<!-- <script language="javascript" type="text/javascript" src="sidebar.js"></script> -->

```

If any of the four major data paths are not generated the links to those path are removed from the Website by the control.css file. The home page and sidebar JavaScript do not need to be edited directly. There is one entry in the control.css for each hidden path. The CSS style below shows how this is done. Each link to one of the data paths is given one of four classes, and any of these style classes can be set to not display. Completely removing the style for class will allow it to appear on the Web pages.

```

.Qlpath { display:none }
.PHCpath { display:none }
.UTILpath { display:none }
.RATESpath { display:none }

```

Conclusion

This document is meant to be an introduction to customize a MONAHRQ-generated Website and not an exhaustive explanation on all the details. The basic elements outlined are an overview of the architecture and folder structure of the Website and tips for adding or removing specific content. To learn more about the customization options, explore the files in the Website root folder.

APPENDIX – REPORTING QUALITY OF CARE TO CONSUMERS

This document was developed by Shoshanna Sofaer (2007) to assist AHRQ QI users in effectively reporting quality information to consumers. The QI consumer pathway in MONAHRQ was developed based on a report model authored by Sofaer. The following document provides an introduction to the methods and rationale behind the report (and thus the content for the consumer pathway in MONAHRQ), as well as providing helpful hints for host users.

MEMORANDUM

Date: May 1, 2007

To: Potential sponsors of public reports incorporating AHRQ Quality Indicators

From: Shoshanna Sofaer, Dr.P.H., Baruch College

Subject: Guidance in using the Hospital Quality Model Reports

A research team from the School of Public Affairs, Baruch College, under contracts with the Department of Public Health, Weill Medical College and Battelle, Inc., has developed a pair of Hospital Quality Model Reports at the request of the Agency for Healthcare Research & Quality (AHRQ). These reports are designed specifically to report comparative information on hospital performance based on the AHRQ Quality Indicators (QIs). The work was done in close collaboration with AHRQ staff and the AHRQ QI team. This memorandum briefly describes the research and development undertaken to develop these Model Reports. It then provides guidance to sponsors who wish to utilize one of the Model Reports in crafting public reports to their target audiences that incorporate AHRQ QI information.

A. What informed these Model Reports?

The Model Reports are based on:

- Extensive search and analysis of the literature on hospital quality measurement and reporting, as well as public reporting on health care quality more broadly;
- Interviews with quality measurement and reporting experts, purchasers, staff of purchasing coalitions, and executives of integrated health care delivery systems who are responsible for quality in their facilities;
- Two focus groups with chief medical officers of hospitals and/or systems and two focus groups with quality managers from a broad mix of hospitals;
- Four focus groups with members of the public who had recently experienced a hospital admission; and
- Four rounds of cognitive interviews (a total of 62 interviews) to test draft versions of the two Model Reports with members of the public with recent hospital experience and basic computer literacy but widely varying levels of education.

B. What distinguishes the two Model Reports from each other?

The first Model Report was developed in mid-2006, at a time when the AHRQ QIs existed exclusively in the form of individual indicators. AHRQ's charge to Baruch at that time was to develop a report that would focus on the Inpatient Quality Indicators (IQIs) and the Patient Safety Indicators (PSIs). A set of Pediatric Quality Indicators (PedQIs) was under development at that time, but not sufficiently advanced to

be incorporated into the initial report. The PedQIs have since been completed and have been incorporated into the first Model Report.

Added together, these three sets of indicators are very large. Evidence indicates that a report with dozens of individual indicators, not grouped together in any way, would not be user-friendly for the public and would not help individuals find the information of greatest interest to them. We therefore organized the first Model Report on the basis of *Health Topics*. We will call this first report, from this point on, the *Health Topics Model Report*.

By later in 2006, AHRQ and the AHRQ QI Team had completed work on a set of four composite measures using a substantial portion of the IQIs, the PSIs, and the new PedQIs. These composites were created on the basis of substantial statistical analysis as well as expert review (for more information, go to the AHRQ Website: www.qualityindicators.ahrq.gov/news/AHRQ_IQI_Composite_Draft.pdf and www.qualityindicators.ahrq.gov/news/AHRQ_PSI_Composite_Draft.pdf). There are two composites drawn from the IQIs, one composite drawn from indicators in the PSIs, and a final composite based on indicators in the PedQIs. AHRQ therefore asked the Baruch team to develop and test a second Model Report based on *composites*. We will call this second report, from this point on, the *Composite Model Report*.

The two Model Reports are complete in terms of their inclusion of all indicators relevant to particular health topics or included in the new composites. A sponsor will be free to choose which of the two Model Reports they will use as the basis for their own public reporting effort. We have not tested, and would not currently recommend, publishing a report that incorporates both health topics and composites. Such a report would be highly redundant, difficult to navigate, and most likely quite daunting to the public.

C. Key features common to both Model Reports

Form of dissemination:

The Model Reports assume that sponsors will use a Website to disseminate hospital quality data. We assume the report will be part of an existing sponsor Website and that various aspects of the “look and feel” of the Model Report chosen by the sponsor will reflect that existing Website. Though this is a Web-based model, a very large proportion of the material in the Model Reports could be adapted to a print report, although this would limit the extent to which readers could select the particular kinds of data they see.

Language and literacy level:

The report is in English and has been written so it can be read by most people. However, very low literacy individuals will likely not be able to read the report (although they may well be able to understand the graphics).

Language for the sponsor’s Website home page:

We have written language for the home page of the sponsor to introduce each report on that home page and link users to the actual report. Research consistently shows that public audiences are appropriately skeptical about health-related information. Therefore, this initial language is key since it serves to legitimize the information in the report to public audiences. In our own research, for example, people stressed that they would not trust data that was collected and disseminated by individual hospitals. Major determinants of whether or not a report will be trusted include the sponsorship of a report and the sponsor’s willingness to provide details about how data are collected and analyzed -- even though realistically very few members of the public (as compared to hospital staff and physicians) will ever look at those details.

An important feature of the sponsor home page is a suggested link to a mechanism for users to provide feedback on the report to the sponsor. The sponsor will need to decide how to structure this mechanism,

but we believe it is a good idea to include an opportunity for feedback. Other approaches to evaluation of the report are also advisable, but this one is relatively low cost.

Language for the report home page:

We have also written language for the initial home page of each report. This page introduces the report, provides a basic definition of quality, suggests ways to use the information in the report, and gives reasons why it is important to check on hospital quality. Finally, the home page describes briefly the kind of information available in the report (this is customized for the two different kinds of reports) and provides a link to the selection of hospitals to compare.

There is always tension between the desire to provide enough background to orient people to quality information and the desire to let people “get to the data” as soon as possible, which users find highly desirable. This is partially managed by letting people skip certain sections and go right to the section of the report that presents the data.

Hospital selection page:

In both reports, the first step of “getting to the data” is to select hospitals to compare. As noted in the template, this page and its related search functionality has to be created by the sponsor. The sponsor will decide whether the report will cover all of the hospitals in a single state, in part of a state, or across multiple states. In some cases, all hospitals will be included in a report; in other cases, where participation in public reporting is voluntary, not all hospitals will be included. The sponsor must select the hospitals to include and will have to write language to describe which facilities are included and which are not (and perhaps why).

Some things to keep in mind in constructing this page:

- People generally like to have access, somewhere on the site, to a list of all the hospitals included in the report, with location and contact information. Links to the Websites of individual hospitals could also be provided and would likely be appreciated by members of the public.
- Creating an easy to use search function for hospitals is important. When there is a relatively small number of facilities included in a report (e.g., fewer than 15), the simplest and most effective approach is to have a list of all the hospitals in the report, with boxes people can check off if they want to see the data for that facility. It is essential that people be able to look at data either for a single hospital, or for a number of selected hospitals, or for all hospitals.

When there are a larger number of facilities, the approach typically used is to narrow down the options geographically, using either counties or ZIP codes. More sophisticated systems are sometimes set up so people can choose hospitals within “n” miles of a given ZIP code. This approach sounds simple and easy but it turns out not to be, because hospital markets do not neatly coincide with either county or ZIP code boundaries. It may be valuable to develop a search function that allows people to look at more than one ZIP code or county.

A final approach to this problem is to let people write in the name of a specific hospital in which they are interested. This works, but only if your search function is not too exact. The names by which people know local hospitals are often not their exact formal name. If the search function requires the exact formal name, you will frustrate your audience. Explore the possibility of what is called a “fuzzy” search as an alternative. Remember that people are now used to dealing with very sophisticated search engines and will expect this kind of flexibility without even being aware of it. Note that having a complete list of the hospitals in the report can help since you can recommend that people use the name used in that list in their search.

- The hospital selection page ends with a link to the page for selecting the quality information you want to look at. Details on this page are specific to each Model Report and will be discussed later in this memo.

Material after the data:

Both reports have several pages of information **after** the data. The placement of this information after the data is purposeful and based on evidence of previous studies as well as on our own extensive cognitive testing. There is always a temptation to put a lot of this material up front, because it seems so important to us as health professionals. However, keep in mind that the public is looking for the data, and much of this additional material does not make a lot of sense to them until after they have seen the data. People lose patience having to go through too many “up front” pages. Here are the specific elements included at the back of both the Model Reports.

- *How should you use this report?* This page makes suggestions about how to use the data, including but not limited to making a hospital choice and starting a conversation with one’s physician. It also provides information about how people get admitted to hospitals.
- *A few things to keep in mind as you use the report.* This page gives some important caveats about the report and tips on how to interpret the information appropriately. It was probably the hardest page to write, since it deals with fairly sophisticated issues such as small numbers and risk-adjustment. We strongly advise you NOT to “tweak” the language here because small changes, in our experience, can lead to huge misinterpretations.

This page also includes links to other kinds of hospital quality data as well as information about the services offered by specific hospitals. Our testing made it clear that the public does not see the AHRQ QIs as being comprehensive in terms of presenting all aspects of quality. Acknowledging this, and helping people find other data, is therefore critical. Sponsors may decide to incorporate other forms of data into their public report. If they do, this section will need to be modified. Finally, this page includes a link to a section of the report on Technical Details about the Quality Information in the Report.

- *Hospital quality: What is it? Where can I learn more about it?* This page provides a fuller definition of quality using the six IOM domains. It also provides descriptions of and links to additional sources of quality information from CMS (Hospital Compare), AHRQ, and JCAHO.
- *If you have concerns and complaints about your care:* This brief page tells people what to do if they have a complaint about the quality of medical care received in a hospital. The advice is to begin within the hospital itself, but we also suggest that if that doesn’t lead to satisfaction, an individual can contact the State’s QIO or its Survey Agency. Links to information on these agencies, as well as the Complaint Hotline at JCAHO, are also provided.
- *Technical details about the quality information in this Report:* This page includes information about how the data are collected and information on how the measures were developed, with links to detailed information about the AHRQ QIs from their Website. A final section of this page must be completed by the sponsor: “how we analyzed the data and calculated scores.”

This section is designed primarily for health professionals rather than for the public, although our testing indicates that, with the exception of “all the acronyms,” members of the public were able to deal with it. Previous research makes clear that even if people do not look at this kind of material, they want to know that it is there, because it indicates that the sponsor is willing to be “transparent” about their methods.

Sponsors are free to add links to additional resources on quality; we suggest some general resources, but sponsors can certainly add more. We also recommend that sponsors add links to educational resources that are specific to a particular health condition on pages where that condition is addressed. Many people in our tests became very interested in learning more about particular procedures or conditions, and it never hurts to take advantage of the “teachable moment.”

D. Distinctive elements of the Health Topics Model Report

Organization by topic:

Given the large number of indicators to report, and the fact that the public does not resonate to terms such as Inpatient Quality Indicators, Patient Safety Indicators, or even Pediatric Quality Indicators, we organized the indicators into 10 topic areas. Our own and others' research makes it clear that people often think about going to a hospital with respect to a particular disease condition and/or procedure that is immediately relevant to them or a loved one, and thus want to look at hospital quality information organized in this fashion.

Sponsors can select the topic areas they want to include. They can also choose not to include all the indicators we have placed within a specific topic. It would not be a good idea, however, to move an indicator from one topic to another.

The report has a page designed to let users choose the topics they will look at. This page has brief definitions of what is included in each topic. Users are able to look at only one topic at a time. They should be able to choose as many hospitals included in the report as they would like with respect to scores on a given topic.

Indicators included:

The Health Topics Model Report includes all indicators that are part of the current set of Inpatient Quality Indicators (IQIs), Patient Safety Indicators (PSIs), and Pediatric Quality Indicators (PedQIs). It does not include Prevention Quality Indicators, since these are not viewed as reflecting hospital quality. This does not mean that some sponsors will not want to report them, simply that since this is a report on comparative hospital quality, it made sense to focus on the IQIs, PSIs, and PedQIs.

Four of the indicators included are not labeled as "quality indicators." These are the four utilization rates for Caesarean sections and Vaginal Birth After Caesarean (VBAC). After extensive discussion with AHRQ staff and the AHRQ QI team, we decided that since current evidence is not clear about the "right" utilization rate for these procedures, we cannot say whether a given rate is too high, too low, or just about right. We don't even know the general directionality people should look for. Therefore, there is a separate section of the report, in the childbirth topic, which includes these utilization rates, explaining that they are not quality indicators but rather information that may be of interest to some. Hospitals are not identified as doing "better" or "worse" on these indicators.

A similar issue arises with volume indicators included in the IQIs. Once again, there is not clear evidence of what the "correct" volume is for many procedures, so we cannot say what is a "better" or a "worse" score on a volume indicator. This being the case, we have structured the Health Topics Model Report so that volume indicators are on the same page as mortality indicators for a given procedure. The volume indicators are considered "additional information" rather than a quality indicator per se. This is explained with respect to each health topic where the issue arises.

Note that the inclusion of all indicators in the Health Topics Model Report does not imply that we expect or recommend that all sponsors include all indicators in their public reports. Indeed, we assume that sponsors will use their own judgment in selecting those indicators that they feel are most important to share with the public in their area. In some cases, when slightly different indicators (i.e., indicators with slightly different denominators) are available, the sponsor would be well advised to choose only one, since providing multiple highly similar indicators will likely confuse the public.

The QI Team has already done work to place the indicators into "tiers" in terms of their validity, reliability, and thus appropriateness for public reporting. The most recent information on these tiers can be found at the AHRQ Website, <http://www.qualityindicators.ahrq.gov>. Over time, AHRQ expects to strengthen these indicators so that they become more appropriate for public reporting. They can be used as is, or sponsors can wait until they have been revised. In either case, the language for them is available now.

Selection of indicators within a topic:

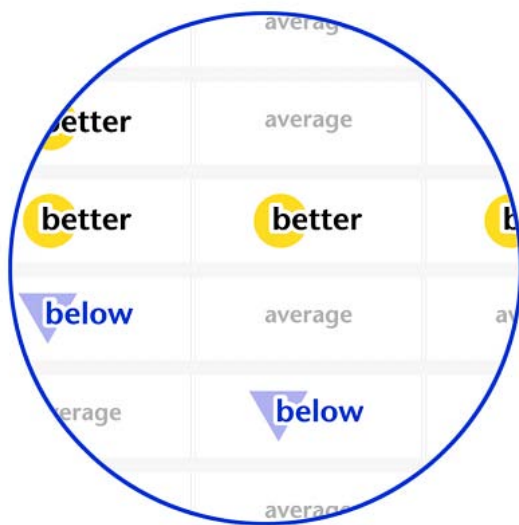
The presentation of each health topic begins with a page on which people get brief definitions of each indicator within that topic. People can then pick the indicators they want to see by checking the corresponding boxes. Alternatively, they can also choose to select all indicators by selecting the “select all” box. The volume indicators are not available to be “selected” and are placed at the bottom of the list under the header “additional information.”

Comparison chart across indicators within a topic:

Once an individual selects the indicator(s) s/he wants to see and selects on “compare hospital scores,” he or she gets to view the resulting comparison chart. We are assuming that sponsors have the ability to let users choose only certain indicators for inclusion in the comparison chart. Our test subjects strongly preferred a Website with this function, so if sponsors have the technical capability, we strongly recommend they do this, rather than force users to look at all the indicators under a topic even if they are only interested in a small subset. This is particularly important for topics with a relatively large number of indicators.

The comparison chart is based on a format extensively tested in recent laboratory studies conducted as part of the CAHPS II project by the American Institutes for Research and their collaborators, Dr. Judith Hibbard and Dr. Jeanne McGee. Their research demonstrated that this kind of presentation of comparative data, called a “word icon” presentation, is far superior to other approaches (such as star charts) that are commonly used to compare entities to each other or to an average. Specifically, people are much more likely to be able to identify high and low performers accurately and much more likely to use the information in making a decision (in the case of the lab studies, a hypothetical decision). The chart identifies hospitals as “Better than average” (bright green), “Worse than average” (bright blue) or “Average” (purposely faded grey).

Figure 1: Example of Comparison Symbols



If the sponsor has the technical capacity, they may also want to include additional symbols to visually indicate “better than average” and “worse than average” as seen to the left (for additional information, see the work of Dr. Jeanne McGee).

On the left side of the comparison chart, under the indicator name, we provide the average for each indicator. This information was included so that people can have a better understanding of just how “good” “average” was, and thus what it means when a hospital is “better” or “worse” than average. Participants in our cognitive testing responded very positively to this information. In addition, some of our testing respondents found it easier to understand what the rate was when it was written out in sentence form, such as “The average rate for hospitals across the state is 2 for every **1,000** patients.” It also increased respondents’ interest in the indicators because it allowed them to get a sense of what the actual data results were before looking at the bar graph for an individual indicator.

Individual indicator graphs:

The comparison chart is constructed so that people can select indicators to examine in detail. Making this selection takes the user to a horizontal bar graph that shows absolute scores for each of the hospitals selected on a given indicator. The state average (or the regional or multistate average if that is the breadth of hospitals included) is included as an anchor. This graphic design is fairly standard, but has some features that are special.

First, the graph is structured so that hospitals are ordered by performance rather than some other characteristics. This approach is, again, strongly evidence based. Such reports are considered more “evaluable” and appear to have a positive effect not only on public comprehension but on the level and intensity of quality improvement activities undertaken by facilities.

Second, we designed the bar graph to maximize comprehension of the bar showing the state (or other) average. In doing so, we built on parallel research for CMS on their Hospital Compare Website, in which we learned that many people are confused by the state and national average bars in their graphs. Our “fix” was: (1) to avoid using a different color for this bar, and instead use the same color in a pattern and (2) to provide specific language about why the state average is there and how to use it.

Third, we structured the graphs to ensure that the numbers were always whole integers (i.e., at least 1). Members of the public have great difficulty dealing with numbers like .35, and even more .035. This requires changing the denominator for the rate, so that in many cases it goes from 100 to 1,000, or even 1,000,000. To ensure that people do not overestimate the numbers, we highlight situations in which events are extremely rare.

E. Distinctive elements of the Composites Model Report

Organization of indicators:

This report is built around the four composites developed by AHRQ and the indicators included in those composites. Sponsors are free to choose which composites they will present. However, we do not recommend that they drop or change indicators within the composites, since they are based on extensive statistical testing and expert review.

Indicators included:

The indicators included in each composite were determined, again, through a process of statistical analysis and expert review. Some QIs are not included in any composites. Volume and utilization indicators are also excluded.

Selecting overall scores:

Rather than selecting health topics, users of the Composites Model Report will begin by selecting what we are calling “overall scores.” This term is used because the term “composite” would not be meaningful to members of the public. Four overall scores are available, one for each composite. Individuals can select as many overall scores as they want to see for the hospitals they have selected.

Overall score comparison chart:

Users are taken to a comparison chart for the overall scores they have chosen. This is the same kind of chart as the comparison chart described above for the Health Topics Model Report. However, since an “average” is not as meaningful for a composite score, they are not provided. The score is organized so the user can select an individual overall score to get additional detailed results.

Overall score bar graph:

The next level of detail is a bar graph with the overall scores for a particular composite for selected hospitals. This is the same information as the comparison chart, but in “absolute” rather than “relative” terms. Note that scores on composites are structured to reflect the observed vs. the expected. Each graph has below it an important paragraph labeled “What do these scores mean” that presents this information in user-friendly language. More technical information can be included in the back of the report in the discussion of scoring that the sponsor must develop.

Selection of specific topics (indicators) within an overall score (composite):

Users are shown the indicators that are included in each composite and are given the opportunity to select those for which they would like to see scores. This task is structured in the same way as specific indicators are selected within a health topic, through a page on which user-friendly labels and definitions are presented.

Comparison charts and bar graphs for indicators within each composite:

Once a user has selected the indicators of interest, the first presentation they see is a comparison chart like those described earlier. They can select the name of each indicator to get to the next level of detail, which is a bar graph on each of the individual indicators. Again, this is the same kind of bar graph described above.

What Sponsors Have To Do

Sponsors will have to make many additional decisions and do additional development work to have an operational Website. Specifically, they will need to:

- Select which of the two Model Reports they want to use as the basis for their report.
- Select which composites or health topics to include in the report.
- In the case of the health topics report, select which specific indicators to include in the report.
- Identify the hospitals whose data will be included in the report.
- Build the actual Website or incorporate the report into an existing Website.
- Program the site to enable both internal and external linkages.
- Create and test a “hospital search” function that permits users to choose one or more hospitals whose scores they want to see, to limit their exposure to information which is, to them, extraneous.
- Create a set of “tabs” for the Website to facilitate navigation (see page 2 of the composite template for an example). Ideally these tabs would be on the left side of the “page” but you might also want to look at the tabs used in Hospital Compare at the top of the page. We recommend in particular the following:
 - A tab on the Sponsor Home Page leading to the Report Home Page
 - The following tabs on the Report Home Page, and ideally visible wherever anyone is within the report Website:
 - Compare Hospital Scores
 - What Is Hospital Quality?

- How Should You Use This Report?
 - Things To Keep in Mind About Hospital Scores
 - Technical Details About Hospital Scores
 - Other Resources About Hospital Quality
- Make and implement decisions about the methods to be used in calculating the scores of individual hospitals, including whether “smoothing” or other statistical techniques will be used.
 - Make decisions about methods and conventions to use in identifying statistically significant differences between scores.
 - Develop language to be added to the Website that describes these methodological decisions (the Model Reports include a place in the Technical Details page for such language to be inserted).
 - If at all possible, conduct formal “usability” testing on their own adaptation of the Model Report, to make sure, in particular, that it is easy to navigate even for people who are not qualified for employment at Google.

Please consider these Model Reports as tools and resources. We expect and hope that sponsors will adapt it and improve upon it. We would welcome your feedback on your experiences working with it.

FREQUENTLY ASKED QUESTIONS AND TROUBLESHOOTING

General MONAHRQ Questions

- ***Can MONAHRQ be used for outpatient data now or eventually?***

Currently, it only works with inpatient discharge data. Depending on user response, we may develop the capacity to handle emergency department and ambulatory surgery data.

- ***Is MONAHRQ Section 508 compliant?***

Yes, we have worked with experts in the field to make sure the generated web pages are within 508 compliance.

- ***How does MONAHRQ compare to the AHRQ QIs?***

MONAHRQ is based on the AHRQ QI program and includes many of the indicators on the QI path. However, MONAHRQ does more than present QI information. Users may access cost maps, rates and volume information, and utilization statistics by hospital and regions as well.

- ***Who can use this tool?***

Any organization with access to hospital administrative discharge data (inpatient) may find MONAHRQ useful.

Questions About Downloading MONAHRQ

- ***Has the skill level needed of the person running the data been assessed?***

Regarding skill level, the programs are not difficult to run, but certain knowledge of the dataset is required (such as knowing the layout).

- ***Are there thresholds on what size file is too large?***

Currently, no. AHRQ has tested MONAHRQ on a hospital administrative data file larger than any currently used in the U.S.

- ***What sort of data files does the program accept?***

Excel spreadsheets, Access databases/MDBs, and CSVs.

- ***Will the program allow variables that are coded differently (example: if instead of females being 1 and males 2, a database has males as 0 and females as 1)?***

The software will walk you through the process of mapping data codes/values.