



*Agency for Healthcare Research and Quality*

*Advancing Excellence in Health Care • [www.ahrq.gov](http://www.ahrq.gov)*

***Input Your Data – Output Your Website:  
A Web-Based Tool for Quality and Utilization Reporting***

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# Development Team



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HEALTHCARE COST AND UTILIZATION PROJECT



## Leveraging the Expertise of Four Organizations

### Battelle

*The Business of Innovation*

- Convert existing WinQI Wizard
- Produce QIs
- Adapt PHC mapping tool
- Test the tool



Social & Scientific Systems, Inc.  
an employee-owned company

- Produce HCUPnet-like utilization queries
- Test the tool



THOMSON REUTERS

- Lead web development and presentation
- Coordinate design efforts
- Test the tool

## The Efficiency and Quality Improvement Portal

**What** is EQUIP?

**Why** is it important?

**Who** is the audience?

**How** will EQUIP work?

**When** will it be deployed?





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## WHAT: The Concept

A WEB-BASED TOOL THAT PROVIDES LOCAL  
INFORMATION ON  
**HEALTH CARE USE, COSTS, VOLUME, AND QUALITY**

AHRQ creates and distributes software programs to generate web-based query system

Local organizations use programs to host a web-based query system

Local users access the web-based query system to obtain health care information

THE BIG QUESTION WAS: **IS THIS FEASIBLE**



*Project presented and approved as part of Value Portfolio Supports CVEs*

## CONSUMERS NEED HEALTH CARE INFORMATION TO MAKE INFORMED CHOICES



*“What hospitals in my area perform heart surgery?”*

*“How many bypass procedures are performed at hospital x versus hospital y?”*

*“What is the quality of care for cardiac procedures at hospitals in my area?”*

*“I don’t have insurance, how much should I expect to pay?”*

CURRENTLY, THERE IS **VERY LIMITED** HEALTH CARE DATA AVAILABLE  
TO ANSWER SUCH QUESTIONS

## State/local organizations have resource limitations

- Unable to develop comprehensive reporting system
- AHRQ can provide support for these organizations





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# DHHS & AHRQ Missions



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## DEPARTMENT OF HEALTH AND HUMAN SERVICES MISSION

Protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves.



## THE AGENCY FOR HEALTHCARE RESEARCH AND QUALITY MISSION

Improving the quality, safety, efficiency, and effectiveness of health care for all Americans.



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# From Data to Information to Action



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Hospital discharge data  
are already being  
collected

Hospital discharge data  
can generate valuable  
healthcare information

Consumers can use  
this information to  
make decisions

## From Data to Information to Action



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# WHO: Two User Groups – Host and End User



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## HOST: ORGANIZATION BUILDING THE WEBSITE

State and local data  
organizations

Chartered Value Exchanges

Hospitals

Anyone with access to  
provider-level data

## END USERS: PEOPLE USING THE WEBSITE

Consumers

Health Planners

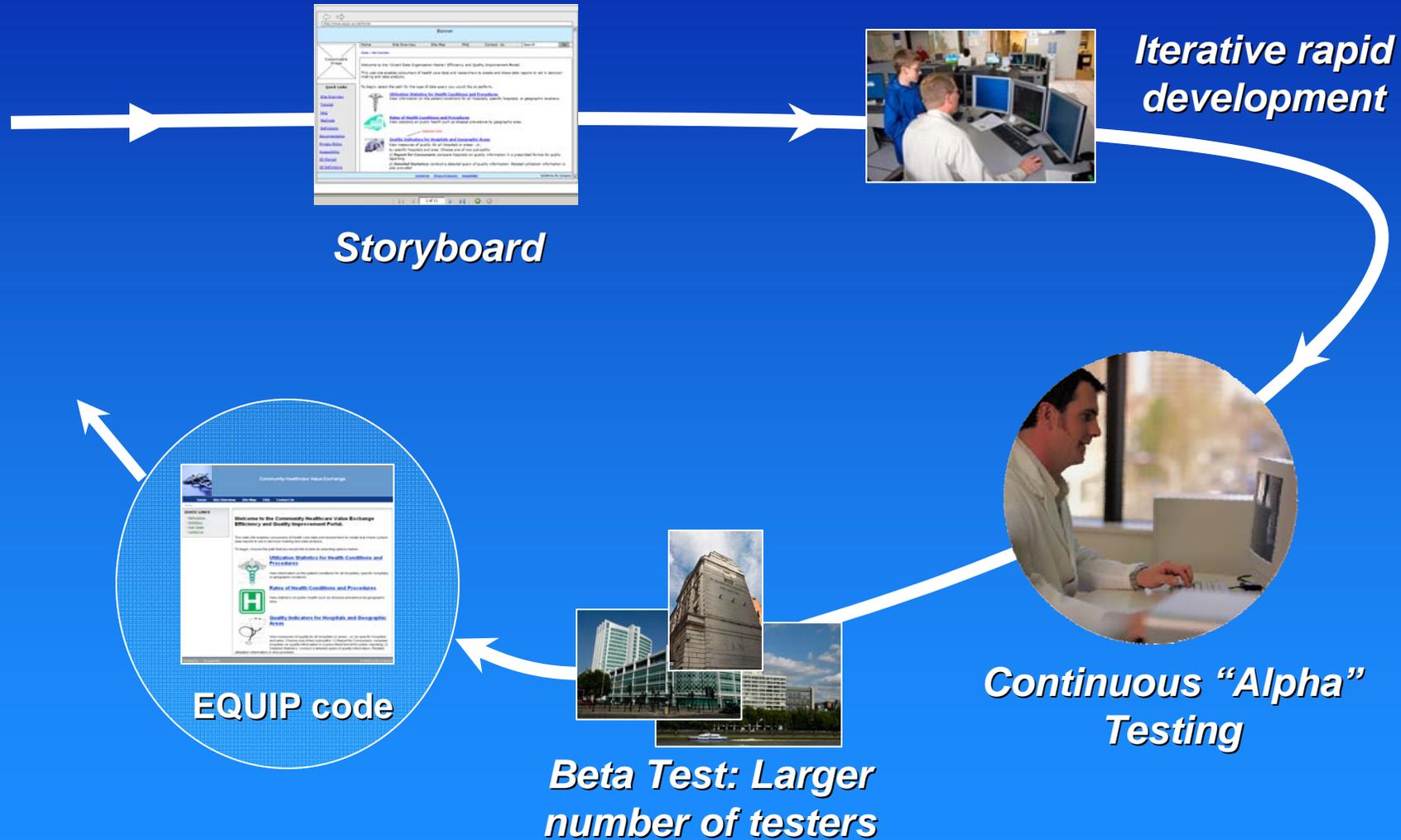
Policy Makers

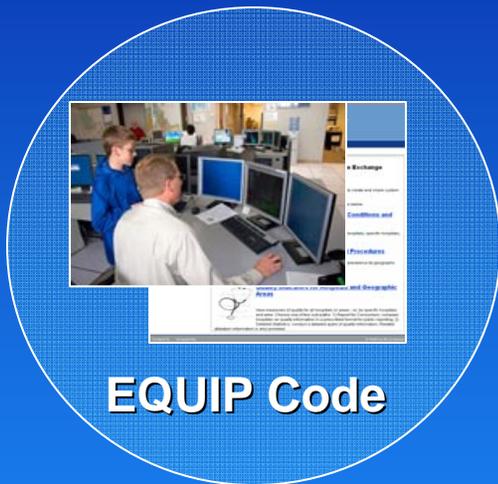
Media

Data Analysts/Researchers

*Multiple audiences but  
**Consumers are the principal  
audience***

# HOW: The Making of EQUIP...





EQUIP code will be distributed to organizations that have access to hospital discharge data



Host organization will implement code and load discharge data to create local EQUIP website on their own servers



End users will access the EQUIP website to run queries about healthcare utilization, cost, and quality for local hospitals and areas

# General Considerations as Development Proceeds

## USING A SMART DEVELOPMENT AND DESIGN APPROACH

<b>Efficient development</b>	Adapt existing programs to feed into the EQUIP system
<b>Minimal burden</b>	Develop web system based on most commonly used programs and software platforms Ensure methods can be understood by wide range of host users
<b>Customizable features</b>	Modular Customizable user interface
<b>Comprehensibility</b>	Ensure information adheres to standards for conveying statistics to public
<b>Documentation</b>	Document methods throughout for host and end users
<b>Accuracy</b>	Iterative testing of results



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## Customizable Features



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- Modular
  - User can choose which pieces to implement
- Generate user-defined reports
- Create maps of various measures
- Drill down on specific issues by patient and area characteristics
- Customizable Interface
  - Users can insert their logo and organization name



- Skip Navigation
- AHRQ Home
  - Questions?
  - Contact Us
  - Site Map

Search AHRQ  Go



## Welcome to H·CUPnet

HCUPnet is a free, on-line query system based on data from the Healthcare Cost and Utilization Project (HCUP). It provides access to health statistics and information on hospital inpatient and emergency department utilization.

**The Model: HCUPnet  
Quick, Free Access to Data**

Begin your query here -

### Statistics on Hospital Stays

#### ▶ [National Statistics on All Stays](#)

Create your own statistics for national and regional estimates on hospital use for all patients from the HCUP Nationwide Inpatient Sample (NIS). [Overview of the Nationwide Inpatient Sample \(NIS\)](#)

#### ▶ [State Statistics on All Stays](#)

Create your own statistics on stays in hospitals for participating States from the HCUP State Inpatient Databases (SID). [Overview of the State Inpatient Databases \(SID\)](#)

#### ▶ [Quick National or State Statistics](#)

Ready-to-use tables on commonly requested information from the HCUP Nationwide Inpatient Sample (NIS), the HCUP Kids' Inpatient Database (KID), or the HCUP State Inpatient Databases (SID).

#### ▶ [National Statistics on Children](#)

Create your own statistics for national estimates on use of hospitals by children (age 0-17 years) from the HCUP Kids' Inpatient Database (KID). [Overview of the Kids' Inpatient Database \(KID\)](#)

#### ▶ [National and State Statistics on Hospital Stays by Payer - Medicare, Medicaid, Private, Uninsured](#)

Interested in hospital stays billed to a specific payer? Create your own statistics for a payer, alone or compared to other payers from the NIS, KID, and SID.

### Statistics on Emergency Department Use

#### ▶ [State Statistics on All ED Visits](#)

Create your own statistics on emergency department visits for participating States from the HCUP State Emergency Department Databases (SEDD) and the SID. [Overview of the State Emergency Department Databases \(SEDD\)](#)

#### ▶ [Quick State Statistics](#)

Ready-to-use tables on commonly requested information from the SEDD and SID.

### AHRQ Quality Indicators (QIs)

#### First Time Visitor?

- HCUPnet overview
- How does HCUPnet work?
- HCUPnet tutorial**
- HCUPnet methodology?

#### What's New?

- New cost information for national hospital stays for 2005.
- 2005 nationwide data now available.
- Information on use of Emergency Departments from selected States.
- 2004 nationwide data on AHRQ Quality Indicators.
- 2005 data for selected States.
- Payer path - statistics by payer, including dually eligible.
- 2003 data for Kids' Inpatient Database (KID).



[More information on HCUP data, tools, and reports](#)

#### What is HCUP?

Brief description - what is HCUP?  
Want to purchase data to do your own analysis?

The statistics in HCUPnet would not be possible without [statewide data collection projects](#) that provide data to HCUP.

HCUPnet is based on aggregate

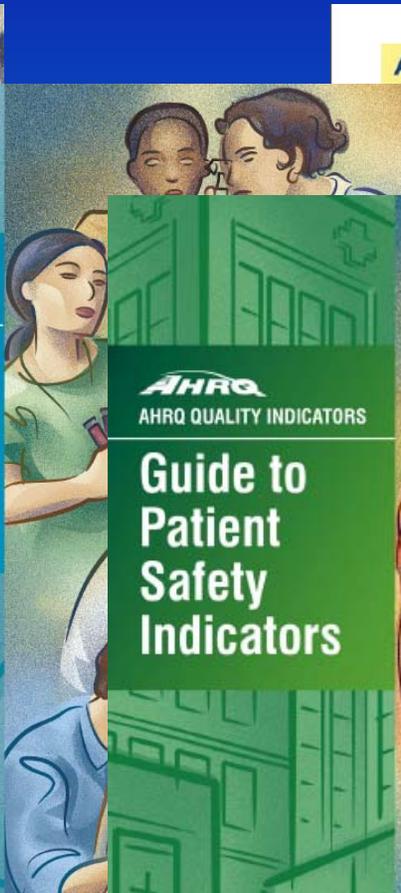
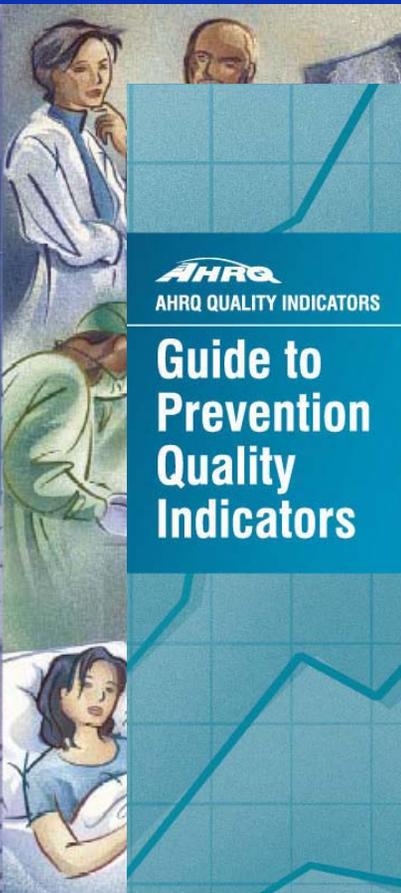
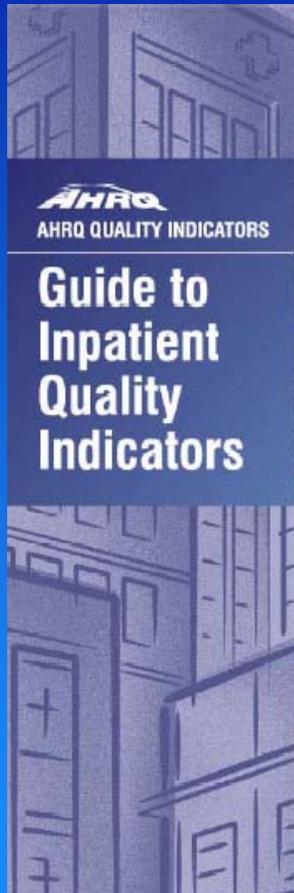


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# AHRQ Quality Indicators



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## AHRQ Quality Indicators Fact Sheet

### Pediatric Quality Indicators

A tool to help improve quality of health care for children.

What are the Pediatric Quality Indicators?

Provider-level indicators provide a measure of the potentially preventable complication for patients who received the complication of care within the same provider-level indicators include only those secondary diagnosis code flags a potentially preventable complication.



- Fracture or Laceration
- Death
- Left During Procedure
- Pneumothorax in Neonates
- Pneumothorax in Non-neonates
- Heart Surgery Mortality
- Heart Surgery Volume
- Stroke
- Hemorrhage or Hematoma
- Respiratory Failure
- Sepsis
- Wound Dehiscence
- Infections Due to Medical Care
- Adverse Reaction

Indicators are specified to include principal diagnosis as secondary diagnoses, for the same care. This specification adds cases where a complication occurred in a separate

- Readmission Rate
- Short-term Complication Rate
- Discharge Admission Rate
- Appendix Admission Rate
- Infection Admission Rate

Measures of Pediatric Health Care Quality Administrative Data. The Pediatric Quality Indicators and software documentation are available on the AHRQ Quality Indicators web site: [http://www.qualityindicators.ahrq.gov/pdji\\_download.htm](http://www.qualityindicators.ahrq.gov/pdji_download.htm).

Children?

Measures of Pediatric Health Care Quality are applicable to children admitted for a variety of conditions. Some measures may be more applicable to children's form less complex heart surgeries. For example, measures of heart surgery are not applicable to allow a hospital with a more complex heart surgery program to perform further. This set of measures also includes measures for groups that appear to be developing more complex heart surgery programs. These measures may be affected by poor access to care, barriers to timely diagnosis, or seeking early treatment, or higher socioeconomic factors.

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



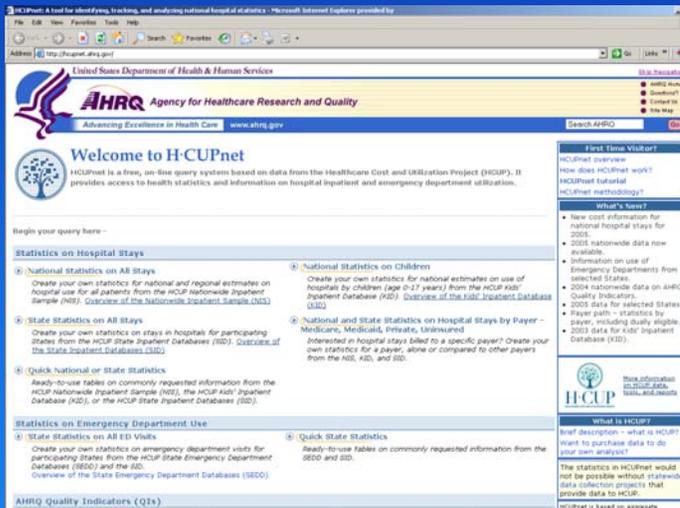
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# EQUIP = HCUPnet + QI + More



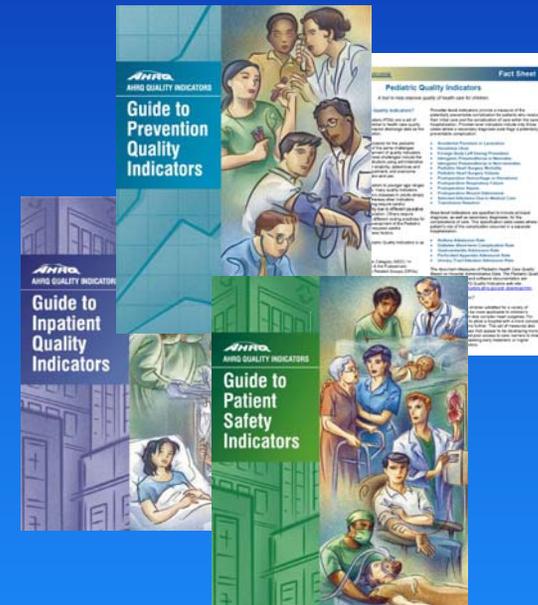
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## HCUPnet



Query Paths, Output Tables, Interface, Help and Definitions

## QIs



WinQI Tool, AHRQ QI Measures, Reporting Template, Mapping Tool

# A Brief Technical Overview



EQUIP Site Builder (“Wizard”):  
Moves host user through the process

Raw  
data  
from  
user

Programs that load data, map  
values, transform data, and  
build data cubes

SQL Server Database stores:  
Meta-data, transformed data,  
and data cubes

Census data  
Comparison data  
Labels

- Page writers
- Graphics generators (for Utilization and QI data)

Web System

- Context and navigation page writers
- Script writers & cascading style sheet writers

Website query interface seen by end user

HTML and .JPGs for QIs and Utilization information

- Navigation
- Formats

## THREE PATHS

### UTILIZATION: HEALTH CONDITIONS AND PROCEDURES

View information on patient conditions across hospitals, for a specific hospital, or across geographic areas



### RATES: HEALTH CONDITIONS AND PROCEDURES

View statistics on the rates of hospitalizations for specific health conditions and procedures for geographic areas



### QUALITY INDICATORS FOR HOSPITALS AND AREAS

View measures of quality for hospitals or areas based on the AHRQ Quality Indicators





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# Three Paths: Example Questions They Will Answer



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## UTILIZATION: HEALTH CONDITIONS AND PROCEDURES

*How many C-sections were performed at area hospitals?*

*What was the average charge?*

*How long do patients usually stay in this hospital for C-sections?*

## RATES: HEALTH CONDITIONS AND PROCEDURES

*What is the volume of CABG in this area?*

*What is the rate of pneumonia hospitalizations in this region?*

*What is the rate of blood transfusions in the state?*

## QUALITY INDICATORS FOR HOSPITALS AND AREAS

*How does the death rate for heart attack patients compare across four hospitals close to my home?*

*What is the rate of obstetric tearing after vaginal delivery in two hospitals close to my home?*



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## *A Peek at EQUIP – How will it work?*



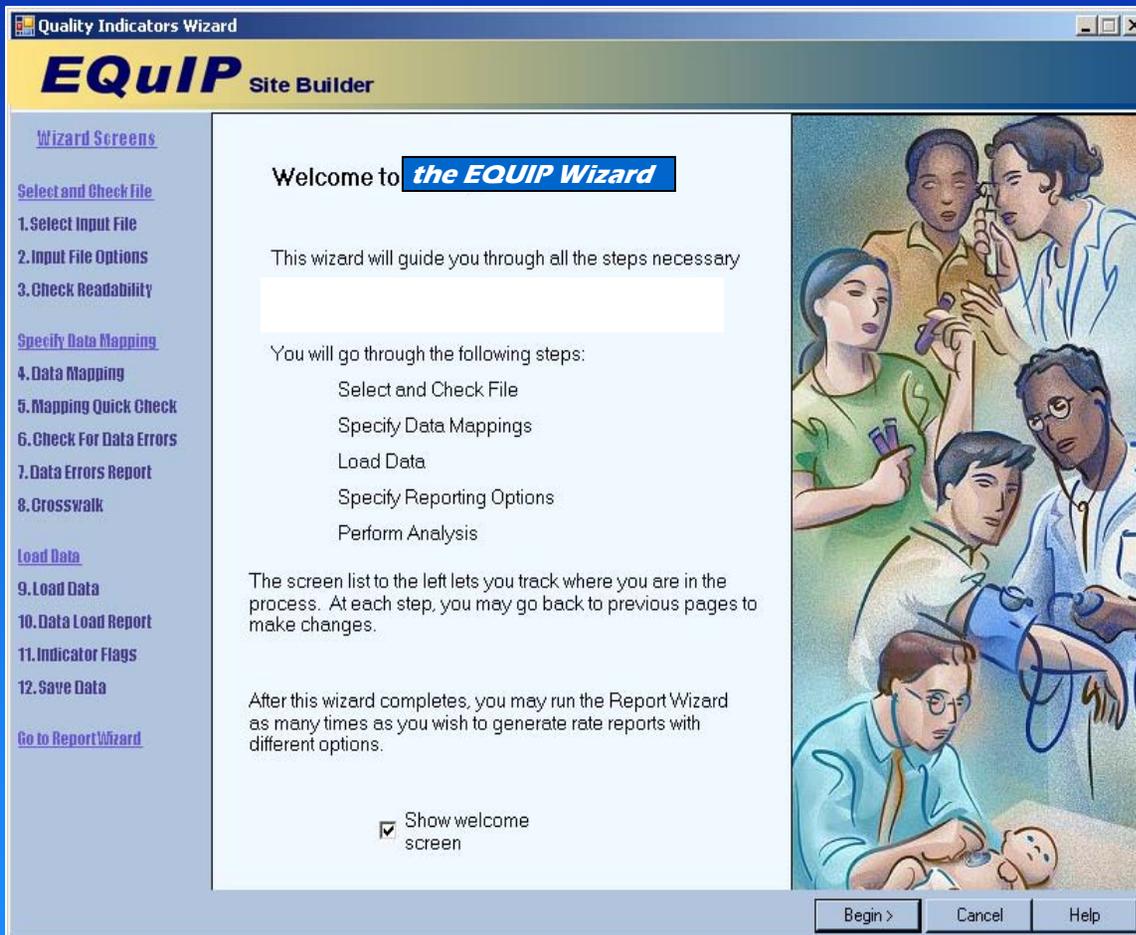
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The **host user** (e.g., local/state organization, an individual hospital) will download the AHRQ EQuIP Tool and generate a website

The **end user** (e.g., health consumers, analysts) will access the website created by the host user to obtain health care data

Example screen shots follow...

# A Peek at EQUIP – A Working Draft What the Host Sees



This tool is the existing  
AHRQ Quality  
Indicators Wizard  
Is being expanded to  
build EQUIP  
Import Data Wizard –  
initial screen



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# Host User EQulP Tool: Select File



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Select Input File

## EQulP Site Builder

[Wizard Screens](#)

[Select and Check file](#)

- 1. Select Input File**
2. Input File Options
3. Check Readability

[Specify Data Mapping](#)

4. Data Mapping
5. Mapping Quick Check
6. Check For Data Errors
7. Data Errors Report
8. Crosswalk

[Load Data](#)

9. Load Data
10. Data Load Report
11. Indicator Flags
12. Save Data

[Go to Report Wizard](#)

### Select Input File

Use the browse feature to locate the data file you want to analyze or directly enter in the specific path to your data file in the space below.

(Example: c:\documents\data\mydatafile.xls)

< Back   Next >   Cancel   Help

Select input file



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# Host User EQuIP Tool: Load and Map Data



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Input File Format

## EQuIP Site Builder

[Wizard Screens](#)

- [Select and Check File](#)
- 1. Select Input File
- 2. Input File Options**
- 3. Check Readability

[Specify Data Mapping](#)

- 4. Data Mapping
- 5. Mapping Quick Check
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[Load Data](#)

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- 12. Save Data

[Go to Report Wizard](#)

Additional Options For: newjersey\_2004.csv

Values are enclosed in quotes (e.g. "value1", "value2")  
(Check this box if any values in any record have quotes that must be removed.)

First row contains column headers

APR-DRG Grouper

Use the built-in limited APR DRG Grouper provided by 3M (tm)  
[\(View APR DRG License\)](#)

Load APR-DRG values from the data file. (if available)

Data Mapping and Crosswalk

My data is in an unknown format [Edit Mapper Shortcuts](#)

Use a mapping specified in a file

Mapping File:

(Type: ByName File: CommaSeparatedText)

Skip validation and mapping screens (jump to Data Load)

< Back   Next >   Cancel   Help

Select options for  
loading and mapping  
data

This file stores all of the  
mappings for future use



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# Host User EQuIP Tool: Map Data



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**Data Mapping**

**EQuIP Site Builder**

**Wizard Screens**

- Select and Check File
  1. Select Input File
  2. Input File Options
  3. Check Readability
- Specify Data Mapping
  - 4. Data Mapping**
  5. Mapping Quick Check
  6. Check For Data Errors
  7. Data Errors Report
  8. Crosswalk
- Load Data
  9. Load Data
  10. Data Load Report
  11. Indicator Flags
  12. Save Data

[Go to Report Wizard](#)

**Data Mapping**

**Input File Variables**

Input Variable (Column Number, Name)	Maps To QI Variable
1: AGE	Age
2: AGEDAY	Age in Days
3: ASCHED	
4: ASOURCE	Admission Source
5: ATYPE	Admission Type
6: AWEEKEND	
7: DISP	Discharge Disposition
8: DISPUNIFORM	
9: DQTR	Discharge Quarter
10: DRG	Diagnosis Related Group
11: FEMALE	
12: SEX	Sex

**Variables Used By QI Software**

- Days on Mech Ventilator
- Birth Weight Grams
- Total Charge
- Custom Stratifier 1
- Custom Stratifier 2
- Custom Stratifier 3
- Present on Admission 1
- Present on Admission 2
- Present on Admission 3
- Present on Admission 4
- Present on Admission 5
- Present on Admission 6
- Present on Admission 7

**Sample View of Input File Data**

Age	Age in Da - 3 -	Admissio - 6 -	Discharge - 8 -	Discharge Diagnosis - 1						
AGE	AGEDAY	ASCHED	ASOURC	ATYPE	AWEEKE	DISP	DISPUNI	DQTR	DRG	FEM
37			5	3	0	1	1	1	373	1
29			5	3	1	1	1	1	370	1
32			5	3	0	1	1	1	373	1
29			5	3	0	1	1	1	373	1
37			5	3	0	1	1	1	373	1
35			5	3	0	1	1	1	373	1

< Back   Next >   Cancel   Help

Map input file variables  
to variables used by  
software



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# Host User EQuIP Tool: Variable Summary



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Data Mapping Quick Check

## EQuIP Site Builder

[Wizard Screens](#)

[Select and Check File](#)

1. Select Input File
2. Input File Options
3. Check Readability

[Specify Data Mapping](#)

4. Data Mapping
- 5. Mapping Quick Check**
6. Check For Data Errors
7. Data Errors Report
8. Crosswalk

[Load Data](#)

9. Load Data
10. Data Load Report
11. Indicator Flags
12. Save Data

[Go to Report Wizard](#)

### Summary of Variables

*This report summarizes the Data Mapping between the input file and the QI Dataset that you assigned on the previous screen. Certain variables are required for all indicators; you may not continue with the analysis unless there is an input assigned for each of these.*

Variables in Input File:	131
Input Variables Mapped to QI Variables:	110
Unused Input Variables:	21
Unmapped Required QI Variables:	0
Unmapped QI Variable Warnings:	1

### Variables

QI Variable	Input Variable(column #)
Key	KEY (54)
Age	AGE (1)
Age in Days	AGEDAY (2)
Race	RACE (15)
Sex	SEX (12)
Primary Payer	PAY1 (14)
Patient State/County Code	PSTCO (51)
Hospital ID	HOSPID (56)
Discharge Disposition	DISP (7)
Admission Type	ATYPE (5)
Admission Source	ASOURCE (4)
Length of Stay	LOS (20)
Diagnosis Related Group	DRG (10)
Discharge Year	YEAR (16)
Discharge Quarter	DQTR (9)
Days on Mech Ventilator	No Input Variable
Birth Weight Grams	No Input Variable
Total Charge	No Input Variable

Preventive hospitalization mapping will ignore this field in calculating cost to charge ratio.

Save Report < Back Next > Cancel Help

## Summary of variables



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# Host User EQuIP Tool: Errors Checking



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Data Errors Report

## EQuIP Site Builder

[Wizard Screens](#)

[Select and Check File](#)

- Select Input File
- Input File Options
- Check Readability
- [Specify Data Mapping](#)
- Data Mapping
- Mapping Quick Check
- 6. Check For Data Errors**
- 7. Data Errors Report**
- Crosswalk

[Load Data](#)

- Load Data
- Data Load Report
- Indicator Flags
- Save Data

[Go to Report Wizard](#)

### Data Errors Report

The QI Wizard has scanned your input file and found the following warnings and errors. No data has yet been loaded. You may choose to exclude data based on the values of certain variables on the following screen.

Column	Records Affected	Message
Age	11	Required Field Empty - Record will not be loaded
Diagnosis Code 31	column	Column of ICD-9-CM codes does not have any leading zeros (warning)
Diagnosis Code 32	column	Column of ICD-9-CM codes does not have any leading zeros (warning)
Diagnosis Code 33	column	Column of ICD-9-CM codes does not have any leading zeros (warning)
Diagnosis Code 34	column	Column of ICD-9-CM codes does not have any leading zeros (warning)
Diagnosis Code 35	column	Column of ICD-9-CM codes does not have any leading zeros (warning)

### Variables

The following statistics describe the data within your file. Your QI dataset may be different if rows are excluded during the data load.

Column	Number Missing	% Missing
Key	0	0%
Age	11	0%
Age in Days	1069847	89%
Race	42737	4%
Sex	0	0%
Primary Payer	5	0%
Patient State/County Code	709	0%
Hospital ID	0	0%
Discharge Disposition	0	0%
Admission Type	4	0%
Admission Source	9013	1%

Save Report < Back Next > Cancel Help

Scan file and report  
errors



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# Host User EQuIP Tool: Crosswalk



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Crosswalk

## EQuIP Site Builder

Wizard Screens

- Select and Check File
- 1. Select Input File
- 2. Input File Options
- 3. Check Readability
- Specify Data Mapping
- 4. Data Mapping
- 5. Mapping Quick Check
- 6. Check For Data Errors
- 7. Data Errors Report
- 8. Crosswalk
- Load Data
- 9. Load Data
- 10. Data Load Report
- 11. Indicator Flags
- 12. Save Data
- Go to Report Wizard

### Crosswalk - Map Input Values to QI Values

The QI Values of the following variables have specific meaning in the Quality Indicators. Choose the QI Value that encompasses the meaning of each value in your input file.

**Input: "ASOURCE" → Dataset: "Admission Source"**

Input Value	Count of Occurrences	QI Value	
	9013	0: Missing	Indicators that rely on this field set to missing for these cases
1	592207	1: ER	
2	23724	2: Another hospital	
3	28992	3: Another fac. incl. LTC	
5	544435	5: Routine/Birth/Other	

**Input: "ATYPE" → Dataset: "Admission Type"**

Input Value	Count of Occurrences	QI Value	
	4	0: Missing	Indicators that rely on this field set to missing for these cases
1	587588	1: Emergency	
2	168548	2: Urgent	
3	323036	3: Elective	
4	115771	4: Newborn	
5	3424	5: Trauma Center	

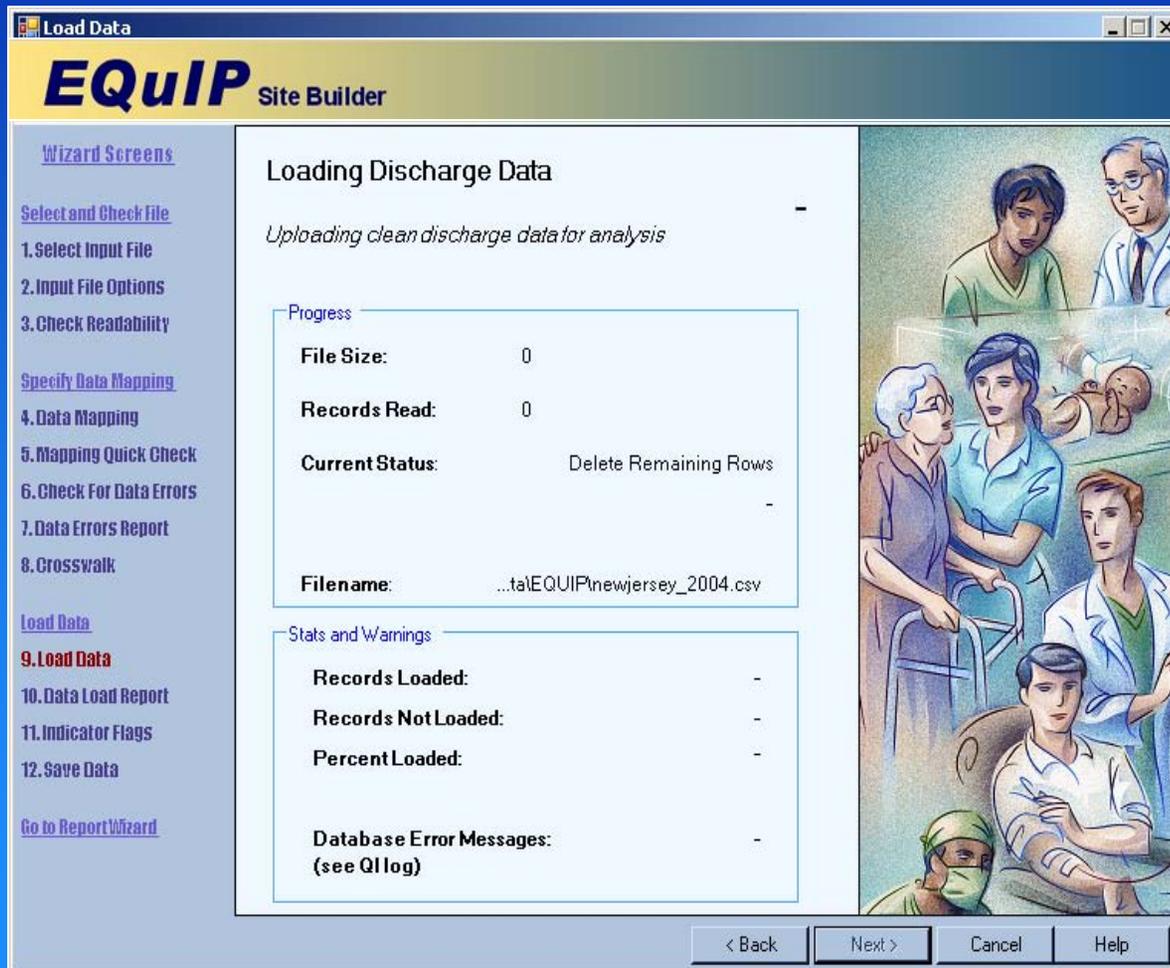
**Input: "DISP" → Dataset: "Discharge Disposition"**

Input Value	Count of Occurrences	QI Value	
1	880724	1: Routine	
2	27803	2: Short-term hospital	

< Back   Next >   Cancel   Help

Map the values from the  
input data to standard  
values required by  
EQIP

# Host User EQuIP Tool: SQL Server



Load Data

## EQuIP Site Builder

[Wizard Screens](#)

[Select and Check File](#)

1. Select Input File
2. Input File Options
3. Check Readability

[Specify Data Mapping](#)

4. Data Mapping
5. Mapping Quick Check
6. Check For Data Errors
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[Load Data](#)

- 9. Load Data**
10. Data Load Report
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12. Save Data

[Go to Report Wizard](#)

### Loading Discharge Data

*Uploading clean discharge data for analysis*

Progress

File Size:	0
Records Read:	0
Current Status:	Delete Remaining Rows

Filename: ...talEQUIPnewjersey\_2004.csv

Stats and Warnings

Records Loaded:	-
Records Not Loaded:	-
Percent Loaded:	-

Database Error Messages:  
(see QI log)

< Back   Next >   Cancel   Help

Data are loaded into an  
SQL Server



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# Host User EQUIP Tool: Summary Report



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Data Load Report

## EQUIP Site Builder

[Wizard Screens](#)

[Select and Check File](#)

1. Select Input File
2. Input File Options
3. Check Readability

[Specify Data Mapping](#)

4. Data Mapping
5. Mapping Quick Check
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[Go to Report Wizard](#)

### Data Load Summary

Data has been loaded from your input file and is ready for Quality Indicators analysis. The following sections show descriptive statistics of the data as it has been loaded. 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	1,198,360
Total Rows Excluded	11
Number of variables per record	131
Records with extra values (more than 131)	1,198,371

### Record Warnings

Column	Records Affected	Message
Age	11	Required field empty - Rows not loaded
Race	42,737	Value mapped to null based on crosswalk (info)
Primary Payer	5	Value mapped to null based on crosswalk (info)
Admission Type	4	Value mapped to null based on crosswalk (info)
Admission Source	9,013	Value mapped to null based on crosswalk (info)

### 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)

### Variables

The following statistics describe the cleansed data that will be used for analysis. It does not include data from any rows that were excluded during the data load. (either due to errors or user specified exclusions)

Column	Number Missing	% Missing	Min	Max
--------	----------------	-----------	-----	-----

Save Report   < Back   Next >   Cancel   Help

Summary report



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# Host User EQUIP Tool: Data Cubes



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Generate Indicator Flags

## EQUIP Site Builder

Wizard Screens

Select and Check File

- Select Input File
- Input File Options
- Check Readability

Specify Data Mapping

- Data Mapping
- Mapping Quick Check
- Check For Data Errors
- Data Errors Report
- Crosswalk

Load Data

- Load Data
- Data Load Report
- Indicator Flags**
- Save Data

Go to Report Wizard

### Generating Indicator Flags

Current Query

**Task:** Code Setup

**Indicator:** has\_med Set 19

**Overall Progress:** 18 / 1077 queries completed

**Queries To Run**

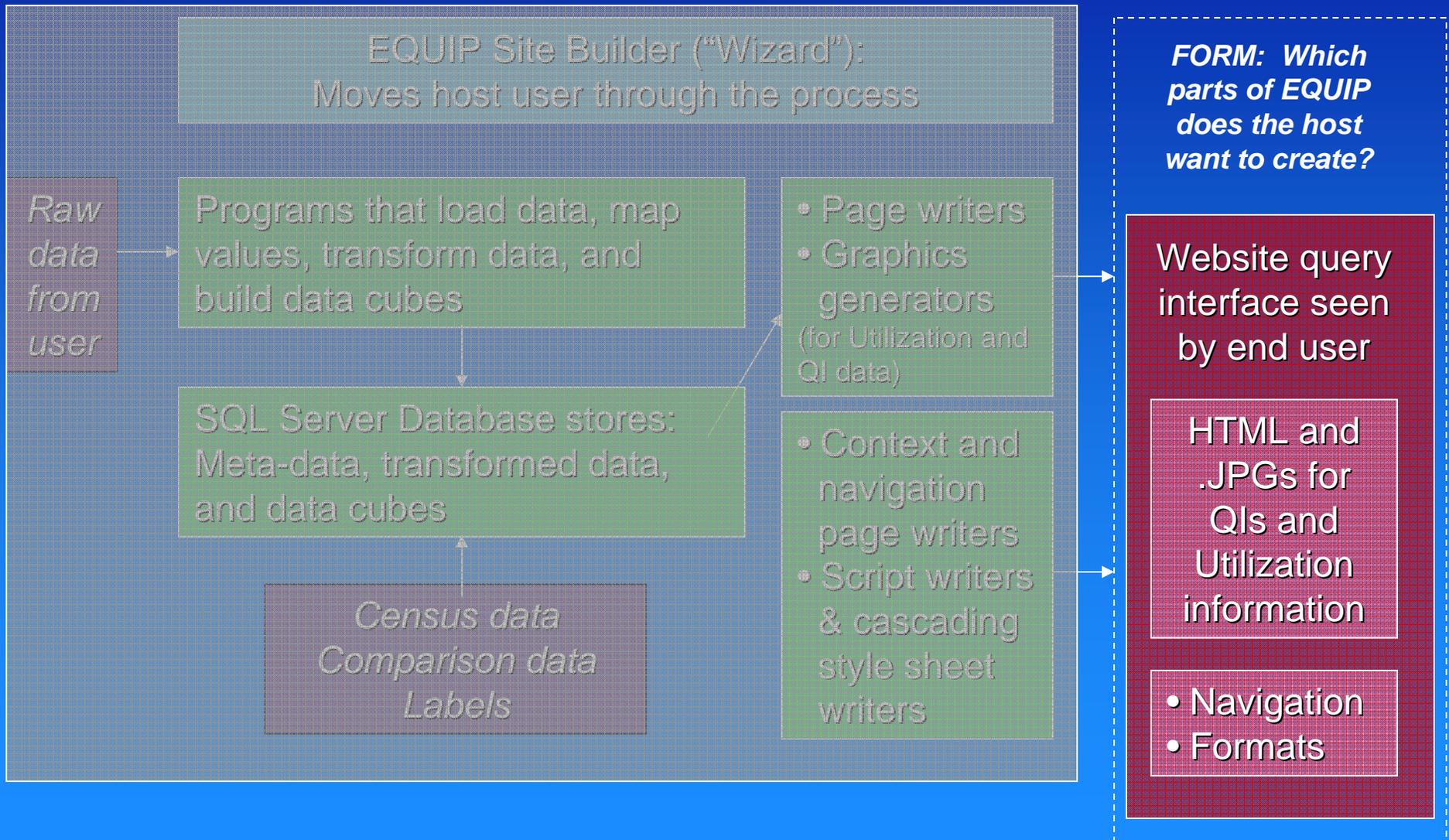
Task	Indicator	#	Rule Type	Rows	Elapsed
Code Setup	-	1	Default apr_drg null values to 0	0	0.2
Code Setup	-	2	Clear Exp Rates	-	0.0
Code Setup	-	3	Set MDC from DRG	1198360	10.2
Code Setup	-	4	DX Index	-	28.7
Code Setup	-	5	PR Index	-	7.7
Code Setup	-	6	Clear Match DX	-	0.0
Code Setup	-	7	Pop Match DX	3429049	52.5
Code Setup	-	8	Set age_cat	1198360	14.0
Code Setup	-	9	Set age_day_cat	128524	2.0
Code Setup	-	10	Init bwhtcat=6	115773	1.2
Code Setup	-	11	Set Low Bwhtcat	7545	19.7
Code Setup	is_neonate	12	Set	115773	0.7
Code Setup	is_neonate	13	Set	0	2.0
Code Setup	is_neonate	14	Set	0	0.3
Code Setup	is_neonate	15	Set	0	0.2
Code Setup	is_newborn	16	Set	111013	1.8
Code Setup	is_newborn	17	Set	111512	0.6
Code Setup	has_surgic...	18	Set	297813	2.0
Code Setup	has_medica...	19	Set	-	-
Code Setup	has_adult_...	20	Set	-	-
Code Setup	has_pediat...	21	Set	-	-
Code Setup	-	22	Rest orproc flags	-	-



< Back   Next >   Cancel   Help

Create data cubes

# End User Website Interface





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# A Peek at EQUIP – A Working Draft What the End User Sees



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Community Healthcare Value Exchange

Home Site Overview Site Map FAQ Contact Us

Home >

**QUICK LINKS**

- > [Methodology](#)
- > [Definitions](#)
- > [User Guide](#)
- > [Contact Us](#)

**Welcome to the Community Healthcare Value Exchange Efficiency and Quality Improvement Portal.**

This web site enables consumers of health care data and researchers to create and share custom data reports to aid in decision-making and data analysis.

To begin, choose the path that you would like to take by selecting options below.

 **Utilization Statistics for Health Conditions and Procedures**  
View information on the patient conditions for all hospitals, specific hospitals, or geographic locations.

 **Rates of Health Conditions and Procedures**  
View statistics on public health such as disease prevalence by geographic area.

 **Quality Indicators for Hospitals and Geographic Areas**  
View measures of quality for all hospitals or areas - or, by specific hospitals and area. Choose one of two sub-paths: 1) Report for Consumers: compare hospitals on quality information in a prescribed format for public reporting. 2) Detailed Statistics: conduct a detailed query of quality information. Related utilization information is also provided.

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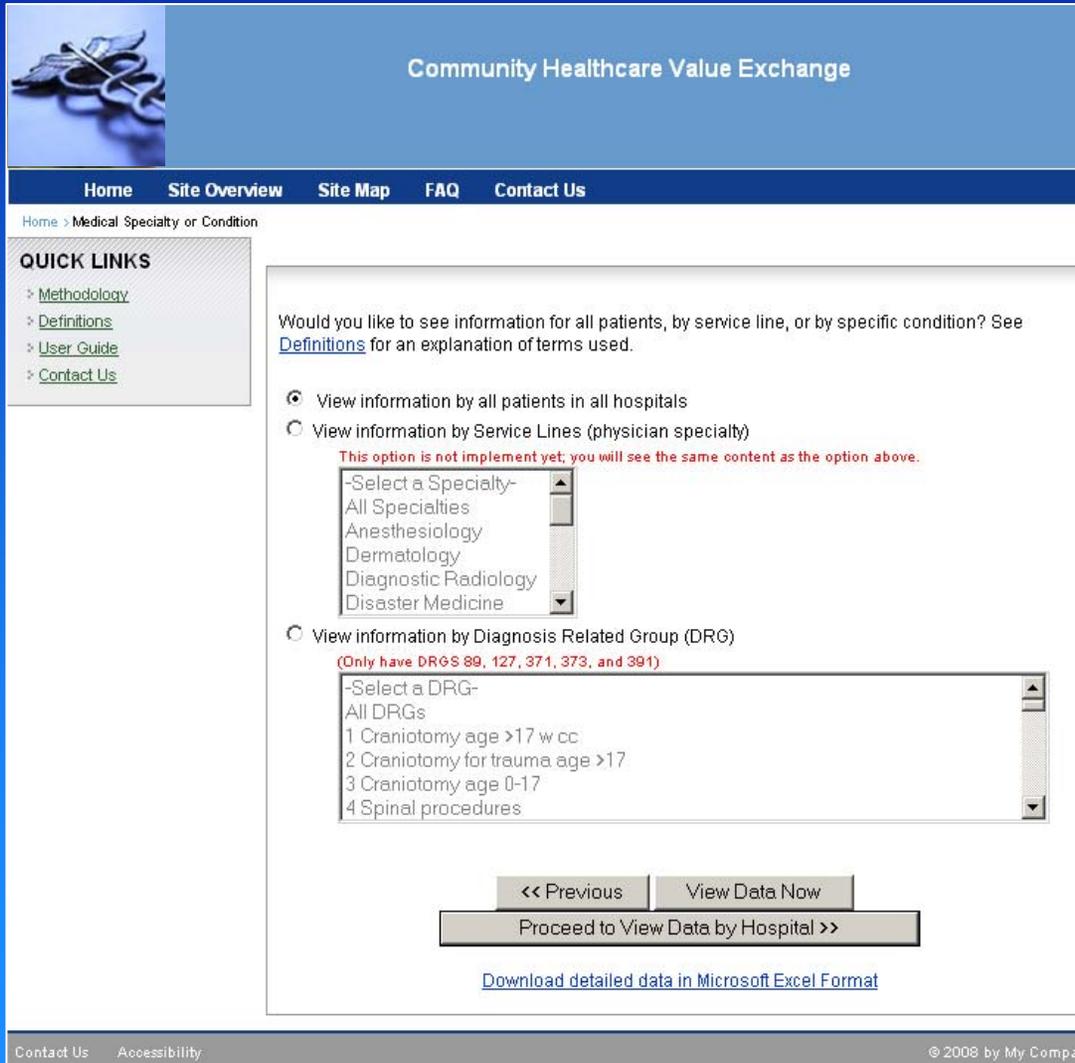
Select 1 of 3 Paths:

**UTILIZATION**

**RATES**

**QUALITY INDICATORS**

# Utilization Path: Select Health Condition



Community Healthcare Value Exchange

Home Site Overview Site Map FAQ Contact Us

Home > Medical Specialty or Condition

**QUICK LINKS**

- > [Methodology](#)
- > [Definitions](#)
- > [User Guide](#)
- > [Contact Us](#)

Would you like to see information for all patients, by service line, or by specific condition? See [Definitions](#) for an explanation of terms used.

View information by all patients in all hospitals

View information by Service Lines (physician specialty)

This option is not implement yet; you will see the same content as the option above.

-Select a Specialty-

- All Specialties
- Anesthesiology
- Dermatology
- Diagnostic Radiology
- Disaster Medicine

View information by Diagnosis Related Group (DRG)

(Only have DRGS 89, 127, 371, 373, and 391)

-Select a DRG-

- All DRGs
- 1 Craniotomy age >17 w cc
- 2 Craniotomy for trauma age >17
- 3 Craniotomy age 0-17
- 4 Spinal procedures

<< Previous View Data Now

Proceed to View Data by Hospital >>

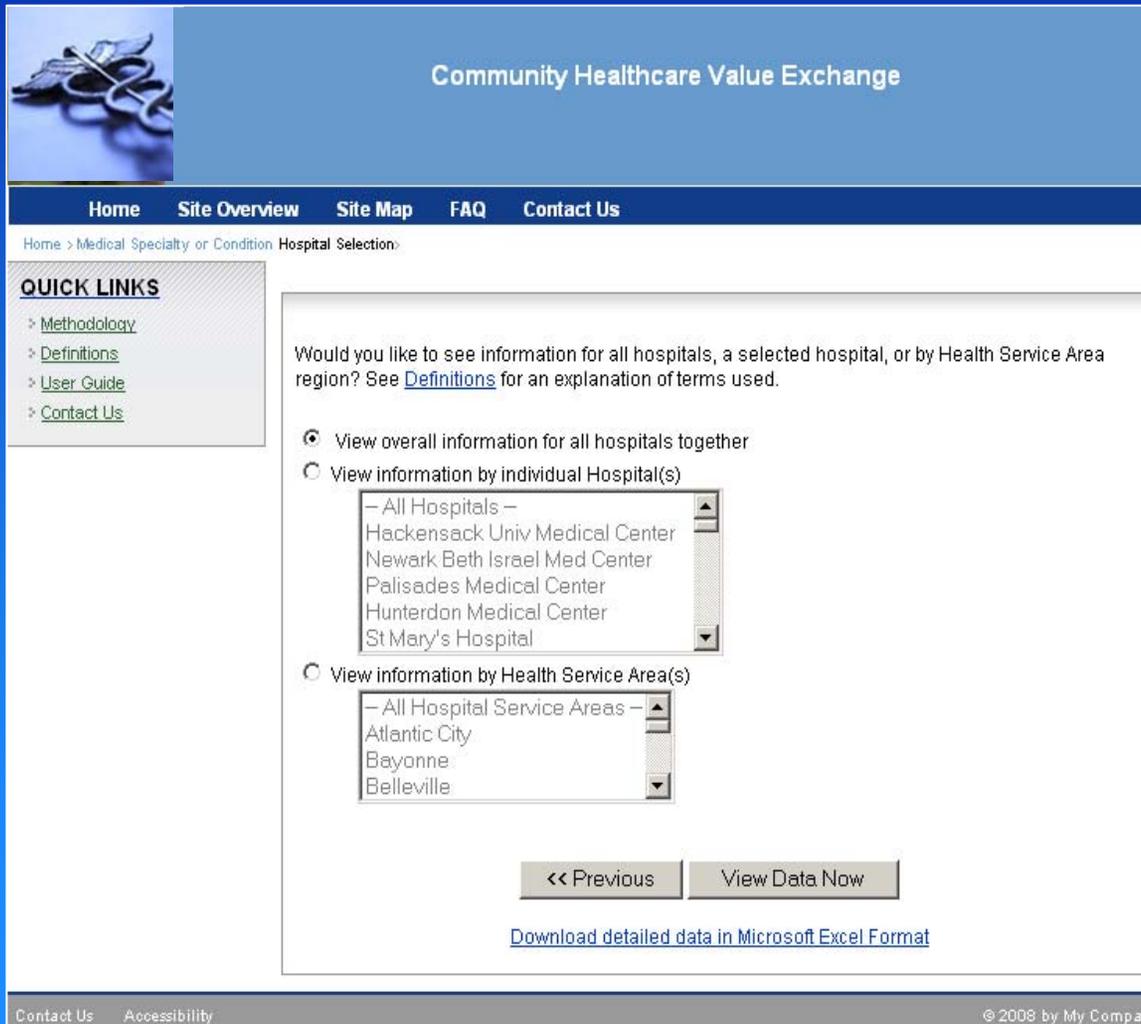
[Download detailed data in Microsoft Excel Format](#)

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Select to view data by  
service line or by health  
condition/procedure  
(DRG)

Allows easy access to  
the data through “view  
data now” feature

# Utilization Path: Select Hospital or Area



Community Healthcare Value Exchange

Home Site Overview Site Map FAQ Contact Us

Home > Medical Specialty or Condition Hospital Selection:

**QUICK LINKS**

- > [Methodology](#)
- > [Definitions](#)
- > [User Guide](#)
- > [Contact Us](#)

Would you like to see information for all hospitals, a selected hospital, or by Health Service Area region? See [Definitions](#) for an explanation of terms used.

View overall information for all hospitals together

View information by individual Hospital(s)

- All Hospitals -
- Hackensack Univ Medical Center
- Newark Beth Israel Med Center
- Palisades Medical Center
- Hunterdon Medical Center
- St Mary's Hospital

View information by Health Service Area(s)

- All Hospital Service Areas -
- Atlantic City
- Bayonne
- Belleville

<< Previous View Data Now

[Download detailed data in Microsoft Excel Format](#)

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Select a specific  
hospital or an area

Allows easy access to  
the data through “view  
data now” feature

Allows download to  
Microsoft Excel of  
summary tables



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# Utilization Path: Data by DRG



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Drill down for more information on a specific condition/procedure

Sort data by any of these columns

 Community Healthcare Value Exchange

STATISTICS BY DIAGNOSIS RELATED GROUP  
*Click on any column header to re-sort the table by that outcome or characteristic.*

Diagnosis Related Group	Number of discharges	Percent of discharges	Mean charges in dollars	Total charges in dollars	Mean costs in dollars	Total costs in dollars	Mean length of stay in days	Percent Male	Percent admitted through E.D.
<b>All Conditions</b>	1,123,892	100.0%	43,077	48,582,737,126	11,383	12,835,015,910	5.0	42.2%	54.9%
<b>391</b> Normal newborn	77,514	6.9%	6,464	501,018,039	1,680	130,258,414	2.5	50.1%	0.0%
<b>373</b> Vaginal delivery w/o complicating diagnoses	59,448	5.3%	14,600	867,913,413	3,790	225,300,607	2.3	0.0%	5.8%
<b>127</b> Heart failure & shock	32,176	2.9%	49,708	1,599,354,715	13,284	427,426,145	5.9	46.8%	86.1%
<b>371</b> Cesarean section w/o CC	31,255	2.8%	23,173	724,257,759	6,044	198,913,233	3.8	0.0%	2.9%
<b>143</b> Chest pain	28,371	2.5%	20,829	590,847,395	5,572	158,095,919	2.0	45.6%	94.7%
<b>430</b> Psychoses	27,748	2.5%	33,726	935,798,414	9,023	250,358,447	8.5	49.5%	66.9%
<b>89</b> Simple pneumonia & pleurisy age >17 w CC	21,667	1.9%	46,322	1,003,621,322	12,336	267,278,776	6.1	46.6%	86.4%
<b>182</b> Esophagitis, gastroent & misc digest disorders age >17 w CC	20,760	1.8%	36,136	750,153,133	9,771	202,843,737	4.8	34.6%	85.0%
<b>88</b> Chronic obstructive pulmonary disease	19,981	1.8%	43,098	861,146,846	11,673	293,245,418	5.6	38.7%	85.6%
<b>390</b> Neonate w other significant problems	18,583	1.7%	9,902	184,011,882	2,561	47,595,648	2.9	54.6%	0.0%





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# Utilization Path: Data for a Specific Hospital



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### STATISTICS FOR PALISADES MEDICAL CENTER FOR ALL PATIENTS

	Number of discharges	Percent of discharges	Mean charges in dollars	Total charges in dollars	Mean costs in dollars	Total costs in dollars	Mean length of stay in days	Percent Male	Percent admitted through E.D.
<b>Total</b>	11,162	100.0%	37,097	414,655,641	11,018	123,155,283	5.1	38.6%	66.7%
<b>Age group</b>									
< 18	1,888	16.9%	6,005	11,337,670	1,784	3,367,358	2.4	50.4%	17.1%
18-44	2,886	25.9%	21,672	62,546,205	6,437	18,576,609	3.0	22.5%	57.3%
45-64	1,790	16.0%	43,077	77,119,660	12,794	22,905,015	5.4	49.7%	85.6%
65+	4,598	41.2%	57,228	263,652,106	16,997	78,306,301	7.3	39.6%	85.6%
<b>Gender</b>									
Male	4,312	38.6%	40,189	173,859,414	11,936	51,637,318	5.5	100.0%	70.8%
Female	6,850	61.4%	35,153	240,796,227	10,441	71,517,964	4.8	0.0%	64.1%
<b>Payer</b>									
Medicare	4,408	39.5%	56,666	250,301,625	16,830	74,341,126	7.3	40.2%	85.8%
Medicaid	658	5.9%	37,849	24,904,444	11,241	7,396,773	5.5	27.8%	58.7%
Private including HMO	3,862	34.6%	23,635	91,279,990	7,020	27,110,720	3.4	37.8%	53.1%



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# Utilization Path: Data for Hospitals in a Geographic Area



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Hospitals grouped by Hospital Service Area (Dartmouth Atlas)

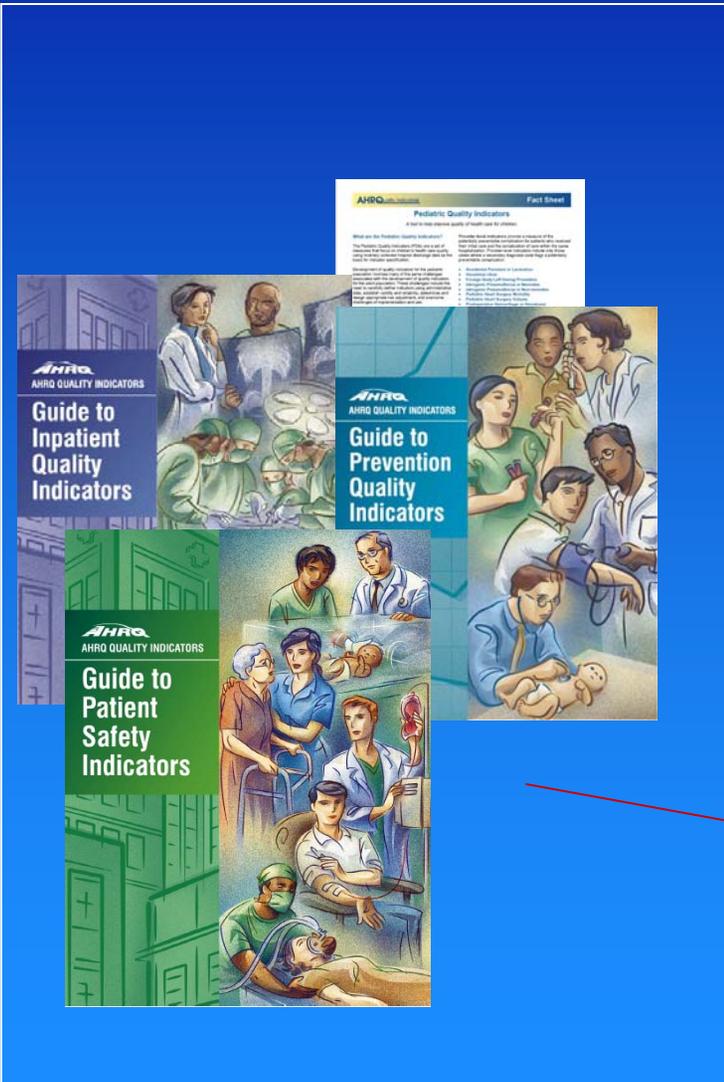
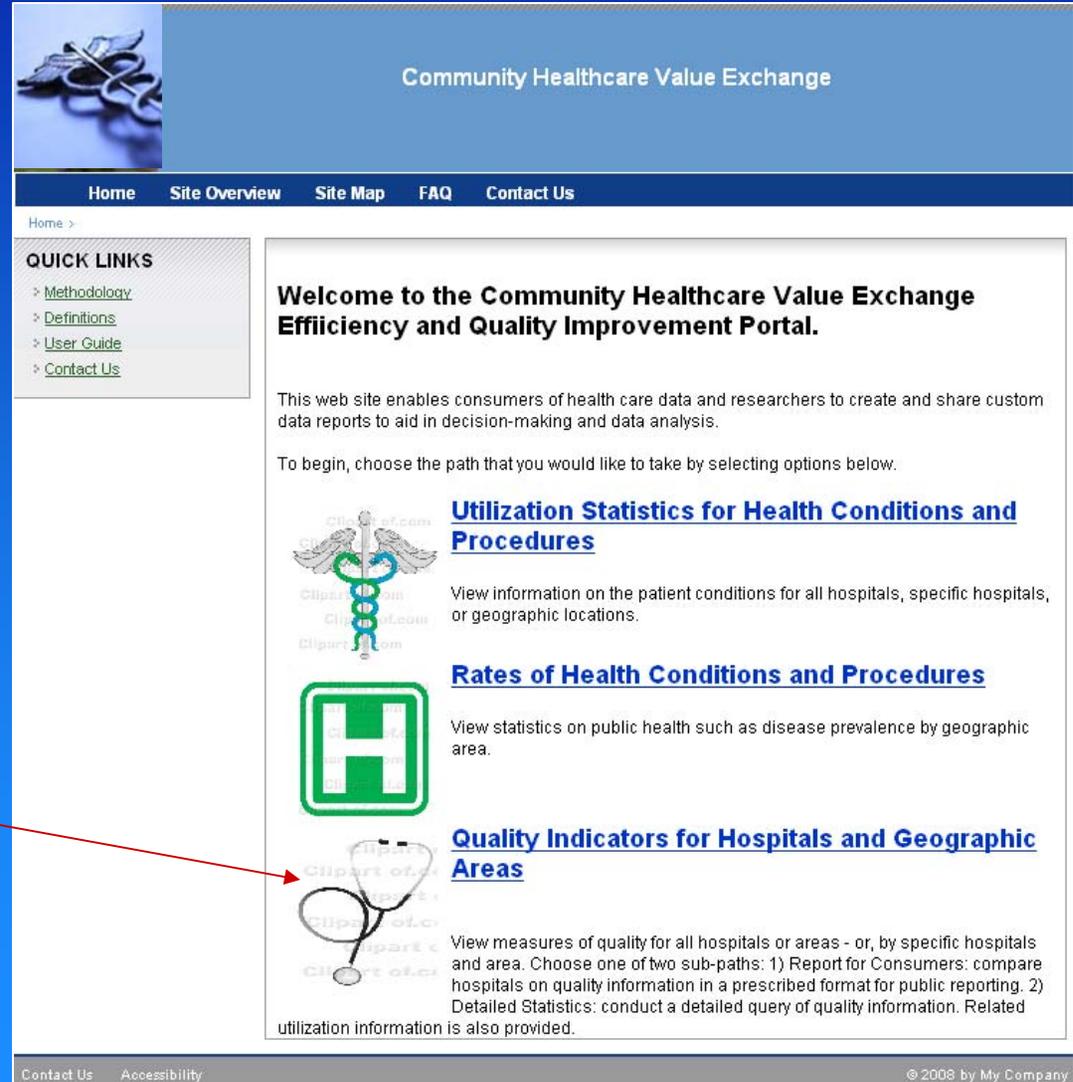


## Community Healthcare Value Exchange

STATISTICS FOR NEWARK HOSPITALS FOR 371 CESAREAN SECTION W/O CC (DRG 371)

Hospital Name	Hospital County	Number of discharges	Percent of discharges	Mean charges in dollars	Total charges in dollars	Mean costs in dollars	Total costs in dollars	Mean length of stay in days	Percent Male	Percent admitted through E.D.	Percent Died
NATIONAL DATA		1,012,445	n/a	13,194	13,357,829,148	4,544	4,600,775,961	3.3	*	4.4%	*
REGIONAL DATA		164,836	n/a	14,703	2,429,631,102	5,295	872,766,453	3.8	*	*	*
ALL NEW JERSEY HOSPITALS		31,255	100.0%	23,173	724,257,759	6,044	188,913,233	3.8	0.0%	2.9%	0.0%
NEWARK HOSPITALS											
Columbus Hospital	NJ - Essex	292	0.9%	19,984	5,835,229	4,233	1,236,152	3.3	0.0%	2.7%	0.0%
Newark Beth Israel Med Center	NJ - Essex	706	2.3%	15,774	11,136,690	3,114	2,198,660	3.5	0.0%	39.1%	0.0%
Saint James Hospital of Newark	NJ - Essex	364	1.2%	15,012	5,464,499	5,631	2,049,580	3.4	0.0%	33.0%	0.0%
University Hospital	NJ - Essex	344	1.1%	27,261	9,377,903	8,235	2,832,966	3.7	0.0%	23.8%	0.0%

Values based on 10 or fewer discharges are suppressed to protect confidentiality of patients and are designated with an asterisk (\*).

Community Healthcare Value Exchange

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Home >

**QUICK LINKS**

- > [Methodology](#)
- > [Definitions](#)
- > [User Guide](#)
- > [Contact Us](#)

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View information on the patient conditions for all hospitals, specific hospitals, or geographic locations.

**[Rates of Health Conditions and Procedures](#)**

View statistics on public health such as disease prevalence by geographic area.

**[Quality Indicators for Hospitals and Geographic Areas](#)**

View measures of quality for all hospitals or areas - or, by specific hospitals and area. Choose one of two sub-paths: 1) Report for Consumers: compare hospitals on quality information in a prescribed format for public reporting. 2) Detailed Statistics: conduct a detailed query of quality information. Related utilization information is also provided.

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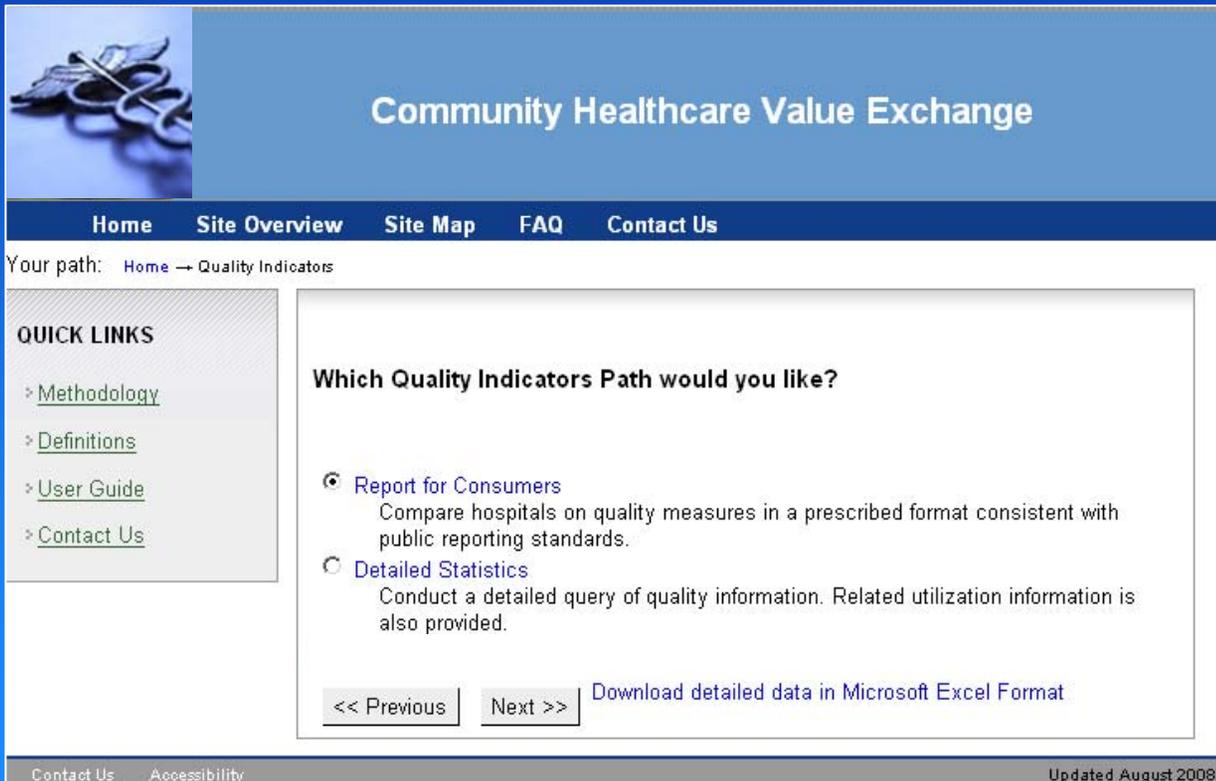


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# Quality Path: Consumer Report versus Detailed Statistics



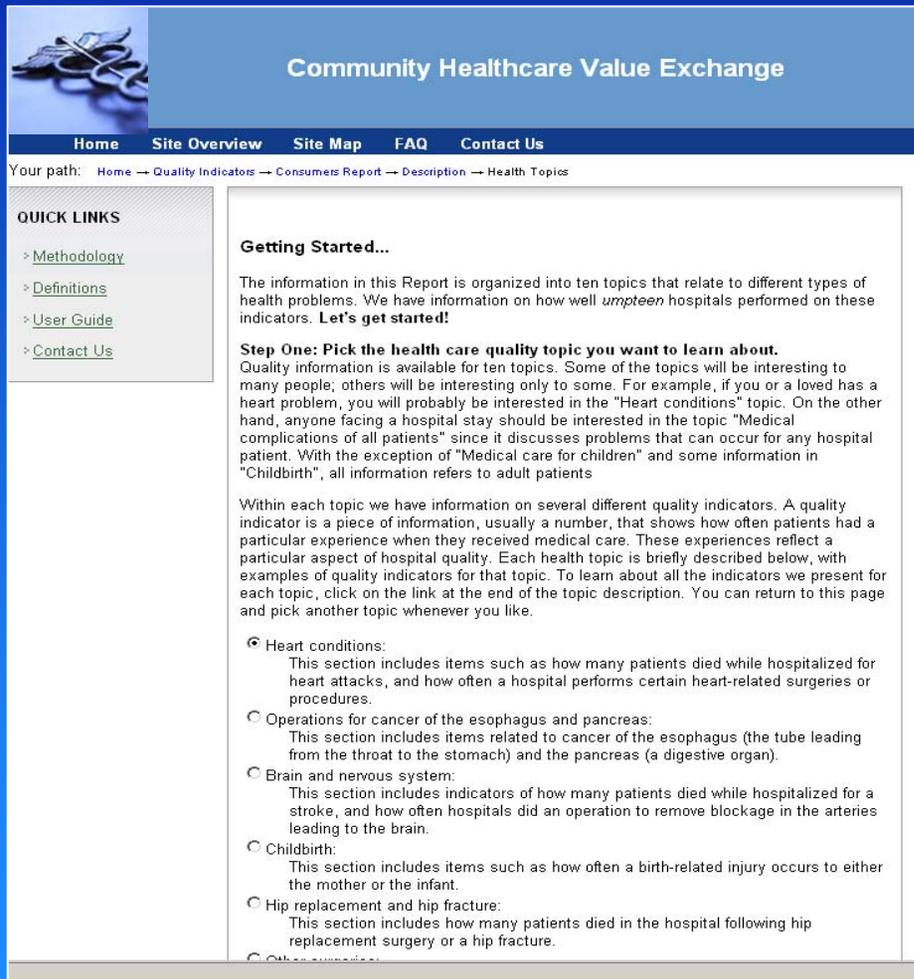
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The screenshot shows the 'Community Healthcare Value Exchange' website. At the top left is a small image of a chain link. The main header area contains the title 'Community Healthcare Value Exchange' and a navigation menu with links for 'Home', 'Site Overview', 'Site Map', 'FAQ', and 'Contact Us'. Below the navigation is a breadcrumb trail: 'Your path: Home → Quality Indicators'. On the left side, there is a 'QUICK LINKS' section with links to 'Methodology', 'Definitions', 'User Guide', and 'Contact Us'. The main content area is titled 'Which Quality Indicators Path would you like?' and contains two radio button options: 'Report for Consumers' (selected) and 'Detailed Statistics'. The 'Report for Consumers' option includes the text: 'Compare hospitals on quality measures in a prescribed format consistent with public reporting standards.' The 'Detailed Statistics' option includes: 'Conduct a detailed query of quality information. Related utilization information is also provided.' At the bottom of the main content area, there are navigation buttons '<< Previous' and 'Next >>' and a link 'Download detailed data in Microsoft Excel Format'. The footer of the website includes 'Contact Us', 'Accessibility', and 'Updated August 2008'.

**Two options:**  
Interested in  
(1) the report for  
consumers, or  
(2) detailed quality  
statistics?

Allows user to  
download detailed  
data to Excel



The screenshot shows the 'Community Healthcare Value Exchange' website. At the top, there is a navigation bar with links for Home, Site Overview, Site Map, FAQ, and Contact Us. Below this is a breadcrumb trail: Home → Quality Indicators → Consumers Report → Description → Health Topics. A 'QUICK LINKS' sidebar on the left contains links for Methodology, Definitions, User Guide, and Contact Us. The main content area is titled 'Getting Started...' and contains the following text:

**Getting Started...**

The information in this Report is organized into ten topics that relate to different types of health problems. We have information on how well *umpte*en hospitals performed on these indicators. **Let's get started!**

**Step One: Pick the health care quality topic you want to learn about.**

Quality information is available for ten topics. Some of the topics will be interesting to many people; others will be interesting only to some. For example, if you or a loved has a heart problem, you will probably be interested in the "Heart conditions" topic. On the other hand, anyone facing a hospital stay should be interested in the topic "Medical complications of all patients" since it discusses problems that can occur for any hospital patient. With the exception of "Medical care for children" and some information in "Childbirth", all information refers to adult patients

Within each topic we have information on several different quality indicators. A quality indicator is a piece of information, usually a number, that shows how often patients had a particular experience when they received medical care. These experiences reflect a particular aspect of hospital quality. Each health topic is briefly described below, with examples of quality indicators for that topic. To learn about all the indicators we present for each topic, click on the link at the end of the topic description. You can return to this page and pick another topic whenever you like.

- Heart conditions:  
This section includes items such as how many patients died while hospitalized for heart attacks, and how often a hospital performs certain heart-related surgeries or procedures.
- Operations for cancer of the esophagus and pancreas:  
This section includes items related to cancer of the esophagus (the tube leading from the throat to the stomach) and the pancreas (a digestive organ).
- Brain and nervous system:  
This section includes indicators of how many patients died while hospitalized for a stroke, and how often hospitals did an operation to remove blockage in the arteries leading to the brain.
- Childbirth:  
This section includes items such as how often a birth-related injury occurs to either the mother or the infant.
- Hip replacement and hip fracture:  
This section includes how many patients died in the hospital following hip replacement surgery or a hip fracture.
- Other surgeries:

Select one of ten  
quality health care topics:

1. Heart conditions
2. Brain and nervous system
3. Childbirth
4. Hip replacement and hip fracture
5. Operations for cancer of the esophagus and pancreas
6. Other surgeries
7. Other health conditions
8. Medical complications of patients having an operation
9. Medical complications of all patients
10. Medical care for children



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# Quality Path: Indicators



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## Community Healthcare Value Exchange

[Home](#) [Site Overview](#) [Site Map](#) [FAQ](#) [Contact Us](#)

Your path: [Home](#) → [Quality Indicators](#) → [Consumers Report](#) → [Description](#) → [Health Topics](#) → [Indicators](#)

### QUICK LINKS

- › [Methodology](#)
- › [Definitions](#)
- › [User Guide](#)
- › [Contact Us](#)

### Step 2: Quality of care for heart conditions

Information is available in the Report about five indicators of quality of care for heart conditions. Definitions of each of the indicators are provided below.

Please check the radio button next to the indicator you care about.

- All indicators**
- Death rate for heart attack patients**  
Deaths in the hospital of patients who came in because they had a heart attack (which is called an acute myocardial infarction).
- Death rate for patients with congestive heart failure**  
Deaths in the hospital of patients who came in because they had heart failure (which is called congestive heart failure).
- Death rate for patient having a coronary artery bypass graft (CABG)**  
Deaths in the hospital following an operation (called a coronary artery bypass graft, or CABG), which is designed to provide a way around clogged arteries in the heart.
- Death rate for patient having a percutaneous transluminal coronary angioplasty (PTCA)**  
Deaths in the hospital following a procedure (called a percutaneous transluminal coronary angioplasty, or PTCA) in which clogged arteries of the heart are opened up, and then kept open using wire mesh tubes or "stents".
- Rate of cardiac catheterization procedures on both sides of the heart**  
Many patients undergo a "cardiac catheterization" to learn how well the heart is working. Usually, this is done by putting tubes in the arteries on one side of the heart. This indicator shows how many patients getting this procedure have tubes put into the arteries on both sides of the heart (called a bi-lateral cardiac catheterization), which experts believe puts them at greater risk for complications.

### Additional information: Number of operations

Information is also available about the number of times coronary artery bypass grafts (CABG) and percutaneous transluminal coronary angioplasties (PTCA) were done at

Select all indicators within a topic  
or specific indicators that  
comprise the topic



## Community Healthcare Value Exchange

Home Site Overview Site Map FAQ Contact Us

Your path: Home → Quality Indicators → Consumers Report → Description → Health Topics → Indicators → Hospitals

**QUICK LINKS**

- > [Methodology](#)
- > [Definitions](#)
- > [User Guide](#)
- > [Contact Us](#)

**Step 3: Choose hospitals to compare**

Choose a region

Atlantic City  
Bayonne  
Belleville  
Bridgeton  
Camden  
Cape May Court House

Select up to four individual hospitals within the region

Hackensack Univ Medical Center  
Newark Beth Israel Med Center  
Palisades Medical Center  
Hunterdon Medical Center  
St Mary's Hospital  
Holy Name Hospital

<< Previous View Data Now

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Contact Us Accessibility Updated August 2008

Select a specific hospital or up to four hospitals in an area

Allows easy access to the data through “view data now” feature

Allows download to Microsoft Excel of summary tables

# Quality Path: Comparing QI Measures Across Four Hospitals



## Community Healthcare Value Exchange

### Compare hospital scores

When you are choosing a hospital, you should look for the hospital that does **Better than Average** on the topics that are most important to you, or on as many items as possible.

Click on the indicator names to see detailed results on how each hospital performed.

Death rate is the percent of patients who were treated for a particular illness or had a particular procedure who died while in each hospital during [insert year].

Rate is the percent of patients having a particular procedure who had it done in one way rather than another.

A hospital's score is calculated in comparison to the average of hospitals across the state.

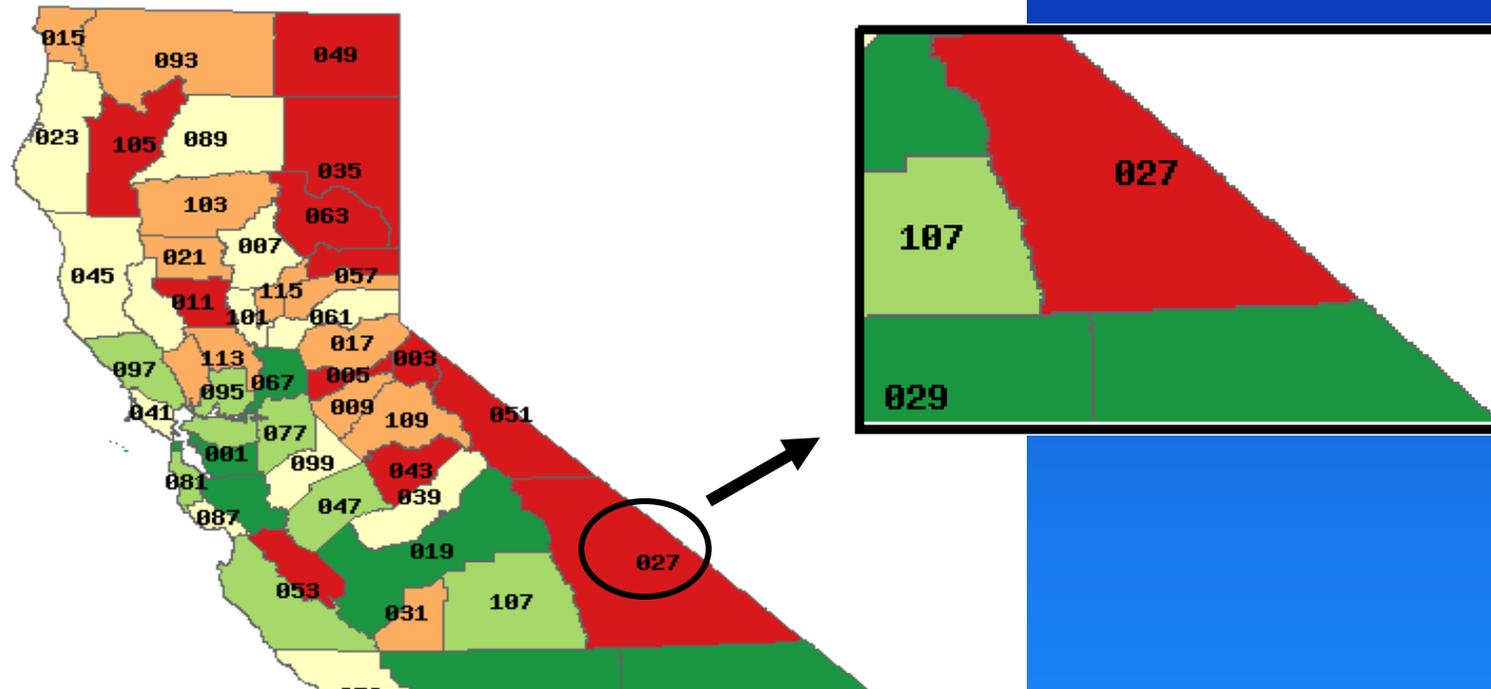
- Average is about the same as the average of hospitals across the state.
- Better than average is better than the average of hospitals across the state.
- Worse than average is worse than the average of hospitals across the state.

#### Quality indicator for chosen hospitals

Heart Condition	Hackensack Univ Medical Center	St Mary's Hospital	Holy Name Hospital	Newark Beth Israel Med Center
<a href="#">Indicator 1</a>	Average	Better Than Average	Average	Worse Than Average
<a href="#">Indicator 2</a>	Better Than Average	Average	Average	Average
<a href="#">Indicator 3</a>	Worse Than Average	Worse Than Average	Average	Better Than Average

# Preventable Hospitalization Costs Mapping Tool

Uncontrolled Diabetes Admission (2001, PQI14)



Better understand geographical patterns of hospital admission rates.  
Calculate potential cost savings if admission rates are reduced.

# Output: Excel Spreadsheet with Cost Savings Estimate

Potential cost savings if number of admissions were reduced by specified percentage

Microsoft Excel - pq\_cost\_2002.xls

File Edit View Insert Format Tools Data Window

K23

**QI Name**

Chronic Obstructive Pulmonary Disease (PQI 5)

Cost Savings Given Reduction of Cases by

County	Name	Mean Cost	Total Cases	Total Cost	10%	20%	30%	40%	50%
26001	Alcona	6,373.43	13	82,854.59	8,285.46	16,570.92	24,856.38	33,141.84	41,427.29
26003	Alger	4,200.81	9	37,807.29	3,780.73	7,561.46	11,342.19	15,122.92	18,903.64
26005	Allegan	4,729.93	111	525,022.23	52,502.22	105,004.45	157,506.67	210,008.89	262,511.11
26007	Alpena	5,252.40	76	399,182.40	39,918.24	79,836.48	119,754.72	159,672.96	199,591.20
26009	Antrim	5,117.96	24	122,831.04	12,283.10	24,566.21	36,849.31	49,132.42	61,415.52
26011	Arenac	5,002.26	7	35,015.82	3,501.58	7,003.16	10,504.75	14,006.33	17,507.91
26013	Baraga	3,646.28	21	76,571.88	7,657.19	15,314.38	22,971.56	30,628.75	38,285.94
26015	Barry	5,179.23	93	481,668.39	48,166.84	96,333.68	144,500.52	192,667.36	240,834.19
					349,381.16	524,071.74	698,762.32	873,452.90	
					31,153.85	46,730.77	62,307.70	77,884.62	
					292,278.12	438,417.18	584,556.24	730,695.30	

**County name, mean cost of admission for indicator, number of cases, and total cost**

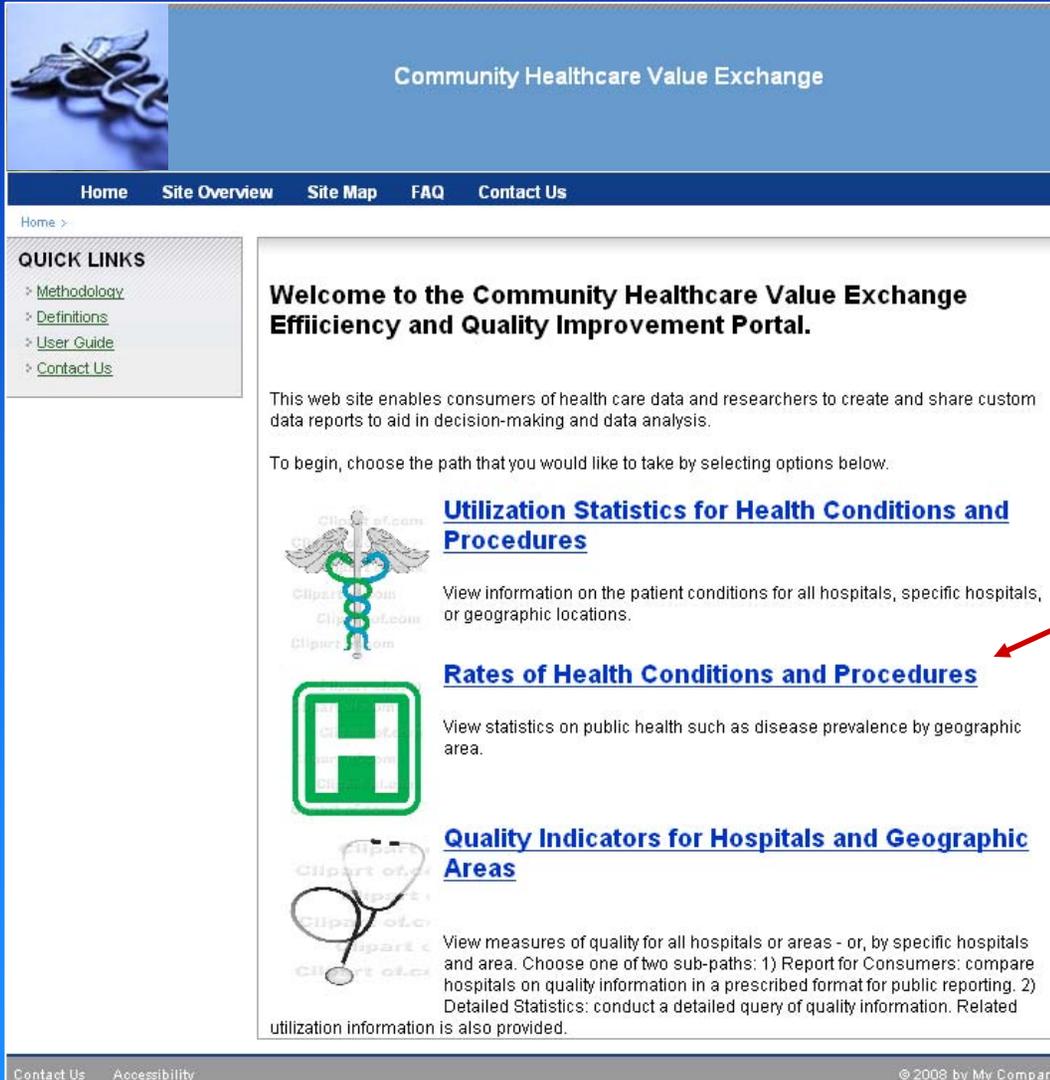


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# The Last Path: Utilization Rates Path



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View statistics on public health such as disease prevalence by geographic area.

 **Quality Indicators for Hospitals and Geographic Areas**  
View measures of quality for all hospitals or areas - or, by specific hospitals and area. Choose one of two sub-paths: 1) Report for Consumers: compare hospitals on quality information in a prescribed format for public reporting. 2) Detailed Statistics: conduct a detailed query of quality information. Related utilization information is also provided.

Utilization and QI Paths are under active development

A third path, the Rates Path, is being designed



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## WHEN: Timeline –

# 9 months from Concept to Product



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Incremental build throughout Summer and Fall  
using an iterative rapid application  
development methodology

**TARGET COMPLETION DATE OF PHASE 1:  
JANUARY 30, 2009**



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# Challenges



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- Aggressive timeline
- Variety of users will want to use the system
  - Different system capabilities
  - Different resource availability
  - System needs to have minimum requirements
  - Need to keep the cost of implementation low
- Limited nature of static model versus dynamic model

EQUIP is an **evolving tool** – the current version is a prototype

## Phase 1

- 3 Paths
  - Utilization
  - Rates
  - Quality
- Mapping capability
- National and regional benchmarks
- Static design

## Subsequent Phases

- Additional Paths
  - Hospital Compare
  - HCAHPS
- Evaluate other data sources
- Provide links to other resources
- Dynamic design
  - Consider adding other federal data sources
- *Many more ideas...will also solicit user suggestions*



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## What makes *EQUIP* unique?



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### EMPOWERS

organizations and consumers to use data to make informed decisions

Provides organizations with the ability to create/host their own website and upload their own data

Enables local organizations to do their own reporting using a standard, validated method

Allows users to draw together multiple data sources that provide information at the local level



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Questions?  
Comments?  
Suggestions?