AHRQ

Agency for Healthcare Research and Quality

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

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Development Team

H·CUP

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

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Outline

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HEALTHCARE COST AND UTILIZATION PROJECT

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

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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

WHY: Rationale

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

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Rationale

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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.

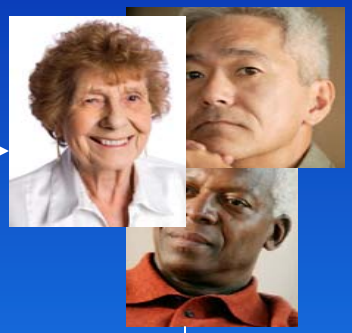
THE AGENCY FOR HEALTHCARE RESEARCH AND QUALITY MISSION

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

From Data to Information to Action

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

WHO: Two User Groups – Host and End User

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***

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HOW: The Making of EQUIP...

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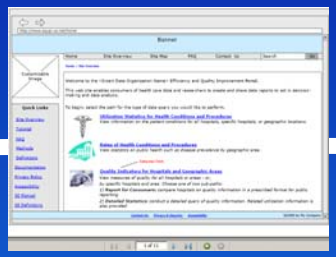


Storyboard

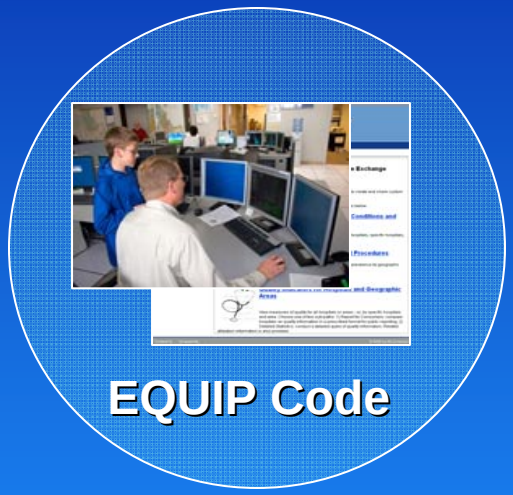
Iterative rapid development

Continuous “Alpha” Testing

Beta Test: Larger number of testers

EQUIP code

Local EQUIP Website



EQUIP Code

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

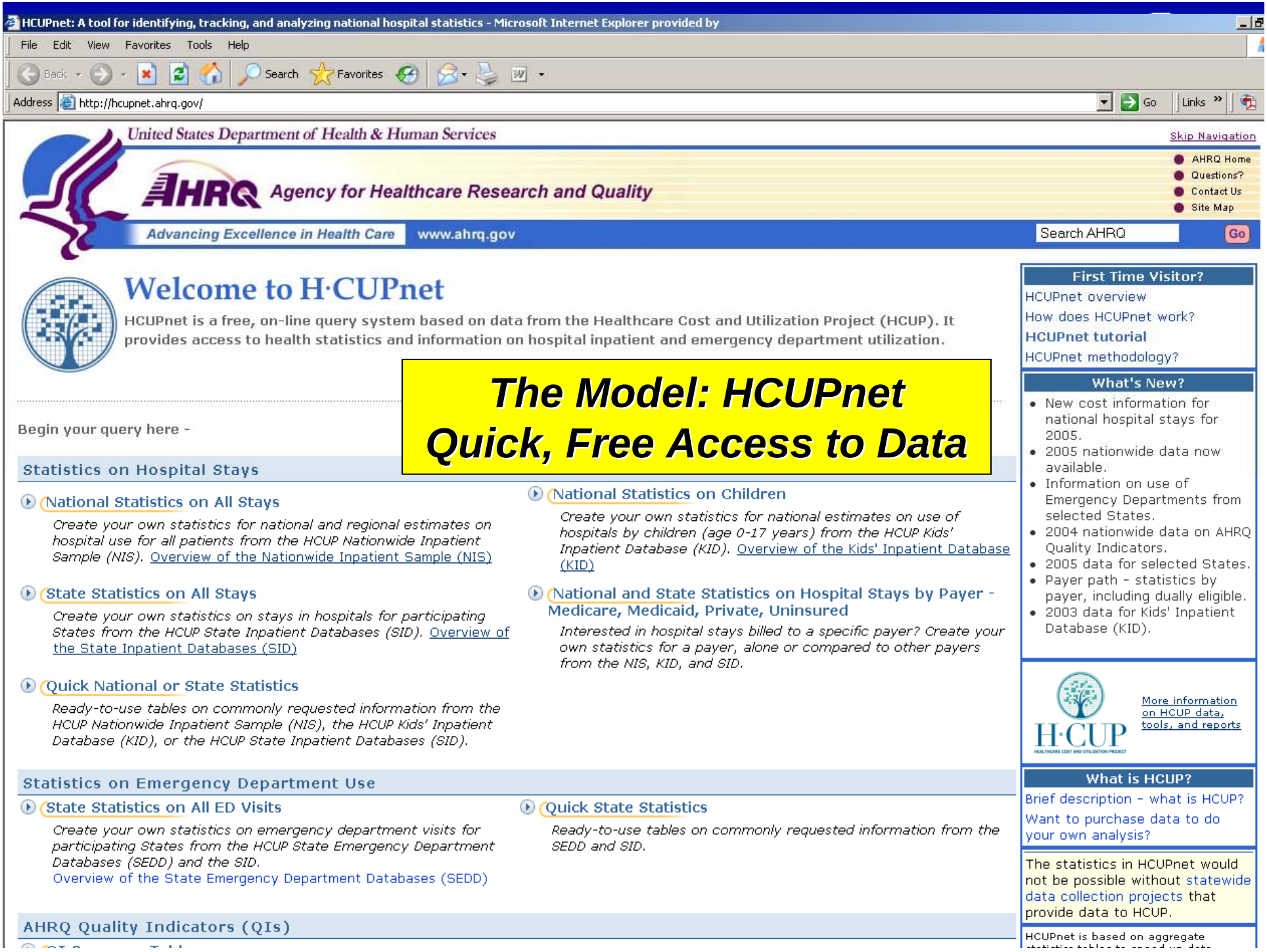
End users will access the EQUIP website to run queries about healthcare utilization, cost, and quality for local hospitals and areas

General Considerations as Development Proceeds

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

Customizable Features

- 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


HCUPnet: A tool for identifying, tracking, and analyzing national hospital statistics - Microsoft Internet Explorer provided by
File Edit View Favorites Tools Help
Back Search Favorites
Address http://hcupnet.ahrq.gov/
Go Links
United States Department of Health & Human Services
Skip Navigation
AHRQ Agency for Healthcare Research and Quality
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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).
H·CUP
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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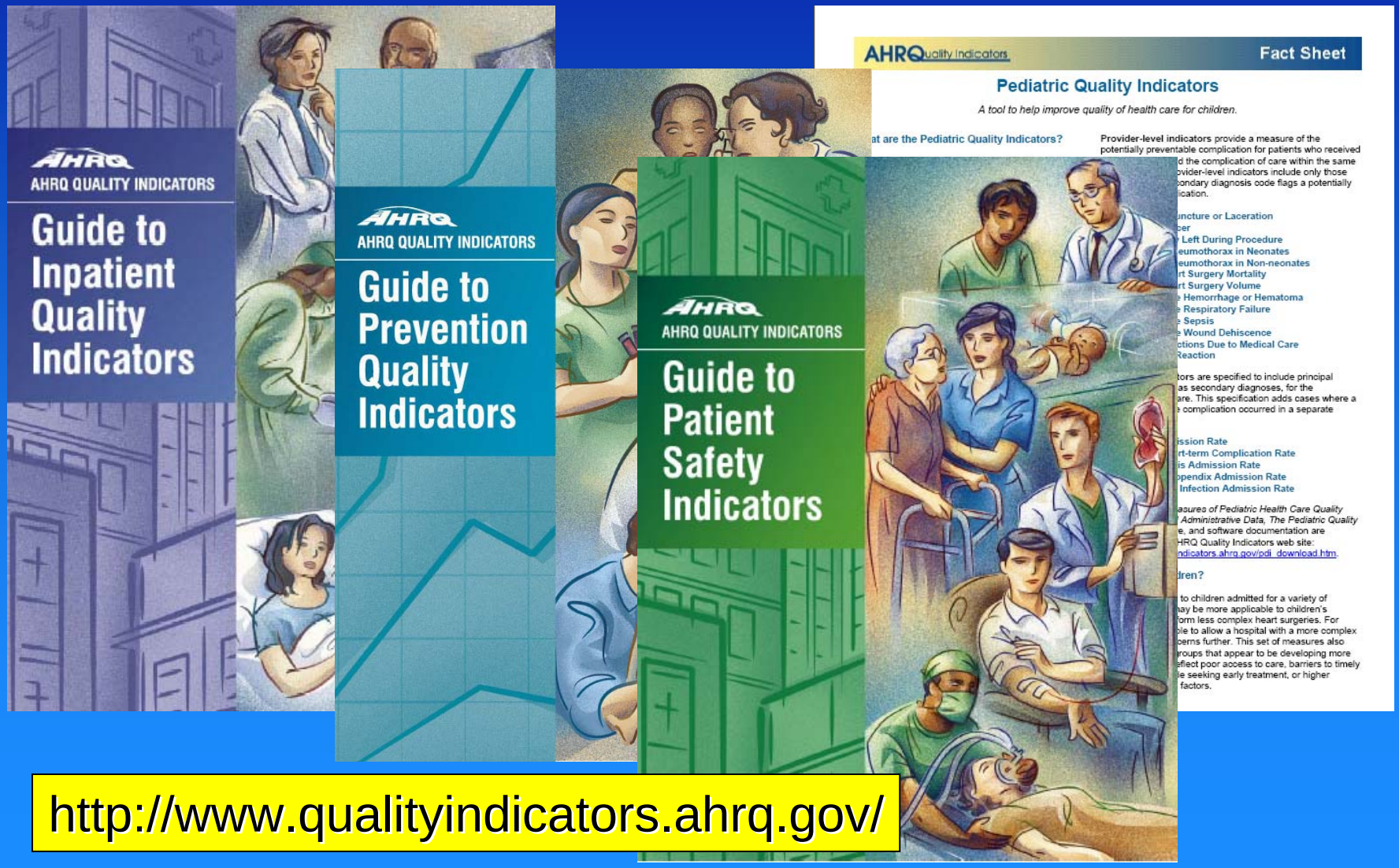
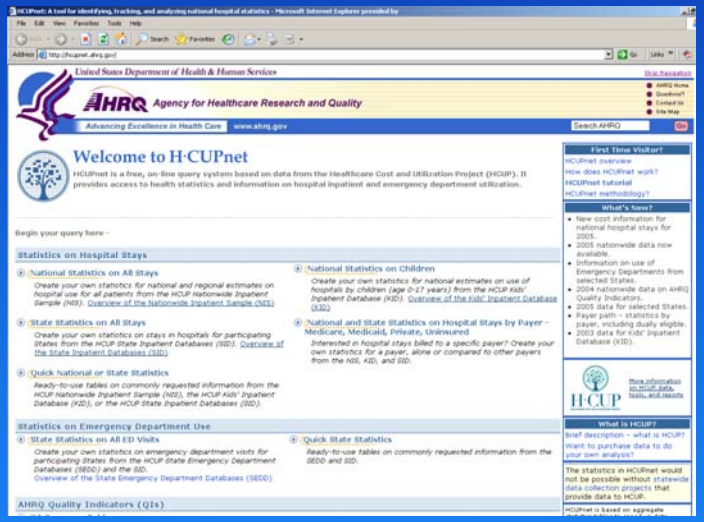


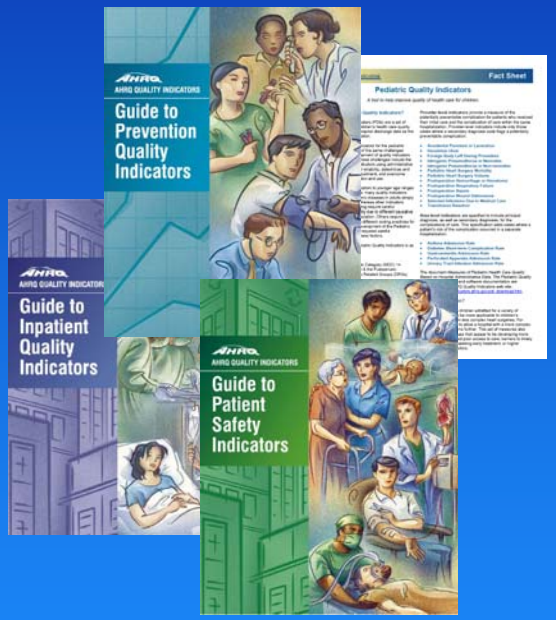
http://www.qualityindicators.ahrq.gov/

EQUIP = HCUPnet + QI + More

HCUPnet



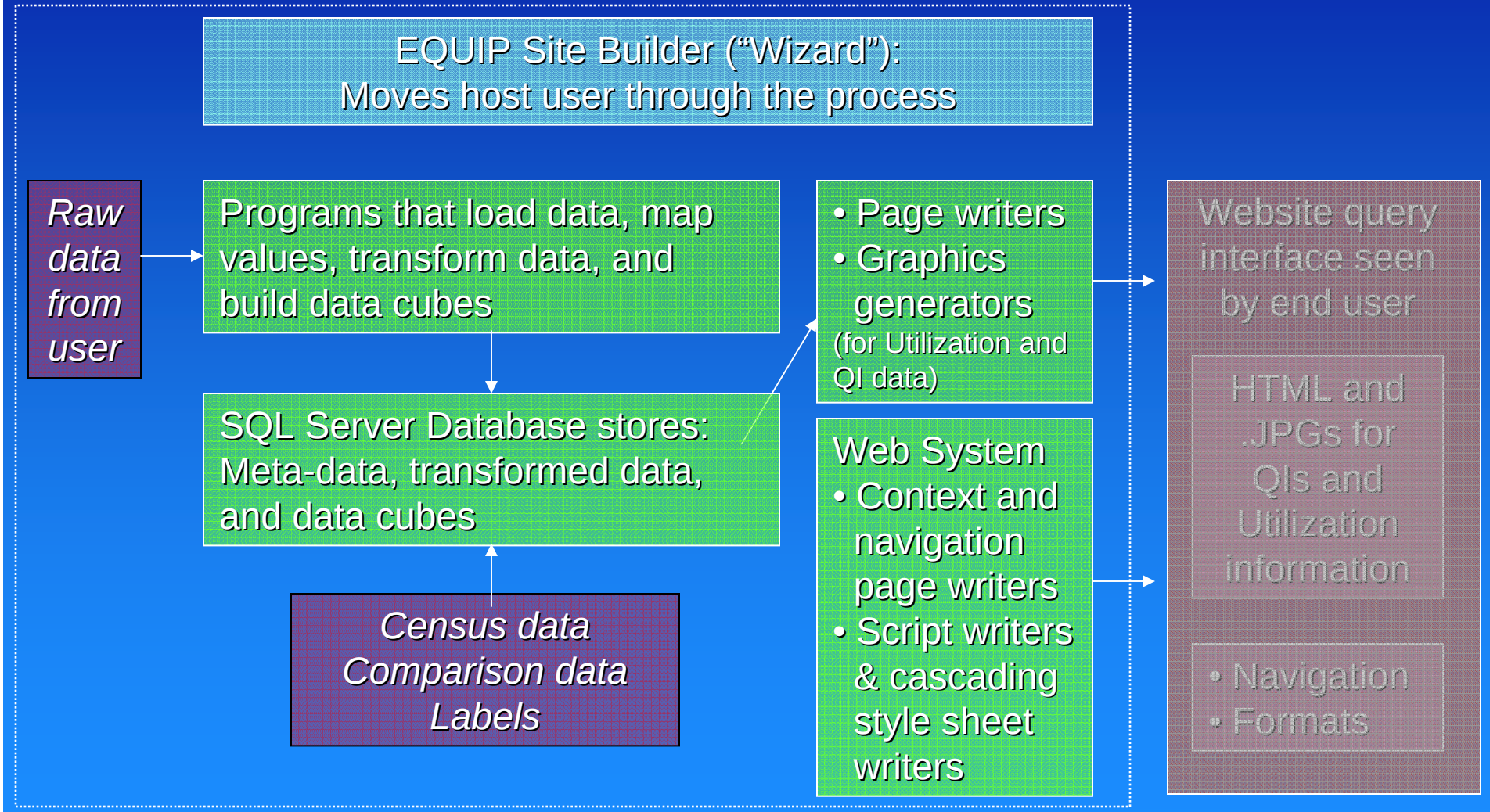
QIs



Query Paths, Output Tables, Interface, Help and Definitions

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

A Brief Technical Overview



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EQUIP Paths

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THREE PATHS

UTILIZATION: HEALTH CONDITIONS AND PROCEURES

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

Three Paths: Example Questions They Will Answer

UTILIZATION: HEALTH CONDITIONS AND PROCEURES

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?

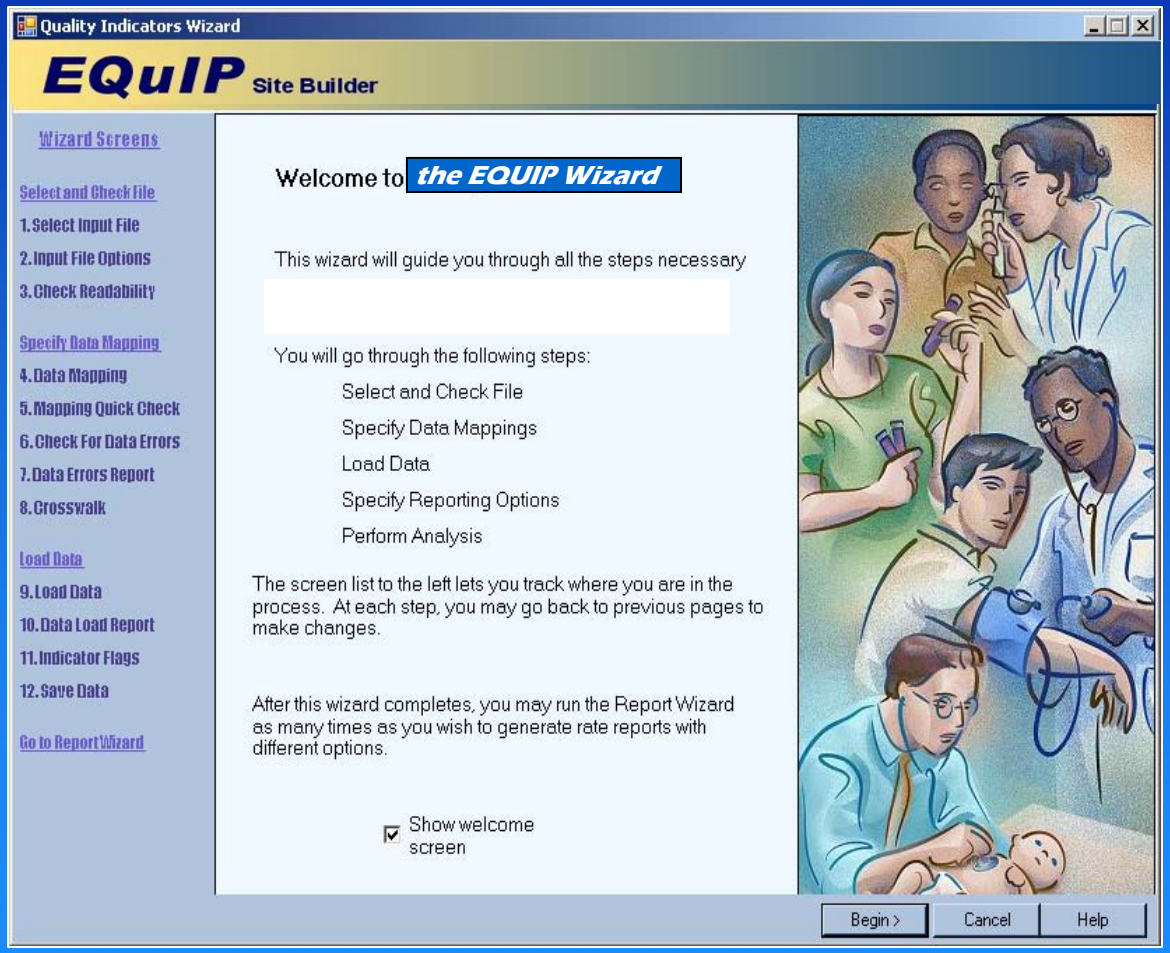
A Peek at EQUIP – How will it work?

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

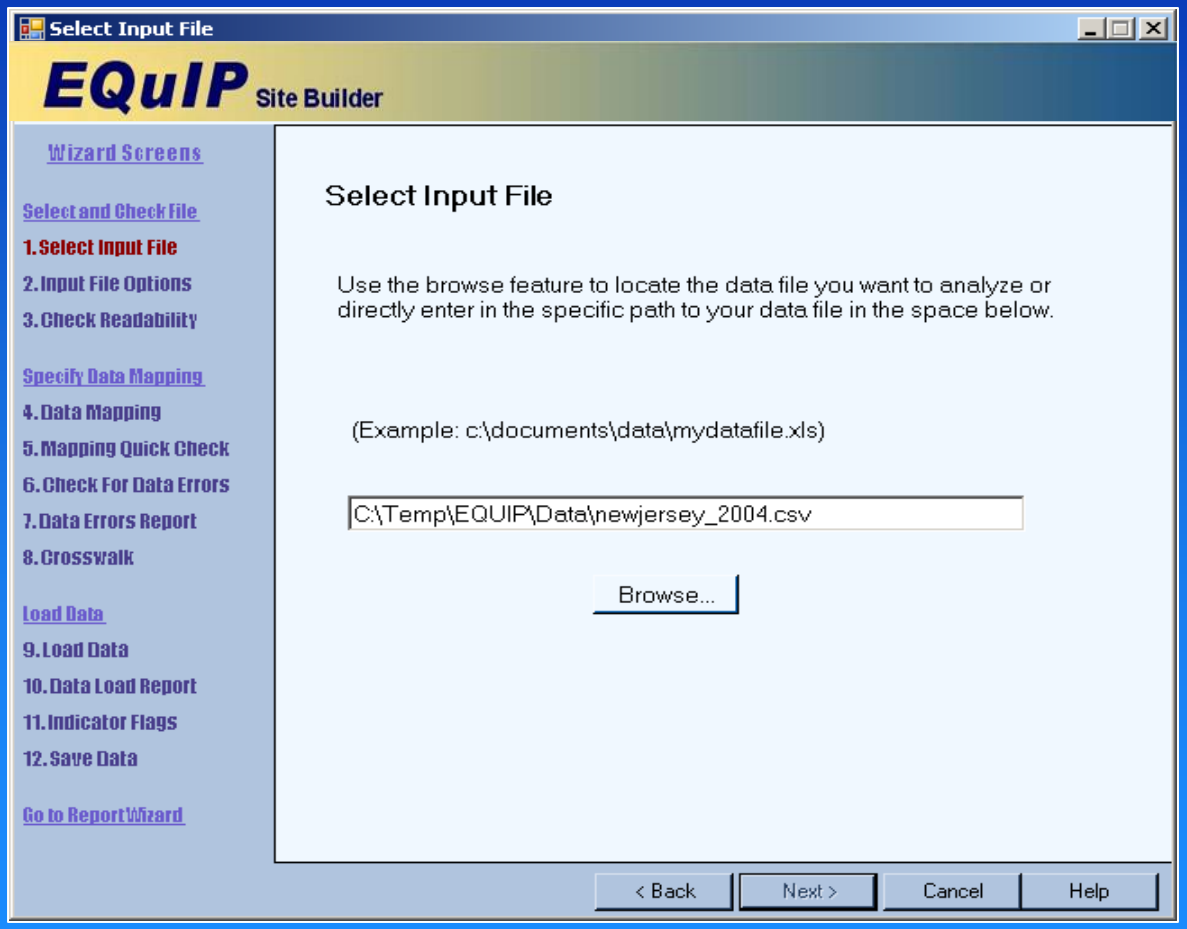


This tool is the existing AHRQ Quality Indicators Wizard

Is being expanded to build EQUIP

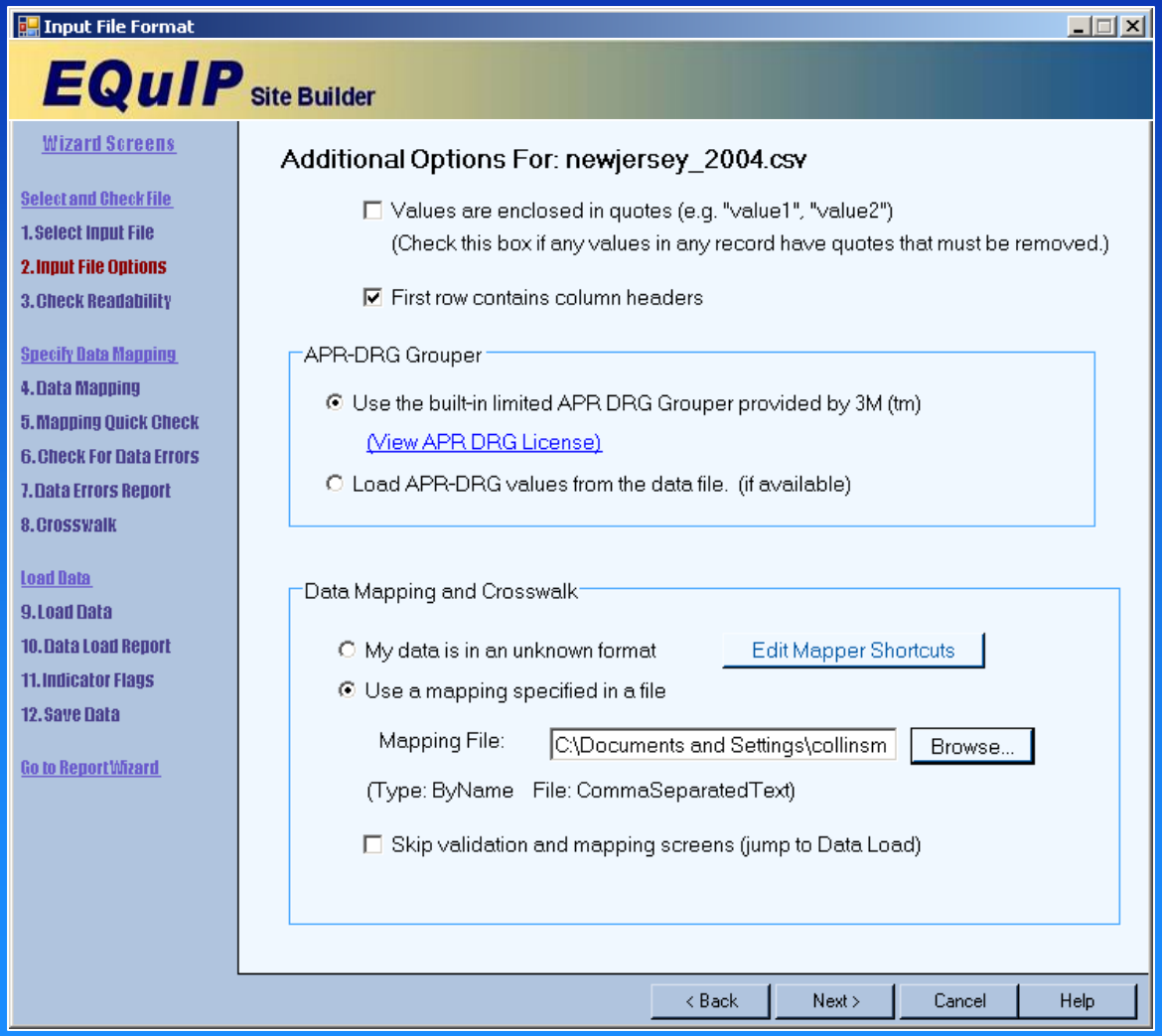
Import Data Wizard – initial screen

Host User EQuIP Tool: Select File



Select input file

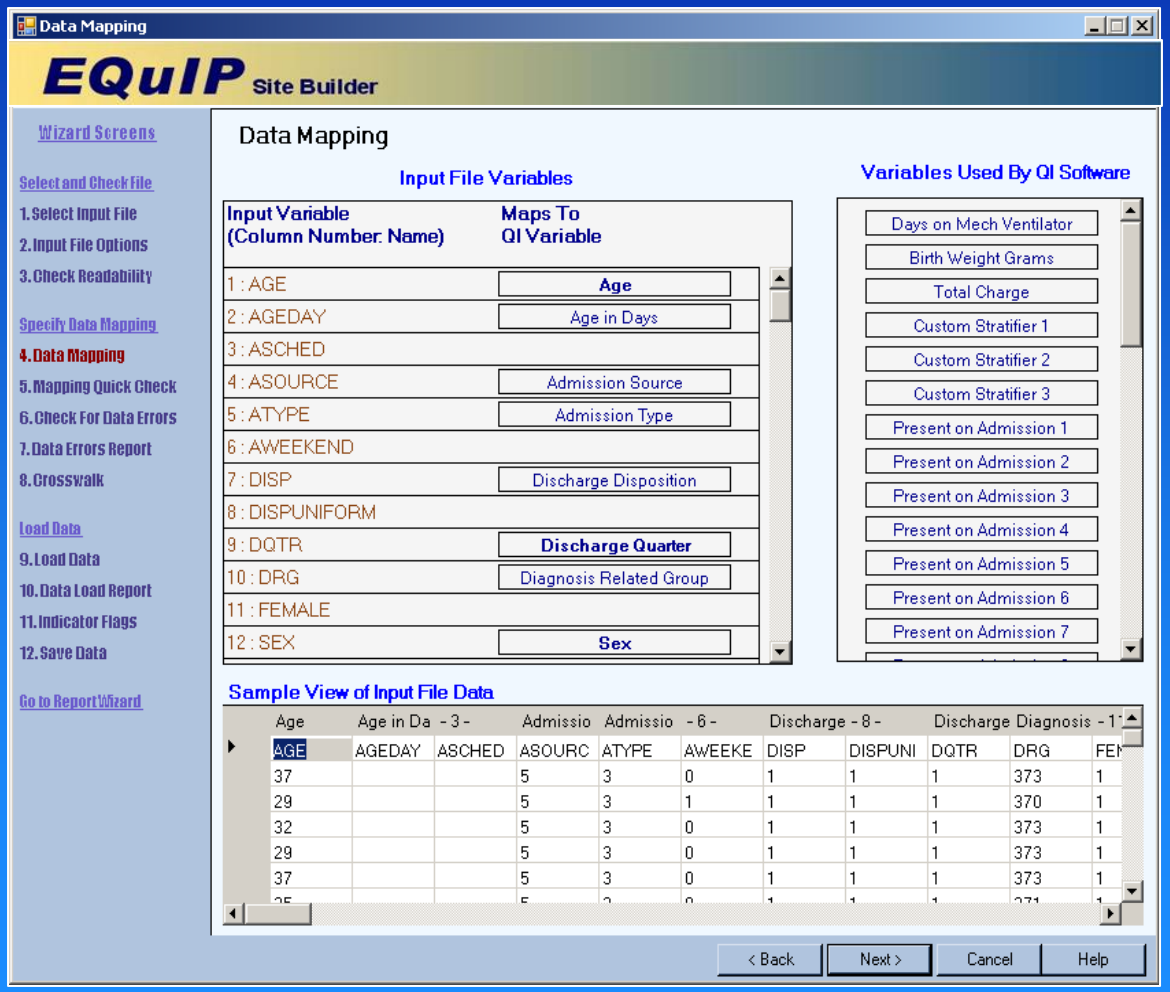
Host User EQuIP Tool: Load and Map Data



Select options for loading and mapping data

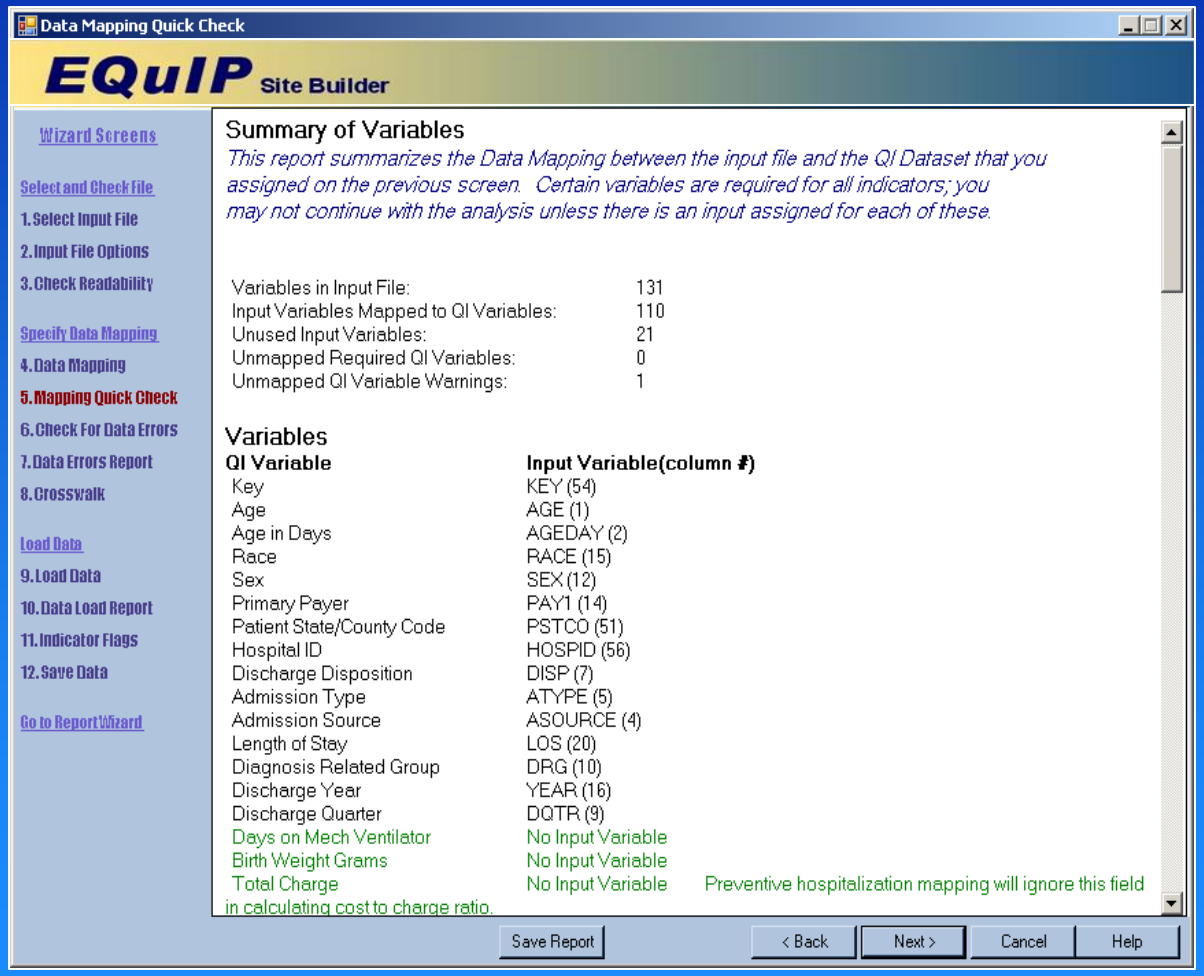
This file stores all of the mappings for future use

Host User EQuIP Tool: Map Data



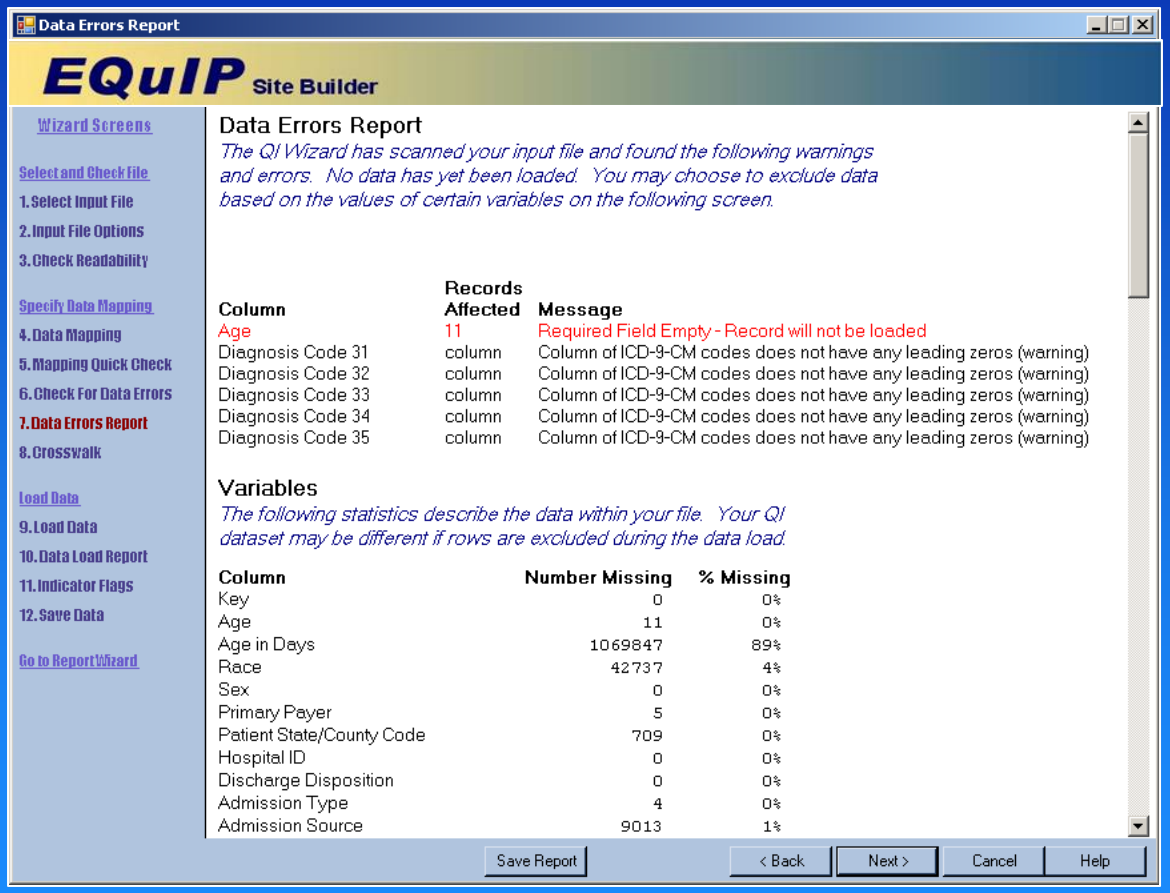
Map input file variables to variables used by software

Host User EQuIP Tool: Variable Summary



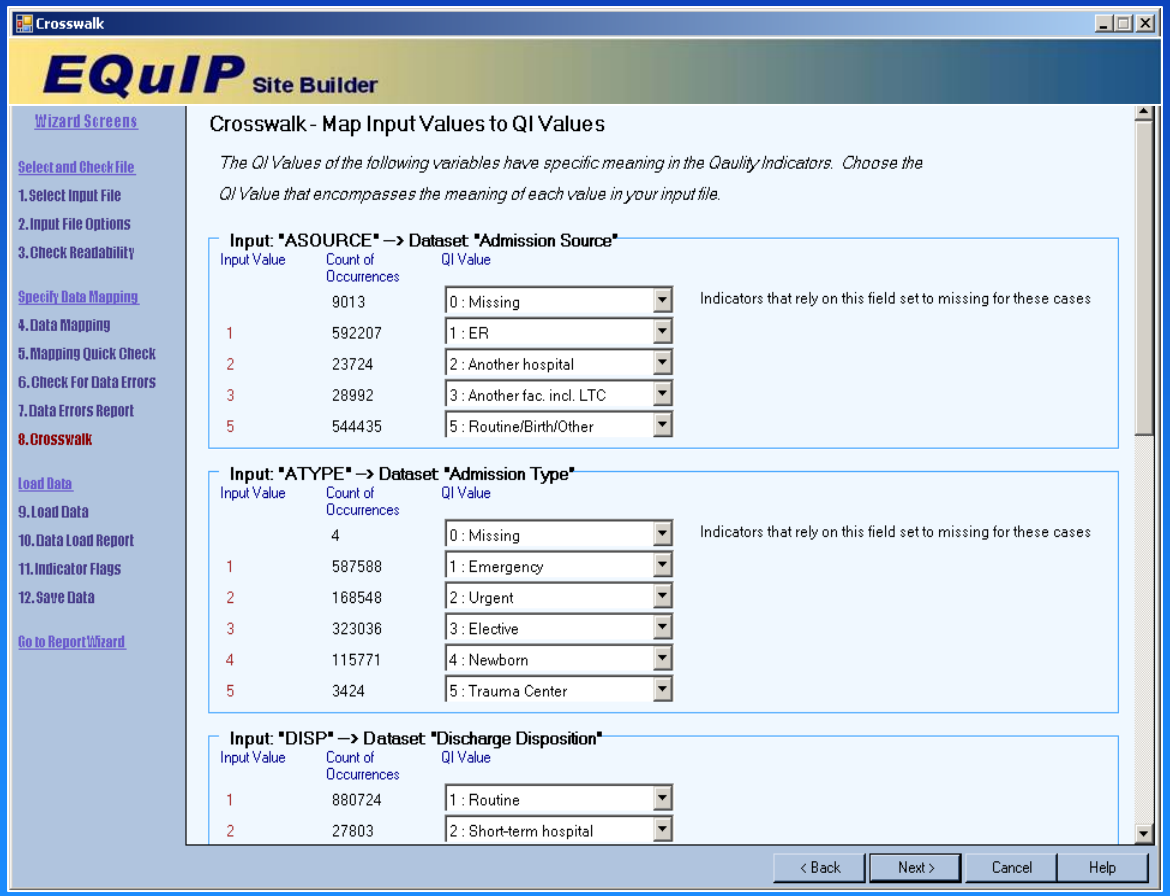
Summary of variables

Host User EQuIP Tool: Errors Checking



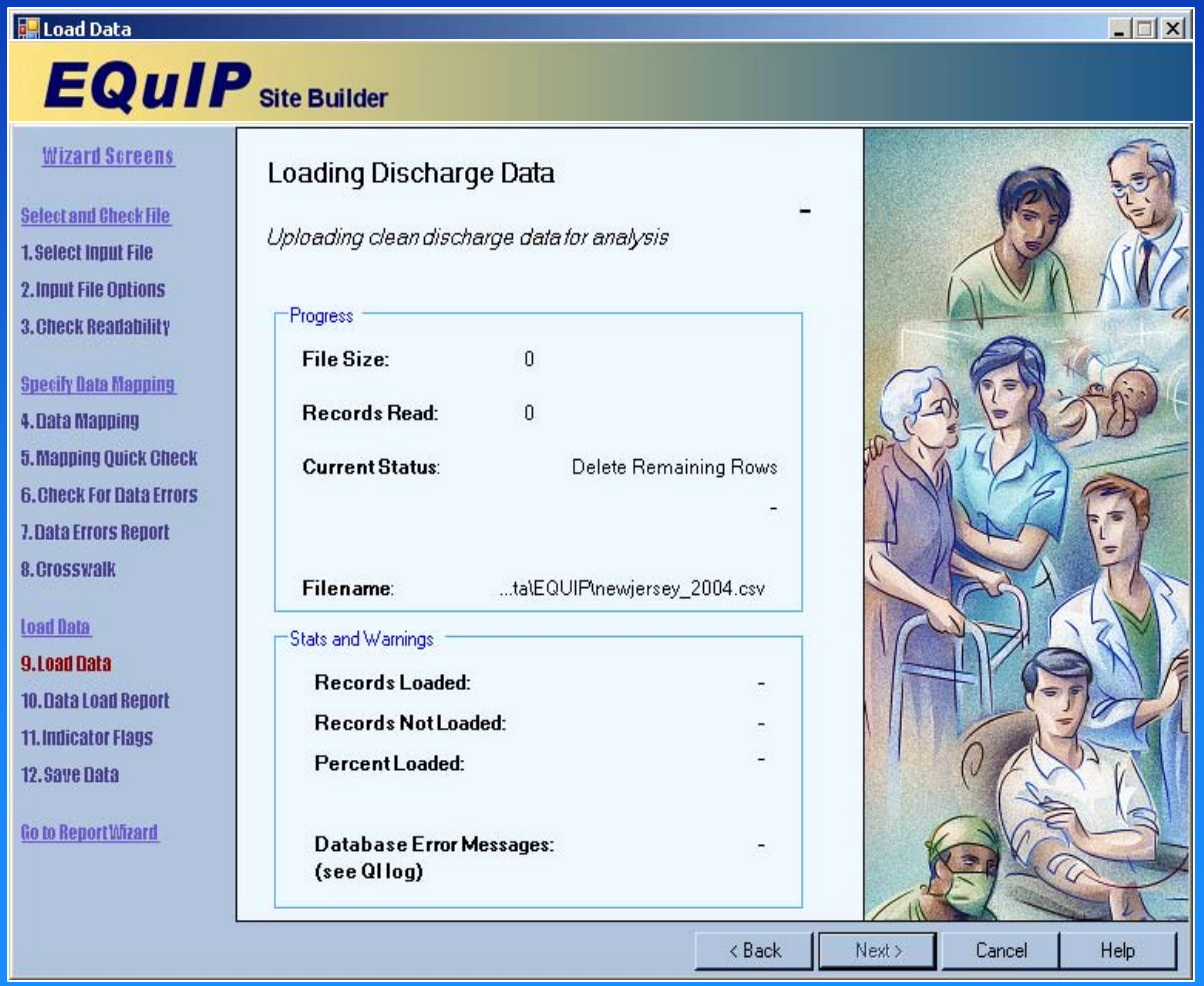
Scan file and report errors

Host User EQuIP Tool: Crosswalk



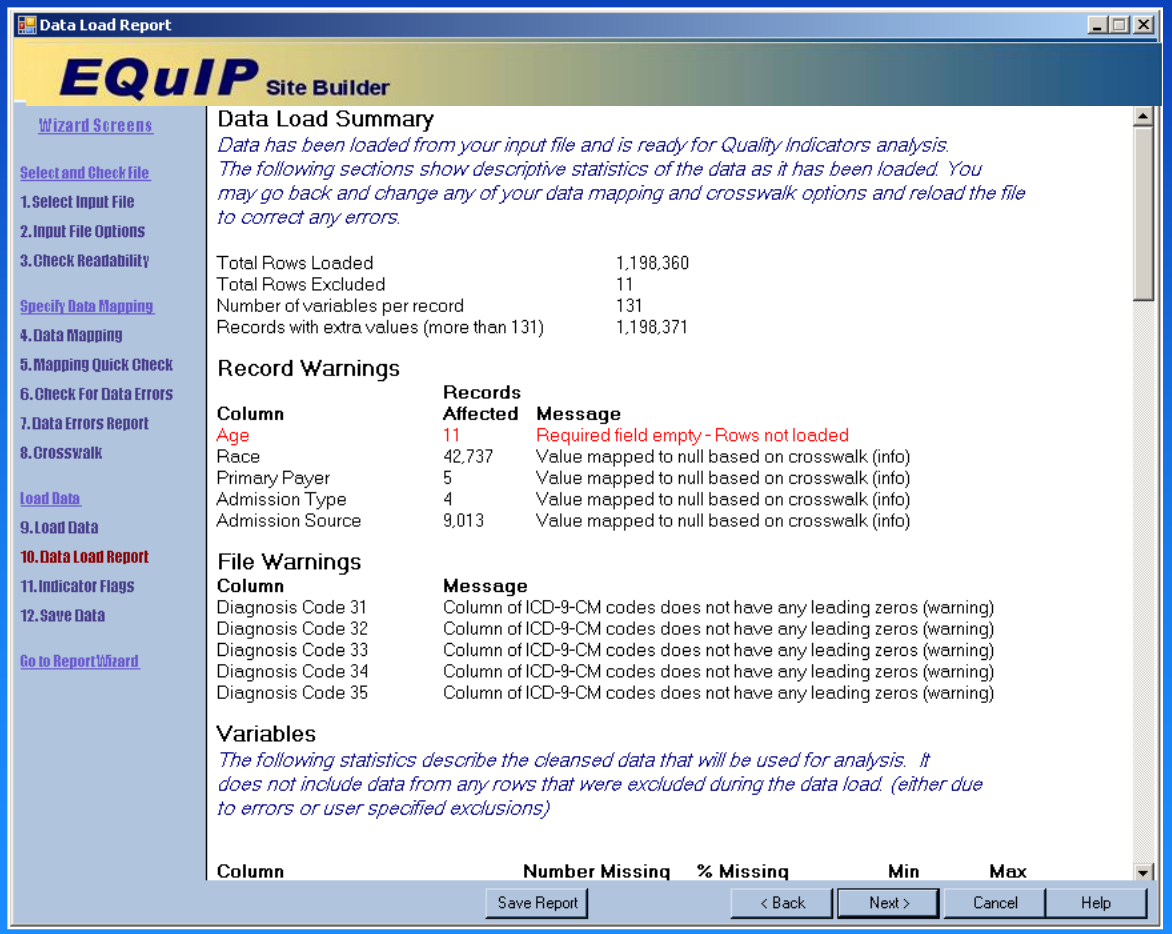
Map the values from the input data to standard values required by EQUIP

Host User EQuIP Tool: SQL Server



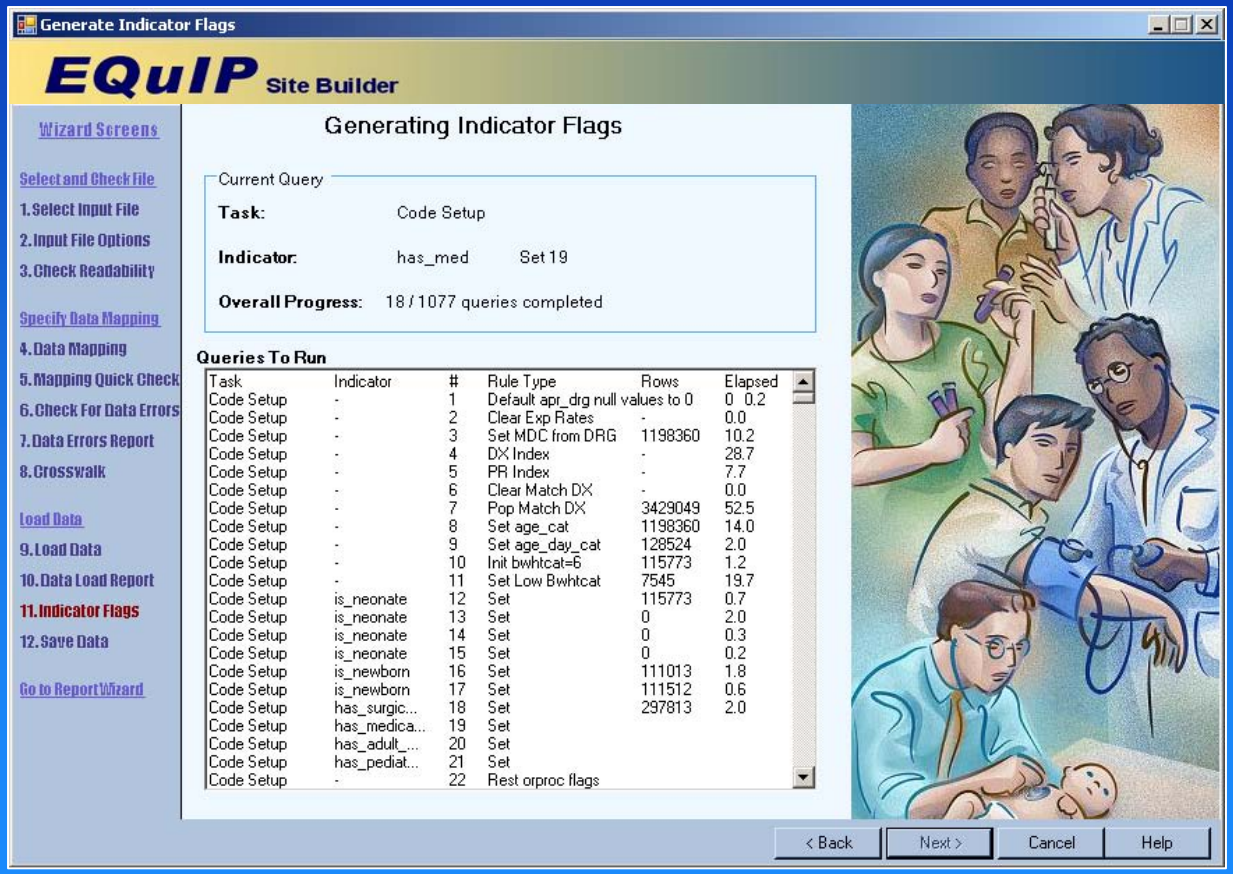
Data are loaded into an SQL Server

Host User EQUIP Tool: Summary Report



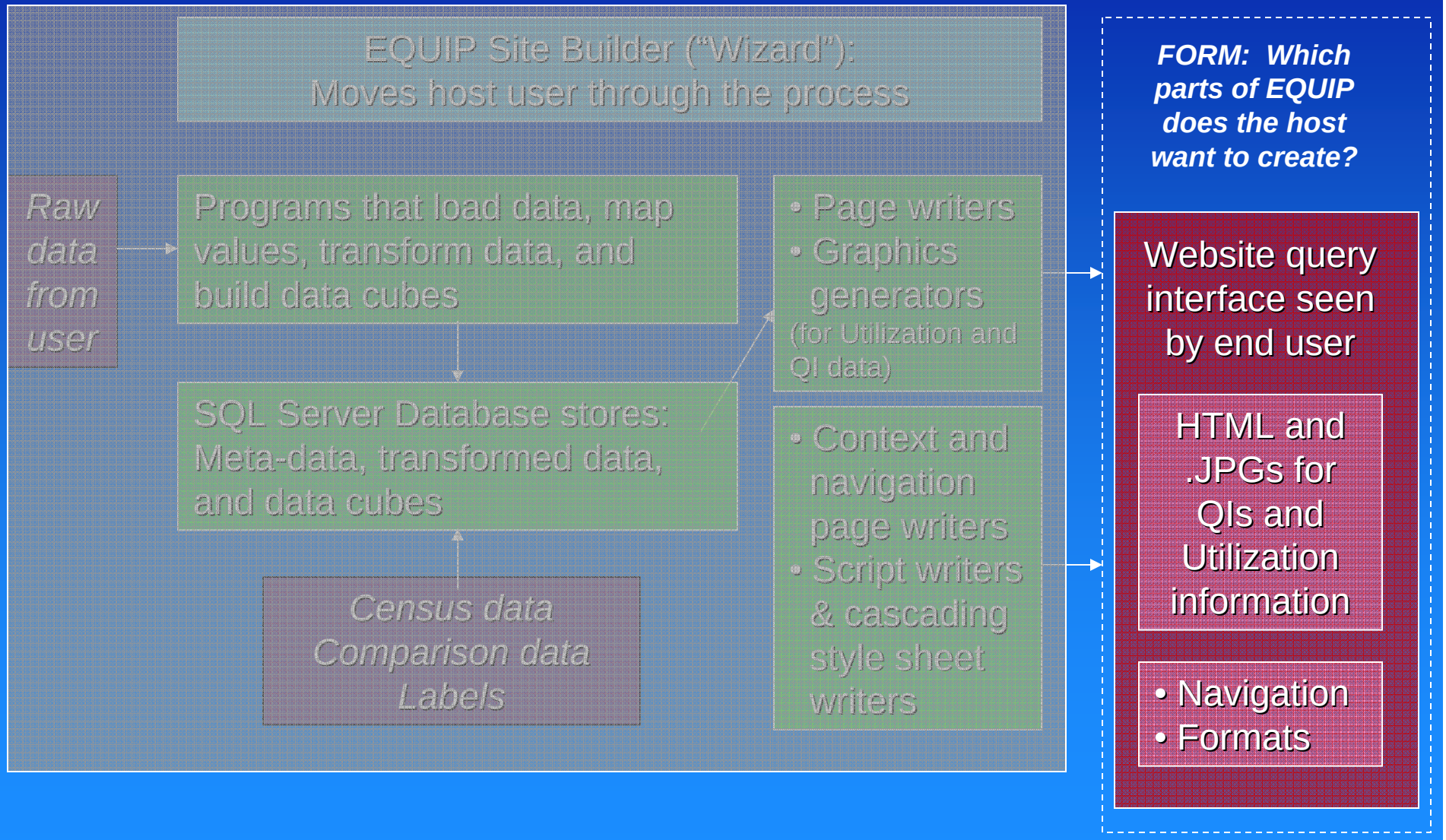
Summary report

Host User EQUIP Tool: Data Cubes

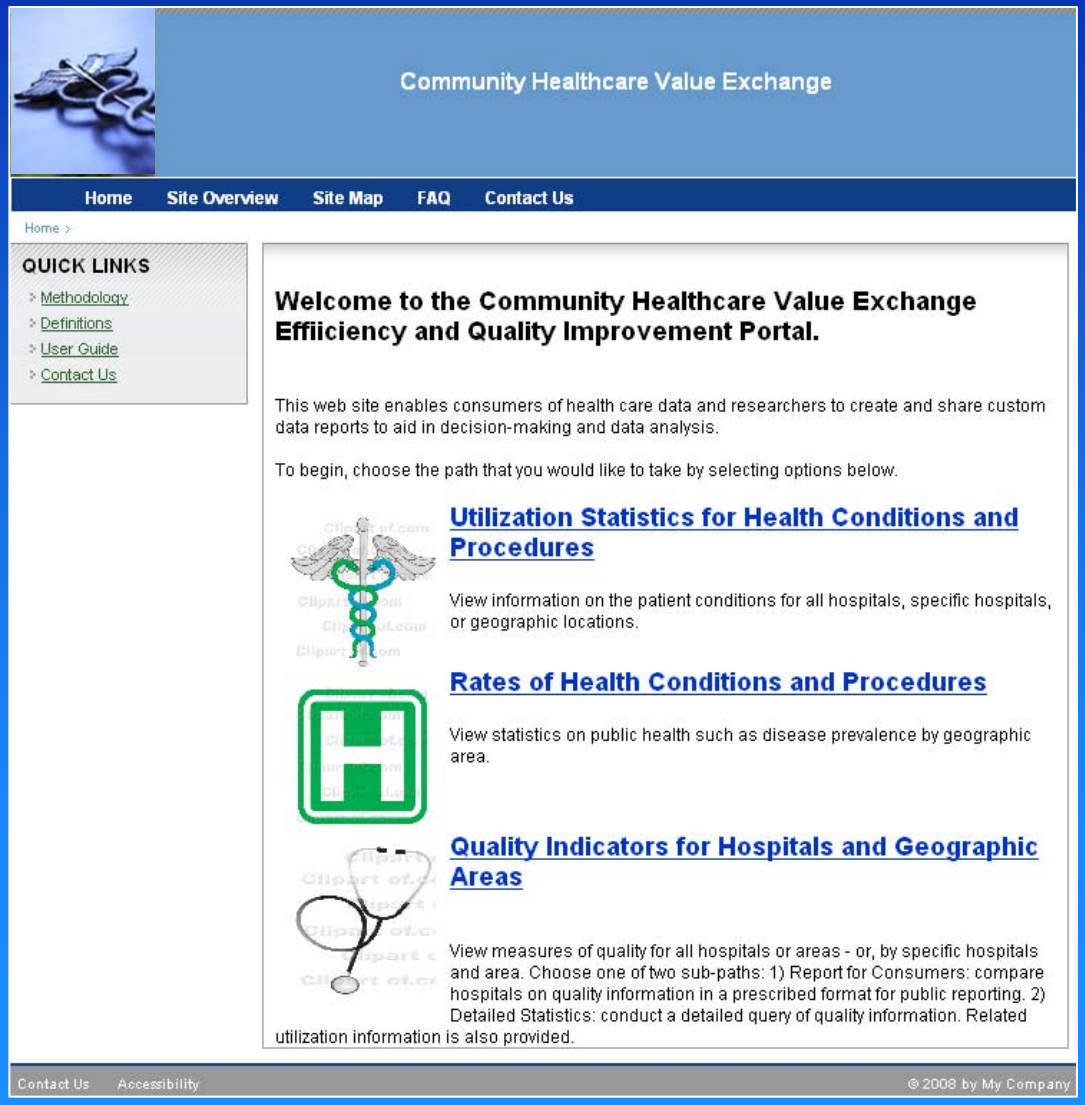


Create data cubes

End User Website Interface



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



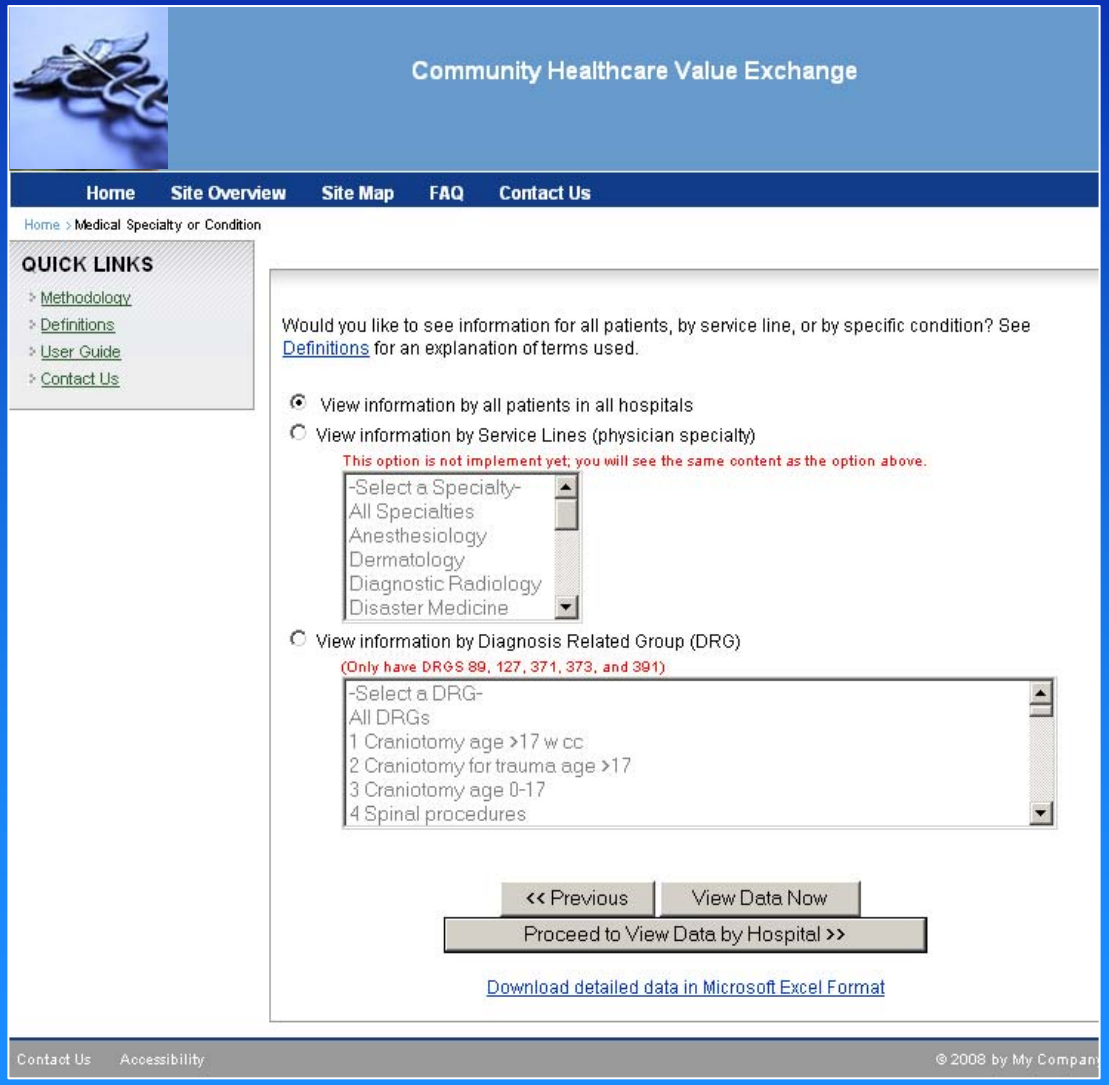
Select 1 of 3 Paths:

UTILIZATION

RATES

QUALITY INDICATORS

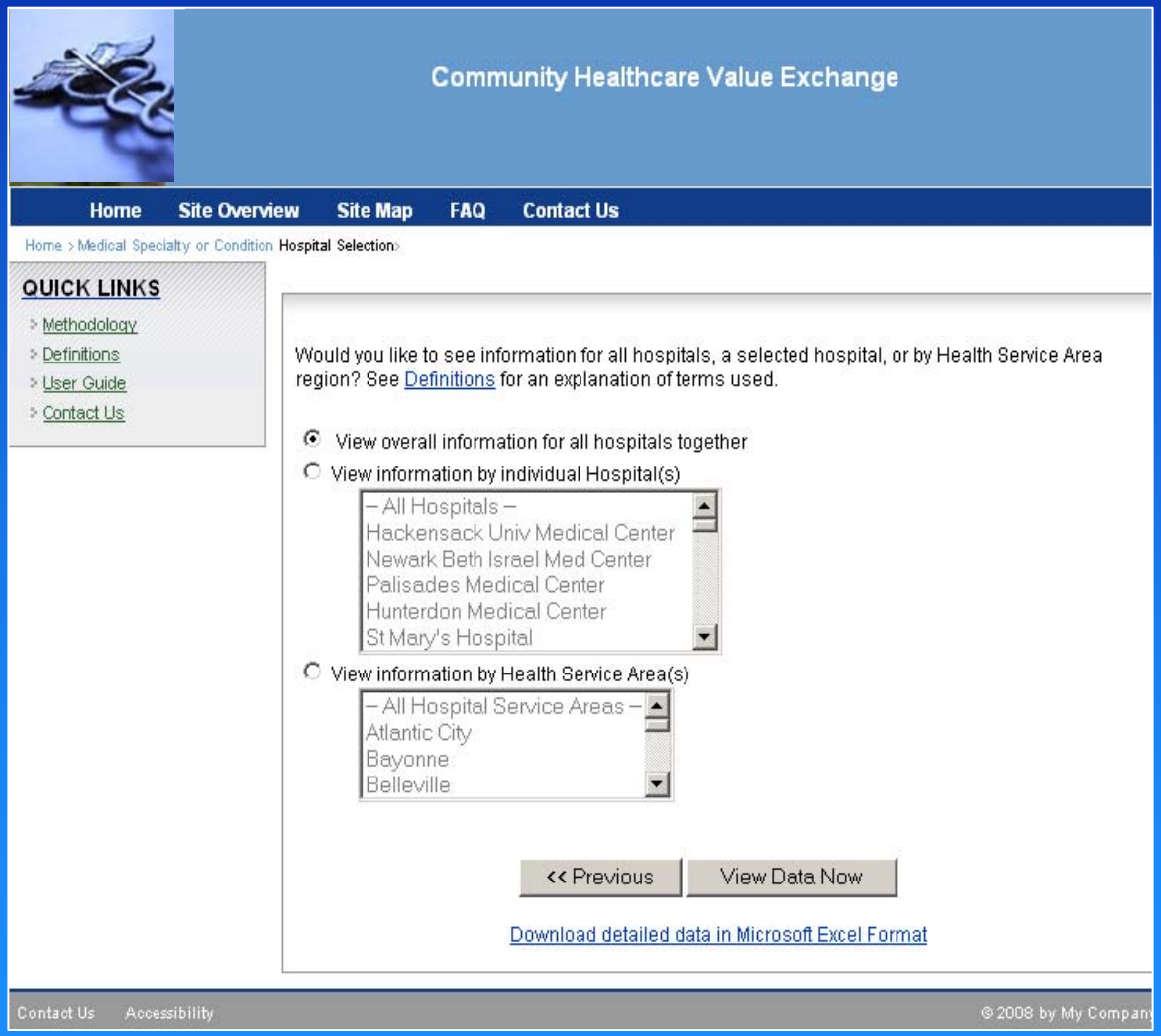
Utilization Path: Select Health Condition



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



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

Utilization Path: Data by DRG

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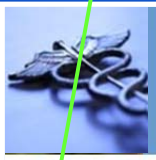
Drill down for more information on a specific condition/procedure

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.
All Conditions		1,123,892	100.0%	43,077	48,582,737,126	11,383	12,835,015,910	5.0	42.2%	54.9%
391	Normal newborn	77,514	6.9%	6,464	501,018,039	1,680	130,258,414	2.5	50.1%	0.0%
373	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%
127	Heart failure & shock	32,176	2.9%	49,708	1,599,354,715	13,284	427,426,145	5.9	46.8%	86.1%
371	Cesarean section w/o CC	31,255	2.8%	23,173	724,257,759	6,044	188,913,233	3.8	0.0%	2.9%
143	Chest pain	28,371	2.5%	20,829	590,947,395	5,572	158,095,919	2.0	45.6%	94.7%
430	Psychoses	27,748	2.5%	33,726	935,798,414	9,023	250,358,447	8.5	49.5%	66.9%
89	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%
182	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%
88	Chronic obstructive pulmonary disease	19,981	1.8%	43,098	861,146,846	11,673	233,245,418	5.6	38.7%	85.6%
390	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%

Utilization Path: Drill Down to a Specific DRG

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Detailed patient and payer characteristics for newborn hospital stays

Community Healthcare Value Exchange

STATISTICS FOR 391 NORMAL NEWBORN (DRG 391)

	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.
Total	77,514	100.0%	6,464	501,018,039	1,680	130,258,414	2.5	50.1%	0.0%
Age group									
<18	77,514	100.0%	6,464	501,018,039	1,680	130,258,414	2.5	50.1%	0.0%
Gender									
Male	38,803	50.1%	6,686	259,437,656	1,737	67,404,138	2.5	100.0%	0.0%
Female	38,711	49.9%	6,241	241,580,383	1,624	62,854,276	2.4	0.0%	0.0%
Payer									
Medicare	45	0.1%	6,995	314,768	1,662	74,801	2.6	64.4%	0.0%
Medicaid	11,716	15.1%	6,377	74,716,310	1,667	19,527,403	2.4	50.9%	0.0%
Private including HMO	57,134	73.7%	6,434	367,613,737	1,656	94,631,389	2.5	49.8%	0.0%
Self-pay	7,571	9.8%	6,942	52,560,170	1,909	14,454,230	2.4	50.6%	0.0%
No charge	58	0.1%	7,420	430,383	2,007	116,412	2.4	50.0%	0.0%
Other	981	1.3%	5,411	5,308,321	1,466	1,438,611	2.5	51.3%	0.0%
Missing	*	*	*	*	*	*	*	*	*

Utilization Path: Data for a Specific Hospital

Community Healthcare Value Exchange

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.
Total	11,162	100.0%	37,097	414,655,641	11,018	123,155,283	5.1	38.6%	66.7%
Age group									
<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%
Gender									
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%
Payer									
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%

Utilization Path: Data for Hospitals in a Geographic Area

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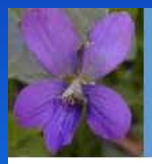
Hospitals grouped by Hospital Service Area (Dartmouth Atlas)



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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	2,423,631,102	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	2,832,866	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 (*).

AHRQ
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Quality Path

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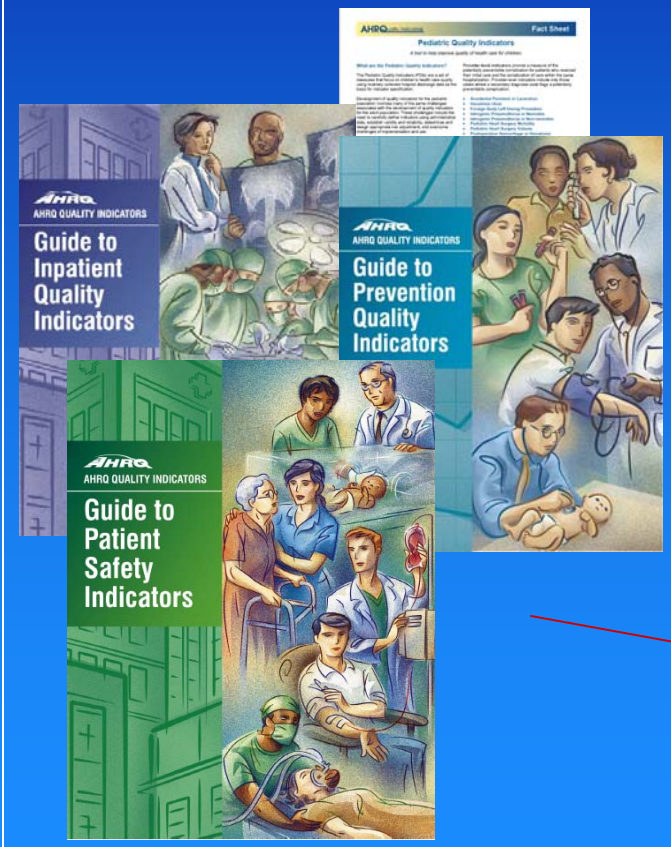

Community Healthcare Value Exchange

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Home >

QUICK LINKS
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- Definitions
- User Guide
- Contact Us

Welcome to the Community Healthcare Value Exchange Effiiciency 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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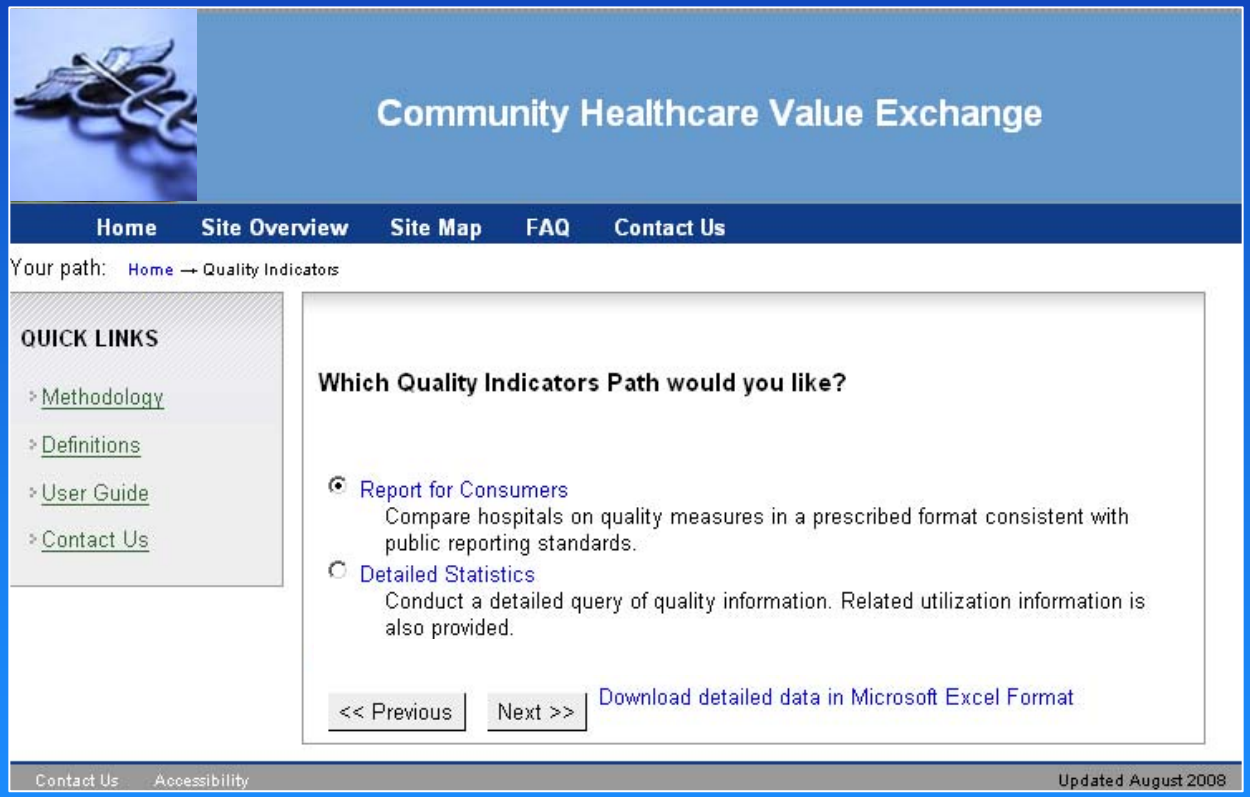
Quality Path: Consumer Report versus Detailed Statistics

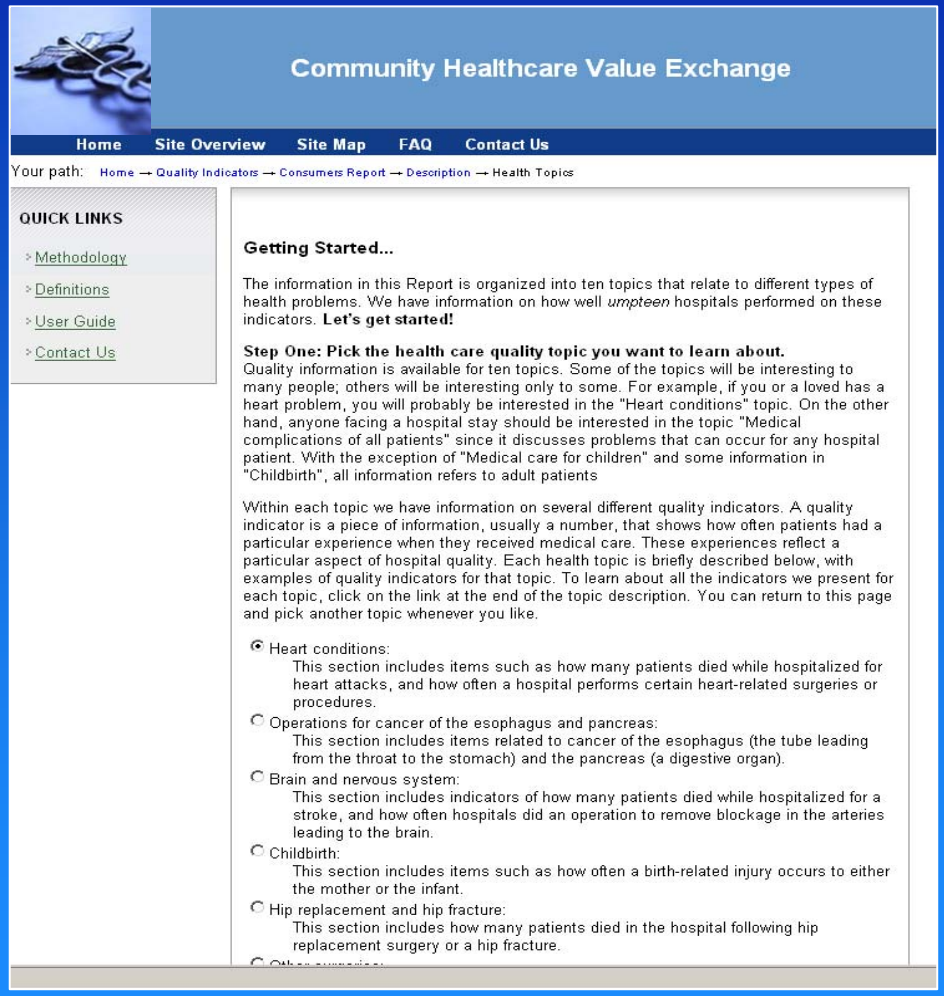


Two options:

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

Allows user to download detailed data to Excel

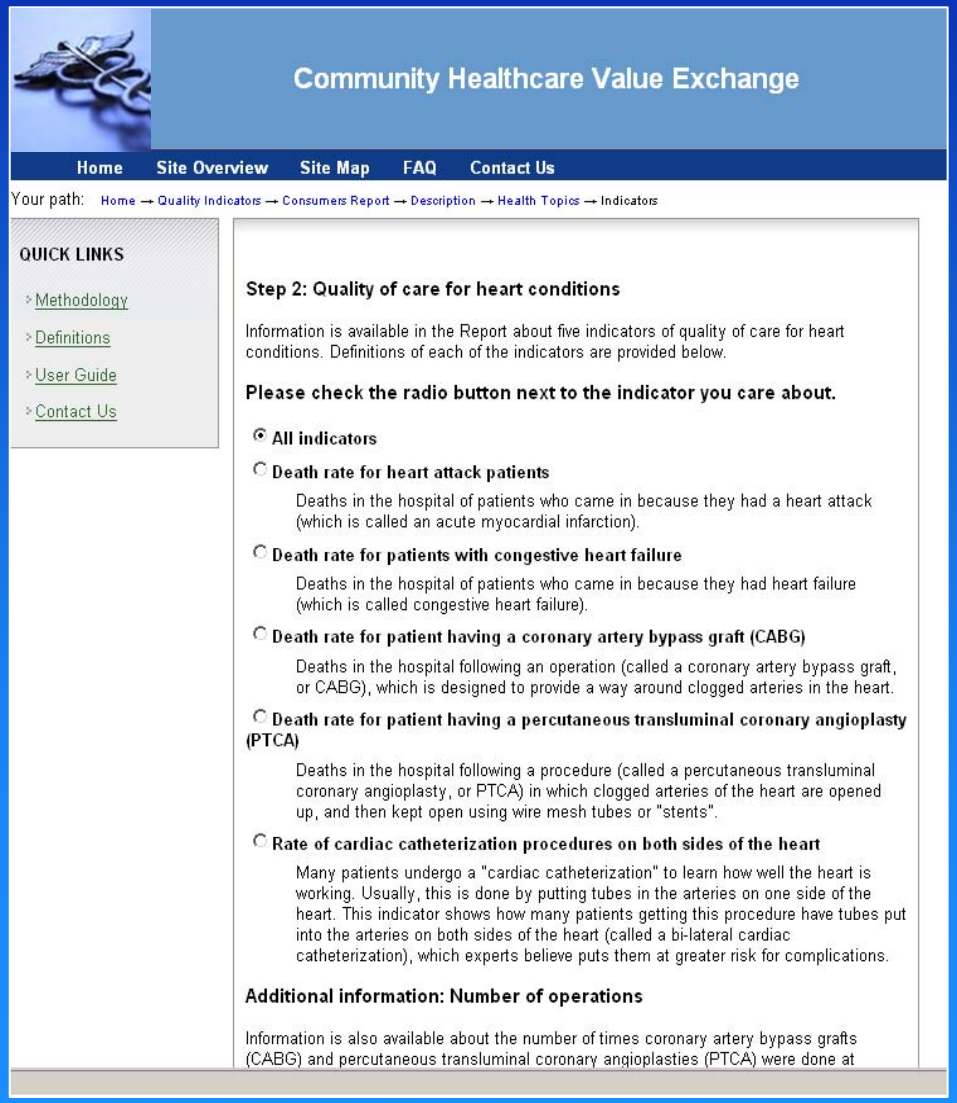
Quality Path: Health Topics



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

Quality Path: Indicators



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

Quality Path: Hospitals

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

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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
Indicator 1	Average	Better Than Average	Average	Worse Than Average
Indicator 2	Better Than Average	Average	Average	Average
Indicator 3	Worse Than Average	Worse Than Average	Average	Better Than Average

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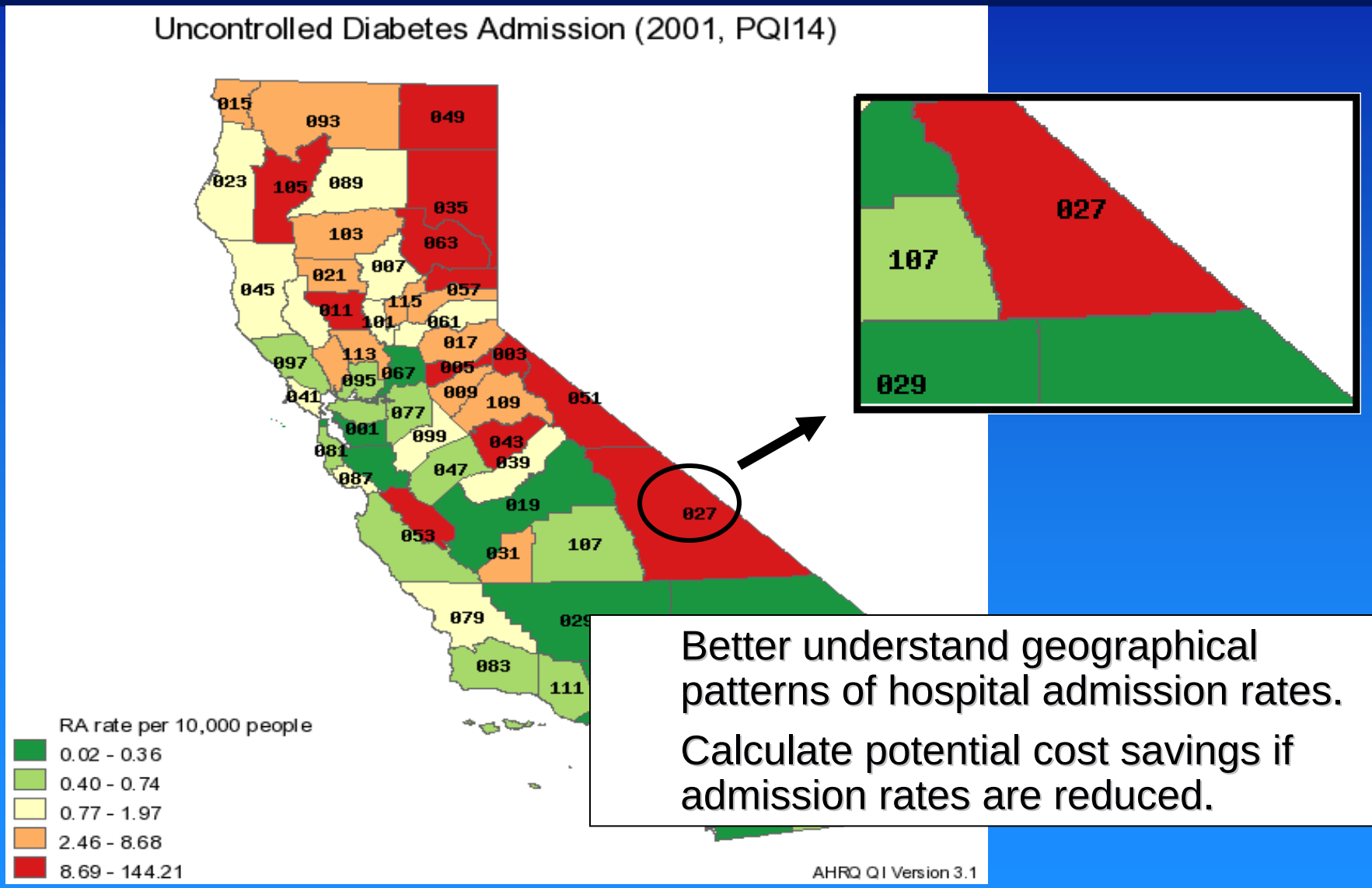
Preventable Hospitalization Costs Mapping Tool



Better understand geographical patterns of hospital admission rates.

Calculate potential cost savings if admission rates are reduced.

Output: Excel Spreadsheet with Cost Savings Estimate

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

QI Name

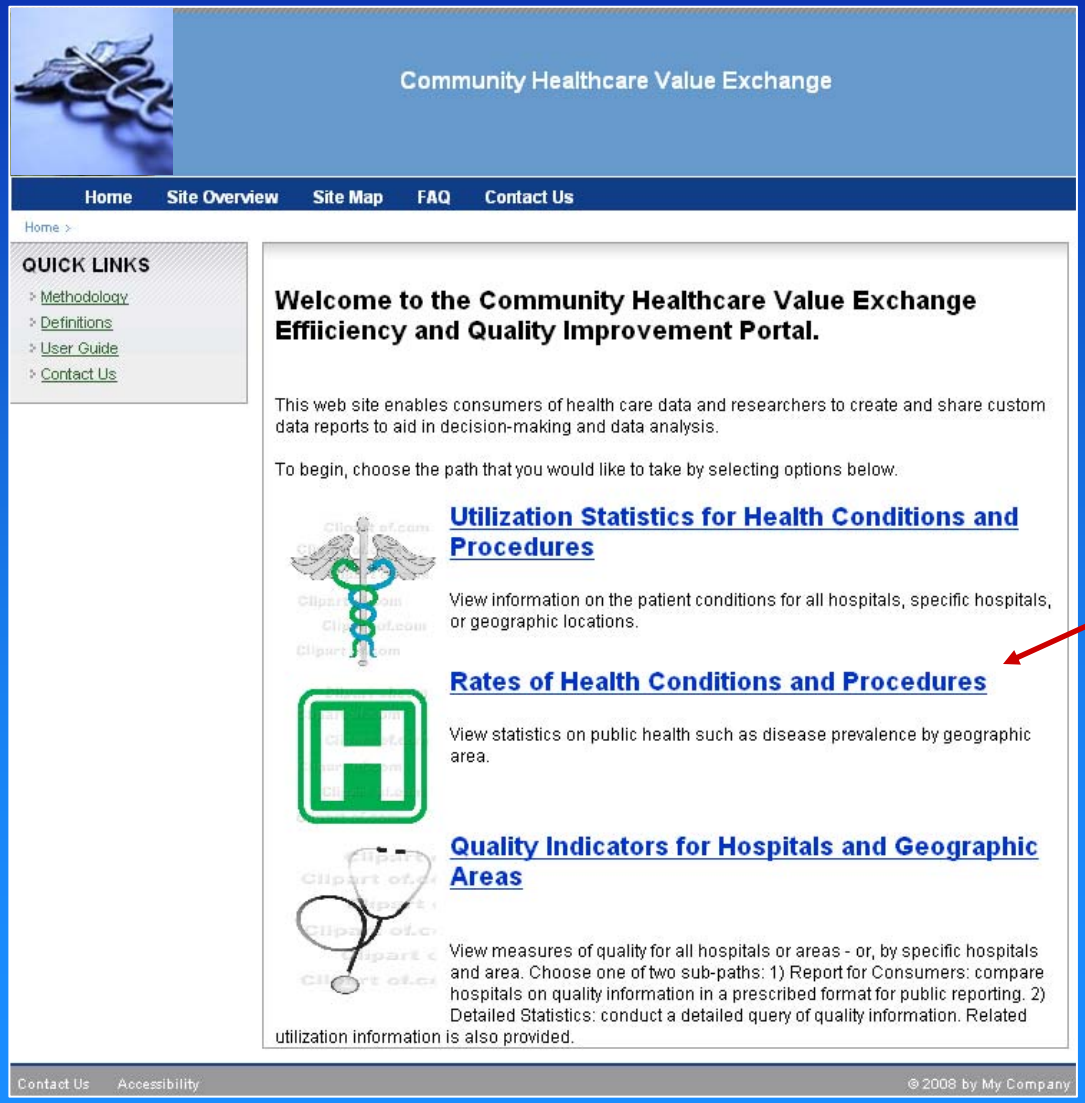
Microsoft Excel - pq_cost_2002.xls

File Edit View Insert Format Tools Data Window

	A	B	C	D	E	F	G	H	I	J
1	Chronic Obstructive Pulmonary Disease (PQI 5)									
2										
3						Cost Savings Given Reduction of Cases by				
4	County	Name	Mean Cost	Total Cases	Total Cost	10%	20%	30%	40%	50%
5	26001	Alcona	6,373.43	13	82,854.59	8,285.46	16,570.92	24,856.38	33,141.84	41,427.29
6	26003	Alger	4,200.81	9	37,807.29	3,780.73	7,561.46	11,342.19	15,122.92	18,903.64
7	26005	Allegan	4,729.93	111	525,022.23	52,502.22	105,004.45	157,506.67	210,008.89	262,511.11
8	26007	Alpena	5,252.40	76	399,182.40	39,918.24	79,836.48	119,754.72	159,672.96	199,591.20
9	26009	Antrim	5,117.96	24	122,831.04	12,283.10	24,566.21	36,849.31	49,132.42	61,415.52
10	26011	Arenac	5,002.26	7	35,015.82	3,501.58	7,003.16	10,504.75	14,006.33	17,507.91
11	26013	Baraga	3,646.28	21	76,571.88	7,657.19	15,314.38	22,971.56	30,628.75	38,285.94
12	26015	Barry	5,179.23	93	481,668.39	48,166.84	96,333.68	144,500.52	192,667.36	240,834.19
13							349,381.16	524,071.74	698,762.32	873,452.90
14							31,153.85	46,730.77	62,307.70	77,884.62
15							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

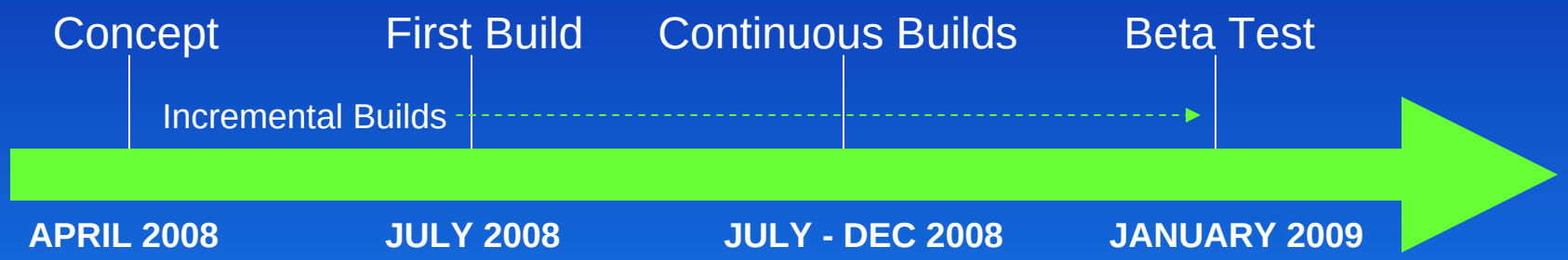
The Last Path: Utilization Rates Path



Utilization and QI Paths are under active development

A third path, the Rates Path, is being designed

WHEN: Timeline – 9 months from Concept to Product



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

Phase 1 versus Subsequent Phases

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?