

Desirable Characteristics and Current Status of State Web-based Data Query Systems

*National Center for Environmental Health
Centers for Disease Control and Prevention
Monthly Brown Bag Webinar
27 November 2006*

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Topics

- 1. Background*
- 2. Key terms*
- 3. Desirable characteristics*
- 4. Current status*
- 5. Development lessons*

Background

- *Purpose*
- *Sponsors*
- *Participants*
- *Process*
- *Products*

Purpose

- 1. Develop basic information about WDQS and WDQS development process useful to states and counties developing, considering developing or revising WDQS*
- 2. Explore potential of WDQS guidelines or de facto standards*

Sponsors

- *Centers for Disease Control and Prevention, National Center for Public Health Informatics, Assessment Initiative*
- *National Association of Public Health Statistics and Information Systems*
- *Association of National Health Data Organizations*

Participants

States

- *Florida (CHARTS)*
- *Georgia (OASIS)*
- *Massachusetts (MassCHIP)*
- *Missouri (MICA)*
- *Rhode Island*
- *Seattle/King County (VistaPHw)*
- *South Carolina (SCAN)*
- *Utah (IBIS)*

National

- *CDC/NCPHI*
 - *AI*
 - *WONDER*
- *NAPHSIS*
- *NAHDO*
- *Public Health Agency of Canada/Office of Public Health Practice*

Process

- *Iterative development, review, and revision of products*
 - *Workgroup meetings, March and September 2005*
 - *Conference calls and e-mail exchanges*
- *Audit of state WDQS, July-December 2005*

Products

1. Final report

- Current status of state WDQS*
- Desirable functionalities*
- Data sets*

2. Journal of Public Health Management and Practice special issue, March 2006

Key Terms

Web-based data query system (WDQS)

Provides user access through a dynamic interface to data pertaining to population health and the determinants of population health on the World Wide Web

Dynamic and static interfaces

Dynamic interface enables user to customize data queries through choosing data sets, variables, measures, and the format for presenting query results

Static interface limits user choice to pre-calculated statistics presented in pre-formatted reports, tables, graphs, or maps

Functionality

Any aspect of what a Web-based data query system can do for a user: its features and capabilities

Types of WDQS functionalities

Basic=fundamental to a WDQS and serves as the starting point for WDQS enhancements and innovations

Enhanced=increases the value and effectiveness of a WDQS for its users, beyond basic functionalities

Innovative=original and creative features, beyond both basic and enhanced functionalities

Identifying desirable WDQS functionalities

Consensus process to:

- 1. Develop matrix of WDQS functionalities*
- 2. Categorize each functionality into hierarchy consisting of*
 - Major functionalities (11)*
 - Sub-functionalities (21)*
 - Specific functionalities (141)*
- 3. Classify each specific functionality as basic, enhanced, or innovative*

WDQS major functionalities (11)

- *Query design*
- *Geographic Levels*
- ***Statistics***
- *Tables*
- *Graphs*
- *Maps and interactive GIS*
- *Benchmark and time trend data*
- *Custom grouping of data*
- *Documentation for individual custom queries*
- *On-line meta-data and help tools*
- *Export to file*

WDQS major functionality—statistics

Sub-functionalities (8):

- *Counts*
- *Percentages*
- *Rates*
- *Rate ratios*
- *Significance testing*
- *Other statistics and measures*
- ***Treatment of unknown values***
- *Cell size suppression*

WDQS major functionality—statistics

Sub-functionality—treatment of unknown values

Specific functionalities (5):

- *Basic specific functionalities*
 - *Unknown values excluded from numerator*
 - *Unknown values excluded from denominator*
- *Enhanced specific functionalities*
 - *Unknown values imputed (depending upon imputation methodology)*
- *Innovative specific functionalities:*
 - *User selects inclusion of unknown values*

Identifying desirable WDQS data sets

- *Consensus process agreements:*
 - *State needs, resources, and priorities differ*
 - *No classification of desirable WDQS data sets*
 - *Major groups of data sets in leading state WDQS (12)*

Overview of data sets in well-established WDQS

- *Administrative*
- *Chronic disease*
- *Communicable disease*
- ***Environmental***
- *Health care resources*
- *Infant and child*
- *Injury*
- *Population counts, estimates, and projections*
- *Population-based surveys*
- *Programmatic*
- *Vital events*
- *Linked analytic files*

Overview of data sets in well-established WDQS

- *Environmental*
 - *Adult lead poisoning*
 - *Childhood lead poisoning*
 - *Other*

Current status of state WDQS--methods

- *Identifying state WDQS*
 - *Consensus process*
 - *State health department Web sites*
 - *Personal knowledge*

Current status of state WDQS--methods

- *One WDQS reviewed per state*
- *Single reviewer*
- *Perspective of member of public without previous WDQS experience*
- *Defined time periods for review*
- *Structured review form, with 54 specific functionalities*
 - *26 basic*
 - *20 enhanced*
 - *2 innovative*
- *No extraordinary measures*

Current status of state WDQS

Number of states with WDQS

- *27 states with one or more WDQS*
 - *19 one WDQS*
 - *8 more than one*
- *25 state WDQS used Web browser*

WDQS data sets

- *Median of 5 data sets per WDQS*
- *2 WDQS with more than 15 data sets*
- *Most commonly available: deaths, births, cancer incidence, hospital discharges, population counts*

Current status of state WDQS

- *26 reviewed basic specific functionalities*
 - *17 provided by at least half of 27 WDQS*
 - *4 provided by 5 or fewer WDQS*
- *20 reviewed enhanced specific functionalities*
 - *6 provided by more than half of 27 WDQS*
 - *8 provided by 5 or fewer WDQS*
- *2 reviewed innovative specific functionalities*
 - *1 provided by 11 WDQS*
 - *1 provided by 4 WDQS*

WDQS development lessons

- *Do:*
 - *Identify full range of AVR users*
 - *Expertise continuum*
 - *Professional role continuum*
 - *Governmental continuum*
 - *Consult and involve full range of AVR users*
 - *Employ considered, iterative process, with multiple opportunities for input, feedback, revision*
 - *Let iterative process drive timeframe*

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