VistaPHw
Quick Reference Guide

Produced by the Department of Health,
Washington State

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Created by
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Table of Contents

Introduction

Background and History…… 6
What is included in VistaPHw… 6
How is VistaPHw being used…... 7
The VistaPHw Partnership……... 9

Installation

VistaPHw……... 10

The VistaPHw Interface

Interface……. 11

Working with VistaPHw

Opening VistaPHw…….. 12
Select an Assessment Topic…….. 12
Select a Geographic Unit…….. 12
Define the Analysis……... 12
Launch the Analysis…….. 14
Examine the Results…….. 14
Computed Output Fields..……. 15
Close VistaPHw……... 18

Epidemiology for VistaPHw

Definitions……. 19
Rates…..……. 19
Confidence Intervals……. 20
Working with Small Numbers..… 20

Technical Questions

Windows 2000…… 22
Excel ……. 22

Some Common Problems

Login Issues, Excel Output, …….. 23

Contacts

VistaPHw State Coordinator…….. 25
Eastern Washington Trainer and
Technical Assistance…….. 25
Web Site……. 25

Introduction

Background and History

Assessment – the work of collecting, analyzing, interpreting and sharing information about population health status – is one of the core functions of public health. Through assessment, public health officials and their partners identify their communities' important health issues in order to set local prevention priorities and guide policy decisions. To do this work, they need timely information that is specific to their communities, as well as the technology and skills to analyze it.[1]

For this purpose, Public Health – Seattle and King County (PHSKC) developed VistaPHw starting in 1991. VistaPHw is a menu-driven software package that allows users with limited computer skills to access and analyze a broad array of public health data. By selecting various options, including type of health indicator, age group, race, gender, time period and geographic location, the user can easily create specific analyses of health indicators. A key feature is that VistaPHw allows the user to analyze health indicators within customized geographic areas based on groupings of census tracts, zip codes, or counties.[1]

What is included in VistaPHw?

VistaPHw is both a menu-driven user interface *and* a collection of public health data sets. The interface is an executable that can be downloaded from the web. Calculations are done by programs stored in the form of a DLL (Dynamic Link Library) file on a webserver. Data files, stored on webservers in SQL, Access or other databases, are accessed over the internet through database software. General measures such as crude, age-specific, and age-adjusted rates are computed using an

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Adapted from Washington State's 2000 Public Health Improvement Plan.

intuitive, point-and-click interface. Trend tests for crude, age-specific and age-stratified rates are also available.

Built in flexibility exists to create and save geographic groupings to do repeated community assessment (combine counties to create a region, combine zipcodes, block groups, census tracts, etc.). The user can also create demographic groupings (e.g. combine age groupings). VistaPHw output is sent to other selected software (e.g., Excel, etc.) for chart or table production. Automated graphing, charting and mapping will be added in the future.

VistaPHw provides a single technological solution for accessing a variety of population-based data sets without the need to learn external statistical packages or acquire complex programming skills. Data in VistaPHw include pregnancies, births and abortions; deaths (including linked infant birth-deaths); hospitalizations; communicable diseases (including tuberculosis and sexually transmitted diseases); cancer registry; marriages and divorces; census; and intercensal population estimates and projections.

How is Vista/PH being used?

VistaPHw is being used across the public health system as a standardized tool for community health assessment. Washington State Department of Health (DOH) program staff use VistaPHw to answer public data requests, validate their own data analysis, and create statistics for reporting health indicators. At the local level, VistaPHw is used to generate data for planning programs, setting policy and priorities, supporting funding procurement (e.g., being able to clearly document needs for grant applications), and responding to requests for information from community partners, public officials and citizens.

Local Health Jurisdictions (LHJs) use VistaPHw to generate local information on:

- The leading causes of morbidity and mortality in their community.
- Populations at high risk for poor health outcomes.
- Racial and ethnic disparities in health status (e.g., infant mortality, life expectancy).
- Spatial and temporal patterns of health events (e.g., teen pregnancy, childhood asthma hospitalization).
- Comparisons of local data to neighboring communities, the state average, and local/state/national targets (e.g., Healthy People 2010).
- Population trends and socioeconomic characteristics.

Vista has been used for:

"A forum on agricultural burning several weeks ago, I looked up rates of hospitalization for asthma over the last 10 years for Whitman, Spokane County and Washington State." *Whitman County*

"A socioeconomic data request from Ocean Beach school district for an after school activities grant they are preparing." *Pacific County*

"…I compiled information about disease cases and rates for salmonella, botulism, E. coli and campylobacter for Whatcom County and Washington State." *Whatcom County*

"Life expectancy for King County men and women." *King County*

The VistaPHw Partnership

In 1996, DOH and LHJs across the state, entered into a partnership with PHSKC to disseminate VistaPHw statewide and to provide training and assistance to LHJs in its use. The goals of the VistaPHw Partnership are to:

- Enhance access to population-based assessment data for local and state public health staff, researchers, and (now in development) the public to use in planning and priority-setting.
- Ensure access to standardized public health assessment data, methods and measures across the state.
- Provide maximum flexibility to the user to define time frames, geographic areas and assessment topics so that the information is relevant to local communities.

Vista is a user-governed partnership: LHJs across Washington participate in determining the directions of Vista development and other partnership activities (e.g., training) through the VistaPHw Advisory Group. The close collaboration between PHSKC, other local health jurisdictions, and DOH on VistaPHw development has ensured that the software continues to meet the needs of both local health assessment staff and DOH data suppliers. The VistaPHw product – as well as the partnership that supports it – is routinely evaluated through a written survey of users. VistaPHw is the longest standing information technology partnership to grow out of Washington's Public Health Improvement Partnership (PHIP), and represents an innovative, system-wide solution to public health's need for community assessment information.

Installation

Installation of VistaPHw

To install VistaPHw follow these steps:

1. Go to www.vistaphw.net and download the desktop user interface (rename setup.exe to vistasetup.exe and save to somewhere on your hard drive you will remember.

2. Go to the vistasetup.exe saved on the hard drive and double click to run the install wizard. This will run through an automated setup and ask you to reboot at the end. Depending on the administrative rights set up on your computer you may need to have an IT person do this step.

3. Add URLs for web servers with Vista data; for DOH data for VistaPHw add https://wws2.wa.gov/doh/chs2/VistaPHw to the Datalinks.txt file in the folder c:\program files\VistaPHw. If you add it above www.VistaPHw.net it will be the default in the login screen. To use the DOH data you will need a login ID and Password, contact the VistaPHw State Coordinator for access.

4. Go to the desktop and there should be a blue sailboat icon. Click on it and you should get a login screen. Make sure the URL for DOH data is selected and type in your email address as the login and then your password. Click okay.

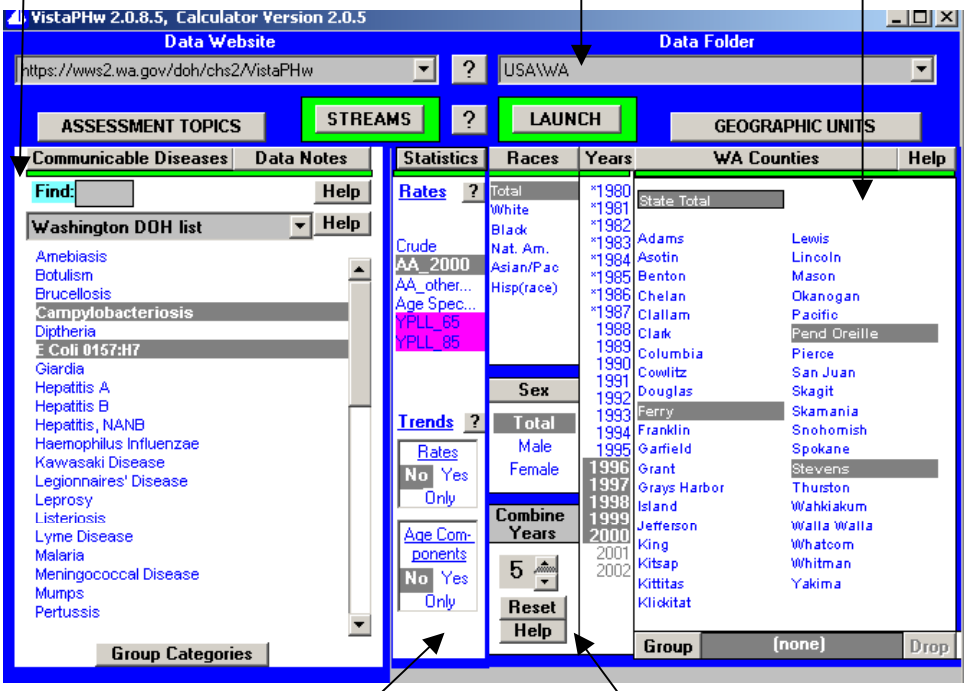
5. A green box appears in the lower part of the login screen when there is an update to the software. Click the update button and the software is automatically updated and the green box disappears.

The VistaPHw Interface

Select an Assessment Topic such as "Communicable Diseases," then choose a disease such as "E. Coli or Campylobacteriosis."

Select National, State or Local Data.

Create and save a customized geographic area (community) by grouping counties, zip codes, or census tracts.



Select demographics and choice of crude, age-adjusted or age-stratified rates. Trend tests are available for all rates and output significance levels and slopes. The user can also create demographic groupings (e.g. combine age groupings).

Select a single year, range of years, or combine years to get a rolling average.

Working with VistaPHw

Opening VistaPHw

Launch VistaPHw by double clicking on the Blue Sailboat Icon located either on the desktop or under c:/programfiles/VistaPHw. Demo data can be accessed with no restrictions, however, a user name and password are needed to access Washington State Department of Health data. To obtain a password and user ID, contact the Washington State Coordinator at (360) 236-4326.

Select an Assessment Topic

After clicking the ASSESSMENT TOPICS button, you are presented with a list of assessment topics available for analysis. Choose one by clicking on the topic title. Note that the topics for which data are not currently available in a data collection are disabled, or "grayed out".

If you make a mistake or need to change assessment topics, you may do so at any time by clicking again on the ASSESSMENT TOPICS button.

Select a Geographic Unit

After selecting an assessment topic you are prompted to select the geographic breakdown to be used in the analysis. After clicking the GEOGRAPHIC UNITS button, you will see a menu of geographic units (e.g., counties) that are available for the assessment topic at hand.

Define the Analysis

Once you have chosen the assessment topic and the type of geography to be analyzed, VistaPHw is able to display the full complement of options available for that combination. You are

ready to select specific risk factors, counties, age groups, races and years by clicking the appropriate categories.

To complete the analysis design, at least one item must be chosen from each panel. Some panels have default choices already selected, such as Total in the Races panel. When the panel containing the LAUNCH button turns from red to green, you have selected enough options to enable VistaPHw to perform the analysis. Click the LAUNCH button to take you to the next step.

Use the left mouse button to select any option and the right mouse button to clear a selection. You can hold down either mouse button and drag the cursor to select or clear a series of options. Click the header bar at the top of most panels to select or clear all options in the panel.

For most assessment topics, press the ALT key while clicking an option to display information about that option, such as associated ICD-9 codes and HP2010 mortality benchmarks and goals.

When you are considering options that are not straightforward, you are likely to find a Help button nearby. In the above illustration, Help buttons are in the Trends, Races, and Combine Years panels.

Use Data Notes to document and share comments about anomalies in the data, helping others to avoid pitfalls that you have had to deal with, and helping yourself to avoid problems others have discovered.

Launch the Analysis

After you click the LAUNCH button, a small panel Launch panel screen will appear at the top of the screen. This panel enables you to specify the directory and file name to receive the output from the analysis. It also permits you to specify the sorted order of rows when multiple places, years, races, and/or medical subsets (e.g., causes of death) have been selected.

This panel also gives access to the Stream Manager, which can be used to combine and modify VistaScript (the text form of what is captured from the VistaPHw interface).

After specifying the output file, row order, and other preferences, click the Run Now button in Launch Panel to activate the analysis program. The analysis may take a few seconds or several minutes depending on the number of years, places, and other options selected.

Examine the Results

When computations are finished, VistaPHw automatically opens Excel and displays the spreadsheet containing your data. The VistaPHw output file contains all the information you need to determine rates and make comparisons between areas or groups. However, the raw data is difficult to interpret and requires some manipulation to produce easy-to-read tables and charts. Manipulating the data in the output file is a matter of using regular Excel commands. VistaPHw automatically places important file information at the top of the spreadsheet. The User's name as well as the date and time the file was created is placed in the first cell in the spreadsheet. A brief data description is also included.

Computed Output Fields

Fields listed below contain the computed results: rates, confidence intervals, and counts. The listed fields contain the results for totals over sex. A corresponding set of fields, beginning in M_ or F_ as in M_RATE, contain computed results for male and female results when requested.

RATE
Usually the number of events (deaths, hospitalizations, disease reports, etc.) per 100,000 population. The rate may be a crude rate, age-adjusted rate or age-specific (See field STAT). For fertility rates, RATE would be the number of births per 1000 population, or per 1000 women aged 15 to 44. For Birth risk factors RATE is the percent of births associated with the risk factor among births whose status relative to the risk factor is known. For abortion rates, this may be the percent of abortions occurring in a particular trimester of pregnancies.

Whatever the source of the numerator and denominator, RATE is suppressed (left blank) if the numerator is less than five (-5 appears in CNT field) or the denominator is less than ten (-10 appears in POP field). Suppression is done to protect confidentiality.

PER
Represents the relationship between the numerator and the denominator (E.g., for births per 1000 women age 15-44, **PER** would have the value "1000 WMN").

LB and UB
The lower bound and upper bound of the confidence interval. The probability (usually 95%) associated with the confidence interval is identified in the output heading. If the percent is

95%, then you can say there is a 95% chance that the true rate is between the lower bound and the upper bound.

AVECNT
When two or more years are rolled together, this is the average annual count of events (deaths, hospitalizations, etc.).

AVEPOP
When two or more years are rolled together, this is the average annual population or average annual denominator value when RATE is a percent (see above).

CNT
For individual years this is the corresponding annual count of health events. When two or more years are rolled together this is the sum of health events over those years.

POP
For individual years this is the corresponding annual population count or other denominator (see discussion under RATE above). When two or more years are rolled together this is the sum of denominators for those years.

PLOT1, PLOT2, PLOT3
Three fields whose values are the lower bound (see LB), the lower confidence interval and the upper confidence interval, respectively. When the three fields are included in a stacked bar chart, the familiar confidence interval bars are produced.

CHISQ and SIG
ChiSq and Sig are the values of the Chi-square test for trends and the corresponding significance level.

Identification of Fields

YEAR

Identifies the year or set of years for which the Rate is computed. For combined years a set of consecutive years is identified as aa-bb, where “aa” identifies the first year in the set, and “bb” identifies the last year in the set. For example, 91-95 identifies the set of 5 years from 1991-1995.

NYRS

NYRS is included in the output just to the left of the Year column whenever combined years are computed. NYRS has the format y.z, where y is the number of years specified by the user and z is the number of years for which events were encountered for the given combination of values of identification fields, disregarding age. If fewer years than specified were encountered, the rate may be invalid, since the full complement of years is always used in the denominator.

PLACE

Identifies the geographical area for which the rate is computed, e.g., “SNOHOMISH COUNTY” or “STATE TOTAL”.

RACE

Identifies the race for which the rate is computed, e.g., “White”.

AGEGRP

Identifies an age category to which the rate applies. Since "Stat" also identifies the age category for Age-Specific rates, AgeGrp is not used when Stat is used. AgeGrp is limited to rates related to Birth, Abortion and Infant Death analysis.

STAT

Indicates the type of rate, such as crude, age-adjusted, age-specific, years of potential life lost, etc. A key to the values of STAT is shown in the Excel spreadsheet above the table. The field STAT is not included if only one type of rate is included

in the output. For example, "age_2129" identifies age-specific rate for age range 21 to 29.

SUBSET
Identifies the *health subset* associated with a row of output, e.g., the cause of death, such as "Ischemic Heart Disease".

FACTOR
Identifies the Birth Risk Factor associated with a row of output, such as "Very Low Birth Weight."

Closing VistaPHw
When finished working with the results in Excel, activate the VistaPHw screen to close VistaPHw or design and launch another analysis. If you minimize or close the Excel screen, the VistaPHw screen should immediately appear. You can also press the alt-tab keys to expose a menu of windows tasks that are currently open; double-click the VistaPHw task. If you use Windows 95, simply click the VistaPHw entry on the task bar.

Once VistaPHw is visible again, click the Exit button in the upper-right corner of the screen to close VistaPHw. You may instead design and launch another VistaPHw analysis.

Epidemiology

- Epidemiology is the study of the *distribution* and *determinants* of diseases and injuries in human populations.

Two fields of epidemiology:

The first is Analytical Epidemiology, which focuses on:

- Research on the *determinants* of disease or injury.
- Hypothesis testing of cause-effect relationships through epidemiological research:
  -case control studies
  -cohort studies
  -randomized intervention studies

The second is Descriptive Epidemiology, which focuses on:

- Exploration of the *pattern* and *frequency* of health events in a population.
- Why do descriptive epidemiology?
  -identify emerging problems
  -monitor known public health issues
  -set public health priorities
  -target resources and intervention efforts
  -generate hypotheses for analytic studies

Measuring Frequency
Counts vs. Rate

Counts

- Number of events in the source population

Anatomy of a Rate

Number of events x unit of population (100, 1000, 100,000)
Population "at risk" of experiencing the event

Rates

- Events adjusted for the size of the source population in which they occurred (we expect to find more cases in larger populations).
- Facilitates *comparison* of disease frequency across different groups of people, places, and time periods

Confidence Intervals (CI)

- The CI for a rate indicates the expected range of random variability, based on statistical assumptions.
- CIs are an indication of the stability of a rate – the greater the random variability, the wider the interval and the more unstable the rate.
- 95% CI means that there is a 95% probability that the CI contains the true, underlying rate.
- 80%, 90%, and 99% CIs are also options in VISTA.

CIs as a Test of Significance

- A rate vs. a standard or target (e.g., HP2010 objective):
  -significant difference if the CI for the observed rate does not contain the standard (or target) rate.
- Two observed rates:
  -significant difference if the CIs for the two rates do not overlap.
- Formerly, CIs are not tests of statistical significance, but are often used to approximate them.

Working with Small Numbers - Aggregation

- Grouping is used to increase the size of the numerator and denominator - "stabilize" the rates when you have small numbers.
  -Combine across multiple *years* of data
  -Combine across geographic *areas* (e.g., counties)
  -Combine across *groups of people* (e.g., aggregate 5-9 and 10-14 age groups into a 5-14 age group)

Aggregation

- Numerator: sum of all events occurring during the period (events in year 1 + events in year 2 + events in year 3)
- Denominator: sum of total population at risk during the period (population in year 1 + population in year 2 + population in year 3)
- A significant limitation to combining across years, areas, groups is the loss of information.
- Often a tradeoff between *stability* of rates and *specificity* of the information. Consider the purpose of the analysis

Rolling Averages

- Used for graphical presentation to "smooth" trend lines.
- Overlapping aggregate rates.
- Not appropriate for statistical tests of significance.

Technical Questions

Windows 2000

VistaPHw does work in the Windows 2000 environment. To install new programs onto a computer running Windows 2000, administrative rights are required. It is therefore suggested that you request help from the IT professional in your department before attempting to install the program.

Excel

When computations are finished, VistaPHw automatically opens Microsoft Excel and displays the spreadsheet containing your data. The VistaPHw output file contains all the information you need to determine rates and make comparisons between areas or groups. However, the raw data are difficult to interpret and requires some manipulation to produce easy-to-read tables and charts.

Often the VistaPHw output contains information in a large number of fields that you will want to break out into separate tables and charts for easier examination and interpretation.

Some Common Problems

Login Issues

If you are having trouble logging in to VistaPHw here are some things to check and remember:

- The Login ID is your full email address
- The Password is case sensitive
- To access Washington State Department of Health Data, make sure this URL is highlighted: https://wws2.wa.gov/doh/chs2/VistaPHw
- Also, make sure that the above URL is correct, if not go to the Datalinks.txt file in the VistaPHw folder under Program Files, and correct the URL

Excel Issues

- After a second run of VistaPHw, the Microsoft Excel output may not be visible, only the top menu bar for Excel is visible. To remedy this, click on View and choose "Full Screen". The output will then be visible. Select View again and choose "Normal View" to see the output in the standard format.

Error 1391

The windows installer service cannot update the file c:/winin/system32/scrrun.dll because the file is protected by windows. You may need to update your OS.

Many people in the health assessment field have had this problem because it is related to EpiInfo 2000.

Solution:

After both systems are installed, you can repair the EpiInfo mischief by re-registering the system version of scrrun.dll. Both systems should then function properly. Here's how:

1. click Start, Run.
2. type "Regsvr32 c:\winnt\system32\scrrun.dll" (without quotes).
3. press Enter, wait for success message.

If you have a system other than Windows 2000 and encounter this problem, use the same solution except in step 2 change the path to the location of scrrun.dll on your hard drive.

Contacts

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