



Department of Health & Mental Hygiene  
Department of Environment

**User's Guide for the**  
**Maryland Tracking Network**  
**Public Portal**  
**Version 1.3**  
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## Introduction

Environmental hazards can affect health. However, our current environmental public health system does not have the full capability to display human diseases and environmental hazards. Today publicly available environmental hazard and public health information are often presented in different formats; hence it has not been possible, up to now, to directly compare information at the state level and at the national level.

In September 2000, The Pew Environmental Health Commission released a report on the status of the environmental public health system, *America's Environmental Health Gap: Why the Country Needs a Nationwide Health Tracking Network*<sup>1</sup>. In that report the Commission recommended, for the first time in the US, to establish a National Environmental Public Health Tracking (EPHT) Network. The US Centers for Disease Control and Prevention (CDC) took the lead in the planning and implementation of a National EPHT Network that could provide all pertinent information, in one location, to eventually contribute to the formulation of sound government policies and in the long run, contribute to keeping everyone in better health by decreasing illnesses and premature deaths.

Maryland was one of the first states funded by the CDC to design and implement an integrated tracking network, and collaborate with CDC to design and implement a national tracking network. The expectation was that, upon completion of this multi-year project, the state, city and CDC tracking sites would contain hazard, chronic disease/health and exposure data that could be of interest to researchers, agencies, and the public and policy makers.

The Maryland Tracking Network (MTN) is jointly implemented by the Maryland Department of Health and Mental Hygiene (DHMH) and Maryland Department of the Environment (MDE). A third contributor to the design, implementation and display of EPHT data is from the academic Information Technology (IT) consultant from the University of Maryland at College Park (UMCP).

The Maryland EPHT Program at DHMH began as a tracking cooperative agreement, with funding from CDC, in fall 2002. After nearly four years of planning and four years of implementation, the MTN public portal became available over the Internet in February 2009. The official launch of the MTN public portal coincided with the CDC sponsored EPHT Workshop held in Washington, DC. The MTN secure portal was completed in March 2010, and became available on an approved role-based resource for Maryland Health Officers and Environmental Health Directors in October 2010. As an integral part of the National EPHT Network, the MTN aims to provide access to the State's EPHT data, as well as background information, that will be required to address current and future environmental public health issues that may adversely impact Maryland residents.

The National EPHT Network public portal became available over the Internet in July 2009. Work is continuing on the NEPHTN secure portal. What makes the NEPHTN and its state/New York City tracking partners, that number 25 as of November 2010, is the standardization of many diverse environmental and public health data sets, that now include air

hazards (ozone and fine particulate matter), contaminants in public water systems, children's blood lead levels, various measures and indicators computed from birth and death certificates, birth defects, cancer, inpatient hospitalizations for asthma, heart attacks and carbon monoxide poisonings and emergency department visits for carbon monoxide poisonings. The uniform formatting of these data sets has been named, appropriately, Nationally Consistent Data and Measures (NCDM). The use of high-quality data voluntarily provided by many data stewards in state/New York City health departments is further assured by carrying out additional data quality checks on all NCDM data sets before they become available from state, New York City public and secure tracking portals as well as the NEPHTN.

Another contribution of this tracking effort is adding information value to data steward data by including measures for time (now years) and space (counties on the public portal and zip codes or census tracts on the secure portal) measures. The purpose of this value-added dimension to NCDM data sets is that they can be displayed in a Geographic Information System (GIS) as computer maps. These computer produced maps can reveal if there are space-time relationships between the occurrence of certain environmental hazard and health outcome and exposure events. The MTN has utilized cutting edge GIS technology in its design of GIS data displays, by constructing its tracking network for the public and secure portals, essentially, from the ground up.

## **What is the Maryland Tracking Network?**

The MTN, the acronym for the Maryland Tracking Network, is an Internet-based collection of related environmental public health data, information and analytical/visualization tools. The MTN was designed to analyze and understand the matrix of environmental hazard, exposure and chronic disease or other health outcomes that are unique to Maryland.

The MTN is administratively housed in the Center for Environmental Health Coordination (CEHC), within the Infectious Disease and Environmental Health Administration (IDEHA), at DHMH. The MTN can be accessed in several ways: From the main DHMH website ([www.dhmh.maryland.gov](http://www.dhmh.maryland.gov)) or from the DHMH Environmental Health (EH) home page (<http://eh.dhmh.md.gov/>), or by going directly to the MTN web site (<http://eh.dhmh.md.gov/tracking/>). The MTN, as well as the other 24 states/New York City tracking programs can be reached from the CDC National Tracking Network website (<http://ephtracking.cdc.gov>).

## **What is in this User Guide?**

This document is intended to be a step-by-step, user-friendly manual to the MTN public portal. The Maryland tracking public portal includes State environmental hazard, exposure, chronic disease and other health outcome data and information that is available to everyone. The MTN also includes the secure portal. Access to data and information in the MTN secure portal is limited, at this time, to data custodians—persons who were kind enough to make their data available through the MTN, Maryland Health Officers and Environmental Health Directors and researchers. The accessibility of sub-county aggregated data in the secure portal to each approved user is determined by the assigned role. For example, data custodians have access to

their own detailed data, but would only see all other data with the same access rights available to a member of the public—what is available on the MTN public portal. If you think you need access to data or information in the secure portal, you may apply for these rights here, on the MTN public portal tab <http://eh.dhmd.gov/tracking/InternalEPHT.aspx>.

The last section of this User's Guide discusses how to interpret data and information available from the MTN public portal. This part of the manual will cover its strengths and limitations, what the MTN can and cannot do, and what the results mean for you.

Current plans are to include further information about the data selection and standards in another manual; this second MTN manual will be the MTN secure portal technical specifications document. This MTN technical manual for the secure portal will be developed in the future. It should be available by spring or summer 2011.

The sections to follow are intended to make it easier for a new visitor to the MTN to make maximum use of the available resources, EPHT data and metadata, more information about each data set, as well as the data selection, analysis and display tools contained in the data query and maps (GIS) tabs.

There are challenges in learning to use a new resource such as the MTN, especially because even a user-friendly resource such as the MTN, requires seeing the EPHT content, data selection, analysis and display tools with the eyes of a student. One suggestion is to actively read the following sections of this MTN user's guide while sitting in front of a computer that displays the MTN public portal welcome page. Each section of this manual should be read, and once the reader understands what is involved in the described activity, the next thing is that it should be practiced by manually doing what is described. The carrying out of this reading-understanding-doing can occur if the new visitor has access to a printed copy of this MTN public portal guide or has a second computer monitor, one with the Internet connection to the MTN, and the other that displays this manual.

A new user, who has made an earnest effort to use this guide and still has questions, is encouraged to contact the MTN public portal help desk via email ([epht@dhmd.state.md.us](mailto:epht@dhmd.state.md.us)) or by telephone (410-767-62340). The MTN helpdesk hours are Monday through Friday from 8:30 am to 4:00 pm, except on holidays.

## Maryland Tracking Network Home Page

The MTN homepage, shown in Figure 1, below consists of five tabs across the top of the web page. Each will be described, with more emphasis on using the query utility to select and display data in a table and/or graph or using the GIS utility to select and display multiple EPHT and demographic data layers in a map:

**1) Welcome** tab is the default tab in **EPHT Home**. The **Welcome** tab includes a brief description of the MTN, how it can be used, and background information about EPHT.

2) The **Getting Started** tab gives the user to access general information about the MTN, what is in the web site, a quick overview on how to make tables and maps, and how to interpret a result that includes a zero or a missing value.

3) The **Query** tab allows the user to retrieve data from a specified data source, limit data selection by invoking the selection of values for selected variables, and display data for those variables as analyzed results in a table and/or graph. The MTN query option was designed to give the user unrestricted data selection and display options, while at the same time, make the technical complexity of this process transparent to the user. The functionalities in this tab will be described more fully next.



Figure 1: Screen image of Maryland Tracking Network (MTN) home page.

As can be seen in Figure 2A below, there are two panels in to the **Query** utility that correspond to the two steps in setting up a query. The first panel says *Please select type of data you want to see*. We will now consider the three choice boxes in this part of the query. In brief, this feature allows you to select the type of health or environmental data, now available, for the row and column variables of the table.

**Step 1A: Please select type of data you want to see.** There are three drop-down menus in the first step, these include **Type of Data** (top left), **Row Variable** (bottom left) and **Column Variable** (bottom right). These three selection options will be covered next. The various options for the **Type of Data** window are shown in the expanded smaller MTN query screen image below the image of the **Query** tab in Figure 2A, labeled Figure 2B.

When this manual was written the **Type of Data** choices that were available were the ones in Figure 2B. As such, they will not be repeated here. These data choices will change as new data sets are added to the MTN or previously included data sets are deemed to no longer be useful.

In this worked out example we have selected “Asthma Hospital Discharges”, as shown below, in both Figures 2A and 2B.

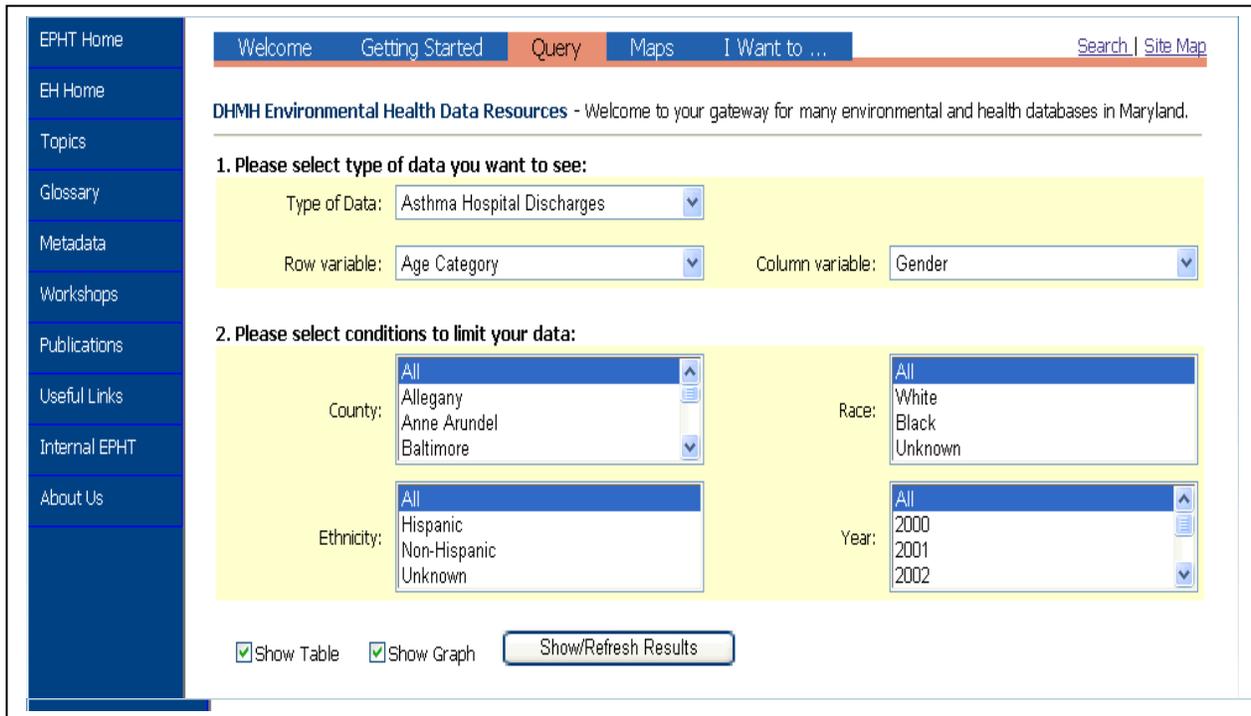


Figure 2A: MTN query tab.



Figure 2B: Query selection options shown as different data measures.

**Step 1B: Row Variable** sub-menu can be used to select the first grouping variable in the asthma data file. The currently available asthma inpatient discharge variables are shown in the expanded selection window for the row variable in Figure 2C. Of the five listed here, *Age Category* is selected.

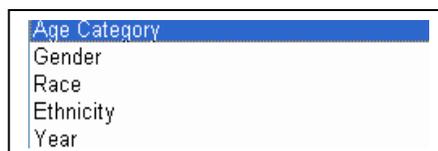


Figure 2C: Row variable selection options for the asthma data set

**Step 1C:** The **Column Variable** is another asthma data record grouping variable used to build the asthma data table. The **Column Variable** includes all of the variables that were available in **Step 1B** for the **Row Variable**, except for the selected variable. For this working example, the **Column Variable** will show all variables except of the previously selected *Age Category* variable. For this working example, the **Column Variable** section was *Gender*, as shown in the larger Query screen image labeled Figure 2A.

This completes the selection of the **Type of Data** (*Asthma Hospital Discharges*), **Row Variable** (*Age Category*) and **Column Variable** (*Gender*), as shown in Figure 2A. At this point, the query, when executed, will produce anonymous asthma hospital discharge counts in a table that will have *Age Category* values (Row) by *Gender* values (Column). The four available conditions in the next step of the query construction will be used to limit what asthma hospital discharge records are selected to build the table and graph.

**Step 2: Please select conditions to limit your data.** The four selection criteria that can be applied to refine the data selection query include **County** (middle left), **Race** (middle right), **Ethnicity** (bottom left), and **Year** (bottom right). Additional information will be provided for these four data filtering options.

**Step 2A:** The **County** drop-down box lists all the Maryland jurisdictions; they include names for 23 counties and Baltimore City. For persons not familiar with Maryland geography, note should be taken that Baltimore City includes the City of Baltimore as a jurisdiction that is independent of Baltimore County. You can select an individual county or Baltimore City, or any combination of jurisdictions by holding down the **CTRL** key as you make multiple county-Baltimore City selections. In this case we picked “*All*”.

**Step 2B:** **Race** includes these four categories: *All*, *White*, *Black*, and *Unknown*, as can be seen in Figure 2. While it is technically possible to select more than one, you will probably want to pick just one of these, unless your data analysis protocol specifies combining two of the available **Race** categories into one newly formed larger **Race** group. For this example, as can be seen in Figure 2A, we also selected “*All*”.

**Step 2C:** **Ethnicity** includes the following four categories: *All*, *Hispanic*, *Non-Hispanic*, and *Unknown*. Again you will likely want to select only one, unless the data question which drives the formulated data query dictates otherwise. Figure 2A also shows that, for this example, we did not further limit the selected asthma hospital discharge records on *Ethnicity*. The selected Ethnicity option was also *All*.

**Step 2D:** For **Year**, you may be interested in a certain combination or continuous range of years. You can select whichever combination you want by using the **CTRL** or **SHIFT** keys.

The very bottom of Figure 2A also provides the user with query data display choices. The results of the to-be-executed data query can be displayed in either a data table only, in a

graph only or in both a data table and graph. These three selection options are made by using the mouse to click within each of the two small boxes to select the associated data display option(s). As seen in Figure 2A, bottom left of the image, the first selection is for **Show Table** and the other is for **Show Graph**. For this example we decided to display the results of the query in both a table and a graph.

Notice that there is also a **Show/Refresh Results** button at the bottom of **Query** tab, in Figure 2A. By clicking on the **Show/Refresh Results** button will execute the query and produce the desired results.

At this point in the worked out data query construction and execution example we are finally ready to look at the results of the previously executed query. The results of our asthma query example are shown below in a table (Figures 3A) and graph (Figure 3B). Each row in the table displays the total number or frequency of *Asthma Hospital Discharge records* for a specific age group, broken down by gender, males and females. The number in parentheses is the *row percentage*. In this case, the two row percents represent the contribution of males (left gender column) and females (right gender column). The total of both rows will present 100% of all observations for a given age category.

Asthma Hospital Discharges in Maryland by Age and Gender			
Years	Age Category	Gender	
		Male	Female
0-4		5289 (65.9%)	2736 (34.1%)
5-9		2996 (64.2%)	1668 (35.8%)
10-14		1761 (63.2%)	1027 (36.8%)
15-19		770 (48.3%)	824 (51.7%)
20-24		548 (38.8%)	863 (61.2%)
25-29		488 (32.6%)	1009 (67.4%)
30-34		640 (32.4%)	1338 (67.6%)
35-39		972 (32.7%)	2001 (67.3%)
40-44		1046 (28.4%)	2640 (71.6%)
45-49		976 (25.0%)	2925 (75.0%)
50-54		880 (24.9%)	2650 (75.1%)
55-59		750 (25.3%)	2213 (74.7%)
60-64		648 (26.5%)	1794 (73.5%)
65-69		585 (26.8%)	1594 (73.2%)
70-74		553 (26.5%)	1537 (73.5%)
75-79		471 (24.1%)	1481 (75.9%)
80-84		387 (25.8%)	1115 (74.2%)
85+		292 (21.8%)	1046 (78.2%)
Unknown		827 (60.3%)	544 (39.7%)

% = Row Percentage, n = Cell Size.  $\chi^2(18) = 6615.23$ ,  $p < .01$  (significant).

Figure 3A: This table shows the results for of the asthma data query example with age as the row variable and gender as the column variable.

The reported Chi-Square statistic of 6615.23 with 18 degrees of freedom in Figure 3A, bottom of table, is very large and has a probability value of  $p$  that is less than 0.01. This significant outcome, based on the computed  $X^2$  value can be interpreted as evidence that in Maryland asthma inpatient hospitalizations differ as a function of age and gender. Similar results have been reported in other states also.

Figure 3B displays the results of the asthma inpatient hospitalization query in a graph. These are the same results that are in the Table, Figure 3A. Careful inspection of

the age by gender percentages and the corresponding age by gender percentages in the graph will reveal that the displayed percentages are the same in the table as they are in the graph. The major difference, however, is that in the graph it is easier to notice that females have higher percentages of asthma hospital discharges and that there is also a gender-related age trend in asthma hospital discharges. For males, the youngest and oldest age categories have higher asthma inpatient hospitalization percentages than males in the middle of the age distribution. This type of graph shape resembles a *U* function, with high values on both ends and low values in the middle. Unlike males, females seem to show increases in asthma inpatient discharges with increasing age. Thus, the percentage of asthma inpatient hospitalizations is higher in women than female children. Extreme care should be used in interpreting these asthma results because percentages do not control for differences in the underlying age distribution—they are not age adjusted rates, nor do they control for differences in males and females. A more appropriate measure that can be used to evaluate asthma inpatient discharges would be to use age and gender adjusted asthma discharge inpatient hospitalization rates. Age adjusted rates are available in the **Maps** tab on the secure portal and in table and map results in the MTN secure portal.

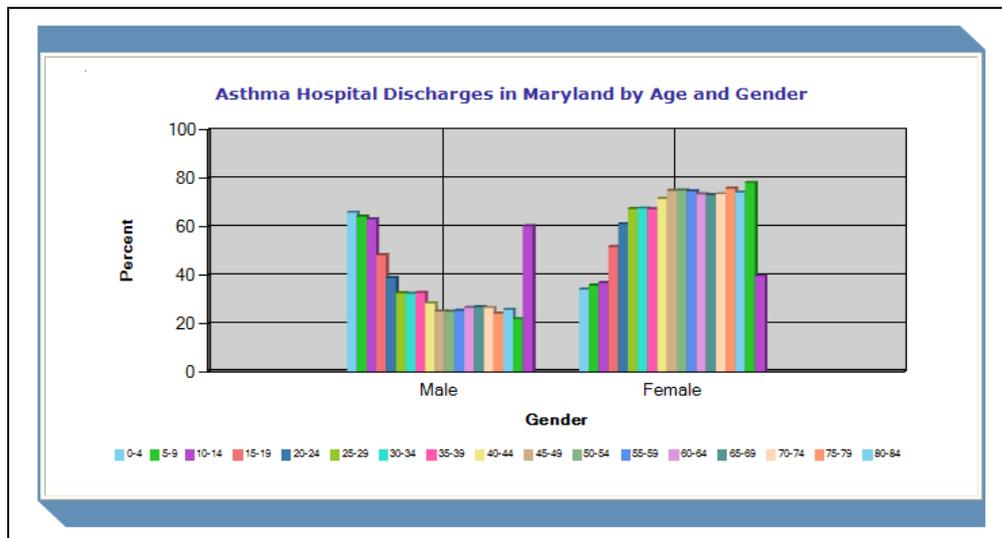


Figure 3B: Graph showing results for the asthma inpatient hospitalization query.

This completes the instructions for data analysis, visualization and reporting for structured queries. Please note that the order of variable selection is important. Due to the intrinsic relationship in the display of asthma inpatient discharges in rows and columns of a constructed data table, if we change the selected variables for asthma inpatient discharges or the selected data set, some or possibly all the displayed variables shown in Figure 3A for the table and here in Figure 3B for the graph will change. The relationship seen in the table and graph could also differ if the width of the age category variable is decreased or increased.

All data query options for **Type of Data** and associated variable names and values are shown in Figure 4. What is evident here is that, based on the way that the MTN query utility was

Data Types	Variable Names	Variable Values
Asthma Hospital Discharges (Admissions)	Age	{ All, 0 to 85+ }
	Gender	{ All, Male, Female }
	Race	{ All, White, Black, Unknown }
	Ethnicity	{ All, Hispanic, Non-Hispanic, Unknown }
	Year	(All, 2000-2006)
	County	{ All, Allegany-Worcester }
Birth Defects Events	Birth Defects	{ All, Anencephaly, Spina Bifida, Cleft Lip, Trisomy 21 }
	Gender of infant	{ All, Male Infant, Female Infant }
	Age of mother	{ All, 17-, 18-25, 26-35, 36-45, 46-55, 56+ }
	Race of mother	{ All, White, Black, Other, Unknown }
	Mother's ethnicity	{ All, Hispanic, Non-Hispanic, Unknown }
Myocardial Infarction Hospital Discharges (Admissions)	Year of birth	{ All, 2000 – 2008 }
	Live birth order	{ All, 1,2,3,4,5,6 }
	Gender	{ All, Male, Female }
	Race	{ All, White, Black, Unknown }
	Ethnicity	{ All, Hispanic, Non-Hispanic, Unknown }
Water Contaminants – MCL violation	Year	(All, 2000-2006)
	Primary source type	{ All, Groundwater, Surface Water }
	Water plant city	{ All, Fairlee, etc. }
	Contaminant	{ All, Arsenic, Nitrates, HAA5, TTHM }
	Violation type	{ All, Single, Average }
	Period begin after	{ All, 1 Jan 1989 – 1 Jan 2008 (individual ranges) }
Birth Events	Period end before	{ All, 31 Dec 1989 – 31 Mar 2008 (individual ranges) }
	Low Birth Weight	{ All, No, Yes }
	Gender	{ All, Male Infant, Female Infant }
	Maternal Race	{ All, White, Black, Other, Unknown }
	Maternal Age	{ All, 18-39+ }
	Hispanic	{ All, No, Yes, Unknown }
	Year	{ All, 2000-2006 }
Deaths – All Causes	County	{ All, Allegany-Worcester }
	Gender	All, Female, Male
	Race	All, Black, White, Other
	County	{ All, Allegany-Worcester }
	Age	All, 0-75+, Unknown
	Marital Status	All, Single, Married, Unknown
	Hispanic	All, No, Yes, Unknown
	Years of Education	All, <12, 12 or More, Unknown
Year	All, 2000-2006	

Figure 4: Complete listing of all possible query selection values for type of data, variable name and variable values.

designed, there are, for all practical purposes, no limits placed on the user with regards to the way the query is constructed. All possible combinations are possible. The other point is that queries should be constructed based on what the user wants to determine. What the user wants to know, has been referred to as the *scientific question*, as it is derived from the *scientific hypothesis*. The scientific hypothesis is a well formulated idea about when persons with asthma go to the hospital as inpatients. The scientific question is re-stated as a data query to produce results that will advance our understanding of how asthma inpatient hospitalizations differ as a function of selected variables. Results can be used to refine scientific hypotheses.

**4) Maps Tab.** Geographic displays of data for selected environmental hazards and chronic diseases or other health outcomes can facilitate the identification of space (counties) and time (years) trends in the selected data set. GIS data displays can be used to formulate new data questions. Data questions become the basis for selecting data. This GIS data selection, analysis, display and interpretation approach to the use of EPHT data on the MTN public portal was used to develop the space-time asthma inpatient hospitalization data analysis example that was described for the query data selection utility. This same data selection example will be used to demonstrate how the GIS utility in the **Maps** tab can be used to determine where in Maryland asthma inpatient hospitalizations occur, and if there are changes from one year to the next.

As it was previously stated, the principles of GIS as a technical area and as a scientific discipline were used to design and build the MTN map utility. Geographical data searches can be accessed through the **Maps** tab.

To follow up on the asthma inpatient hospitalization data analysis example, the spatial occurrence of asthma hospital admissions, as age adjusted rates, in Maryland is shown in the Figure 5, below. For each county with data, there are bar(s). The individual bars represent years of asthma inpatient discharges. The map legend, at the bottom of Figure 5, shows the legend for the various colored bars, with each color representing a different of asthma inpatient hospitalization data year.

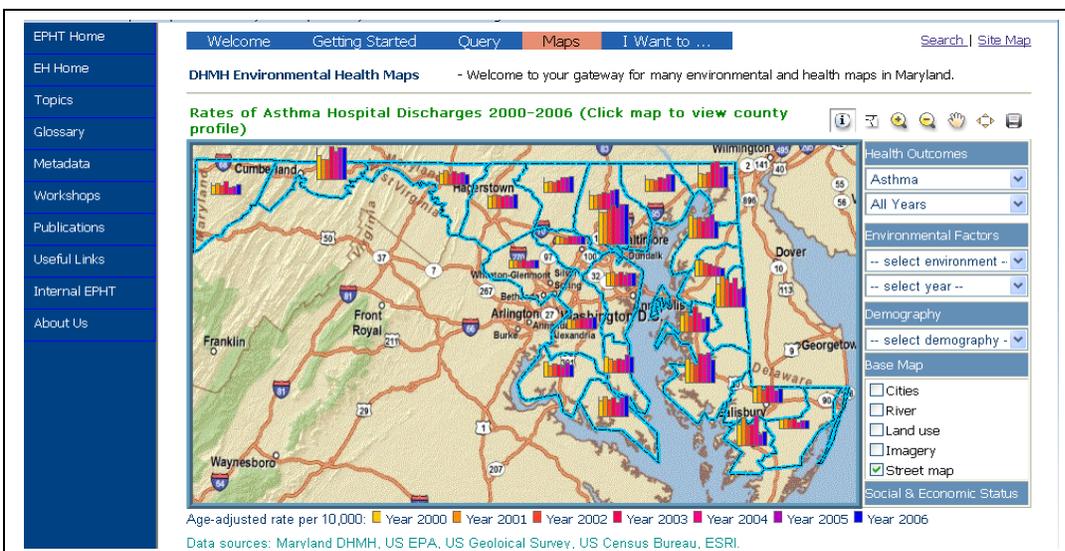


Figure 5: Display of asthma inpatient hospitalization rates in a Maryland county map.

To view the actual numbers for the rates, click on any county polygon or bar to open another window. To invoke this option, make certain your computer setting permits pop-ups. When the county polygon data window is opened the results are displayed as shown in Figure 6. For each year selected, the asthma inpatient hospitalization discharge rate per 10,000 persons is shown, along with the 95% Confidence Interval (CI). The Lower and Upper Limits of the 95% CI contain other possible sample rates. If an asthma inpatient hospitalization rate for one year is significantly different from the asthma inpatient hospitalization rate for another year the rate for the first year is not included within the CI for another year. The State rate and 95% CI are also shown in the table; these values are in the table to the left of the Maryland county map, in Figure 6.

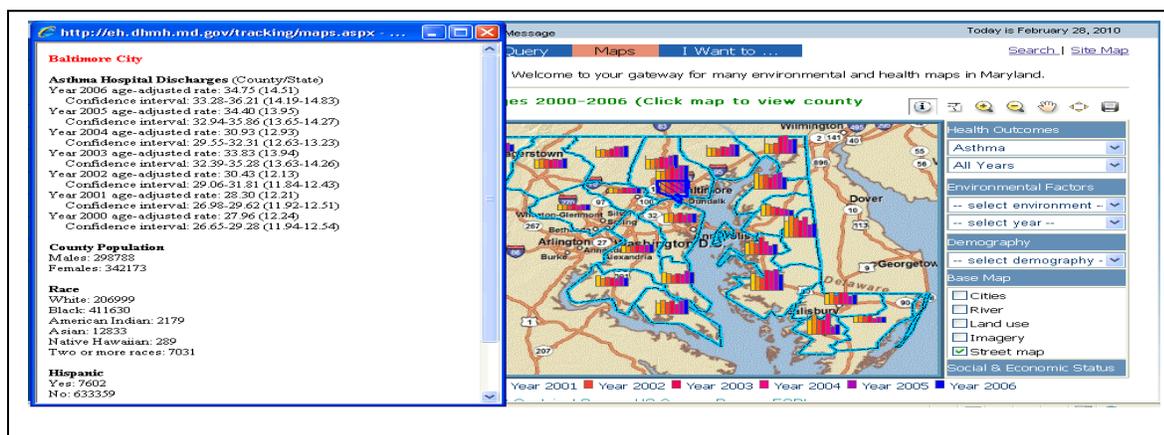


Figure 6: Table output with map shows descriptive statistics as asthma inpatient hospitalization discharges rates per 10,000 persons and the 95% Confidence Interval (CI) for each year of data for the selected county as well as the State asthma inpatient discharge rate per 10,000 persons and 95% CI.

The map utility includes several useful and interesting display options that can be invoked by using the menus on the right side of the map page. The **Health Outcomes** menu allows the selection of a chronic disease or health outcome for a given year or all available years. The two **Environmental Factors** sub-menus allow the selection of environmental factors, which now include ozone (O<sub>3</sub>) and fine particulate matter (PM<sub>2.5</sub>) for a given year or all available years. Displays of *Population Density* or *Household Density* can be selected under the **Demography** menu. One or more additional map layers (*Cities, Rivers, Land Use, Imagery, and Street Map*) may be selected under the **Base Map** menu.

Finally, the fifth item, 5), is for the, **I Want to** tab. There are links in the **I Want to** tab to various functions and resources contained within the MTN.

There are additional content items on the MTN public portal that are neither related to the query or map utilities. These will be listed and briefly described individually. The information in the various menus is included because of its relevance in understanding environmental public health issues related to how environmental hazards can adversely impact, directly or at low levels for many years, chronic diseases or other health outcomes.

## The Left Navigation Menu

The Left Navigation Menu contains links to other MTN content. The Navigation Menu is always available on each page of the MTN public portal. The Left Navigation Menu is shown in Figure 7. A concise description of each menu item follows.



Figure 7: The MTN public portal navigation menu

**7B) EH Home.** This takes you to the home page of the DHMH Environmental Health Coordination Program.

**7C) Topics.** The topics page is categorized into environmental and health effects. Each subtopic contains information about the subject and Internet links to other resources.

**7D) Topics** available are listed below and may increase as more NCDMs are added to the portal.

- Air Quality
- Asthma
- Birth Defects
- Cancer (to be added)

- Children’s Environmental Health
- Clean Indoor Air Act
- Drinking Water
- Myocardial Infarction (heart attacks)
- Lead
- Pesticides
- Vital Statistics

**7E) Glossary.** The glossary is an easy-to-understand guide to general and technical terms used in the MTN.

**7F) Metadata.** The metadata button takes you to more specific information about each of the data sets in the MTN. The Maryland metadata model was used to display three levels of user-friendly and easy to understand information about what each data set contains, its suggested use and limitations.

**7G) Workshops.** This page contains links to information about the workshops held by EPHT. In some cases the slides from individual presentations can also be found here.

**7H) Publications.** Publications from the Maryland EPHT Program are shown in this page, including newsletters, posters and other presentations, and, in the future, publications published in scientific journals.

**7I) Useful Links.** This page contains links to other useful external and internal resources.

**7J) Secure Data Access.** This link takes you to the landing page for the MTN Secure Portal. Here users can learn more about the secure portal, and how to request access to the secure portal. Information included consists of instructions in completing an online application form to apply for access to the MTN secure portal. Requested roles will be determined on a case-by-case basis. Typically, county Health Officers in local health departments will have access to detailed health data in their jurisdictions but not in other counties. Similarly, data custodians will be able to see their own data at the highest level of resolution, but other data will be visible as is now available in the MTN public portal. Researchers will be able to get to information on how to apply for access to specific data after their research protocols have been approved by the DHMH Institutional Review Board.

**7K) About Us.** This page contains information about the State of Maryland, why EPHT is needed and Maryland EPHT accomplishments.

This concludes this *User’s Guide* for the MTN public portal. If you have any questions or comments about using the MTN or about this *User’s Guide*, please let us know through the [Contact Us](#) button. We welcome your feedback on how to make the content and functionality of

the MTN more useful to you, or how we can make the MTN public portal *User's Guide* easier to understand.

## Reference

<sup>1</sup>Environmental Health Tracking Project Team. *America's Environmental Health Gap: Why the County Needs a Nationwide Health Tracking Network*. Baltimore: The Pew Environmental Health Commission, Johns Hopkins Bloomberg School of Public Health, 2000.