**Maryland Department of Health and Mental Hygiene
Center for Cancer Surveillance and Control (CCSC)**

Mortality Data Suppression Policy

June 2008; revised September 2011

Background

The Maryland Department of Health and Mental Hygiene (DHMH) Center for Cancer Surveillance and Control (CCSC) publishes Maryland state- and county-level mortality data in various reports, including the Cigarette Restitution Fund Program (CRF) Cancer Reports and the Maryland Cancer Registry (MCR) Annual Reports. CCSC obtains selected mortality data primarily through two data sources:

- Centers for Disease Control and Prevention (CDC) WONDER web site
- Maryland Assessment Tool for Community Health (MATCH)

Both databases have data use and reporting policies for the protection of individual identity and/insufficient precision. The risk of inadvertent disclosure of identity is increased in datasets that include small geographic areas as well as other detailed variables, such as socio-demographic characteristics (e.g., gender, race) or deaths from less common diseases. In addition, when the numbers of deaths (i.e., death counts) used to compute rates are small, the resulting rates tend to have poor statistical reliability.

The purpose of this policy is to assure confidentiality and stability of data presented in CCSC reports. This policy also serves as a guideline for data suppression depending on the data source, which allows for consistency with data suppression throughout CCSC reports, and updates the June 2008 policy.

National Center for Health Statistics (NCHS) Mortality Data

Mortality data is obtained through the query of the National Center for Health Statistics (NCHS) Compressed Mortality File (CMF), a county-level national mortality and population database available to the public through the Centers for Disease Control and Prevention (CDC) WONDER web site (http://wonder.cdc.gov). Data obtained from the NCHS Compressed Mortality File are subject to both CDC WONDER Data Use Restrictions (http://wonder.cdc.gov/datause.html) and the NCHS Data Use and Reporting Agreement (available in the CMF documentation at: http://www.cdc.gov/nchs/data_access/cmf.htm.

CDC WONDER automatically applies the following criteria to all data obtained through CMF queries:

Modifications to the data restrictions noted:

- As of May 23, 2011, all sub-national data representing zero to nine (0-9) deaths are suppressed, along with their rates. Corresponding sub-national denominator population figures are also suppressed when the population represents fewer than 10 persons. This is a change from prior criteria where, beginning in 1989, data cells in tables were suppressed only for single county-level data, when the data represented five or fewer non-zero (1-5) deaths for a time period less than three years, and the county's total population in the April 1st, 2000 Census was fewer than one hundred thousand (100,000) persons.
- Age-adjusted rates based on death counts 10 to 19 are annotated by CDC WONDER as "unreliable" (i.e., poor statistical reliability).

 Unchanged:

- Totals and sub-totals are suppressed when the value falls within scope of the suppression criteria, or when the summary value includes a single suppressed figure, in order to prevent the inadvertent disclosure of suppressed values.

The NCHS Data Use and Reporting Agreement for the CMF is covered by the following policy:

"The Public Health Service Act (42 U.S.C. 242m(d)) provides that the data collected by the National Center for Health Statistics (NCHS) may be used only for the purpose for which they were obtained; any effort to determine the identity of any reported cases, or to use the information for any purpose other than for statistical reporting and analysis, is against the law. Therefore users will:

- Use these data for statistical reporting and analysis only.
- For sub-national geography, do not present or publish death or birth counts of 9 or fewer or rates based on counts of nine or fewer (in figures, graphs, maps, table, etc.).
- Make no attempt to learn the identity of any person or establishment included in these data.
- Make no disclosure or other use of the identity of any person or establishment discovered inadvertently and advise the Director, NCHS of any such discovery."

Maryland Assessment Tool for Community Health (MATCH) Mortality Data

County level births, deaths, population estimates and hospitalizations can be obtained through a query of the MATCH online database. The interactive online database is sponsored by the Family Health Administration, which features statistics for Maryland resident health events. MATCH was developed in partnership with the Maryland Vital Statistics Administration and the Maryland Health Care Commission. It can be accessed at: http://www.matchstats.org. The official annual reports from the Maryland

Vital Statistics Administration can be obtained online at:
http://vsa.maryland.gov/html/reports.cfm.

DHMH/CCSC MORTALITY DATA SUPPRESSION POLICY

Death Counts

The following criteria apply to both single- and multiple-year (aggregated) tabulations.

For CDC WONDER data:

- CCSC follows the NCHS restrictions that were in effect at the time of publication preparation.
- Consistent with WONDER policy as of May 23, 2011, death counts in any given cell are suppressed at the state or county level when there are fewer than 10 deaths (i.e., 0-9 deaths), regardless of county population size, referred to as primary suppression. A cell containing 0-9 deaths is denoted as "<10" in published tables.
- Complementary suppression of death counts is employed to prevent disclosure of the value of cell(s) with primary suppression when the count could be calculated by subtraction from a row or column total. If the number of deaths in a suppressed cell (0-9 deaths) can be "back-calculated" from a total using subtraction, then counts in additional cell(s) are suppressed, as needed, to prevent back calculation. The symbol "s" is used in a cell to denote the use of complementary suppression.

For MATCH data:

- CCSC follows the MATCH data suppression rules that were in effect at the time of publication.
- Death counts in any given cell are suppressed at the state or county level when there are fewer than 5 deaths excluding zero (i.e., 1-4 deaths), regardless of county population size. A cell containing 1-4 deaths is denoted as "<5" in published tables.
- Complementary suppression of death counts is employed to prevent disclosure of the value of cell(s) with primary suppression when the count could be calculated by subtraction from a row or column total. If the number of deaths in a suppressed cell (1-4 deaths) can be "back-calculated" from a total using subtraction, then counts in additional cell(s) are suppressed, as needed, to prevent back calculation. The symbol "s" is used in a cell to denote the use of complementary suppression.

Mortality Rates

Rates calculated on the basis of small death counts have poor statistical reliability (i.e., large standard error relative to the rate itself). To discourage misinterpretation or misuse of statistically unstable rates, DHMH/CCSC applies the following criteria for suppression of death rates in all data tables.

For CDC WONDER data:

- Age-adjusted mortality rates based on counts less than 20 (i.e., 0-19) are suppressed by DHMH/CCSC at the state or county level. Suppressed rates are designated by the ** symbol with a footnote explaining that the rate would be unreliable.
- Complementary suppression is not needed.

Note: CDC WONDER publishes and annotates rates as "unreliable" (but does not suppress) based on counts less than 20 deaths.

For MATCH data:

- Age-adjusted mortality rates based on counts less than 20 (i.e., 0-19 deaths) are suppressed by DHMH/CCSC at the state or county level. Suppressed rates are designated by the ** symbol with a footnote explaining that the rate would be unreliable.

Note: MATCH suppresses rates based on counts less than 20 deaths.

Summary of DHMH/CCSC Mortality Data Suppression Policy
as of 09/29/2011

	DEATHS	
	DEATH COUNTS	**RATES**
PRIMARY SUPPRESSION RULE	WONDER data: Suppress counts of 9 or less, including zero (0-9). MATCH data: Suppress counts of less than 5, excluding zero (1-4).	WONDER or MATCH data: Suppress rates based on death counts of less than 20, including zero, regardless of population size.
REFERENCE/SOURCE	DHMH/CCSC Mortality Data Suppression Policy	DHMH/CCSC Mortality Data Suppression Policy
RATIONALE FOR METHOD	WONDER data: This meets NCHS requirements (05/23/2011) for tabulated data at sub-state geographic levels. MATCH data: This meets Vital Statistics requirements for tabulated data at sub-state geographic levels.	Our suppression policy meets NCHS and Maryland Vital Statistics requirements, which say rates based on numbers less than 20 are unreliable.
DESIGNATION/SYMBOL IN TABLES	WONDER data: <10 MATCH data: <5	**
FOOTNOTE FOR TABLES	WONDER data: <10 = Death counts of 0-9 are suppressed per DHMH/CCSC Mortality Data Suppression Policy for WONDER data MATCH data: <5 = Death counts of 1-4 are suppressed per DHMH/CCSC Mortality Data Suppression Policy for MATCH data	** = Rates based on death counts of 0-19 are suppressed per DHMH/CCSC Mortality Data Suppression Policy
COMPLEMENTARY SUPPRESSION RULE	Suppress death count in cell(s) in rows and/or columns to prevent back calculation of numbers in cells with primary suppression.	No additional suppression required
DESIGNATION/SYMBOL IN TABLES	s	N/A
FOOTNOTE FOR TABLES	s= Death counts are suppressed to prevent disclosure of data in other cell(s)	N/A