

# Race/Ethnicity and OMB Directive 15: Implications for State Public Health Practice

## ABSTRACT

**Objectives.** This study assessed the impact of the Office of Management and Budget's (OMB's) 1997 revised standards for the collection of race and ethnicity data on state health departments, using the Massachusetts Department of Public Health (MDPH) as the primary example, and we make recommendations for states' implementation of these standards.

**Methods.** After analyzing the revised OMB standards, existing MDPH data sets were assessed for the impact of the revised standards on data collection, tabulation, analysis, and reporting for state health departments.

**Results.** The revised OMB standards will have an impact on the MDPH and other state health departments. Similarities and differences exist between federal and state health agencies regarding the purpose of data collection, tabulation, analysis, and reporting. These similarities and differences will affect state implementation of the revised OMB standards.

**Conclusions.** States need to plan for the implementation of the revised OMB standards and to understand the impact of this revision on the collecting and reporting of public health data. The revised OMB standards will introduce added complexities to the collection and analysis of race and ethnicity data, but they will also produce a more nuanced understanding of the relationship of race and ethnicity to the health of the American people. (*Am J Public Health.* 2000; 90:1714–1719)

Daniel J. Friedman, PhD, Bruce B. Cohen, PhD, Abigail R. Averbach, MS, and Jennifer M. Norton, MS

In October 1997, the Office of Management and Budget (OMB) announced its revisions to the Standards for the Classification of Federal Data on Race and Ethnicity,<sup>1</sup> also known as OMB Directive 15. The most dramatic aspect of the revised OMB standards is the provision that enables reporting of multiple races for individuals. The revised standards additionally set a minimum of 5 race categories and mandate the placement of a separate Hispanic identifier question preceding the race question in all data sets for which self-identification is the mode for reporting race.<sup>1</sup> The revised standards will introduce added complexity to the collection and analysis of race and ethnicity data. However, these standards also have the potential for producing a more nuanced understanding of the relationship of race and ethnicity to the health of the American people and for creating more appropriately targeted and more effective public health programs.

The revised OMB standards instruct "federal programs . . . [to] adopt the standards as soon as possible, but not later than January 1, 2003, for use in household surveys, administrative forms and records, and other data collections."<sup>1(p58782)</sup> Although the revised OMB standards do not explicitly affect state and local public health agencies, their impact will in fact be profound. Many core state public health data sets, such as those for births, deaths, AIDS surveillance, cancer incidence, and sexually transmitted disease incidence, are implemented through federal funds, and they will be expected to meet the revised OMB standards. Additionally, state public health agencies will likely seek to maximize comparability between data sets implemented with and without federal funds, resulting in the use of the revised OMB standards for additional state data sets. Furthermore, states will need to have agreement between race categories used in the collection of health events for use as numerators in calculating population-based rates and race categories used in the US census as denominators.

Finally, with encouragement from the Centers for Disease Control and Prevention, states are promoting integration among categorically driven public health data sets, which will also increase the use of the revised OMB standards for state public health agencies.<sup>2-4</sup>

Queries in April 2000 by the Massachusetts Department of Public Health (MDPH) to state public health agencies revealed a wide range of preparedness for the implementation of the revised OMB standards. Of 18 responding states, 2 have already drafted guidelines for data collecting and reporting to comply with the revised OMB standards. Seven states have examined the revised OMB standards and have initiated planning. However, 9 other states have either failed to start planning for implementation or failed to recognize the potential impact on state information systems.

In this article, we assess the likely practical impact of the revised OMB standards on state health agencies, using the MDPH as the main case example. On the basis of that assessment, we also provide state-level recommendations for federal and state implementation of the revised OMB standards.

## ***Practical Impact of the Revised OMB Standards on State Public Health Agencies***

Similarities and differences between state and federal public health agencies regarding the purpose of data collection, data collection constraints, tabulation, analysis, and reporting will

The authors are with the Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Public Health, Boston.

Requests for reprints should be sent to Daniel J. Friedman, PhD, Assistant Commissioner, Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Public Health, 250 Washington St, 6th Floor, Boston, MA 02108 (e-mail: danieljfriedman@attglobal.net).

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largely determine the impact of the revised OMB standards on state public health agencies. These similarities and differences are explored below.

### *Purpose of Public Health Information Systems*

State and federal public health information systems share the common purpose of providing data for ongoing monitoring of health trends to identify health priorities and to conduct program evaluations. However, other purposes of federal and state public health data systems differ. At the federal level, data systems such as the births component of the Vital State Cooperative Program are used to identify high-need states or demographic groups with high needs nationally.<sup>5</sup> At the state level, the same data systems may be used to identify individuals, block groups, or neighborhoods at high risk and requiring public health intervention services. For example, in Massachusetts, birth data are used to locate newborns who failed to receive screening at birth, to initiate infant immunization records in the Massachusetts Immunization Information System, and to identify infants requiring early intervention services.

The differences in purpose between state and federal public health information systems hold implications for state implementation of the revised OMB minimum standards. States with heterogeneous racial and ethnic populations will require race and ethnicity data at a substantially greater level of detail than mandated by the revised OMB standards; the new data requirements will enable the targeting and designing of services for specific ethnic groups. The current Massachusetts birth certificate, for example, allows mothers and fathers to choose from 39 ethnic and national categories for self-identification. Analyses of Massachusetts birth certificate data reveal that ethnic variation in

birthweight among subgroups of Blacks and subgroups of Hispanics is often as great as variation between the broad racial groups.<sup>6,7</sup> Analysis of births in Massachusetts to Chinese and Southeast Asian mothers demonstrates that the mother's birthplace, as well as race and ethnicity, substantially affects birthweight.<sup>8</sup>

The salience of ethnic detail for program targeting and design may increase from federal to state to local levels. The classification of some groups may be inconsequential at the federal level but may raise major issues for evaluating public health needs and targeting public health services at state and local levels. For example, 64% of Cape Verdeans and 96% of Dominicans who gave birth in Massachusetts in 1997 classified their race as "Other" on the birth certificate. Reclassifying Cape Verdean and Dominican births and infant deaths from "Other" to "Black," as mandated by National Center for Health Statistics guidelines (unpublished information, National Center for Health Statistics, 1996), would decrease the Massachusetts statewide 1997 Black infant mortality rate from 11.1 deaths per 1000 live births to 10.4 per 1000, and the Boston Black infant mortality rate from 12.9 per 1000 to 10.7 per 1000 (see Table 1). Guidance for the appropriate classification of racial and ethnic groups with small numbers nationally but concentrated locally may best derive from experience at state and local levels.

### *Data Collection Constraints*

Both state and federal agencies with responsibility for public health data collection will struggle with issues regarding use of the broad race categories included in the revised OMB standards. However, state and federal public health data collection constraints differ in 2 respects, which may affect state implementation of the revised OMB standards. First, the proportions of data sets in which race and

ethnicity are collected through self-report, observation, and medical or administrative record review differ at federal and state levels. Review of the National Center for Health Statistics' Web site indicates that approximately 59% of its 17 mentioned data sets use self-report to generate race information, while 41% include race categorization based on record review or observation.<sup>9</sup> In contrast, of 27 MDPH surveillance and programmatic data sets that include race designation, approximately 70% are based on observation, record review, or some combination of sources.

The source of race and ethnicity data—self-report, observation, or record review—may affect whether information systems use the revised OMB standard's 2-question race and ethnicity format (which contains the separate Hispanic identifier question followed by the 5-race-categories question) or the single-question format (which contains the 5 race categories and the Hispanic identifier in 1 combined question). Information systems relying on observer and record-review race and ethnicity data may be more likely to use the single-question race and ethnicity format, as permitted in the revised OMB standards. State public health agencies must develop consistent and uniform algorithms for reconciling race and ethnicity data derived from data sets based on self-report, using the 2-question race and ethnicity format, with race and ethnicity data derived from data sets based on observation or record review, using the single-question format.

The second difference lies in state contractual responsibilities for data reporting in categorical programs to federal agencies, and especially the current lack of consistent race and ethnicity standards in federally mandated data sets. States have responsibility for collecting and, in many cases, transmitting ongoing public health surveillance and programmatic data to various federal agencies. Currently, programs housed within the Cen-

**TABLE 1—Birth Outcomes for Black Women and Infants When Cape Verdeans and Dominicans Are Included Compared With When Cape Verdeans and Dominicans Are Not Included: Massachusetts, 1997**

	No. of Births	% Low Birthweight	Infant Mortality Rate
<b>Boston</b>			
Black, with Cape Verdeans and Dominicans	3072	12.0	10.7
Black, not including Cape Verdeans and Dominicans	2551	12.3	12.9
<b>New Bedford</b>			
Black, with Cape Verdeans and Dominicans	172	9.9	NA
Black, not including Cape Verdeans and Dominicans	106	12.3	NA
<b>Massachusetts</b>			
Black, with Cape Verdeans and Dominicans	7410	10.6	10.4
Black, not including Cape Verdeans and Dominicans	5586	11.4	11.1

*Note.* Infant mortality rates are per 1000 live births. Low birthweight denotes infants weighing less than 2500 g (5.5 lbs) at birth. NA = not available because the number of infant deaths in 1997 was too small for the calculation of reliable rates.

*Data source.* Massachusetts birth certificates and death certificates (for infant mortality), 1997; Registry of Vital Records and Statistics, Bureau of Health Statistics Research and Evaluation, Massachusetts Department of Public Health.

ters for Disease Control and Prevention, the National Institutes of Health, the Health Resources and Services Administration, and other federal agencies sometimes use differing formats, categories, guidelines, and requirements for race and ethnicity data collection. For example, the current US standard certificates of live birth and death follow a 2-question format, with a separate Hispanic origin identifier preceding a race question.<sup>10</sup> In contrast, the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program uses 27 individual race categories, including "Other" and a separate Hispanic-origin field. For reporting purposes, data are presented for each group individually and an aggregated Asian category is not presented.<sup>11</sup> State public health agencies will need standardization in implementing the revised OMB standards across and within all federal agencies with responsibilities for public health data collection, to engender consistent race and ethnicity data collection in diverse information systems.

#### *Data Tabulation, Analysis, and Reporting*

To identify historical trends and changes in health status and outcomes requiring programmatic responses, both state and federal public health agencies will need to compare race and ethnicity data collected by using the revised OMB standards with race and ethnicity data collected by using earlier formats. State public health agencies, like their federal counterparts, will need to develop methods for tabulating the 63 categories of race data resulting from the revised OMB standards. These tabulation methods should be economical in presentation and consistent across multiple data sets.<sup>12</sup> Both state and federal agencies will also need intercensal population denominator data to construct population-based rates for the 9 years between the decennial censuses. Furthermore, state and federal agencies need to develop algorithms for coding responses to the "Other" race category response included in the year 2000 census and the forthcoming new US standard certificate of live birth, but not in the revised OMB standards.<sup>1,13</sup> Despite these similarities, 3 substantial differences separate state and federal data tabulation, reporting, and analysis of race and ethnicity data.

The first difference is in the choice of techniques to "bridge" race and ethnicity data collected under the revised OMB standards with data collected with earlier formats. These bridging estimates constitute "prediction[s] of how the responses would have been collected and coded under the old standard."<sup>14(p61)</sup> The Tabulation Working Group of the Inter-agency Committee for the Review of Stan-

dards for Data on Race and Ethnicity has described several different bridging methods. One major distinction between alternative bridging methods is whether "an individual's responses are assigned to a single racial category (termed whole assignment) or to multiple categories (termed fractional assignment). Whole assignment can be based on a set of deterministic rules or based on some probabilistic distribution."<sup>14(p63)</sup>

The distinctions between whole and fractional assignment on the one hand and deterministic or probabilistic rules for assignment on the other hand yield a multiplicity of alternative bridging techniques. The Tabulation Working Group has specified 4 deterministic whole assignment techniques (smallest group, largest group, largest group other than White, and plurality), 2 deterministic fractional assignment techniques (equal fractions and National Health Interview Survey [NHIS] fractions), and 2 probabilistic whole assignment techniques (equal selection probabilities and NHIS selection probabilities).<sup>14</sup>

State choice of bridging techniques may depend partly on the specifics of each state's race and ethnic mix. States possessing higher state and local concentrations of multiple-race respondents and respondents who do not recognize the revised OMB standards' categories as valid for themselves will confront the need to choose bridging techniques that do not minimize estimates of the size of these populations. State choice of bridging technique could hold important implications for state public health agencies and could even affect reporting of which minority group is the largest or most rapidly growing in a particular state. It could have an impact more at the local level, depending on the geographic distribution of minorities in the population. In an effort to simulate the potential impact of multiple-race selection, maternal and paternal race from Massachusetts birth certificates were examined. Single-race infants, whose parents were of the same race, and biracial infants, whose parents were of different races, were assigned to race categories on the basis of 4 bridging techniques. Table 2 presents the findings for Massachusetts and for Boston, which is more racially diverse than the state as a whole. In Boston, the assignment of infants according to the smallest-group bridging technique yielded a count of 2348 White infants, compared with 2525 White infants by the equal-fraction technique, a difference of 7.5%. In comparison, the corresponding data for Massachusetts produced a difference of only 4% between the 2 bridging techniques, or 56 777 White infants by the smallest-group technique compared with 59 074 White infants by the equal-fraction technique.

Owing to the focus of state public health agencies on identifying population groups

needing services, the impact of the choice of bridging technique on reporting of outcome measures will be especially important. Table 3 presents the variation in the outcome of infant mortality after the reallocation of biracial infants (on the basis of maternal and paternal race) to single-race groups by using 4 different bridging techniques. The impact of alternative bridging techniques on reported infant mortality rates is greatest for Black infants, with a 5.5% difference in infant mortality rate between the smallest-group and the largest-group bridging techniques.

The priorities that Massachusetts will attach to the 7 criteria for assessing bridging and future tabulation methods presented in the OMB's *Draft Provisional Guidance on the Implementation of the 1997 Standards for the Collection of Federal Data on Race and Ethnicity*<sup>14</sup> will differ from those emphasized by federal agencies. "Understandability and communicability" and "ease of use" will constitute the major criteria for Massachusetts in determining choice of a bridging technique. Probabilistic and fractional assignment bridging techniques are less likely to be used by states than deterministic whole assignment techniques, owing to difficulties in communicating such probabilistic and fractional assignment bridging techniques to the public.

The second difference between state and federal approaches to tabulation, analysis, and reporting of race and ethnicity data relates to differential needs for denominator data. Both state and federal agencies will need accurate and flexible denominator data to construct population-based rates. The primary federal interest will be in the use of denominator data for calculating national and state rates. However, states are confronted with the need for population denominators to provide data for program intervention and targeting at substate levels. States will need intercensal population denominators, by age, sex, and race, at county, city, and town levels. States must develop ongoing sources of reliable intercensal population estimates for substate areas. Federal guidelines will need to be established for assisting states in producing reliable and consistent intercensal population estimates and for dealing with such issues as missing race and ethnicity data for small substate areas. Similarly, additional federal tabulation guidelines beyond those contained in the revised OMB standards may be needed for assisting states in aggregating race categories for those small substate areas in which small denominators would preclude constructing rates or even presenting data for any but the largest race/ethnicity groups.

The third difference between state and federal approaches lies in the need, as determined by the revised OMB standards, for re-

**TABLE 2—Comparison of Racial Distribution After Allocation of Biracial<sup>a</sup> Infants by Using 4 Bridging Techniques<sup>14</sup>: Massachusetts, 1997**

	Deterministic Whole Assignment			Deterministic Fractional Assignment—Equal Fractions <sup>e</sup>
	Smallest Group <sup>b</sup>	Largest Group Other Than White <sup>c</sup>	Largest Group <sup>d</sup>	
<b>Boston</b>				
White		2348	2702	2525
Black	1810	2012	1727	1858
Asian/Pacific Islander	587	576	480	534
American Indian	27	9	1	14
Other	1618	1445	1480	1459
<b>Massachusetts</b>				
White	56777	56777	61370	59074
Black	5628	5059	3838	4733
Asian/Pacific Islander	3832	3699	2814	3323
American Indian	264	189	22	143
Other	8365	9142	6822	7594

<sup>a</sup>Biracial is defined as having parents of different races on the basis of maternal and paternal race as reported on the birth certificate. In 1997, 9.1% of infants in Boston and 7.3% of infants statewide were biracial.

<sup>b</sup>Assigns responses of more than 1 racial group into the smallest group.

<sup>c</sup>Assigns responses of more than 1 racial group into the largest group other than White.

<sup>d</sup>Assigns responses of more than 1 racial group into the largest group.

<sup>e</sup>Assigns equal weights to each racial group identified.

*Data source.* Massachusetts birth certificates and death certificates (for infant mortality), 1997; Registry of Vital Records and Statistics, Bureau of Health Statistics Research and Evaluation, Massachusetts Department of Public Health.

**TABLE 3—Impact of Bridging Methods on the Calculation of Infant Mortality Rates: Massachusetts, 1997**

	Deterministic Whole Assignment									Deterministic Fractional Assignment—Equal Fractions <sup>d</sup>		
	Smallest Group <sup>a</sup>			Largest Group Other Than White <sup>b</sup>			Largest Group <sup>c</sup>					
	Deaths	Births	IMR	Deaths	Births	IMR	Deaths	Births	IMR	Deaths	Births	IMR
White	234	56777	4.1	234	56777	4.1	256	61370	4.2	245.0	59073.5	4.1
Black	51	5628	9.1	47	5059	9.3	37	3838	9.6	44.0	4733.0	9.3
Asian/Pacific Islander	13	3832	3.4	12	3699	3.2	9	2814	3.2	11.0	3323.0	3.3
American Indian	2	230	NA	2	189	NA	0	22	0.0	1.0	143.0	NA
Other	37	6045	6.1	49	9142	5.4	42	6822	6.2	43.0	7593.5	5.7

*Note.* Infant mortality rates (IMR) are identified.

<sup>a</sup>Assigns responses of more than 1 racial group into the smallest group.

<sup>b</sup>Assigns responses of more than 1 racial group into the largest group other than White.

<sup>c</sup>Assigns responses of more than 1 racial group into the largest group.

<sup>d</sup>Assigns equal weights to each racial group identified.

*Data source.* Massachusetts birth certificates and linked infant birth–death file (for infant deaths), 1997; Registry of Vital Records and Statistics, Bureau of Health Statistics Research and Evaluation, Massachusetts Department of Public Health.

coding the responses in the “Other” race category included in the year 2000 census and in the new US standard certificate of live birth.<sup>13</sup>

In Massachusetts, groups such as Cape Verdeans and Dominicans, with relatively small numbers nationally but high concentrations locally, will be especially likely to indicate their race as “Other.” Since use of federal guidelines to reclassify such “Other” race responses into the categories included in the revised OMB standards could misrepresent the racial and ethnic self-identification of such groups, states may need to develop guidelines different from those developed by the Bureau of the Census or the National Center for Health Statistics.

### ***Recommendations for State Implementation of the Revised OMB Standards***

#### *Educate State Health Departments*

State health departments need to be informed about the implications of the revised OMB standards for state and local collection of public health data and about how the standards should be implemented. To make such education most appropriate, it should be based on an immediate assessment of the activities currently under way to implement the revised OMB standards in each state health agency. Given the magnitude of the impact of the re-

vised OMB standards on state health agencies, the Centers for Disease Control and Prevention should consider holding an educational and training conference directed at state public health programmatic and surveillance staff.

#### *Develop Working Partnerships Between Federal and State Public Health Agencies*

Consistent and sensible state implementation of the revised OMB standards can occur only if federal and state agencies form working partnerships to identify and develop uniform solutions to such issues as bridging, intercensal estimation of small-area population

denominators, and consistency between race and ethnicity classification in self-reported, observer-based, and record review–based data sets. Such solutions must be in accordance with the revised OMB standards and must also meet state needs and constraints. States are looking to the federal government to promulgate consistent guidance across federal health agencies to provide uniform direction to state efforts.

### *Develop Working Partnerships With Community Groups*

State public health agencies should form working partnerships with the affected groups in each state to develop appropriate data collection, tabulation, and reporting strategies.

### *Educate Data Providers and Collectors*

Data providers and collectors such as physicians, public health nurses, hospitals, neighborhood health centers, nursing homes, and funeral directors—as well as the public—must be educated about the revised OMB standards and encouraged to use self-report whenever possible in obtaining and reporting race and ethnicity data. Education campaigns directed at data providers can be launched federally and implemented at the state level, similar to the education campaign launched to increase participation in the year 2000 census or the Australian campaign to educate data providers about the need for self-report of race for individuals of Aboriginal and Torres Island descent.<sup>15–18</sup>

### *Simulate Bridging With Existing Data Sets*

State public health agencies should use existing data sets, such as births, to simulate the effects of different bridging techniques on estimates of health status and health outcomes.

### *Focus on Ethnicity*

In addition to meeting the minimum standards for the collection of race data, states should collect, present, and analyze data on detailed race/ethnicity for participants in public health programs and track health status and health outcomes. Focusing on ethnicity rather than race may provide state public health agencies with more useful data for program targeting.

### *Construct Small-Area Intercensal Population Estimates*

State public health agencies will need to develop statewide and small-area intercensal population estimates for all single-race, multiple-race, and ethnicity groups, and identify new sources for informing those estimates, such as the new American Community Survey.<sup>19</sup>

### *Improve Coordination Within and Between State Public Health Agencies*

State public health agencies will need to develop consistent guidelines for implementation of the revised OMB standards for diverse data sets and will need to champion consistent implementation across different states.

## **Conclusions**

Implementation of the revised OMB standards for the collection of race and ethnicity data has the potential to substantially increase the current administrative burden on data providers and data collectors. Data providers must be informed and educated, electronic and manual data collection and tabulation systems must be reprogrammed and revised, numerous methodological decisions must be made, and the public must be comprehensibly informed. Implementation of the revised OMB standards also has the potential to increase variation between different data sets and different states in race and ethnicity data collection, tabulation, analysis, and reporting. However, the revised OMB standards provide state and federal public health agencies with an important opportunity to collect, tabulate, and analyze data on program participation and community health that more accurately reflect the racial and ethnic nuances of contemporary American society. Health status and health outcomes vary not just by race but also by ethnicity, generation in the United States, acculturation, place of birth, and economic position. While the revised OMB standards will not provide the detailed data on ethnicity, generation, place of birth, acculturation, and economic position necessary for fully understanding the relationship of race and ethnicity to health status and outcomes, the standards do reflect an important step in moving beyond a simplistic concept of race and its impact on health.

As indicated in the revised OMB standards, “the categories in this classification are social-political constructs and should not be interpreted as being scientific or anthropological in nature.”<sup>11(p58788)</sup> Race categories in the US census have changed frequently during the 20th century to reflect changing political and cultural norms.<sup>20–29</sup> Race categories will continue to change in future censuses, and federal and state public health agencies need to anticipate these changes through the development of techniques that enable bridging of race data both retrospectively and prospectively. Detailed ethnicity categories may be more likely to reflect the demographic realities of American society than contemporary political and cultural norms, and capturing ethnic detail holds the potential for providing a valid over-time bridge for understanding public health trends. □

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## **Contributors**

D.J. Friedman wrote the paper. B.B. Cohen helped to conceptualize the study and the analyses. A.R. Averbach conducted the birth analyses and edited the paper. J.M. Norton conducted the demographic analyses and edited the paper.

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