

National Assessment of Epidemiologic Capacity in Maternal and Child Health: Findings and Recommendations

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National Assessment of Epidemiologic Capacity in Maternal and Child Health: Findings and Recommendations

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EXECUTIVE SUMMARY

BACKGROUND

Over the past century, state public health agencies have developed their epidemiological abilities to address the public health issues defined by the Institute of Medicine. These abilities have broadened as the focus of public health agencies has shifted from solely infectious diseases to chronic diseases, maternal and child health (MCH), and other issues. Starting in 1997, the Council of State and Territorial Epidemiologists (CSTE) developed modules to assess state and territorial health agency epidemiology and data capacity, as well as to monitor Healthy People 2010 Objective 23-14 which calls for an increase in public health agencies that provide epidemiology services to support the essential public health services.

METHODS

The MCH Epidemiology Capacity Assessment module was developed using existing competencies for MCH epidemiologists practicing in states and territories. After pretesting in three states, the 42-question assessment module was administered to all state and territorial health agencies via a web-based survey from November 2001 to March 2002. Multiple representatives from each state were asked to be involved in completing the assessment. Non-responding agencies were contacted by phone to encourage completion.

RESULTS

Fifty-two of 56 state and territorial health agencies (93%) responded. Nearly half (52%) of the agencies reported that their MCH epidemiology/data capacity was very adequate to adequate. The most common barriers to developing capacity were inability to hire personnel, lack of financial resources, and lack of qualified personnel.

Human capacity

With wide variation, agencies reported having nearly 12 staff members, on average, involved in MCH data-related activities. The majority were master's (4.5) and bachelor's (3.7) trained individuals with some doctoral trained individuals (2.5). Approximately 76% of the agencies reportedly had MCH epidemiologists and 71% of respondent agencies had a senior or lead MCH epidemiologist. Of the agencies that had MCH epidemiologists, there were an average of 3.5 MCH epidemiologists per agency. The epidemiologists' activities included writing reports (100%), completing special studies (90%), conducting program evaluations (80%) and developing policies (61%).

Systems capacity

Most agencies reported very adequate or adequate computer hardware (86%) and software (73%) capabilities. Almost 62% of agencies reported adequate capacity to link databases. Nearly all agencies (98%) used federal funds to support MCH data-related activities. Two-thirds also used state funds. Most continuing educational training of agency staff was received at national (92%) and regional (63%) meetings. Major barriers to training included time constraints (85%), financial constraints (75%) and lack of in-state training (67%).

MCH data-related activities

Staff's accessibility and analysis of MCH data sources varied by agency. Data results were generally reported in paper formats, although some results were published on websites (71%) and in peer-reviewed journals (30%).

RECOMMENDATIONS**General**

- National Partners should jointly conduct case studies to identify the "best practices" of MCH epidemiology.

- MCH epidemiology and data capacity should be assessed periodically to monitor progress in building human and systems capacity at the state and territorial level.

Human Capacity

- Each state and territory should have a minimum of one doctoral level MCH epidemiologist or comparable substitute serving as the lead MCH epidemiologist.
- Each major MCH program area should be staffed or equipped with adequate MCH epidemiology support.

Systems Capacity

- MCH epidemiology/data staff should strengthen and expand their analysis and use of MCH-related databases, especially those that are linked to other databases.
- MCH epidemiology/data staff should work closely with MCH directors in carrying out the 10 Essential Public Health Services.
- MCH directors should encourage their MCH epidemiologists to obtain continuing education in MCH epidemiology.
- Federal MCH epidemiology leaders should work closely with universities to define competencies and develop appropriate graduate and continuing education courses.

MCH Data-Related Activities

- MCH directors and their MCH epidemiologists should actively participate at national, regional, and state meetings to exchange information with others.

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BACKGROUND

The Institute of Medicine (IOM) report *The Future of Public Health*¹ recommended that health agencies should systematically collect, assemble, analyze and disseminate information on epidemiologic studies regularly to facilitate evidence-based decision making in public health. Although this recommendation has largely been implemented by most state public health agencies, the focus has by far been on infectious disease. Over the past 100 years, there has been a shift in the causes of death and disability in the United States from infectious to chronic diseases². Also, the Healthy People 2010 Objective 23-14 calls for an “increase in the proportion of Tribal, State, and local public health agencies that provide or assure comprehensive epidemiology services to support essential public health services.” Additionally, in recent years, demand has been increasing for government accountability and for public health decisions to be derived from scientific evidence. Therefore, public health agencies at all levels throughout the nation have come to realize the importance of building epidemiology capacity in the area of chronic disease and maternal and child health (MCH).

To meet this increasing challenge, the Centers for Disease Control and Prevention (CDC) and the Maternal and Child Health Bureau of the Health Resources and Services Administration (HRSA/MCHB) have been collaborating with state, territorial and local public health agencies since 1986 to improve MCH epidemiology capacity at the state, territorial, and local levels³.

The newly established National Action Alliance on improving MCH epidemiologic capacity (formerly the National Action Agenda)⁴ stated that, in order to perform the essential MCH services, it is necessary for state and territorial public health agencies to have adequate data capacity, training systems, resilient surveillance systems, MCH population based survey systems, information technology systems, and a workforce with the technical expertise to analyze and disseminate data as well as the ability to collaborate with individuals inside and outside of public health agencies.

However, little is known about the current level of epidemiologic capacity at the state and territorial level. Therefore, in 1997, the Council of State and Territorial Epidemiologists (CSTE) started an effort to assess the epidemiologic capacity at state and territorial health agencies. The epidemiologic capacity assessment (ECA) instrument was first piloted in 10 states and territories. In January 2001, a small advisory group was organized under the leadership of the CSTE Executive Committee to revise this instrument. This assessment contains five modules (Core, Infectious Disease, Chronic Disease, MCH, and Food Safety). Each module was organized under the framework of the Ten Essential Services of Public Health⁵, because several of the 10 essential public health services (ES) are carried out by epidemiologists, including monitoring health status (ES #1), diagnosing and investigating health problems and health hazards (ES #2), and conducting evaluation and research (ES #9).

The objectives of the MCH Epidemiology Capacity Assessment module were to assess the human capacity, systems capacity, and MCH-data related activities at the state and territorial public health agencies, as well as to assess the baseline MCH epidemiologic capacity at state and territorial public health agencies, to provide information for the National Action Alliance⁴ and assist in its effort to build MCH epidemiologic capacity at all levels throughout the nation. To be consistent with other modules, the assessment was also structured using the framework of the ten essential public health services.

METHODS

In September of 1999, CSTE first drafted the MCH Epidemiology Capacity Assessment module structuring it around the competencies for MCH epidemiologists practicing in states and territories⁶. These competencies were developed using the University of Illinois at Chicago School of Public Health case study evaluation done in 1996, those developed by the CDC for its EIS officers, as well as those proposed by the Association of Teachers of Maternal and Child Health. The primary goal of the competencies was to build the capacity of state and local health departments by using the population-based focus of epidemiology to enhance MCH program planning. The three competency areas

were epidemiologic processes, communication and professionalism. MCH epidemiologists were classified using the definition given by Handler et al.⁷, which states that a MCH epidemiologist/data staff member is an individual who utilizes his/her analytical and data interpretation skills to carry out the following population-based activities for the maternal and child health community:

- Assess health-related needs and status of the community
- Obtain funding to drive maternal and child health programs
- Make recommendations for new policies and/or aid in the improvement of existing policies
- Evaluate existing programs

Individuals from federal partner organizations such as CDC, HRSA/MCHB, the Association of Maternal and Child Health and Programs (AMCHP), CityMatCH and the National Association of Public Health Statistics and Information Systems (NAPHSIS), as well as academics and state employees, participated in the initial review processes of the assessment.

A paper-based version of the tool was piloted in Wisconsin, Kansas and Michigan. State Epidemiologists were asked to have MCH Program Directors, Vital Statistics Directors and MCH Epidemiologists collaborate to discuss and complete the tool. Feedback from these pilots was incorporated into later versions.

The final version of the assessment tool was administered to states and territories via a web-based survey that consisted of 42 questions. A total of 51 states (including the District of Columbia) and 5 territories (American Samoa, the Commonwealth of Northern Mariana Islands, the Federated States of Micronesia, Guam and Puerto Rico) were administered the survey. States and territories were notified electronically about the assessment efforts and data were collected between November 2001 and March 2002. Follow-up telephone calls were made to those states and territories that did not respond initially. Appendix B contains a paper-based version of the assessment.

After the assessment administration process was completed, workgroup members who participated in the initial review process reconvened during conference calls. These meetings served to discuss the questions that would be most beneficial in describing the current MCH epidemiologic capacity in state and territorial agencies.

Frequencies were calculated for those questions that best examined systems capacity, human capacity, MCH-related data activities and self-assessed overall capacity. Frequencies were calculated for all other questions as well. Data were analyzed using the SAS software.

RESULTS

Of the 56 public health agencies that were administered the assessment, 52 (92.8%) states and territories responded to the assessment and, excluding territories, 49 states, including the District of Columbia (96.1%), responded. State and territorial agencies cited lack of a designated MCH epidemiologists and departmental restructuring as reasons for not completing the assessment. Results given in this report include the responses from the 52 states and territories, which were organized into four areas: human capacity, systems capacity, MCH data-related activities, and self-assessed overall capacity. The data are also presented according to the 10 essential public health services. Appendix A contains frequency data for this assessment.

Human Capacity

This section identifies the results for human capacity within state and territorial agencies. Human capacity includes the following areas: agency personnel, personnel duties, involvement in MCH activity and agency workforce training capacity. These areas impact the ability of state and territorial agencies to develop policies and plans, as well as to assure a competent public health workforce.

Staffing

MCH Data Staff. On average, approximately 12 staff members (including MCH epidemiologists) reportedly took part in MCH data-related activities in each state and territorial agency (Range: 1-100) (Q26)[§]. However, this number varied greatly between states, with the majority (65.4%) of agencies having fewer than 12 MCH data staff members. On average, there were more master's level (4.5) and bachelor's level (3.7) trained MCH data staff members than doctoral level staff members (2.5) (Figure 1) (Q26a). In addition to MCH epidemiologists, states and territories reported data managers (52.0%), other staff (52.0%), other epidemiologists (40.0%) and State Epidemiologists (22.0%) as individuals who address MCH data needs (Q27).

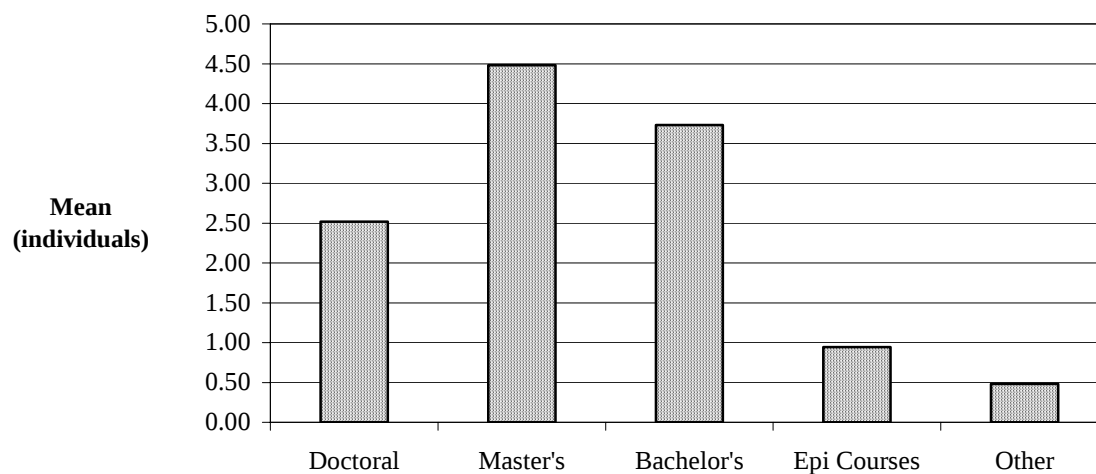


Figure 1. Mean number of staff members addressing MCH data needs by training levels: US states and territories, 2002.

MCH Epidemiologists. Approximately three quarters of state and territorial agencies (76.0%) reported having an MCH epidemiologist who addressed MCH data needs (Q27). Of the 38 public health agencies that reported having MCH epidemiologists, on average 3.5 MCH epidemiologists were employed per agency (Standard Deviation: 6.6, Range: 1

[§] Question number found in Appendix A

– 35) (Q28). The majority of these MCH epidemiologists were trained at the doctoral (1.3) and the master's level (1.1) (Figure 2) (Q28a).

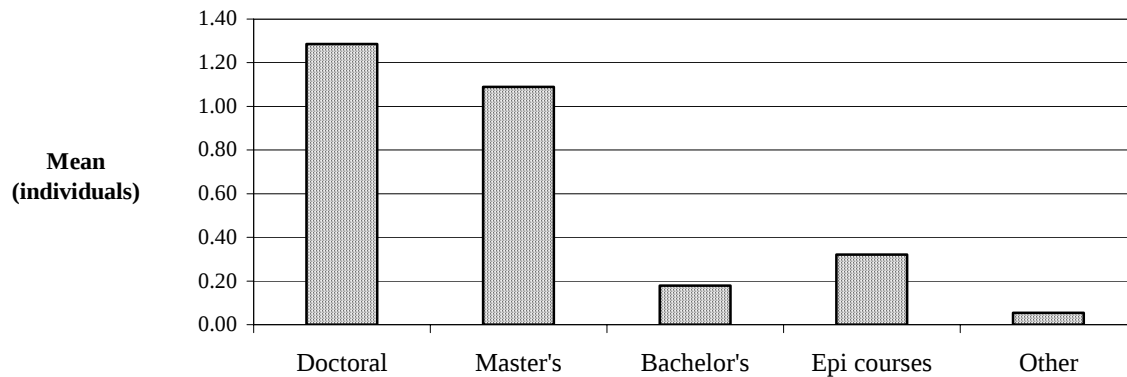


Figure 2. Mean number of MCH epidemiologists by training level: US states and territories, 2002.

Of the 38 state and territorial agencies that reported having MCH epidemiologists, approximately 11 agencies (28.9%) reported not having a lead or senior MCH epidemiologist (Q28b). Twenty-seven of the 38 agencies (71.1%) that responded had lead or senior MCH epidemiologists.

Involvement in MCH activities

MCH epidemiologists or data staff reportedly were involved in developing strategic plans, coordinating the design and implementation of studies, and interpreting and disseminating data for MCH epidemiology projects and activities. The majority of states and territories who reported having lead MCH epidemiologists or other MCH epidemiologists also reported that these individuals were involved in the MCH activities carried out by the MCH epidemiologists and data staff. Over 60% of MCH activities were reported as being carried out by MCH Directors, MCH program managers or some combination of both. Vital statistics directors, health statistics staff, senior agency managers, other epidemiologists, and state epidemiologists were frequently involved as well, but varied according to the agency (Q20, Q21, Q22).

Over 55% of agencies reported that their MCH epidemiology/data staff were given the opportunity to contribute to the development and improvement of proposed legislation, existing ordinances and regulations, and revisions of existing state statutes as needed (Q24). All states and territories reported that their MCH epidemiology/data staff performed report writing. Agencies also conducted special studies (90.4%), program evaluation (80.0%) and policy development (61.2%). In contrast, less than 30% of agencies reported that their MCH epidemiology/data staff conducted cost-benefit analysis (Q40).

Systems Capacity

Systems capacity consists of data systems capacity, funding sources, external resources, internal collaboration, web resources and training support among state and territorial agencies. This section will describe the results for these broad areas.

Data systems capacity

For the purpose of data collection and analysis, 45 (86.5%) states and territories considered their computer hardware to be adequate and 38 (73.1%) states and territories considered their computer software to be adequate. Technical support for data collection and analysis was considered adequate in only 50% of states and territories (Q34). Over 90% of agencies reported having access to recent versions of general office software, Internet browsers, and email software. At least 60% of the states and territories had access to one statistical package (Q35). Figure 3 depicts the comparative use of different statistical software applications used by states and territories.

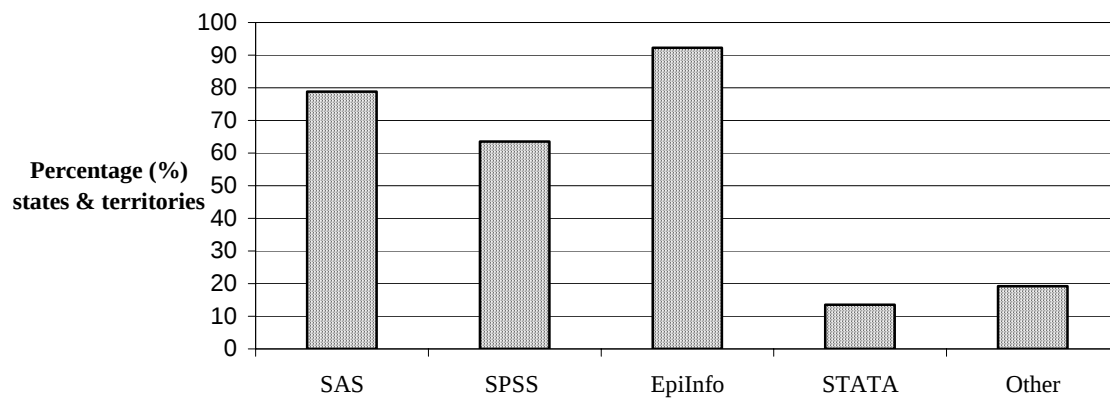


Figure 3. Statistical software packages utilized: US states and territories 2002.

In addition 70% of agencies reported using SUDAAN when asked whether they used other statistical software packages (Q35).

Over sixty percent of agencies (61.5%) reported having had the capacity to link vital records, risk factors, claims/program data, screening data/surveillance, case investigation, injury, and other large MCH databases (Q2d). Also, 80.8% of states and territories reported that these databases were available to other public health personnel within agencies (Q2e).

Funding sources for MCH activities

Over ninety percent (98.0%) of state and territorial agencies reported receiving funding from the federal level, while relatively few states and territories reported receiving funding from non-profit organizations (7.8%) and private organizations (2.0%).

Approximately 67% of agencies reported receipt of funding for MCH activities from their respective states and territories (Figure 4) (Q12).

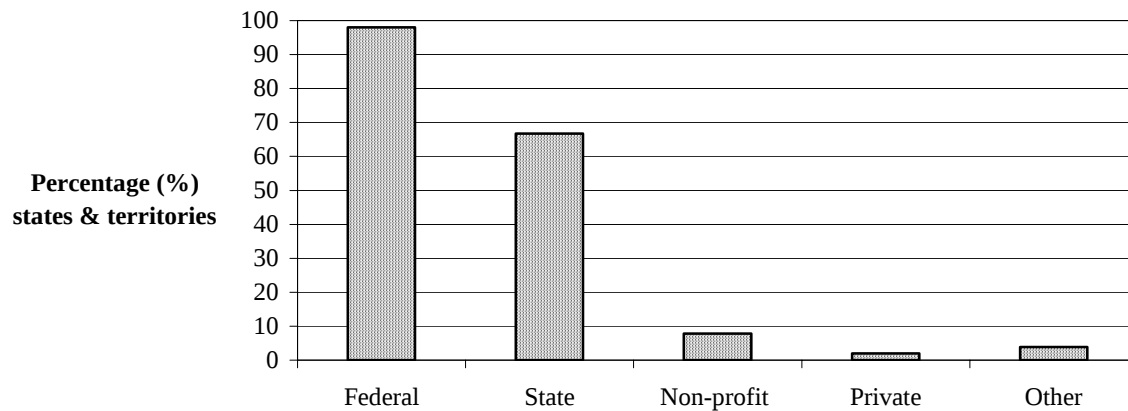


Figure 4. Funding sources for MCH data-related activities: US states and territories, 2002

External resources and internal collaboration

MCH epidemiologists and program partners collaborate at least most of the time in 45 states and territories (86.5%) (Q16). Collaboration with outside agencies occurred in 38 states and territories (73.1%) when they conducted MCH investigations and studies (Q11). Thirty-one (88.6%) states and territories reported that collaborative efforts were carried out between their staff members and Schools of Public Health (Q13). These collaborative efforts have resulted in studies that were followed by recommendations in 27 of 38 states and territories (71.0%). Implementation of these recommendations occurred in 15 states and territories (44.1%) (Q11). Federal agencies (65.4%) were reported as being the external collaborative resource most involved in improving MCH surveillance, data collection, information dissemination and data analysis (Q14).

Training support

Over 90% of states and territories reported MCH epidemiology/data staff participation in continuing education at the national level (Q33).

However, 37 states and territories (71.2%) provide and/or support MCH epidemiological training (Q30). Half of agencies (50.0%) reported that they had adequate or better capacity to train MCH epidemiology/data staff in data collection. More than forty

percent of states and territories reported having adequate or better capacity to train in the areas of data management / software analysis (59.4%), data analysis (48.6%), data interpretation (45.9%), program evaluation (45.9%) and overall MCH surveillance (45.9%). Agencies reported having inadequate capacity to train individuals to conduct investigations (27.8%), apply research (35.1%), produce reports (27.0%) and generate hypotheses (27.0%) (Q31). Figure 5 depicts adequate training capacity for data-related MCH activities.

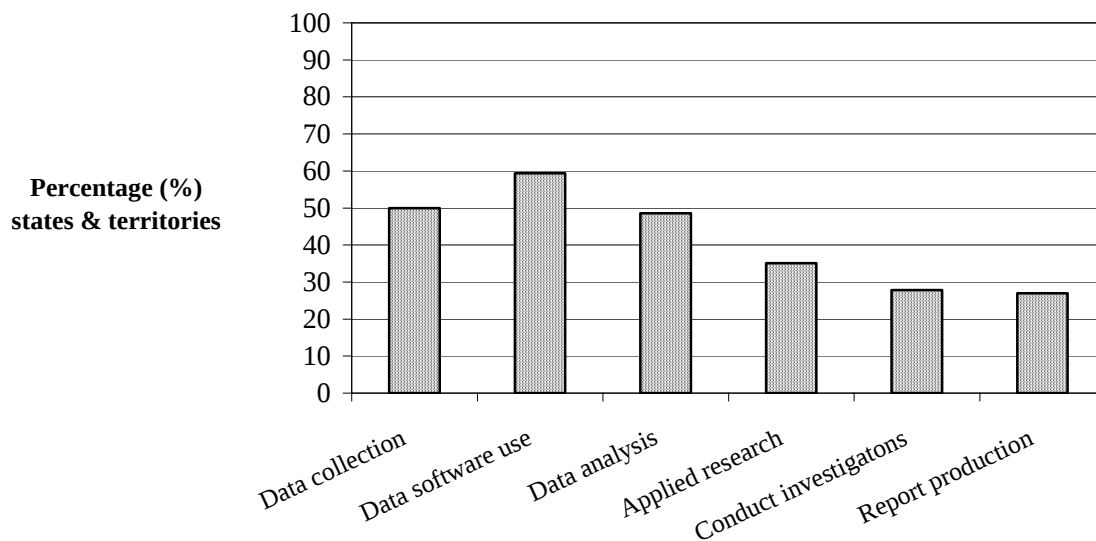


Figure 5. Training capacity for various data-related MCH activities: US states and territories, 2002

A large percentage of states and territories reported that time constraints (84.6%), financial constraints (75.0%) and lack of available in-state training programs (67.3%) were the major barriers to accessing continuing education in MCH epidemiology. Less than two percent of states and territories reported lack of staff interest as being a major barrier (Q32).

MCH Data-related Activities

This section summarizes the findings on a number of MCH data related activities that can be considered capacity outcome measures. These findings mirror the stages of an effective MCH program (or public health) cycle that incorporates the use of data to assess, plan, monitor and evaluate population-based health services programs. Finally, this section will discuss the findings on the respondents' perception of their agency's MCH epidemiology capacity and barriers to increasing capacity.

Planning, strategy, and development

The majority of agencies (78.8%) reported using data to make MCH policy and program decisions most of the time (Q19). Over 80% of agencies reported that they use MCH data during various stages of their decision-making process for activities such as initiating the design of programs, evaluating the usefulness of programs, finalizing decisions based on the relevance of data and informing individuals about the impact of decisions (Figure 6) (Q18).

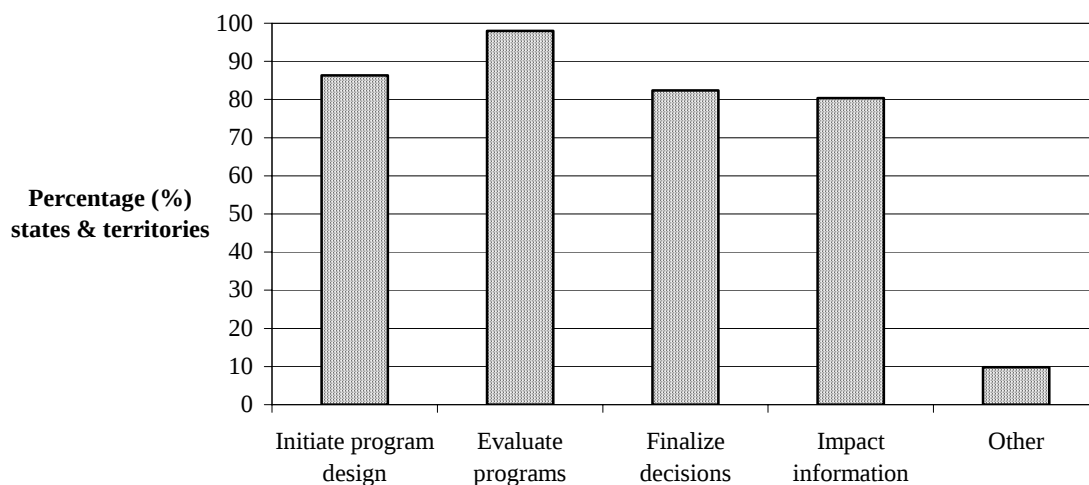


Figure 6. Stage in decision-making at which agencies use MCH data: US states and territories, 2002.

Data collection/analysis

There was great variability in the accessibility and analysis of various data sources by MCH epidemiology/data staff (Q2). All states and territories had access to birth data and mortality data including infant and fetal death. Of these vital records data, infant death data was most analyzed (78.8%). With the exception of linked infant birth-death data, which was analyzed by 63% of agencies, most linked data had been analyzed by less than 40% of agencies (Figure 7). Among other types of data sources, more than 80% of states and territories reported that BRFSS, YRBSS, hospital discharge, Medicaid, WIC, newborn screening, and lead screening data were most accessible or most collected. Analyses of these data sets were, however, conducted in less than half of responding agencies, with the exception of the BRFSS data (58.8%). Of the various areas for which data analysis was conducted, “infant death” (78.8%) and “low birth weight” (74.0%) were the topics most analyzed, while “prenatal substance exposure” and “children with special health care needs” (CSHCN) were the topics least analyzed at 44% each (Q3).

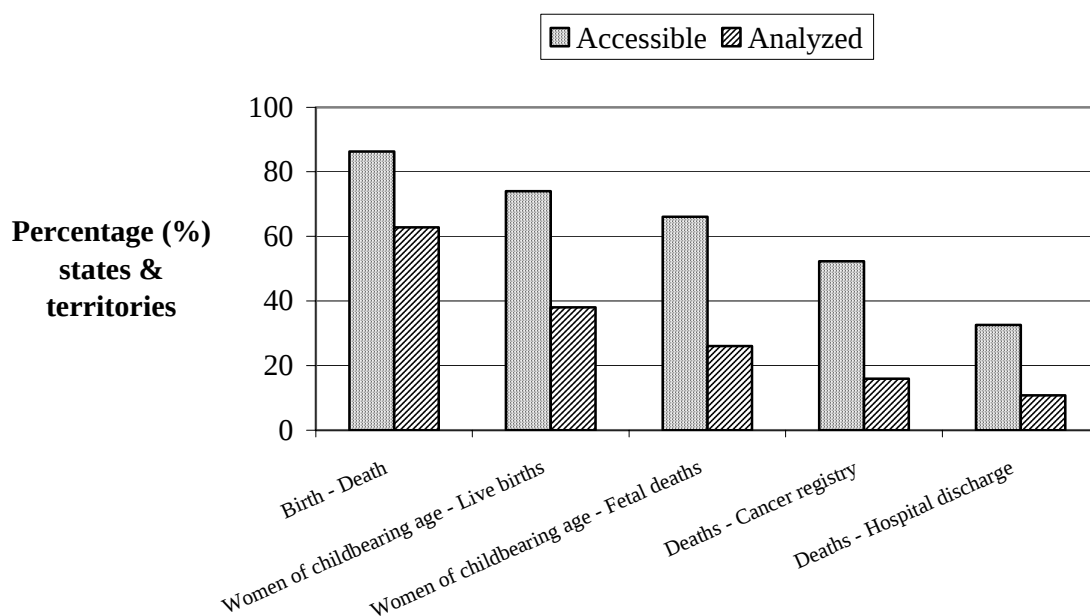


Figure 7. Linked databases that were accessible and analyzed by agencies: US states and territories, 2002.

Data dissemination

States and territories reported that results of data analyses were typically disseminated in paper format and in reports (e.g., 96% published annual vital statistics reports and 83% published surveillance reports) (Q2b, Q15). The results were published on the web by only half of the agencies and by 30% of the agencies in peer-reviewed journals or in MMWR (Q2a, Q7). However, sharing of this information informally with agency staff or other outside groups occurred in more than 80% of states and territories (Q4). Approximately 7% of agencies stated that they never shared such information. About 90% of agencies reported that MCH program/data staff were active in presenting this information at conferences, workshops, and community forums within the past year (Q5). Approximately 60% of agencies reported that the conferences or workshops were sponsored by statewide organizations (68%) and local organizations (59%).

Program Impact and Evaluation

Agencies reported that within the past three years data collection, data assembly and data analysis from multiple sources contributed to the development of various MCH programs at various levels, such as prenatal care programs (75%), breastfeeding programs (60%), Children with Special Health Care Needs programs (56%), immunization programs (35%) and daycare programs (17%) (Q23). Results were similar for the use of data in program evaluation for these topic areas (Q38). Approximately 62% of the agencies indicated that their MCH epidemiology/data staff routinely evaluated population-based MCH services (Q39).

Self-Assessed Overall Capacity and Barriers

Approximately half of the respondents indicated that their agency's MCH epidemiology/data capacity was very adequate to adequate (Q37). The following three reasons were most commonly identified as major barriers to collecting, using and sharing data when making decisions regarding MCH issues: lack of ability to hire personnel,

lack of financial resources, and lack of qualified personnel (Q17). At least two of these barriers were experienced by a majority of state and territorial agencies.

DISCUSSION

Over the past few years there has been an increase in the number of epidemiologist positions as well as MCH epidemiologic capacity teams in state and territorial health agencies. Training programs for public health professionals have also started to incorporate epidemiological methodology in their curricula⁸. Despite these positive developments, this survey indicates that there is still a need to improve human capacity, systems capacity and MCH data-related activities in state and territorial agencies.

Human Capacity

According to the findings of this assessment regarding the number of MCH epidemiology/data staff members, staff involvement in MCH activities, and the capacity to train personnel in outside agencies, human capacity still needs improvement. For example, approximately one quarter of states and territories have neither a senior or lead MCH epidemiologist nor a doctoral or master's level MCH epidemiologist. It is necessary for a senior or lead MCH epidemiologist to be present in states and territories in order to provide essential MCH leadership to address public health problems. In addition, MCH epidemiologists or data staff do not carry out essential data-related activities in some state and territorial public health agencies. However, it is not clear from this assessment whether other staff performed these functions, contractors performed these functions, functions were not perceived as essential, staff were not currently capable of performing these functions, or whether sufficient time and resources were not available. Even among the states and territories that had MCH epidemiologists or data staff, there was great variability between states and territories as to the number of staff. Some states and territories had a single person to handle MCH data needs, whereas one state had 100 MCH epidemiology/data staff members. Future studies should compare the states and territories, with many epidemiology/data staff to those with few staff to

determine whether data needs are adequately addressed, and to determine to what extent evidence-based public health decision-making is implemented in these states and territories, respectively.

Systems Capacity

When data systems capacity, funding sources, external resources, internal collaboration, web resources and training support within state and territorial agencies were assessed, the results indicated that the computer hardware, software and technical support necessary for data analysis was available in most states and territories. Many agencies were also capable of linking databases and making databases available to personnel within the agency for analysis. Support for these MCH activities was primarily provided by federal funds. Collaboration with internal and external partners occurs often within most states and territories. However, most agencies did not report implementation of recommendations identified by external resources. Overall, agency training to MCH epidemiology staff was supported by many states and territories. This training was, however, considered less than adequate in various areas such as study design, hypothesis generation and media interviews. Barriers were found to be associated with accessing continuing education and most continuing education for state MCH epidemiology staff occurred at the national and regional levels.

MCH Data-Related Activities

The majority of state and territorial agencies reported the use of data at various stages of their decision making process in planning, developing, and evaluating programs. However, findings from this assessment indicated that many of the databases routinely collected by agencies were under-utilized. Although most agencies published annual vital statistics reports and surveillance reports, very few published reports in peer-reviewed journals. It is beneficial for MCH epidemiology/data staff to publish in peer-reviewed journals because such activities enhance the overall quality of work at the

agency, help improve the quality of work in other states and territories, provide unique insights into public health problems sometimes missed by academic researchers, and improve employee morale.

The majority of the agencies also appear to share data with outside organizations and have their staff make presentations at conferences and workshops, mostly at the state and local level. Data are used for program evaluation at a moderate level, with great variability between program areas.

While many states and territories use data, in general, to carry out their MCH functions, the level of data use and analysis is limited. Most data are published as simple descriptive reports and therefore only impact a few topical and program areas. Few agencies conduct in-depth analyses of these data and some agencies do not use the data at all. It would be beneficial for MCH directors to therefore make it a priority to hire and to maintain qualified personnel, to secure financial resources, to encourage MCH epidemiology/data staff to conduct data analyses to guide the development and implementation of public health programs and to evaluate the effectiveness of conducting these activities.

Capacity to Perform the Ten Essential Services of Public Health

The Public Health Functions Steering Committee, which consisted of representatives from national health organizations and federal agencies, adopted the Essential Services of Public Health in 1994. The Ten Essential Public Health Services were developed to provide a standard definition for public health practice in order to assure quality health services. This list of public health functions acts as a tool to aid agencies in progressing with greater clarity of purpose and uniformity among public health workers, state agencies and policy makers. The Ten Essential Services of Public Health have been useful in assessing organizational capacity, job performance and public health expenditures as well as in identifying the overall knowledge and competency necessary for public health workers to carry out public health functions². The Ten Essential Services are as follows:

1. Monitor health status to identify and solve community health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships to identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.
6. Enforce laws and regulations that protect health and ensure safety.
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. Assure a competent public and personal health care workforce.
9. Evaluate effectiveness, accessibility and quality of personal and population-based services.
10. Research for new insights and innovative solutions to health problems.

The results of this assessment indicated that most agencies had the ability to diagnose and investigate health problems and hazards, establish partnerships with key individuals within the state and local arena, develop policies and plans supporting health efforts, link individuals to health services, as well as to evaluate health programs and assess program effectiveness in order to allocate resources accordingly and to utilize data to plan the delivery of health services.

Routine monitoring of the population's health status includes providing surveillance of reports of disease and conditions, providing expanded scope and capability of state and territorial health department epidemiology surveillance systems, and conducting and supporting local initiatives that periodically monitor health status. Overall, state agencies were able to monitor health status. However, agencies without doctoral level MCH epidemiologists reported that they did not utilize data analyses in order to answer research questions (QA1). These state agencies were also lacking in the capacity to link databases for analysis and their ability to make databases available to other public health personnel within the agency. These same agencies did, however, publish tables on the

web for public access, unlike some state and territorial agencies with doctoral level MCH epidemiologists (QA2).

Results from this assessment also showed that state and territorial agencies need to improve their capacity to communicate the importance of epidemiologic investigations and surveys addressing public health concerns. Many states and territories reported preparing written reports for public dissemination, however few reported publishing their work in peer-reviewed journals. Agencies lacking doctoral level MCH epidemiologists generally used program staff or vital statistics staff to train or provide technical assistance to local health agencies on data related issues instead of their MCH epidemiologists (QA3).

Enforcing laws and regulations that protect health and ensure safety requires the influence of state epidemiologic personnel to develop state statutes or proposed legislation. Most states and territories reported that their MCH epidemiology staff were able to assist in the development of or review of proposed legislation, and contribute to the creation or improvement of existing ordinances, as well as to critique and provide revisions to update existing state statutes as needed by their agency, regardless of whether an MCH epidemiologist was present (QA4, QA5, QA6).

Although states and territories reported having the capacity to protect the health of the community, results of the assessment indicated that most agencies needed to increase their capacity to train staff in various MCH areas and to decrease the barriers associated with accessing continuing education, in order to assure a competent public and personal health care workforce. Assuring a competent public and personal health care workforce includes providing appropriate orientations, training and technical support, providing continuing education and professional development to assure competency of the epidemiology program workforce, to assure overall program development and to assure cultural competency of the workforce. Few agencies reported that they had adequate capacity to train staff to conduct investigations, carry out applied research, and design

studies. Financial constraints, time constraints and lack of available in-state training programs were major barriers associated with accessing continuing education. Although states and territories reported major barriers in accessing continuing education, most states and territories reported receiving continuing education on a national and regional level. The majority of state agencies reported that their computer hardware, software and technical support capacity ranged from very adequate to adequate. More than half of the agencies also reported that their capacity to collect and analyze data, as well as the personnel present in their agency, was very adequate to adequate. However, their capacity to collaborate with outside agencies ranged from somewhat adequate to inadequate.

Assessment Limitations

While it was intended that the assessment provide the most accurate, comprehensive and useful information, this assessment had several limitations. First this assessment did not ask agencies about the structure of their MCH programs. All agencies are not organized in the same manner; therefore, cautions must be taken when interpreting the findings of this assessment. Second, the sample size was inherently small for this assessment, making it difficult to make comparisons between subgroups. Third, the responses given may have reflected personal viewpoints of the person who completed the assessment, which may have been limited by the individuals' knowledge and experience.

RECOMMENDATIONS

General

1. MCH epidemiology leaders at the federal level (e.g., CDC, HRSA/MCHB) should work closely with academic institutions as well as with state, territorial and local public health agencies to:
 - Define MCH epidemiologic competency for both states and territories and for MCH epidemiologists;

- Financially support, and jointly develop, training programs to prepare students at the nation's schools of public health for MCH epidemiology;
 - Financially support projects or programs for training the existing work force in MCH epidemiology.
2. CDC, HRSA/MCHB, CSTE, and AMCHP should consider jointly conduct case studies to identify the "best practices" of MCH epidemiology. Such studies can help identify key ingredients for the success of MCH programs, so other states can learn from the best examples to improve their own practices.
 3. The MCH epidemiology/data capacity should be assessed periodically (e.g., every five years), to monitor progress in building MCH epidemiology/data capacity at the state and territorial level across the nation.

Human Capacity

1. MCH epidemiology and data capacity at the state and territorial level needs to be further strengthened.
 - CSTE recommends that each key MCH issue (e.g., WIC, Medicaid, CSHCN, birth defect, fetal and infant mortality, maternal morbidity and mortality, newborn hearing and metabolic screening, and MCH programs) should be staffed with adequate MCH epidemiology/data capacity. This assessment found that, although on average agencies had 12 staff members who were involved in MCH data-related activities, there was great variability in the number of staff members between states and territories. Some states and territories only have one such staff member addressing MCH data needs.
 - CSTE recommends that each state and territory have a minimum of one doctoral-level MCH epidemiologist (or master's level epidemiologist with at least five years of epidemiologic experience) serving as the lead MCH epidemiologist. This survey found that, of the 38 states and territories that have MCH epidemiologists, 11 did not have a lead or senior MCH

epidemiologist. CSTE believes that the presence of a lead/senior MCH epidemiologist is essential for states and territories to promote evidence-based decision-making in MCH.

Systems Capacity

1. States and territories should improve routine data analysis and use of epidemiologic data to monitor trends in MCH problems, and to guide MCH interventions and programs in states and territories.
 - This survey found that only 63% of states and territories currently analyze the linked birth-infant deaths data, and fewer than 40% of the state and territorial agencies analyze the other linked datasets. These databases contain rich information about MCH problems within states and territories. When the data they contain are properly analyzed and used, these databases be powerful tools for the development and evaluation of MCH programs, as well as for generating political will for actions.
2. In addition to the analysis and use of linked data, MCH epidemiology/data staff should work closely with the state and territorial MCH directors to:
 - Analyze other MCH databases to monitor trends in key MCH indicators;
 - Promote evidence-based MCH programs through presentation of MCH epidemiologic information and through education of MCH program staff;
 - Participate at all levels of decision making of MCH policies and strategies;
 - Collaborate with other public, private and academic institutions within state and territories on data collection, analysis and dissemination;
 - Conduct applied epidemiologic research of problems affecting the MCH population in the state or territory.

MCH Data-Related Activities

1. State and territorial MCH directors should encourage their MCH epidemiologists to get continued education in MCH epidemiology. Training activities could include:
 - Data collection, preparation, analysis, interpretation and dissemination;
 - Program planning and evaluation;
 - Applied MCH epidemiologic research;
 - Respond to media requests.
2. State and territorial MCH directors should encourage their MCH epidemiologists to publish their work in peer-reviewed journals, to participate in national, regional and local meetings or conferences and present their work, and to exchange information with other MCH epidemiologists.

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APPENDIX A

Frequency tables for the Maternal and Child Health Epidemiology Capacity Assessment

Essential Service #1: Monitor Health Status to Identify Community Health Problems

1. In the past three years, has your MCH Epidemiology/data staff conducted data analyses for any of the following purposes?

	Yes N (%)	No N (%)	Don't know N (%)
Needs assessment / Program planning	51 (98.0)	1 (2.0)	---
Program evaluation	46 (88.5)	5 (9.6)	1 (1.9)
Descriptive epidemiology report	43 (84.3)	7 (13.7)	1 (2.0)
Answer research questions	41 (80.4)	10 (19.2)	1 (1.9)
Surveillance monitoring	49 (94.2)	3 (5.8)	---
Policy development	40 (78.4)	10 (19.6)	1 (2.0)

2. Please indicate whether the following listed databases are accessible to, analyzed or collected by your MCH epidemiology/data staff as of August 2001:

	Accessible N (%)	Analyzed N (%)	Not Collected N (%)	Respondents N
Vital Records				
Birth data	52 (100.0)	40 (76.9)	---	52
Death data (All ages)	52 (100.0)	33 (63.5)	---	52
Infant death	52 (100.0)	41 (78.8)	---	52
Fetal death	52 (100.0)	31 (59.6)	---	52
Abortion death	38 (77.6)	13 (26.5)	11 (22.4)	49
Linked birth-death data	44 (86.3)	32 (62.8)	7 (13.7)	51
Linked deaths of women of childbearing age – Live births	37 (74.0)	19 (38.0)	13 (26.0)	50
Linked deaths of women of childbearing age – Fetal deaths	33 (66.0)	13 (26.00)	17 (34.00)	50
Linked deaths – Cancer registry	23 (52.3)	7 (15.9)	21 (47.73)	44
Linked deaths – Hospital discharge	15 (32.6)	5 (10.8)	31 (67.39)	46

	Accessible N (%)	Analyzed N (%)	Not Collected N (%)	Respondents N
Birth defects registry	35 (68.6)	19 (37.2)	16 (31.37)	51
Cancer registry	36 (90.0)	11 (27.50)	4 (10.0)	40
Risk Factors				
BRFSS- Behavioral Risk Factor Surveillance System	49 (96.1)	30 (58.8)	2 (3.9)	51
PRAMS-Pregnancy Risk Assessment Monitoring System	29 (55.8)	23 (44.2)	23 (44.2)	52
State sponsored household survey	15 (32.6)	6 (13.0)	31 (67.4)	46
YRBSS-Youth Risk Behavior Surveillance System	41 (80.4)	16 (31.4)	10 (19.6)	51
Claims / Program Data				
CHIP-Child Health Insurance Program	33 (73.3)	8 (17.8)	12 (26.7)	45
Hospital discharge	41 (82.0)	20 (40.0)	9 (18.0)	50
Medicaid	36 (90.0)	14 (31.8)	8 (18.2)	44
Emergency department	24 (52.2)	6 (13.0)	22 (47.8)	46
WIC-Women Infants & Children	44 (91.7)	21 (43.8)	4 (8.3)	48
Screening data /Surveillance				
Newborn / Metabolic screening	49 (98.0)	23 (46.0)	1 (2.0)	50
Hearing screening	40 (78.4)	16 (31.4)	11 (21.6)	51
Lead screening	44 (86.3)	21 (41.2)	7 (13.7)	51
Immunization registry	37 (77.1)	11 (22.9)	11 (22.9)	48
Immunization survey	36 (76.6)	11 (23.4)	11 (23.4)	47
PedDNSS-Pediatric Nutrition Surveillance System	35 (72.9)	10 (20.8)	13 (27.1)	48
PNSS-Pregnancy Nutrition Surveillance System	27 (57.4)	11 (23.4)	20 (42.6)	47
Oral health surveillance	27 (60.0)	12 (26.7)	18 (40.0)	45
Case Investigation				
Fetal mortality	36 (72.0)	15 (30.0)	14 (28.0)	50
Infant mortality	41 (95.3)	26 (60.5)	2 (4.6)	43
Child Fatality Review	38 (77.6)	20 (40.8)	11 (22.4)	49
Maternal mortality	35 (68.6)	18 (35.3)	16 (31.4)	51

	Accessible N (%)	Analyzed N (%)	Not Collected N (%)	Respondents N
Injury				
School injury	11 (23.4)	7 (14.9)	36 (76.6)	47
Other				
Title V performance measures	50 (100.0)	45 (90.0)	---	50
Title V health status indicators	50 (100.0)	45 (90.0)	---	50

2a. In general, are tables routinely published on the web for public access for the majority of the above-analyzed databases? (n = 51)

	N (%)
Yes	26 (51.0)
No	25 (49.0)
Don't know	---

2b. In general, are tables in paper formats routinely published for public access for the majority of the above-analyzed databases?

	N (%)
Yes	51 (98.1)
No	---
Don't know	1 (1.9)

- 2c. In general, are queries created on the web for the majority of the above-analyzed databases? (n = 51)**

	N (%)
Yes	10 (19.6)
No	39 (76.5)
Don't know	2 (3.9)

- 2d. Does your agency generally have the capacity to link the above listed databases for analysis?**

	N (%)
Yes	32 (61.5)
No	19 (36.5)
Don't know	1 (1.9)

- 2e. In general, are databases available to other public health personnel within your agency for analysis?**

	N (%)
Yes	42 (80.8)
No	8 (15.4)
Don't know	2 (3.8)

Essential Services #2: Diagnose and Investigate Health Problems and Health Hazards in the Community

3. In the past three years, has your agency staff conducted epidemiologic studies for the following MCH conditions:

	Yes N (%)	No N (%)	Don't know N (%)
Infants deaths			
All	39 (50.0)	9 (18.0)	2 (4.0)
SIDS	31 (64.6)	16 (33.3)	1 (2.0)
Other	7 (30.4)	11 (47.8)	5 (21.7)
Maternal deaths	30 (58.8)	20 (39.2)	1 (2.0)
Low birth weight	37 (74.0)	13 (26.0)	---
Pre-term birth	28 (56.0)	20 (40.0)	2 (4.0)
Birth defects	27 (54.0)	22 (44.0)	1 (2.0)
Prenatal substance exposure	22 (44.0)	25 (50.0)	3 (6.0)
Child fatality	27 (55.1)	21 (42.9)	1 (2.0)
Child injury deaths	24 (48.0)	24 (48.0)	2 (4.0)
Children with special health care needs	22 (44.0)	26 (52.0)	2 (4.0)
Environmental exposure	28 (56.0)	17 (34.0)	5 (10.0)
Other	9 (50.0)	7 (38.9)	2 (11.1)

*Essential Services #3: Inform, Educate and Empower People About Health Issues***4. In the past year, has your agency shared information gained from MCH data analyses with the following? (n = 51)**

	Yes N (%)	No N (%)	Don't know N (%)
Program / policy staff	50 (98.0)	---	1 (2.0)
Public health professionals outside of your agency	50 (98.0)	---	1 (2.0)
Other agency staff within your agency	50 (98.0)	---	1 (2.0)
Medicaid / SCHIPS staff (n = 50)	39 (78.0)	7 (14.0)	4 (8.0)
State or local policy makers	47 (92.2)	3 (5.9)	1 (2.0)
Private healthcare providers (n = 50)	39 (78.0)	4 (8.0)	7 (14.0)
Community leaders	45 (88.2)	2 (3.9)	4 (7.8)
Universities / local colleges	38 (74.5)	6 (11.8)	7 (13.7)
Advocacy groups	44 (86.3)	1 (2.0)	6 (11.8)
Media	42 (82.4)	4 (7.8)	5 (9.8)
Information never shared	2 (6.7)	---	1 (3.3)
Other	1 (100.0)	---	---

5. How long has it been since your MCH program or data staff presented information at conferences, workshops, and/or community forums

	N (%)
During the past 12 months	47 (90.4)
1 – 2 years	2 (3.8)
3 – 5 years	2 (3.8)
> 5 years	1 (1.9)
Never	---

Were the conferences / workshops sponsored by:

	N (%)
Association of Maternal and Child Health Programs (AMCHP)	26 (46.4)
Urban Maternal and Child Health (CityMATCH)	6 (10.7)
Maternal and Child Health Epidemiology (CDC)	28 (50.0)
American Public Health Association (APHA)	5 (8.9)
Council of State and Territorial Epidemiologists (CSTE)	17 (30.4)
Other	19 (33.9)
Statewide organizations	38 (67.9)
Local organizations	33 (58.9)
Regional organizations	23 (41.1)

6. In the past three years, has your MCH epidemiology/data staff prepared written reports, other than Block Grant applications from MCH data analyses for public dissemination? (n = 50)

	N (%)
Yes	44 (88.0)
No	6 (12.0)
Don't know	---

7. In the past three years, has your MCH epidemiology/data staff published work in peer-reviewed journals or MMWR from MCH data?

	N (%)
Yes	16 (30.1)
No	34 (65.4)
Don't know	2 (3.9)

8. In the past three years, which of the staff in your agency has provided training or technical assistance to local health agencies on data collection or analysis related to MCH issues? (Check all that apply)

	N (%)
Program staff	46 (88.5)
MCH epidemiologist (s)	36 (69.2)
Other epidemiology staff	14 (26.9)
Vital statistics staff / State center for health statistics staff	28 (53.8)
None	2 (3.8)
Other	7 (13.5)

9. In which of the following ways would you be willing to help train staff from other States and territories in MCH epidemiology, if funding was provided? (Check all that apply)

	N (%)
Have staff from other States and territories visit and train at your agency	32 (61.5)
Travel to other state health departments	24 (46.2)
Workshops at MCH meetings in your geographic area	33 (63.5)
Workshops at national MCH meetings	34 (65.4)
Consultation by phone and e-mail	33 (63.5)
National Web/phone-based seminars	18 (34.6)
Other	1 (1.9)
None	5 (9.6)

Essential Service #4: Mobilize Partnerships to Identify and Solve Health Problems

- 10. Do you have a current list of individuals or organizations (community partners) with an interest in promoting MCH in your state?**

	N (%)
Yes	40 (76.9)
No	4 (7.7)
Don't know	8 (15.4)

- 11. In the past three years, have outside resources (personnel, private agencies, funding, etc.) been used to conduct MCH-related investigations and studies?**

	N (%)
Yes	38 (73.1)
No	10 (19.2)
Don't know	4 (7.7)

If yes, were these studies and investigation activities followed by a meeting of the individuals involved? (n = 38)

	N (%)
Yes	31 (81.6)
No	3 (7.9)
Don't know	4 (10.5)

Did these meetings result in the identification of specific recommendations to improve the management of problems / issues or responses to needs? (n = 38)

	N (%)
Yes	27 (71.0)
No	6 (15.8)
Don't know	5 (13.2)

Were most of these recommendations implemented? (n = 34)

	N (%)
Yes	15 (44.1)
No	3 (8.8)
Don't know	16 (47.1)

12. What are the funding sources for your agency's MCH epidemiology activities? (Check all that apply) (n = 51)

	N (%)	% Funding Mean	% Funding SD
Federal funds	50 (98.0)	65.3	37.0
State funds	34 (66.7)	20.6	27.3
Non-Profit organizations	4 (7.8)	0.04	0.2
Private organizations	1 (2.0)	---	---
Other	2 (3.9)	0.4	2.5

13. Is there a School of Public Health in your state?

	N (%)
Yes	35 (67.3)
No	17 (32.7)
Don't know	---

If yes, do your MCH staff members collaborate with this school? (n = 35)

	N (%)
Yes	31 (88.6)
No	4 (11.4)
Don't know	1 (2.8)

14. Which of the following are involved in improving MCH surveillance, data collection, information dissemination and analysis?

	N (%)
MCH Epidemiologist (s)	44 (84.6)
State Epidemiologist (s)	26 (50.0)
Other Epidemiologist	23 (44.2)
MCH director	50 (96.2)
Vital statistics staff / State centers for health statistics	50 (96.2)
Local and regional hospitals	28 (53.8)
Health plans	13 (25.0)
State family planning agencies	25 (48.1)
Private funding organizations	10 (19.2)
Mortality review board	22 (42.3)
Federal agencies	34 (65.4)
Schools of public health	25 (48.1)
Medical schools	19 (36.5)
Other academic institutions	17 (32.7)
Other	13 (25.0)

15. Which of the following information is published for public health audiences and outside partners (private agencies, business partners, etc.)? (Check all that apply)

	N (%)
Current events	19 (36.5)
Health alerts / Periodic bulletin	28 (53.8)
Newsletters	33 (63.5)
Surveillance reports	43 (82.7)
Policy changes	14 (26.9)
Recent investigations	17 (32.7)
Training opportunities	22 (42.3)
Annual vital statistics reports	50 (96.2)
Web-based reports	37 (71.2)
Other	6 (11.5)

16. How often do MCH epidemiologists and program staff members collaborate with each other on MCH-related issues?

	N (%)
All of the time	22 (42.3)
Most of the time	23 (44.2)
Sometimes	5 (9.6)
Never	2 (3.9)
Don't know	---

Essential Service #5: Develop Policies and Plans that Support Individual and Community Health Efforts

- 17. Which of the following, if any, are major barriers when collecting, using and/or sharing data to make decisions regarding MCH issues?**

	Collecting data N (%)	Using data N (%)	Sharing data N (%)
Lack of technical (hardware, software, etc.) support	14 (26.9)	15 (28.8)	16 (30.8)
Lack of qualified personnel	22 (42.3)	25 (48.1)	18 (34.6)
Lack of ability to hire personnel	38 (73.1)	37 (71.2)	26 (50.0)
Lack of financial resources	35 (67.3)	32 (61.5)	27 (51.9)
Lack of involvement from epidemiologists	8 (15.4)	9 (17.3)	6 (11.5)
Lack of written protocol or policy currently in place	10 (19.2)	10 (19.2)	13 (25.0)
Lack of scientific consultation and support	6 (11.5)	8 (15.4)	6 (11.5)
Statute limitations	11 (21.2)	7 (13.5)	16 (30.8)
Travel	6 (11.5)	7 (13.5)	11 (21.2)
Other	4 (7.7)	6 (11.5)	4 (7.7)
No barriers	2 (3.8)	2 (3.8)	2 (3.8)

18. At what point in the decision-making process is MCH data used? (*Check all that apply*) (n = 51)

	N (%)
To initiate the design / tailoring of specific programs	44 (86.3)
To evaluate the usefulness of programs	50 (98.0)
To finalize decisions made based on the direct relevance of data	42 (82.4)
To inform individuals about the impact of decisions	41 (80.4)
Other	5 (9.8)

19. How often does your MCH program director use data to make MCH policy and program decisions?

	N (%)
All of the time	17 (32.7)
Most of the time	24 (46.1)
Sometimes	10 (19.2)
Never	---
Don't know	1 (1.9)

20. Within your agency, who is involved in developing a strategic plan for MCH epidemiology projects / activities? (n = 51)

	N (%)
MCH director	44 (86.3)
Lead MCH epidemiologist	26 (51.0)
MCH Epidemiologist (s)	24 (47.1)
State Epidemiologist (s)	10 (19.6)
Other Epidemiologist	10 (19.6)
Senior health department manager (s)	20 (39.2)
MCH program managers	39 (76.5)
Vital statistics director / manager	16 (31.4)
State centers for health statistics staff	11 (21.6)
MCH Epi Team / Committee (i.e. MCH Epi Network)	14 (27.4)
Other	12 (23.5)

21. Within your agency, who is involved in coordinating the design and implementation of MCH epidemiological studies? (n = 51)

	N (%)
MCH director	33 (64.7)
Lead MCH epidemiologist	27 (52.9)
MCH Epidemiologist (s)	26 (51.0)
State Epidemiologist (s)	11 (21.6)
Other Epidemiologist	14 (27.4)
Senior health department manager (s)	12 (23.5)
MCH program managers	38 (74.5)
Vital statistics director / manager	15 (29.4)
State centers for health statistics staff	11 (21.6)
MCH Epi Team / Committee (i.e. MCH Epi Network)	12 (23.5)
Other	12 (23.5)

22. **Within your agency, who is involved in interpreting and disseminating data from MCH epidemiological studies?** (Check all that apply)

	N (%)
MCH director	39 (75.0)
Lead MCH epidemiologist	26 (50.0)
MCH Epidemiologist (s)	29 (55.8)
State Epidemiologist (s)	12 (23.1)
Other Epidemiologist	12 (23.1)
Senior health department manager (s)	13 (25.0)
MCH program managers	18 (73.1)
Vital statistics director / manager	18 (34.6)
State centers for health statistics staff	16 (30.8)
MCH Epi Team / Committee (i.e. MCH Epi Network)	10 (19.2)
Other	14 (34.6)

23. In the past three years, have MCH data collection, assembly and/or analysis from multiple sources contributed to the development of any of the following programs or interventions related to the following MCH issues? (Check all that apply)

	N (%)
Immunizations	18 (34.6)
Daycare	9 (17.3)
Injury Prevention	26 (50.0)
Prenatal Care	39 (75.0)
Lead Poisoning	21 (40.4)
Health Insurance	19 (36.5)
Breastfeeding	31 (59.6)
Nutrition	20 (38.5)
Children with Special Health Needs	29 (55.8)
Other	17 (32.7)
None	2 (3.8)

Essential Services #6: Enforce Laws and Regulations that Protect Health and Ensure Safety

24. How often does your MCH epidemiology/data staff have the opportunity to contribute to the development and improvement of the following:

	Annually	Biannually	Quarterly	As Needed	Never
Assist in the development or review of proposed legislation	8 (15.4)	5 (9.6)	---	31 (59.6)	8 (15.4)
Contribute to the creation of or improving existing ordinances and regulations enacted	3 (5.9)	1 (2.0)	---	37 (72.6)	10 (19.6)
Critique and suggest epidemiologic based revisions to update existing state statutes.	2 (3.9)	2 (3.9)	---	36 (70.6)	11 (21.6)

Essential Service #7: Link people to needed personal health services and assure the provision of health care when otherwise unavailable.

25. Does your agency use or provide data to plan the delivery of health care services at the individual level? (n = 51)

	N (%)
Yes	41 (80.4)
No	6 (11.8)
Don't know	4 (7.8)

Essential Service #8: Assure a Competent Public and Personal Health Care Workforce

- 26. How many staff members in your agency address MCH data needs (e.g. data collection, analysis, and dissemination)?**

Mean number (SD)	11.8 (15.6)
Interquartile range	10
None N (%)	---
Don't know N (%)	2 (5.8)

- 26a. How many staff members in your agency addressing MCH data needs are present at each level of training?**

	Mean (SD)
Doctoral level	2.5 (2.7)
Master level	4.5 (4.6)
Bachelor level	3.7 (10.5)
Taken epidemiology courses	0.9 (2.9)
Other	0.5 (1.7)

- 27. Within your agency, who addresses MCH data needs (e.g. data collection, analysis, and dissemination)? (n = 50)**

	N (%)
MCH Epidemiologist	38 (76.0)
State Epidemiologist	11 (22.0)
Other Epidemiologist	20 (40.0)
Data Manager	26 (52.0)
Other	26 (52.0)

28. How many MCH Epidemiologists do you have in your agency (including federal assignees)?

Mean number (SD)	3.5 (6.6)
None N (%)	8 (14.3)
Don't know N (%)	---

28a. How many staff members in your agency addressing MCH data needs are present at each level of training?

	Mean (SD)
Doctoral level	1.3 (1.8)
Master level	1.1 (2.5)
Bachelor level	0.2 (0.6)
Taken epidemiology courses	0.3 (1.7)
Other	0.05 (0.3)

28b. Do you have a lead or senior MCH Epidemiologist? (n = 38)

	N (%)
Yes	27 (71.1)
No	11 (28.9)

If not, why not? (Check all that apply)

	N (%)
Lack of budget	---
Lack of adequately skilled personnel	---
Lack of technical capacity	---
Don't need epidemiologic input	1 (1.8)
Lack of interest or time from epidemiology staff	---
Lack of interest or time from program staff	---
Other	1 (1.8)

29. Does your staff use any of the following websites to assist with MCH-related issues in your agency? (Check all that apply) (n = 51)

Websites	N (%)
HRSA Title V Information System	48 (94.1)
MCH Analytic Skill Bytes (UIC School of Public Health)	37 (72.6)
CDC/DRH	45 (88.2)
Data Speak (UIC School of Public Health)	39 (76.5)
Data Skills Online (UNC School of Public Health)	26 (51.0)
Other web broadcasts	10 (19.6)
Other distance learning sites	6 (11.8)

30. Does your agency provide or support MCH epidemiology training to staff members?

	N (%)
Yes	37 (71.2)
No	14 (26.9)
Don't know	1 (1.9)

31. How adequate is your agency's training to MCH Epidemiology/data staff in the following areas? (n = 37)

	Very Adequate N (%)	Adequate N (%)	Somewhat adequate N (%)	Inadequate N (%)	Very Inadequate N (%)	Not Covered N (%)
Overall MCH surveillance	4 (10.8)	13 (35.1)	12 (32.4)	6 (16.2)	1 (2.7)	1 (2.7)
Conduct investigations (n = 36)	1 (2.7)	7 (19.4)	12 (33.3)	9 (25.0)	1 (2.8)	6 (16.7)
Data collection (n = 36)	10 (27.8)	8 (22.2)	12 (33.3)	4 (11.1)	---	2 (5.6)
Data analysis	8 (21.6)	10 (27.0)	13 (35.1)	4 (10.8)	1 (2.7)	1 (2.7)
Data interpretation	7 (18.9)	10 (27.0)	12 (32.4)	6 (16.2)	1 (2.7)	1 (2.7)
Data dissemination	6 (16.2)	8 (21.6)	18 (48.6)	3 (8.1)	1 (2.7)	1 (2.7)
Program planning	2 (5.4)	11 (29.7)	19 (51.4)	4 (10.8)	1 (2.7)	---
Program evaluation	2 (5.4)	15 (40.5)	14 (37.8)	5 (13.5)	1 (2.7)	---
Policy development	---	11 (29.7)	14 (37.8)	9 (24.3)	---	3 (8.1)
Report production	5 (13.5)	11 (29.7)	10 (27.0)	9 (24.3)	1 (2.7)	1 (2.7)
Applied research	1 (2.7)	8 (21.6)	9 (24.3)	7 (18.9)	6 (16.2)	6 (16.2)
Study design	3 (8.1)	6 (16.2)	12 (32.4)	6 (16.2)	3 (8.1)	7 (18.9)
Hypothesis generation	3 (8.1)	10 (27.0)	6 (16.2)	7 (18.9)	3 (8.1)	8 (21.6)
Data management / analysis software use	9 (24.3)	13 (35.1)	10 (27.0)	3 (8.1)	1 (2.7)	1 (2.7)
Literature review	5 (13.5)	8 (21.6)	11 (29.7)	5 (13.5)	2 (5.4)	6 (16.2)
Public presentations	8 (21.6)	10 (27.0)	12 (32.4)	2 (5.4)	1 (2.7)	4 (10.8)
Public information	3 (8.1)	9 (24.3)	13 (35.1)	8 (21.6)	---	4 (10.8)
Media interviews	4 (10.8)	5 (13.5)	12 (32.4)	6 (16.2)	2 (5.4)	8 (21.6)

32. What are the major barriers, if any, to accessing continuing education in MCH epidemiology in your agency? (Check all that apply)

	N (%)
Financial constraints	39 (75.0)
Time constraints	44 (84.6)
Lack institutional support	7 (13.5)
Location inconveniences	19 (36.5)
Travel restrictions	31 (59.6)
Lack of available in-state training program	35 (67.3)
Lack of staff interest	1 (1.9)
Personnel policies/Hiring	10 (19.2)
Other	3 (5.7)
No barriers	---

33. Has your MCH epidemiology/data staff participated in continuing education in MCH epidemiology at the following levels:

Levels	Yes N (%)	No N (%)	Don't know N (%)
National (n = 49)	45 (91.8)	4 (8.2)	---
Regional (multi-state) (n = 46)	29 (63.0)	14 (30.4)	3 (6.5)
State (n = 44)	23 (52.3)	18 (40.9)	3 (6.8)
Local (n = 41)	14 (34.1)	20 (48.8)	7 (17.1)

34. In general, when doing data collection and analysis, how adequate are the following in your agency?

	Very Adequate N (%)	Adequate N (%)	Somewhat adequate N (%)	Inadequate N (%)	Very Inadequate N (%)
Computer hardware	22 (42.3)	23 (44.2)	7 (13.5)	---	---
Computer software	20 (38.5)	18 (34.6)	11 (21.1)	3 (5.8)	---
Computer technical support	15 (28.8)	12 (23.1)	13 (25.0)	9 (17.3)	3 (5.8)

35. Do you have access to the most recent versions of the following types of software? (n = 48)

General office software	N (%)
Microsoft Office	51 (98.1)
Wordperfect	23 (44.2)
Other	2 (3.8)
Statistical packages	N (%)
SAS	41 (78.8)
SPSS	33 (63.5)
EpiInfo	48 (92.3)
STATA	7 (13.5)
Other*	10 (19.2)
GIS Software	35 (67.3)
Internet browser	49 (94.2)
Email software	48 (92.3)

* 70% of states and territories reported using SUDAAN.

36. Is there a state demographer available to provide support/consultation to MCH staff in your agency?

	N (%)
Yes	30 (57.7)
No	14 (26.9)
Don't know	8 (15.4)

37. In general, how adequate do you think your current capacity is in the following MCH areas:

	Very Adequate N (%)	Adequate N (%)	Somewhat adequate N (%)	Inadequate N (%)	Very Inadequate N (%)
Data collection	14 (26.9)	20 (38.5)	15 (28.9)	3 (5.8)	---
Data analysis	14 (26.9)	13 (25.0)	18 (34.6)	7 (13.5)	---
Collaboration with partners outside your agency	13 (25.0)	14 (26.9)	20 (38.5)	20 (38.5)	---
Personnel within your agency	12 (23.1)	15 (28.8)	18 (34.6)	6 (11.5)	1 (1.9)

Essential Service #9: Evaluate Effectiveness, Accessibility, and Quality of Personal and Population-Based Services

38. In the past year, has your MCH epidemiology/data staff evaluated the following programs or interventions using data from multiple sources:

Programs	Yes N (%)	No N (%)	Don't know N (%)
Immunizations (n = 44)	14 (31.8)	26 (56.1)	4 (9.1)
Daycare (n = 43)	7 (16.3)	31 (72.1)	5 (11.6)
Breastfeeding (n = 47)	26 (55.3)	19 (40.4)	2 (4.3)
Prenatal care (n = 49)	38 (77.6)	10 (20.4)	1 (2.0)
Children with Special Health Needs (n = 47)	33 (70.2)	13 (27.7)	1 (2.1)
Injury (n = 45)	26 (57.8)	18 (40.0)	1 (2.2)
Lead poisoning (n = 45)	20 (43.5)	22 (47.8)	4 (8.7)
Health insurance (n = 42)	21 (50.0)	19 (45.2)	2 (4.8)
Nutrition (n = 44)	21 (47.7)	21 (47.7)	2 (4.6)
Other (n = 22)	16 (72.7)	3 (13.6)	3 (13.6)
None (n = 5)	3 (60.0)	---	2 (40.0)

39. In general, does your MCH epidemiology/data staff routinely evaluate population-based MCH services? (n = 50)

	N (%)
Yes	31 (62.0)
No	18 (36.0)
Don't know	1 (2.0)

40. Does your MCH epidemiology/data staff conduct the following activities?

	Yes N (%)	No N (%)	Don't know N (%)
Program evaluation	40 (80.0)	10 (20.0)	---
Special studies	47 (90.4)	5 (9.6)	---
Policy development	30 (61.2)	18 (36.7)	1 (2.0)
Report writing	52 (100.0)	---	---
Cost-benefit analysis	12 (24.0)	36 (72.0)	2 (4.0)

41. How would you rate the degree of difficulty for providing annual reports on the following:

	Very Easy	Easy	Somewhat Difficult	Difficult	Very Difficult
Title V Block Grant <u>national</u> performance measures	6 (11.8)	17 (33.3)	25 (49.0)	3 (5.9)	---
Title V Block Grant <u>state-specific</u> performance measures	7 (13.7)	16 (31.3)	24 (47.1)	3 (5.9)	1 (2.0)
Title V core health status indicators	4 (7.8)	14 (27.4)	25 (49.0)	6 (11.8)	2 (3.9)
Title V developmental health status indicators	3 (5.9)	7 (13.7)	29 (56.9)	11 (21.6)	1 (2.0)
Healthy People 2010 maternal, infant and child health measures	---	---	---	---	---

Essential Service #10: Research for New Insights and Innovative Solutions to Health Problems

- 42. Has your epidemiology/data staff conducted any short- or long-term prospective studies in the past year?**

	N (%)
Yes	8 (16.0)
No	35 (70.0)
Don't know	7 (14.0)

If not, which of the following limited their ability to conduct these studies?

	N (%)
Lack of expertise	10 (28.6)
Difficulty finding controls	3 (8.6)
Too few cases for a relevant study	5 (14.3)
Lack of epidemiology staff	27 (77.1)
Insufficient support resources	22 (62.9)
Not a priority	15 (42.9)
Other	4 (11.4)

Additional frequency tables:**N = 32 agencies with doctoral level epidemiologists****N = 16 agencies without doctoral level epidemiologists****A1. Data analyses by MCH epidemiology/data staff for the following purposes based on the presence of a doctoral level MCH epidemiologist.**

	Doctoral Yes N (%)	Doctoral No N (%)
Needs assessment / Program planning	31 (96.9)	16 (100.0)
Program evaluation	30 (93.8)	14 (93.3)
Descriptive epidemiology report	28 (87.5)	12 (80.0)
Answer research questions	26 (83.9)	11 (68.8)
Surveillance monitoring	30 (93.8)	15 (93.8)
Policy development	25 (80.6)	12 (80.0)

A2. Analyzed database activities for public access based on the presence of a doctoral level MCH epidemiologist.

	Doctoral* Yes N (%)	Doctoral No N (%)
Routine publication of tables on web	14 (43.8)	10 (62.5)
Routine publication of tables in paper format	31 (100.0)	1 (100.0)
Web query creation	5 (16.7)	4 (26.7)
Capacity to link databases	19 (59.4)	12 (75.0)
Database availability to public health personnel internally	25 (78.1)	14 (93.3)

* (N = 31 doctoral)

A3. Staff providing training or technical assistance to local health agencies on data collection or analysis based on the presence of a doctoral level MCH epidemiologist.

	Doctoral Yes N (%)	Doctoral No N (%)
Program staff	28 (87.5)	14 (87.5)
MCH Epidemiologist (s)	28 (87.5)	7 (43.8)
Other epidemiology staff	9 (28.1)	3 (18.8)
Vital statistics / SCHS staff	19 (59.4)	8 (50.0)
None	1 (3.1)	1 (6.2)
Other	4 (12.5)	3 (18.8)

A4. MCH epidemiology/data staff assistance in the development or review of proposed legislation based on the presence of a doctoral level MCH epidemiologist.

	Doctoral* Yes N (%)	Doctoral No N (%)
Annually	4 (12.5)	2 (12.5)
Biannually	3 (9.4)	1 (6.2)
Quarterly	---	---
As Needed	21 (65.6)	9 (56.2)
Never	4 (12.5)	4 (25.0)

* (N = 31 doctoral)

A5. MCH epidemiology/data staff contribution to the creation of or improvement of existing ordinances and regulations, based on the presence of a doctoral level MCH epidemiologist.

	Doctoral* Yes N (%)	Doctoral No N (%)
Annually	---	1 (6.2)
Biannually	1 (3.2)	---
Quarterly	---	---
As Needed	25 (80.6)	10 (62.5)
Never	5 (16.1)	5 (31.2)

* (N = 31 doctoral)

A6. MCH epidemiology/data staff suggestions on epidemiologic based revisions and updates on existing state statutes, based on the presence of a doctoral level MCH epidemiologist.

	Doctoral Yes N (%)	Doctoral No N (%)
Annually	---	1 (6.2)
Biannually	1 (3.2)	1 (6.2)
Quarterly	---	---
As Needed	24 (77.4)	9 (56.2)
Never	6 (18.8)	5 (31.2)

APPENDIX B

CSTE Epidemiology Capacity Assessment Tool: Maternal and Child Health (MCH) Questionnaire



Council of State and Territorial Epidemiologists

CSTE Epidemiology Capacity Assessment Tool

Maternal and Child Health (MCH) Questionnaire

Introduction:

The Epidemiology Capacity Assessment (ECA) instrument was originally developed in 1997 and piloted in 10 states for the purpose of self-assessment the .pdf version of the tool and an associated final report may be downloaded at <http://www.cste.org/resources.htm>. The revision of the ECA Tool was prompted by the HP 2010 Objective 23-14 – calling for CSTE to provide a broad snapshot of epidemiology capacity in states to perform essential public health services, including monitoring health status, diagnosing and investigating health problems and health hazards, and conducting evaluation and research.

In January 2001, a small advisory group was organized under the charge of the CSTE Executive Committee to begin the revision process. The current tool includes seven modules (Core, Infectious Disease, Chronic Disease, Maternal and Child Health, Environmental Health, Occupational Health, and Injury Control), and all are formatted to the framework of the Ten Essential Services of Public Health. This module consists of approximately **40** questions.

Your state's information is crucial to the success of this important national initiative, and will provide policymakers, and federal and state partners the information they need about the status of MCH epidemiology capacity in the nation's health departments.

Instructions:

Please answer every question by checking off the choice(s) that best match your situation. Enter additional text to explain your answers where needed. If you select "Other," please specify your response in the space provided. Please complete **one** survey for your state. In order to receive the most accurate account of the MCH Epidemiology/data capacity in your state, we encourage the MCH program director, the MCH Epidemiologist/Data manager, and the vital statistics director agree and complete the assessment.

According to Handler et al, CSTE is defining an MCH Epidemiology/ Data staff as individuals who utilize their analytical and data interpretation skills to carry out the following population-based activities for the maternal and child health community:

- Assess health-related needs and status of the community
- Obtain funding to drive maternal and child health programs
- Make recommendations for new policies and/or aid in the improvement of existing policies
- Evaluate existing programs

MCH Epidemiology/ Data staff members performing the above-mentioned functions may be employed within a structured department (MCH or Epi Bureau) or in various programs within your agency that collectively carry out MCH Epidemiological functions.

MCH Epidemiologist / Data Manager Contact Information:

First name*	
Last name*	
Degree(s)	
Title*	
Agency*	
Address*	
Address2	
City*	
State*	
Zip*	
Telephone	
Fax	
Email	

MCH Program Director Contact

First name	
Last name	
Degree(s)	
Title	
Agency	
Address	
Address2	
City	
State	
Zip	
Telephone	
Fax	
Email	

Vital Statistics Director Contact Information:

First name	
Last name	
Degree(s)	
Title	
Agency	
Address	
Address2	
City	
State	
Zip	
Telephone	
Fax	
Email	

State Epidemiologist Contact Information:

First name	
Last name	
Degree(s)	
Title	
Agency	
Address	
Address2	
City	
State	
Zip	
Telephone	
Fax	
Email	

* Required Fields

For each question, unless otherwise instructed, please mark the response(s) which best reflects your opinion.

ESSENTIAL SERVICE #1**Monitor Health Status to Identify Community Health Problems**

1. In the past three years, has your MCH epidemiology/data staff conducted data analyses for any of the following purposes?

Needs assessment / Program planning	☐ Yes	☐ No	☐ Don't know
Program evaluation	☐ Yes	☐ No	☐ Don't know
Descriptive epidemiology report	☐ Yes	☐ No	☐ Don't know
Answer research questions	☐ Yes	☐ No	☐ Don't know
Surveillance monitoring	☐ Yes	☐ No	☐ Don't know
Policy development	☐ Yes	☐ No	☐ Don't know

2. In the past three years, has your MCH epidemiology/data staff participated in the design or implementation of surveys, surveillance systems, program information systems, etc. for MCH health problems and risk factors?

☐ Yes☐ No☐ Don't know

Please indicate whether the following listed databases are accessible to, analyzed or collected by your MCH epidemiology / data staff as of August 2001:

	Accessible	Analyzed	Not Collected
Vital Records			
Birth data	☐	☐	☐
Death data (All ages)	☐	☐	☐
Infant death	☐	☐	☐
Fetal deaths	☐	☐	☐
Abortion data	☐	☐	☐
Linked birth-death data	☐	☐	☐
Linked deaths of women of childbearing age - Live births	☐	☐	☐
Linked deaths of women of childbearing age - Fetal deaths	☐	☐	☐
Linked deaths - Cancer registry	☐	☐	☐
Linked deaths - Hospital discharge	☐	☐	☐
Birth defects registry	☐	☐	☐
Cancer registry	☐	☐	☐

	Accessible	Analyzed	Not Collected
Claims / Program Data			
CHIP-Child Health Insurance Program	☐	☐	☐
Hospital discharge	☐	☐	☐
Medicaid	☐	☐	☐
Emergency department	☐	☐	☐
WIC-Women Infants and Children	☐	☐	☐
Screening Data / Surveillance			
Newborn / Metabolic screening	☐	☐	☐
Hearing screening	☐	☐	☐
Lead screening	☐	☐	☐
Immunization registry	☐	☐	☐
Immunization survey	☐	☐	☐
PedDNSS-Pediatric Nutrition Surveillance System	☐	☐	☐
PNSS-Pregnancy Nutrition Surveillance System	☐	☐	☐
Oral health surveillance	☐	☐	☐

	Accessible	Analyzed	Not Collected
Risk Factors			
BRFSS- Behavioral Risk Factor Surveillance System	☐	☐	☐
PRAMS-Pregnancy Risk Assessment Monitoring System	☐	☐	☐
State sponsored household survey	☐	☐	☐
YRBSS-Youth Risk Behavior Surveillance System	☐	☐	☐
Injury Surveillance			
School injury	☐	☐	☐

	Accessible	Analyzed	Not Collected
Case Investigation			
Fetal mortality	☐	☐	☐
Infant mortality	☐	☐	☐
Child Fatality Review	☐	☐	☐
Maternal mortality	☐	☐	☐
Other			
Title V performance measures	☐	☐	☐
Title V health status indicators	☐	☐	☐

2a. In general, are tables routinely published on the web for public access for the majority of the above-analyzed databases?

☐ Yes

☐ No

☐ Don't know

2b. In general, are tables in paper formats routinely published for public access for the majority of the above-analyzed databases?

☐ Yes

☐ No

☐ Don't know

2c. In general, are queries created on the web for the majority of the above-analyzed databases?

☐ Yes

☐ No

☐ Don't know

2d. Does your agency generally have the capacity to link the above listed databases for analysis?

☐ Yes

☐ No

☐ Don't know

2e. In general, are databases available to other public health personnel within your agency for analysis?

☐ Yes

☐ No

☐ Don't know

ESSENTIAL SERVICE #2

Diagnose and Investigate Health Problems and Health Hazards in the Community

3. In the past three years, has your agency staff conducted epidemiologic studies for the following MCH conditions:

Infant deaths

All

☐ Yes

☐ No

☐ Don't know

SIDS

☐ Yes

☐ No

☐ Don't know

Other (Please specify) _____

☐ Yes

☐ No

☐ Don't know

Maternal deaths

☐ Yes

☐ No

☐ Don't know

Low birth weight

☐ Yes

☐ No

☐ Don't know

Pre-term birth

☐ Yes

☐ No

☐ Don't know

Birth defects

☐ Yes

☐ No

☐ Don't know

Prenatal substance exposure	☐ Yes	☐ No	☐ Don't know
Child fatality	☐ Yes	☐ No	☐ Don't know
Child injury deaths	☐ Yes	☐ No	☐ Don't know
Children with special health needs care	☐ Yes	☐ No	☐ Don't know
Environmental exposure (e.g. lead poisoning, PCB, etc.)	☐ Yes	☐ No	☐ Don't know
Other (<i>Please specify</i>) _____	☐ Yes	☐ No	☐ Don't know

ESSENTIAL SERVICE #3**Inform, Educate and Empower People About Health Issues****4. In the past year, has your agency shared information gained from MCH data analyses with the following?**

Program staff/policy staff	☐ Yes	☐ No	☐ Don't know
Public health professionals outside of your agency	☐ Yes	☐ No	☐ Don't know
Other agency staff within your agency	☐ Yes	☐ No	☐ Don't know
Medicaid / SCHIPs staff	☐ Yes	☐ No	☐ Don't know
State or local policy makers	☐ Yes	☐ No	☐ Don't know
Private healthcare providers	☐ Yes	☐ No	☐ Don't know
Community leaders	☐ Yes	☐ No	☐ Don't know
Universities / local colleges	☐ Yes	☐ No	☐ Don't know
Advocacy groups	☐ Yes	☐ No	☐ Don't know
Media	☐ Yes	☐ No	☐ Don't know
Information never shared	☐ Yes	☐ No	☐ Don't know
Other (<i>Please specify</i>): _____	☐ Yes	☐ No	☐ Don't know

5. How long has it been since your MCH program or data staff presented information at conferences, workshops, and/or community forums?

☐ During the past 12 months
 ☐ 1-2 years
 ☐ 3-5 years
 ☐ > 5 years
 ☐ Never

5a. Were the conferences/workshops sponsored by (Check all that apply)

☐ Association of Maternal and Child Health Programs (AMCHP)
☐ Urban Maternal and Child Health (CityMatCH)
☐ Maternal and Child Health Epidemiology (CDC)
☐ American Public Health Association (APHA)
☐ Council of State and Territorial Epidemiologists (CSTE)
☐ Other (*Please specify*) _____
☐ Statewide organizations
☐ Local organizations
☐ Regional organizations

6. In the past three years, has your MCH epidemiology / data staff prepared written reports, other than Block Grant applications from MCH data analyses for public dissemination?

☐ Yes
 ☐ No
 ☐ Don't know

Please provide examples of written reports _____

7. **In the past three years, has your MCH epidemiology / data staff published work in peer-reviewed journals or MMWR from MCH data?**

☐ Yes☐ No☐ Don't know

Please provide examples of generated publications _____

8. **In the past three years, which of the staff in your agency has provided training or technical assistance to local health agencies on data collection or analysis related to MCH issues?** (Check all that apply)

☐ Program staff☐ MCH Epidemiologist(s)☐ Other Epidemiology staff☐ Vital statistics staff / State Center for Health Statistics staff☐ None☐ Other (please specify) _____

9. **In which of the following ways would you be willing to help train staff from other states in MCH epidemiology, if funding was provided?** (Check all that apply)

☐ Have staff from other states visit and train at your agency☐ Travel to other state health departments☐ Workshops at MCH meetings in your geographic area☐ Workshops at national MCH meetings☐ Consultation by phone and e-mail☐ National Web/phone-based seminars☐ Other (Please specify): _____☐ None

- 9a. **Please list the name(s), position title(s) and degree(s) held by those MCH epi and data staff members your agency would be willing to share to help train staff from other states.**

Name: _____

Position title: _____

Degree(s): _____

Name: _____

Position title: _____

Degree(s): _____

ESSENTIAL SERVICE #4 Mobilize Partnerships to Identify and Solve Health Problems

10. **Do you have a current list of individuals or organizations (community partners) with an interest in promoting MCH in your state?**

☐ Yes☐ No☐ Don't know

11. **In the past three years, have outside resources (personnel, private agencies, funding, etc.) been used to conduct MCH-related investigations and studies?**

☐ Yes☐ No (Skip to 12)☐ Don't know (Skip to 12)

If yes, were these studies and investigation activities followed by a meeting of the individuals involved?

☐ Yes

☐ No

☐ Don't know

Did these meetings result in the identification of specific recommendations to improve the management of problems / issues or responses to needs?

☐ Yes

☐ No

☐ Don't know

Were most of these recommendations implemented?

☐ Yes

☐ No

☐ Don't know

12. What are the funding sources for your agency's MCH epidemiology activities? (Check all that apply)

☐ Federal funds

Specify percentage: _____

☐ State funds

Specify percentage: _____

☐ Non-profit organizations

Specify percentage: _____

☐ Private organizations

Specify percentage: _____

☐ Other _____

Specify percentage: _____

13. Is there a School of Public Health in your state?

☐ Yes

☐ No (*Skip to 14*)

☐ Don't know (*Skip to 14*)

If yes, do your MCH staff members collaborate with this school?

☐ Yes

☐ No

☐ Don't know

14. Which of the following are involved in improving MCH surveillance, data collection, information dissemination and analysis? (Check all that apply)

☐ MCH epidemiologist(s)

☐ State Epidemiologist

☐ Other Epidemiologist (*Please specify*) _____

☐ MCH director

☐ Vital statistics staff / State Centers for Health Statistics

☐ Local and regional hospitals

☐ Health plans

☐ State family planning agencies

☐ Private funding organizations

☐ Mortality Review Board

☐ Federal agencies

☐ Schools of public health

☐ Medical schools

☐ Other academic institutions

☐ Other (*Please specify*) _____

15. Which of the following information is published for public health audiences and outside partners (private agencies, business partners, etc.)? (Check all that apply)

☐ Current events

☐ Health alerts / Periodic bulletin

☐ Newsletters

☐ Surveillance reports

☐ Policy changes

☐ Recent investigations

☐ Training opportunities

☐ Annual vital statistics reports

☐ Web-based reports

☐ Other (*Please specify*) _____

16. How often do MCH epidemiologists and program staff members collaborate with each other on MCH-related issues?

- ☐ All of the time ☐ Most of the time ☐ Sometimes ☐ Never ☐ Don't know

ESSENTIAL SERVICE #5

Develop Policies and Plans That Support individual and Community Health Efforts

17. Which of the following, if any, are major barriers when collecting, using and/or sharing data to make decisions regarding MCH issues?

	<u>Collecting data</u>	<u>Using data</u>	<u>Sharing data</u>
Lack of technical (hardware, software, etc.) support	☐	☐	☐
Lack of qualified personnel	☐	☐	☐
Lack of ability to hire personnel	☐	☐	☐
Lack of financial resources	☐	☐	☐
Lack of involvement from epidemiologists	☐	☐	☐
Lack of written protocol or policy currently in place	☐	☐	☐
Lack of scientific consultation and support	☐	☐	☐
Statute limitations	☐	☐	☐
Travel	☐	☐	☐
Other (<i>Please specify</i>) _____	☐	☐	☐
No barriers	☐	☐	☐

18. At what point in the decision-making process is MCH data used? (Check all that apply)

- ☐ To initiate the design / tailoring of specific programs
☐ To evaluate the usefulness of programs
☐ To finalize decisions made based on the direct relevance of data
☐ To inform individuals about the impact of decisions
☐ Other (*Please specify*) _____

19. How often does your MCH program director use data to make MCH policy and program decisions?

- ☐ All of the time ☐ Most of the time ☐ Sometimes ☐ Never ☐ Don't know

20. Within your agency, who is involved in developing a strategic plan for MCH epidemiology projects/activities? (Check all that apply)

- ☐ MCH director
☐ Lead MCH Epidemiologist
☐ MCH Epidemiologist(s)
☐ State Epidemiologist
☐ Other Epidemiologist (*Please specify*) _____
☐ Senior health department manager(s)
☐ MCH Program manager(s)
☐ Vital statistics director/manager
☐ State Centers for Health Statistics staff
☐ MCH Epi Team/Committee (i.e. MCH Epi Network)
☐ Other (*Please specify*) _____

- 21. Within your agency, who is involved in coordinating the design and implementation of MCH epidemiological studies?** (Check all that apply)
- ☐ MCH director
 - ☐ Lead MCH Epidemiologist
 - ☐ MCH Epidemiologist(s)
 - ☐ State Epidemiologist
 - ☐ Other Epidemiologist (*Please specify*) _____
 - ☐ Senior health department manager
 - ☐ MCH Program manager(s)
 - ☐ Vital statistics director/manager
 - ☐ State Centers for Health Statistics staff
 - ☐ Team/Committee (i.e. MCH Epi Network)
 - ☐ Other (*Please specify*) _____
- 22. Within your agency, who is involved in interpreting and disseminating data from MCH epidemiological studies?** (Check all that apply)
- ☐ MCH director
 - ☐ Lead MCH Epidemiologist
 - ☐ MCH Epidemiologist(s)
 - ☐ State Epidemiologist
 - ☐ Other Epidemiologist (*Please specify*) _____
 - ☐ Senior health department manager
 - ☐ MCH Program manager(s)
 - ☐ Vital statistics director/manager
 - ☐ State Centers for Health Statistics staff
 - ☐ Team/Committee (i.e. MCH Epi Network)
 - ☐ Other (*Please specify*) _____
- 23. In the past three years, have MCH data collection, assembly and/or analysis from multiple sources contributed to the development of any of the following programs or interventions related to the following MCH issues?** (Check all that apply)
- ☐ Immunizations
 - ☐ Daycare
 - ☐ Injury Prevention
 - ☐ Prenatal Care
 - ☐ Lead Poisoning
 - ☐ Health Insurance
 - ☐ Breastfeeding
 - ☐ Nutrition
 - ☐ Children with Special Health Needs
 - ☐ Other (*Please specify*) _____
 - ☐ None

ESSENTIAL SERVICE #6 Enforce laws and regulations that protect health and ensure safety

24. How often does your MCH epidemiology / data staff have the opportunity to contribute to the development and improvement of the following:

	Annually	Biannually	Quarterly	As Needed	Never
Assist in the development or review of proposed legislation	☐	☐	☐	☐	☐
Contribute to the creation of or improving existing ordinances and regulations enacted	☐	☐	☐	☐	☐
Critique and suggest epidemiologic based revisions to update existing state statutes.	☐	☐	☐	☐	☐

ESSENTIAL SERVICE #7 Link people to needed personal health services and assure the provision of health care when otherwise unavailable.

25. Does your agency use or provide data to plan the delivery of health care services at the individual level?

☐ Yes

☐ No

☐ Don't know

ESSENTIAL SERVICE #8 Assure a Competent Public and Personal Health Care Workforce

26. How many staff members in your agency address MCH data needs (e.g. data collection, analysis, and dissemination)?

Number:

☐ None (Skip to 29)

☐ Don't know (Skip to 29)

- 26a. How many staff members in your agency addressing MCH data needs are present at each level of training?

Number

_____ Doctoral level (MD, PhD, etc.)

_____ Masters level (MPH, MS, etc.)

_____ Bachelors level (BS, BA, etc.)

_____ Taken epidemiology courses

_____ Other (please specify) _____

27. Within your agency, who addresses MCH data needs (e.g. data collection, analysis, and dissemination)? (Check all that apply.)

- ☐ MCH Epidemiologist(s)
☐ State Epidemiologist
☐ Other Epidemiologist (*Please specify*) _____
☐ Data Manager
☐ Other (*Please specify*) _____

28. How many MCH Epidemiologists do you have in your agency (including federal assignees)?

Number

- ☐ None (*Skip to 29*)
☐ Don't know (*Skip to 29*)

28a. How many MCH Epidemiologists are present at each level of training (including federal assignees)?

Number

_____ Doctoral level (MD, PhD, etc.)
_____ Masters level (MPH, MS, etc.)
_____ Bachelors level (BS, BA, etc.)
_____ Taken epidemiology courses
_____ Other (*please specify*) _____

28b. Do you have a lead or senior MCH Epidemiologist?

- ☐ Yes ☐ No (*Skip to 29*)

28c. Please provide the following information regarding your lead or senior MCH epidemiologist.

Name: _____

Degree(s): _____

Position title: _____

Agency location: _____

28d. Does this epidemiologist participate in policy and program decision-making for MCH issues?

- ☐ Yes (*Skip to 29*) ☐ No

28e. If not, why not? (Check all that apply)

- ☐ Lack of budget
☐ Lack of adequately skilled personnel
☐ Lack of technical capacity
☐ Don't need epidemiologic input
☐ Lack of interest or time from epidemiology staff
☐ Lack of interest or time from program staff
☐ Other (*Please specify*) _____

29. Does your staff use any of the following websites to assist with MCH-related issues in your agency?

(Check all that apply)

- ☐ HRSA Title V Information System <http://www.mchdata.net/>
- ☐ MCH Analytic Skill Bytes (UIC School of Public Health) http://www.uic.edu/sph/dataskills/skillbytes/skillbytes_register.htm
- ☐ CDC/DRH <http://www.cdc.gov/>
- ☐ Data Speak (UIC School of Public Health) <http://www.uic.edu/sph/dataspeak>
- ☐ Data Skills Online (UNC School of Public Health) <http://www.sph.unc.edu/toolbox/>
- ☐ Other web broadcasts (Please specify) _____
- ☐ Other distance learning sites (Please specify) _____

30. Does your agency provide or support MCH epidemiology training to staff members?

- ☐ Yes ☐ No (Skip to 32) ☐ Don't know (Skip to 32)

31. How adequate is your agency's training to MCH Epidemiology / data staff in the following areas?

	Very Adequate	Adequate	Somewhat adequate	Inadequate	Very Inadequate	Not covered
Overall MCH surveillance	☐	☐	☐	☐	☐	☐
Conduct investigations	☐	☐	☐	☐	☐	☐
Data collection	☐	☐	☐	☐	☐	☐
Data analysis	☐	☐	☐	☐	☐	☐
Data interpretation	☐	☐	☐	☐	☐	☐
Data dissemination	☐	☐	☐	☐	☐	☐
Program planning	☐	☐	☐	☐	☐	☐
Program evaluation	☐	☐	☐	☐	☐	☐
Policy development	☐	☐	☐	☐	☐	☐
Report production	☐	☐	☐	☐	☐	☐
Applied research	☐	☐	☐	☐	☐	☐
Study design	☐	☐	☐	☐	☐	☐
Hypothesis generation	☐	☐	☐	☐	☐	☐
Data management / analysis software use	☐	☐	☐	☐	☐	☐
Literature review	☐	☐	☐	☐	☐	☐
Public presentations	☐	☐	☐	☐	☐	☐
Public information	☐	☐	☐	☐	☐	☐
Media interviews	☐	☐	☐	☐	☐	☐

32. What are the major barriers, if any, to accessing continuing education in MCH epidemiology in your agency? (Check all that apply)

- ☐ Financial constraints
- ☐ Time constraints
- ☐ Lack Institutional support
- ☐ Location inconveniences
- ☐ Travel restrictions
- ☐ Lack of available in-state training programs
- ☐ Lack of staff interest
- ☐ Personnel policies / Hiring
- ☐ Other (Please specify) _____
- ☐ No barriers

33. Has your MCH epidemiology / data staff participated in continuing education in MCH epidemiology at the following levels:

National	☐ Yes	☐ No	☐ Don't know
Regional (multi-state)	☐ Yes	☐ No	☐ Don't know
State	☐ Yes	☐ No	☐ Don't know
Local	☐ Yes	☐ No	☐ Don't know

34. In general, when doing data collection and analysis, how adequate are the following in your agency?

	Very Adequate	Adequate	Somewhat adequate	Inadequate	Very Inadequate
Computer hardware	☐	☐	☐	☐	☐
Computer software	☐	☐	☐	☐	☐
Computer technical support	☐	☐	☐	☐	☐

35. Do you have access to the most recent versions of the following types of software?

General office software

☐ Microsoft Office (Word, Excel, Access, Publisher, Powerpoint)
☐ Wordperfect
☐ Other (*Please specify*) _____

Statistical packages

☐ SAS
☐ SPSS
☐ EpiInfo
☐ STATA
☐ Other (*Please specify*) _____
☐ GIS software
☐ Internet browser
☐ Email software

36. Is there a state demographer available to provide support/consultation to MCH staff in your agency?

☐ Yes ☐ No ☐ Don't know

37. In general, how adequate do you think your current capacity is in the following MCH areas:

	Very Adequate	Adequate	Somewhat adequate	Inadequate	Very Inadequate
Data collection	☐	☐	☐	☐	☐
Data analysis	☐	☐	☐	☐	☐
Collaboration with partners outside your agency	☐	☐	☐	☐	☐
Personnel within your agency	☐	☐	☐	☐	☐

ESSENTIAL SERVICE #9**Evaluate Effectiveness, Accessibility, and Quality of Personal and Population-Based Services****38. In the past year, has your MCH epidemiology / data staff evaluated the following programs or interventions using data from multiple sources:**

Immunizations	☐ Yes	☐ No	☐ Don't know
Daycare	☐ Yes	☐ No	☐ Don't know
Breastfeeding	☐ Yes	☐ No	☐ Don't know
Prenatal care	☐ Yes	☐ No	☐ Don't know
Children with Special Health Needs	☐ Yes	☐ No	☐ Don't know
Injury	☐ Yes	☐ No	☐ Don't know
Lead poisoning	☐ Yes	☐ No	☐ Don't know
Health insurance	☐ Yes	☐ No	☐ Don't know
Nutrition	☐ Yes	☐ No	☐ Don't know
Other (Please specify) _____	☐ Yes	☐ No	☐ Don't know
None	☐ Yes	☐ No	☐ Don't know

39. In general, does your MCH epidemiology / data staff routinely evaluate population-based MCH services?

☐ Yes ☐ No ☐ Don't know

40. Does your MCH epidemiology / data staff conduct the following activities?

Program evaluations	☐ Yes	☐ No	☐ Don't know
Special studies	☐ Yes	☐ No	☐ Don't know
Policy development	☐ Yes	☐ No	☐ Don't know
Report writing	☐ Yes	☐ No	☐ Don't know
Cost-benefit analysis	☐ Yes	☐ No	☐ Don't know

41. How would you rate the degree of difficulty for providing annual reports on the following:

	Very Easy	Easy	Somewhat difficult	Difficult	Very difficult
Title V Block Grant <u>national</u> performance measures	☐	☐	☐	☐	☐
Title V Block Grant <u>state-specific</u> performance measures	☐	☐	☐	☐	☐
Title V core health status indicators	☐	☐	☐	☐	☐
Title V developmental health status indicators	☐	☐	☐	☐	☐
Healthy People 2010 maternal, infant and child health measures	☐	☐	☐	☐	☐

Please briefly explain any difficulty experienced.

ESSENTIAL SERVICE #10**Research for New Insights and Innovative Solutions to Health Problems**

42. Has your MCH epidemiology / data staff conducted any short- or long-term prospective studies in the past year?

☐ Yes

☐ No

☐ Don't know

If not, which of the following limited their ability to conduct these studies?

- ☐ Lack of expertise
- ☐ Difficulty finding controls
- ☐ Too few cases for a relevant study
- ☐ Lack of Epidemiology staff
- ☐ Insufficient support resources
- ☐ Not a priority
- ☐ Other (*Please specify*) _____