

ID: 73960965

Maternal and Child Health - Host Site Description

Arizona Department of Health Services

Assignment Location: Phoenix, US-AZ
Arizona Department of Health Services
Bureau of Assessment and Evaluation

Primary Mentor: Martin Celaya, DrPH, MPH
Bureau Chief, Bureau of Assessment and Evaluation
Arizona Department of Health Services

Secondary Mentor: Mary Glidden, MPH, BS
Office Chief, Office of Fatality Review
Arizona Department of Health Services

Work Environment

Hybrid

Assignment Description

The fellow will be placed with the Bureau of Assessment and Evaluation (BAE), Office of Fatality Review (OFR) in partnership with the Population Epidemiology and Evaluation Team (PEET). The fellow will work in partnership with both OFR and PEET to support a combination of surveillance that focuses on the timeliness, quality, and dissemination/use of data the agency is getting for maternal mortality and related topics such as maternal morbidity.

The fellow's day-to-day activities will be similar to those of agency-hired epidemiologists. The activities are as listed in no order of importance or ranking:

- Conduct epidemiologic investigations used in the prevention of maternal mortality, severe maternal morbidity, and other maternal health conditions
- Designing and preparing reports from analyses of surveillance data, literature reviews
- Participate in training as necessary in Power BI, SAS, etc.
- Collect and analyze data in order to design a public-facing dashboard for Maternal Mortality and Severe Maternal Morbidity
- Collaborate with epidemiologists, and program managers, across the agency to develop joint analyses and reports focused on maternal and child health, health equity, and health improvement
- Identifying, analyzing, and reporting public health issues and problems
- Designing, manipulating, and using databases for analysis of health problems to assess the potential public health impact
- Conducting literature reviews for program planning, preparation of publications, and for evaluation
- Attend nationwide and statewide meetings on maternal health and maternal mortality initiatives

Describe Statistical and Data Analysis Support, Such as Databases, Software, and Surveillance Systems Available to the Fellow

The fellow will be provided access to SAS and PowerBI to support assigned activities. They will have access to Google and Office Suite of products. They will be provided access to hospital discharge data (HDD), vital records, and all other necessary data systems necessary to complete assigned tasks.

Projects

Surveillance Activity Title: Specialized topical surveillance reports on maternal mortality

Surveillance Activity Description:

MCH epidemiologists are currently developing a SAS program that facilitates summarizing data and outcomes in the manner that is needed for the MMRP bi-annual report. The fellowship goal for this project would be to publish a summary report by May 2026. This report will be structured in a similar format as previous MMRP reports, with descriptive epidemiological findings and a summary of recommendations generated from the Maternal Mortality Review Committee meetings. Similar reports will likely occur on even years (i.e. 2026, 2028, etc.).

Surveillance Activity Objectives:

With support and guidance from MCH epidemiologists, the CSTE Fellow would conduct the following activities:

- Execute the SAS program provided by MCH Epidemiologists to obtain the summarized data.
- Create initial graphs with key findings similar to the visuals and graphs that have been included in existing MMRP reports and infographics.
- Assess data results for significant findings and summarize explanations in narrative form for the final report.

With support and guidance from mentors, the CSTE Fellow would conduct the following activities:

- Finalize the layout and format for the graphs that will be included in the final report as well as the overall report layout.

Expected final deliverable: A public-facing PDF report detailing maternal mortality descriptive epidemiology findings and MMRC recommendations.

Surveillance Activity Impact:

Developing this report would help the public better understand the most recent trends identified regarding maternal mortality in Arizona. This report would also allow public health practitioners from a wide range of specialized areas (e.g. education, clinical, policy development, etc.) to guide their efforts to improve maternal mortality and, ultimately, maternal health in the state.

Surveillance System Evaluation Title: Use applied skills to evaluate the efficacy of sociodemographic characteristics in descriptive statistics for maternal mortality.

Surveillance System Evaluation Description:

MCH epidemiologists currently create reports summarizing descriptive statistics for maternal mortality. These reports typically include multiple data metrics focusing on sociodemographic characteristics with data extracted from multiple data sources. Since data for sociodemographic metrics are extracted from multiple data sources, it would be helpful for epidemiologists to better understand which are the data sources with more complete and accurate data.

The fellowship goal for this project would be to conduct an evaluation on the data quality for sociodemographic characteristics for the data surveillance systems currently used to calculate maternal mortality ratios.

Surveillance System Objectives:

With support and guidance from MCH epidemiologists, the CSTE Fellow would conduct the following activities:

- Create an action plan for conducting the evaluation of Arizona data quality within MMRIA (Maternal Mortality Review Information Application).
- Draft an evaluation study design for this project.
- Create a report template summarizing the evaluation methods and results.

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- Create a SAS program and workflow to conduct the statistical analysis needed for this project.

With support and guidance from mentors, the CSTE Fellow would conduct the following activities:

- Monitor the timeliness of activities and due dates.
- Edit and format the final product summarizing the results of this project

Expected final deliverable: A PDF report, along with a summary presentation, explaining the results and providing suggestions for next steps at the conclusion of the evaluation.

Surveillance System Impact:

Expected public health impact: Conducting this evaluation would generate more accurate data measures for maternal mortality, particularly for metrics highlighting sociodemographic trends. Ultimately, this will increase trust for public health practitioners on data for maternal mortality in Arizona.

Major Project Title: Design a public-facing Maternal Mortality dashboard using Power BI with the data set(s) automated and provided by the MCH epidemiology team

Major Project Description:

Background: MCH epidemiologists are currently developing data set(s) that would contain all the data needed for a potential future maternal mortality dashboard. This would be beneficial to both partners within and outside of the agency, given the high demand for maternal health data and given the high amount of detailed maternal mortality data available.

The fellowship goal for this project would be to develop a public-facing dashboard using Power BI with the data set(s) automated and provided by the MCH epidemiology team.

Major Project Objectives:

With support and guidance from the MCH epidemiologists, the CSTE Fellow would conduct the following activities:

- Study and understand the maternal health data set(s); identify and understand what content is available in the data set(s) provided, how the data is structured, etc.
- Create additional variables as needed to create the dashboard views requested by CSTE mentors.

With support and guidance from mentors, the CSTE Fellow would conduct the following activities:

- Develop a template for the visual layout of the dashboard. This will include, but not be limited to, identifying and documenting the selected fonts, colors, and sizing, etc., of the dashboard structure.
- Develop the data content layout for the dashboard. For instance, this will include activities such as deciding what data metrics will be important to include, highlight, and summarize in the dashboard, and which data metrics to use as slicers.
- Both MCH epidemiologists and CSTE mentors will provide technical guidance and support. However, depending on the CSTE Fellow's Power BI experience, independent training and additional guidance may be needed. This could include completing online trainings/courses on Power BI during the fellowship, seeking technical support from the agency's Business Informatics Office, and other activities for professional development.

Expected final deliverable: A public-facing Power BI dashboard that displays maternal mortality data from the Arizona Maternal Mortality Review Program .

Major Project Impact:

Developing this dashboard would enable quick and easy access to maternal mortality data for public health practitioners. Additionally, this dashboard would give stakeholders from a wide range of specialized areas (e.g.

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education, clinical, policy development) a robust amount of data to guide their efforts to improve maternal mortality and, ultimately, maternal health in the state.

Additional Project #1 Title: Publish a summary report and related public-facing dashboard describing trends of Severe Maternal Morbidity in Arizona

Project #1 Type: Surveillance Activity

Project #1 Description:

This fellowship project aims to publish a summary report and develop a public-facing dashboard highlighting trends in severe maternal morbidity (SMM) in Arizona. The report will include descriptive epidemiological findings, significant key takeaways, and insights derived from SMM data, following a format similar to previous Maternal Mortality Review Program (MMRP) reports. The Fellow will review existing visuals, adapt SAS programs for data analysis, create graphs, and finalize the report layout. Additionally, the Fellow will design a Power BI dashboard with interactive features, selecting key metrics and creating a visually appealing template. Supported by MCH epidemiologists and mentors, the Fellow will receive guidance, technical training, and resources to complete both deliverables, which aim to improve public understanding and inform maternal health interventions in Arizona.

Project #1 Objectives and Expected Deliverables:

- Review any initial data visuals and/or summaries created by the MCH epidemiologists in order to identify key takeaways that should be included in a public-facing report.
- Adapt the existing SAS program used to gather SMM data to create new data summaries that might merit analysis and inclusion into the final report.
- Create initial graphs with key findings similar to visuals and graphs that have been previously created by MCH epidemiologists and used in previous reports.
- Assess data results for significant findings and summarize explanations in narrative form for the final report.
- Develop the data content layout for the dashboard. For instance, this will include activities such as deciding what data metrics will be important to include, emphasize, and summarize in the dashboard, and which data metrics to use as slicers.

Expected final deliverable: A public-facing surveillance report and Power BI dashboard that displays SMM data from Arizona

Project #1 Impact:

Developing this report and dashboard would enable quick and easy access to severe maternal morbidity data for public health practitioners. Additionally, this dashboard would give stakeholders from a wide range of specialized areas (e.g. education, clinical, policy development) a robust amount of data to guide their efforts to improve severe maternal morbidity and, ultimately, maternal health in the state.

Please Describe the Fellow's Anticipated Role in Preparedness and Response Efforts – Include Activities and Time Allocation (Required Competency of Fellowship)

BAE programs are often involved in state-wide emergency responses (e.g., COVID-19, infant formula shortage). The fellow will be integrated into the data analysis arm of the HEOC structure and will assist with epidemiologic data analysis (as requested). No COVID response expected at this time.

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Please Describe the Fellow's Anticipated Role in Cluster and Outbreak Investigations – Include Activities and Time Allocation (Required Competency of Fellowship)

From 2018-2019, mental health conditions were identified as the underlying cause of approximately 32% of pregnancy-related deaths in Arizona. Given the continuing concern for mental health disorders throughout the perinatal period and the limited available resources and services to address these concerns, investigations regarding maternal mental health clusters could prove beneficial for guiding interventions and the provision of services throughout Arizona. The fellow would have an opportunity to initiate this investigation and would like to account for approximately 20% of the fellow's time allocation.