

ID: 43662273

Maternal and Child Health - Host Site Description

Colorado Department of Public Health and Environment

Assignment Location: Denver, US-CO
Colorado Department of Public Health and Environment
Center for Health and Environmental Data

Primary Mentor: Sarah Blackwell, MPH, BA
Baby & You Program Coordinator/MCH Surveys Unit Supervisor
Colorado Department of Public Health and Environment

Secondary Mentor: Tess Clendenen, PhD, BA
Early Childhood Evaluator
Colorado Department of Early Childhood

Work Environment

Hybrid

Assignment Description

The Colorado Department of Public Health and Environment (CDPHE) offers rich opportunities to practice applied epidemiology and public health within its many innovative and collaborative programs that span the lifecourse. This assignment in MCH epidemiology will provide a CSTE/CDC Applied Epidemiology Fellow with a well-rounded and unique experience working with the skilled epidemiologists, evaluators, and novel data sets in the Center for Health and Environmental Data (CHED) as well as provide many opportunities to collaborate with programs across CDPHE and with external partners. The Fellow will sit in the Health Statistics and Evaluation Branch and work closely with maternal and child health, maternal mortality, and many other programs across the Department. The Fellow will also be able to gain experience in responding to a multi-county or multistate communicable disease outbreak and to participate in emergency preparedness and response trainings.

The proposed Fellow projects focus primarily on the wide breadth of topic areas addressed by the four surveys distributed to postpartum people as part of the Baby & You program. Baby & You is an online maternal and child health data collection system that draws a sample of postpartum people from recent live birth certificates, then recruits participants by mail to join an online survey platform through which they receive four, 10-minute surveys from shortly after giving birth up to their new baby's third birthday. Baby & You collects both cross-sectional and longitudinal information on a wide variety of topics in the postpartum and early childhood periods. Baby & You, originally Health eMoms, launched in 2018 and data collection for this first iteration of the system continued through early 2022. The system briefly sunsetted due to funding shortfalls but was restored by legislation that now provides dedicated and sustained state funding for the system in perpetuity. Baby & You relaunched in April 2023 as a more equitable and representative data system than it was before, with oversamples of historically underrepresented racial and ethnic groups and a dedication to collaborative decision-making with community-based partners.

The Fellow will have the opportunity to conduct cross-sectional and longitudinal analyses using the data collected across the four Baby & You surveys. These surveys covered a wide breadth of novel topic areas that aren't available from other sources and allow for the assessment of how social circumstances, health, and behaviors change over time for individual families and what factors may mediate these changes. Baby & You's intentional inclusion (or oversampling) of historically underrepresented racial and ethnic groups makes it possible to disaggregate data for American Indian/Alaska Native, Black/African American, Asian/Pacific Islander, Hispanic/Latinx, and White birthing people using a single year of data. Baby & You will provide the Fellow with ample opportunity to plan and complete novel analyses and share never-before-seen data with a broad range of programs and partners within CDPHE, across the state, and nationally. The focus of these analyses will be informed by community and programmatic needs and the interests of the Fellow.

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In addition to supporting programs across CDPHE by analyzing and translating Baby & You data, the Fellow will also work closely with the CDEC on the Maternal, Infant, and Early Childhood Home Visiting Program (MIECHV); CDPHE MCH program on their priority areas; and the maternal mortality review program. In their work with the MIECHV program, the fellow will also have the opportunity to develop skills in collecting and analyzing qualitative data, which are an increasingly important component of the applied epidemiologist's tool box. The Fellow will not be limited to Baby & You data and can complement Baby & You analyses with data from other systems such as Vital Records, the Pregnancy Risk Assessment Monitoring System, the National Survey of Children's Health, Behavioral Risk Factor Surveillance System, hospital discharge and emergency department data, the Maternal Mortality Review Information Application (MMRIA), and more. Through involvement in Baby & You, the Fellow will also have the opportunity to gain skills in survey methodology, protocol management, mail and electronic survey operations, data weighting, partner engagement, and meeting facilitation if desired.

Ms. Blackwell and Dr. Clendenen will share training and oversight responsibilities to meet at least the minimum requirements set forth by the CSTE. Both mentors are readily available for informal communication as needed for the duration of the Fellowship. They will provide conceptual and technical review of epidemiologic research and surveillance methods, and ensure project objectives are well-defined and attainable. After becoming familiar with department personnel, key partners, programs and organizational structure, it is expected that the Fellow will achieve a high-level of autonomy in initiating and executing designated activities. However, the Fellow's mentors will always be available to help open doors and navigate roadblocks.

The centralized location of the Health Statistics and Evaluation Branch (HSEB) and CDEC on the Cherry Creek campus promotes partnership and teamwork within and between the departments. Numerous collaborations are necessary to collect, analyze, interpret, and disseminate data and evidence-based information to help inform public health programming. The Fellow will work collaboratively with partners to ensure that analyses and projects are not conducted in isolation from intersecting efforts within the departments and state-wide. Both mentors and other CDEC, HSEB, and Prevention Services Division (PSD) staff will work closely with the Fellow to ensure that he/she receives an appropriate orientation to the agencies and divisions including arranging opportunities to meet department staff and key partners and to shadow appropriate staff in order to facilitate the development of collaborative relationships.

The Fellow's day-to-day activities, learning opportunities, and challenging tasks will include:

- Attend weekly meetings with mentors (2-4 hours/week minimum).
- Develop and implement projects that address all of the applied epidemiology core competencies, including but are not limited to: design and conduct an evaluation of a surveillance system; enhance existing surveillance system(s) and/or contribute to the development of new surveillance systems; data collection, analysis, and dissemination, including preparation of fact sheets, blog posts, oral presentations, and peer-reviewed manuscripts; develop recommendations for MCH and partner program planning; work with MCH and partner program staff to assist with the interpretation and use of relevant data; and evaluate a public health intervention.
- Communicate and collaborate with CHED, PSD, and CDEC staff and internal and external partners (e.g. Baby & You Partner Advisory Network, Department of Human Services, Department of Health Care Policy and Financing, local public health agency staff, Colorado Health Institute, The Colorado Health Foundation, Early Childhood Leadership Council, etc.) on projects.
- Gain proficiency in evidence-based public health, health equity and environmental justice, cultural competency, and other applied epidemiology competencies through reading, trainings, live or archived webinars, seminars at the University of Colorado School of Public Health, meetings, and conferences.
- Participate in mail and web operations for Baby & You data collection, if desired.
- Contribute to Baby & You survey development and revision, if desired.

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- Participate on a national workgroup (e.g., CSTE subcommittees), if desired.
- Participate in the following meetings: Health Statistics and Evaluation Branch Epi meetings (quarterly), Baby & You Partner Advisory Network meetings (ad hoc, ~12 per year), MCH Advisory Team meetings (annually), CO MIECHV federal, state, and local evaluation-focused meetings (quarterly), and CHED's Data Equity Workgroup (monthly).
- Take daily 30-minute wellness break

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

The Departments and Divisions provide very data-rich environments with ample technical assistance in statistics and epidemiologic analyses. Unique to the placement of the Fellow in the Health Statistics and Evaluation Branch (HSEB) is the opportunity for the Fellow to have access to, analyze, and publish data from Baby & You, Vital Records, the Pregnancy Risk Assessment Monitoring System, the National Survey of Children's Health, Behavioral Risk Factor Surveillance System, hospital discharge and emergency department data, the Maternal Mortality Review Information Application, and more. The epidemiologists in the Division use these and other datasets on a daily basis. The Fellow will receive technical assistance in using these data systems from staff in the Division and especially from the two mentors. CDEC data systems include extensive program administrative, participation, and child/family demographic data that can be used alongside public health data sources from CDPHE to contextualize program reach and outcomes. A team of five program analysts, including statisticians, data managers and programmers can support the fellow's technical data skills.

The Fellow will have the opportunity to gain a deep understanding of public health surveillance and applied epidemiology through participation in Baby & You and other surveillance projects. The Fellow can participate in the Baby & You survey development process and gain experience in incorporating analytic considerations into survey design and in finding relevant tested survey questions. The Fellow will also be able to critically examine a data collection system through a rigorous evaluation and make recommendations for protocol revisions that will directly improve the quality of the system. These activities will give the Fellow greater insight into the nuance and limitations of the data that they are analyzing, leading to a more appropriate analytic approach and proper communication of results. All of this experience will improve the Fellow's competencies in epidemiologic methods, persuasive communication in writing and oral presentation, and understanding of the strengths and limitations of data-driven public health practice as defined by Colorado public health law.

The Fellow will have access to statistical analysis software and the Microsoft Office Suite (Word, Excel, PowerPoint). Potential other software to be made available based on needs and desires of the Fellow include data visualization software (such as Tableau) and qualitative analysis software. The Fellow will receive additional statistical support from the SAS, R, and Tableau users groups at CDPHE/CDEC as well as the HSEB Epi Team. The Fellow will have access to journal articles through the CDPHE digital library.

Projects

Surveillance Activity Title: Baby & You data products

Surveillance Activity Description:

In collaboration with the Baby & You Analyst and Partner Advisory Network, the Fellow will prioritize topic areas for Baby & You data briefs on a broad range of cross-cutting topics from the available Baby & You birth cohorts and surveys. These data briefs could include prevalence at time of survey, individual-level trends across surveys, relationships between survey measures, development of targets and comparison of baseline data to targets, and incorporation of complementary data from other data sources (Pregnancy Risk Assessment Monitoring System, National Survey of

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Children’s Health, National Immunization Survey, etc.). Working with partners, the Fellow would determine the most relevant audience for the data products, the most appropriate form of data product for that audience, the goals and takeaways, and the necessary indicators and metrics to include to achieve these goals. The Fellow would analyze the necessary data, develop data visualizations for the data, select qualitative comments from postpartum people to humanize the data, and identify the appropriate medical and social contexts to appropriately frame the data. The Fellow would then disseminate these data products through the Baby & You partner network and through presentations at stakeholder meetings. Based on stakeholder input and the Fellow’s skills and interests, these could also take the form of digital data stories and dashboards.

Potential topic areas include:

- Breastfeeding initiation, duration, and exclusivity
- Immunizations perspectives, approach, adherence
- Maternal mental health needs, resources, services, stigma, coping
- Health care utilization and screening
- Barriers to preventive health care and behavioral health care as well as satisfaction with care
- Developmental screening, referral, and intervention
- Oral health: first year dental visits, application of sealants
- Employment, maternal leave, and family-friendly practices in places of employment
- Child care, barriers to child care, child care preferences, factors affecting child care decisions
- Child safety: childhood lead exposure risk, car seat use
- Substance use: marijuana and other substance use during and after pregnancy, safe storage, and secondhand exposure; prescription painkiller use during and after pregnancy; tobacco use; binge drinking
- Social determinants of health: general finances, resource insecurities, health insurance status, WIC participation, partner and social support, experiences of discrimination, community connectedness and neighborhood strengths, Adverse Childhood Experiences, Benevolent Childhood Experiences

Surveillance Activity Objectives:

- Gather partner and community input on topic area priorities for Baby & You data products
- Work with partners and community to identify the audience, form, goals, and takeaways of the data product
- Develop an outline for the data product based off of partner engagement
- Create data product by analyzing and visualizing Baby & You data (deliverable: data products)

Surveillance Activity Impact:

These data products will be used by CDPHE programs and partners to highlight the strengths and struggles of the diversity of postpartum people, drive program and policy priorities in Colorado, target and evaluate programmatic activities, apply for funding and report progress to funders, and identify additional data needed to understand the full scope of priority MCH issues in Colorado.

Surveillance System Evaluation Title: Baby & You Surveillance System Evaluation

Surveillance System Evaluation Description:

The first iteration of Baby & You, Health eMoms, was in operation from 2018-2021. During this time, the system collected highly acceptable, flexible, timely, and useful data for CDPHE programs and partners. The primary challenges of the system at that time were in its stability and representativeness. The former proved to be the first iteration of the system’s downfall in 2021 when the program had to sunset due to funding shortages. However, due to the many strengths of the system, this sunset led to Baby & You data users and supporters advocating for the system to receive dedicated and sustained funding through legislation (HB 22-1289), which passed in spring of 2022. Although this funding

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has brought stability and the opportunity to advance representativeness through oversamples of historically underrepresented racial and ethnic groups, the success of the new iteration of the system has not yet been evaluated. In the second year of their fellowship, the Fellow will evaluate Baby & You to determine whether the system is now representative and if the data are useful and acceptable to partners and community members representing the racial and ethnic groups included in the oversample.

Surveillance System Objectives:

Perform a surveillance system evaluation of Baby & You and provide actionable recommendations for the improvement of the system. (deliverable: surveillance system evaluation report)

Surveillance System Impact:

This surveillance system evaluation will help us identify opportunities for quality improvements to Baby & You to make it a more equitable and useful data system for public health partners and community organizations/members.

Major Project Title: Examining Adverse and Benevolent Childhood Experiences Among Birthing People in Colorado

Major Project Description:

Baby & You collects information on Benevolent Childhood Experiences (Survey 3) and Adverse Childhood Experiences (Survey 4) among birthing people. These data are not commonly collected in population-based data systems, or within this population despite their potential for intergenerational effects and transmission, or in conjunction with one another to create a more complete picture of childhood experiences. The Fellow would have the unique opportunity to link Baby & You data sets to explore these risk and resilience factors and investigate their impacts on perinatal and postpartum mental health, parenting self-efficacy, and other perspectives and experiences collected across Baby & You's four surveys. The Fellow will conduct a literature review on ACES/BCES and combine what they learn from this and what we learn through partner engagement to design an analysis and data product.

Major Project Objectives:

The deliverable for this project is an ACEs and BCEs data product. The specific form that data product should take will be determined through engagement of partners and the Fellow's interests and ideas. We would also support the Fellow if they wished to submit this as an abstract to a scientific conference or a manuscript to a scientific journal.

Major Project Impact:

These findings could support internal and external evaluation projects related to early childhood and family support programs that work to prevent ACES, promote BCES, and/or support the mental health and well-being of children and families experiencing adversity. Some program examples with planned and/or ongoing evaluations include the Colorado Child Abuse Prevention Program, Colorado Early Intervention Program, and the Infant and Early Childhood Mental Health Program. This analysis would also be a valuable and novel contribution to the ACES and BCES literature.

Additional Project #1 Title: Evaluation of Family Engagement in the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program

Project #1 Type: Surveillance Activity

Project #1 Description:

CO MIECHV supports caregivers and families with young children to achieve positive maternal and child health outcomes. Programs are delivered based on the best evidence that they meet families' needs. Primary goals are to ensure families are receiving these benefits, by enrolling families who would benefit most from home visiting and reducing barriers to keep enrolled families engaged. Rigorous long-term evaluations of evidence-based home visiting

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programs funded by MIECHV identified positive outcomes related to childbirth and health, school readiness, parenting skills and reduction in child abuse and neglect.

Project #1 Objectives and Expected Deliverables:

This four-year mixed methods evaluation will include primary and secondary data collection using surveys, administrative records, and interviews/focus groups with families, home visitors, and home visiting model experts. Emphasis will be placed on market research to learn and understand more about home visiting messaging, for families and referral partners. The Fellow will have the opportunity to consider different components of the evaluation that they find beneficial for their professional development, which may include measure/instrument development and testing (qualitative/quantitative), development of community-based participatory evaluation planning and/or marketing material development, collection and/or analysis of qualitative and/or quantitative data (including population-based surveillance data to consider program context/reach), planning/development of communication strategies and products to incorporate community voice in the interpretation of evaluation findings, and developing strategies for data interpretation, dissemination, and/or visualization for community and professional audiences.

Project #1 Impact:

Last year CO MIECHV served 3,318 caregivers and children from 1,604 households, over 69% of which are considered "low income." Through over 20,000 visits last year, MIECHV home visitors promoted regular maternal and child healthcare, breastfeeding, early literacy and positive parenting activities. They conduct developmental screenings for children, intimate partner violence and depression screenings for caregivers and refer to essential services for follow-up and intervention. Home visiting supports families to receive consistent health screenings, service referrals, and positive parenting support. Developing strategies to study and improve parent engagement in home visiting will ensure that more families can access and receive these essential services that support their needs and goals.

Additional Project #2 Title: Create a template/framework for an annual report of American Indian/Alaska Native maternal and child health in Colorado

Project #2 Type: Surveillance Activity

Project #2 Description:

In 2022, the Colorado Health Indicators Dataset (COHID) changed the racial and ethnic categories that it uses based on changes in the Census and at the Colorado Demographer's Office. On this Tableau-based platform, users can now only look at vital statistics (ex. birth and death data) among those who identify as American Indian/Alaska Native (AIAN) alone rather than by American Indian/Alaska Native in combination with any other race. As one of the most diverse and multicultural racial and ethnic groups in the United States, the former approach improperly shrinks the population size of the AIAN category, making it more likely for these data to be suppressed and less likely for them to lead to clear or actionable conclusions. For this project, the Fellow would work with CDPHE's Tribal Liaison and Tribal Data Specialists and community-based partners to develop the framework for a maternal and child health report or dashboard for this population (birth record, Baby & You, maternal mortality review, etc.) for the AIAN population that allows the viewer to look at statistics for the populations of AIAN alone and AIAN alone or in combination with any other race.

Project #2 Objectives and Expected Deliverables:

Create a template/framework for an annual report or dashboard that will provide more comprehensive and actionable information on maternal and child health priorities among the AIAN population in Colorado.

Project #2 Impact:

This project will help disseminate more meaningful data on AIAN MCH priorities in Colorado that could guide action among sovereign governments and organizations serving AIAN people in Colorado. It will also address an inequity in how these data are displayed and disseminated until the COHID system can be reconfigured.

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Additional Project #3 Title: Design a strengths-based maternal and child health data product

Project #3 Type: Surveillance Activity

Project #3 Description:

Public health has long received criticism for focusing on risk and deficits rather than strengths, especially with regards to examining health inequities and disparities. Highlighting only deficits among communities that experience systemic inequities can potentially do harm by perpetuating stereotypes and reinforcing negative assumptions about populations. Baby & You collects information on many potential strengths such as social support, community connection and belonging, and Benevolent Childhood Experiences. The Fellow could develop an analysis and data product to examine these strengths and their connection to maternal wellbeing.

Project #3 Objectives and Expected Deliverables:

The deliverable for this potential project is a data product on strengths in the perinatal period. The specific form that data product should take will be determined through engagement of partners and the Fellow's interests and ideas.

Project #3 Impact:

This data product would be a valuable addition to maternal and child health in Colorado by providing partners with a way of highlighting current strengths and advocating for building strengths in the populations we serve. It may also help us build stronger and more trusting relationships with community partners who have historically felt harmed by the deficits framing of many health disparities data products.

Additional Project #4 Title: Support Building/Improving Early Childhood Data Portals/Dashboards

Project #4 Type: Surveillance Activity

Project #4 Description:

To the degree that the Fellow is interested, they could be involved in curating and packaging data related to early childhood, using our department's various data sources, to providing easier access to these data for community members, local and other state agencies as well as advocates.

Project #4 Objectives and Expected Deliverables:

Develop a public-facing Early Childhood Data Product according to the needs of Early Childhood Stakeholders

Project #4 Impact:

Making these data more accessible and digestible to partners would enable them to better advocate for early childhood systems changes that would benefit children, families, and those serving them.

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

CDPHE operates a comprehensive training program in emergency preparedness through the Emergency Preparedness and Response Division and is equipped to implement a full-scale command center response in the event of a public health or environmental disaster. The department's capabilities are routinely exercised, such as during the COVID-19 pandemic response. The Fellow could participate in emergency response trainings or exercises routinely planned for regional epidemiologists. Through collaborations with state epidemiologist, Dr. Rachel Herlihy and her staff in the Division of Disease Control and Public Health Response, the Fellow will have the opportunity to participate in the planning and implementation of public health preparedness and response activities related to communicable disease outbreaks, including potential COVID-19 pandemic response activities. We expect the Fellow to spend 2-6 weeks during the two-year training on preparedness and response efforts, with some opportunity for additional time based on ongoing public health needs and the Fellow's interest.

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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)

The Fellow will have the opportunity to participate in response to at least one multi-county or multi-state acute disease outbreak and/or time-sensitive investigation. Through their participation, they will write a field investigation report of an infectious disease or other approved outbreak investigation. Please see the letter of support from the state epidemiologist overseeing outbreak investigation activities for CDPHE, Dr. Rachel Herlihy. Exact time allocation would be dependent on the communicable disease landscape during the fellowship and the Fellow's interests, but we would expect that the Fellow will spend 2-4 weeks during the two-year training on cluster and outbreak investigations.