

Maternal and Child Health

Assignment Description:

The Alaska MCH-Epi Unit is a national leader in MCH epidemiology. The Unit was awarded the 2009 National MCH Epidemiology Award for Effective Practice at the MCH Epidemiology Conference in Atlanta. The Surveillance of Child Abuse and Neglect (SCAN) Program was voted one of the 3 best global programs of its kind at the 2010 International Society for Child Abuse and Neglect Conference in Hawaii. We are one of the only groups in any public health department to have an active NIH grant or to have conducted a randomized clinical trial to answer a public health question. We have pioneered the use of Medicaid claims data to evaluate public health questions. The Childhood Understanding Behaviors Surveillance (CUBS) program is one of only 4-5 toddler follow-up programs to PRAMS and we were the first to link PRAMS and CUBS to create a longitudinal survey. We are the first group to link PRAMS and child protective services data. The MCH-Epi Unit has approximately 14 positions and six programs: the Maternal-Infant and Child Death Review, Alaska Birth Defects Registry, Pregnancy Risk Assessment Monitoring System (PRAMS), CUBS (a toddler follow-up to PRAMS), SCAN, and the MCH Indicators Project.

In addition to these ongoing original source data programs, we provide support to other MCH programs such as WIC, the Infant Learning Program, and Newborn Screening. Lastly, we conduct original studies on Maternal-Child Health issues of importance to the state. For example, we have conducted a 4-year randomized clinical trial of *H. pylori* eradication as a way to reduce iron deficiency among Alaska's indigenous population, an evaluation of vitamin D deficiency among attendees of WIC clinics, a comprehensive evaluation of the importance of newly identified and prevalent newborn inborn error of metabolism (CPT1A deficiency), and numerous others.

We also work on pediatric and pregnancy related infections with the Section of Epidemiology and the Arctic Investigations Program of the US CDC. We currently have a CSTE Fellowship graduate who has designed and implemented CUBS and a former PHPS fellow who designed and implemented SCAN. All fellows are encouraged to become involved in projects that require field work in some of Alaska's many rural and primarily Alaska Native villages.

Day to Day Activities:

The fellow's day-to-day activities will include designing studies and programs, writing protocols, evaluating databases, writing reports and peer-reviewed manuscripts (which we emphasize in our unit), attending meetings with stakeholders throughout the state, conducting field evaluations as required for specific projects, and responding to media and public inquiries.

Potential Projects:

Potential projects are virtually limitless, bounded only by the fellow's curiosity and imagination. Projects of keen interest include:

1. Establishing a population-based evaluation of the clinical effects of CPT1A deficiency in rural Alaska Native populations. CPT1A is newly identified as a common clinical variant in Inuit populations, but its clinical significance (beneficial or harmful) is virtually completely unknown. We have conducted two previous small evaluations in infants, but now want to evaluate several entire villages and link genotype

results to medical records. This project would involve extensive field travel, interaction with Alaska Native communities, experience with IRBs and other issues.

2. Alaska Native children have an increased risk of almost all birth defects. We would like to conduct a case-control study of some of the more prevalent conditions such as VSD and ASD to determine if associated factors can be identified.

3. The fellow can choose any topic within the PRAMS and CUBS databases to evaluate; these contain a wealth of data but we do not have the staff to evaluate more than a small proportion of these.

4. The SCAN program is internationally recognized despite being just over 3 years old. It would now benefit from a formal surveillance system evaluation. The Newborn Screening Program and the Breast and Cervical Cancer Screening Programs also have never had a formal evaluation.

5. Alaska has high rates of maternal mortality but we have not analyzed data from our Maternal-Infant Mortality Review to document preventable causes and intervention strategies. All medical records for these deaths are housed with our unit so the analysis could be done quickly.

6. Moving forward with additional work to determine the etiology of the very high prevalence of iron deficiency anemia in Alaska Native people. Options range from iron absorption studies to trials of iron supplementation in pregnant women.

7. The CDC AIP program is currently working in the fields of respiratory infections, pneumococcal conjugate vaccine evaluation, and H. pylori. These would all be open to the fellow.

8. As indicated previously, the fellow will have the opportunity to participate in outbreak investigations. Alaska has no county health departments outside of Anchorage and Fairbanks, so opportunities are frequent.

Preparedness Role:

Emergency preparedness is coordinated through the Section of Epidemiology. Previous CSTE fellows have had ample opportunity to be involved in this and the current fellow will have this opportunity as well.

Assignment Location: Anchorage, Alaska

Primary Mentor: Bradford Gessner, MD, MPH
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