

## Birth Defects/Maternal and Child Health

### Description:

Birth defects in Alaska have received significant media attention recently both locally and nationally. While birth defects affect approximately 3% of live births nationally and are considered the leading cause of infant death and childhood disability, in Alaska, surveillance for birth defects has established rates of major congenital anomalies twice that reported nationally; moreover, rates for Alaska Natives are significantly higher than for non-Natives. Approximately 18 percent of Alaskan infants are born with a reportable birth defect and six percent have a serious congenital anomaly. For many individual birth defects, including fetal alcohol syndrome (FAS), rates in Alaska are higher than those documented in any other state. Birth defects contributed to 33% of neonatal and 20% of post neonatal deaths during 1992-2002 in Alaska. Alaska Natives are twice as likely to have a major congenital anomaly as non-Natives, and infants born to mothers living in the northern and southwest regions of the state are more likely to have birth defects than infants born to mothers in other regions of the state. There is no clear explanation for why most of these findings occur.

The Alaska Birth Defects Registry is part of the Alaska Maternal Child Health Epidemiology Unit. The Unit has approximately 15 positions and six programs including the Maternal-Infant and Child Death Review, Pregnancy Risk Assessment Monitoring System, Childhood Understanding Behaviors Survey, Surveillance of Child Abuse & Neglect, the MCH Indicators Project, and the Alaska Birth Defects Registry. In addition to these ongoing original source data programs, the unit provides support to other MCH programs and functions such as Newborn Metabolic Screening, Specialty Clinics, and Perinatal Health. 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, an evaluation of perinatal care regionalization in Alaska, 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 an employee, a former CSTE fellow, who designed and implemented the Childhood Understanding Behaviors Survey (CUBS) for Alaska and now manages that program, participated in field investigations in rural villages, and who manages data analysis for the Alaska Maternal-Infant and Child Death Review.

The assigned fellow will have the opportunity to design and implement evaluations of birth defects prevalence, including assessments of surveillance databases, case verification studies, developing ways to measure and increase sensitivity, pilot methodologies for increasing sensitivity, evaluate preventive efforts, establish and update surveillance guidelines, etc. These activities will provide the assignee with the opportunity to critically assess and analyze epidemiological data, travel to sites across Alaska to conduct medical record reviews and meet with providers, learn about Alaska's indigenous populations and health disparities affecting them, and work closely with Alaska health care providers and public health agencies. The assignee will have the opportunity to work on other projects within the unit and with other state and local health programs. Finally, the fellow will have the opportunity to live in Alaska.

Every imaginable outdoor activity exists including skiing, climbing, hiking, kayaking, sailing, rafting, hunting, fishing, snow machining, dog sledding all within a short distance of Anchorage. While small, Anchorage has more than its share of cultural activities including a large and well-supported performing arts center, a local opera company, numerous concert venues, and plenty of ethnic restaurants. Winters are moderate (average temperature in Anchorage is 20oF) and summers are mostly sunny. We have had numerous fellows and EIS officers and most have chosen to remain in this magical place.

#### Day-to-Day Activities:

Fellow's day-to-day activities working with us in the area of birth defects may include designing studies and programs, writing protocols, evaluating databases, writing reports and peer-reviewed manuscripts, attending meetings with stakeholders throughout the state, and responding to media and public inquiries. The fellow will generally work independently on identified projects, but in a collaborative setting where mentors and co-workers are readily available for consultation, problem-solving and brainstorming. The work day is mostly unstructured. The MCH EPI Unit meets periodically, as does birth defects registry staff.

#### Potential Projects:

Potential projects for the fellow include: evaluation of the fetal alcohol spectrum disorders (FASD) surveillance component of the Alaska Birth Defects Registry; evaluation of our surveillance methodology to examine and describe the true extent of the problem of disparities for selected birth defects between Alaska Natives and non-Natives; designing case verification studies on selected birth defects; and designing and implementing a project to link birth outcomes data to exposure databases, including establishing relationships with partners, setting up data sharing agreements, and organizing meetings. One of the persistent hypotheses about the high prevalence of birth defects in Alaska and the disparity between Alaska Natives and non-Natives is that they are an affect of the passive surveillance system. Exploring this hypothesis could be an interesting project for a fellow assigned to our state.

#### Emergency Prep Role:

The fellow will have the opportunity to work with the Section of Epidemiology to conduct outbreak investigations and will have the opportunity to work with the Arctic Investigations Program to evaluate infectious diseases of importance to maternal and child health in Alaska. In addition, the applicant can be as involved as desired in Emergency Preparedness. A current area of emphasis for our section is Maternal Child Health Disaster Preparedness.

Assignment Location: Anchorage, AK

Primary Mentor: Bradford Gessner, MD, MPH  
Director, MCH Epidemiology Unit  
Alaska DHSS

Secondary Mentor: Janine Schoellhorn, MS, MPH  
Senior Epidemiologist  
Alaska DHSS