**Assignment Description**

The Bureau of Infectious Diseases is organizationally located within the Center for Community and Preventive Health, Office of Public Health, Louisiana Department of Health. The Bureau includes Sections focused on sexually transmitted diseases, HIV, and hepatitis; environmental epidemiology and toxicology; tuberculosis; immunizations; and infectious disease epidemiology. The CSTE fellow will be part of the Infectious Disease Epidemiology Section that employs 25 epidemiologists and support staff who are charged with tracking the causes and consequences of infectious diseases in Louisiana communities. This Section studies the distribution and determinants of infectious diseases in Louisiana, including conducting outbreak investigations, instituting disease control measures, and coordinating efforts to prevent the spread of communicable diseases. Specific surveillance systems include the Infectious Disease Reporting System, Louisiana Early Event Detection System (syndromic surveillance), Electronic Laboratory Reporting, Emergency Medical Service Syndromic Surveillance, Rabies Infected Animal Surveillance, West Nile infection surveillance in humans, horses, birds, and mosquitoes, Antibiogram surveillance, and Active surveillance of flu, antibiotic resistance, respiratory virus infection, hurricane related injuries and deaths, and special needs shelter. Proposed activities also include work in the area of maternal and child health, organizationally located within the Bureau of Family Health, Center for Community and Preventive Health, Office of Public Health, Louisiana Department of Health. The Bureau of Family Health works to promote optimal and equitable health for all Louisiana women, infants, children, teens and families. Key activities include provision of reliable data to monitor health and inform programs and policy, provide preventive and educational services to promote optimal health, and partner with communities, government, and academia to advance common goals. DAT currently employs eleven full-time epidemiologists and four PRAMS staff. DAT staff maintain strong relationships with the CDC through the MCH Epidemiology Assignee, PRAMS, and other CDC funded grants and technical assistance. Although the fellow is officially part of the Infectious Disease Epidemiology Section, the fellow will work closely with the Data Action Team (DAT) of MCH Epidemiologists and the CDC assigned MCH Epidemiologist in the Bureau of Family Health to complete a few COVID priority projects in the area of maternal and child health.

All COVID-19 cases are presently reported through routine reporting, although surveillance data are collected across multiple pathways. All facilities performing testing for COVID-19/SARS-CoV-2 are required to report positive results to the Louisiana Department of Health. This includes rapid testing, point-of-care testing, antibody testing, or any other testing performed for COVID-19. Electronic laboratory reporting (ELR) in HL7 or CSV format is the preferred mechanism for reporting results. Specific reportable conditions related to COVID surveillance include COVID-19 associated mortality, COVID-19 during pregnancy, and hospitalizations of children under age 18 years who have a positive COVID-19 lab result. Healthcare providers who diagnose reportable cases of COVID-19 can report cases via a secure online portal available on the Office of Public Health website. As of mid-May 2020, Louisiana has identified over 30,000 cases and over 2,000 deaths statewide. As an ongoing pandemic, it is recognized that changes in surveillance priorities and available data and resulting projects may occur over relatively short time periods and will be considered by both the fellow and mentors as appropriate.
**Day-to-Day Activities**

General activities will include participating in a few key projects of interest to the fellow, including data collection, patient and family interviews, chart generation, data management, and data analysis. Analytic projects will include the design, analysis, and interpretation of COVID-19 studies using surveillance data described in the previous section. The fellow will participate in and work with both the Infectious Disease Epidemiology Section and the Bureau of Family Health in generating strategies for display and/or publication of findings. Ongoing professional and analytic support and assistance will be routinely available through the mentors and other appropriate staff.

The fellow will have opportunities to become familiar with the entire scope of work occurring within the Infectious Disease Epidemiology Section, the Bureau of Family Health, and other sections and programs of interest within the Office of Public Health. The fellow will be expected to attend regular staff meetings that foster a collaborative and/or learning environment and important and emerging topics are discussed. The Infectious Disease Epidemiology Section conducts weekly staff meetings characterized by brief reports of ongoing projects from all Infectious Disease Epidemiology Section program areas and updates describing ongoing infectious disease-related epidemiologic activities from each of the nine Public Health regions in the state. Once-monthly staff meetings review all Infectious Disease Epidemiology Section programs and activities, including those not presently active. In addition, the Bureau of Family Health hosts weekly staff meetings where priority activities are announced or reviewed. DAT hosts bi-monthly maternal and child health epidemiology meetings, with additional specialized trainings and journal clubs occurring less frequently. Examples of such trainings include methods and software to link data between systems such as vital records and hospital inpatient discharge and using SAS macros to support more efficient processing of repetitive analyses. The fellow will be encouraged to attend as many trainings and stakeholder meetings as feasible, while allowing sufficient time to complete CSTE competencies and projects. Staff epidemiologists routinely meet or exceed routine data needs, assuring that fellows and other trainees are afforded sufficient opportunity to focus their work to achieve their professional interests and training goals.

**Potential Projects**

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<tr>
<th>Surveillance Activity</th>
<th>Data collection, management, and analysis related to COVID-19 related pregnancies and their outcomes</th>
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**Project Description**

Pregnancy-related cases of COVID-19 are required to be reported to the Infectious Disease Epidemiology Section. Through the conduct of patient and family interviews, the fellow will gather additional surveillance information to permit analysis of these data. The fellow will collect reports of relevant cases using routine and special surveillance practices. The recently released COVID-19 Pregnancy Module from the Pregnancy and Infant Linked Outcomes Team at CDC will be considered as one of the primary data collection tools along with linkages to external existing data sources such as vital records birth, death, and fetal death certificate data. The fellow will work with current staff to filter, analyze and report data through chart generation, reports, and other mechanisms as appropriate.
### Surveillance Evaluation

**Evaluation of COVID-19 case ascertainment and information completeness via Louisiana surveillance data**

Accurate and complete ascertainment of COVID-19 cases is imperative to perform additional surveillance functions, including contact tracing and supplemental data collection. The MMWR Guidelines for evaluation of surveillance systems will be used to guide the evaluation of one or more available COVID-19 surveillance registries: COVID-19 general population Electronic Laboratory Reporting (ELR), COVID-19 associated mortality, COVID-19 during pregnancy, hospitalizations of children under age 18 years who have a positive COVID-19 lab result, Healthcare providers who diagnose reportable cases of COVID-19, or case interviews of individuals testing positive for COVID-19. For whichever surveillance system is selected to be evaluated by the fellow and mentors, the fellow will be responsible for coordinating schedules and convening evaluation meetings, interviewing key stakeholders, helping to focus the evaluation questions of interest based on the guidelines, assume a leadership role in evaluation activities and calculations, and produce a written report of findings and recommendations along with a corresponding oral presentation via powerpoint or another data visualization program.

### Major Project

**Description of the determinants, distribution and outcomes of health problems associated with COVID-19 pregnancies and related outcomes in Louisiana**

Evidence to date has shown that pregnant women do not appear to be at increased risk of or susceptibility to COVID-19. Early literature reports that over half of pregnant women with suspected or confirmed COVID-19 are asymptomatic. However, relatively little remains known about associated maternal and infant outcomes in terms of morbidity and mortality. While a disproportionate number of black and additional minority populations have been adversely impacted by COVID-19, it is not well documented if this inequity applies to pregnancy and pregnancy outcomes to the same, greater, or lesser degree. The fellow will generate a report or a number of reports providing a descriptive summary of determinants, distribution and outcomes related to pregnancy COVID-19 infection and outcomes for both maternal and infant populations. The fellow will be responsible for conducting a thorough literature review to ensure the most recent information is incorporated into the analysis plan. Potential areas of analyses will involve health disparities including race-ethnicity, age, geographic location, social determinants of health such as household characteristics, employment, and poverty. In addition, relationship of the number of cases to the volume of testing within a defined geographic area, including assessment by age, race, socioeconomic level, social vulnerability index, risk levels of employment, housing types, on other factors of interest. Additional investigation into appropriate epidemiologic methods, such as Poisson, multinomial, multilevel or time to event (Cox proportional hazards) regression and/or GIS or other advanced methods may be pursued, if appropriate and with the support of the mentors. These data will permit analyses to characterize the burden of the disease and generate and test hypotheses that may be helpful in reducing future disease occurrence and/or severity.
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<tr>
<th>Additional Projects</th>
<th>COVID-19 related infant comorbidities and identification of Pediatric Multi-System Inflammatory Syndrome</th>
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<td>Relatively little is known about consequences of infant exposure and infection of COVID-19. Current though indicates that vertical transmission is unlikely and predominant infant infection results from direct contact with another infected individual. While recommendations around infant care during the COVID-19 pandemic are still being released, one relatively new syndrome called Pediatric Multi-System Inflammatory Syndrome is a rare but potentially serious early childhood health condition thought to potentially be associated with COVID-19 infection. The fellow would research what is known about this condition and identify all known methods for identifying suspected cases. The fellow in conjunction with mentors and other staff would then develop methodology to identify and monitor the health of suspected cases, including both hospitalizations and mortality. Depending on the volume of reports, the fellow will analyze reported cases and determine those reports that meet the case definition for pediatric multi-system inflammatory syndrome. Additional details would need to be developed later, as new information is continually developing about this condition as of mid-May 2020.</td>
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**Preparedness Role**

The fellow will be expected to complete the standard four FEMA emergency and disaster planning trainings. In addition, the fellow will be offered the opportunity to attend at least one of the Governor’s Office of Homeland Security and Emergency Preparedness (GOHSEP) Chemical, Biological, Radiological, Nuclear, and explosives (LA-CBRNE) 2 day working group meetings. For example, former CSTE fellows have chosen to participate in a Louisiana Department of Health sponsored two day training specific to pediatric disaster response and emergency preparedness. The fellow may also engage with staff responsible for periodically updating the Office of Public Health emergency preparedness plan to address continuity of operations plan (COOP) if requested and the fellow desires.

**Additional Activities**

Assessment of changes in health status and intentional and unintentional injury by age group over COVID time period(s) – before, during, and possibly after or ongoing. Community reports indicate an increased observance of violence potentially associated with the COVID-19 pandemic. Administrative data may be useful in elucidating changes in occurrence of multiple health outcomes, including but not limited to intentional injury such as partner violence, child abuse and neglect, suicide, and homicide; unintentional injury such as accidental overdoses or poisonings, drownings, and falls; and adverse maternal, infant, and childhood outcomes such as small for gestational age, preterm birth, and possibly increased low-risk cesarean section births. The fellow would have the opportunity to analyze data over time to investigate any changes over time across multiple outcomes and create products to help inform the public of potential risks that may be heightened since the occurrence of COVID-19. If detected, increasing awareness could result in prevention of future adverse outcomes as community awareness increases.

Inequities in health outcomes among COVID infected individuals has been widely reported in the news. In addition, certain populations such as the elderly (especially those in residential facilities and/or with comorbid conditions) and incarcerated have received special attention with few recommendations on methods to prevent neighboring infection. The fellow could have the
opportunity to identify relevant data sources for these high-risk populations to identify early warning signs for any future occurrence of excess COVID infection and develop communications products to help avert future outbreaks.

While most schools and many child care centers have been closed for more than a month, it is recognized that classrooms and childcare facilities may not be closed long-term. Similar to the project above, the fellow might pursue analyses that could be used to create potential best practice products in hopes of helping these establishments re-open with the best available data-driven evidence for safety moving forward.

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<th>Mentors</th>
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| **Primary** | Gary A. Balsamo, DVM, MPH&TM  
Assistant State Epidemiologist and State Public Health Veterinarian |
| **Secondary** | Lyn Kieltyka, PhD, MPH  
State Maternal and Child Health Epidemiologist assigned to Louisiana through the Centers for Disease Control and Prevention, Division of Reproductive Health |