ID: 59653865
Chronic Disease, Infectious Diseases - Host Site Description
Great Plains Tribal Leaders Health Board

Assignment Location: Rapid City, US-SD
Great Plains Tribal Leaders Health Board
Great Plains Tribal Epidemiology Center

Primary Mentor: Meghan O'Connell, MD, MPH
Chief Public Health Officer
Great Plains Tribal Leaders Health Board

Secondary Mentor: Cheng Wang, MD, PhD
Biostatistician
Great Plains Tribal Leaders Health Board

Work Environment
100% Virtual

Assignment Description

The Fellow will be placed in the Great Plains Tribal Epidemiology Center (GPTEC). GPTEC provides public health support to the 18 tribal communities in the four-state area of North Dakota, South Dakota, Nebraska, and Iowa. Activities include providing information, data, technical assistance, and capacity building services. The Fellow will work daily with GPTEC staff on projects that are relevant to Tribes. Fellows will be expected to attend meeting with Tribal Health Directors and other Tribal Leaders to discuss epidemiology and/or project needs. They may be asked to report on their projects to Tribal Health Directors and other stakeholders and solicit feedback. All GPTEC activities are done at the request of or in consultation with Tribes.

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

Dr. Wang will offer comprehensive statistical and data analysis support to the fellow, drawing upon her proficiency in R, SAS, Python, SQL, and other relevant tools. Leveraging her extensive experience in relational databases and syndromic surveillance, she will provide guidance and instructions on data manipulation, analysis, and interpretation. Additionally, Dr. Wang will collaborate with the team to harness the organization's expertise in informatics and dashboard building, utilizing licensed Tableau software to develop interactive visualizations and reporting tools. The organization's secured Azure cloud environment, coupled with licensed SAS software, will provide the fellow with robust data analysis capabilities. Furthermore, access to syndromic surveillance systems, EDM relational database, Syndromic Surveillance system, Prescription and poison control data, Influenza surveillance data, and ongoing efforts to acquire CMS data will ensure comprehensive access to diverse datasets for research and analysis purposes.

Projects

Surveillance Activity Title: Enhancing Syndromic Surveillance among Native Veterans

Surveillance Activity Description:
The Veterans Affairs (VA) healthcare system serves millions of veterans across the United States, providing comprehensive medical services. Great Plains Tribal Epidemiology Center (GPTEC) collaborates with the VA syndromic team and is granted data access to all race-ethnicity data of the VA syndromic database in the Great Plains area. GPTEC aims to enhance syndromic surveillance analytics based on VA syndromic data to improve awareness of the health status of native veterans.

ID: 59653865
Chronic Disease, Infectious Diseases - Host Site Description
Great Plains Tribal Leaders Health Board

Surveillance Activity Objectives:
- Develop Advanced Analytics Tools: Design and implement advanced analytics tools tailored for syndromic surveillance within the VA Healthcare System. These tools will enable real-time monitoring of health indicators and early detection of abnormal patterns suggestive of potential outbreaks or health emergencies.
- Enhance Data Visualization Capabilities: Develop data visualization dashboards that allow decision-makers to explore syndromic surveillance data efficiently. Visualizations may include geographic mapping, temporal trends, and demographic breakdowns to identify hotspots and vulnerable populations.
- Establish Collaborative Networks: Foster collaboration with other tribal communities and public health agencies to share best practices, exchange surveillance findings, and coordinate responses to regional or national health emergencies.

Surveillance Activity Impact:
Enhanced Preparedness: Strengthen the VA Healthcare System's preparedness for future health emergencies by building robust surveillance infrastructure and fostering a culture of data-driven surveillance and response.

Surveillance System Evaluation Title: Evaluation of Veteran Affairs Syndromic Surveillance System Data in Great Plains

Surveillance System Evaluation Description:
Syndromic surveillance systems play a crucial role in monitoring and detecting public health threats, including infectious disease outbreaks and bioterrorism events. Within the Veterans Affairs (VA) healthcare system, syndromic surveillance is essential for safeguarding the health of veterans and ensuring timely responses to emerging health threats. GPTEC recently established a collaboration with the VA syndromic team and gained access to the near-real-time Great Plains area veteran syndromic data. However, the effectiveness and quality of this data have not been evaluated yet.

Surveillance System Objectives:
- Evaluation Report: Compile findings from the evaluation into a comprehensive report detailing the performance, strengths, weaknesses, and recommendations for the Great Plains VA syndromic surveillance data.
- Recommendations: Provide actionable recommendations for system improvements, including enhancements in data quality.
- Dissemination: Share evaluation results and recommendations with relevant stakeholders, including VA leadership, the Great Plains Tribal Epi team, and syndromic surveillance experts, to inform decision-making and drive continuous improvement efforts.

Surveillance System Impact:
By identifying areas for improvement and implementing evidence-based recommendations, this project aims to enhance the effectiveness, efficiency, and impact of tribal VA syndromic surveillance in safeguarding the health and well-being of native veterans and communities and strengthen the collaboration between GPTEC and the VA syndromic team.

Major Project Title: Automated Community Health Reporting System: Enhancing Data Accessibility and Timeliness

Major Project Description:
Tribal community health reports play a vital role in informing public health decision-making, resource allocation, and policy development. However, the manual process of compiling, analyzing, and disseminating health data can be time-consuming, resource-intensive, and prone to delays. Many tribal communities have limited resources and other competing priorities which makes the tribal community health reports a prolonged and challenging process. An automated tribal community health reporting system offers a solution to streamline this process, improving data accessibility, accuracy, and timeliness.

ID: 59653865
Chronic Disease, Infectious Diseases - Host Site Description
Great Plains Tribal Leaders Health Board

Major Project Objectives:
The objective of this project is to develop and implement a semi-automated community health reporting system for Great Plains tribal communities that aggregates, analyzes, and visualizes health data from diverse sources, including Census and IHS data, to generate comprehensive and timely reports for stakeholders. The Expected deliverables include:
- Data Integration: Identify and integrate relevant health data sources, including Census, Mortality, IHS data, and socioeconomic indicators.
- Dashboard Development: Design and develop an interactive dashboard interface that allows users to customize data queries, visualize trends, and generate customizable reports based on specific parameters (e.g., geography, time period, health indicators).
- User Training: Provide training and support to stakeholders on how to use the automated reporting system effectively, interpret findings, and leverage insights for public health interventions.

Major Project Impact:
Expected Impacts / Outcomes:
- Automated Reporting System: Develop and deploy a user-friendly automated community health reporting system that streamlines the process of data collection, analysis, and dissemination.
- Timely Reports: Improve the timeliness of community health reports, providing stakeholders with up-to-date information on health trends, disease outbreaks, and emerging public health threats.
- Data Accessibility: Enhance data accessibility and transparency by providing stakeholders with self-service access to health data through the interactive dashboard interface.
- Informed Decision-Making: Empower stakeholders to make informed decisions and prioritize public health interventions based on real-time data insights and trends.

Additional Project #1 Title: Tribal Child Blood Lead Data Access and Analysis Project: Enhancing Surveillance and Intervention Strategies
Project #1 Type: Surveillance Activity

Project #1 Description:
Lead exposure remains a significant public health concern, particularly among children, due to its detrimental effects on neurodevelopment and long-term health outcomes. Effective surveillance of blood lead levels (BLLs) is essential for identifying at-risk populations and implementing targeted interventions. However, access to comprehensive and timely BLL data, as well as robust analysis tools, is extremely limited for tribal communities. This project aims to address these gaps by developing a system for accessing and analyzing child blood lead data among Great Plains tribal communites.

Project #1 Objectives and Expected Deliverables:
The objective of this project is to create a routine for tribal communities to access their child blood lead data, and develop a matrix for analyzing, and visualizing child blood lead data to facilitate surveillance, identify trends, and inform intervention strategies aimed at reducing lead exposure among children. Expected deliverables include:
- Data Integration: Identify and integrate blood lead data from various sources, including CDC Blood Lead surveillance team, and tribal clinic labs, into a centralized database.
- Database Development: Design and develop a secure and scalable database infrastructure capable of storing and managing large volumes of child blood lead data, while ensuring compliance with data privacy regulations.
- Data Access Portal: Create a secured data access portal that allows authorized users, such as tribe directors, to retrieve their child blood lead data.
- Analysis Tools: Implement analytical tools and algorithms for exploring and analyzing blood lead data, including descriptive statistics, spatial analysis, trend analysis, and hotspot identification.
- Visualization: Develop visualization tools, such as maps, charts, and dashboards, to present blood lead data in a user-friendly and actionable format, enabling stakeholders to identify high-risk areas and populations.

ID: 59653865
Chronic Disease, Infectious Diseases - Host Site Description
Great Plains Tribal Leaders Health Board

Project #1 Impact:
Expected impacts:
- Data Access Platform: Launch a secure platform for accessing and retrieving child blood lead data, providing stakeholders with timely and actionable information for decision-making.
- Insights and Trends: Generate insights and identify trends in child blood lead levels through data analysis, enabling stakeholders to monitor changes over time and prioritize intervention efforts.
- Targeted Interventions: Inform the development and implementation of targeted intervention strategies, such as lead abatement programs, educational campaigns, and policy initiatives, to reduce lead exposure and protect children's health.
- Collaboration and Partnerships: Foster collaboration and partnerships among tribal public health agencies, healthcare providers, community organizations, and other stakeholders to collectively address lead exposure issues and improve child health outcomes.

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

The fellow's work will support surveillance of and monitoring for public health threats. Reports will be provided to Tribes and to our Emergency Operations Center.

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

The Fellow will assist with data analysis and interpretation for Tribes in the event of a cluster or outbreak investigation. Each Tribe requires a specific report and evaluation of a cluster or outbreak. With the assistance of the primary mentor, the Fellow may be asked to present findings to Tribal Health Directors and other key stakeholders to describe the cluster or outbreak. GPTLHB is currently in an ongoing outbreak of syphilis. The Fellow will assist with describing risk factors for infection, monitoring the scope of the outbreak, and evaluating response efforts.

Please Describe the Fellow's Anticipated Role in the COVID-19 Response – Include Activities and Time Allocation

The fellow's surveillance work will include COVID-19, along with other respiratory infections.

Please Describe Opportunities for Fellows to Work in Health Equity as well as Incorporating Diversity, Equity, and Inclusion into their Work

All of the activities performed by GPTLHB are directed by health equity. As a tribal organization, GPTLHB's primary mission is to improve the wellness of tribal populations in the Great Plains Area. The Fellow will have the opportunity to work with Native people and serve them in all of his/her work.