

Infectious Diseases

Assignment Description

For more than a quarter of a century, the AI has established model programs in the public health response to the largest HIV epidemic of any state. Nearly 131,000 New Yorkers live with HIV and approximately 3,800 are diagnosed with HIV infection annually. New York State (NYS) has a proud history of advocacy and leadership in HIV education and care. Major successes against HIV include the dramatic decrease in infections among injection drug users and the near elimination of maternal to child transmission of HIV. However, challenges remain. Approximately one third of the newly diagnosed are diagnosed late (i.e., an AIDS within one year of HIV diagnosis). While the burden of HIV is heaviest in NYC, 21% of persons living with a diagnosis of HIV infection (PLWDHI) reside outside of NYC. In NYS, HIV is no longer a young persons' disease. While the majority of diagnoses occur before age 40, 77% of PLWDHI are over age 40 and 42% are age 50 or older. Racial and ethnic disparities persist with blacks having approximately 8 times the new HIV diagnosis rate of whites; Hispanics have over 5 times the new diagnoses rate as compared to whites. Health disparities are striking with persons of color (43% of PLWDHI are black and 32% Hispanic) and especially women of color disproportionately affected by the HIV epidemic.

The NYS HIV surveillance system receives reports of HIV related laboratory tests performed for NYS residents or NYS clinicians. These tests are used primarily for disease surveillance, that is, to detect cases of HIV infection. However, the tests can also be used as indirect measures for contact with the medical care system to indicate how promptly people enter care after their initial HIV diagnosis and whether they subsequently remain in care after diagnosis. Entry into care is one of the key indicators of the National HIV/AIDS Strategy. The national target level for 2015 is that 85% of newly diagnosed persons will have entered HIV care within three months of diagnosis. In 2011, 83% of newly diagnosed HIV cases in NYS had a CD4 or viral load test within three months of their diagnosis, indicating linkage with HIV care. Over one third of PLWDHI had no evidence of care. Suppressed viral load was documented in 46% of PLWDHI. NYS NHAS parameters exceed national estimates, but much work remains to be done.

The CSTE fellow will address the epidemic through a primary assignment to the Surveillance Program of BHAIE in Albany, NY. The fellow will participate in activities related to HIV surveillance investigation, data quality and analysis activities. Pending official release by CDC of the revised HIV case definition, the fellow will participate in implementation and assess the implication of the changes on the detection of new diagnoses, including acute HIV and HIV-2. The incumbent will develop and revise new surveillance reports, contribute to research publications, and make program recommendations for BHAIE. Additionally, the fellow will have the opportunity to actively participate in national work groups (for example, the CSTE HIV Surveillance and Implementing the HIV Laboratory Algorithm Workgroups) as well as local AIDS Institute workgroups with topics such as HIV and STD comorbidity. The fellow will participate in HIV/AIDS data dissemination activities. The CSTE fellow will be expected to attend NYSDOH Institutional Review Board Human Subjects training, so s/he will be able to fully participate in various BHAIE projects.

Through her role as DEER Director, the Primary Mentor will assure that the fellow has opportunities to broaden his/her experience with an STD-related project if so desired. The Primary Mentor will also seek opportunities within DEER or external to DEER for the fellow to participate in acute outbreak investigations to develop outbreak-related competencies required by the fellowship. In recent years opportunities available to a fellow within DEER would have included investigation of HIV transmission via organ transplantation from a living donor, a multistate notification related to activities of an illegal sperm donor, an investigation of hepatitis C among youth in a rural NYS area, and investigations related to regional increases in primary and secondary syphilis.

The fellow will benefit from BHAЕ's multiple strong relationships and existing collaborations, including organizational alignment of BHAЕ with the OPER and the BSTDPE. Additional established relationships exist with 1) NYSDOH AIDS Institute Division of HIV, STD, and Hepatitis Prevention of the NYSDOH AIDS Institute, which directs statewide prevention activities; 2) the HIV Laboratory of the NYSDOH Wadsworth Center Laboratories, which serves as the national laboratory for the CDC HIV Incidence Surveillance project; 3) the New York City Department of Health and Mental Hygiene which shares in the work of HIV surveillance; 4) the CDC, which funds the NYSDOH BHAЕ to participate in several national projects including National HIV Behavioral Surveillance and the Medical Monitoring Project; 5) other infectious diseases epidemiology bureaus and programs within the NYSDOH, inclusive of tuberculosis and hepatitis/other communicable diseases; 6) the School of Public Health of the University at Albany, which includes many NYSDOH scientists among its faculty and uses the NYSDOH as a frequent placement site for student internships and projects.

Day-to-Day Activities

Anticipated day-to-day activities will depend on the particular projects assigned to the fellow. After an extensive orientation to the bureau and the surveillance program, the fellow will become involved in several discrete projects (opportunities outlined below) with daily work time allocated to individual projects, collaborative research, and data analyses.

- The fellow should expect to meet with Dr. Anderson at least weekly and Dr. Smith biweekly to review and plan the current work tasks.
- The fellow will actively participate in monthly conference calls, including
 - 1-- HIV Surveillance calls with our colleagues in New York City, our CDC assigned epidemiologist, and our national CSTE affiliated colleagues as part of the CSTE HIV Surveillance and Implementing the HIV Laboratory Algorithm work groups, and
 - 2--A call with Local Health Department STD Leadership discussing current STD and HIV issues. Additionally, the fellow will attend the larger AIDS Institute monthly staff meetings and may be tasked with updating the group regarding current MMWR reports or research/data reports pertaining to HIV/AIDS surveillance.
- As a member of the surveillance team, the fellow will be invited to all monthly and quarterly surveillance program meetings and conference calls and, as needed, will attend other internal

BHAE working group meetings (e.g., Improving Provider Reporting, Data Analysis, eHARS Status, and various registry matching meetings).

- The fellow will be expected to participate in the semi-monthly BHAE Bureau Seminar Meetings, a collaborative environment through which the research and various data products of the bureau are presented and refined. Occasional travel within NYS is expected.

The fellow will be provided workspace and computer access within BHAE offices in the Corning Tower located in downtown Albany in the Empire State Plaza, the home of New York's state government as well as theatres, the state museum, the NYS Archives, and the state Capitol Building. Albany is part of New York's Capital District which includes the cities of Schenectady, Troy, and Saratoga intertwined with multiple suburban and rural areas. The area has nationally recognized colleges and universities as well as graduate schools in medicine, law, and pharmacy. The city provides a walkable downtown, excellent transportation, and excellent four-season outdoor recreational opportunities in the nearby Adirondack, Catskill, and Green Mountains. The close proximity to New York City, Boston, Vermont, and Montreal enhance the area's cultural and recreational opportunities.

Potential Projects

There is flexibility built into the program such that the Fellow will have the option of pursuing specific projects of interest. Potential projects include:

Integration of new HIV Case Definition into the NYS HIV Surveillance System: A new national HIV diagnosis algorithm is in the process of adoption which will improve diagnosis of acute HIV, improve confirmation of HIV-2 infection, and eliminate the need for expensive Western blot evaluations in most circumstances. An important revision by CDC of the national surveillance case definition of HIV infection is anticipated. These changes must be communicated to stakeholders and be incorporated into the NYSDOH HIV Surveillance system, which is comprehensive and complex. By law reporting of HIV/AIDS is to the state DOH rather than local health departments and thus, efforts are underway by the NYSDOH to assist labs and clinicians with implementing the multi-test algorithm and to facilitate continued public health reporting of HIV-related results and diagnoses. In addition to laboratory and clinician reporting, NYSDOH staff review medical records for suspected cases of HIV-infection. Standard operating procedures for the conduct of field investigation and case confirmation will need to be revised and aligned with the new elements of the national surveillance case definition. In conjunction with subject matter experts, the CSTE fellow will participate in the workgroup to revise and roll out of guidance to staff related to the case definition changes. Approximately 75-80% of the NYS HIV/AIDS epidemic is in the city, and the city health department participates in HIV/AIDS surveillance for city providers through a Memorandum of Understanding with the NYSDOH. Data exchanges between the state and city health departments are extensive and allow the state to maintain a statewide HIV/AIDS registry. Within this complex array of activities, the fellow will have multiple opportunities, including the redesign and evaluation of surveillance practices and the algorithm for partner services assignment among persons with newly diagnosed HIV, including acute HIV.

STD Surveillance System Evaluation: In NYS, laboratories and medical providers are required by law to report suspect or confirmed cases of communicable diseases, including sexually transmitted diseases, to the local health department in which the patient resides. Required information includes laboratory test type, specimen source, test results, patient demographics and locality of residence, and selected dates including date of specimen collection, laboratory test date, date of lab report to the local health department, date of assignment for case investigation, and date of case closure. Major reportable diseases include Chlamydia, gonorrhea, and syphilis, with syphilis surveillance and investigational activities receiving priority status as the timeliness of case diagnosis, treatment, and investigation is critical to interrupting disease spread. The fellow will have the opportunity to conduct evaluation activities, establish a 'report card' for laboratories, providers and health department staff, and utilize the results to review surveillance policies and procedures.

Evaluation of HIV-STD comorbidity: Additionally, the fellow may have opportunities related to the implementation of the near real-time matching of cases reported to the HIV and STD surveillance registries. Though periodic registry matches have occurred, support at the state and national levels for service integration have resulted in a new requirement for ongoing matches between the HIV and STD registries. Specific activities may include: (1) augmenting the STD and HIV registries with key data elements (e.g. demographics and risk factors) that were not captured via routine surveillance, (2) estimating the prevalence of HIV/STDs co-infection, and (3) describing the demographic characteristics and disease stage of and risk factors for acquisition among those who are diagnosed with HIV and STDs. Such knowledge is important for efficient targeting of prevention services and for appropriate referral and linkage to medical care.

Surveillance Data and the National HIV/AIDS Strategy: The National HIV/AIDS Strategy proposes extensive use of HIV/AIDS surveillance data to evaluate outcomes, including calculations of HIV incidence estimates, HIV transmission rate estimates, the proportion of newly diagnosed persons entering and retained in care, and the control of HIV viral loads in relationship to recognized health disparities.

Registry Matching Projects and Analyses: BHAEC conducts multiple matching projects with other public health databases for purposes of enhancing disease surveillance; some are episodic (hepatitis, tuberculosis, etc.) and some recur annually (Medicaid, Vital Statistics, Department of Corrections and Community Supervision). The opportunity exists for the fellow to take a lead role in several new or recurring match projects: 1) a match of the HIV registry to the AIDS services database; 2) a match of the HIV registry to the statewide ADAP (AIDS Drug Assistance Program) database; 3) cross-matching of HIV, STD, and hepatitis C registries to assess co-infected populations 4) matching of the HIV registry to the database documenting services for HIV infected persons.

Resistance and Subtype Analyses: In 2005, NYS became the first state in the US to implement comprehensive HIV resistance and subtype surveillance through laboratory reporting of nucleic acid sequences from genotypic resistance tests. Opportunities exist for detailed analysis of resistance and subtype patterns among the newly diagnosed and among persons known to have been living with

HIV/AIDS, and for the development of new analytic techniques such as assessment of incidence using genotypic data.

Evaluation of Internet Partner Services: Social networking sites, such as Facebook and MySpace, provide opportunities for individuals to connect with others who share similar interests. Similar sexual networking sites like Manhunt, Adam4Adam and Gay.com, provide opportunities for locating sexual partners. Sexual partners identified through the Internet are frequently anonymous; therefore, infected patients are unable to provide their partners' identifiers such as name, address and physical attributes, information traditionally used to track down and notify sexual contacts. In response, the NYSDOH Bureau of STD Prevention and Epidemiology, in collaboration with other DOH agencies, developed Internet Partner Services Guidelines to establish protocols that adapted traditional disease intervention strategies for STD/HIV to the Internet. Internet Partner Services was fully implemented in 2008 with approximately 150 – 200 investigations conducted annually. The fellow will have the opportunity to conduct an evaluation of Internet Partner Services outcomes as compared to traditional Partner Services to assess its added value as a partner management strategy.

Preparedness Role

The fellow will be well-positioned to participate in structured emergency preparedness planning activities and to lend temporary assistance in urgent/emergent public health surveillance activities. NYSDOH leadership expects that Epidemic Intelligence Service and CSTE trainees will be made available for temporary reassignment to emergency activities for the mutual benefit of the trainee and the department. Moreover, DEER staff are expected to contribute as needed to Emergency Preparedness efforts. In 2009, for example, selected BHAEE staff participated in the NYSDOH H1N1 influenza efforts through medical record reviews of hospitalized patients, through membership in surveillance and Clinical Guidelines workgroups, and through participation in phone banks taking vaccine orders. Opportunities available in 2011 and 2012 included assistance with extensive public health challenges related to severe post-Hurricane Irene and Hurricane Sandy flooding. In 2013, the PHAP fellow assisted with the Coastal Storm Planning Survey Analysis, which involved surveying health care facilities regarding their emergency plans during coastal storms.

Assignment Location: New York State Department of Health
Albany, New York

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