

Infectious Diseases

New York City Department of Health and Mental Hygiene, Division of Disease Control (Bureau of HIV/AIDS Prevention and Control)

Queens, New York

Assignment Description

The host site for this Fellow will be the Bureau of HIV/AIDS Prevention and Control (BHIV), which administers over 200 million dollars of programmatic funding for HIV prevention, treatment, and other services for HIV-infected persons. The Fellow would join a committed group of public health professionals working to address this highly preventable, life-threatening, prevalent infectious disease at the population level through innovative surveillance and programmatic interventions. The Fellow would be jointly assigned to two programs within the BHIV:

1. The Care and Treatment Research and Evaluation Unit (CTP REU): The CTP REU is primarily responsible for the management and analysis of data collected on clients who receive supportive services (e.g., case management, mental health, legal advocacy) in New York City and the TriCounty area (including Westchester, Rockland, and Orange counties) that are funded by Ryan White Part A (RWPA). These data are most often used to conduct process and impact evaluations of RWPA services and to identify barriers to service utilization and/or the achievement of optimal medical outcomes. RWPA and New York City HIV Surveillance Registry data are matched on a routine basis, which allows us to use laboratory information to measure HIV medical outcomes (e.g., viral load suppression).

The Fellow's main assignments in the CTP REU will include two projects focusing on: (a) the prevalence and correlates of psychiatric hospitalizations among people living with HIV; and (b) the association between mental health service utilization and health/mental health outcomes among people living with HIV. The Fellow will also have the opportunity to share these findings with key stakeholders, including RWPA providers and CTP technical assistance and quality management staff, which will provide insight into how research and evaluation findings impact real-world public health policy and practice.

2. The HIV Epidemiology and Field Services Program (HEFSP) Surveillance Unit: The goals of HEFSP are to conduct HIV surveillance, perform partner notification and linkage to care services, and carry out epidemiologic research to describe and contribute to a more comprehensive understanding of the HIV epidemic in NYC. The Fellow's main assignments in the HEFSP will involve assisting in, developing, and taking the lead on analyses of HIV/AIDS surveillance data available to the HEFSP Surveillance Unit.

The HEFSP Surveillance Unit investigates and reports approximately 2,500 new HIV diagnoses and 1,500 AIDS diagnoses annually. The NYC HIV Surveillance Registry contains information on persons diagnosed with AIDS in NYC since 1981 and HIV since 2000, as well as longitudinal HIV-related laboratory test results for persons living with diagnosed HIV infection and receiving care in NYC. The Program's epidemiology staff is also responsible for investigation of any identified clusters of HIV infections or HIV cases of special public health interest. The Fellow would specifically concentrate on

areas for which epidemiologic analysis could impact the Bureau's understanding of the state of the epidemic in ways that inform its programmatic interventions.

Day-to-Day Activities

The Fellow will fully participate in the day-to-day activities of the Care and Treatment Research and Evaluation and HIV Surveillance units, which include data collection, cleaning, quality assurance, analysis, and dissemination. Analyses will include examining outcomes by demographic characteristics and other relevant variables and comparisons of these outcomes across sample years. Inferential analyses based on specific research questions will involve developing and testing explanatory models using multivariable statistical techniques. Analyses will be primarily conducted using SAS.

In both units, the Fellow will be assigned projects that will provide the opportunity to conceptualize a project's aims and methodology and take the lead in implementing analyses. The Fellow will also be responsible for responding to data requests from other BHIV programs and bureaus throughout the NYC DOHMH, in addition to external stakeholders. Dissemination-related responsibilities will include developing reports, fact sheets, oral and poster presentations, and manuscripts based on data analyses. Other day-to-day activities will be tailored to the Fellow's interests, but could include:

1. Attending weekly unit meetings.
2. Attending meetings with the Bureau of Sexually Transmitted Disease Control and other disease programs regarding ongoing programmatic collaborations.
3. Participating in monthly surveillance conference calls with New York State regarding issues with surveillance data transfers and data flow.
4. Attending formal educational opportunities at the NYC DOHMH including Epidemiology Grand Rounds, BHIV Grand Rounds, BHIV journal club, research seminars, and trainings; and
5. Participating in collaborations with HIV researchers outside the BHIV and the NYC DOHMH, including academic health centers (e.g., Columbia University, Hunter College/City University of New York).

If the Fellow has an interest in a specific area of HIV treatment and/or prevention, this could also be accommodated (e.g., anti-stigma campaigns; substance use/harm reduction; condom distribution; PrEP/PEP; needle exchange; HIV prevention for women, people of color, transgender persons, etc.).

Potential Projects

Surveillance Activity Participation in HIV/AIDS surveillance activities (The HIV Epidemiology and Field Services Program [HEFSP] Surveillance Unit)

In the HEFSP Surveillance Unit, the Fellow's assignments would primarily involve assisting in, developing, and taking the lead on data analyses of HIV/AIDS surveillance data. Specific surveillance activities could include the following: shadowing field staff during medical record abstraction for case investigation, participating in manual review of data matches with NYC HIV Surveillance data, completing data requests using SAS and other analytic software, participating in quality assurance checks for frozen analytic datasets, developing and producing slide presentations and reports, and conducting oral and poster presentations of data analyses.

Surveillance Evaluation Evaluation of differences between eHARS Registry data and frozen analytic datasets, including a focused evaluation of a transmission risk classification algorithm (HEFSP Surveillance Unit)

A major activity of the HEFSP Surveillance Unit is to create a quarterly frozen analytic dataset. This dataset is a cleaned version of HIV registry data from eHARS and incorporates various additional data sources, such as expanded pediatric surveillance data, HIV-2 data, acute HIV investigations, and death surveillance data. Cleaned, analytic versions of core variables are created and appended to this dataset. The Fellow would evaluate the current and potential contributions of these additional data sources by comparing the HIV registry data with the cleaned and expanded analytic dataset. Variables such as HIV transmission risk, transgender status, and diagnostic status could be compared. In particular, there is an interest in evaluating current sources of HIV transmission risk information for persons newly diagnosed with HIV and reported to NYC's surveillance system, as well as the local algorithm used to classify individuals based on transmission risk. The Fellow would conduct such an evaluation as part of the larger surveillance evaluation, comparing multiple sources of information on risk with data already imported to eHARS.

The Fellow might have the opportunity to use multiple imputation (MI) to improve the completeness of transmission risk information. The CDC has used MI to impute missing HIV risk factor information since 2007. Since then, the CDC has encouraged local and state health departments to incorporate MI methods and has developed a SAS program based on national data for performing MI with jurisdiction-level HIV registry data. A previous validation study performed by the HEFSP suggested that MI could be a useful method for improving HIV transmission risk classification at the local level. However, it may be necessary to further refine the model used for MI as the current model provided by the CDC only results in moderate agreement with risk information confirmed on re-investigation. The Fellow would therefore further explore the use of MI for routine NYC HIV surveillance activities. This would include refining the regression model used for local purposes, including the addition of NYC-specific variables and a validation of the updated MI model.

Major Project Psychiatric hospitalizations among people living with HIV in New York City (Care and Treatment Research and Evaluation Unit [CTP REU])

This project focuses on describing the prevalence and correlates of psychiatric hospitalization among people living with HIV (PLWH) in New York City using data from several sources, including: (1) The Electronic System for HIV/AIDS and Reporting (eSHARE; demographic, service, clinical, and psychosocial information on PLWH receiving support services funded by Ryan White Part A); (2) The New York City HIV Surveillance Registry (HIV diagnosis dates and viral load/CD4 labs on all PLWH in care in New York City); and (3) The Statewide Planning and Research Cooperative System (hospital discharge records for all inpatient and outpatient hospitalizations at New York State medical facilities). The Fellow will have the opportunity to develop the aims for this project, specify the design and analysis plan, summarize the extant literature in this area, create the analytic dataset, conduct the analyses, and interpret the findings in terms of their implications for public health practice. The Fellow will also be mentored in developing a conference abstract and a manuscript based on the findings of this project.

Additional Project The association between mental health service utilization and health and mental health outcomes among PLWH in New York City (CTP REU)

This project will focus on examining the effect of differing levels of mental health service utilization among PLWH in New York City on HIV-related (e.g., viral load suppression) and mental health (e.g., depression) outcomes, compared to a control group of PLWH who are not receiving these services. This project will provide the Fellow with the opportunity to use advanced statistical analysis techniques, such as propensity score matching, which would be used to create the control group. The Fellow will be also be encouraged to disseminate the findings yielded from this project by developing a conference abstract and a manuscript.

Additional Project Examining the reliability and validity of a brief disability assessment (CTP REU)

Physical functioning is critical to assess among PLWH, particularly to ensure that patients with significant limitations receive the appropriate level of care. Two components of the eSHARE intake assessment currently include: 1) a 6-item measure of the client's disability status that is required by the Health Resources and Services Administration (the funder of RWPA services); and 2) The Short Form Survey (SF-12v2; Ware et al., 1996), a 12-item instrument that measures overall mental health and physical functioning. We originally chose to include the SF-12v2 on the RWPA assessment to have a validated assessment of functioning that could be used as both an indicator of the potential need for support services and a non-HIV specific health outcome. However, we are currently considering removing the SF-12v2 from the RWPA assessment because of its length and cost. This project is designed to yield information that will help us in making this decision, specifically by evaluating the reliability and validity of the disability measure to determine if it is a sufficient measure of physical functioning.

Preparedness Role

The Fellow would be assigned a role within the NYC DOHMH emergency response structure (the Incident Command System). Past fellows have been activated to work on various emergency situations, such as the Ebola response and outbreaks of Invasive Meningococcal Disease and Legionellosis. The Fellow would also attend the Point of Dispensing (POD) training, which is regularly offered to agency employees. In the event of a large-scale public health emergency, NYC would open up to 200 PODs which would operate around the clock to dispense medication as needed.

Additional Activities

1. Electronic System for HIV/AIDS Reporting and Evaluation (eSHARE) data extraction (CTP REU): Each month, eSHARE data tables that contain demographic, service, clinical, and psychosocial information on people living with HIV who are receiving Ryan White Part A funded services in NYC are extracted from the NYC DOHMH servers for use by the CTP REU staff. The extraction process involves running and updating code that is used to ensure the quality and completeness of the data and to prepare analytic datasets.
2. Update HIV surveillance standard slide sets published on the NYC DOHMH website (HEFSP Surveillance Unit): Each year the HEFSP Surveillance Unit publishes slide sets that provide information on the epidemiology of HIV and AIDS in NYC. These slide sets contain information about the overall epidemic in NYC as well as among certain subgroups, such as females, men who have sex with men, transgender persons, children, and foreign-born persons. The Fellow could participate in and/or take the lead on reviewing the content included in the standard slide sets, considering the current epidemic and public interests, and then make recommendations to the analysis team regarding the removal or addition of certain figures and topics.
3. Evaluate data quality and completeness (CTP REU and HEFSP Surveillance Unit): Both the CTP REU and the HEFSP Surveillance Unit conduct routine checks to ensure the quality and completeness of the datasets for which they are responsible. In the CTP REU, the Fellow could investigate the consistency of reported sociodemographic characteristics across RWPA client assessments (clients frequently enroll in multiple RWPA services at multiple agencies). In the HEFSP Surveillance unit, the Fellow could contribute to evaluating the completeness of laboratory reporting in the NYC HIV Surveillance Registry, which could involve comparing electronically received laboratory reports against reports collected via active field surveillance or other data sources.
4. Data requests (CTP REU and HEFSP Surveillance Unit): We routinely receive requests for data from internal staff members in the Bureau of HIV/AIDS Prevention and Control (BHIV) and other bureaus in the New York City Department of Health and Mental Hygiene, in addition to individuals from external institutions (e.g., The Mayor's Office, advocacy/social service organizations, academic health centers). The Fellow would be responsible for speaking to the individual requesting the information to clarify the purpose of the request, determine whether the appropriate data are available, and then reach an agreement on the output, format, and timeline for the fulfillment of the request. After analyzing the

data, the Fellow would also discuss the findings with the individual requesting the data, in addition to how to most effectively present the information based on the intended audience(s).

5. Requests for Proposals: BHIV staff are frequently asked to volunteer to review requests for proposals that are submitted for programmatic funding from the NYC DOHMH. Prospective reviewers for submitted applications attend a training on the proposal scoring system and attend meetings after the proposal review process is complete to discuss discrepant scores. Participating in this process would give the Fellow the opportunity to understand how programs for people living with HIV are designed and monitored, which would enhance the ability to design and implement effective health services research and evaluation projects.

6. Participate in outbreak investigations and field investigations: Past examples of outbreak investigations have included (a) participating in DOHMH's emergency responses to Legionnaires' disease outbreaks or NYC's Ebola case, (b) investigating a tuberculosis outbreak with the NYC DOHMH Bureau of TB Control, and (c) investigating a foodborne outbreak with the NYC DOHMH Bureau of Communicable Disease.

Mentors

Primary

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Secondary

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