Quarterly Progress Report

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Program Area: Infectious Disease [HIV, STIs, Viral Hepatitis(mainly Hep C), and Tuberculosis]
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DEPARTMENT OF HEALTH

I. Introduction:

Interdisciplinary and collaborative setting of primary fellowship training activities within the PA Dept of Health: HIV/AIDS Epidemiology Investigation Section [incl. related STI, Viral Hepatitis (Hep C), and TB], Division of Infectious Disease Epidemiology

- **Purpose**: The HIV/AIDS Epidemiology Investigation Section serves as an interdisciplinary operational bridge between data collection in public health surveillance for HIV/AIDS [and related STIs, Viral Hepatitis(Hep C), and Tuberculosis) and disease intervention programs (disease control and prevention) for HIV/AIDS and related diseases. The overall purpose of this applied "disease intervention epidemiology" coordination program is to assure an integrated approach to the provision of applied Epidemiology support for prevention and care intervention/service programs on Human Immunodeficiency Virus (HIV), Sexually Transmitted Diseases (STDs), Tuberculosis (TB) & Viral Hepatitis . The greater risk of coinfection and complications of comorbidity of these conditions underpins the need for coordination and integration of applied "disease intervention epidemiology" support for public health intervention programs on these associated conditions. The target population of interest for the interdisciplinary group of public health intervention/service programs that are supported by the Section includes all persons living with these infections or who are at risk of acquiring these infections or progressing to illness. The program supports public health intervention programs on HIV(& related STD, TB & Viral Hepatitis) and the public health agency partners involved in planning and providing these intervention (prevention and care) services. The applied Epidemiology support involves providing an evidence-based (research and data driven) decision model that allows public health agencies and their partners to focus on identifiable health needs and disparities in the various geographical and human sub populations of interest. Critical to this support is the analysis of available routinely collected morbidity and mortality data, and conduct supplemental studies in order to provide the data necessary for prevention and care planning, and development, implementation and outcome evaluation of public health interventions/services:
- **More specifically, the major focus areas of applied Epidemiology services in support of public health program planning, services and interventions for HIV(& related STD, TB & Viral Hepatitis) are:**
  - Applied Epidemiology Consulting for Planning & Resource Distribution;
  - Supplemental Applied Epidemiology Investigation/Research Studies;
    - Supplemental Applied Epidemiology Research on Disease Burden/Risk Assessment; and Monitoring & Evaluation of Service Delivery
    - Applied Epidemiology Research & Development on Interventions and Services
  - Training/Capacity Development in Applied HIV/Infectious Disease Epidemiology (incl. training on related Public Health Preparedness Epidemiology);
  - Publication & Dissemination of Applied Epidemiology Research Findings;

NOTE: ACTIVITIES SINCE THE LAST PROGRESS REPORT ARE IN BOLD (SEE "ACTIVITIES COMPLETED ON PROJECT")

II. Overview of In-Service and Non-Service Applied Public Health Activities and Accomplishments within the HIV/AIDS Epidemiology Investigation Section to date according to the Plan of Action):

1. **SURVEILLANCE ACTIVITIES IN WHICH THE FELLOW WILL PARTICIPATE**

A. TITLE OF PROJECTS: **Supplemental Public Health Surveillance of HIV, STIs, and Viral Hepatitis in Special Populations**: Youth Risk Behavior Survey (YRBS) and STI-HIV (sero)surveillance in screening and treatment programs in school-based settings

BRIEF DESCRIPTION OF PROJECT

- Background: The potential for greater likelihood of HIV and STIs among adolescent females (of school-going age) has been shown in various studies, including STI studies among adolescent and young adult females in PA*. STI data on adolescent and young adults suggest much higher incidence of STIs among this younger population compared to older age groups. In areas with higher prevalence of HIV/AIDS, higher incidence of STIs may suggest a greater likelihood of HIV transmission. Routine HIV/AIDS surveillance data on this population suggests that this population has low HIV testing rates, HIV/AIDS diagnoses rates (underascertainment of HIV), hence the epidemic in this population may be underestimated by routine HIV/AIDS surveillance which depends on reports of new diagnoses.
- Objectives: To supplement routine HIV/AIDS surveillance data, the PA Department of Health (HIV Epidemiology Investigation Section) aims to modify and conduct a 2-arm study to investigate: a) the extent of HIV-STI related sexual and substance use behavioral risk factors through this school-based cross-sectional survey, i.e. the YRBS project; in conjunction with b) school-based screening (incl. cross-sectional serosurvey) and treatment of HIV and STI comorbidity in the school-going adolescent population in PA. To determine the extent of HIV-related sexual and substance use risk behavior in relation to HIV-STI comorbidity in the YRBS study population, HIV and/or STI screening and treatment will be offered to all YRBS sexual and risk behavior survey participants. The coupling of sexual and substance use risk behavior data with direct measurement of HIV prevalence, and incidence rates will offer a unique avenue for annual cross-sectional surveillance of behavioral risk factors and (sero) surveillance for HIV-STI comorbidity in school-based settings.
- The YRBS component of the study will be conducted through a PA Dept of Health collaboration with the PA Dept of Education, interested academic institutions, and other stakeholders to restart the CDC-funded Youth Risk Behavior Surveillance (YRBS) project in voluntarily participating high morbidity school districts outside Philadelphia. The school-based STD screening and treatment arm of the study will be conducted through a collaboration of the PA

Department of Health (HIV Epidemiology Investigation Section), the PA DOH STD program, and voluntarily participating high morbidity school districts' school-based STD screening and treatment programs.

- Uses of Study Findings: Data from this project will be used to allocate resources and direct HIV prevention and care services.
- Fellowship Core Competencies to be Fulfilled:
    i. Surveillance Activity: This project is one of the surveillance projects that the fellow will participate in;
    ii. Epidemiology Methods: Most of the Epidemiology methods competencies can be fulfilled by this project;
    iii. Communication: A surveillance report will be generated from this project, graphics representation of data; and oral/poster presentation and/or manuscript will be subject to peer-review in professional conference/journals;
    iv. More specific time-phased details are outlined in the table at the end of this document.

Activities completed on project:

1. **Held meeting with Division of TB and STD staff to discuss collaboration effort.**
2. **Reviewed materials on YRBS data collection in Philadelphia and past results from the statewide survey.**
3. **Discussed collaboration with Division of HIV Prevention and the Community Planning Group's Young Adult Roundtable (YART).**
4. **Developed project plan (i.e. timeline with action steps) to aid collaboration with the Divisions of STD and HIV Prevention.**

B. TITLE OF PROJECT: **Supplemental Public Health Surveillance of HIV, STIs, and Viral Hepatitis in Special Populations**: Serosurveillance for HIV, STIs, and Viral Hepatitis in incarcerated populations

BRIEF DESCRIPTION OF PROJECT

- Background: Although a substantial number of HIV/AIDS cases in PA which have IDU as a probable mode of transmission were diagnosed in correctional settings or may have a history of incarceration, screening for HIV is not part of mandatory health screening of inmates upon admission to the state correctional system (unlike Syphylis, which is subject to mandatory screening). Consistent with requirements of PA Act 148(1990), HIV screening in correctional settings is voluntary and is therefore subject to underascertainment, which suggests potential underestimation of the prevalence and transmission of HIV in this setting. The lack of accurate information on this population underscores the need to more accurately estimate the burden of HIV/AIDS prevalence and incidence in the incarcerated population, and for the Department of Health (HIV Epidemiology Investigation Section) to collaborate closely with the Department of Corrections' Health Services on discharge planning and service delivery.
- Objectives: To investigate the extent of HIV/AIDS (and related STIs, and Viral Hepatitis) in the incarcerated population, this collaborative project [Departments of Corrections (Medical Services) and Health(HIV Epidemiology Investigation

Section)] aims to use remnant serum specimens from mandatory annual inmate intake screening for syphilis to conduct annual cross-sectional serosurveillance for HIV, STIs, and Viral Hepatitis in collaboration with the PA Dept of Corrections, interested academic institutions, and other collaborating partners.

- Uses of Study Findings: Data from this project will be used to allocate resources and direct HIV prevention and care services.
- Fellowship Core Competencies to be Fulfilled:
    i. Surveillance Activity: This project is one of the surveillance projects that the fellow will participate in;
    ii. Epidemiology Methods: Most of the Epidemiology methods competencies can be fulfilled by this project;
    iii. Communication: A surveillance report will be generated from this project, graphics representation of data; and oral/poster presentation and/or manuscript will be subject to peer-review in professional conference/journals;
    iv. More specific time-phased details are outlined in the table at the end of this document.

Activities completed on project:

1. **Developing project plan with action steps to be used to recruit academic and other collaboration partners to write a grant application for investigator-initiated research.**

C. TITLE OF PROJECT: **Supplemental Public Health Surveillance of HIV, STIs, and Viral Hepatitis in Special Populations**: Serosurveillance for HIV among Job Corps Entrants in PA

BRIEF DESCRIPTION OF PROJECT

- Background & Objectives: STI data on adolescent and young adults suggest much higher incidence of STIs among this younger population compared to older age groups. In areas with higher prevalence of HIV, higher incidence of STIs may suggest a greater likelihood of HIV transmission. Routine HIV/AIDS surveillance data on this population suggests that this population has low HIV testing rates, HIV/AIDS diagnoses rates (underascertainment of HIV), hence the epidemic in this population may be underestimated by routine HIV/AIDS surveillance which depends on reports of new diagnoses.
- To supplement routine HIV/AIDS surveillance data, the PA Department of Health (HIV Epidemiology Investigation Section) aims to ascertain prevalence of HIV in the job corps entrants cohort by using data from mandatory annual intake screening for HIV among job corps entrants to conduct annual cross-sectional serosurveillance in this population in collaboration with the Job Corps program, interested academic institutions, and other collaborating partners.
- Uses of Study Findings: Data from this project will be used to allocate resources and direct HIV prevention and care services.
- Fellowship Core Competencies to be Fulfilled:
    i. Surveillance Activity: This project is one of the surveillance projects that the fellow will participate in;

ii. Epidemiology Methods: Most of the Epidemiology methods competencies can be fulfilled by this project;
iii. Communication: A surveillance report will be generated from this project, graphics representation of data; and oral/poster presentation and/or manuscript will be subject to peer-review in professional conference/journals;
iv. More specific time-phased details are outlined in the table at the end of this document.

Activities completed on project:

1. **Developing project plan with action steps to be used to recruit academic partners to collaborate with on project implementation, i.e. interns/fellows (and their preceptors) in schools of medicine and public health who need research projects to fulfill academic research curriculum requirements.**

D. TITLE OF PROJECT: **Supplemental Public Health Surveillance/Monitoring and Evaluation of Public Health interventions for HIV, STIs, and Viral Hepatitis in Special Populations**: Evaluation of a) effectiveness of Voluntary Counseling and Testing (VCT) and partner counseling and referral services (PCRS), b) utility of social network/outbreak investigation and early detection of HIV and related Viral Hepatitis and STIs in prevention of HIV transmission, and c) Pilot implementation of VCT using rapid testing and PCRS in a transient population

BRIEF DESCRIPTION OF PROJECT

- Background: The effectiveness of public, private and public-private approaches for conducting PCRS has not been evaluated; hence, the PA Department of Health issued interim guidelines with the intent to evaluate these approaches before providing definitive guidance on one approach or another. In addition, the effectiveness of dedicated HIV Voluntary Counseling and Testing (VCT) sites' PCRS vs. integrated sites such as sexually transmitted disease (STD) clinics in terms of yield of partners elicited and infected partners identified has not been systematically studied, hence this project will also evaluate whether there are indeed any differences by site type and client characteristics and which of these factors may account for differences which may need to be addressed in the poorer performing sites. Further, two standards of prevention appear to be in effect with regards to outbreak investigations of HIV and STDs: routine classic outbreak investigations of HIV (with documentation of linkage between partners' social networks) and "critical-time referrals to interventions"(CTRI) to prevent progression of outbreaks seem to be conducted only by STD clinics with integrated VCT for HIV in instances of HIV comorbidity with other STDs while the same is not extended to HIV positives and their partners who receive services from non-STD VCT sites. The lack of outbreak detection functionality in VCT-PCRS programs makes it impossible to detect and interrupt HIV outbreaks or determine whether increases in positivity rates might be due to outbreaks, hence the need to evaluate the utility and effectiveness of outbreak detection functionality in these settings. The proposed PCRS monitoring and evaluation project will therefore determine the utility and effectiveness of these disparate

approaches in order to determine what the most appropriate approach(es) may be. Further, an associated project included in this project's description entails evaluation of pilot implementation of rapid testing in a transient population.

- Objectives: The overall objectives of the project are to monitor and evaluate:
    i. The effectiveness of the main site types and approaches [conducted by public(direct), private and public-private(indirect) providers] in i) conducting PCRS in accordance with CDC guidelines; not only with regards to eliciting partners/contacts but also in locating and identifying new HIV positive individuals and their social networks, and in turn referring them to voluntary counseling and testing, and prevention and care; and ii) achieving high levels of patient acceptability;
    ii. The utility and effectiveness of partner/contact/social network investigations (with documentation of linkage between partners' social networks) conducted in various site types and approaches [conducted by public(direct), private and public-private(indirect) providers] to facilitate i) real-time outbreak investigations of HIV, STIs, Viral Hepatitis(Hep C), Tuberculosis, and other related diseases, and ii) "critical-time referral to interventions"(CTRI) to prevent progression of outbreaks;
    iii. The implementation of a comprehensive critical-time intervention protocol for case review and linkage to prevention and care services of persons living with HIV/AIDS (PLWH/A) who have unmet needs for primary medical care who are reported to each local health Department (through PA-NEDSS) or enrolled in Medicaid and ADAP (in DPW).
    iv. Pilot implementation of VCT using rapid testing and PCRS in a transient population;
- Uses of Study Findings: Data from this project will be used to allocate resources and direct HIV prevention and care services.
- Fellowship Core Competencies to be Fulfilled:
    i. This project entails conducting supplemental Public Health Surveillance/ Monitoring and Evaluation of Public Health interventions for HIV, STIs, and Viral Hepatitis in Special Populations;
    ii. Epidemiology Methods: Most of the Epidemiology methods competencies can be fulfilled by this project;
    iii. Communication: A field investigation report based on social network/outbreak investigations and early disease detection activities will be generated from this project. Graphics representation of data; and oral/poster presentation and/or manuscript will be subject to peer-review in professional conference/journals;
    iv. More specific time-phased details are outlined in the table at the end of this document.

Activities completed on project:

1. **Held several meetings with Division of HIV/AIDS Prevention staff to discuss PCRS proposal and protocol development.**
2. **Observed PCRS visit with acute HIV case and documented risk factors, linkage between partners' social network, and other information relevant to CTRI.**

3. **Drafted document of "information needed" for acute outbreak investigation. (To be discussed with Division of HIV Prevention Manager and HIV field staff.)**
4. **Developed action steps and a timeline of activities being undertaken in collaboration with field and laboratory investigators to advance the contact investigation (partners/social network investigation).**

E. TITLE OF PROJECT: **Supplemental Public Health Surveillance/Monitoring and Evaluation of Public Health interventions for HIV, STIs, and Viral Hepatitis in Special Populations**: Monitoring of perinatal exposure to HIV and evaluation of implementation of CDC guidelines for perinatal HIV prevention in PA

BRIEF DESCRIPTION OF PROJECT

- Background: Monitoring of perinatal exposure as part of HIV reporting is still in early stages of implementation, and the implementation of CDC guidelines on perinatal prevention is currently not being monitored in PA.
- Objectives: The overall objective of this project is to develop a comprehensive coordinated perinatal monitoring, evaluation, and perinatal prevention intervention program in PA outside Philadelphia by better coordinating and using existing services and resources. More specifically, the project's objectives are as follows:
    i. *Monitoring and Evaluation*: To conduct comprehensive measurement/monitoring of perinatal exposure to HIV and measure progress on service delivery/prenatal testing of all women who deliver livebirths: i.e. monitoring the following indicators: a) rates of HIV prenatal tests offered, b) rates of HIV prenatal tests conducted during pregnancy (regardless of outcome of test), and c) rates of perinatal exposure to HIV among women delivering livebirths in PA outside Philadelphia.
    ii. *Perinatal Prevention Interventions*: To develop a comprehensive coordinated perinatal prevention intervention program in PA (outside Philadelphia) by better coordination of existing services and resources
- Uses of Study Findings: Data from this project will be used to allocate resources and direct HIV prevention and care services.
- Fellowship Core Competencies to be Fulfilled:
    i. Surveillance Activity: This project is one of the surveillance projects that the fellow will participate in;
    ii. Epidemiology Methods: Most of the Epidemiology methods competencies can be fulfilled by this project;
    iii. Communication: A surveillance report will be generated from this project, graphics representation of data; and oral/poster presentation and/or manuscript will be subject to peer-review in professional conference/journals;
    iv. More specific time-phased details are outlined in the table at the end of this plan of action.

Activities completed on project:

1. **Held several meetings with Division of HIV/AIDS Prevention staff to discuss perinatal HIV transmission proposal and protocol development.**
2. **Assisted mentor with epidemiologic support to the Division of HIV Prevention staff during CDC Project Officer visit and conference call with CDC consultant regarding perinatal HIV transmission efforts in Pennsylvania.**
3. **Developed project implementation plan (i.e. timeline with action steps) to aid collaboration with the Divisions of STD and HIV Prevention.**

F. TITLE OF PROJECT: **Supplemental Public Health Surveillance/Monitoring and Evaluation of Public Health interventions for HIV, STIs, and Viral Hepatitis in Special Populations**: HIV Medical Monitoring Project (MMP)

BRIEF DESCRIPTION OF PROJECT

- Background: State Health Departments are responsible for monitoring HIV risk-taking and health seeking behavior, HIV-related unmet needs for primary medical care, provision of treatment, adherence to treatment, and clinical outcomes in order to assess needs and barriers to prevention and care and their outcomes, and address unmet needs and adverse outcomes identified.
- Objectives: The Medical Monitoring Project (MMP) is a supplemental cross-sectional surveillance investigation on a nationally representative sample of persons reported as living with HIV ***and in care*** during the selected 4-month HIV care period of January 1st through April 31st, 2007. The primary objective of MMP is to gain a better understanding of health-related needs of people living with HIV and AIDS. Data collection will be done through the use of detailed medical chart abstractions and interviews. Data to be collected will include supplemental surveillance data on behavior, compliance, treatment, and clinical status to elucidate health-related disparities in HIV risk-taking and health seeking behavior, HIV-related unmet needs for primary medical care, provision of treatment, adherence to treatment, and clinical outcomes. The project is being conducted by the Pennsylvania Department of Health (PA DOH) in collaboration with the Centers for Disease Control and Prevention (CDC).
- Uses of Study Findings: Findings of this study will be used to allocate resources and direct HIV prevention and care services, i.e. target prevention and care services towards addressing risk factors identified.
- Fellowship Core Competencies to be Fulfilled:
    i. Surveillance Activity: This project is one of the surveillance projects that the fellow will participate in;
    ii. Epidemiology Methods: Most of the Epidemiology methods competencies can be fulfilled by this project;
    iii. Communication: A surveillance report will be generated from this project, graphics representation of data; and oral/poster presentation and/or manuscript will be subject to peer-review in professional conference/journals;
    iv. More specific time-phased details are outlined in the table at the end of this plan of action.

Activities completed on project:

1. **Participated in bi-weekly conference calls with CDC Project Officer.**
2. **Attended internet training courses regarding: (1) data collection, tracking, and transfer; and (2) facility and patient sampling techniques.**

2. SURVEILLANCE SYSTEM TO BE EVALUATED

TITLE OF PROJECT: **Consequences of reporting delays and the resulting incomplete reporting on HIV prevention and care services**

BRIEF DESCRIPTION OF PROJECT:

- Background: State Health Departments are responsible for estimating (and addressing) unmet needs (UN) for HIV-related primary medical care (HRPMC) among persons living with HIV/AIDS (PLWH/A), and therefore need to assess completeness of reporting/coverage, data elements (Teutsch & Churchill, 1994), and missed opportunities for federal funding and addressing UN-for-HRPMC.
- Objectives: The project will evaluate the usefulness of HIV/AIDS surveillance, Medicaid, ADAP and other data used to support HIV prevention and care funding allocations, with specific reference to: a) evaluation of surveillance performance attributes such as reporting delays, and completeness of reporting/coverage and data elements; b) the impact on estimation of morbidity and UN-for-HRPMC; c) amount of potential funding lost (APFL) from federal sources that would have been allocated to the state for prevention and care services; and d) missed opportunities for surveillance-based linkage to care and prevention for those with unmet needs for HIV-related primary medical care.
- Uses of Study Findings: Findings of this evaluation will be shared with surveillance, Medicaid, ADAP, Careware and other data sources to assist in improvement of data collection from these sources for future estimation of UN-for-HRPMC. APFL data from this project will also be used to recommend adjustment of allocations of resources within the state.
- Fellowship Core Competencies to be Fulfilled:
    i. Surveillance Activity: This project is one of the surveillance projects that the fellow will participate in;
    ii. Epidemiology Methods: Most of the Epidemiology methods competencies can be fulfilled by this project;
    iii. Communication: A surveillance report will be generated from this project, graphics representation of data; and oral/poster presentation and/or manuscript will be subject to peer-review in professional conference/journals;
    iv. More specific time-phased details are outlined in the table at the end of this plan of action.

Activities completed on project:

1. **Conducted completeness of coverage analyses, comparing HARS to the combined MA-ADAP database.**
2. **Determined unmet needs for HIV-related primary care (UN-for-HRPMC) among MA-ADAP enrollees.**

3. **Determined the likelihood that MA-ADAP enrollees with UN-for-HRPMC were already reported to HARS.**
4. **Submitted abstract of evaluation project to CSTE conference.**

3. ROLE IN BIOTERRORISM/PUBLIC HEALTH PREPAREDNESS AND RESPONSE

BRIEF DESCRIPTION OF ROLE:

Background & Activities**:** As demonstrated by the breakdown in continuity of critical services for large immunologically vulnerable populations such as HIV patients, the elderly and the very young, during the public health emergency created by hurricane Katrina, the special needs of such populations are not often well addressed in the development/implementation of public health preparedness plans. The fellow will participate in a review of the state bioterrorism/public health preparedness plan for potential need and capacity for protecting immunologically vulnerable populations such as HIV patients, the elderly and the very young. The review will be conducted with a view to generating recommendations for a) addressing the special needs of these vulnerable populations; and b) health risk communication directed to such special vulnerable populations, as these issues relate to the development and implementation of the Department's public health preparedness response plans. From the perspective of public health preparedness capacity to protect immunologically vulnerable populations such as HIV patients, the fellow will interact with an interdisciplinary public health preparedness team in order to gain an opportunity to investigate typical outbreaks which often occur during natural or man-made disasters, i.e. participate in at least one (1) rapid outbreak investigation of food or water-borne illness in an immunologically vulnerable population such as HIV patients, the elderly and the very young. In addition, as part of the project to evaluate PCRS and social network/outbreak investigation/early detection described under surveillance/monitoring and evaluation projects, the fellow will also participate in HIV field investigations and outbreak investigations of HIV and related conditions [e.g. STDs, Viral Hepatitis (primarily Hepatitis C), and Tuberculosis].

Fellowship Core Competencies to be Fulfilled:

i. Surveillance Activity: This project is one of the surveillance projects that the fellow will participate in;
ii. Epidemiology Methods: Most of the Epidemiology methods competencies can be fulfilled by this project;
iii. Communication: A review report (based on a review of the PA public health preparedness plan) and a field investigation report (based on an outbreak investigation) will be generated from this project. Health risk communication issues will also be addressed in the review and recommendations arising from this project.
iv. More specific time-phased details are outlined in the table at the end of this plan of action.

Activities completed on project:

1. **Reviewed the Pennsylvania Pandemic Flu Plan.**
2. **Developed project implementation plan detailing the review, critique and identification of pandemic flu plan elements of relevance to public health**

preparedness, and recommendations to support the needs of immunologically vulnerable segments of the population such as HIV infected, the elderly and the very young.

4. MAJOR PROJECT (including timeline)

TITLE OF MAJOR PROJECT: **Supplemental Public Health Surveillance/Monitoring and Evaluation of Public Health interventions for HIV, STIs, and Viral Hepatitis in Special Populations**: Monitoring and evaluation of HRSA-defined unmet needs (UN) for HIV-related primary medical care (HRPMC) in PA

BRIEF DESCRIPTION OF MAJOR PROJECT

- Background & Objectives: State Health Departments are responsible for estimating, assessing and addressing UN-for-HRPMC among persons living with HIV/AIDS (PLWH/A). Previous estimates of UN-for-HRPMC in PA indicate that a substantial proportion (at least 1/3) of PLWH/A who know their HIV status are not receiving ongoing care and prevention, i.e. ***not in care***.
- To estimate, assess and address UN-for-HRPMC among PLWH/A "not in care", this project will be conducted in 3 steps as defined by HRSA:
    i. Step 1: Update of Estimates of Unmet Needs: In phase I & II of the Unmet Needs Project (UNP), unmet needs/"not in care" status will be monitored and estimates updated biennially using indicators of linkage to care/medical evaluation (CD4 T-lymphocytes counts or viral load results) or HIV antiretroviral prescriptions. Data from Medicaid, the AIDS drug assistance program(ADAP) and from several sentinel clinical sites (Ryan White Care Act, RWCA-funded Title III comprehensive HIV care clinics) will be used to update estimates of unmet needs in 2007(based on 2005 care pattern data). During 2007, recommendation and revision of HIV reporting regulations will be undertaken to assure expanded reporting of all CD4 T-lymphocytes counts or viral load results needed for estimating unmet needs, and HIV reporting/surveillance data will be used in the next biennial estimate due 2009(using 2008 care pattern data);
    ii. Step 2: Assessment of Unmet Needs: In Phase III of the UNP, two "assessment" projects are planned:
        a) An annual cross-sectional statewide survey of HIV care and prevention service providers to catalog inventory of prevention and care services, incl. expanded provider profiles of capacity/ competence to provide services; and
        b) A biennial cross-sectional statewide survey of needs and barriers to care and prevention for PLWH/A and at risk [w/focus on those w/unmet needs & coordinate w/MMP(focuses on those in care or w/met needs)];
    iii. Step 3: Addressing Unmet Needs: In Phase IV, the project will also conduct small scale demonstration projects (proof of principle) to evaluate models for addressing UN-for-HRPMC by using Medicaid, ADAP and

surveillance data to link PLWH/A who have unmet needs to care and prevention.

- Uses of Study Findings: Data from this project will be used to allocate resources and direct HIV prevention and care services.

Activities completed on project:

1. **Project administration: participated in conference calls with HRSA (and Mosaica consultants), developed summary project outline, developed detailed timeline for unmet needs estimation (Phase IIA) – SEE BELOW (Page 14).**
2. **Unmet needs survey preparation: set up listservs, drafted welcome letters, drafted letter requesting questionnaires from coalitions.**
3. **Survey development: conceptualized modules for questionnaire, compiled questions from MMP, SHAS, HRSA Needs Assessment tools, and YRBS.**
4. **Work with subcontractor (UPitt): drafted work statement for activities related to the statewide survey of unmet needs and barriers to HIV prevention and care (Phase IIIC), provided consultation regarding unmet needs literature review, reviewed summary of findings from past focus groups conducted by UPitt.**
5. **Data collection: drafted memos requesting data from HIV Surveillance and Department of Public Welfare.**

OVERVIEW OF TIMELINE OF PHASES I - IV: Overview of Implementation Time & Phases for Estimation of Unmet Needs for HIV-related Primary Medical Care (Phase I. & II.), Assessment of Needs/Community Services Assessment [HIV Care & Prevention Service Needs, Gaps and Barriers] (Phase III.), and Development, Implementation, and Evaluation of Intervention Protocols for Addressing Unmet Needs for HIV-related Primary Medical Care (Phase IV)

(I. & II.) Estimation of Unmet Needs for HIV-related Primary Medical Care, (III.) Assessment of Needs [HIV Care (& Prevention) Service Needs, Gaps and Barriers], and (IV.) Development, Implementation, and Evaluation of Intervention Protocols for Addressing Unmet Needs for HIV-related Primary Medical Care					
Implementation Activity	**Estimation of Unmet Needs**		**Assessment of Unmet Needs/Community Services Assessment**		**Addressing Unmet Needs**
Implementation Phase	**Phase I** (HRSA Framework Option 4) **Unmet Needs Estimation using HIV reporting data**	**Phase II(A, B, & C)** (HRSA Framework Option 2): **Unmet Needs Estimation using alternative data sources**	**Phase III(A, B): Survey of prevention & care providers (Inventory) => "Service Gap Analyses"**	**Phase III (C): Survey of sub-cohorts of PLWH/A with unmet needs vs. met needs=> "Needs Assessment"**	**Phase IV: Evaluation of Models/Intervention Protocols/Strategies for Addressing Unmet Needs**
Overlapping Timelines:	2004(prelim); 2007(update)	2005-6(IIA & IIB); 2006(IIC)	2006-2007	2006-2008	2006-2008
Overall Objectives & Main Deliverables:	→ **Phases I: Preliminary Estimation of Unmet Needs** for HIV-related Primary Medical Care (based on early data collection from 2003 HIV case reporting system) - **completed**. → **Updated estimates of unmet needs** from both privately and publicly-funded care using HIV reporting data from the dynamic cohort of HIV/AIDS surveillance cases diagnosed and **2008 care pattern data may be available by June 30, 2009**. This expected delay is due to the need to revise HIV reporting regulations to include all viral load and CD4 T-lymphocyte counts and the longer reporting delays of the new HIV reporting system that is in development. → **Overall Timeline:** a) The first biennial update of unmet needs estimates from the HIV reporting system based on **2008 care pattern data is expected on 8/2009;**	→ **Phases IIA - IIB: Interim Estimation of Unmet Needs** for HIV-related Primary Medical Care (based on 2003 public data from Medicaid and SPBP/ADAP):- Completed 6/2006; → **Phase IIC: Next improved estimates of 2005 status** of unmet needs, including both public and private data; → **Overall Timeline:** a) **IIC**: Interim update estimates using data from both privately and publicly-funded care using HRSA framework Option 2 based on Medicaid and ADAP data and Title III sentinel sites are planned for the period 12/2006 – 12/2007. -2006 preliminary estimates of unmet needs among privately funded PLWH/A **due 11/2006(completed)**; -Planned new substantive update based on 2005 care pattern data is **due 12/2007;**	→ **Phases IIIA-IIIB: Assessment of Unmet Needs for Services:** → →**Phase IIIA: Prelim service gap analyses:** due 11/2006; → →**Phase IIIB: Survey of HIV Care (& Prevention) Service Providers & Gap Analyses;** → **Overall Timeline:** a) Annual cross-sectional **statewide** survey of HIV care and prevention service providers to catalog ***inventory*** of prevention and care services, incl. expanded provider profiles of capacity/ competence to provide services; **b)** Geospatial/mapping analyses of PLWH/A w unmet needs (Phase II) vs. services inventory (Phase IIIb); **analyses completion due 8/2007**	→ **Phase IIIC: Assessment of Unmet Needs & Barriers:** → **Survey of HIV Care (& Prevention) Needs & Barriers for PLWH/A**: Biennial Cross-sectional **statewide** survey of needs and barriers to care and prevention for PLWH/A and at risk [w/focus on those w/unmet needs & coordinate w/MMP(focuses on those in care or w/met needs)]; → **Overall Timeline for Key Deliverables:** **a)** Survey of potential research collaboration partners(10/06); **b)** Specific objectives & questionnaire consensus development (12/2006 – 3/2007); **c)** Sampling scheme development (12/2006 – 5/2007); **d)** Piloting of survey approaches/ strategies for reaching PLWH/A with unmet needs; (1/2007 – 5/2007); **e)** Survey implementation (7/2007 – 12/2007); **f)** Survey analyses, report writing and dissemination (12/2007 – 3/2008); **completion due 6/2008**	→ **Phase IV:** Demonstration projects (proof of principle) for development, evaluation of pilot implementation and dissemination of effective care service database-driven models (**unmet needs intervention protocols for piloting various approaches/strategies**) for **addressing unmet needs through continuous monitoring and linkage to care services of all PLWH/A with unmet needs in HIV reporting and Medicaid-ADAP(SPBP)-enrollment databases**. → **Overall Timeline:** **a)** Protocol Development: 1/2007-6/2007; **b)** Year 1 Implementation and baseline analyses 7/2007-3/2008; **completion due 6/2008**

PROJECT TIMELINE

Unmet Needs Estimation Using Alternative Data Sources: Phase IIA

Activity	Data Source	Time Frame for Completion
Data Acquisition		
Draft letters requesting data from HIV Surveillance, DPW, Vital Statistics, HIV Care, and sentinel sites		2/15/07 – 2/23/07
Obtain a unified statewide datafile with a HARS-layout on all HARS-variables on all cases diagnosed through 12/31/2005, reported through 12/31/2006	HIV Surveillance	2/26/07 – 3/16/07
Obtain Medicaid HIV-related claims data for the period 1/1/2002 through 12/31/2006	DPW	2/26/07 – 3/16/07
Obtain SPBP/ADAP claims data for the period 1/1/2002 through 12/31/2006	DPW	2/26/07 – 3/16/07
**Obtain death registry data on deaths from 1/1/2001 through December 31, 2005, reported through 12/31/2006	Vital Statistics	2/26/07 – 3/23/07
Obtain Careware data for services provided Jan 1, through December 31, 2005	HIV Care	2/26/07 – 3/23/07
Obtain sentinel site Careware (or equivalent) data from Title III sites in eastern, central, and western PA for services provided Jan 1, through December 31, 2005	**Eastern PA**: LVH; Drexel **Central PA**: Hershey, Pinnacle **Western PA**: UPMC; Allegheny Gen.	3/01/07 – 4/30/07
Data Cleaning		
Create algorithms for data merges and draft statistical programs with dummy datasets		3/01/07 – 3/31/07
Combine MA and SPBP databases		3/01/07 – 3/31/07
Record linkage with HARS for AIDS diagnoses		3/01/07 – 3/31/07
Record linkage with Careware		3/01/07 – 3/31/07
Record linkage with death registry		3/01/07 – 3/31/07
Query MA-SPBP for three care pattern indicators: reimbursement claims for viral load (VL) testing or CD4 counts or pharmacy claims for ART		3/01/07 – 3/31/07
Calculations for Option 2 of the HRSA unmet needs framework		
Determine number of persons living with AIDS (PLWA), recent time period	HARS	3/19/07 – 4/13/07
Determine number of persons living with HIV (PLWH	HARS	3/19/07 – 4/13/07

non-AIDS aware), recent time period, local estimate using CDC methods		
Determine proportion (%) of PWLA who received the specified HIV primary medical care services in 12-month period	Medicaid and Title III sentinel sites	3/19/07 – 4/13/07
Determine proportion (%) of PWLH (aware, non-AIDS) who received the specified HIV primary medical care services in 12-month period	Medicaid and Title III sentinel sites	3/19/07 – 4/13/07
Determine proportion (%) of PLWH or PLWA receiving HIV-related services and enrolled in MA and SPBP (ADAP) who had unmet need for primary medical care	MA+SPBP	3/19/07 – 4/13/07
Creation of Sampling Frame for Unmet Needs Assessment: Generate sample of PLWH in MA-SPBP enrollment with met and unmet needs in 2005		3/19/07 – 4/13/07
Secondary Analyses		
Geospatial mapping by county of residence		4/16/07 – 5/18/07
Stratification by:		
Sex/gender		4/16/07 – 4/30/07
Race/ethnicity		4/16/07 – 4/30/07
Current age group as of 2004		4/16/07 – 4/30/07
Urban vs. rural zipcode of residence		4/16/07 – 4/30/07
HIV/AIDS service coalition area		4/16/07 – 4/30/07
Multiple logistic regression		
Statewide univariate (unadjusted) Odds Ratios and 95% confidence intervals		4/16/07 – 5/18/07
Adjusted Odds Ratios and 95% confidence intervals		4/16/07 – 5/18/07

5. NATIONAL, STATE OR REGIONAL MEETING(S) TO BE ATTENDED

A. Meetings already attended:
   i. Annual Joint Conference of Pennsylvania Public Health Association & the Department of Health's Public Health Institute, Harrisburg, PA (9/21/06-9/22/06)
   ii. Pennsylvania Department of Health's Quarterly Community Epidemiology Meeting, Harrisburg, PA (11/1/06)
   iii. APHA 134th Annual Meeting, Boston, MA (11/4/06-11/7/06) – oral presentation
   iv. Statewide HIV-STD Intervention Joint Staff Meeting, State College, PA (11/8/06-11/9/06)

B. Future Meetings:
   i. Pennsylvania Department of Health's Spring 2007 Public Health Institute, State College, PA (5/21/07-5/25/07)
   ii. 2007 CSTE Annual Conference, Atlantic City, NJ (6/24/07-6/28/07)
   iii. Annual Joint Conference of Pennsylvania Public Health Association & the Department of Health's Public Health Institute, Philadelphia, PA (9/2007)
   iv. CDC HIV Prevention Conference, Atlanta, GA (12/2/07-12/5/07)

Activities since last progress report:

1. **Prepared conceptual topic proposal of supplemental study ("Geographic epidemiology of potential HIV sexual transmission in Pennsylvania") to submit to the CDC HIV Prevention Conference. Proposal is currently being converted into an abstract for submission to conference.**

6. OTHER ACTIVITIES

A. TITLE OF ACTIVITY: **Consulting Service for HIV Prevention & Care Planning: Applied Epidemiology Consulting and Data Requests**

BRIEF DESCRIPTION OF ACTIVITY:

Background: The applied Epidemiology consulting service for planning entails coordinating and providing collaborative Epidemiology support for HIV, STD, TB & Viral Hepatitis prevention and care program planning, development, implementation, service delivery/utilization monitoring, outcome evaluation and capacity development.

- **Epidemiology consulting for prevention and care program planning (incl. policy development and resource distribution) is provided through**:
  - **Epidemiology consulting for planning**: Providing consultation for use of Epidemiologic data and methods in statewide CDC- and State-funded prevention program planning and HRSA and State-funded care program planning (i.e. applied Epidemiology support for program plan development, federal grant applications, and intra-state resource distribution) and implementing partners at the regional service area consortia, county and municipal health departments, and district health services.
    - Serving as assistant 'Epidemiologist in attendance' at monthly meetings of Pennsylvania's HIV Prevention Community Planning Group and HIV Care Planning Council;

- Supporting special planning related projects such as Prioritization of Prevention Target Populations and resource allocation;

- **Epidemiologic studies which entail biostatistical analyses of a wide array of relevant surveillance data, interpretation and translation of findings into relevant public health policy, plans, practice and services. In particular, this activity focuses on**:
  - **Designing epidemiologic studies and performing biostatistical analyses of routinely collected public health surveillance data** on trends of incidence and prevalence of disease, behavioral risk for infection, patterns of prevention and treatment/care service delivery and referrals, and evaluating prevention and treatment outcomes (incl. treatment failure/adverse outcomes of treatment such as drug resistance). To assure relevance of the data collected to end-users in the planning, program implementation and service delivery partners, the analyses conducted include evaluation/validation analyses of data used and are done in coordination with public health intervention programs which utilize the data for planning and resource distribution, and with surveillance partner programs which collect these data for purposes of population-level monitoring of disease burden, outcomes and service delivery;
  - **Interpretation and translation of findings of analyses into public health policy, plans and practice** through publication and dissemination of research summaries. This service produces reference publications which serve as the scientific basis for evidence-based policy development, planning, resource distribution and targeting of prevention and care intervention activities throughout the state. Publications to be produced include:
    a) Biennial updates of the Integrated Epidemiologic Profile of HIV/AIDS in PA;
    b) Semi-annual supplements of the Integrated Epidemiologic Profile of HIV/AIDS in PA;
- **Specialized Data Requests**: The section responds to specialized data requests from statewide planning committees and Departmental intervention programs in need of specialized/custom analyses

<u>Activities since last progress report:</u>

1. **Served as assistant 'Epidemiologist in attendance' at monthly meetings of Pennsylvania's HIV Prevention Community Planning Group (9/20/06, 11/15/06, 1/17-18/07) and HIV Care Planning Council (11/14/06).**
2. **Responded to specialized data requests: (1) provided recommendations for use of alternative data for assessing population risk of HIV transmission; (2) determined the number of potential new SPBP enrollees if the Department of Welfare raises the annual income ceiling from $30,000 to $35,000.**
3. **Updated Powerpoint presentations for Integrated Roundtable Reviews at the upcoming Community HIV Prevention Planning Group meetings. Presentations review the epidemiology of HIV/AIDS among IDU, Heterosexual, MTCT, MSM**

and MSM-IDU risk groups in Pennsylvania, and identify potential gaps in available data, implications for prioritization of target populations, etc.

B. TITLE OF ACTIVITY: **Summary of Interdisciplinary Work**

BRIEF DESCRIPTION OF ACTIVITY:

Background: The section provides collaborative Epidemiology support for HIV, STD, TB & Viral Hepatitis prevention and care program planning, development, implementation, service delivery/utilization monitoring, outcome evaluation and capacity development. The very nature of work in the HIV/AIDS Epidemiology Investigation Section is interdisciplinary in scope and implementation model.

- **Outbreak investigations**: As described in the Section on PCRS, the fellow will interact with and participate in HIV and STI field investigations, specifically learning about the unique outbreak investigations of HIV, STI and related conditions as described earlier in the previous section for the PCRS project. As described in the section on public health preparedness/bioterrorism, the fellow will also participate in at least one (1) outbreak investigation for food- or water-borne diseases in collaboration with the General Infectious Diseases Investigation Section.
- **Evaluation of surveillance**: As described under the section on surveillance activities, the fellow will participate in evaluations of completeness of coverage, timeliness, completeness and accuracy of data elements (i.e. accuracy of field surveillance investigation of case reports through coordinating gold standard reabstractions and comparison of chart abstraction data from case surveillance and chart abstraction data from the MMP supplemental surveillance project), etc.
- **Cross-program work between applied HIV Epidemiology & Public Health interventions:** using HIV, STI, Viral Hepatitis (Hep C), and TB Surveillance, Medicaid, ADAP, Careware and other Public Health Intervention data. To develop strategies for effective linkage to prevention and care services for persons living with HIV who are not in care. In addition the program also uses a wide array of surveillance data from the above-referenced programs in various aspects of Epidemiology support for HIV/AIDS prevention and care program planning, implementation, outcome evaluation, service monitoring;
- **Other interdisciplinary work:** This will be facilitated by the provision for 10% release time for rotations through public health grand-rounds, seminar and tutorial series on other HIV, STI, Hepatitis (Hep C), TB and other related topics/program areas. Through this process, the fellow will be exposed to a broad range of applied public health topics in other related program areas such as infectious disease outbreak investigations on STIs, TB, (incl. some waterborne and food-borne diseases); HIV-related substance use: assessing the potential impact of the PA fentanyl drug use outbreak on HIV occurrence in PA; and HIV-related chronic disease programs such as Cancer. Networking opportunities at the Penn State University College of Medicine at Hershey Medical Center (only 10 miles from Harrisburg city center) include a stimulating academic Health Sciences research seminar series.

Activities since last progress report:

1. **Updated graphs charting trends in incidence of gonorrhea and syphilis by year of diagnosis, sex, age group and county (using SPSS and Excel).**
2. **Prepared 2005 STD data for analyses of differences in incidence of gonorrhea by sex and age group according to screening type: arrayed all cases (using SAS); filtered out gonorrhea cases, determined age, and created age groups (using SPSS); conducted preliminary analyses (using SAS and SPSS).**

C. TITLE OF ACTIVITY: **Non-service Applied Epidemiology Training**

BRIEF DESCRIPTION OF ACTIVITY:
Background: A substantial amount of non-service training is planned in 2 categories:
I. Basic epidemiology training offered to Department of Health's HIV-related public health intervention programs' implementing partners

Activities since last progress report:

1) **Prepared updated slide series for the Department of Health's Spring Public Health Institute (PHI) course on unmet needs estimation.**
2) **Revised pre/post-test questionnaire to evaluate knowledge and skills development of course attendees (to be presented at PHI on 5/24/07).**

II. Advanced applied epidemiology training programs offered to Dept of Health staff, associates and fellows; these activities supplement in-service applied Epidemiology training activities for the fellow. Avenues for non-service Applied Epidemiology Training sponsored by the host health agency and collaborating institutions that the fellow will participate in include:

NOTE: Activities since the last progress report (i.e., Plan of Action on December 5, 2006) are shown with dates in blue.

1. **Epidemiology, Biostatistics and Technical Tutorial series** (selected methods and technical issues in applied Epidemiology):
    a. Introduction to data security and confidentiality (9/5/06-9/8/06)
    b. Introduction to Cognos General Cube (New User Training) for extraction of data from the Medicaid data warehouse (10/5/06-10/6/06)
    c. Introduction to accessing and analyzing HIV/AIDS surveillance data in SAS & SPSS (11/3/2006);
    d. Applied Epidemiology Tutorial on Arrays using SAS software: Creating a Single Observation from Multiple Records (12/22/06);
    e. Additional bi-weekly tutorials to be determined as needed
2. **Applied HIV/Infectious Disease Epidemiology Seminar series** (General applied Epidemiology seminars; seminars on case studies on clinical public health management of conditions of public health importance)
    a. Weekly attendance at HIV and Related Infectious Disease Grand Rounds (case studies on clinical public health management of conditions of public health importance) at the Penn State Medical Center in Hershey, PA

b. Twice-yearly PA-DOH's Public Health Institute Applied HIV Epidemiology Track (9/21–9/22/06)
c. Quarterly infectious disease & community health seminars (11/1/06):
    i. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings (Comparison of the revised CDC Recommendations and Pennsylvania Act 148 which governs HIV testing and confidentiality in the state)
    ii. National outbreak of E.Coli O157:H7 associated with fresh spinach
    iii. Mycobacterium chelonae/abscessus outbreak investigation
    iv. Avian Influenza Pandemic Committee discussion
    v. Overview of HIV Incidence Surveillance Project (ISP) and Variant, Atypical, and Resistant HIV Surveillance (VARHS) Project
d. Annual retreat of STD field investigation staff (11/8–11/9/06):
    i. STD disease trends
    ii. Interim Guidelines for PCRS (Partner Counseling and Referral Services) in the private sector
    iii. Epidemiology of HIV/AIDS in Pennsylvania (featuring HIV-STD synergy perspectives);
    iv. PCRS Activities Form revision (overview and discussion with field staff)
    v. STD Performance Measures and HIV Program Performance Indicators
    vi. Using the Internet for partner services
    vii. Syphilis Elimination overview
    viii. STD/HIV National Electronic Disease Surveillance System (NEDSS) Data Sharing Initiative
e. Additional monthly seminars to be determined

3. **Weekly HIV Curriculum and Public Health Research Seminar Series in collaboration with Penn State College of Medicine, PSCOM** (a Woodward-endowment funded collaborative program of the Division of Infectious Diseases & Epidemiology, Dept of Medicine, PSCOM, and the HIV Epidemiology Investigation Section at PA Dept of Health):
    a. The Clinical Presentation of HIV (2/5/07)
    b. Applied HIV/AIDS Epidemiology in PA: Avenues for collaboration on Applied HIV /AIDS Epidemiology projects at the PA Dept of Health (2/5/07)
    c. Antiretroviral Therapy (2/12/07)
    d. Execution of a successful HIV-related research project: From conceptualization to publication (2/12/07)
    e. Literature Review in preparation for HIV Clinical and Public Health Research (2/19/07)
4. **Bureau of Epidemiology Brown Bag Seminar Series**
    a. Indigenous health in Australia, New Zealand, and the Pacific (1/23/07)

b. Empirical Evidence for the Effect of Airline Travel on Inter-Regional Influenza Spread in the United States (2/13/07)

5. **Applied HIV (& related disease) Epidemiology Journal Club:** (to be scheduled)
6. Monthly meetings of Pennsylvania's HIV Prevention Community Planning Group and HIV Care Planning Council

D. TITLE OF ACTIVITY: **Other Activities**

BRIEF DESCRIPTION OF ACTIVITIES:

a. Plan for assumption of increasing levels of responsibility over the duration of the fellowship
   i. Assist in the preparation of a competitive request for application (RFA) to the PA Department of Education for re-instatement of YRBS
   ii. Progressively assume responsibility for coordination of activities on major project assigned
   iii. Progressively assume responsibility for developing course content and conducting training courses/workshops in Applied HIV Epidemiology Track at the Department of Health's Public Health Institute
   iv. In-service training to progressively carry out fellowship assignments within the framework of Department of Health/Bureau of Epidemiology performance standards
b. Plan for keeping primary and secondary mentors updated on fellowship progress
   i. Biweekly one-on-one meetings with primary mentor to discuss progress on projects and training opportunities
   ii. Regular communication with primary mentor through daily contact and emails
   iii. Monthly update meeting with primary and secondary mentors
c. Participation in appropriate host agency sponsored management training/courses: attendance of management and other relevant trainings offered by PA-DOH Bureau of Human Resources, Governor's Office of Admin, and other agencies
   i. Online certification: Continuity of Government (11/17/06)
   ii. Information Security Awareness Program (11/22/06)
   iii. Fundamentals of Supervision (12/12–12/14/2006)
   iv. Additional courses to be determined

Activities since last progress report:

1. **In-service training on Department of Health/Bureau of Epidemiology performance standards: The Governor's Code, workplace morale, confidential management of personnel information, and requesting unscheduled leave.**
2. **Completed PA-DOH online trainings: Healthy People 2010, bomb threats.**
3. **Conducted bi-weekly progress report meetings with primary mentor and monthly update meetings with primary and secondary mentors.**

TABULATION OF FULFILLMENT OF CORE COMPETENCIES AND TIMELINE

Depending on the specific assigned project, day-to-day applied epidemiology assignments on primary and supplemental projects may include the following range of applied Epidemiology and public health mentored experiences/skill development objectives.

The emphasis planned is custom tailored to meet the fellow's need for training.

PLEASE NOTE: Rows with yellow color coding represent core competencies identified in CSTE curriculum.
All other competencies are included for completeness and to demonstrate the full scope of training program opportunities offered by various projects that the fellow will participate in.

				MANNER FULFILLED: Current and planned projects which can support learning objective/skill development						
EPIDEMIOLOGIC METHODS / Core Competency Skill Development Objectives	**Emphasis planned on a Scale of 1 – 5** (with 5 being greatest emphasis)	**DATE ANTICI-PATED**	**Miscellaneous Projects, tutorials and seminars on selected topics ; journal club; conferences**	**Unmet Needs Estimation**	**Unmet Needs Assessment (Surveys; MMP; Focus Groups; Rapid Assessments)**	**Addressing Unmet Needs for prevention & care e.g. care program; MTCT prevention**	**Consulting for Planning & Resource Allocation: e.g. Prioritization Prevention Target Pops**	**Analysis Projects: Update of Integrated Epi Profile & Supplements**	**VCT, PCRS Pilot Projects (incl. outbreak investigation)**	**Surveillance of HIV and related conditions in special populations e.g. correctional settings ; youth ; etc**
A. Applied Epidemiology Research Methods: Design and Conduct of Epidemiologic Studies:										
○ Conduct population-level/public health problem review, literature review of relevant scientific knowledge and develop synopses of public health review;	1	Ongoing activity for each project	√	√	√	√	√	√	√	√
○ Outbreak Investigation: Conduct a social network/contact investigation or outbreak investigation of HIV and related conditions such as sexually transmitted diseases (STDs), Tuberculosis (TB), and Viral Hepatitis;	4	Fellow will be detailed to assist as outbreaks occur	√						**Outbrk 1: 1/16/07–?**	

				MANNER FULFILLED: Current and planned projects which can support learning objective/skill development						
EPIDEMIOLOGIC METHODS / Core Competency Skill Development Objectives	**Emphasis planned on a Scale of 1 – 5** (with 5 being greatest emphasis)	**DATE ANTICI-PATED**	**Miscellaneous Projects, tutorials and seminars on selected topics ; journal club; conferences**	**Unmet Needs Estimation**	**Unmet Needs Assessment (Surveys; MMP; Focus Groups; Rapid Assessments)**	**Addressing Unmet Needs for prevention & care e.g. care program; MTCT prevention**	**Consulting for Planning & Resource Allocation: e.g. Prioritization Prevention Target Pops**	**Analysis Projects: Update of Integrated Epi Profile & Supplements**	**VCT, PCRS Pilot Projects (incl. outbreak investigation)**	**Surveillance of HIV and related conditions in special populations e.g. correctional settings ; youth ; etc**
○ Conceptualize surveillance/ epidemiology research strategies, surveillance/epidemiology data needed or Epidemiologic/related research questions and hypotheses;	3	Activity to be done for each project as needed	√	√	√	√	√	√	√	Assist in conceptualizing and design of YRBS survey outside Philadelphia in conjunction with STI testing **(11/06–?)**
○ Design supplemental disease burden monitoring and evaluation studies [incl. supplemental HIV (and related disease) surveillance systems] to assess health problems;	3	Activity to be done for each project as needed	√	√	√	√	√		√	Assist in conducting annual cross-sectional serosurveillance for HIV, STIs, and Viral Hepatitis in collaboration with the PA Dept of Corrections **(2/07–?)**

				MANNER FULFILLED: Current and planned projects which can support learning objective/skill development						
EPIDEMIOLOGIC METHODS / Core Competency Skill Development Objectives	**Emphasis planned on a Scale of 1 – 5** (with 5 being greatest emphasis)	**DATE ANTICI-PATED**	**Miscellaneous Projects, tutorials and seminars on selected topics ; journal club; conferences**	**Unmet Needs Estimation**	**Unmet Needs Assessment (Surveys; MMP; Focus Groups; Rapid Assessments)**	**Addressing Unmet Needs for prevention & care e.g. care program; MTCT prevention**	**Consulting for Planning & Resource Allocation: e.g. Prioritization Prevention Target Pops**	**Analysis Projects: Update of Integrated Epi Profile & Supplements**	**VCT, PCRS Pilot Projects (incl. outbreak investigation)**	**Surveillance of HIV and related conditions in special populations e.g. correctional settings ; youth ; etc**
○ Evaluate surveillance systems in order to understand the limitations of surveillance data available for use to support HIV and related public health interventions;	4	Nov 2006-Mar 2007	√	Assist in conducting evaluation of completeness of coverage of HIV/AIDS reporting system data **(COMPLETE 12/5/06)** and its impact on unmet needs estimation				Assist in assessment of data sources for the PA Integrated Epidemiologic Profile **(11/06–12/07)**		√

				MANNER FULFILLED: Current and planned projects which can support learning objective/skill development						
EPIDEMIOLOGIC METHODS / Core Competency Skill Development Objectives	**Emphasis planned on a Scale of 1 – 5** (with 5 being greatest emphasis)	**DATE ANTICI-PATED**	**Miscellaneous Projects, tutorials and seminars on selected topics ; journal club; conferences**	**Unmet Needs Estimation**	**Unmet Needs Assessment (Surveys; MMP; Focus Groups; Rapid Assessments)**	**Addressing Unmet Needs for prevention & care e.g. care program; MTCT prevention**	**Consulting for Planning & Resource Allocation: e.g. Prioritization Prevention Target Pops**	**Analysis Projects: Update of Integrated Epi Profile & Supplements**	**VCT, PCRS Pilot Projects (incl. outbreak investigation)**	**Surveillance of HIV and related conditions in special populations e.g. correctional settings ; youth ; etc**
○ Design an Epidemiologic study to address/investigate a public health problem or evaluate the impact/effectiveness of public health interventions;	3	Jan – June 2007 Unmet Needs & YRBS Projects	√	√	Assist in assessing unmet needs for HIV-related primary care using data from Medicaid, ADAP, MMP, and other sources **(2/07–6/07)**	√	√	√	√	Assist in assessment of the likelihood of greater HIV and STI incidence among adolescent females (of school-going age) using YRBS and sero-surveillance data **(12/22/06–4/1/07)**
○ Understand the different basic types of Epidemiologic study designs, the advantages & limitations of each type;	2		√	√	√	√	√	√	√	√
○ Develop a surveillance procedures manual and/or a research study protocol/proposal/research plan;	2			√	√	√	√	Methods, Data sources	√	YRBS, prisons

				MANNER FULFILLED: Current and planned projects which can support learning objective/skill development						
EPIDEMIOLOGIC METHODS / Core Competency Skill Development Objectives	**Emphasis planned on a Scale of 1 – 5** (with 5 being greatest emphasis)	**DATE ANTICI-PATED**	**Miscellaneous Projects, tutorials and seminars on selected topics ; journal club; conferences**	**Unmet Needs Estimation**	**Unmet Needs Assessment (Surveys; MMP; Focus Groups; Rapid Assessments)**	**Addressing Unmet Needs for prevention & care e.g. care program; MTCT prevention**	**Consulting for Planning & Resource Allocation: e.g. Prioritization Prevention Target Pops**	**Analysis Projects: Update of Integrated Epi Profile & Supplements**	**VCT, PCRS Pilot Projects (incl. outbreak investigation)**	**Surveillance of HIV and related conditions in special populations e.g. correctional settings ; youth ; etc**
○ Design a questionnaire or other data collection instrument to address a health problem;	2	Dec. 2006 – May 2007 for Unmet Needs, PCRS & Bethesda projects	√		Assist in development of consolidated Unmet Needs survey instruments for statewide use **(10/06–6/07)**				Assist in design of instrument(s) to evaluate direct and indirect approaches to implementing PCRS according to CDC guidelines **(11/06–11/07)**	Assist in design of pilot survey for rapid testing initiative with transient population/ homeless **(11/06–4/07)**
○ Establish a collaborative research team and prepare an application for research funding;	3		√	√	√	√	√	√	√	√
○ Collect health data from appropriate sources (e.g., case interviews, medical records, vital statistics records, laboratory reports, or pathology reports);	4	Ongoing activity for each project		Obtain data from HIV/AIDS Surveillance, DPW, Vital Statistics **(2/15–3/16/07)**	√				√	Assist in design and analyses of Job Corps serosurveillance project **(2/07–12/07)**
○ Create a database for a health data set;										

				MANNER FULFILLED: Current and planned projects which can support learning objective/skill development						
EPIDEMIOLOGIC METHODS / Core Competency Skill Development Objectives	**Emphasis planned on a Scale of 1 – 5** (with 5 being greatest emphasis)	**DATE ANTICI-PATED**	**Miscellaneous Projects, tutorials and seminars on selected topics ; journal club; conferences**	**Unmet Needs Estimation**	**Unmet Needs Assessment (Surveys; MMP; Focus Groups; Rapid Assessments)**	**Addressing Unmet Needs for prevention & care e.g. care program; MTCT prevention**	**Consulting for Planning & Resource Allocation: e.g. Prioritization Prevention Target Pops**	**Analysis Projects: Update of Integrated Epi Profile & Supplements**	**VCT, PCRS Pilot Projects (incl. outbreak investigation)**	**Surveillance of HIV and related conditions in special populations e.g. correctional settings ; youth ; etc**
○ MS Access (non-web)	1	TBD/As needed	√							
○ Web databases using ASP & MS Access	4	TBD/As needed	√		√				√	√
○ Web databases using MySQL	5	TBD/As needed	√		√				√	√
○ Web databases using PHP	5	TBD/As needed	√		√				√	√
○ Web databases using CGI	5	TBD/As needed	√		√				√	√
○ Use statistical software to analyze and characterize Epidemiologic data		Next biennial update of Epi Profile and Unmet Needs Estimate analyses Jan - August 2007		Assist in conducting analyses of HIV/AIDS data sources for biennial update of estimate of unmet needs **(6/07–12/07)**				Assist in analyses of HIV/AIDS data sources for biennial update of PA Integrated Epidemiologic Profile **(1/07–12/07)**		
○ SAS	3		√	√	√	√	√	√	√	√
○ SPSS	2	TBD/As needed	√	√	√	√	√	√√√	√	√
○ STATA	5	TBD/As needed	√√							

				MANNER FULFILLED: Current and planned projects which can support learning objective/skill development						
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○ EpiInfo	4	TBD/As needed		√	√	√	√	√√√	√	√
○ Mapping/GIS Software (please specify): ArcView	2	January – June 2007	Assist intern with mapping of Harrisburg STD data **(11/06–4/07)**	√	Assist with geospatial mapping of service gap analyses data in assessment of unmet needs **(3/07–8/07)**	√	√	√√√ Assist in geospatial mapping analyses of data in update of Epi profile **(6/07–12/07)**	√	√
○ Record Linkage Software (please specify types of software you might be familiar with for doing record linkages and rate your need for training support):	5	TBD/As needed	√	√	√				√	√
○ Other (please specify): see last section for qualitative										
○ Basic, intermediate and advanced Epidemiology and Biostatistics methods often used in applied HIV Epidemiology studies:										
○ Hypothesis generation and conceptualization of epidemiologic studies in public health practice	2		√	√	√	√	√	√	√	√

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○ Epidemiologic study designs (please list/specify types of study designs you are familiar with and provide a rating for your need for training support on each study design you are familiar with: _____ _)	Pros Cohort – 3 Retro Cohort – 3 Case/control – 3 RCT – 3		√	√	√	√	√	√	√	√
○ Sampling in Epidemiologic studies	3		√	√	√√√	√	√		√	√
○ Outbreak investigation analyses	4		√						√√√	
○ Analyses of categorical/binary data (incl. comparison of proportions)	2/3			√	√	√	√	√	√	√
○ Life-table and Kaplan-Meir analyses,	5						√	√		√
○ Reliability/inter-rater agreement analyses,	4			√	√					√
○ Standardization analyses, etc,	5							√		
○ Multivariate/adjusted analyses (incl. linear and multiple regression,	3			√	√	√	√	√	√	√
○ Analyses of cohort and case-control data using multiple logistic regression, Cox proportional-hazards regression, etc)	4			√	√	√	√	√	√	√

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○ Analyses of HIV/infectious disease outbreak and social/partner network investigation data;	4								√	
○ Social network and cluster analyses;	4								√	
○ Time-series analyses,	5							√		
○ Path analyses	5				√				√	
○ Evaluation analyses of surveillance systems and screening programs (incl.,;)	4								√	√
○ Completeness of reporting analyses	4			√				√		√
○ Timeliness of reporting analyses	4			√				√		
○ Analyses of sensitivity and specificity of case definitions, matching algorithms and screening tests	4			√					√	√
○ Interpret surveillance data, including the ability to recognize the limitations of the data and potential sources of bias or confounding;	3	January – August 2007		Assist in assessment of impact of incomplete reporting on unmet needs estimation **(11/06–6/07)**				√		√

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○ Interpret Epidemiologic research data and findings from Epidemiologic studies, including the ability to recognize the limitations of the data and potential sources of bias or confounding;	2	TBD/As needed		√	√	√	√	Assist in interpretation of findings and narratives included in the PA Integrated Epidemiologic Profile **(6/07– 12/07)**	√	√

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○ Prepare and Publish Public Health Reports and disseminate findings to program planning and intervention implementation partners and recommend control measures, prevention programs, or other public health interventions based on Epidemiologic findings;	2	Assist in producing Semi-annual reports: June 2007; Dec 2007; June 2008		√	√	√	√	Assist in presenting findings from the PA Integrated Epidemiologic Profile to relevant stakeholders (i.e., Prevention Community Planning Group, Care Planning Council, etc) **(10/07–8/08)**	√	√

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○ Develop manuscripts for publication in peer-reviewed scientific journals, assist with peer review of scientific manuscripts for publication and also review published literature and develop reviews of relevant applied Epidemiology research findings;	2	Adapt semi-annual reports for peer review: June 2007; Dec 2007; June 2008	Participate in journal club					√ √ √		
○ Translate applied Epidemiologic research findings into applied public health intervention programs.	3			√	√	√ √ √	√	√ √ √	√	√
B. Ethics in Public Health Research and Practice:										
○ Distinguishing between public health research and public health practice.	2	Tutorials biweekly; Seminars Monthly	Attend Tutorial/ PHI							
○ Protection of human subjects and the role of an Institutional Review Board (IRB).	1	TBD/As needed	Participate in IRB review							
○ Understand the ethical implications of research study design and conduct;	2	Seminars Monthly	√							
○ Understand the ethical implications of intervention program implementation;	2	Seminars Monthly	√							

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○ Assist in ethics review of research and public health practice protocols;	2	TBD/As needed	Participate in IRB review							
C. Communication, Peer Review, Publication and Dissemination of Applied Epidemiology Findings:										
○ Publish and disseminate findings to program policy/decision-makers, planning and intervention implementation partners, and recommend control measures, prevention programs, or other public health interventions based on research findings. This will be achieved through the following experiences:										
○ Write a field investigation report (and/or write a surveillance study report) for peer review, publication, and dissemination.	3	Semi-annual reports: June 2007; Dec 2007; June 2008	Assist in outbreak investigation rotation with Infectious Disease Epidemiology Surveillance Section		√				√	√

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○ Make an oral presentation to audiences of varying levels of Epi training (including lay audiences) using appropriate media.	2	TBD/As needed	Assist with providing training through courses/ workshops to Dept partners at Public Health Institute **(5/21–25/07)**	√	√	√	√	√	√	√
○ Present data graphically and know how to use graphic software.										
▪ Excel Graphics	1	TBD/As needed	√					Assist in creating charts for posters and oral presentations, semi-annual reports, Epi profile, and its supplements **(10/07–8/08)**		STD charts **(COMPLETE 10/26/06)**

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▪ PowerPoint	1	TBD/As needed	PHI course on unmet needs **(5/24/07)**					√ √ √		
▪ Other (please specify):	1							√ √ √		
○ Health-Risk Communication: Understand the basics of health-risk communication and be able to communicate Epidemiologic findings in a manner that is easily understood by lay audiences (i.e. including those with limited scientific background).	2	Tutorials biweekly; Seminars Monthly	Participate in seminar to review public health preparedness /bioterrorism and health risk communication plan for vulnerable populations							
○ Understand the basic process for preparing a manuscript for peer-review and publication by participating in appropriate peer review activities. Specific fellows' training activities in this regard will include:										

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○ Reviewing published literature and develop manuscripts of summarized reviews of relevant applied Epidemiologic research findings;	1	Adapt semi-annual reports for peer review: June 2007; Dec 2007; June 2008	Participate in journal club	√	√	√	√	√√√	√	√
○ Developing research manuscripts for peer review and publication in scientific journals;	2	Adapt semi-annual reports for peer review: June 2007; Dec 2007; June 2008	Participate in journal club	√	√	√	√	√√√	√	√
○ Assisting with peer review of related scientific manuscripts for publication;	1	TBD/As needed	Participate in journal club							

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○ Complete one or more of the following capstone activities in partial fulfillment of fellowship requirements:										
○ Develop and publish a Public Health Report;	2	Semi-annual reports: June 2007; Dec 2007; June 2008	Participate in journal club	√	√	√	√	√√√	√	√
○ Present a poster for peer-review at a national/regional meeting;	1	To be done for conferences to be attended in 2007 & 2008	Participate in CSTE conference **(Abstract submitted 12/1/06; presentation 6/24/07)**	√	√	√	√	√√√	√	√

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○ Prepare an Epidemiologic research manuscript for peer-review and publication in a scientific journal;	2	Adapt semi-annual reports for peer review: June 2007; Dec 2007; June 2008	Participate in journal club	√	√	√	√	√√√	√	√
○ Prepare an HIV Epidemiology or interdisciplinary research grant proposal to initiate an essential real-life project in collaboration with a public health intervention program;	2		√ √ √	√	√	√	√	√√√	√	Assist in design and protocol development of YRBS, prisons studies
D. Translation of Epidemiologic/Scientific Findings into Public Health Policy & Practice:										
D1. Public Health Practice:										
○ Essential public health functions.	3	Tutorials biweekly; Seminars Monthly	Attend/participate in Tutorial/Seminar							

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○ Roles of local, state, and federal public health agencies.	3	Tutorials biweekly; Seminars Monthly	Attend/participate in Tutorial/Seminar							
○ The diversity of how epidemiology is used in different program areas.	2	Tutorials biweekly; Seminars Monthly	Attend/participate in Tutorial/Seminar							
○ Translate applied Epidemiologic research findings into applied public health intervention program implementation protocols.	3		√ √ √			√ √ √	√ √ √			
○ Integrate measurement of measurable outcome evaluation end-points into implementation of intervention programs.	2		√ √ √			√ √ √	√ √ √			
○ Cultural sensitivity issues.	2	Tutorials biweekly; Seminars Monthly	Attend/participate in tutorial/Seminar							
D2. Public Health Policy and Legal/Regulatory Issues:										
○ Pennsylvania Public Health laws;	4	Tutorials biweekly; Seminars Monthly	Participate in Seminar on PA Public Health Act of 1955							

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○ The Health Insurance Portability and Accountability Act of 1996 (HIPAA);	3	Tutorials biweekly; Seminars Monthly	Participate in Seminar on HIPAA & the Public Health exemption: implications for public health practice, surveillance & research							
○ Pennsylvania laws on confidentiality of HIV information, and reporting regulations;	4	Tutorials biweekly; Seminars Monthly	Participate in Seminar on PA HIV Confidentiality Act 148 (1990); and HIV/AIDS reporting regulations							
○ Develop applied public health Epidemiology briefs based on methods, practice and research literature reviews and present recommendations based on scientific findings to policy/decision-makers for use in public health policy, and legislation/regulation development;	4		√ √ √				√ √ √			√ √ √

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E. Qualitative Research Methods										
○ Conceptualize ethnographic research strategies and hypotheses	1		√		√	√			√	
○ Ethnographic sampling (respondent-driven, time-location, purposive)	2		√		√	√			√	
○ Design ethnographic study	2		√		√	√			√	
○ Understand types of ethnographic studies and their strengths/limits	1		√		√	√			√	
○ Develop ethnographic study protocol	2		√		√	√			√	
○ Design question guide	1		?		?	?			?	
○ Collect ethnographic data:										
○ Participant observation	1		√		√					
○ Interviews (key informant and participant)	1		√		√					
○ Focus groups	1				√					
○ Qualitative analysis:										
○ Grounded Theory	1		√							
○ Manifest and latent content analyses	1		√							
○ Spatial mapping	2			√	√			√		
○ Social network analysis	3		√					√	√	
○ Use of qualitative analysis software:										
○ Atlas ti	1		√		√				√	
○ QSR N6/NUDIST	1				√				√	
○ Evaluate validity and reliability in ethnographic research	1		√		√	√			√	
○ Conduct rapid assessment	2		√							
○ Community-based participatory research	3		√							

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○ Understand data triangulation and reporting of mixed methods research	1		√							
Other Skills:										
Cluster analysis (based on cluster sampling)	4		√		√			√		
Standardized weights	4		√		√			√		
Structural Equation Modeling/Hierarchical Linear Modeling	5		√					√		

Summary of overall fellowship experience to date:

Comments:

a. **Fellow comments: Several months were spent familiarizing myself with the PA-DOH and the work being conducted by the HIV Epidemiology Section. Steady progress is now being made towards meeting the majority of core competencies through a variety of interesting and challenging projects. I look forward to conducting advanced statistical analyses, presenting findings, and publishing articles on this work over the next 6-9 months. Dr. Muthambi has also made a great effort to set up opportunities for skill development through a seminar series and specialized tutorials. I am very satisfied with my fellowship experience to date.**

b. **Mentors comments: Dr. Ferraro is making commendable progress on completion of her applied Epidemiology training program requirements. She has shown enthusiasm to go beyond the requirements and exceed expectations. We are very pleased with the placement of Dr. Ferraro with our Department's Applied HIV Epidemiology Training Program.**

Fellow Signature: _Aimee Ferraro, PhD, MPH_____

Date: _February 28, 2007_____

Primary Mentor Signature: _Benjamin Muthambi, DrPH, MPH_____

Date: __February 28, 2007_____

Secondary Mentor Signature: _Joseph Pease, MS, MPH_____

Date: ___February 28, 2007_____