Community Assessment: HIV Prevention Need in Brighton, Massachusetts

Catherine Paciorkowski

College of Nursing & Health Services, University of Massachusetts Dartmouth

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Dr. Maryellen Brisbois, PhD, RN, APHN-BC

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Community Health Assessment

This community assessment examines HIV prevention needs within a hospital-affiliated infectious disease outpatient clinic located at Boston Medical Center-Brighton (BMC-Brighton) located in Brighton, Massachusetts, serving patients across Boston and Suffolk County. The clinic provides comprehensive HIV treatment and prevention services to adults at increased risk for HIV acquisition, including men who have sex with men (MSM), transgender and gender-diverse individuals, individuals with recent sexually transmitted infections (STIs), and persons affected by substance use disorders. Despite advances in antiretroviral therapy and the availability of highly effective pre-exposure prophylaxis (PrEP), new HIV infections persist in Massachusetts, particularly within racially and socioeconomically marginalized communities. The identified health need is insufficient PrEP initiation and persistence among eligible individuals. The proposed intervention is the implementation of a standardized Yeztugo (lenacapavir) twice-yearly injectable PrEP delivery pathway designed to improve equitable access, workflow consistency, and long-term prevention continuity.

The geographic community of interest is Brighton, a neighborhood within the City of Boston, Massachusetts, located in Suffolk County. Because the infectious disease clinic draws patients from across Boston and adjacent municipalities, Suffolk County level epidemiologic data are used to approximate the clinic's service population. The population of interest includes adults aged 18 years and older at increased risk for HIV acquisition, particularly MSM, transgender and gender-diverse individuals, individuals with recent bacterial STIs, and persons who inject drugs. Urban populations such as those in Suffolk County historically account for the highest concentration of HIV diagnoses in Massachusetts (Massachusetts Department of Public

Health [MDPH], 2024). Boston's estimated population is approximately 675,000 residents, and Suffolk County's population is approximately 800,000 (U.S. Census Bureau, 2023). Compared with Massachusetts overall (population ~7 million), Suffolk County has a younger median age and greater racial and ethnic diversity.

Table 1

Demographic Comparison: Suffolk County, Massachusetts, and United States

Characteristic	Suffolk County	Massachusetts	United States
Total Population	~800,000	~7 million	~333 million
Median Age	33 years	40 years	38 years
Age 15-44	~50%	~39%	~40%
White (Non-Hispanic)	45%	67%	59%
Black/African American	23%	9%	13%
Hispanic/Latino	20%	13%	19%
Bachelors Degree or Higher	48%	45%	35%
Median Household Income	~$81,000	~$96,000	~$74,000
Population Below Poverty Level	18%	10%	11%

Note. Data derived from U.S. Census Bureau (2023).

Suffolk County demonstrates higher racial diversity and higher poverty rates compared to the state overall. These demographic patterns are epidemiologically significant because HIV incidence is disproportionately concentrated among younger adults and racial/ethnic minority populations. Concentrated poverty, housing instability, and urban density further influence vulnerability to HIV transmission and reduced access to preventive care.

Prevalent Health Issues in Suffolk County

In Suffolk County, the leading causes of death include heart disease, cancer, unintentional injury (including overdose), stroke, and chronic lower respiratory disease (MDPH, 2024). Although HIV is no longer a leading cause of mortality due to effective treatment, it remains a significant chronic infectious disease requiring lifelong management.

In 2022, Massachusetts reported 403 new HIV diagnoses, corresponding to a statewide rate of approximately 5.8 cases per 100,000 residents (MDPH, 2024). Suffolk County reported a substantially higher rate of approximately 12–14 cases per 100,000 residents, more than double the statewide rate. Suffolk County accounts for approximately one-third of new HIV diagnoses annually in Massachusetts.

HIV disproportionately affects men (approximately 75% of new diagnoses) and MSM represent the majority of cases. Racial disparities remain pronounced. In Massachusetts, Black residents experience HIV diagnosis rates approximately four times higher than White residents, and Hispanic/Latino residents experience rates approximately three times higher than White residents (MDPH, 2024). These inequities are particularly evident in urban centers such as Boston.

Suffolk County consistently reports STI rates above the statewide average. Elevated STI rates are epidemiologically significant because bacterial STIs increase biological susceptibility to HIV acquisition. Young adults aged 20–34 years account for the highest STI rates, aligning with the demographic most impacted by new HIV diagnoses.

Despite the availability of oral PrEP for over a decade, prevention gaps remain. Nationally, approximately 31,800 new HIV infections occurred in 2022 (Centers for Disease Control and Prevention [CDC], 2024). Suffolk County's HIV diagnosis rate remains more than twice the statewide average, underscoring a continued prevention need.

The national PrEP-to-Need Ratio (PnR) was 15.6 in 2024 (AIDSVu, 2025). While Massachusetts performs better than many states, racial inequities in PrEP utilization persist. Black individuals account for 38% of new HIV diagnoses nationally but only 15% of PrEP users; Hispanic/Latino individuals account for 32% of diagnoses but only 18% of PrEP users (AIDSVu, 2025). Similar disparities are observed in Boston.

In Suffolk County, concentrated poverty (18% below poverty level), racial disparities, and high STI rates create compounding HIV vulnerability. Structural determinants including housing instability, substance use, incarceration history, and insurance disruptions impede sustained engagement in preventive care. Daily oral PrEP may present adherence challenges for individuals managing multiple social stressors.

The estimated lifetime cost of HIV treatment exceeds $1 million per individual (HIV+Hepatitis Policy Institute, 2022). Beyond financial burden, HIV infection entails lifelong medical management, potential stigma, and increased risk of comorbidities. Preventing even a small number of infections yields substantial cost savings and improves population health outcomes.

Oral PrEP remains highly effective when taken consistently and is recommended by the U.S. Preventive Services Task Force (USPSTF, 2023). However, adherence challenges reduce

population-level effectiveness. Injectable lenacapavir (Yeztugo), approved in 2025, demonstrated extremely high efficacy in Phase 3 trials, including zero HIV infections in certain study arms (Bekker et al., 2024; Kelley et al., 2025). The CDC issued formal clinical guidance recommending structured HIV testing and monitoring protocols for its use (Patel et al., 2025). The World Health Organization (2025) endorsed long-acting injectable PrEP as part of comprehensive HIV prevention strategies.

Several key informant discussions were conducted with infectious disease physicians, advanced practice providers, registered nurses, and clinic administrative leadership. Informants consistently identified workflow inconsistency as a barrier to optimal PrEP delivery. Providers reported variability in identifying PrEP-eligible patients during routine visits, particularly when visits focused on acute medical concerns. Nursing staff noted difficulty maintaining consistent laboratory monitoring intervals for oral PrEP patients and described missed follow-up appointments as a recurring issue. Providers also observed patient-reported pill fatigue, stigma concerns related to daily medication, and inconsistent adherence due to housing or transportation instability.

Several clinicians reported increased patient inquiry regarding long-acting injectable PrEP and expressed optimism about its potential to improve adherence. However, informants emphasized that without a standardized protocol including standing lab orders, defined nursing roles for injection administration, EHR reminders, and outcome tracking the introduction of injectable PrEP could increase operational complexity. Leadership expressed institutional support for developing measurable quality indicators, including time from eligibility identification to first injection, on time six-month injection adherence rate, six- and twelve-

month retention rates, proportion of patients with complete HIV testing per CDC guidelines. Collectively, key informant data reinforce the need for a structured, nurse-integrated Yeztugo pathway to ensure safe, equitable, and efficient implementation.

Suffolk County experiences HIV and STI rates significantly higher than the Massachusetts average, with persistent racial and socioeconomic disparities. Although Massachusetts demonstrates strong HIV treatment outcomes, prevention gaps remain evident, particularly in PrEP initiation and persistence. The financial and human costs of HIV infection are substantial, and evidence strongly supports the efficacy of twice-yearly injectable lenacapavir as well as the effectiveness of standardized delivery systems. Implementing a structured Yeztugo PrEP pathway within the BMC- Brighton infectious disease clinic represents an evidence-based, equity-focused strategy to reduce HIV transmission, improve prevention continuity, and advance statewide Ending the HIV Epidemic goals.

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