Evaluating the Impact of the Two-Tier Medical Case Management Model Among People Living with HIV in the City of Philadelphia

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Background: In 2019, the Philadelphia Department of Public Health transitioned from uniform medical case management (MCM) for people with HIV(PWH) to a two-tier strategy that places individuals into standard or comprehensive care. This change aimed to reduce burden on lower acuity patients and increase capacity for patients with greater needs. This study evaluates the impact of the two-tier MCM model on HIV care outcomes and service use using real world data pre- and post-implementation.

Methods: Data were obtained from CareWare, an electronic health record system for Ryan White (RW) HIV/AIDS Programs, and supplemented with eHARs, the CDC HIV surveillance system. The pre-implementation cohort completed intake April 25, 2017 - April 24, 2018; the post-implementation cohort April 25, 2023 - April 24, 2024. Both cohorts were followed for a year to assess receipt of HIV care, retention in HIV care, and viral suppression among 1) PWH, and 2) PWH not suppressed at intake. Population-averaged risk differences were estimated by mixed effects logistic regression with predictive margins. Time to viral suppression was compared between unsuppressed PWH pre- and post-implementation using Kaplan-Meier curves. Differences in RW service use were analyzed using mixed effects negative binomial regression with predictive margins. Clinical outcomes and service use were compared by fidelity to the 2-tier model (correct, incorrect, inconsistent, or no care) in the 2023 cohort, stratified by comprehensive or standard MCM.

Results: While receipt of care and viral suppression did not significantly change in the 2023 cohort, retention in care decreased 0.05% [-0.08, -0.01]. There were no significant changes in clinical outcomes among the group not suppressed at intake. Total and core service use significantly increased with 2-tier MCM (+16.3 [10.2, 22.5] total; +13.4 [8.3, 18.5] core) and decreased in the support subcategory (-5.4 [-10.7, -0.1]). Individuals assigned to standard who incorrectly received comprehensive had better clinical outcomes. Outcomes were worse for people who incorrectly received standard.

Conclusions: Two-tier MCM does not adversely affect clinical outcomes for most patients and may improve efficiency of service provision and increase capacity for patients with higher needs.