



## Closer to achieving Zero AIDS: a Croydon University best practice

HIV (human immunodeficiency virus) originated in humans in the 1930s through a transfer of blood while hunting chimpanzees. However, HIV and its late-stage disease, now known as AIDS (acquired immune deficiency syndrome), did not get recognized until nearly five decades later, in the 1980s. A notable uptick in the incidence rates of rare pneumonia and cancers, now often referred to as “AIDS-defining illnesses” (ADIs), precipitated the discovery of HIV and AIDS. The HIV epidemic is a worldwide plague; an estimated 39 million people have died from HIV-related infections and diseases since its discovery in 1981. Currently, the World Health Organization estimates that 37.7 million people are living with HIV (as of 2020), with approximately 1.5 million acquiring HIV infection that same year. Despite its continued presence and lethality, HIV infection is now a preventable and treatable disease, with highly effective treatments to prevent the infection with HIV from progressing to AIDS.

In 2013 UNAIDS was formed to end AIDS as a public health threat by 2030. One of the critical steps in its path towards its desired state of zero AIDS by 2030 was the goal UNAIDS 2020 90-90-90 Treatment for All target 2020. This goal targeted that 90% of all people living with HIV will know their HIV status, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy, and 90% of all people receiving antiretroviral therapy will



Team from Croydon University Hospital

have viral suppression. The United Kingdom achieved these goals by the 2020 deadline through much hard work and dedication. However, with 1 in 14 people living with HIV still unaware of their HIV status, much work remains to be done. Within the United Kingdom, Croydon has a high HIV prevalence rate of >5/1000 people, with 46% of new HIV infection diagnoses occurring late in the disease with the presentation of a CD4 count of <350 cells/mm<sup>3</sup> and often after the onset of ADIs. Individuals presenting with these findings are estimated to be infected with HIV for at least three to five years prior to diagnosis. Lack of early intervention post-infection is known to increase the likelihood of ill-health, premature death, and onward transmission of HIV.

To further combat the spread of HIV and the incidence of AIDS, the British HIV Association (BHIVA) recommends opt-out testing in the Emergency Department (ED); however, testing rates of <67% have limited the recommendation's effectiveness. Knowing the opportunity to improve their HIV care, with a solid understanding of BHIVA's recommendations, a multi-disciplinary team at Croydon University Hospital implemented an innovative opt-out HIV testing protocol in their ED in May of 2020. During the first 18 months post-implementation, their protocol has sustained an impressive 97% testing rate, establishing a new international gold standard.

Their efforts drew upon the background and knowledge of diverse healthcare professionals, enabling a unique protocol that closed many potential gaps in HIV care. The team included Information Technology (IT), led by Andrew Widdowson (Deputy Head of Clinical Applications, IT Department), The NHS Trust (Governing Body) led by Mike Bell (Chair of Croydon Health Services NHS Trust), Laboratory Medicine, led by Leslie Parry (Consultant Biochemist), HIV Medicine, led by Dr. Ian Cormack (Clinical Lead HIV Medicine), and Emergency Medicine, led by Dr. Sarah Horne (Emergency Medicine Consultant).

The innovative program has normalized opt-out HIV testing for all ED patients, removing social barriers on both the provider and patient sides. Another unique aspect of their protocol is that the HIV Medicine team automatically manages all non-negative HIV results. Throughout the process of additional testing to the diagnosis, non-negative patients receive thorough counseling on the benefits of knowing their HIV status and receive mental health support from an HIV mental health specialist. The HIV Medicine team receives a daily report of all non-negative HIV tests on patients seen in the ED the previous 24 hours. These reports include people who ultimately are not admitted to the hospital, enabling the opportunity to re-engage these patients in HIV care if they have lapsed and connect them to appropriate care if they are not previously known to be HIV positive.

The care initiative achieved some stellar metrics in the first 18 months post-implementation. These metrics include a reduction in the mortality rate of new HIV-positive diagnosed inpatients from 23% per year (2017-2019) to 0% from 2020-2021. Patients' safety improved by avoiding at least 78 cases of potential drug-drug interactions with antiretroviral medications, with

safe alternative treatments identified and used. In addition, 60% of patients identified and previously diagnosed as HIV positive but not compliant with treatment re-engaged in HIV care. Patients also realized improved wellness, with a precipitous drop in ADI at diagnosis from a baseline of 78% (2005-2010) to 4% (2020-2021). The experience also improved for patients screened for HIV, with Dr. Sarah Horne (Consultant in Emergency Medicine) noting, "Normalizing opt-out HIV testing avoids people feeling 'targeted' to have an HIV test. It avoids awkward discussion about specific sexual risks in a busy clinical environment and helps reduce stigma as everyone receives the same treatment. The HIV team manages all non-negative HIV results. One test on its own is not diagnostic, and the patient is invited for a combination of other tests to establish whether they are genuinely HIV positive." Reducing ADIs to 4% of new cases leads to improved satisfaction 33 for HIV clinicians. ADIs are dangerous for the patient and complex to manage, and most ADIs can have a good outcome if recognized and treated immediately. In addition, the program achieved 0% transmission of HIV infection to all identified partners using post and pre-exposure prophylaxis, which is another strong satisfier for clinician stakeholders.

The health system and administration also received benefits from the care initiative. Croydon University Hospital achieved the highest ever recorded opt-out HIV testing rate (97%) in the Emergency Department (ED) over 18 months. Twenty-five new HIV diagnoses occurred in the ED during the first year of testing, representing a threefold increase compared to the previous two years (2017-2019). The ED is now responsible for diagnosing more new HIV cases than all other HIV testing centers combined. These achievements enhance the health system's reputation as a healthcare leader. The system also experienced a reduction in length of stay for newly diagnosed HIV-positive patients from a baseline average of 35 days to an average of only 2.4 days. The readmission rate also improved from a baseline of 31% to 0%. Payors realized decreased healthcare costs at an estimated annual £326,000 in mitigated costs. The payors also avoided unnecessary care costs by avoiding at least three cases of unnecessary procedures, such as endoscopy. The avoidance of transmission to 7 known partners also resulted in the avoidance of aggregate costs estimated at greater than £2.24 million annually. Payors also realized lower costs with intensive care admissions for newly

diagnosed HIV-positive patients reduced from 17% to 0%. In recognition of the extraordinary achievement of significantly better healthcare achieved by their avant-garde and unified approach to addressing HIV care gaps, the team at Croydon University Hospital received the prestigious status as a top 3 winner in association with the 2021 UNIVANTS of Healthcare Excellence Awards program. For more details on this program and/or this best practice, visit [www.UnivantsHCE.com](http://www.UnivantsHCE.com).

#### THREE KEY TAKEAWAYS:

- The incidence of patients presenting with AIDS defining illness at diagnosis can nearly be eliminated with effective, comprehensive opt-out screening protocols in the Emergency Department.
- Early diagnosis, prior to advanced HIV disease status, can reduce AIDS associated mortality to 0%.
- Interdisciplinary knowledge sharing can enable the closing of potential care gaps in HIV medicine, dramatically improving healthcare provision in measurable ways.

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