

# Introduction of highly active antiretroviral treatment for HIV patients has halved new HIV diagnoses since 1996

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A Canadian study being presented at the forthcoming International AIDS Society (IAS) conference shows that the annual number of new HIV diagnoses has more than halved since the introduction of highly active antiretroviral therapy (HAART) for HIV patients in 1996. For every 100 patients placed on HAART, new HIV diagnoses fell by 3%. The Article is published Online First and written by Professor Julio Montaner, Director, British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC, Canada, and colleagues.

The authors undertook a population-based study of HAART coverage and HIV transmission in British Columbia, Canada—a Canadian Province with free access to HIV care. Data for number of HIV tests done and new HIV diagnoses were obtained from the British Columbia Centre for Disease Control. Data for viral load, CD4 cell count, and HAART use were extracted from the British Columbia Centre for Excellence in HIV/AIDS population-based registries.

The authors found that, between 1996 and 2009, the number of individuals actively receiving HAART increased from 837 to 5413 (547% increase), and the number of new HIV diagnoses fell from 702 to 338 per year (52% decrease). There was a strong association between increasing number of patients on HAART and decreasing number of new diagnoses. For every 100 additional individuals on HAART, the number of new HIV cases decreased by 3%. Mean HIV viral load

concentrations also decreased markedly and were linked to a decrease in new HIV cases.

New HIV diagnoses fell by 30% in 1996-2000, remained fairly stable in 2001-2003 (2% reduction), and decreased by 17% in 2004-2009. HAART use expanded substantially in 1996-2000 and 2004-09, and remained stable in 2001-03, driven by evolving contemporary treatment guidelines. The authors show that the decrease in new HIV diagnoses per year was driven to a large extent by the subset of individuals with documented history of injecting [drug use](#), in whom new HIV diagnoses per year decreased by nearly 50% during the study.

Rates of sexually transmitted infections and hepatitis C infection increased during the last 15 years of the study, which implies that these findings cannot be accounted for by decreasing sexual HIV risk behaviour.

The authors say: "Our results show a strong and significant association between increased HAART coverage, reduced community viral load, and decreased number of new HIV diagnoses per year in the population of a Canadian province."

The authors conclude: "Our results support the proposed secondary benefit of HAART used within existing medical guidelines to reduce [HIV transmission](#)..[and] provide a strong rationale for re-examination of the HIV prevention and treatment dichotomy, as has been strongly advocated by the UN Joint Programme on HIV/AIDS (UNAIDS) as part of a comprehensive combination prevention strategy. Furthermore, our results should serve to reenergise the G8's universal access pledge as a means to curb the effect of AIDS and the growth of the HIV pandemic."

Professor Montaner adds that this work and a previous paper on this subject by himself and colleagues have helped UNAIDS shape their

strategy on the new Treatment 2.0 initiative, which calls for 15 million people worldwide to be treated with antiretroviral drugs that can slow the progression of HIV-AIDS symptoms - up from the five million currently undergoing treatment. This strategy would cost some \$26 billion per year. Such a plan would require innovations such as simpler, safer, and more resilient treatment regimens as well as minimal laboratory monitoring.

In an accompanying Comment, Dr Franco Maggiolo and Dr Sebastiano Leone, Division of Infectious Diseases, Ospedali Riuniti, Bergamo, Italy, say: "HAART might prove effective within other risk populations provided that the source individuals are thoroughly identified and correctly treated. Therefore we must couple the use of antiretrovirals with risk-reduction strategies, and identify infected individuals through information or education interventions that favour individual access to screening programmes. Integrated experiences that provide voluntary routine HIV testing and rapid entry into care, such as those recently implemented in Washington, DC, would tell us whether HAART can succeed as an epidemic control measure."

They conclude: "While waiting for an effective vaccine, experiences such as those reported today should be strongly considered by clinicians, national and international agencies, policy makers, and all parties involved in the development of treatment guidelines, because the population-based dimension of HAART might play an important part in the future control of the [HIV](#) epidemic."

Provided by Lancet

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