

## **Abstract**

**Background:** Taiwan established a nationwide surveillance system for human immunodeficiency virus (HIV) infection in 1989 and adopted a policy to provide all HIV-infected citizens free access to highly active antiretroviral therapy (HAART) since April, 1997. This provided an opportunity to determine the effect of widespread use of HAART on the evolution of HIV epidemic.

**Methods:** We analyzed the national HIV surveillance data. The HIV transmission rate was estimated using an exponential model of HIV epidemic evolution, with statistical projection over the interval between infection and detection, to fit the surveillance data.

**Results:** Till the end of 2002, the cumulative number of HIV-infected citizens in Taiwan reached 4,390 (0.019% of the total population). After implementing the policy of providing free access to HAART, the estimated HIV transmission rate decreased by 53% (0.391 versus 0.184 new cases per prevalent case-year; 95% CI, 31%-65%). There was no statistically significant change in the incidence of syphilis cases, both in general population and among HIV-positive patients, during the same period.

**Conclusion:** Providing free HAART to all HIV-infected citizens was associated with a 53% decrease in HIV transmission rate and contributed to the control of HIV epidemic in Taiwan.

**Keywords :** highly active antiretroviral therapy ; HIV infections ; health policy ; disease transmission ; Taiwan