

HIV-1 epidemiology and subtype diversity in the Australian-born and newly-arrived Asian-born MSM populations in Victoria, Australia 2015-2018

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Background:

Notified cases of HIV-1 among gay and bisexual men (GBM) in Victoria decreased by 33% between 2016 and 2018 while the proportion of total incident cases diagnosed among newly-arrived Asian-born GBM increased. To improve our understanding of locally-acquired HIV transmission and inform prevention and response strategies, we aimed to characterise the epidemiology and subtype diversity of HIV-1 in Australian-born and newly-arrived Asian-born GBM in Victoria.

Methods:

Data included were from newly-diagnosed HIV cases notified to the Victorian Department of Health and Human Services, 1 January 2015 to 31 December 2018 who: were Australian-born or newly-arrived Asian-born GBM (≤ 4 years before HIV diagnosis), reported country of HIV acquisition, and had HIV subtyping data available. Subtyping data from the Victorian Infectious Diseases Reference Laboratory were linked to notification records.

Results:

The study included 267 Australian-born and 104 newly-arrived Asian-born GBM. Of the nine HIV-1 subtypes observed in Australian-born GBM, subtype B predominated (79%), followed by CRF01_AE (12%). In newly-arrived Asian-born cases, subtype CRF01_AE was the most common (47%) followed by subtype B (40%). There was no significant change in the proportion of B and non-B subtypes in either Australian-born ($p=0.76$) or newly-arrived Asian-born ($p=0.66$) GBM over time.

Subtype B represented 40% of infections in Asian-born cases who reported local acquisition compared to 29% of those with overseas acquisition. Non-B subtypes represented 58% of infections in Australian-born GBM with overseas acquisition compared to 21% of those who acquired it locally.

Conclusion:

Victoria is characterised by significant HIV-1 viral diversity but dominated by the B subtype. The substantial proportion of locally acquired non-B infections (particularly CRF_01AE) in Australian-born GBM, and subtype B in newly-arrived Asian-born GBM as well as the greater proportion of locally acquired infections in newly-arrived

Asian-born GBM suggests sexual mixing and ongoing local HIV transmission between these two populations.

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