CSIRO PUBLISHING

RESEARCH PAPER
https://doi.org/10.1071/SH24028

SEXUAL HEALTH

The use of suboptimal antiretroviral therapy when applying for migration to Australia: a case series

Daniel Tran[A], Brent Allan[B], Alexandra Stratigos[C], Darryl O'Donnell[D,E], Dash Heath-Paynter[D,E], Aaron Cogle[F] and Jason J. Ong[G,H,I,*]

For full list of author affiliations and declarations see end of paper

***Correspondence to:**
Jason J. Ong
Melbourne Sexual Health Centre,
Alfred Health, 580 Swanston St, Carlton,
Vic. 3053, Australia
Email: Jason.ong@monash.edu

Handling Editor:
Ian Simms

ABSTRACT

Background. Australia imposes restrictions for people living with HIV (PLHIV) applying for permanent residency (PR), including spending less than AUD51,000 on medical costs over 10 years. Some PLHIV opted for suboptimal and cheaper antiretroviral therapy (ART) regimens to increase their chances of receiving PR. We collated a case series to examine PLHIV on suboptimal ART because of visa issues. **Methods.** We identified all patients applying for a PR in Australia who obtained nevirapine, efavirenz or zidovudine between July 2022 and July 2023 from the Melbourne Sexual Health Centre. Pathology results and records detailing psychological issues relating to the patients' wishes to remain on suboptimal ART were extracted from clinical records by two researchers. **Results.** We identified six patients with a mean age of 39 years migrating from Asian and European countries. Three patients used efavirenz, and three used nevirapine. All desired to remain on cheaper, suboptimal ART to stay below visa cost thresholds, which they considered to aid favourably with their application. Four displayed stress and anxiety arising from visa rejections, appeal deadlines and the lengthy visa application process. **Conclusions.** Despite access to more effective and safer ART, we identified patients who chose to remain on cheaper ART to improve chances of obtaining an Australian visa, potentially putting their health at risk. We found significant evidence of stress and anxiety among patients. There is a need to review and revise current migration policies and laws in Australia that discriminate against PLHIV and jeopardise public health.

Keywords: Australia, HIV, immigration, laws, mental health, migration, PLHIV, visa.

Introduction

Over the past decades, significant advances have been made in the treatment of HIV, with novel drugs and combinations continually being developed.[1] These advances have led to a decline in new HIV infections and AIDS-related deaths over the years.[2] As newer drugs are developed, there is a growing list of suboptimal drugs, which may be less effective and have greater side effect profiles compared to newer counterparts. However, these suboptimal antiretroviral therapies (ART) will generally be cheaper because they are off-patent. As such, people living with HIV (PLHIV) may use suboptimal ART in the context of cost restrictions associated with visa applications, potentially increasing short-term side effects and long-term disease burden.

Such cost thresholds are a feature of the current Australian immigration policy, whereby visas will be rejected based on 'significant healthcare and community service costs' if the 10-year healthcare cost to the Australian government exceeds AUD51,000.[3] Previously, HIV healthcare costs were estimated arbitrarily at around AUD300,000, and this was later changed to 'lifetime' costs before the current '10-year' cost estimation was adopted.[4] Unlike most countries, no exceptions for applicants with HIV exist in current Australian laws. The total 10-year cost of HIV management in Australia, which includes costs associated with ART, consultations, and laboratory tests, is estimated to be AUD119,209, so this automatically results in visa rejections for PLHIV.[5] After this initial

Received: 1 February 2024
Accepted: 8 April 2024
Published: 29 April 2024

Cite this: Tran D *et al.* (2024)
The use of suboptimal antiretroviral therapy when applying for migration to Australia: a case series. *Sexual Health* **21**, SH24028.
doi:10.1071/SH24028

rejection, individuals may engage with a migration lawyer to prepare a health waiver for a minority of visa options if they are eligible, which involves a letter of support and test results from treating clinicians. The waiver may then be granted or refused at the discretion of the case officer, which overall lengthens the visa application process.

Due to these current restrictions, PLHIV may elect to remain on cheaper, suboptimal ART to assist with reducing their projected healthcare costs. To date, there have not been any studies examining the impacts of visa restrictions on the mental and physical health of PLHIV. As such, we used the study design of a case series to collate the experiences of PLHIV who are applying for permanent residency (PR), and why they chose to remain on suboptimal ART. This study also explores how this process affects the mental health and health-seeking behaviours of PLHIV applying for PR and the overall impacts upon public health.

Materials and methods

We identified all patients who obtained suboptimal ART (efavirenz, nevirapine or zidovudine) from July 2022 to July 2023 from the Melbourne Sexual Health Centre (MSHC) pharmacy. MSHC is a public sexual health clinic that provides free HIV management. This search yielded 57 patients; 22 patients used an efavirenz combination (Atripla), 5 patients used a zidovudine combination (Combivir), and 30 patients used a nevirapine combination. Further screening resulted in six eligible patients. Data extraction based on unit record numbers was performed by two independent researchers. The inclusion criterion was that the patient had to be in the process of applying for PR in Australia whilE on the suboptimal ART. Reasons for exclusions included insufficient clinical notes (n = 15), patients' choice to remain on old regimes being unrelated to visa issues (n = 30), and patients using old regimes due to side effects from new ART (n = 6). Table 1 summarises the characteristics of the included patients. Specific characteristics were altered to maintain patient anonymity, including ages being adjusted by ±2 years, patients being assigned aliases unrelated to their initials, and countries of origin being de-identified. Direct quotes from the clinical notes are presented to illustrate the impact of the visa application process.

Results

Patient 1

Mr A is a 31-year-old man from Asian Country X who lived with HIV for 4 years before applying for an Australian Partner Visa in 2015. Before his application, Mr A was enrolled in the ENCORE study, which provided access to TDF/FTC/EFV. This study concluded shortly before Mr A's partner visa application, so his HIV was managed by imported generic Atripla afterwards. At the time of his application, Mr A had a CD4+ count of 457 cells/mm^3 (34%) and an undetectable viral load.

Mr A was informed his visa may be denied due to his HIV condition after waiting approximately 1 year, with the Medical Officer of the Commonwealth (MOC) stating, 'The estimated cost to the Australian community of the services identified in the 864 is likely to be: Pharmaceuticals $564 k, Medical services $70.5 k, Total Cost $634.5 k' [in AUD]. As such, the clinic was required to write a letter to support a health waiver, emphasising the likelihood of generic medications becoming cheaper over time, as well as Mr A's stable employment and his contribution to HIV knowledge via his past study enrolments. This period caused significant stress for Mr A and his partner, as they called the clinic multiple times to follow up on the letter of support, particularly due to the tight deadline for submitting the waiver.

Mr A's PR was granted roughly 3 years after applying. During this time, there was evidence of stress caused by the migration process: his insistence on importing his ARV medications throughout the application, as well as frequent communications with the clinic to obtain support for his waiver.

Table 1. Characteristics of included patients.

Alias	Age (years) at application	Gender	Country of origin	Sexual orientation	Time until visa	ARV regime	Visa outcome	Year of application
A	33	M	Asian country X	MSM	3 years 2 months	Atripla	PR granted	2015
B	34	M	Asian country Y	MSM	3 years 11 months	Atripla	PR granted	2017
C	27	M	European country X	MSM	3 years 1 month	NVP/Truvada	PR granted	2011
D	45	M	European country Y	MSM	Applied in November 2022	Atripla	Still pending	2022
E	68	M	Asian country X	MSW	Applied in June 2023	NVP/KIV	Still pending	2023
F	27	F	Asian country Z	WSM	Applied in September 2012	NVP/KIV	PR rejected	2012

F, female; KIV, Kivexa; M, male; MSM, men who have sex with men; MSW, men who have sex with women; NVP, nevirapine; WSM, women who have sex with men.

Patient 2

Mr B is a 32-year-old man from Asian Country Y living with HIV for 12 years before applying for an Australian Partner Visa in 2017. His HIV had been well-controlled on Atripla, with a CD4+ count of 603 cells/mm^3 (25%) and an undetectable viral load at the time of his visa application. Mr B elected to continue with Atripla during the visa application process, with medical records stating he was 'happy to stay on older medications due to immigration processes'. Additionally, Mr B continued to import Atripla from his home country rather than purchasing locally.

Mr B was informed that his visa may be denied due to his HIV condition based on healthcare costs causing 'undue cost to the Australian community'. Mr B subsequently engaged in extensive legal services, and the clinic sent multiple letters to support Mr B's health waiver. Clinical records noted on four occasions Mr B's stress and anxiety, with examples including 'No decision yet (regarding immigration), (patient is) coping with stress', and '(patient) also notes stress re immigration, pt aware of counselling'.

Mr B's anxiety is further highlighted in his correspondences to the clinic, with comments including 'I'm quite at a loss' and 'we're left with no choice but to chase up on the required letters and reports when such (short) notice is given', in reference to the turnaround given by the Administrative Appeals Tribunal to submit paperwork. As a result, the clinic sent multiple letters outlining the low costs of healthcare services and medications associated with Mr B's HIV.

Mr B was granted his PR almost 4 years after submitting his application. However, the above demonstrates the mental burden and stresses incurred from the rejections and the long processes, as well as perceptions that using imported Atripla would help with the application.

Patient 3

Mr C is a 29-year-old man from European Country X living with HIV for 2 years before applying for an Australian spousal visa in 2011. Mr C had been using imported nevirapine and Truvada, which he continued throughout the application. At the time of application, his CD4+ count was 356 cells/mm^3 (37%) and he had a viral load of 54 copies/mL before stabilising at undetectable levels (<20 copies/mL) 4 months later.

Mr C was informed that his visa may be denied due to his HIV, with the MOC stating, 'I consider that the provision of healthcare services to the hypothetical person in the circumstances defined above would be likely to result in a significant cost to the Australian community in the areas of health care', with a cost estimation provided at AUD278,000. As a result, the clinic wrote a letter and submitted laboratory results to support a health waiver. The clinic's correspondence outlined that Mr C leads a healthy lifestyle, has no AIDS-defining illness, and can be a productive worker and taxpayer, and that his partner is a 'highly-educated member of the community and is a very productive taxpayer' and can support Mr C financially. As with the previous patients, the letter from the clinic outlined that HIV treatments would be considerably cheaper in the future.

Mr C was granted his PR visa approximately 3 years after his application.

Patient 4

Mr D is a 45-year-old man from European Country Y living with HIV for 9 years before applying for an Australian partner visa. Mr D was using Atripla for his HIV. At the time of application, Mr D had a CD4+ cell count of 387 cells/mm^3 (40%) and an undetectable viral load. He has immune thrombocytopaenia, however, his platelet counts have been stable at around 100 and he does not take any regular medications for this condition.

Three months after applying, Mr D was informed that his visa may be denied due to his HIV, with the patient stating he was, 'refused the visa on the grounds of HIV and the cost to Australia', thereby necessitating a letter to support his health waiver. During this period, the patient seemed anxious as he contacted the clinic twice due to the short turnaround in submitting the health waiver. Mr D emphasised that his HIV had been stable and that, 'I have been to all appointments and been very diligent in taking my medication everyday'.

Furthermore, Mr D expressed his desire to stay on Atripla for his application, with records stating, 'on Atripla – wants to continue for now as a newer ARV combo will affect his appl'n for residency'. A few months later, Mr D was noted as, 'Considering switching to Biktarvy, wants to wait until he gets his visa (currently on bridging visa)'. This shows that Mr D intended to switch to a more expensive but effective medication once the application is cleared.

The outcome of Mr D's application is still pending, but his anxiety during the process and desires regarding current and future treatments and their effects on his application process have been well-documented.

Patient 5

Mr E is a 67-year-old man from Asian Country X who had been living with HIV for 8 years before applying for an Australian visa (visa type unspecified). He is married and attends all appointments with his son, who acts as an interpreter during appointments. Mr E had previously used Genvoya but switched to Dovato after recommendations from a previous physician due to renal co-morbidities. At the time of application, Mr E had a CD4+ cell count of 351 cells/mm^3 (32%) and an undetectable viral load. He has hereditary renal impairment unrelated to his HIV.

Despite being on Dovato for only 4 months with no reported side effects or detected viral load, Mr E's son

requested to change his drug regimen at the time of visa application, with records stating, '(Mr E's son) would like me to Ix cheaper alternatives to Dovato to get under threshold for immi = $51,000'. As such, Mr E switched to the cheaper regime of nevirapine + kivexa. Mr E's son continued to follow up with the clinic, requesting medical reports quoting the costs of this regime.

The outcome of Mr E's application is still pending, and he has not received any correspondence from the MOC. Due to communication barriers, there were not a lot of opportunities to record Mr E's potential anxiety in medical records. However, Mr E's son showed a strong investment in the application process, requesting a change of regime to lower the medication cost and following up with the clinic.

Patient 6

Ms F is a 27-year-old female from Asian Country Z who had been living with HIV for 8 years before applying for a permanent Australian visa. She is married to an HIV-negative husband and gave birth to an HIV-negative child around the time of her application. Ms F had been using Kivexa and nevirapine to manage her HIV, receiving these drugs via the ATRAS clinical study due to her Medicare ineligibility. At the time of her application, Ms F had a CD4+ cell count of 591 cells/mm^3 (28%) and an undetectable viral load. She also experienced HIV-associated thrombocytopaenia, which another physician managed. She intermittently reported symptoms, including nausea, fatigue and sacroiliac joint pain, possibly due to her ART.

A health waiver was requested for Ms F's visa application but was ultimately denied 18 months after the application. This caused significant stress for Ms F, with clinical notes highlighting, 'New issue: depressed and on olanzapine and clomipramine – related to visa rejection'. Ms F has also started seeing a psychiatrist and has been losing weight. Over the next 6 years, Ms F contested the decision through the Administrative Appeals Tribunal, which has long processing times due to application backlogs. This process included eight letters from the clinic, primarily outlining details regarding the cheap nature of Ms F's ART. The ATRAS clinical study concluded during this period, so Ms F continued to purchase Kivexa and nevirapine without a Medicare card. This added to her stress, with notes stating, 'Major financial stressors, no medicare . . . '.

The numerous letters required placed pressure on both Ms F and the doctors. Examples include the clinic requesting an extension due to doctors being on leave, Ms F continually ringing the clinic for updates close to the deadlines, and the doctor allocating time to attend an online court hearing, which was cancelled by the panel at the last minute. Ms F's visa was once again rejected, but she has continued trying until now. Recent clinical records have shown that despite discussions with doctors about switching drugs and the inferiority of her current regime, Ms F is adamant about staying with her regime as she 'feels her current regimen is cheap, so helps for PR application'.

The outcome of Ms F's application is still pending after 11 years. Throughout this process, Ms F was well-documented to be experiencing anxiety and depression, along with the pressure placed on the doctors to submit several letters within strict timeframes. Ms F was adamant about remaining on suboptimal ART to aid with her application despite experiencing side effects that could be attributed to the medications.

Discussion

This case series identified patients attending a public HIV clinic who chose to use older, cheaper drugs because of a misguided understanding of current Australian migration laws and policy regarding cost thresholds. It also highlights the mental health impact of visa immigration restrictions. To our knowledge, no studies have examined how a country's immigration laws may affect patients' choices regarding HIV treatment. Our study examines how cost thresholds in current Australian migration laws affect the mental health and ART choices of PLHIV, emphasising the necessity to revise these laws.

The evidence of the stressful nature of the visa application process in this case series cannot be ignored. The stressors extend beyond mental health fears and fatigue and into the social and emotional lives of visa applicants, ultimately affecting their physical health. As it stands, Australian permanent visa applications for PLHIV are automatically rejected due to exceeding visa cost thresholds, and applicants are subsequently required to submit test results and letters from HIV specialists to apply for a health waiver, if applicable. However, there are also tight turnarounds of 28 days for HIV specialists and lawyers to submit required supportive documents, and this was a clear source of anxiety that was documented for four patients in this case series (Mr A, Mr B, Mr D, Ms F). Furthermore, these restrictive time frames create additional pressure for HIV specialists who would already be extremely busy. The processing times are often extended as visa medicals are only valid for 12 months, so delays and additional costs might be experienced when applicants are requested to complete updated medical assessments. As such, this acts as an additional source of anxiety on top of the thresholds and turnarounds, as previously described.[6]

This case series also highlights how the thresholds influenced patients' treatment choices, specifically the insistence on importing medications into Australia and their desire to receive suboptimal but cheaper treatment regimes. The ART choices in this study, Atripla, Combivir, and Nevirapine, are outdated and considered suboptimal compared to current recommendations. Atripla was approved in 2006 and includes the combination of 600 mg efavirenz, 200 mg

emtricitabine and 300 mg tenofovir disoproxil fumarate (TDF).[7] In contrast, the recommended first-line ART, Biktarvy, comprises 50 mg bictegravir, 200 mg emtricitabine, and 25 mg tenofovir alafenamide (TAF). TAF has lower bone and renal-related side effects compared to TDF.[8] Combivir is a combination of lamivudine and zidovudine, with the latter presenting with potential gastrointestinal side effects and bone marrow suppression.[9] Nevirapine has been on the market since the 1990s, and can result in Stevens-Johnson Syndrome and hepatic-related issues, among others.[10]

Our study should be read considering some limitations. We used data from only one clinic, albeit the largest public sexual health clinic in Australia. Our analysis was limited by the relatively small sample size and some older clinical notes being unavailable. We only identified patients within a 1-year time period who were using suboptimal medications. Extending the time period may identify more patients in a similar situation. In addition, our analysis did not include an examination of the associated costs to the healthcare system, specifically the time spent for the waivers by the healthcare professionals. Including this data in a future study may help strengthen the argument for a legal change. A future qualitative study would be useful to provide an in-depth understanding of the impact of the visa application process for PLHIV.

In conclusion, this case series highlights that PLHIV were choosing to use suboptimal ART to maximise their chances of obtaining an Australian visa, with its associated impacts on their mental and physical health. There is an urgent need to review and revise current HIV migration laws, including removing HIV restrictions as a condition for migration to Australia. The inclination for suboptimal ART and the aforementioned mental health burden may be alleviated by increasing the cost thresholds or providing an exemption for PLHIV. Currently, most countries have already removed HIV restrictions for visa applications based upon evidence that optimal ART suppresses the virus to levels that make it untransmissible through sexual contact.[11] A recent example was New Zealand removing the HIV restrictions in late 2021, with UNAIDS further encouraging the remaining countries to follow suit, arguing that such restrictions do not protect public health and perpetuate community stigma associated with HIV.[12] This would also reinforce the Australian Government's commitment to U = U (undetectable = untransmissible), as visa applicants with a stable, undetectable viral load should not be subjected to compromising their physical and mental health, as seen in this case series, given that their HIV is untransmissible. Finally, it is noteworthy that the Australian Government HIV Taskforce Report already includes recommendations to review the significant cost thresholds for PLHIV applying for an Australian visa. This case series supports this urgent need for revision and to consider removing HIV restrictions for migration to Australia as is already the case among most other countries.[13]

References

1 Tseng A, Seet J, Phillips EJ. The evolution of three decades of antiretroviral therapy: challenges, triumphs and the promise of the future. *Br J Clin Pharmacol* 2015; 79(2): 182–194. doi:10.1111/bcp.12403

2 UNAIDS. Global HIV Statistics. 2023. Available at https://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_en.pdf

3 Department of Home Affairs. Protecting health care and community services. 2021. Available at https://immi.homeaffairs.gov.au/help-support/meeting-our-requirements/health/protecting-health-care-and-community-services

4 Australian Federation of AIDS Organisations. Applying for permanent residence in Australia – information for people with HIV and their advisors. 2011. Available at https://napwha.org.au/files/factsheet_0311_immigration.pdf

5 Australian Government, Department of Home Affairs. Notes for Guidance for Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS). 2020. Available at https://www.homeaffairs.gov.au/foi/files/2020/fa-201000888-document-released.pdf

6 Department of Home Affairs. Visa processing times. 2023. Available at https://immi.homeaffairs.gov.au/visas/getting-a-visa/visa-processing-times

7 Julg B, Bogner JR. Atriplatrade mark – HIV therapy in one pill. *Ther Clin Risk Manag* 2008; 4(3): 573–577.

8 Wassner C, Bradley N, Lee Y. A review and clinical understanding of tenofovir: tenofovir disoproxil fumarate versus tenofovir alafenamide. *J Int Assoc Provid AIDS Care* 2020; 19: 232595822091923. doi:10.1177/2325958220919231

9 Edwards Z, Ingold CJ, Azmat CE. Zidovudine. StatPearls: Treasure Island (FL); 2023. Available at https://www.ncbi.nlm.nih.gov/books/NBK554419/

10 Rehman N, Nguyen H. Nevirapine. StatPearls: Treasure Island (FL); 2023. Available at https://www.ncbi.nlm.nih.gov/books/NBK554477/

11 Ong JJ, Hui C, Allan B, Pulliam C, Torres MA, Vuyiseka D, *et al.* Global evidence, impact and implementation of U=U. *Sex Health* 2023; 20(3): iii–v.

12 UNAIDS. UNAIDS welcomes New Zealand's decision to lift travel restrictions for people living with HIV. 2021. Available at https://www.unaids.org/en/resources/presscentre/pressreleaseandstatementarchive/2021/october/new-zealand-lift-travel-restrictions-hiv

13 Australian Government. HIV taskforce report. Australian Government; 2023. Available at https://www.health.gov.au/resources/publications/hiv-taskforce-report?language=en

Data availability. The data that support this study cannot be publicly shared due to ethical or privacy reasons and may be shared upon reasonable request to the corresponding author if appropriate.

Conflicts of interest. JJO is the co-Editor-in Chief of *Sexual Health*. To mitigate this potential conflict of interest they were blinded from the review process. All other authors declare no conflicts of interest.

Declaration of funding. JJO is funded by the Australian National Health and Medical Research Council Emerging Leadership Investigator Grant (GNT1193955).

Author affiliations

[A]Melbourne Medical School, The University of Melbourne, Melbourne, Vic., Australia.

[B]QThink Consultancy Services, Malmsbury, Vic., Australia.

[C]HIV/AIDS Legal Centre, Surry Hills, NSW, Australia.

[D]Health Equity Matters, Sydney, NSW, Australia.

[E]Kirby Institute for Infection and Immunity in Society, UNSW, Sydney, NSW, Australia.

[F]National Association of People with HIV Australia, Newtown, NSW, Australia.

[G]Central Clinical School, Monash University, Melbourne, Vic., Australia.

[H]Melbourne Sexual Health Centre, Melbourne, Vic., Australia.

[I]Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, UK.