Optimizing ART Adherence to Reach the Third 95

Juliana de Oliveira Costa
Medicines Intelligence Research Program
School of Population Health
UNSW Sydney, Australia

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I would like to acknowledge the Bedegal People, the traditional owners of the lands on which I work and live. I pay my respects to their elders past and present and extend that respect to any first nations people joining us today.
Agenda

1. Monitoring adherence to antiretroviral therapy
2. What are we measuring?
3. How are we measuring adherence to therapy?
4. Identifying vulnerable populations
5. Increasing adherence and retention to care
6. Reflections
1. Monitoring adherence to antiretroviral therapy (ART)

Optimal linkage and retention in care, ART adherence

Murphy 2022 AIDS 2022

Brown A et al. 2022 AIDS 2022
In routine care…

20%-45% of PLHIV on therapy have difficulties remembering to take their medicines every day or stop to take their treatment at some point.

Monthly adherence patterns during 360 days in PLHIV on ART in Australia

The solid line represents the predicted probability of adherence in each group.
The dashed line represents the observed proportion of people adherent in each group.


Grierson J. HIV Futures Seven. 2013
2. What are we measuring?

Conceptualization of adherence to therapy

3. How are we measuring adherence to therapy?

<table>
<thead>
<tr>
<th>Methods of assessment</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement of drug/metabolite levels</td>
<td>Accurate, Objective, proving the ingestion of the drug</td>
<td>Costly, Invasive, Inter individual differences</td>
</tr>
<tr>
<td>Indirect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pill counts</td>
<td>Simple, Mostly used in clinical trials</td>
<td>No evidence of ingested medication</td>
</tr>
<tr>
<td>Electronic databases</td>
<td>Easy to use, Inexpensive, Non-invasive, patients not aware that they are being monitored, Especially specific to identify non-adherent patients</td>
<td>Evidence of the drug being dispensed but not ingested</td>
</tr>
<tr>
<td>Self-reported (questionnaires, visual analogue scales)</td>
<td>Easy to use, Inexpensive</td>
<td>Overestimate adherence, Subjective, influenced by recall or reporting bias</td>
</tr>
<tr>
<td>Electronic monitoring systems</td>
<td>Objective Additional information on degree of adherence One of the most accurate methods</td>
<td>The patient is aware of the evaluation, No actual evidence that the medication is being ingested</td>
</tr>
</tbody>
</table>

Performs as well as self-report, pill count and electronic monitoring in predicting HIV viral suppression

Almeida-Brasil CC et al. AIDS Care 2019;31(6):647-59

3. How are we measuring adherence to therapy?

### Considerations for using electronic databases

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Are all dispensings/prescriptions recorded?</th>
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</thead>
<tbody>
<tr>
<td>Time period</td>
<td>Cumulatively over the year? Monthly basis?</td>
</tr>
<tr>
<td>Best measure</td>
<td>Adherence: Medication possession ratio, proportion of days covered? Persistence: Time to first discontinuation or proportion of patients covered (considering re-initiation)?</td>
</tr>
<tr>
<td>Adherence to multiple medicines</td>
<td>Which active ingredients or medicines to consider?</td>
</tr>
</tbody>
</table>
Adherence to multiple medicines: covered day?

1) exposure to ≥3 antiretrovirals at the same time
2) exposure to any antiretroviral
3) lowest number of days covered per antiretroviral
4) average of days covered over all antiretrovirals
5) highest number of days covered per antiretroviral
4. Identifying vulnerable populations

Illustration by Barbara Kelley
www.damianbarr.com/

Population groups: Transgender people, people who inject drugs, migrants, postpartum women, incarcerated people

Age:
Young people

Race and ethnicity:
Black people, Indigenous peoples

Clinical characteristics:
People on multiple medicines, with mental health conditions, with specific co-morbidities, early HIV infection

Socioeconomic:
Lower socioeconomic status, living in disadvantaged areas/remote areas

IN DANGER: UNAIDS Global AIDS Update 2022
Costa JM et al. Journal of the International AIDS Society, v. 21, n. 1, p. e25066, 2018
4. Identifying vulnerable populations (and measuring outcomes)

Multi-Agency Data Integration Project (MADIP)

Abstract: Australia spends more than $70 billion annually on medicines, delivering significant health benefits to the population. However, inappropriate prescribing and medicine use also result in harm to individuals and populations, and waste of precious health resources. Medication data linked with other routine collections enables evidence generation in pharmacoepidemiology, the science of quantifying the use, effectiveness and safety of medicines in real-world clinical practice. This review details the history of medicines policy and data access in Australia, the strengths of existing data sources, and the infrastructure and governance enabling and improving evidence generation in the field. Currently, substantial gaps persist with respect to cohesive, contemporary linked data sources supporting quality use of medicines, effectiveness and safety research, exemplified by Australia’s limited capacity to contribute to global efforts in real-world studies of vaccine and disease-modifying treatments for COVID-19. We propose a road map to bolster the data pie, and population health more broadly, underpinned by a distinct capability governing and streamlining access to linked data assets for research, regulatory and policy purposes. Real-world evidence generation requires current data workstreams to be maintained as a matter of urgency to deliver efficient and equitable healthcare and improve the health and well-being of all Australians.
5. Increasing adherence and retention to care

Nonjudgmental multidisciplinary health care team
Strengthen early linkage to care and retention in care
Patient’s knowledge about HIV

Adherence toolbox

- Behavioural and psychosocial challenges
- Language and literacy
- Beliefs, perceptions, and expectations
- Assessment of structural issues
- Medication-taking skills
- Involvement of the patient in ARV regimen selection
- Use of positive reinforcement to foster adherence success
- Identifying the type of and reasons for poor adherence and targeted ways to improve adherence
- Selecting from among available effective adherence and retention interventions
- Placing patients with apparent cART adherence problems on regimens with high genetic barriers to resistance

IAPAC Guidelines for Optimizing the HIV Care Continuum, 2021
Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents with HIV, 2023
5. Increasing adherence and retention to care

Public health measures

• Make free HIV care and treatment available to all people residing in Australia
• Enable all people newly diagnosed with HIV to commence treatment within 14 days of their diagnosis
• Double the number of cART prescribers in by 2025 and increase reimbursements for HIV-related services
• Clinic audits to identify patients with poor HIV treatment outcomes
• Implement a tailored person-centred support programs
Changing models of care for increasing adherence and retention

Cash transfer programmes
- Increase retention in care for specific populations (e.g., pregnant women), cART coverage, potentially increases adherence to cART ¹,²

Community-based interventions
- Differentiated service delivery (DSD), peer-led DSD and adherence clubs improve retention, adherence and/or viral suppression ³-⁷

Building blocks of DSD for HIV treatment

1 Richterma A et al. Nat Hum Behav. 2022 Oct;6(10):1362-1371
2 Guimarães NS et al. Lancet HIV. 2023 Jun;10(6):e394-403
6 Atuhaire L et al. Syst Rev. 2021 May 6;10(1):137
6. Reflections

- Monitoring adherence to therapy is key for optimising ART, both at the individual and the population-level.
- Different measures tackle different aspects of adherence.
- Reaching vulnerable populations is necessary to close gaps in the HIV care cascade and reach the third 95 target.
- Tools used to improve adherence and retention should align with identified barriers and target population, including customised models of care.
- These strategies should be supported by public health measures addressing structural barriers for health care access.
Acknowledgements

Thank you!
Muchas gracias
j.costa@unsw.edu.au