

A multi-state model examining patterns of transitioning among states of engagement in care in HIV-positive individuals initiating combination antiretroviral therapy

Jennifer Gillis, Mona Loutfy, Ahmed Bayoumi, Tony Antoniou, Ann N Burchell, Sharon Walmsley, Curtis Cooper, Marina B Klein, Nima Machouf, Julio SG Montaner, Sean B Rourke, Christos Tsoukas, Robert Hogg, Janet Raboud, and the CANOC Collaboration.

Journal of acquired immune deficiency syndromes. December 2016. 73(5)

Objective

The purpose of this study was to develop a model for describing patterns in HIV care over time. This model should consider health outcomes and the changing levels of follow-up care that individuals receive.

Importance of this Study

- Engagement in HIV care is usually studied using the “cascade of care” model.
- The “cascade of care” model has limitations, including the assumption that individuals will move through stages of HIV care in one direction, from HIV diagnosis to suppression.
- This study provides a model that can fill information gaps in the “cascade of care” by describing different patterns of follow-up in relation to HIV treatment outcomes, and factors that predict changes in states of HIV care.

How this Study was Conducted

- Data was analyzed from the CANOC collaboration, an interprovincial collaborative cohort of HIV-positive individuals on antiretroviral therapy in Canada.
- Fives states of HIV care were defined:
 - (1) guidelines care – optimal health outcomes (suppression) and optimal follow-up;
 - (2) successful care with less frequent follow-up;
 - (3) suboptimal care – poorer treatment outcomes and decreased follow-up;
 - (4) loss to follow-up (no contact for 18 months);
 - (5) death.
- Data from 7810 participants was used to classify the state of care experienced by an individual for each year of follow-up.
- Factors associated with changes in state of care were analyzed.

Study Results

- Individuals who are younger, women, of Indigenous ethnicity, and people who inject drugs are **more** likely to move from guidelines HIV care to suboptimal care, and are **less** likely to move from suboptimal to guidelines care.
- One-fifth of individuals who are in successful care (the same as guidelines care but with less frequent follow-up visits) are predicted to move to suboptimal care later on.

Implications

- Multi-state models are useful for distinguishing between individuals that change their level of follow-up care due to successful or failing HIV treatment outcomes. Strategies for managing HIV care will depend on this distinction.
- Flexible models that account for changes in levels of follow-up care over time may contribute to more effective policies and recommendations for engaging individuals in optimal care.

© 2016 CANOC