The 29th Annual Canadian Conference on HIV/AIDS Research
Le 29e Congrès annuel canadien de recherche sur le VIH/sida

Session: **EPH1**: Friday May 1 – 11:00:12:30 – HIV and HCV Surveillance

Track:	Epidemiology and Public Health
Subject:	Epidemiology and Surveillance of HIV Co-infections
Presentation Type:	Oral
Title of Abstract:	**Using Population-level Latent Class Analysis to Classify People Living with HCV in British Columbia (BC) for Targeted Program Planning**
Authors and Affiliations:	Emilia Clementi[5], Sofia Bartlett[1, 4, 6], Stanley Wong[1], Amanda Yu[1], Margo Pearce[1, 5], Mawuena Binka[1], Dahn Jeong[5, 1], Maria Alvarez[1], Prince Adu[1, 5], James Wilton[1], Zahid Butt[2], Geoff McKee[3], Younathan Abdia[1, 5], Jason Wong[1, 5], Jane Buxton[1, 5], Mel Krajden[1, 4], Michael Otterstatter[1, 5], Naveed Janjua[1, 5] 1. BC Centre for Disease Control, Vancouver, BC, Canada, 2. University of Waterloo, Waterloo, ON, Canada, 3. Vancouver Coastal Health Authority, Vancouver, BC, Canada, 4. Department of Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, Canada, 5. School of Population and Public Health, University of British Columbia, Vancouver, BC, Canada, 6. Kirby Institute, University of New South Wales, Sydney, NSW, Australia

Abstract

Introduction: Direct-acting antivirals (DAAs) have expanded hepatitis C virus (HCV) treatment access to individuals with comorbidities such as HIV. As of 2018, 5.0% (n=2,689) of people currently living with HCV (plHCV) also live with HIV (plHCV-HIV). HCV affects diverse populations including people who inject drugs (PWID), gay/bisexual men who have sex with men (gbMSM), and immigrants from endemic regions. Assessing patterns of shared characteristics among subpopulations using Latent Class Analysis (LCA) may facilitate targeted program planning.

Methods: The BC Hepatitis Testers Cohort includes all plHCV identified in BC between 1990 to 2015, followed until 2018, with linked data on medical visits, hospitalizations, cancers, prescription drugs, and deaths. LCA grouped all people who had been HCV antibody-diagnosed in the Cohort (n=73,665) by characteristics with demonstrated relationships to HCV treatment uptake (age, gender, ethnicity, sexual identity, coinfections, urbanicity, socioeconomic status, use of injection drugs, liver disease and mental illness among others). Models were fit adding 1-10 classes stepwise. The final model was chosen based on fit statistics, epidemiological meaningfulness, and posterior probability for class assignment. Classes were named by defining characteristics. Among people treated, multinomial logistic regression and LS-means assessed prescribers' specialties.

Results: The best-fitting model had six classes named: 'Younger PWID', 'Older PWID', 'gbMSM', 'Urban socially-deprived baby boomers', 'Rural baby boomers', and 'People of Asian backgrounds', with proportions of plHCV-HIV at 10%, 17%, 7%, 4%, 0%, and 0% respectively. Among people treated with DAA's, the probability (mean, [standard deviation]) of receiving treatment from infectious disease physicians was higher for the three classes with higher proportions of plHCV-HIV (30.9%, [0.013]) and lower for remaining three (20.3%,[0.012]).

Conclusion: LCA identified six classes with distinct characteristics. Observed differences in HCV treatment suggests multiple factors influence treatment prescription. Further analysis of health service utilization patterns related to multivariable patient profiles may inform optimal service layout.