Cohort profile: The Comparative Outcomes And Service utilization Trends (COAST) study – a comparison between HIV-positive individuals and a random sample of the general population of British Columbia, Canada - 1996-2010

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Background

- There is limited understanding regarding the impact of long-term ART use on aging, future patterns of morbidity and mortality and how this will affect health resource use among aging HIV-positive individuals
- To further our knowledge around these issues, we have designed a new population-based study – The Comparative Outcomes And Service utilization Trends (COAST) study.
- The COAST study aims to evaluate the determinants of health outcomes and health care services utilization among HIV-positive adults in the ART era in British Columbia (BC), Canada, and to assess how these may differ from those observed in a random sample of the general population of BC.

Methods

Cohort design

- The COAST study follows a retrospective cohort study design.
- The study involves confidential data linkage between the BC Centre for Excellence in HIV/AIDS (BC-CfE), which contains data on demographics, ART use, AIDS-defining, immunologic and virologic outcomes for all HIV-positive individuals receiving ART in BC, and Population Data BC, a BC data holding and service provider that holds longitudinal data for all four million BC residents.

Study population

- The study comprises of three defined cohorts (Figure 1) including de-identified, confidentially linked health-related data from the two data sources described above for the period April 1, 1996 to March 31, 2010.
- Eligibility criteria: ≥ 19 years during the study follow-up. HIV seropositivity was an additional inclusion criterion for the cohorts consisting of HIV-positive individuals only.
- Validated case-finding algorithms[1,2] were applied to identify all HIV-positive adults across BC to create two HIV-positive cohorts that were differentiated by whether or not participants had ever accessed antiretroviral (ARV) regimens. The third cohort, a random 1% sample of adults in BC was created for comparative purposes.
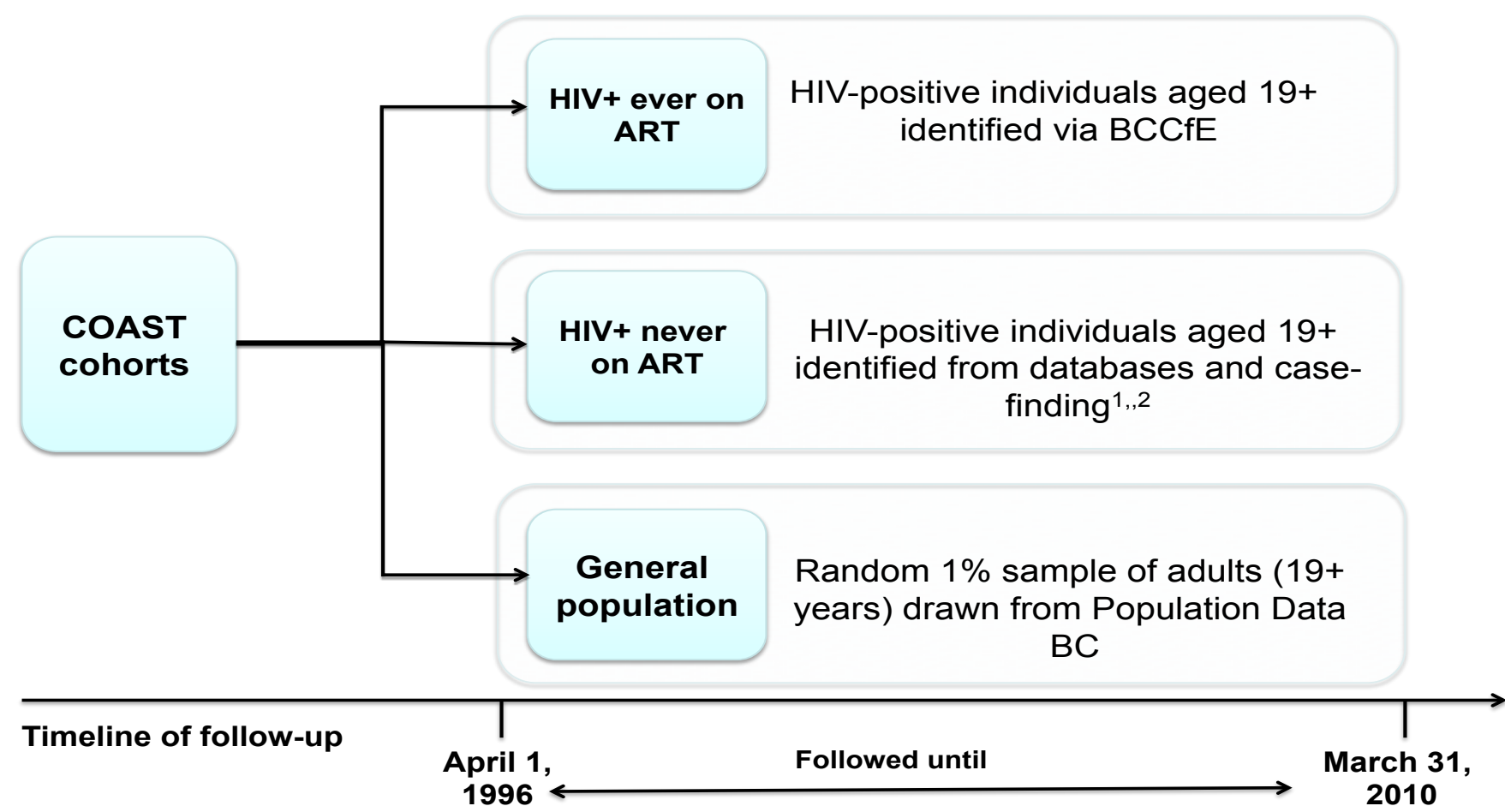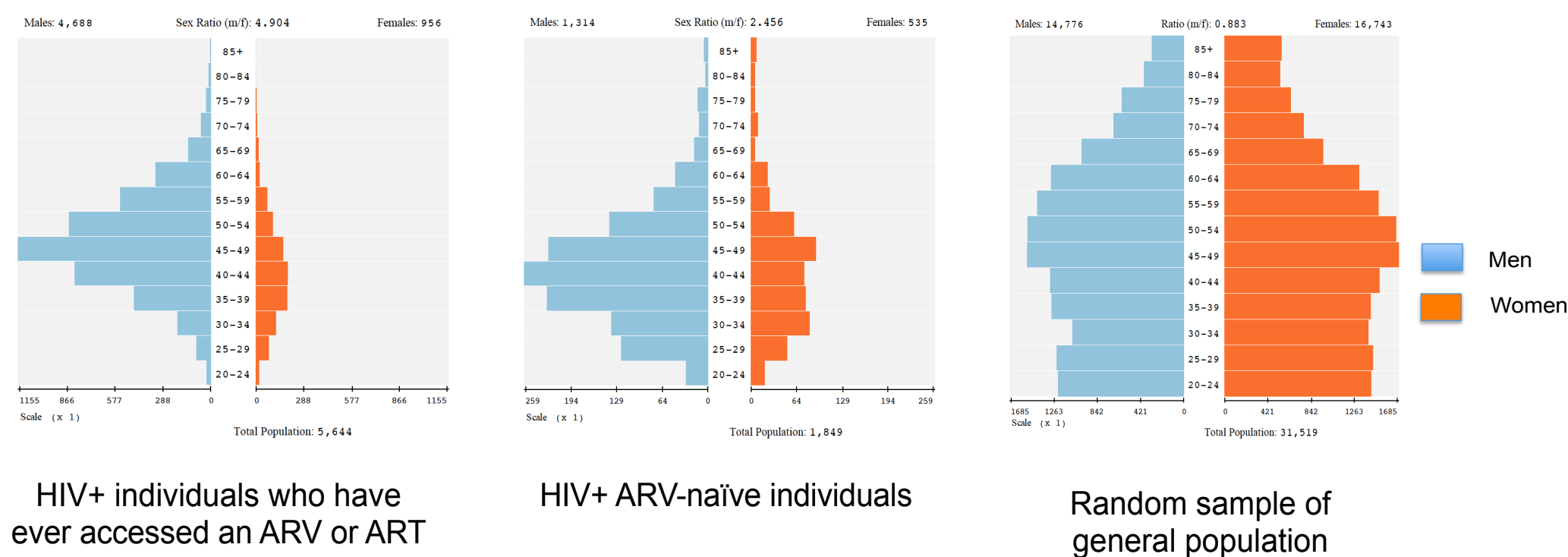

Figure 1: The COAST study design

Results

Cohort characteristics

- The COAST study comprises 60,413 individuals (57% men), of which 12,730 (21%) are HIV-positive. Table 1 describes the key characteristics of the cohorts in the study

Table 1: Cohort characteristics

Variable	HIV+ ever on ART (N = 8,620)	HIV+ never on ART (N = 4,110)	General population (N = 47,683)
Age at baseline, median (Q1, Q3) years	37 (32, 44)	38 (38, 46)	34 (21, 49)
Sex, n (%)			
- Male	7,171 (83.2)	3,140 (76.4)	24,084 (50.5)
- Female	1,448 (16.8)	967 (23.5)	23,561 (49.4)
- Unknown	1 (0.0)	3 (0.1)	38 (0.1)
Follow-up time, median (Q1, Q3) months	92 (42, 150)	25 (3, 65)	157 (70, 167)

- The distribution of the three cohorts stratified by age and sex is illustrated graphically in the population pyramids in Figure 2. There are significantly more men in the HIV-positive only cohorts, and slightly less men in the general population which is consistent with the demographic composition of the HIV epidemic and the general population in BC and Canada.

HIV+ individuals who have ever accessed an ARV or ART

HIV+ ARV-naïve individuals

Random sample of general population

Figure 2: Cohorts by age and sex (2010)

Discussion

- A unique aspect of our study is the comparison over time of health outcomes and resource utilization between HIV-positive individuals and the general population. Findings from these cohorts will improve our understanding of the impact of long-term ART use on aging, health outcomes and other comorbidities and how this will affect health resource utilization among HIV-positive individuals over time.

References
1. Nosyk B, Colley G, Yip B, et al. Application and validation of case-finding algorithms for identifying individuals with human immunodeficiency virus from administrative data in British Columbia, Canada. *PloS One*. 2013;8(1):e54416
2. Antonioiu T, Zagorski B, Loutfy MR, et al. Validation of case-finding algorithms derived from administrative data for identifying adults living with human immunodeficiency virus infection. *PloS One*. 2011; 6(6):e21748