

Incidence and Recurrence Rates of Cardiovascular Disease (CVD) Events Among People Living with and without HIV in British Columbia: A Community-led Study with the Eng/aging Project

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Background

- People with HIV (PWH) are living longer largely owing to the success of antiretroviral therapy which has been accompanied by greater age-related illnesses, including cardiovascular disease (CVD).
- Our community experts identify CVD as a major concern among peers aging with HIV, including the ways they may be uniquely experiencing CVD events.
- Studies have explored the clinical mechanisms and risk factors associated with CVD events among PWH, however the patterns of recurrence for PWH who have previously experienced a CVD event are under-investigated.^{1,2,3}

Objectives

Using a collaborative, community-led approach, we developed the following objectives:

- To explore the incidence of acute index and recurrent CVD events as well as how the characteristics of those who experienced a CVD event differ for PWH and people without HIV (PWoH) in British Columbia (BC)
- To examine the characteristics/factors that may be associated with these incidence rates among PWH and PWoH

Methods

- The Comparative Outcomes and Service Utilization Trends (COAST) study is a provincial population-based cohort study containing de-identified administrative health data from the BC Centre for Excellence in HIV/AIDS (BC-CfE) Drug Treatment Program and other administrative databases through Population Data BC.
- From April 1st, 1992, to March 31st, 2020, PWH and a 10% random sample of all PWoH in BC aged ≥19 years were followed using linked administrative health data from COAST.
- We examined six CVD outcomes: Ischemic Heart Disease (IHD), Acute Myocardial Infarction (AMI), Congestive Heart Failure (CHF), Stroke, Arrhythmia, and Peripheral Vascular Disease (PVD).
- Events were identified using ICD diagnostic codes from emergency department visits or inpatient hospitalizations (with a CVD-related diagnostic code classified as the 'most responsible diagnosis').
- Age-adjusted incidence rates were expressed per 1,000 person-years, and median time between events, as well as the distribution of potential CVD risk factors were reported.

References

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PWH had higher incidence rates of index and recurrent CVD events compared to PWoH in BC. PWH experienced these events at younger ages and with less time to the recurrent event.

Results

Figure 1: Participant flow chart showing the number of individuals included in analysis

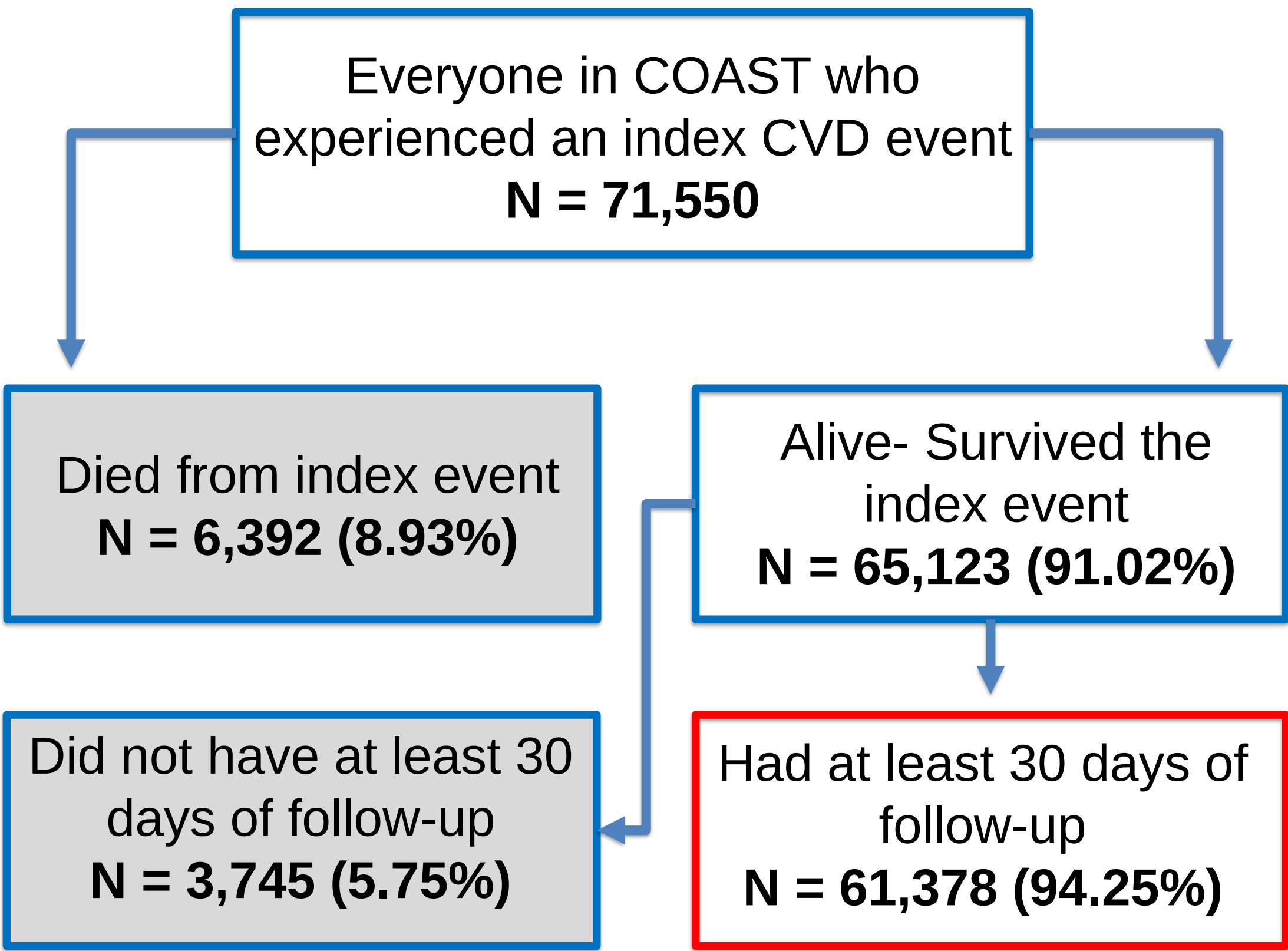


Figure 2: Incidence Rates of Index CVD Events (per 1,000 person-years)

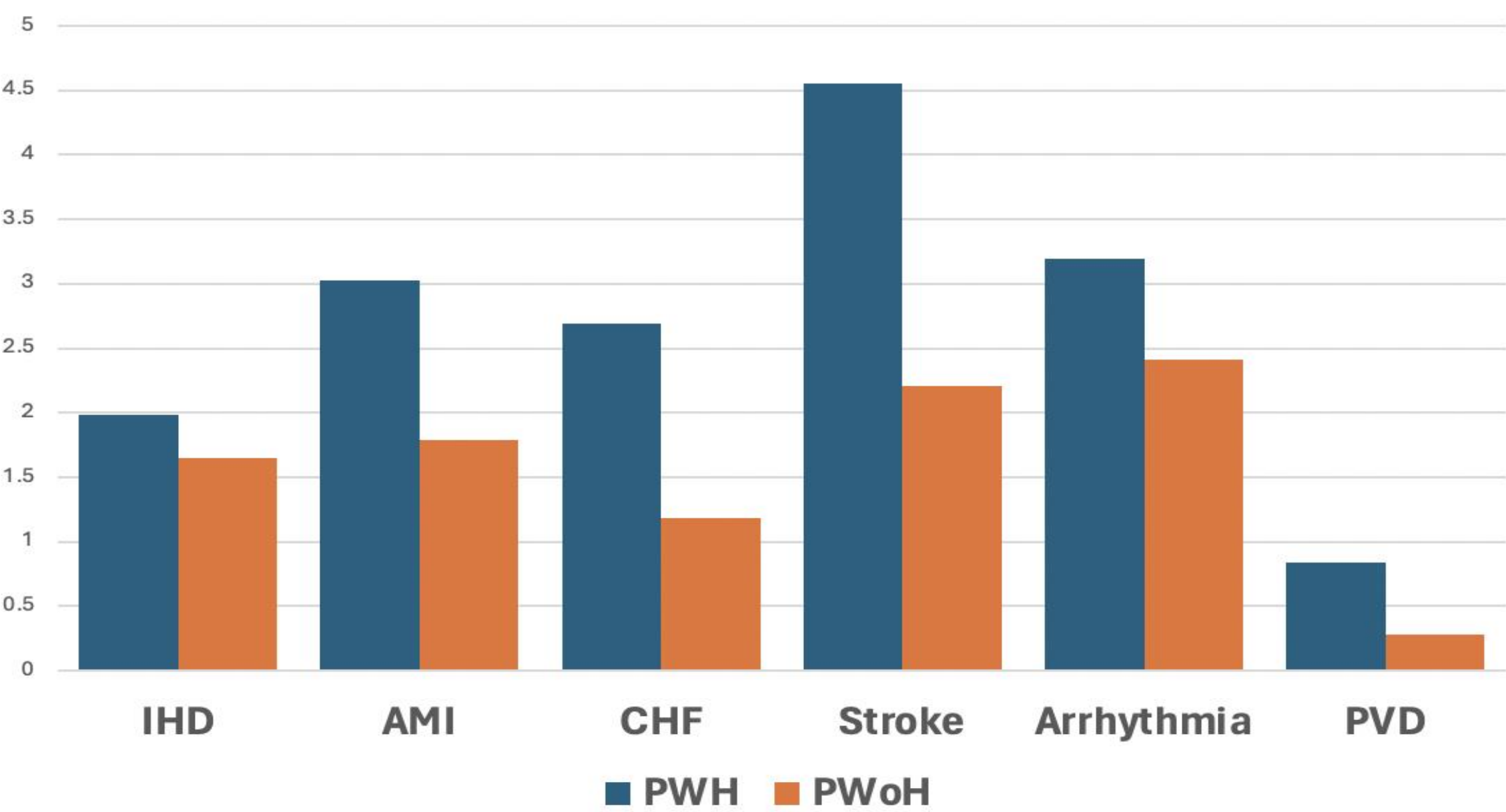
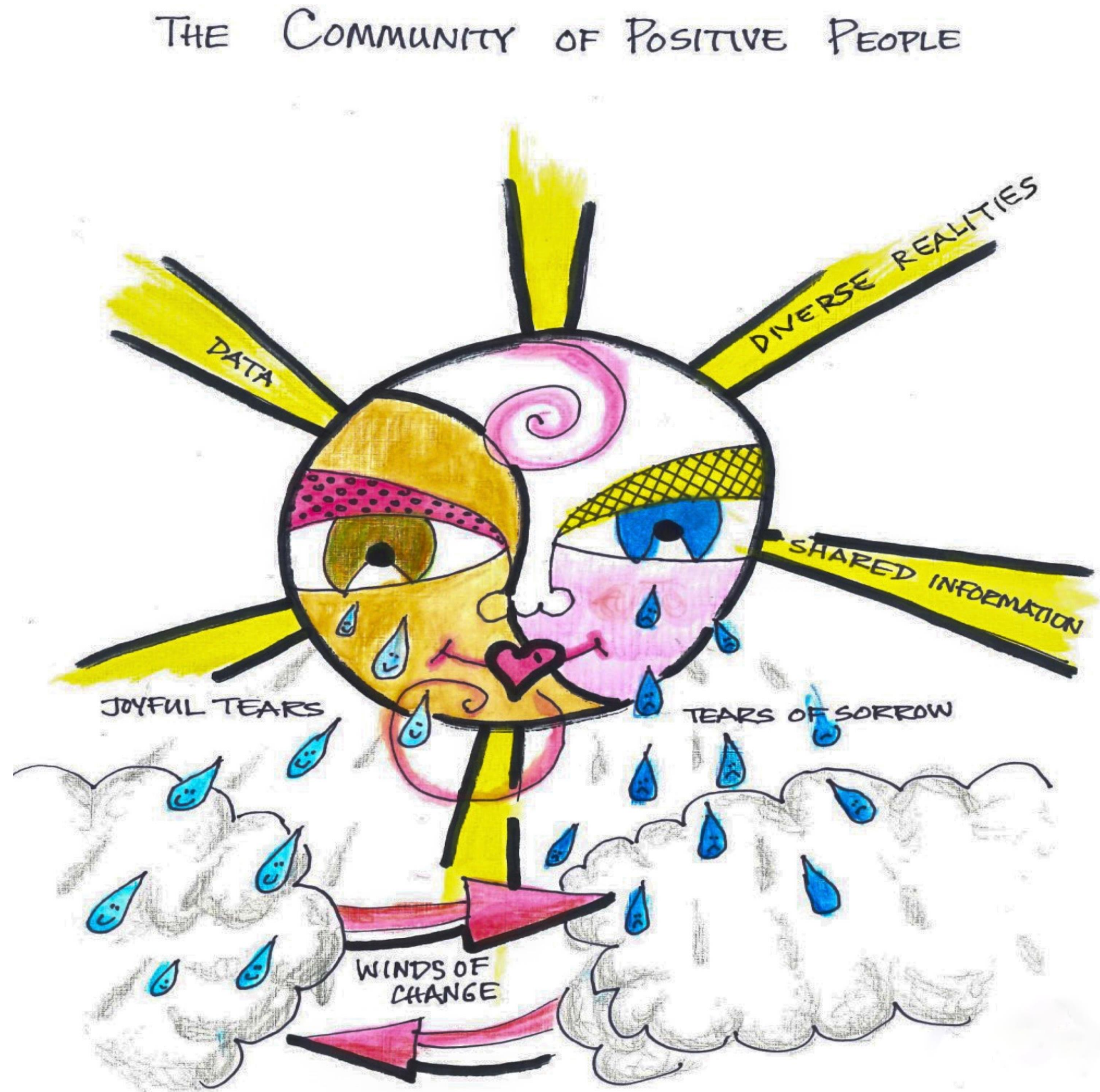
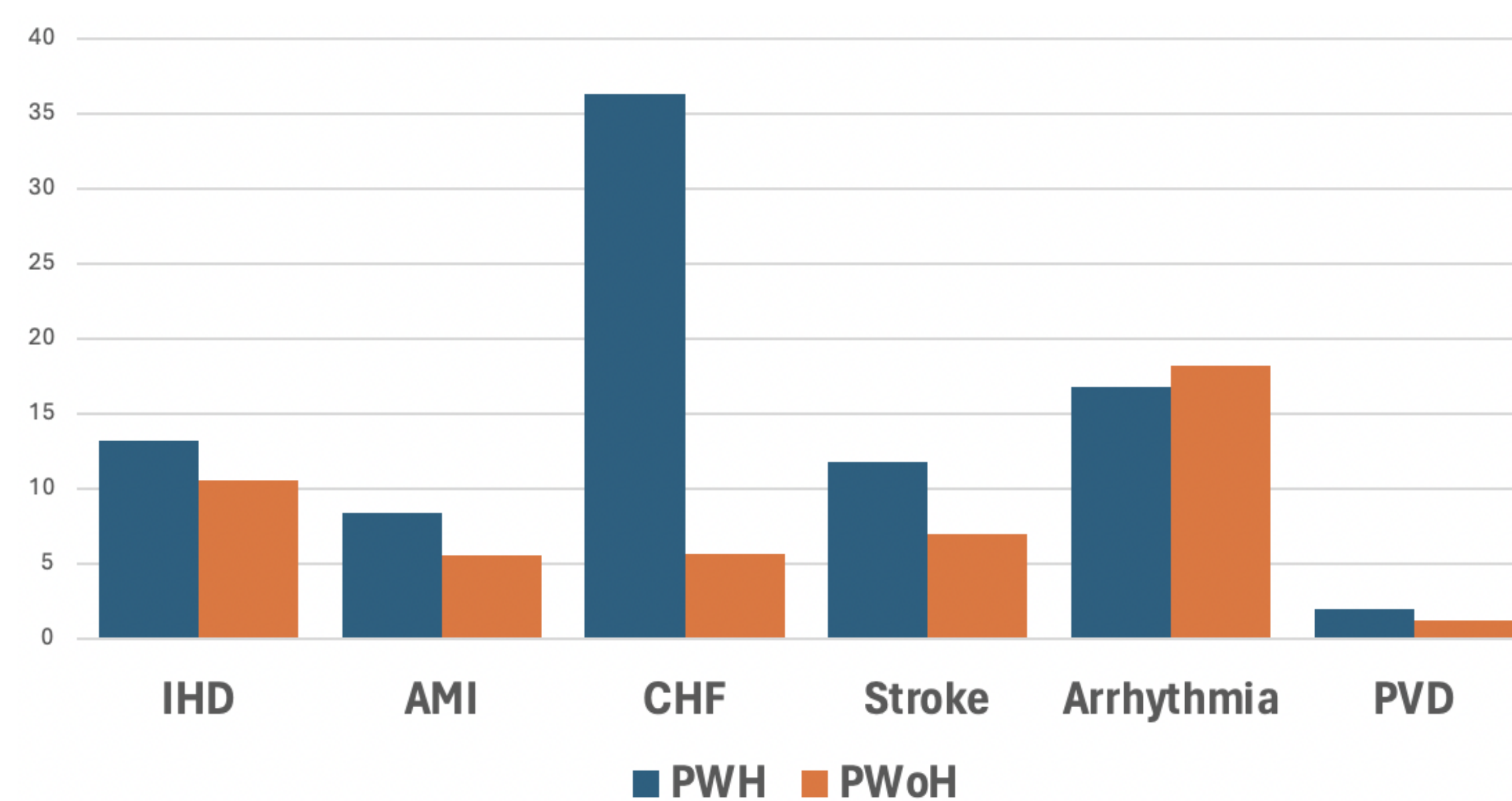


Figure 3: Incidence Rates of Recurrent CVD Events (per 1,000 person-years)



Artwork by Peggy Frank Adapted by Joe Average's Original Piece

Table 1: Median Age & Time to Event

	PWH	PWoH
	Any CVD event	
Median age at baseline	43 IQR: 36-52	55 IQR: 42-66
Median age at index event	54 IQR: 47- 62	69 IQR: 57-79
Median age at recurrent event	59 IQR: 51-66	75 IQR: 65-84
Median time from baseline to incidence index event	9.05 [years] IQR: 4.31-15.21	13.38 [years] IQR: 6.32-20.14
Median time from index to recurrent event	1.00 [years] IQR: 0.21-3.29	1.66 [years] IQR: 0.31-5.02

- The cohort was made up of 1,241 PWH (82% male) and 60,137 PWoH (53% male), with 75% of PWH being virally suppressed.
- 44% of PWH were on income assistance compared to only 4% of PWoH.
- A larger proportion of PWH reported diagnoses for Depression and Hyperlipidemia compared to PWoH (37% vs. 19%; 38% vs. 28%).
- However, a larger proportion of PWoH reported diagnoses for Diabetes and Hypertension (20% vs. 17%; 49% vs. 26%).

Conclusion

- Our community-led study indicates that PWH experience higher incidence of index and recurrent CVD events; however, PWoH had more Hypertension and Diabetes.
- PWH may have access to greater care and earlier CVD diagnoses at a younger age which may affect rates.
- Future phases of this study will assess whether engagement with primary care providers is associated with rates of recurrence-free survival between PWH and PWoH.

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Disclaimer: Further information on the data sets used for this project is at: (https://my.popdata.bc.ca/project_listings/18-223/collection_approval_dates). All inferences, opinions, and conclusions drawn in this material are those of the author(s), and do not reflect the opinions or policies of the Data Steward(s).