Heterogeneity in Community Priorities for HIV Molecular Epidemiology in the US: A Best-Worst Scaling

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BACKGROUND

- HIV molecular epidemiology (HIV-ME) can support HIV cluster identification, tailor public health interventions, and conduct important research about HIV.
- HIV-ME has vocal critics and concerns about the ethical, legal, and social implications (ELSI) of HIV-ME remain.
- We explored heterogeneity in community priorities for HIV-ME and assessed the validity of the results.

METHODS

- Adult cisgender men who have sex with men (MSM) were recruited from the 2023-2024 American Men's Internet Survey.
- Eleven aspects of HIV-ME were identified using mixed methods and best-worst scaling (BWS) was used to quantify their importance
- A Youden design was used to generate 11 BWS choice tasks; in each task people selected the most and least important HIV-ME aspect from 5 options (Figure 1).
- A conditional logit was used to estimate aggregate results, and heterogeneity was assessed using latent class analysis (LCA).
- The importance of each aspect was rescaled to sum to 100% with differences compared between latent classes.
- Analysis of additional open and closed-ended responses were used to test the validity of LCA results.

Please choose the most important and least important feature of programs using HIV-ME		
Most important		**Least important**
☐	Community discussions about the HIV-ME program are held routinely	☐
☐	People are told that their individual data are used for HIV-ME	☐
☐	HIV-ME is used to study how HIV changes over time	☐
☐	HIV-ME data are not shared with law enforcement	☐
☐	HIV-ME is used to identify clusters with higher rates of HIV transmission	☐

Figure 1. Example choice task for best-worst scaling

Most people want HIV-ME to be used to: identify and respond to HIV clusters, study HIV evolution, and evaluate HIV prevention. Some people want to protect HIV-ME data by ensuring data privacy, obtaining permission to use it, providing disclosure about its use, and preventing law enforcement access to it. Priorities did not differ by HIV status.

RESULTS

- 747 people completed the survey, including 134 people living with HIV who were more likely to be 40 or older (p<0.01), have public insurance (p<0.01), and identify as non-Hispanic black (p<0.01).
- Highest priority was given to "ensuring privacy" (17%) in aggregate; priorities did not differ by HIV status (p<0.01)
- LCA identified two groups with distinct priorities where the "Use the Data" group (63%) prioritized uses of HIV-ME and the "Protect the Data" group (37%) emphasized HIV-ME data protection (Figure 2).

Aspect of HIV-ME, Importance score	Classes: Use the data (63%)	Classes: Protect the data (37%)
Cluster response	18.8	7.4
Study evolution	15.2	6.2
Cluster identification	15.5	6.7
Evaluate prevention	14.6	6.5
Researcher access	8.4	4.1
Community engagement	1.4	0.7
Avoid stigma	3.5	4.4
No law enforcement	4.7	10.6
Provide disclosure	2.6	10.8
Ensure privacy	12.7	24.8
Obtain permission	2.4	17.8

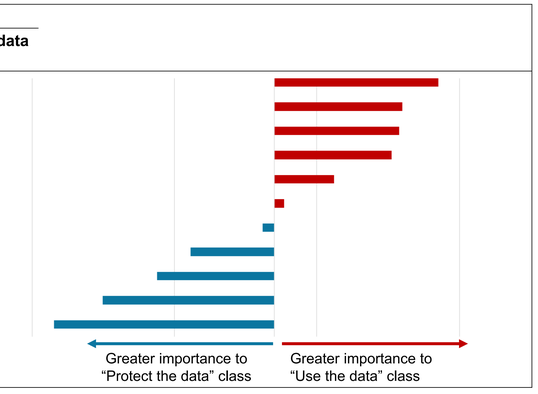


Figure 2. Importance of HIV-ME aspects by latent class

VALIDITY OF LCA RESULTS

Validity tests showed: (A) strong correlation on split-sample analysis (ρ=0.99), (B) high correlation with 3-point importance scores (ρ=0.78), and (C) concordance with open-ended responses (Figure 3A-4C)

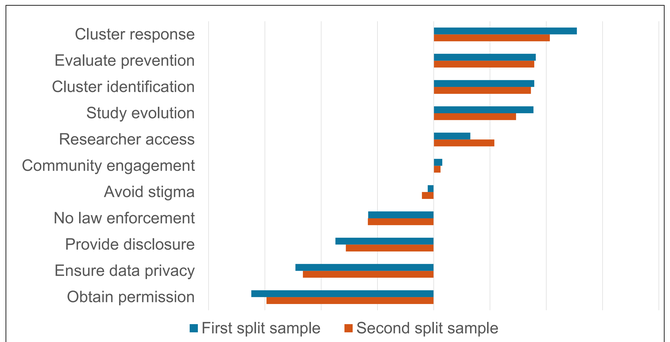


Figure 3A. Correlation of LCA results with split-sample analysis

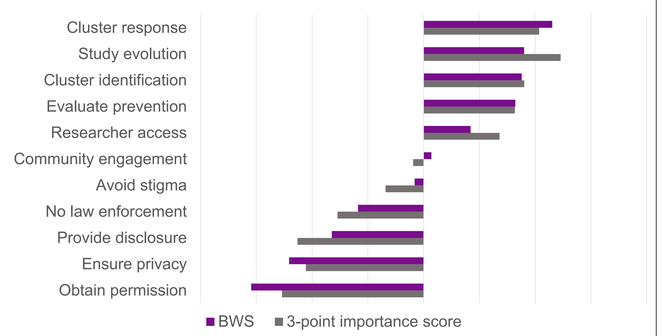


Figure 3B. Correlation of LCA results with 3-point importance scores

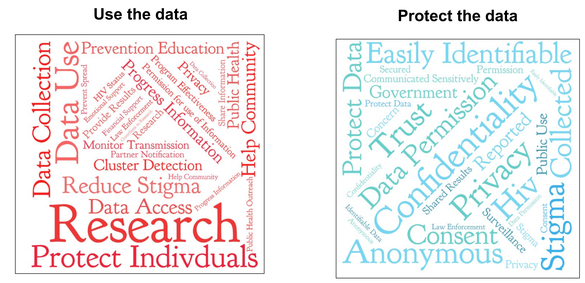


Figure 3C. Concordance of LCA with open-ended results

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