



HIV Phylogenetics

Ethical communication of results

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Potential benefits

Improve **knowledge** of transmission patterns

Improve **evaluations of (cost-)effectiveness**

Change high-level **public health priority setting**

Improve **focused public health programmes**
for groups more likely to be sources of transmission

Reduce **stigma**

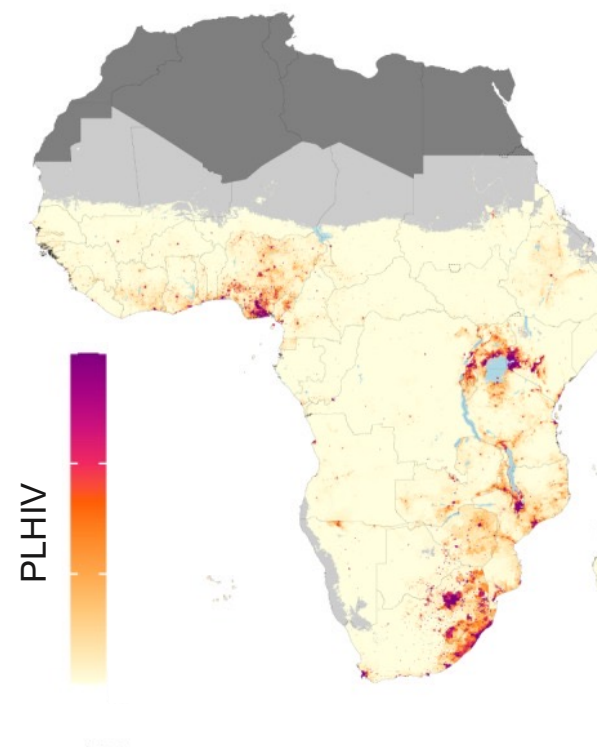


Image: Laura Dwyer-Lindgren Nature (2019)

Image: Edison Mugalu

Molecular cluster responses: ethical concerns

Public health use of phylogenetic data
in “concentrated” epidemics in North America

High degree of linkage without consent

Increased identifiability & directionality

Potential stigma for people & communities

Privacy infringements

Liberty infringements

Fairness, e.g., burdens for marginalized groups

Trust in public health

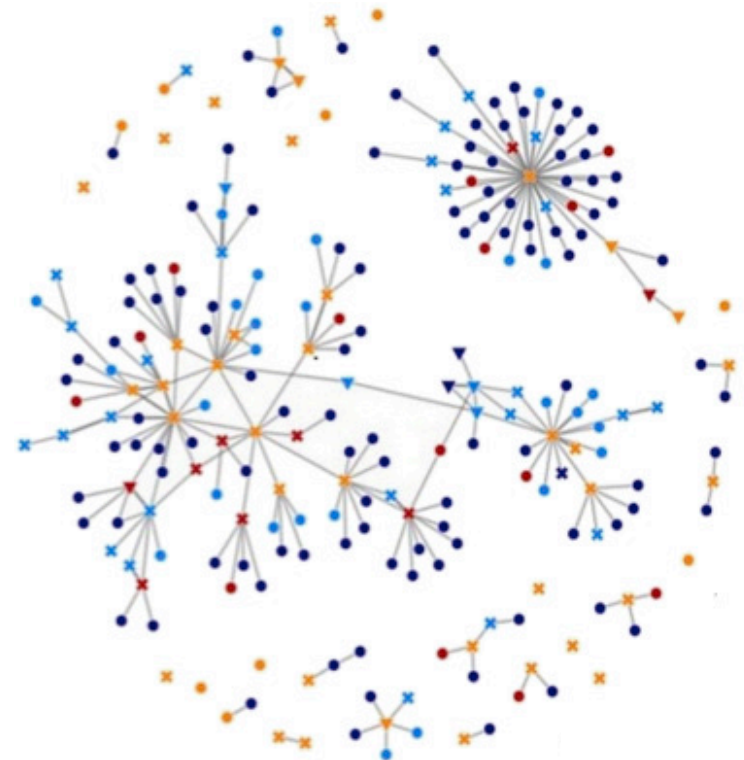


Image: dshs.texas.gov/hivstd/cdr

“Near real-time monitoring of HIV transmission hotspots”

Canadian database

~9000 HIV genomes on file

~5-6 new genomes per day

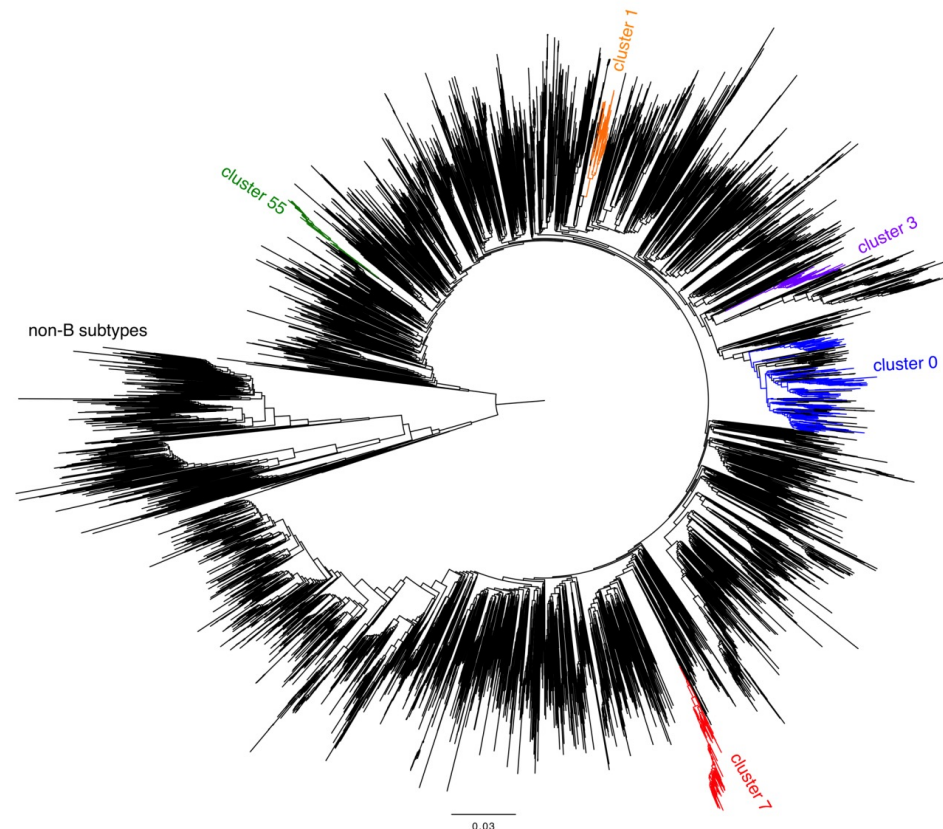
Regular phylogenetic analysis

Other data:

Gender, birth year, postcode

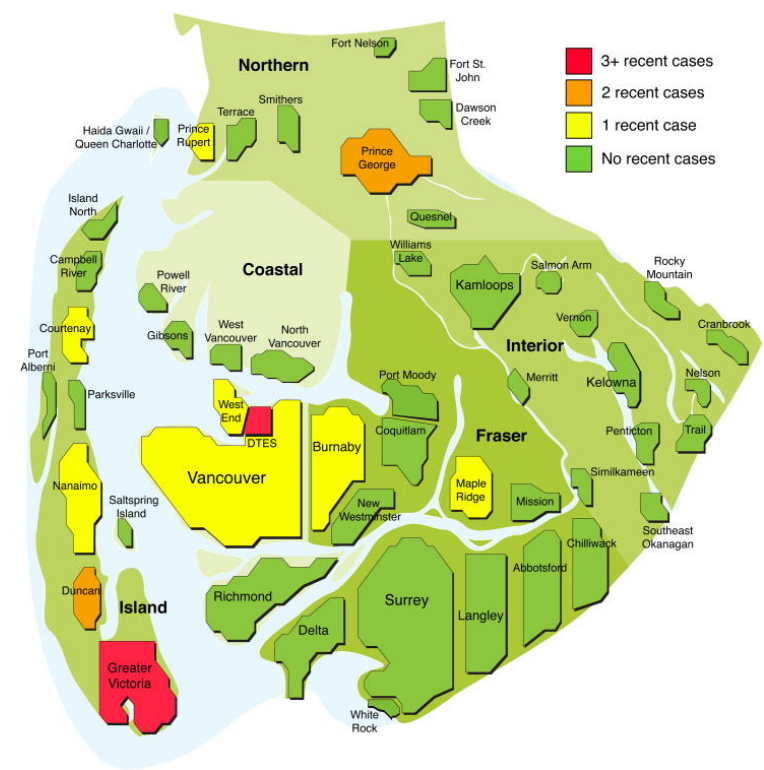
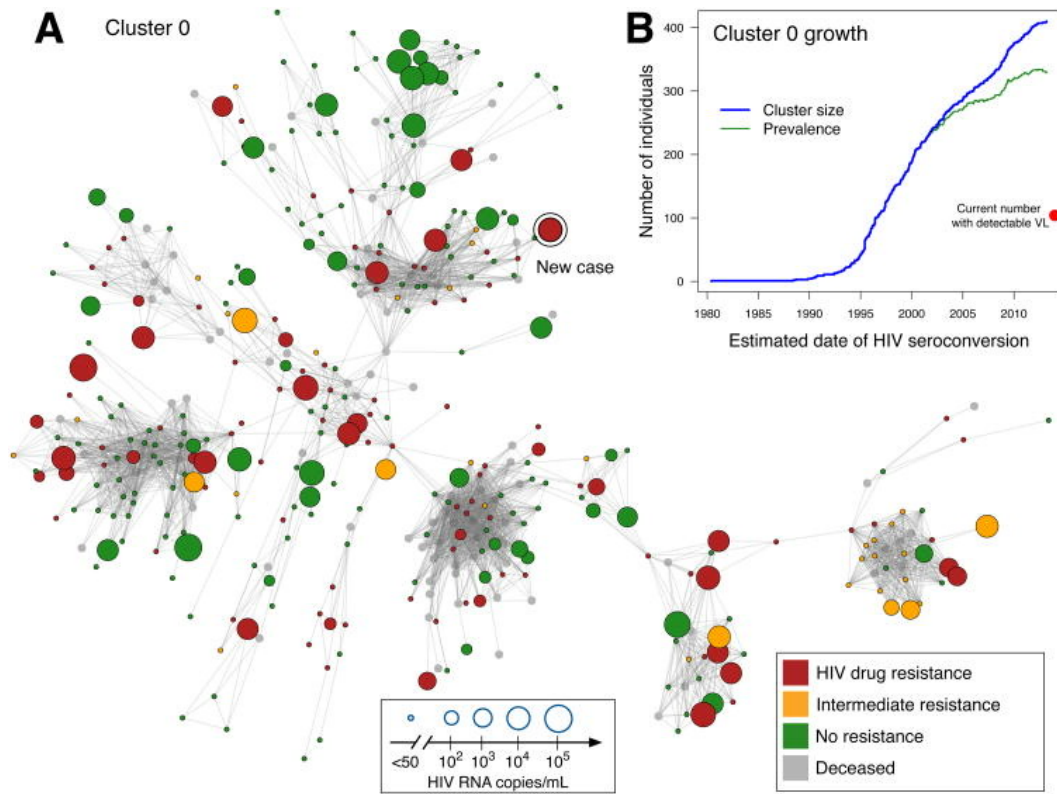
IV drug use, sexual orientation

Monthly feedback to public health agencies



Poon et al. Lancet HIV 2016 May; 3(5): e231-238

“Near real-time monitoring of HIV transmission hotspots”



Poon et al. Lancet HIV 2016 May; 3(5): e231-238

HIV transmission networks among transgender women

US database

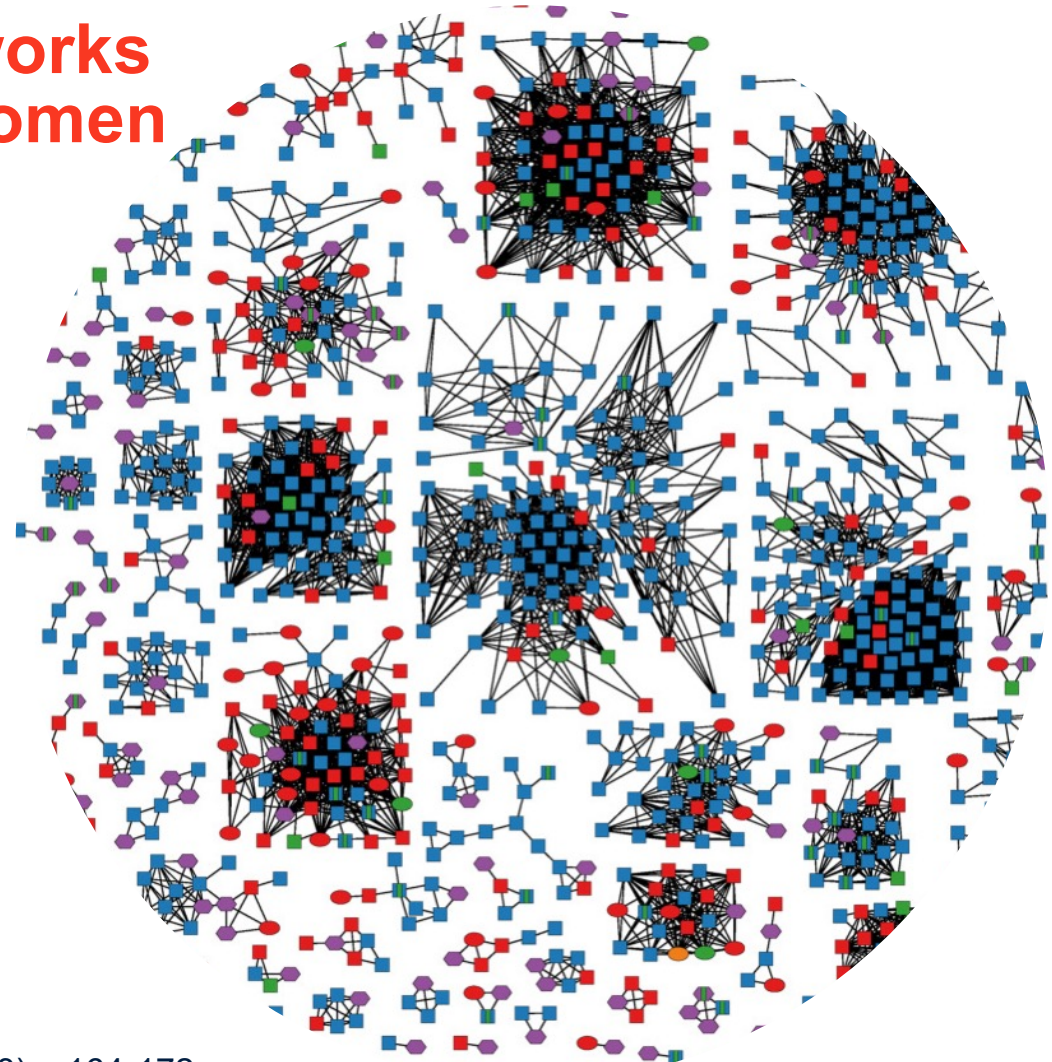
Clinical and demographic data

Sex, gender, and sexual orientation

PWID: people who inject drugs

MSM: Men who have sex with men

TGW: Transgender women



Ragonnet-Cronin et al. Lancet HIV 2019 March;6(3), e164-172



Reducing stigma: Lake Victoria fishing villages

Epidemiologic data:

High HIV prevalence in fishing villages

Phylogenetic data¹:

More transmission *into* than out of fishing villages

Potential to de-stigmatise these communities



1 Bbosa et al. Sci Rep 2019

Conclusions

Phylogenetic analyses map HIV transmission networks

Researchers & public health agencies have a duty to communicate these data carefully

Ethical aspects include:

- Achieving public health benefits
- Identifiability of individuals (privacy)
- How people and communities are described
- Issues of fairness (justice)

Thank you

Questions welcome!

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Alexander Calder (title slide)

