

THE IMPACT OF STARHS “DETUNED ASSAY” RESULTS ON HIV INCIDENCE
CALCULATIONS IN AN ONGOING COHORT OF MEN WHO HAVE SEX WITH MEN (MSM)
IN VANCOUVER

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Background: Serological Testing Algorithm for Recent HIV Seroconversion (STARHS) – a.k.a. the
“detuned assay” – can be used to calculate the probability that seroconversion has occurred within a
defined period of time. Potential applications are to narrow down the window period of infection for
newly positive patients to assist with contact tracing; and to estimate HIV incidence density in a
population when only cross-sectional results are available.

Objectives: To compare STARHS estimates of recent HIV seroconversions with the established
window periods for seroconversions in an ongoing cohort of young MSM; and to determine the
impact on HIV prevalence and incidence calculations if STARHS results are used to designate
baseline reactivities as recent seroconverters. Method: Using STARHS we tested 61 stored blood
samples from 20 of 33 seroconverters and 20 of 28 baseline reactivities. Results were compared with
the dates of existing HIV results and incorporated into Vanguard Project prevalence and incidence
calculations.

Results: Of 20 seroconverters, STARHS results indicated that 17 had seroconverted within 170 days.
Of 31 available results, 26 (83.9%) were congruent with existing data, two (6.5%) were incongruent,
and three (9.7%) couldn’t be validated, although they were consistent with existing data. Of 20
baseline reactivities, STARHS results indicated that nine had seroconverted within 170 days. Of 30
available results, only one (3.3%) could be validated, as prior HIV-negative results were unavailable
for most baseline reactivities. Designating these nine participants as seroconverters reduced the
baseline HIV prevalence from 2.48% to 1.70% and marginally increased the overall HIV incidence
from 1.50% to 1.52% when the observation period was increased by six months per participant.

Conclusions: The STARHS detuned assay appears to be a useful method of estimating how recently
an infected individual has seroconverted, however, incorporating STARHS data had no significant
impact on the overall HIV incidence rate in our cohort.