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LETTERS

ESTIMATING HIV PREVALENCE

A cautious note on household surveys in poor settings

The World Health Organization’s HIV prevalence estimates have recently been adjusted downwards, mostly because of new data from population based surveys.¹ But such surveys are limited by surveyor bias—they are typically performed on large numbers of respondents by small numbers of surveyors—and this could disproportionately influence (worldwide) HIV prevalence estimates.

In 2007 a population based household survey in a sub-Saharan country randomly assigned eight trained nurses to perform medical interviews and collect oral fluid samples for anonymous HIV testing on 2452 people. The estimated HIV prevalence was 12.7%.

The figure shows weekly HIV positivity estimates collected during the survey, stratified by nurse. HIV positivity in samples obtained by one nurse (“H”) increased to more than 80% during the second phase of the survey. No significant differences were found in age, sex, education, income, marital status, or household demographics of respondents visited by nurse “H” compared with the other nurses. The areas assigned to nurse “H” were identical to those assessed by three other nurses, none of whom showed similar results. When all 313 respondents sampled by nurse “H” were excluded, HIV prevalence dropped from 12.7% (95% CI 11.4 to 14.0) to 9.6% (7.3 to 11.8).

If one nurse in 10 produced 50% false positive results, estimated HIV prevalence would be 1.2, 1.5, or 2.6 times higher than it should be in 15%, 6%, or 2% HIV prevalence settings, respectively.¹ Retrospective analyses

of household survey data are recommended to avoid basing HIV global needs assessments on flawed prevalence rates.^{2 3}

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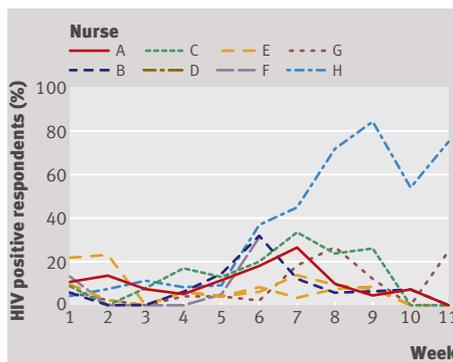
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A longer version of this note is posted on www.pharmaccess.org and www.aaid.org.

- 1 WHO. Global HIV prevalence has levelled off. 2007. www.who.int/mediacentre/news/releases/2007/pr61/en/index.html.
- 2 Janssens W, de Beer I, Coutinho HM, van Rooy G, van der Gaag J, Rinke de Wit TF. A cautious note on household survey HIV prevalence estimates in resource-poor settings. *BMJ* 2010. www.bmj.com/content/341/bmj.c3942/reply#bmj_el_243786.
- 3 Roehr B. International AIDS relief stagnated in 2009. *BMJ* 2010;341:c3942. (20 July.)

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Prevalence of HIV positive results from eight nurses