JOURNAL OF THE INTERNATIONAL AIDS SOCIETY
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Concurrency revisited: increasing and compelling epidemiological evidence

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Journal of the International AIDS Society 2011, **14:**33 doi:10.1186/1758-2652-14-33

Accumulated evidence of substantial iatrogenic HIV transmission ignored and mischaracterized

Devon Brewer (30 June 2011) Interdisciplinary Scientific Research

Mah and Shelton [1] seek to defend the hypothesis that sex partner concurrency spawned generalized HIV epidemics. Regrettably, they ignore and mischaracterize major relevant evidence, rendering their argument moot.

Mah and Shelton claim "critics of concurrency have not proposed plausible alternative explanations for why the explosive generalized epidemics occurred" (p. 3). Actually, a decade ago, we highlighted the fact that Africans in cities with high HIV prevalences reported low rates of concurrency and those in cities with low HIV prevalences reported higher rates of concurrency [2-3]. We suggested then, and in scores of publications since [4], that iatrogenic transmission through blood exposures may underlie generalized HIV epidemics in Africa and elsewhere, and provided evidence consistent with that notion.

Mah and Shelton further assert that "notably, while non-sexual transmission (i.e., iatrogenic or parenteral) likely contributes some new infections in generalized epidemics, empirical evidence continues to mount that non-sexual transmission is not the major contributor of new infections in these epidemics" (p. 5). None of the sources Mah and Shelton cite present any results of studies with comprehensive assessment of both sexual and non-sexual exposures to HIV. It is impossible to know whether a potential mode of transmission is involved without assessing it. Presumptions are not data.

However, a growing body of research points to substantial iatrogenic HIV transmission at sites throughout sub-Saharan Africa. In these studies, researchers eliminated or controlled for sexual exposures as possible factors related to HIV infection. These researchers have found that a range of blood exposures are associated with incident or prevalent HIV infection, including medical injections [5-6], tetanus toxoid vaccination [7-9], male and female circumcision [10-11], blood transfusion [12], and diverse blood exposures in healthcare and cosmetic care [13-15]. Also, there are significant rates of horizontally acquired HIV infection in national probability samples of children under age 5 in Mozambique, Swaziland, and Uganda [14,16-18]. Moreover, Africans who are aware of blood-borne HIV risks are less likely to be infected than those who are unaware [19]. HIV prevalences are highest in countries (southern and east Africa) where few adults know about blood-borne risks and where prevention campaigns (including many funded by USAID) omit information about such risks.

To determine modes of HIV transmission with confidence, researchers must assess blood and sexual exposures comprehensively in incident HIV cases and controls, trace their contacts corresponding to such exposures, and sequence the DNA in infected persons' HIV isolates [20-22]. Until such investigations are completed, it is unscientific, blind prejudice to claim, as Mah and Shelton do, that blood exposures are not significant routes of HIV transmission in sub-Saharan Africa.

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Competing interests

We declare no competing interests.

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