groups received identical education on condom use and prevention of HIV-1 infection. Further, controls with STD symptoms at enrolment received treatment, and all participants were encouraged to seek care if they had symptoms of STD between the survey rounds. Thus, the control group benefited from intervention activities that would tend to keep the difference between the intervention and control groups at a minimum.

On this background I fully agree with the conclusion given by Hitchcock and Fransen that anything other than a sustained commitment to STD prevention as an important part of HIV control programmes is unthinkable.

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Sir—Penny Hitchcock and Lieve Fransen\(^1\) provide a plausible epidemiological explanation for the strikingly negative results of Maria Wawer and colleagues' STD prevention trial\(^2\) on HIV-1 incidence rates in Rakai Uganda. Nevertheless, Hitchcock and Fransen go on to recommend that STD prevention programmes should be equally implemented in similar contexts with mature HIV-1 epidemics. They are of course right, for Wawer's negative result in a community intervention trial if researchers know that its results, whether positive or negative, will not alter current control policies anyway? Moreover, is it ethical to undertake community trials if researchers know that its results, whether positive or negative, will not alter current control policies anyway? Moreover, is it ethical to undertake community trials to test interventions that are, from a public-health perspective, unsafe, unfeasible, and unaffordable for that same community? This question was also raised by the Perinatal HIV Intervention Research in Developing Countries Workshop Participants (March 6, p 832).\(^5\) We wonder whether African communities have any power to oppose this kind of epidemiological research.

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Authors' reply

Sir—Angus Nicoll and colleagues suggest that the divergent results of the Mwanza and Rakai STD control trials for AIDS prevention, ethically mandated the interventions used: syndromic treatment in the former study and mass treatment in the latter. It is unlikely that a syndromic approach would have had substantial effects on HIV-1 in Rakai, where most HIV-1 transmission occurred independently of STD symptoms or laboratory diagnoses. In addition, the sensitivity and specificity of symptoms of STD screening were poor\(^1\) (as has also been reported in Mwanza).\(^2\) Finally, many symptoms in the Rakai population were not due to treatable STDs: 42% of genital ulcers were herpes simplex virus-2, and only 7% were identified as syphilis or chancroid; over 50% had bacterial vaginosis, a disease which is not amenable to cure and is associated with risk of HIV-1.\(^3\) The hypothesis that the Mwanza trial achieved success by reducing symptom duration is attractive, but data on duration were not reported in that study. Finally, reintroduction of STDs in Rakai may have diluted an effect; however, in a study of pregnant women in whom STDs were significantly reduced in the intervention compared with the control group, we observed no reduction in HIV-1 incidence.

Gunnar Kvåle suggests that the Rakai results may have been due to lack of comparability between groups, or to the services offered to the control population. Absolute differences between groups in the distribution of key variables were small, and were adjusted for in analyses. Condom use was low in both groups, and only 16% of patients with symptoms in the control group reported seeking effective treatment. Thus, ethically mandated services cannot explain the negative results in the overall population or in all subgroups.

Francine Matthys and Marleen Boelaert raise issues of drug resistance and costs. Medications were provided as single, directly observed treatment, to keep inadequate compliance, a main cause of selective resistance, to a minimum. Gonorrhoea sensitivity testing identified no resistant strains. The drug costs estimated by Matthys and Boelaert are excessively high: metronidazole, ciprofloxacin, and penicillin together cost under US$1 in Kampala pharmacies. These drugs are also included in the World Bank Group's Health standard drug regimen, where their combined cost is even lower. Azithromycin is being used in mass treatment trachoma campaigns in developing countries, and prices are

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