- hood morbidity. *N Engl J Med.* 1985;312:82–89
- Creasy RK. Preterm birth prevention: where are we? Am J Obstet Gynecol. 1993;168:1223–1230.
- Goldenberg RL. The prevention of low birthweight and its sequelae. *Prev Med.* 1994;23:627-631.
- Mueller-Heubach E, Rubinstein DN, Schwarz SS. Histologic chorioamnionitis and preterm delivery in different patient populations. *Obstet Gynecol.* 1990;75:622-626.
- Watts DH, Krohn MA, Hillier SL, Eschenbach DA. The association of occult amniotic fluid infection with gestational age and neonatal outcome among women in preterm labor. *Obstet Gynecol.* 1992;79:351–357
- Cassell G, Hauth J, Andrews W, Cutter G, Goldenberg R. Chorioamnion colonization: correlation with gestational age in women delivered following spontaneous labor versus indicated delivery. *Am J Obstet Gynecol.* 1993;168:425. Abstract.
- Goldenberg RL, Mayberry SK, Copper RL, DuBard MB, Hauth JC. Pregnancy outcome following a second-trimester loss. Obstet Gynecol. 1993;81:444–446.

- Gibbs RS, Romero R, Hillier SL, Eschenbach DA, Sweet RL. A review of premature birth and subclinical infection. *Am J Obstet Gynecol.* 1992;166:1515–1528.
- Andrews WW, Goldenberg RL, Hauth JC. Preterm labor: emerging role of genital tract infections. *Infect Agents Dis.* 1995; 4:196-211.
- Andrews WW, Hauth JC, Goldenberg RL, et al. Amniotic fluid interleukin-6: correlation with upper genital tract microbial colonization and gestational age in women delivered following spontaneous labor versus indicated delivery. Am J Obstet Gynecol. 1995;173:606-612.
- 11. Krohn MA, Hillier SL, Nugent RP, et al. The genital flora of women with intraamniotic infection. Vaginal infection and prematurity study group. *J Inf Dis.* 1995;171:1475–1480
- 12. Goldenberg RL, Klebanoff MA, Nugent R, et al. Bacterial colonization of the vagina during pregnancy in four ethnic groups. *Am J Obstet Gynecol*. In press.
- Hillier SL, Nugent RP, Eschenbach DA, et al. Association between bacterial vaginosis and preterm delivery of a low-birth-weight infant. N Engl J Med. 1995;333:1737-1742.

- Korn AP, Bolan G, Padian N, Ohm-Smith M, Schachter J, Landers DV. Plasma cell endometritis in women with symptomatic bacterial vaginosis. *Obstet Gynecol*. 1995;85: 387–390.
- Cassell GH, Davis RO, Waites KB, et al. Isolation of mycoplasma hominis and Ureaplasma urealyticum from amniotic fluid at 16–20 weeks of gestation: potential effect on outcome of pregnancy. Sex Transm Dis. 1983:10:294–302.
- Gray DJ, Robinson HB, Malone J, Thomson RB Jr. Adverse outcome in pregnancy following amniotic fluid isolation of Ureaplasma urealyticum. *Prenat Diagn*. 1992;12: 111–115.
- Ghidini A, Eglinton GS, Jenkins CB, et al. Amniotic fluid IL-6 levels during the early second trimester: a predictor of preterm delivery. Am J Obstet Gynecol. 1996;174: 474. Abstract.
- Hauth JC, Goldenberg RL, Andrews WW, DuBard MB, Copper RL. Treatment with metronidazole and erythromycin reduces preterm delivery in women with bacterial vaginosis. N Engl J Med. 1995;333:1732– 1736.

Editorial: Family Planning, Sexually Transmitted Diseases, and the Prevention of AIDS—Divided We Fail?

Sexual activity is a basic, if not obligate, antecedent of sexual transmission of both sperm and microorganisms. These two conjoined consequences have spawned three disjoined services, namely, family planning clinics, clinics for sexually transmitted diseases (in practice, limited to those who are immediately treatable), and a host of ad hoc services purportedly aimed at preventing the sexual transmission of the human immunodeficiency virus (HIV). These typically function independently of one another. Might not a naive observer ask if two or even one of these agencies could comfortably combine these three functions, and, in doing so, gain in efficiency and effectiveness?

Contraception has always been the province of family planning clinics. These, growing under the wing of ardent advocates like Margaret Sanger since the 1920s, developed into agencies outside the mainstream of health and curative services. That independence may well, at different times and places, have secured their survival despite swings in political opposition and the hostility of some religious groups toward pregnancy prevention and spacing. Family planning is a movement as well as a service, focusing almost entirely on its own mission. Admittedly, some movement members have

advocated an expanded focus on reproductive health or, even beyond that, on the health of women. The assumption of responsibility for reproductive health, however, would properly require provision for the inclusion of services for men. Among both staff and clientele, men are largely absent in these clinics. Nor are most clinics equipped to serve all the health needs of women.

Diagnosis and treatment of diseases known to be sexually transmitted and treatable are the domain of special clinics, the second class of service. These too are often located in space separated from generic health services, and are generally administered directly by public health departments. Such assignments of place and responsibility, one might think, denotes an emphasis on the primary prevention of these transmissible diseases.

In practice, the focus tends to be on the more immediate matters of effective diagnosis and treatment. Health education and a reaching out into communities are lesser commitments. These activities extend to giving out male condoms and, with varying degrees of emphasis and success, advising patients to urge their contacts to come for treatment. But contact tracing and follow up are generally limited to certain categories of patient and are seldom thorough. Despite their public health status, many clinics thus provide a service that emphasizes the medical model and, at best, secondary prevention. The patient comes with a problem and is treated, then sent on his way. Also, one cannot but observe that, in ironic contrast to the family planning clinics, sexually transmitted disease clinics predominantly serve men. These diseases affect at least as many women as men and cause more serious morbidity in women than in men.

Services that seek the prevention of HIV are the third arm of the trio. On the one hand, like services for family planning, they are a product of a social movement. On the other hand, like the sexually transmitted disease clinics, they often are the creation of public health departments and are seen to be their responsibility. A wide range of agenciesvoluntary, nongovernment and government, ad hoc social and religious groupsare involved in the prevention of HIV transmission. What is remarkable, and the occasion for this commentary, is the very small contribution to these efforts made by family planning clinics and the sexually transmitted disease clinics.

The reasons for the disjunction and separateness of these services probably

can be found in the varied history of their origins. Hence we may ask: Is the separation for the benefit of service users? For the convenience of professional care givers and agency staff? Because of budgetary constraints? These are each researchable questions; but ultimately, we are concerned with more general questions. Does separation reduce the effectiveness of each class of service? Does it distort their overall mission? And, if the agencies are working well, why interfere?

These questions put the onus on the critic. What is the evidence for overlaps and gaps, for instance? Three pointers are proposed. The first, already mentioned above, is the patent neglect of both prevention and treatment of sexually transmitted diseases (including HIV) in women. Such neglect is a matter of concern, for we know that delay in seeking treatment is associated with longlasting morbidity, sterility, and even mortality, and of course with transmission to partner. Not to encourage women to seek timely treatment nor to document their diseases in an integrated way surely is a failure of mission for all three classes of agency.

If existing sexually transmitted disease clinics are unattractive to women, an explanation often advanced for their failure to attend there, is this not an implicit criticism of management? (And a failure, too—women vote with their feet, so to speak.) If personnel do not have

sensitivity to the needs of women, should they not be better trained? If, apart from treatment, women are supplied only with condoms and given, at the most, superficial education in self-protection, and no information on physical or chemical barriers other than the male condom, is this not again a failure of mission?

Now let us turn to family planning clinics. Insofar as they confine their advice to the use of those contraceptives that provide no barriers to sexually transmitted disease, i.e. hormonal methods and intrauterine devices, they, too, are sidestepping or ignoring a wider responsibility. Neither the training nor the philosophy of most clinic personnel seems to have convinced them to take on this added role. In truth, there often is active resistance, even hostility, to so doing.

For agencies focusing on the prevention of HIV, the neglect of preventive activity at sexually transmitted disease clinics and family planning clinics in turn deprives them of two natural bases of operation. The clientele of each can be described, in varying degrees, as at risk for HIV. Moreover, the very services that have for decades tried to provide sensitive and intimate care to women fail, both by not joining more fully in prevention of sexually transmitted diseases and HIV, and by failing to pass on their special skills to others.

For each of these services, there are admirable exceptions to these general

assertions. One example in Jamaica began with a preliminary needs assessment at family planning clinics, which in almost every detail confirmed the general shortcomings sketched above. There followed a systematic retraining of staff, the addition of missing skills and services, and most important, also a satisfying reorientation of both facility and clients to a broader set of goals.¹

Without resort, then, to elaborate trials of new systems, some exceptional and exemplary agencies might be studied and evaluated against the common run, to test the validity of some of our basic assumptions. Does integration achieve higher client satisfaction and greater economies? Improve prevention? And, most of all, does it better achieve the public health mission of protecting the population from the unwanted consequences of unguarded sexual activity? The betting is that integration will contribute to all these desirable outcomes. It is time, surely, to try, test, and so find out. \square

> Zena Stein Associate Editor

Reference

 Scott P, Becker J. HIV prevention and family planning: integration improves client services in Jamaica. *Captions* [Arlington, Va: Family Health International/AID-SCAP]. 1995;2(3):15-18.

Comment: The Dominant Role of Driver Behavior in Traffic Safety

The article by Hingson et al.¹ in this issue of the Journal reports reductions in harm from traffic crashes associated with a Saving Lives Program. This program involves a set of initiatives all aimed at influencing the behavior of drivers by such means as speeding and drunk driving awareness days, media campaigns, and business information programs. The study finds that the program generated a 25% reduction in fatal crashes and a 42% reduction in fatal crashes involving alcohol. The proportion of vehicles observed speeding was cut in half.

The only other traffic-harm reductions of comparable magnitude are also associated with changes in driver behavior. Reducing the speed limit from 70 to 55 miles per hour reduced fatality rates on US rural interstate roads by 34%,² mandatory safety-belt wearing in the United Kingdom reduced front-seat occupant

fatalities by 20%,³ and random breath testing for alcohol in the Australian state of New South Wales reduced driver fatalities by 19%.^{2,4}

In the 1970s, major studies in the United States⁵ and the United Kingdom⁶ identified factors associated with large samples of crashes. The research groups, which were unaware of each other's activities, obtained remarkably similar findings. The US study found the road user to be the sole factor in 57% of crashes, the roadway in 3%, and the vehicle in 2%; the corresponding values from the UK study were 65%, 2%, and 2%, respectively. In nearly all cases, the vehicular factor was in fact a vehicle maintenance problem, such as bald tires or worn brake linings. The road user was identified as a sole or contributing factor in 94% of crashes in the US study and in 95% of crashes in the UK study.

All the information above supports the core traffic safety research finding that changes in driver behavior offer, by far, the largest opportunities for harm reduction. A clear hierarchy of factors can be specified.² Human factors are far more important than engineering factors. Among human factors, driver behavior (what the driver *chooses to do*) has much greater influence on safety than driver performance (what the driver *can do*). Among engineering factors, roadway engineering has much greater influence than automotive engineering. The fatality rates on some road categories are 8 times that

Editor's Note. This comment, submitted from the author's home, reflects his personal views. He is employed by General Motors Corporation.

See related article by Hingson et al. (p 791) in this issue.