STD Risk Assessment (in Family Planning Clinic Settings)

Sexually Transmitted Disease (STD) risk assessment in the context of family planning (FP) is under study. STD risk assessment should have a variety of benefits in reproductive health (RH) and improve overall quality of care. A risk assessment will potentially help determine what type of RH services should be offered to a client, for example:

a) what contraceptive options are best suited to the client's needs, including dual method use,

b) what risk reduction counseling is needed,

c) whether testing and/or treatment/referral for STDs is needed, and

d) in the case of maternal and newborn care, what diagnostic and/or treatment options are needed to decrease maternal and neonatal morbidity and mortality.

Thus, appropriate STD risk assessment tools are under study for both effective STD management and appropriate FP counseling to form a unified pathway for integrated RH health services.

Uses of STD Risk Assessment in Reproductive Health

- **For all family planning clients:**
  STD risk assessment can be a tool to aid in counseling regarding appropriate contraceptive options. For example, clients determined to be at increased risk of current or future STDs would be poor candidates for intrauterine devices (IUDs), but may be good candidates for barrier methods.

- **For symptomatic clients:**
  For clients with symptoms and signs of an STD, syndromic management (i.e., management based on symptoms and signs as opposed to detection of specific organisms) is a programmatic option in settings where laboratory diagnosis is not feasible. Where STD treatment services are offered, clients should be treated with antibiotic regimens appropriate to cure the range of organisms typically causing the particular syndrome. Syndromic management of urethral discharge in men, and of genital ulcers in men and women, has been shown to have a high positive predictive value. In cases of vaginal discharge, where syndromic management is problematic, STD risk assessment may help predict more specific treatment, i.e., treatment for vaginitis alone or treatment for both vaginitis and cervicitis.

- **For asymptomatic clients:**
  STD risk assessment might help to identify those clients who are at greater risk of being infected and therefore good candidates for further clinical examination or laboratory evaluation, or alternatively for treatment of presumptive infections. Unfortunately, studies have shown that results of STD risk assessment in asymptomatic women do not correlate well with actual presence of infection, however, in some settings it may still be a useful approach to determine who should undergo further evaluation.

Risk Factors to be Assessed

Several recent investigations[1-3] have found that certain demographic, behavioral and non-laboratory clinical factors (e.g., self reported vaginal discharge or lower abdominal pain) were correlated with the presence of various STDs in the study populations. These factors were (or could be) used to assess the likelihood that persons coming for RH services are either currently infected or at high risk of future infection with STDs.

Helping Clients Receive an Accurate STD Risk Assessment:

The studies mentioned above also have shown that the risk factors vary from one setting to another. Thus, a characteristic which indicates increased STD risk in one country/population may not be indicative of elevated risk in a different country/population. To increase the utility and predictive value of STD risk assessment, programs should try to establish what demographic characteristics, behavioral risk factors, and clinical symptoms and signs are associated with the various STDs seen in their local setting. When doing so is not possible, creating a risk assessment tool based on some of the characteristics which have been demonstrated to be risk factors for STD infection in other settings may be a useful alternative. The utility of using STD risk assessment without clinical validation must be judged in the context of the current services available and the scope of the STD problem.

Because of the sensitive nature of sexuality and STDs in many cultures, clients may be hesitant to respond truthfully during an STD risk assessment. Thus, the provider should ask questions in a non-judgmental manner and assure the client that the discussion is strictly confidential.

Self-assessment methods, where the client determines his or her own level of risk based on information given by the provider but does not indicate which specific risk factors apply, might be useful in such settings. Research into the utility of self-assessment for STD risk is ongoing.

Citations:

1) Behets FM, Liomba G, Lule G, Dallabetta G, Hoffman IF, Hamilton HA, et al. Sexually transmitted diseases and human immunodeficiency virus control in Malawi: a field study of genital ulcer disease. Journal of Infectious Diseases 1995;171(2):451-5.
2) Vuylsteke B, Laga M, Alary M, Gerniers MM, Lebughe J, Nzila N, et al. Clinical algorithms for the screening of women for gonococcal and chlamydial infection: evaluation of pregnant women and prostitutes in Zaire. Clinical Infectious Diseases 1993;17(1):82-8.
3) Behets FM, Williams Y, Brathwaite A, Hylton-Kong T, Hoffman I, Dallabetta G, et al. Management of vaginal discharge in women treated at a Jamaican sexually transmitted disease clinic: use of diagnostic algorithms versus laboratory testing. Clinical Infectious Diseases 1995;21(6):1450-5.

The following demonstrates a list of risk factors which have been associated with an increased risk of STDs. These risk factors are not meant to be universally applicable; the development of a local STD risk assessment, based on the local situation, would be useful and merits consideration.

What Demographic, Behavioral and Clinical Characteristics have been associated with increased risk of STDs?

Risk Factors (Development of a local risk assessment protocol, based on local situation, is useful)	Rationales
1. Demographic a) Age. (e.g., <20 years old vs. ≥20 years old)	a) Recent surveys in several countries have shown that the prevalence of STDs is higher among women under 20. In general, adolescent males and females, are at greater risk for contracting STDs. Both biological (i.e., postulated immaturity of the female reproductive tract) and behavioral factors (i.e., greater number of partners, low awareness of acquired immunodeficiency syndrome (AIDS) and other STDs, and limited use of protection against STDs) are thought to contribute to this risk. *The actual "cut off" age may **not** be age 20 in all societies*, the true age for use in STD risk assessment should ideally be determined from local/regional information. 1) Brabin L, Kemp J, Obunge OK, Ikimalo J, Dollimore N, Odu NN, et al. Reproductive tract infections and abortion among adolescent girls in rural Nigeria. Lancet 1995;345:300-4. 2) Duncan ME, Tibaux G, Pelzer A, Reimann K, Peutherer JF, Simmonds P, et al. First coitus before menarche and the risk of sexually transmitted disease. Lancet 1990;335:338-40. 3) Duncan ME, Tibaux G, Pelzer A, Mehari L, Peutherer J, Young H, et al. Teenage obstetric and gynecological problems in an African city. Central Africa Journal of Medicine 1994;40:234-44. 4) Lema VM, Hassan MA. Knowledge of sexually transmitted diseases, HIV infection and AIDS among sexually active adolescents in Nairobi, Kenya and its relationship to their sexual behaviour and contraception. East African Medical Journal 1994;71:122-8.

Risk Factors	Rationales
b) Partnership Status Single vs. Married/Living with regular partner.	b) In some cultures, marital status/living with a partner is a good indicator of a monogamous relationship. In the US, women using intrauterine devices (IUDs) who are married or living with a partner have no elevation of pelvic inflammatory disease (PID) risk compared to similar women using no contraceptive method. PID is one of several possible health consequences of STDs. However, marital status or living with a partner does not necessarily offer protection from STDs, mainly due to women's inability to influence their husbands'/partners' behavior. *Local practices and customs must be taken into account when determining the likely importance of this factor in relation to STD risk.* Single women/women not living with a regular partner are at increased risk due to possible behavioral characteristics such as multiple partners or partners with multiple partners.

1) Lee N, Rubin G, Borucki R. The intrauterine device and pelvic inflammatory disease revisited: new results from the Women's Health Study. Obstetrics and Gynecology 1988;72(1):1-6.
2) Braddick MR, Ndinya-Achola J, Mirza N, Plummer FA, Irungu G, Sinei SK, et al. Towards developing a diagnostic algorithm for *Chlamydia trachomatis and Neisseria gonorrhoeae* cervicitis in pregnancy. Genitourinary Medicine 1990;66(2):62-5.
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5) Rosenfield A, Fathalla M (editors). The FIGO manual of human reproduction. Park Ridge, NJ: Parthenon Publishing Group, 1990.

Risk Factors	Rationales
2. Behavioral	
a) New or more than one sexual partner in the last three months.	a) Clients with a recent history of new or multiple partners are at increased risk of STDs, especially if they do not use condoms. 1) Padian NS, Shiboski SC, Hitchcock PJ. Risk factors for acquisition of sexually transmitted diseases and development of complication. In: Wasserheit JN, Aral SO, Holmes KK (eds). Research issues in human behavior and sexually transmitted diseases in the AIDS era. Washington, DC: American Society for Microbiology, 1991:83-96. 2) Catania JA, Binson D, Dolcini MM, Stall R, Choi KH, Pollack LM, et al. Risk factors for HIV and other sexually transmitted diseases and prevention practices among U.S. heterosexual adults: changes from 1990-1992. American Journal of Public Health 1995;85(11):1492-9. 3) Levin LI, Peterman TA, Renzullo PO, Lasley-Bibbs V, Shu XO, Brundage JF, et al. HIV-1 seroconversion and risk behaviors among young men in the US army. American Journal of Public Health 1995;85(11):1500-6. 4) Aral SO, Soskoline V, Joesoef RM, O'Reilly KR. Sex partner recruitment as a risk factor for STD: clustering of risky modes. Sexually Transmitted Diseases 1991;18(1):10-7.
b) Partner has other/multiple sex partners.	b) Clients whose partners have other or multiple partners are at increased risk of STDs. It may be extremely difficult for women to assess their partners' behavior. 1) Faxelid E, Ndulo J, Ahlberg BM, Krantz I. Behaviour, knowledge, and reactions concerning sexually transmitted diseases: implications for partner notification in Lusaka. East African Medical Journal 1994;71(2):118-21.

Risk Factors	Rationales
3. Clinical	
a) History of STD or PID, or previous syndromic treatment for an reproductive tract infection (RTI).	a) Clients with prior STDs are at increased risk, especially if partner(s) were not treated and the underlying risk behavior still exists. Clients may not remember or realize that they have received prior treatment for an STD. 1) Faxelid E, Ndulo J, Ahlberg BM, Krantz I. Behaviour, knowledge, and reactions concerning sexually transmitted diseases: implications for partner notification in Lusaka. East African Medical Journal 1994;71(2):118-21. 2) Daly C, Maggwa N, Mati JK, Solomon M, Mbugua S, Tukei PM, et al. Risk factors for gonorrhea, syphilis, and trichomonas infections among women attending family planning clinics in Nairobi, Kenya. Genitourinary Medicine 1994;70(3): 155-61 3) Handsfield HH, Jasman LL, Roberts PL, Hanson VW, Kothenbeutel RL, Stamm WE. Criteria for selective screening for *Chlamydia trachomatis* infection in women attending family planning clinics. Journal of the American Medical Association 1986; 255(13):1730-4. 4) Addiss DG, Vaughn ML, Ludka D, Pfister J, Davis JP. Decreased prevalence of *Chlamydia trachomatis* infection associated with a selective screening program in family planning clinics in Wisconsin. Sexually Transmitted Diseases 1993;20(1):28-35. 5) Sellors JW, Pickard L, Gafni A, Goldsmith CH, Jang D, Mahony JB, et al. Effectiveness and efficiency of selective vs universal screening for chlamydial infection in sexually active young women. Archives of Internal Medicine 1992;152(9):1837-44.
b) Partner with symptoms of an STD: • uethral discharge • genital sores • pain when urinating	b) Clients whose partner(s) have symptoms of an STD are at increased risk of infection. It may be extremely difficult for women to assess their partners' symptoms. 1) Faxelid E, Ndulo J, Ahlberg BM, Krantz I. Behaviour, knowledge, and reactions concerning sexually transmitted diseases: implications for partner notification in Lusaka. East African Medical Journal 1994;71(2):118-21. 2) Behets FM, Williams Y, Brathwaite A, Hylton-Kong T, Hoffman I, Dallabetta G, et al. Management of vaginal discharge in women treated at a Jamaican sexually transmitted disease clinic: use of diagnostic algorithms versus laboratory testing. Clinical Infectious Diseases 1995;21(6):1450-5. 3) Daly C, Wangel A-M, Hoffman I, Canner J, Lule G, Lema V, et al. Validation of the World Health Organization diagnostic algorithm and development of an alternative scoring system for the management of women presenting with vaginal discharge in Malawi. [In press].

Risk Factors	Rationales
c) Current symptoms or signs which may indicate an STD (some of these are very non-specific): ● vaginal discharge ● sores in genital area ● pain during intercourse ● bleeding after intercourse ● pain when urinating ● lower abdominal pain	c) Clients with symptoms/signs of an STD should be evaluated and their condition addressed according to local protocol. Several studies have assessed different algorithms for determining which symptomatic persons actually have STDs; unfortunately, in low risk populations, these algorithms have unacceptably low sensitivity and/or specificity (ability to detect if a client is truly positive or negative for an STD). 1) Germain M, Alary M, Gredeme A, Mahony JB. Evaluation of a screening algorithm for the diagnosis of genital infections with *Neisseria gonorrhoea* and *Chlamydia trachomatis* among female sex workers in Benin. Sexually Transmitted Diseases 1997;24(2):109-15. 2) Behets FM, Williams Y, Brathwaite A, Hylton-Kong T, Hoffman I, Dallabetta G, et al. Management of vaginal discharge in women treated at a Jamaican sexually transmitted disease clinic: use of diagnostic algorithms versus laboratory testing. Clinical Infectious Diseases 1995;21(6):1450-5. 3) Daly C, Wangel A-M, Hoffman I, Canner J, Lule G, Lema V, et al. Validation of the World Health Organization diagnostic algorithm and development of an alternative scoring system for the management of women presenting with vaginal discharge in Malawi. [In press].

Conclusion

Current research has indicated that an STD risk assessment approach can be a practical, feasible approach to determine high risk sexual behavior in clients for counseling purposes, including contraceptive choice. In conjunction with an STD algorithm, STD risk assessment has been applied as a method to determine if a symptomatic woman with a vaginal infection may also have a cervical STD infection. STD risk assessment approaches for asymptomatic women have been useful in identifying clients who are at greater risk of being infected with an STD, but problematic in determining which clients have current STD infections. With no currently available, simple, rapid diagnostic tests for many of the most common STDs, further research is warranted in order to investigate new approaches to improving existing STD risk assessment tools and syndromic algorithms.

Additional Citations for more information:

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4) FHI/AIDSCAP. STD Risk and Dual Method Use Study Questionnaire. Kingston, Jamaica.
5) Stergachis A, Scholes D, Heidrich FE, Scherer DM, Holmes KK, Stamm WE. Selective screening for *Chlamydia trachomatis* infection in a primary care population of women. American Journal of Epidemiology 1993;138(3):143-53.
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9) Behets FM, Desormeaux J, Josef D, Adrien M, Coicou G, Dallabetta G, et al. Control of sexually transmitted diseases in Haiti: results and implications of a baseline study among pregnant women living in Cite Soleil Shantytowns. Journal of Infectious Diseases 1995;172(3):764-71.
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