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Providing Services for Sexually Transmitted Infections Within Other Health Programs

by

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PROVIDING SERVICES FOR SEXUALLY TRANSMITTED INFECTIONS WITHIN OTHER HEALTH PROGRAMS

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EXECUTIVE SUMMARY

Prevention and control of sexually transmitted infections (STIs) are now receiving increased attention because of the emergence of human immunodeficiency virus (HIV) and AIDS as a major public-health problem. Several STIs have been identified as risk factors for the spread of HIV. There is also growing recognition of the economic burden of STIs, from both direct and indirect costs. The direct costs of treating STIs such as gonorrhea and chancroid has markedly increased because of the emergence of antimicrobial resistance and the frequent need for hospitalization due to STI sequelae. And in terms of indirect costs, the World Bank's 1993 **World Development Report** estimates that in high-prevalence urban areas, STIs account for up to 17 percent of productive healthy life years lost, and are second only to measles in their disease burden.

Vertical STI programs offering only STI services, are staffed by personnel with specialized training and are preferred by specialists. Their geographic accessibility for the general population is limited, compared to that of primary care centers and family-planning clinics. And women, since STIs are often asymptomatic in them, have no particular reason to go to a specialized STI clinic. Furthermore, the stigmatizing attitude in many STI clinics prevents women from seeking care in them.

Integrated care would increase access to reproductive health care for women and to STI services for the general population. Maternal-child health (MCH) and primary health care (PHC) clinics offering a full range of clinical and preventive care for all types of diseases, including STIs, will be perceived as "one-stop clinics" and will attract a wider range of clients, including out-of-school youth and adolescents. Family-planning clinics offering STI services can achieve broader community outreach, especially extending this outreach to men. Additional benefits of integrated care include avoiding duplication of services and maximizing scarce resources, given current resource limitations and opportunity costs.

Programs can be integrated at different levels. In one form of integration, programs are integrated from the national level to the service delivery level. The organizational structure and staff of the different programs/divisions are fully integrated. There is a single program/division that is multi-service, and a single plan with a comprehensive set of objectives and a budget that covers the entire multi-service program/division. Another form of integration involves adding new services only to an existing program. Here, integration is at the service delivery level but not at the national level, and management may or may not be integrated.

Similarly, different types of services can be integrated. STI services can be added to family-planning programs, to maternal-child health clinics and primary health clinics. Adding STI services to school health programs would address the sexual health needs and problems of school-based youth and would reach the pre-pubescent group with information and education before they become sexually active. Still another type involves integration of STI services with HIV/AIDS prevention activities. By integrating the two fields, STI clinics

can serve as important access points for diagnosis, treatment, condom promotion and education of groups at risk of contracting both STIs and HIV — groups who might not get HIV/AIDS services at all if these were not provided at STI clinics. Additionally, STI clinics can serve as sentinel sites for tracking trends in HIV/AIDS as well as STIs.

This paper stresses the importance of providing STI services within other health programs, and highlights the issues that need to be addressed (in clinic settings as well as non-clinic settings) by health planners and program managers in designing new integrated delivery systems or improving the quality and effectiveness of on-going ones.

Integration-related issues discussed in the paper include:

- Objectives and target population for integrated services;
- Information, education and communication;
- STI counseling in integrated programs;
- Promoting condoms and barrier contraceptives;
- Screening and referral/diagnosis, and treatment;
- Partner notification and referral;
- Training of staff;
- Physical infrastructure and laboratory support;
- Essential drugs, commodities, and logistics;
- Supervision; and
- MIS and Monitoring.

The paper concludes with a discussion of different objectives for different types of integration, emphasizing the importance of clearly defined objectives and targets before planning and implementing an integrated program.

The appendix is a review of basic information regarding common sexually transmitted infections identified as risk factors for HIV transmission, and curative and preventive measures that can be taken in resource-poor settings.

INTRODUCTION

Prevention and control of sexually transmitted infections (STIs) have not been a priority for most countries and development agencies. Lack of awareness of the problem of STIs and their sequelae, competition for resources to control other important health problems and the reluctance of public-health policy makers to deal with diseases related to sexual behavior which is difficult to change have all played a role. And for women, their low status in society has been a major obstacle to the control and prevention of STIs occurring in them.

To date, most STI activities have focused on prevention of development of complications (secondary prevention), but prevention of transmission of infection (primary prevention) is now receiving increased attention because of the emergence of human immunodeficiency virus (HIV) and AIDS as a major public-health problem and the identification of several STIs as risk factors for the spread of HIV.

Recognition is also growing regarding the economic burden of STIs, in terms of direct as well as indirect costs. For example, regarding direct costs, the cost of treating STIs such as gonorrhea and chancroid has markedly increased because of the emergence of antimicrobial resistance and the frequent need for hospitalization due to STI sequelae. In terms of indirect costs, Over and Piot have estimated in the World Bank 1993 World Development Report that, in urban areas with high prevalences, STIs account for up to 17% of productive healthy-life years lost and are second only to measles in their disease burden. Over and Piot have also estimated that women in a high-prevalence urban setting bear a total STI illness burden of 44.4 healthy-life days per capita per year, about 3 percent more than the burden borne by men.

This paper stresses the importance of providing STI services within other health programs and highlights the issues that need to be addressed by health planners and program managers in the design of new integrated delivery systems or to improve the quality and effectiveness of on-going ones.

Why Integration?

Increased Access to Reproductive Health Care for Women. Vertical STI programs offer STI services exclusively, are staffed by personnel with specialized training and are preferred by specialists. Thus, compared with primary-care centers and family-planning clinics, their geographic accessibility is limited for the general population. And specifically for women, since STIs are often asymptomatic in them, women with an STI will have no particular reason to go to an STI clinic, although they may decide to go to a primary-health-care (PHC) facility because of urogenital problems or abdominal problems. Furthermore, the stigmatizing attitude in many STI clinics prevents women from seeking care in them. And when women go to a primary-health-care clinic to seek treatment for

symptoms such as vaginal discharge, genital ulcers or lower abdominal pain, they are usually referred to a separate STI clinic, to which they may or may not go. Integrated care will avoid referrals and will increase access to STI services for the general population, particularly women.

Broader Outreach. Access to health services is inconvenient and time-consuming in most developing-country settings. Maternal-child health (MCH) and PHC clinics offering a full range of clinical and preventive care for all "categories" of diseases, including STIs, will be perceived as "one-stop clinics" and will attract a wider range of clients including out-of-school youth and adolescents. For family-planning clinics, programs that offer STI services also have the possibility of attaining a broader community outreach, especially expanding outreach to men.

Other Benefits. Integrated care can avoid duplication of services and maximize scarce resources, given current resource limitations and opportunity costs. For example, STI clinics may be the only contact point for high-risk groups with the health system. Available funds will go further if HIV/AIDS prevention programs and STI services are integrated and health systems are able to concentrate on detection and early intervention of both AIDS and STIs at the same time.

Levels and Types of Integration

Different forms of integration involving different levels can be done. Programs can be integrated starting from the national level to the service-delivery level. In this form of integration, the organizational structure and staff of different programs/divisions are fully integrated. There is a single program/division that is multi-service and a single plan with a comprehensive set of objectives and a budget that covers the entire multi-service program/division. Another form of integration only involves adding new services to an existing program. In this form, integration is at the service-delivery level but not at the national level. Still, there are programs integrated at the service-delivery level but not at the management level.

Similarly, different types of services can be integrated. Some examples follow:

- **Adding STI services to Family Planning.** Family-planning (FP) programs reach out to the sexually active population of reproductive age. FP programs and STI programs have a common goal: to improve reproductive health. Clients attending FP and STI clinics frequently have overlapping health needs. By counseling and promoting barrier contraceptives at FP clinics, family-planning programs can help prevent STIs and its consequences, such as infertility, as well as reduce sexual transmission of HIV. Likewise, providing STI services at FP clinics offers significant opportunities for synergistic effects. For example, helping women

have healthy babies by treating STIs and preventing adverse consequences of pregnancy is likely to increase women's acceptance of family planning.

- **Adding STI services to maternal-child health, primary health care clinics.** MCH services are integrally linked to provision of appropriate care for pregnant, postpartum and breastfeeding women. Like FP programs, MCH staff already have substantial experience and training dealing with issues of sexuality, counseling and contraception. Likewise, PHC clinics provide basic curative services including simple laboratory examinations and PHC staff already have health education, diagnosis, treatment and simple laboratory experience. MCH and PHC clinics that include more comprehensive health services such as STI diagnosis and treatment may be more attractive to the community. Indeed, for some women, the only contact they may make with the health system for health care and health education will be when they take their children to PHC clinics and under-five clinics or when they go to an MCH clinic for antenatal care.
- **Adding STI services to school health programs.** School health programs are the best channels to address the sexual health needs and problems of school-based youth, and particularly to reach the prepubescent group with information and education before they become sexually active.
- **Adding HIV/AIDS prevention interventions to STI clinics.** The predominant mode of transmission for STI and HIV is sexual for both; many of the measures for preventing sexual transmission of STIs and HIV are the same, as are the target audiences for these interventions. By integrating the two fields, STI clinics can serve as important access points for diagnosis, treatment, condom promotion and education of groups at risk of contracting both STIs and HIV — groups who may not get HIV/AIDS services at all if these are not provided at STI clinics. Additionally, STI clinics can serve as sentinel sites for tracking trends in HIV/AIDS as well as STIs.

ISSUES TO ADDRESS

The following is a discussion of issues that need to be addressed in clinic settings as well as non-clinic settings by health planners and program managers in the planning and implementing of integrated programs.

Clinic Settings

1. *Information, Education and Communication*

IEC is a service component that is basic for every program at whatever level. IEC is also an activity which offers the potential for a high public-health impact with the least compromise of existing services.

In *FP clinics*, integration will require a shift in the focus of IEC activities to emphasize that contraception would reduce not only the risk of unplanned pregnancy but that of STIs and their aftermath. In *MCH and PHC clinics*, IEC activities will need to add information on STIs and their consequences, high-risk behavior associated with STIs, messages promoting condoms and use of condoms, as well as messages promoting health-care-seeking behavior. In *school health programs*, the addition of sexuality education including information on STIs, communication and negotiation skills and condom promotion can give school-based youth information as well as the means to protect themselves. *HIV/AIDS programs* (outreach, peer, workplace, youth centers, youth clubs, etc.) generally target adolescents, youth, men and high-risk groups, and integration offers an opportunity to reach a wider community with information on STIs and their consequences as well as the means to protect themselves and to seek care.

Issues to address:

What are the differences and the similarities in IEC training and IEC material in the two programs to be integrated? Can existing IEC material and messages from the two programs be shared or is there a need to jointly develop appropriate new material and messages? What are the pros and cons of combining messages from two fields? For integration with FP, new materials and messages will be mandatory to communicate a dual message of protection: that selected contraceptive methods would reduce not only the risk of unplanned pregnancy but that of STIs as well. For integration with HIV prevention programs, it is important that new AIDS/STI prevention messages be designed so as not to obscure the risk from other routes of transmission, such as drug use. In addition, particularly for youth, IEC materials need to be appropriate to both the age and the culture of the youth.

Regarding IEC training for an integrated program, will there be a need to develop new training curricula or will adding appropriate modules to on-going training programs be sufficient (e.g., STI information add-ons to community-based distribution (CBD) training in FP programs)?

What types of messages and communication channels will be appropriate and most effective in an integrated program aimed at a diverse, mixed audience? Can client participation in the development of new messages have a stronger impact?

What mechanisms/linkages will need to be established for distribution and utilization of IEC materials (e.g., a multisectoral approach involving ministries such as health, education, labor, the private sector, etc.)?

2. *STI Counseling*

This will require frank discussions about sexual relationships and reducing high-risk sexual behavior. Thus, FP staff in an integrated program should be able to provide counseling to clients not only on FP but on sexuality and behavior-change issues as well. Likewise, MCH/PHC clinic staff should be able to provide counseling not only on pregnancy and nutrition but information on STIs as well. Similarly, school health staff and youth counselors and peer educators in youth clubs and centers should be able to provide not only sexuality education, but information and counseling on STIs and where to obtain services as well. In addition, integrated care staff will need to promote condoms and emphasize partner notification, referral and treatment in their counseling sessions.

Issues to address:

How can counseling skills be strengthened in order that counselors and peer educators are adequately prepared and feel comfortable discussing sexuality and behavioral issues with their clients? What are the minimum counseling skills and information needed for personnel involved in integrated care?

How do we best add STI information to existing counseling? How much additional time would it take if STI counseling is added? Particularly for counselors at FP clinics would this detract from FP counseling? And for counselors at MCH and PHC clinics, would the addition time taken for STI counseling detract from health education and nutrition, prenatal care and childcare counseling? Will there be a need for new counselors or can current staff provide the additional counseling with training? Will it be too much information for current staff to disseminate? What are the training and supervisory requirements?

3. *Promoting Condoms and Other Barrier Contraceptives*

The biggest obstacle programs will face in bringing the fields together is the fact that the most effective choices to prevent pregnancy are not necessarily the most effective for preventing STIs. Condoms have not been favored by most FP providers due to concerns about condom effectiveness, consistent and correct use, breakage, logistics and cost. Furthermore, since HIV/AIDS prevention programs often emphasize the use of condoms by core transmitters such as commercial sex workers, some FP programs fear that promoting condoms in FP clinics could stigmatize their services. Where FP and STI/HIV prevention are equally important goals, a consensus on condom-promotion messages and strategies is critical. FP programs need to take into consideration the possibility that, for

some clients, the secondary benefits of STI prevention may be as salient as the primary benefit of contraception.

Integrated care raises the question of whether programs should recommend that people at higher risk of STI/HIV use two methods: one for family planning and one for STI prevention. This "dual protection" could involve the use of two barrier methods or a barrier method together with a non-barrier method such as oral contraceptives (OCs) or intra-uterine devices (IUDs).

Issues to Address:

Condom Advocacy: What are the factors that need to be addressed for FP and STI/HIV programs to reach a consensus on condom advocacy — i.e., for FP programs to promote condoms as vigorously as other contraceptives and STI/HIV programs to promote condoms not only for disease prevention but for FP as well?

Provider Attitudes: What is the role of provider knowledge, attitudes and practices in promoting barrier methods?

What are local attitudes and practices affecting use of barrier methods?

Male Participation: What are the most effective strategies to increase male involvement/use of barrier methods? FP programs have focused mostly on women and the lack of equitable participation by men has resulted in their ignorance of contraceptive methods and inability to help their female partners make informed choices. Given that the one currently available effective means for preventing STIs and HIV transmission, i.e., condoms, requires the full and dedicated participation of the male partner, motivating and including men will be essential to the success of promoting barrier methods.

Acceptability: How can we promote a positive image of condom use? How can community norms be changed regarding use of barrier methods? How acceptable is the dual protection method? Who should be advised to use the "dual approach"? Who will comply? (Only individuals who assess themselves to be "at risk" will comply, which brings us to the next question....) What are the determinants influencing people's risk assessments of selves as well as their partners? What are the factors that need to be addressed to enable people to make better risk assessments in order that individuals at high risk are convinced of their need for dual protection?

User Compliance: How can sustained use of condoms and other barrier methods be promoted? What are the norms and determinants influencing user compliance of barrier methods?

Safety: How safe is the dual approach using two barrier methods? (increased micro-trauma and micro-ulceration to the vaginal epithelium? increased colonization by anaerobic organisms?)

Costs: What would be the cost to FP programs of providing condoms for STI prevention?

4. *Screening and Referral/Diagnosis and Treatment*

Syndromic diagnostic algorithms as well as risk-assessment protocols for screening are being improved and evaluated as are simpler, inexpensive rapid diagnostic tests (e.g., Rapid Plasma Reagin (RPR) test and Tolidine Red Unheated Serum Test (TRUST) for syphilis, the oxidase strip for gonococcal urethritis, dehydrated culture pads for diagnosing gonococcal infections in women). These developments may facilitate easier integration of STI diagnosis in other programs. Treatment, however, may still be a problem because appropriate drugs may not be available, they may be too expensive or because treatment fails as a result of antibiotic resistance or noncompliance.

Issues to Address:

Syndromic Diagnosis: What is the cost-effectiveness of syndromic diagnosis? How does the syndromic approach to diagnosis and treatment of STIs compare with laboratory and clinical approaches, particularly in terms of cost-effectiveness in integrated programs? Syndromes fail to identify asymptomatic patients and as many as 50 percent of infected women are asymptomatic. On the other hand, using the syndromic approach for symptomatic women is also not effective, since a definite diagnosis cannot be made and providers may need to treat for several STIs at the same time with consequent drug wastage.

What is the range of STI screening, diagnosis and treatment services that should be provided without compromising existing services? For example, should all clients attending integrated clinics be screened or should screening be targeted only at those presumed to be at risk based on provider's assessment of patient's history? If assessed to be at risk, should the client be referred for treatment only or for diagnosis and treatment? Or should clinics have the capability of providing the complete range of services: screening, diagnosis and treatment? What are clients' needs on range of services to be provided? What are providers' perspectives? If referring, how can effective and appropriate referral systems and linkages be developed? What are the mechanisms necessary to monitor these referral systems?

How much would the addition of STI screening and treatment affect cost? Will the addition of a complete range of services provide an opportunity for cross-subsidization? Clients may be willing to pay for STI diagnosis and treatment, and the income may be used to subsidize the cost of providing existing services. What

additional resources will be needed to perform STI diagnosis and treatment (e.g., antibiotics, laboratory reagents, additional refrigeration...)? Will there be a need for new staff or can current staff provide the additional services with training?

Evaluation of risk assessment protocols: How accurate and reliable are they? Should risk assessment be made primarily by providers? How does self assessment of risk compare with assessment by a health-care provider?

Infection control: How can we ensure infection prevention and strict adherence to universal infection-control procedures in FP, MCH and PHC clinics offering integrated care to protect clients and providers?

5. *Partner Notification*

Partner notification will be a new component that will have to be addressed by FP, MCH and PHC clinics and by HIV prevention programs and school health programs if STI services are to be integrated. Partner notification whereby partners of those who are identified and are being treated as having an STI are traced, informed of their probable exposure to infection, and offered medical and counseling services is an essential activity in STI control. In developing countries, however, partner notification is rarely implemented because of sociocultural barriers concerning STIs and sex in general and because of lack of health-care providers trained in partner notification.

Partner notification may be accomplished by: (1) patient referral; (2) provider referral through providers/workers trained to confidentially trace and notify the partner(s) based on information provided by the infected patient and; (3) patient and provider referral in which the provider asks for names and addresses of partners, but gives patients one week's time to refer them. If the patient's partners do not appear, providers attempt to contact them. Patient referral is the least expensive and also the least-effective approach: generally less than one third of partners appear for treatment. Provider referral can bring up to three times as many partners for treatment, but concerns such as cost-effectiveness and the potential to invade privacy have frequently been voiced. The last approach, patient and provider referral, may deter people from seeking care. People may stay away from a clinic that requires patients to give the names and addresses of partners. Partner referral is more important for women, because in the absence of routine screening for women, the only way to identify asymptomatic women may be through their male sexual partners. For gonorrhea and chlamydia specifically, partner notification can lead to treatment of asymptomatic infected female partners of men with proven infection.

Issues to Address:

Which strategies of partner notification best accomplish prevention, early case detection and/or early treatment? Of particular interest are: (a) different cultural responses to partner notification and possible adverse effects on women who notify

their male partners; and (b) measures of efficacy, including reduced re-infection rates and reduced community STI burden.

How do we best add partner notification and referral to existing services in resource poor settings? What are training and supervisory requirements?

Patient referral is the least expensive approach but it is also the least effective, since it is basically a voluntary intervention depending entirely on patient compliance and self-assessment of risk. Can personalizing infection risk and delivering highly individualized prevention messages increase patient acceptance of, and compliance with, partner notification efforts? (This may be an operations research worth doing in resource-poor settings.)

What is the feasibility and effectiveness of using PHC workers, community based distribution (CBD) workers, traditional birth attendants (TBAs) and other community practitioners in partner-notification activities? Can peer counselors in HIV prevention programs be effectively used in partner notification activities, especially to reach adolescents and youth?

6. *Training*

Regardless of the degree and level of integration planned, training for integrated-care program managers and staff will be mandatory. Training must take into account reinforcing communication and interpersonal skills as well as technical skills. Staff familiar with each field must be cross-trained so that they are sensitive to and informed about the other. At a minimum, existing staff and managers of clinics, services and/or programs to which STI services are being added should be able to: (a) recognize symptoms, do sexual-history taking and perform simple risk assessments; (b) provide basic STI information and answer basic questions; (c) counsel clients on prevention in the context of STIs (education for risk reduction, promoting and teaching use of condoms and barrier methods, improving treatment-seeking behaviors, encouraging compliance with medical prescriptions); (d) treat or refer clients appropriately based on level of integration and; (e) *particularly for FP workers*, know the linkages between STIs and contraception, since decisions about contraception should involve balancing the relative need to prevent both STIs and unplanned pregnancy.

Issues to Address:

Strong training components already exist for FP staff, MCH/PHC staff, as well as for educators in HIV/AIDS programs. Therefore, will adding appropriate STI modules to on-going training programs be sufficient? Or will there be a need to develop an integrated training curriculum which includes both short and long-term training activities?

Training of trainers: Will training a special cadre of trainers (e.g., supervisors in an integrated setting who will be supervising staff) have a stronger impact, in terms of follow-on training and supervision of integrated-care staff? What is the selection criteria for trainers? What are the minimum skills (interpersonal skills, counseling skills, training skills) and knowledge that need to be included in an integrated training curriculum for training of trainers (TOT)? For example, in Botswana, assessments of TOT workshop participants revealed that few actually impart the knowledge or skills gained, one of the reasons being the lack of skills needed to train others.

7. *Physical Infrastructure and Laboratory Support*

RPR and TRUST tests are already at hand to diagnose syphilis in settings where physical infrastructure is not adequate to perform examinations in private or to set up laboratory support. But for gonorrhea and chlamydia, until quick, simple inexpensive field diagnostics are available, providing quality diagnostic and treatment services will require an examination room and laboratory support. At a minimum, an integrated clinic must have: (1) the capability to perform an examination (including pelvic and genital); (2) a microscope to do wet-mount microscopy (microscopy without staining to differentiate between different types of vaginal discharge) and; (3) basic reagents to do gram stains to diagnose gonorrhea in females. In most clinics, examination rooms may already exist although laboratory support may not be available. Thus, basic laboratory facilities will need to be set up. This in turn will require re-allocation of scarce resources. Consequently, the other option to consider will be the establishment of an effective referral system for easy access to basic laboratory services.

Issues to Address:

Are current physical resources adequate for providing STI services? Space to set up a small laboratory? Examination room and waiting-room space? An additional examination room may even be needed, particularly for women clients if services will be provided to both genders, since adding STI services could result in more male and adolescent clients.)

An assessment of clinic capability to provide laboratory support: What would be the cost to programs of (a) procuring syphilis-screening kits; and (b) adding/upgrading laboratory facilities to provide basic laboratory support for STI diagnosis and treatment? What are the training requirements? Will provision of STI diagnosis and treatment provide an opportunity for cross-subsidization? (For example, a family-planning program in Colombia charged for STI consultation and diagnostic testing. The profit helped pay for family-planning services.) Or, will setting up basic laboratory facilities compete with existing services for scarce resources?

The need for a referral system: How can appropriate referral systems and linkages be developed for easy access to laboratory services? How effective are these referral networks? What are the mechanisms necessary to monitor these referral systems?

8. *Essential Drugs, Commodities and Logistics*

Similar to setting up basic laboratory facilities, re-allocation of resources will also be required for procurement of STI drugs as well as essential commodities such as STI guidelines, condoms and barrier contraceptives if STI services are to be added to current services. And for FP clinics, gloves and instrument sterilization supplies will be mandatory for infection prevention.

Issues to Address:

What additional resources (essential commodities and drugs) will be needed for adding STI services? What will be the cost?

Will there be a need to co-ordinate separate logistics systems for projecting needs, procurement and quality control, warehousing and distribution? In general, in FP programs, contraceptives are made available through government logistics systems. HIV/AIDS projects may have a parallel distribution system and social-marketing programs may have their own logistics systems.

How will existing logistics systems be affected by the addition of STI services which will focus on a higher demand for condoms and barrier contraceptives as well as STI antibiotics and laboratory reagents? Particularly for FP and HIV/AIDS programs, how will condom supplies and logistics systems be affected by a higher demand for condoms through the addition of STI services?

9. *Supervision*

Integrated programs may involve supervising more staff with a greater breadth of training and expertise. The roles and responsibilities of the staff will be broader as well. Supervisors will be required to understand a broader range of issues, diagnose a wider range of health problems and help service providers (in-clinic as well as outreach providers) carry out multiple tasks effectively. If staff are expected to provide more than one type of service in an integrated program, will there be a need to have more than one supervisor? It should be noted however that health workers can often become overburdened and discouraged if they have to respond to multiple supervisors.

Issues to Address:

To what extent should supervision be integrated? (a) Should there be a separate supervisor for each service (e.g., one supervisor for FP, one for STIs, etc.) and

supervision carried out separately? (b) Should there be separate supervisors for each service but with supervision coordinated and carried out jointly and with supervisors sharing information? (c) Should a single supervisor oversee all services? What are the perspectives and needs of current supervisors and staff on this issue?

10. *MIS and Monitoring*

Successful program management will depend on monitoring results regularly. Programs that have clearly defined targets and simple systems for monitoring and measuring the achievement of these targets are more likely to be successful. One of the difficulties in integration will be the incompatibility of integrating information systems from the two vertical programs that are being integrated. Each vertical program will have specific objectives, measured by specific single output indicators directly related to the desired outcome. For example, the major outcome objectives and indicators for FP programs are clearly defined as are the objectives and indicators for an STI program. In an integrated program, single output indicators may not be adequate for program monitoring. There are multiple objectives and multiple indicators in an integrated program and the correlation between the indicators and the desired outcomes will be difficult to define.

Issues to Address:

How can information systems be integrated? How can compatible program outcome objectives, program output indicators and reporting forms be developed? Or should program outcomes continue to be measured separately?

Non-Clinic Settings

Attention must also be paid to the potential for addressing STI activities in non-clinic settings — through community outreach via CBD workers in FP programs, peer educators and youth counselors in HIV/AIDS programs, via mobile outreach teams in EPI (Extended Program on Immunizations), MCH and PHC programs, through the formal and informal private sector such as social marketing programs, workplace interventions, private practitioners, pharmacists and traditional practitioners and through non-governmental organizations (NGOs) with access to the community.

Potential areas for adding STI activities in non-clinic settings include: (1) IEC activities; (2) STI counseling; (3) promoting condoms and barrier contraceptives; and (4) screening and referral.

Issues to Address:

What is the feasibility and effectiveness of using outreach PHC workers, CBD workers, HIV/AIDS educators in workplace programs and youth programs, traditional practitioners and birth attendants in selected STI activities such as: (1)

IEC; (2) STI counseling; (3) condom promotion; and (4) screening and referral? What are the training and supervisory requirements? Will community outreach be more effective in reaching the community about STIs and STI prevention?

How can social-marketing programs and the skills and technical expertise of associated private-sector resources (commercial advertising and public-relations organizations in social marketing) be effectively used to improve selective non-clinic STI services (e.g., condom and barrier-contraceptive promotion and distribution as well as development of effective communication and education strategies focusing on behavior change such as risk reduction and treatment-seeking behavior)? How can the success of condom social marketing programs that sell protection and change behavior (e.g., the SOMARC project of the Futures Group) be replicated in integrated programs?

What are the comparative roles of public and private sectors in the provision of STI services (target population, cost-effectiveness, impact)?

CONCLUSION

In sum, the complications of STIs carry serious consequences for the pregnant woman (ectopic pregnancy) and her fetus (low birth weight, congenital infection or fetal wastage as a result of spontaneous abortion and stillbirth) as well as for the non-pregnant woman (pelvic inflammatory disease and infertility). Adding STI services to other health programs such as FP programs, MCH programs and PHC programs attended by the majority of women in the general population would increase their access to STI services and prevent devastating consequences of STIs, particularly in asymptomatic women, resulting in improved reproductive health. Women referred by their infected male partners through partner notification and referral may also find going to a FP clinic, a MCH clinic or a PHC clinic easier than going to a STI clinic. Similarly, adding STI services to school health programs would increase the access of school-based adolescents and youth to STI information, STI counseling, condoms and STI prevention, and STI diagnosis and treatment.

But is adding STI services to these programs (FP, MCH, PHC, school health) the most cost-effective? Will the integration of these programs offer the most public-health impact in terms of reducing the prevalence and incidence of STIs? These are fundamental questions that need to be asked wherever funds are limited.

For example, where funding is limited, programs have often been targeted at core transmitter groups. Core transmitter groups are the reservoir for many STIs and their frequent change of partners permits STI pathogens to persist in a community or to increase rapidly through continuous dissemination. It has been documented that programs targeted at core transmitter groups are the most cost-effective and will ultimately have the highest

impact on public health because they may have an amplifying effect — for example, an intervention in the core group will have a ten-fold or more effect than one implemented in a non-core group (World Bank World Development Report, 1993). The following is an excellent example of the cost-effectiveness of a targeted STI program: in a Nairobi commercial sex worker (CSW) population, STI diagnosis and treatment in combination with condom promotion reduced the mean annual incidence of gonorrhoea from 2.85 cases per woman in 1986 to 0.66 cases per woman in 1989 and markedly decreased the incidence of other STIs including HIV infection in the CSWs. It was estimated that the program prevented 6,000 to 10,000 new cases of HIV infection, at approximately US \$8-12 per case prevented.¹

For the most part, FP clinics, MCH clinics, PHC clinics and school health programs do not serve these core STI transmitter groups, whereas a stronger correlation exists between STI programs and HIV/AIDS programs. For instance, STIs play a major role in HIV transmission, the predominant mode of transmission for both STIs and HIV is sexual, many of the measures for preventing sexual transmission of STIs and HIV are the same, and the target audiences for these interventions are, in general, the same — the core transmitters and those at higher risk of contracting both STIs and HIV/AIDS such as youth and adolescents.

Given these factors, the addition of STI services to HIV/AIDS prevention programs reaching core transmitter groups would be the most cost-effective with the highest public-health impact in reducing the prevalence and incidence of STIs. On the other hand, integration with FP, MCH, PHC and school health programs will reach a broader audience obviously, but not necessarily the core transmitter groups.

The identification of key STI interventions that can be integrated which could offer the greatest public-health impact with the least compromise of existing service delivery should be the fundamental objective in planning and implementing integrated programs. Furthermore, **before planning and implementing an integrated program, the risk profile of the population must be known and the objectives and targets for integration must be clearly defined.**

- If the main objectives are to improve women's reproductive health, to attract a wider, diverse range of clients and to promote a broader community outreach by developing clinics with a range of services for all "categories" of diseases, adding STI services to MCH and PHC programs can be considered.

¹ Moses S, Plummer F, Ngugi E et. al. 1991. "Controlling HIV infection in Africa: effectiveness and cost of an intervention in a high-frequency STD transmitter core group." AIDS 1991. 5(4):407-11.

- If the main objectives are to improve women's reproductive health and family health and to expand FP outreach to men and adolescents, adding STI services to FP clinics makes sense.
- If the main objective is to reach school-based adolescents and pre-pubescent youth with STI information and education, adding STI services to school health programs must be the approach.
- But if the main objective is to reduce the incidence and prevalence of STIs in a specific population or area and have an important impact on HIV transmission rates, integrating/coordinating STI services and HIV/AIDS prevention programs would be the most cost-effective, with the highest public-health impact in the face of today's HIV/AIDS epidemic.

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APPENDIX

This section is a discussion of basic information regarding common sexually transmitted infections identified as risk factors for HIV transmission and curative and preventive measures that can be done in resource-poor settings.

Gonorrhoea

Population at Risk

- "Core" transmitters (CSWs, clients of CSWs and men and women with multiple sexual partners).
- **General population** - Sexually active adults and adolescents, husbands/wives and sexual partners of "core" transmitters.
- **Infants** born to infected mothers.
- Reported prevalence rates for gonorrhoea in pregnant women attending antenatal clinics range from 3% to 22% in African countries.

Transmissibility

- **Males:** 20% infected after one exposure; 60% to 80% after four exposures.
- **Females:** 50% to 90% infected after one exposure.
- **Infants:** 2% to 50% exposed during birth develop gonococcal ophthalmia neonatorum (GON), an eye infection. If untreated, GON damages the vision of 1% to 6% of infected infants.

Consequences

Health

- **Males:** urethritis; epididymitis (in 10% to 30% of men who had gonococcal urethritis); and infertility (without treatment).
- **Females:** Pelvic inflammatory disease (PID) in 10% to 20% of women with untreated gonococcal cervicitis; infertility in 15% with an initial episode of PID;

ectopic pregnancy in 7% to 10% of women with PID; and chronic pelvic pain and recurrent infection in 17% of infected women.

- **Infants:** Gonococcal ophthalmia neonatorum (GON), spontaneous abortion and low birth weight due to gonorrhoea-induced premature delivery.
- **HIV Transmission:** possible 3-9 fold increase.

Economic

- **Direct Costs:** Costs of diagnosis, treatment, drugs, hospitalization. In gonorrhoea, diagnosis and treatment is further complicated by the fact that cervical gonorrhoea is asymptomatic in at least 20% to 50% of women and thus go untreated until complications arise. The cost of treating complications is greater than the costs of treating the infection itself, and clinics and hospitals devote much of their time and resources treating patients with STI complications. For example, in reports from sub-Saharan Africa, PID accounts for 17% to 40% of all admissions to gynecology wards.
- **Indirect Costs:** The indirect costs include the value of labor lost from morbidity, debility and premature mortality as well as the value of any labor diverted from other productive uses to care for the ill. Based on Over and Piot's estimates, *the average number of healthy productive days of life lost per capita per year is 0.9 days for both men and women infected with gonorrhoea.* These figures however, do not fully include the impact of gonorrhoea on infant morbidity, debility and mortality.

Social

- Psychological and social costs of infertility.
- Negative impact on the welfare of other members of the family as a result of the illness of a productive family member.

Diagnosis and Treatment of Gonorrhoea

- **Clinical diagnosis:** Diagnosis based on history and physical examination with clinical finding of cervical infection.
- **Etiologic diagnosis:** Culture is the standard diagnostic tool to identify gonorrhoeal infections. Culturing techniques can accurately detect gonorrhoea but cost US\$ 12 to \$40 and require one to six days to incubate specimens in a laboratory. Gram staining of endocervical smear is often used where culture is not available but only detects 40% to 50% of infections in women. Gram stain also requires a microscope

and a trained technician. Diagnostics for poor resource settings such as dehydrated medium for culture and detection of gonococcal cervicitis in women and oxidase strips for detection of gonococcal urethritis in men are also available and are currently being field tested.

- **Syndromic diagnosis:** Identifying all possible STIs that cause discharge using risk-assessment protocols and syndromic flow charts.
- **Treatment:** Single dose treatments of cefixime, ceftriaxone, ciprofloxacin (contraindicated in pregnancy) or spectinomycin. A World Bank study concluded that, compared with other interventions to improve adult health, management of STIs (gonorrhoea, chlamydia, syphilis) in populations with moderate prevalence rates (less than 10 percent) ranked among the ten most cost-effective interventions. However, where resources are limited, a World Bank analysis by Over and Piot suggests that if prevalence is more than 10 percent, mass treatment of core transmitters may be more cost-effective — the analysis calculated that treating 100 cases of gonorrhoea in the core group averts 10 times as many future cases as treating 100 cases in the non-core group. It should also be noted that mass treatment is most feasible for STIs which can be treated by single dose regimes. Mass treatment of pregnant women in high-prevalence areas could be the most cost-effective if all maternal and perinatal complications resulting from maternal gonococcal infections are taken into account.

Preventive Measures

Infants

- Ocular prophylaxis at birth with tetracycline eye ointment for newborns. Cost-effectiveness of ocular prophylaxis of newborns: based on Schulz and colleagues' estimates, the cost of ocular prophylaxis with tetracycline is US\$0.05 per dose; on the other hand, the cost of early diagnosis and treatment of a case of GON is estimated to be US \$1.40.

Pregnant Women

- Selective prenatal screening at the first prenatal visit with Gram stain or culture of the cervical discharge (Criteria for selective screening: epidemiological risk, presence of symptoms, or presence of clinical signs of cervicitis.)
- Follow-up screening (in the third trimester or at delivery) in women with past history of infection.
- Tracing and screening sexual partner to prevent re-infection.

General Population

- Promoting acceptability and correct, consistent use, and distributing condoms.
- Promoting barrier methods (spermicides, diaphragm, cervical cap, sponge).
- Motivating male participation to increase male involvement/use of condoms and barrier methods.
- Behavior modification through IEC activities.
- Counseling for risk reduction.
- Encouraging compliance with medical prescriptions.
- Emphasizing partner notification and referral.
- Training health workers in counseling, promoting barrier contraceptives, assessing risks, symptom recognition and partner tracing.

Partner Involvement for Testing and Treatment

- Plays important role. More important for women because in the absence of routine screening for women, the only way to identify asymptomatic women for diagnosis and treatment may be through their sexual partners. It is estimated that 30% of women and 5% of men infected with gonorrhea may be asymptomatic.

Clinics with Potential for Providing Complete Range of Services

- Family-planning clinics
- Primary health care clinics
- Maternal and child health services
- HIV/AIDS prevention programs (HIV counseling and testing clinics)

Programs with Potential for Providing Some Services

These services include IEC, STI counseling, promoting condoms and barrier contraceptives, symptom recognition and referral, and partner tracing.

- School health programs
- Community outreach programs (CBD workers in FP programs; peer educators and youth counselors in HIV/AIDS programs, mobile outreach teams in MCH and EPI programs)
- Youth clubs
- Programs through the formal and informal private sector (workplace interventions, pharmacists, private practitioners, traditional practitioners, NGOs with access to the community)

Chlamydia

Population at Risk

- "Core" transmitters (CSWs, clients of CSWs and men and women with multiple sexual partners).
- **General population** - Sexually active adults and adolescents, husbands/wives and sexual partners of "core" transmitters.
- **Infants** born to infected mothers.
- Reported prevalence of chlamydia in pregnant women range from 4% to 20% in African countries.

Transmissibility

- **Adults:** 30% of men and 45% of women whose sexual partners had chlamydia may be infected.
- **Infants:** 50% to 75% born to infected mothers may develop chlamydial ophthalmia (25%-50%) and chlamydial pneumonia (5%-10%).

Consequences

Health

- **Males:** urethritis; epididymitis. Accounts for 35% to 50% of nongonococcal urethritis (NGU) in men.

- **Females:** PID in 10% to 20% of women with untreated chlamydial cervicitis; ectopic pregnancy; infertility; postpartum pelvic infection. Chlamydial PID produces milder symptoms, resulting in delayed treatment with higher risk of infertility and ectopic pregnancy than gonococcal PID.
- **Infants:** Chlamydial ophthalmia, chlamydial pneumonia and low birth weight due to premature delivery induced by early rupture of membranes.
- **HIV Transmission:** possible 3-6 fold increase

Economic

- **Direct Costs:** Costs of diagnosis, treatment, drugs, hospitalization for treating complications such as PID, ectopic pregnancy and infertility. As in gonorrhoea, diagnosis and treatment of chlamydia is complicated by the fact that 3 out of every 4 women with chlamydia will not have any symptoms. The rising incidence of complications such as ectopic pregnancy or infertility are often the only indicators of the prevalence of chlamydia and the cost of treating complications is far greater than the costs of treating the infection itself.
- **Indirect Costs:** These include the value of labor lost from morbidity, debility and premature mortality as well as the value of any labor diverted from other productive uses to care for the ill. Based on Over and Piot's estimates, *the average number of healthy productive days of life lost per capita per year is 3.8 days for infected men and 4.8 days for infected women.* These figures however, do not fully include the impact of chlamydia on infant morbidity, debility and mortality.

Social

- Psychological and social costs of infertility.
- Negative impact on the welfare of other members of the family as a result of the illness of a productive family member.

Diagnosis and Treatment of Chlamydia

- **Clinical diagnosis:** Chlamydia can be diagnosed on a clinical finding of cervical infection/discharge based on history and physical examination combined with the exclusion of gonorrhoea.
- **Etiologic diagnosis:** Definitive diagnosis by serologic tests or culturing techniques. Gram stain is often used where culture and serologic tests are not available but the diagnosis is only presumptive. Diagnostics for poor resource settings such as non-

culture chlamydial diagnostic kits are available, but they are currently being field tested.

- **Syndromic diagnosis:** Identifying all possible STIs that cause discharge using risk-assessment protocols and syndromic flow charts.
- **Treatment:** Multiple-dose regimens of doxycycline or tetracycline for 7 days. For pregnant women, multiple-dose regimens of erythromycin for 7 days.

Preventive Measures

Infants

- Ocular prophylaxis of neonates within one hour of birth with tetracycline eye ointment. Cost effectiveness of ocular prophylaxis of neonates: the cost of ocular prophylaxis with tetracycline is estimated to be US\$0.05 per dose; on the other hand, the cost of maternal erythromycin treatment would be \$3.36, based on a seven day course.
- No strategy exists for preventing chlamydial pneumonia in newborns.

Pregnant Women

- In high-prevalence areas, prenatal screening for cervical infection and treatment of positives with oral erythromycin for seven days to prevent chlamydial conjunctivitis and pneumonia in the newborn, and postpartum pelvic infection in the mother.
- Tracing and screening sexual partner to prevent re-infection.

General Population

- Promoting acceptability and correct, consistent use, and distributing condoms.
- Promoting barrier methods (spermicides, diaphragm, cervical cap, sponge).
- Motivating male participation to increase male involvement/use of condoms and barrier methods.
- Behavior modification through IEC activities.
- Counseling for risk reduction.
- Encouraging compliance with medical prescriptions.

- Emphasizing partner notification and referral.
- Training health workers in counseling, promoting barrier contraceptives, assessing risks, symptom recognition and partner tracing.

Partner Involvement for Testing and Treatment

- Plays important role. More important for women because in the absence of routine screening for women, the only way to identify asymptomatic women for diagnosis and treatment may be through their sexual partners. It is estimated that 70% of women and 30% of men infected with chlamydia may be asymptomatic.

Clinics with Potential for Providing Complete Range of Services

- Family-planning clinics
- Primary-health-care clinics
- Maternal and child health services
- HIV/AIDS prevention programs (HIV counseling and testing clinics)

Programs with Potential for Providing Some Services

These services include IEC, STI counseling, promoting condoms and barrier contraceptives, symptom recognition and referral, and partner tracing)

- School health programs
- Community outreach programs (CBD workers in FP programs; peer educators and youth counselors in HIV/AIDS programs, mobile outreach teams in MCH and EPI programs)
- Youth clubs
- Programs through the formal and informal private sector (workplace interventions, pharmacists, private practitioners, traditional practitioners, NGOs with access to the community)

Syphilis

Population at Risk

- "Core" transmitters (CSWs, clients of CSWs and men and women with multiple sexual partners).
- **General population** - Sexually active adults and adolescents, husbands/wives and sexual partners of "core" transmitters.
- **Infants** born to infected mothers.
- Reported prevalence of syphilis in pregnant women range from 3% to 16% in African countries.

Transmissibility

- **Adults:** 30% to 60% of sexual partners may become infected after one exposure.
- **Infants:** Mother's syphilis status plays important role. Early maternal syphilis has an 80% chance and late maternal syphilis a 23% chance of having an adverse pregnancy outcome.

Consequences

Health

- **Males:** From painless lesions of early syphilis primary stage to rash, lymph node enlargement, joint swelling of secondary stage; ultimately advancing to large lesions, cardiovascular syphilis, neurosyphilis of late syphilis.
- **Females:** Same as above. First symptoms may be rash of secondary syphilis.
- **Infants:** Fetal wastage (spontaneous abortion, stillbirth), low birth weight or prematurity and congenital or perinatal infection.
- **HIV Transmission:** possible 2-10 fold increase

Economic

- **Direct Costs:** Costs of diagnosis, treatment, drugs, hospitalization for treating late syphilis. As in gonorrhea and chlamydia, in women diagnosis and treatment of

early syphilis is complicated by the fact that the earliest symptoms (painless lesions) are almost always missed and the first apparent symptoms may be the rash of secondary syphilis.

- **Indirect Costs:** These include the value of labor lost from morbidity, debility and premature mortality as well as the value of any labor diverted from other productive uses to care for the ill. Based on Over and Piot's estimates, *the average number of healthy productive days of life lost per capita per year is 7.7 days for infected men and 8.2 days for infected women.* These figures however, do not fully include the impact of syphilis on infant morbidity, debility and mortality as a consequence of adverse pregnancy outcome.

Social

- Psychological and social costs of the infection.
- Negative impact on the welfare of other members of the family as a result of the illness of a productive family member.

Diagnosis and Treatment of Syphilis

- **Clinical diagnosis:** clinical diagnosis based on history and physical examination with clinical finding of painless lesion.
- **Etiologic diagnosis:** Widely used serologic tests for syphilis in resource poor settings are rapid tests such as the RPR and TRUST tests. Recently, PATH has developed two simple diagnostics — a plasma separator card and a small mechanized rotator — to use with the RPR and TRUST screening tests to simplify separation of plasma and cells from the blood specimens. Another serologic test which is widely used is the Venereal Disease Research Laboratory (VDRL) test. The diagnosis of primary syphilis is best made however by microscopic examination, i.e., darkfield microscopic identification of the pathogen in a fresh sample obtained from the lesion. This method requires considerable expertise to collect specimens and identify pathogens.
- **Syndromic diagnosis:** Identifying all possible STIs that cause genital ulcers using syndromic flow charts.
- **Treatment:** Two doses of benzathine penicillin during one clinic visit. For those allergic to penicillin: multiple-dose regimens of doxycycline or tetracycline for 15 days. For pregnant women allergic to penicillin: multiple-dose regimens of erythromycin for 15 days.

Preventive Measures

Infants

- Screening and treatment of infants born to infected mothers within the first 7 days after birth.

Pregnant Women

- Early antenatal care with antenatal syphilis screening and treatment of all reactive women with benzathine penicillin during the first visit. In high-prevalence areas syphilis screening should be repeated again during the early third trimester. The key to the success of this intervention is the availability of rapid screening tests such as RPR and TRUST tests allowing screening and treatment during the first visit. Cost effectiveness of antenatal syphilis screening and treatment: based on the Zambia pilot project, US \$12.00 averted an adverse outcome associated with syphilis during pregnancy in places where the maternal syphilis is high (10%).
- Intensive and sustained health education to motivate women to attend antenatal care in the first trimester.
- Counseling/encouraging seroactive women to bring their sexual partners for treatment to prevent re-infection.

General Population

- Promoting acceptability and correct, consistent use, and distributing condoms.
- Promoting barrier methods (spermicides, diaphragm, cervical cap, sponge).
- Motivating male participation to increase male involvement/use of condoms and barrier methods.
- Behavior modification through IEC activities.
- Counseling for risk reduction.
- Encouraging compliance with medical prescriptions.
- Emphasizing partner notification and referral.
- Training health workers in counseling, promoting barrier contraceptives, assessing risks, symptom recognition and partner tracing.

Partner Involvement for Testing and Treatment

- Plays important role in re-infection. Spouses/partners of women diagnosed and treated at first antenatal visit should be traced and encouraged to undergo testing and treatment.

Clinics with Potential for Providing Complete Range of Services

- Family-planning-clinics
- Primary-health-care clinics
- Maternal and child health services
- HIV/AIDS prevention programs (HIV counseling and testing clinics)

Programs with Potential for Providing Some Services

These services include IEC, STI counseling, promoting condoms and barrier contraceptives, symptom recognition and referral, and partner tracing.

- School health programs
- Community outreach programs (CBD workers in FP programs; peer educators and youth counselors in HIV/AIDS programs, mobile outreach teams in MCH and EPI programs)
- Youth clubs
- Programs through the formal and informal private sector (workplace interventions, pharmacists, private practitioners, traditional practitioners, NGOs with access to the community)

Chancroid

Population at Risk

- "Core" transmitters (CSWs, clients of CSWs and men and women with multiple sexual partners). Commercial sex workers (especially those from the lower social strata) and their sex partners play an important role in the spread of chancroid.

- **General population** - Sexually active adults and adolescents, husbands/wives and sexual partners of "core" transmitters.

Transmissibility

- **Adults:** people are infectious as long as they have ulcers.
- **Infants:** No transmission to infants.

Consequences

Health

- **Males:** Painful, irregular ulcers causing pain, tenderness and discomfort. Without treatment, leads to tissue destruction of the perineum and external genitalia. Responds easily to antibiotics if diagnosed early.
- **Females:** Multiple lesions located at the entrance of the vagina are the most common presentation. However, the lesions can also be located intravaginally, where they produce no symptoms.
- **HIV Transmission:** possible 2-18 fold increase.

Economic

- **Direct Costs:** Costs of diagnosis, treatment, drugs, hospitalization for treatment of complications. (As in other STIs, early diagnosis and treatment in women is complicated by the fact that these women may have no symptoms.)
- **Indirect Costs:** These include the value of labor lost from morbidity, debility and premature mortality as well as the value of any labor diverted from other productive uses to care for the ill. Based on Over and Piot's estimates, *the average number of healthy productive days of life lost per capita per year is 0.25 days for both men and women infected with chancroid.*

Social

- Psychological and social costs of the infection
- Negative impact on the welfare of other members of the family as a result of the illness of a productive family member.

Diagnosis and Treatment of Chancroid

- **Clinical diagnosis:** Diagnosis is usually clinical. It is based on history and physical examination with clinical finding of painful lesion.
- **Etiologic diagnosis:** No rapid diagnostic methods currently exist for serologic detection of the organism that causes chancroid, although research in this area is ongoing. Culture of the organism is difficult and expensive for resource poor settings.
- **Syndromic diagnosis:** Identifying all possible STIs that cause genital ulcers using syndromic flow charts.
- **Treatment:** Multiple-dose regimens of erythromycin for 7 days (or) oral ciprofloxacin in a single dose (or) injection of ceftriaxone in a single dose are usually effective, although the efficacy rates vary worldwide. (Note: decreased responsiveness to single-dose therapy for chancroid has been documented in people with chancroid who are also HIV-positive.)

Preventive Measures

General Population

- Promoting acceptability and correct, consistent use, and distributing condoms.
- Motivating male participation to increase male involvement/use of condoms and barrier methods.
- Promoting barrier methods (spermicides, diaphragm, cervical cap, sponge).
- Behavior modification through IEC activities.
- Counseling for risk reduction.
- Encouraging compliance with medical prescriptions.
- Emphasizing partner notification and referral.
- Training health workers in counseling, promoting barrier contraceptives, assessing risks, symptom recognition and partner tracing.

Partner Involvement

- Plays important role in re-infection if partners are not traced, screened and treated, since people with chancroid are infectious as long as they have ulcers (ulcers may last to 12 weeks without treatment).

Clinics with Potential for Providing Complete Range of Services

- Family-planning clinics
- Primary-health-care clinics
- Maternal and child health services
- HIV/AIDS prevention programs (HIV counseling and testing clinics)

Programs with Potential for Providing Some Services

These services include IEC, STI counseling, promoting condoms and barrier contraceptives, symptom recognition and referral, and partner tracing.

- School health programs
- Community outreach programs (CBD workers in FP programs; peer educators and youth counselors in HIV/AIDS programs, mobile outreach teams in MCH and EPI programs)
- Youth clubs
- Programs through the formal and informal private sector (workplace interventions, pharmacists, private practitioners, traditional practitioners, NGOs with access to the community.)

Herpes Simplex Virus-2 (HSV-2)

Population at Risk

- "Core" transmitters (CSWs, clients of CSWs and men and women with multiple sexual partners).

- **General population** - Sexually active adults and adolescents, husbands/wives and sexual partners of "core" transmitters.
- **Infants** born to infected mothers.
- Reported prevalence of HSV in Africa is scarce, although some serological studies in Central Africa indicate that women have prevalences of HSV-2 antibodies as high as in the US.

Transmissibility

- **Adults:** Can be transmitted while person is symptomless.
- **Infants:** Type of maternal infection plays important role. Primary maternal infection has a 20% to 50% chance of transmission to the infant and recurrent maternal infection has a 3% to 5% chance.

Consequences

Health

- **Males:** Primary infection of vesicles, leading to shallow painful ulcers and ultimately progressing to systemic manifestations including central nervous system symptoms. A considerable number of primary episodes of infection have no symptoms.
- **Females:** Same as above. In addition, leads to cervicitis.
- **Infants:** (1) Intrauterine HSV infection resulting in neonatal HSV infection, or (2) intrapartum infection during delivery. The spectrum of HSV infection includes infection limited to skin, eyes, or mouth (SEM) only and/or central-nervous-system involvement and/or disseminated infection with multiple-organ involvement. With central-nervous-system involvement, as many as 50% of infected children suffer permanent neurological damage.
- **HIV Transmission:** possible 2-9 fold increase.

Economic

- **Direct Costs:** Costs of diagnosis, treatment, drugs, hospitalization for treating central-nervous-system complications.

- **Indirect Costs:** These include the value of labor lost from morbidity, debility and premature mortality as well as the value of any labor diverted from other productive uses to care for the ill. The impact of HSV on infant morbidity, debility and mortality need to be considered also.

Social

- Psychological and social costs of the infection.
- Negative impact on the welfare of other members of the family as a result of the illness of a productive family member.

Diagnosis and Treatment

- **Clinical diagnosis:** identification based on history and physical examination with clinical finding of vesicles and painful, shallow ulcers.
- **Etiologic diagnosis:** No rapid diagnostic methods currently exist for serologic detection of the virus. Viral culture is difficult and expensive for resource poor settings.
- **Syndromic diagnosis:** identifying all possible STIs that cause ulcers using syndromic flow charts.
- **Treatment:** Topical acyclovir ointment (restricted use, limited to primary herpes genitalis) and symptomatic therapy for pain caused by lesions. Oral acyclovir where feasible. For infants: Vidarabine. (Documented reduction in mortality in infants with SEM or central nervous system involvement.)

Preventive Measures

Infants

- To prevent intrapartum HSV infection, Caesarean delivery is recommended in women who have herpetic genital lesions in areas where genital herpes is the predominant cause of genital ulcer disease.

General Population

- Promoting acceptability and correct, consistent use and distributing condoms.

- Motivating male participation to increase male involvement/use of condoms and barrier methods.
- Parental education of parents with known herpetic infection regarding the consequences in infants.
- Counseling for risk reduction focusing on factors associated with increased risk such as early age at sexual debut, number of lifetime partners.
- Training health workers in counseling, promoting condoms and barrier contraceptives, assessing risks, symptom recognition and referral for treatment.

Clinics with Potential for Providing Complete Range of Services

- Family-planning clinics
- Primary-health-care clinics
- Maternal and child health services
- HIV/AIDS prevention programs (HIV counseling and testing clinics)

Programs with Potential for Providing Some Services

These services include IEC, counseling for risk reduction, promoting condoms and barrier contraceptives, symptom recognition and referral.

- School health programs
- Community outreach programs (CBD workers in FP programs; peer educators and youth counselors in youth clubs and HIV/AIDS programs, mobile outreach teams in MCH and EPI programs)
- Programs through the formal and informal private sector (workplace interventions, pharmacists, private practitioners, NGOs with access to the community)