



Special Communication from the World Health Organization
**Tailoring clinical management practices to meet the
special needs of adolescents: sexually transmitted
infections**

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Abstract

Sexually transmitted infections are a major health risk to all sexually active adolescents and improving clinical management for this age group is of major importance. Currently, adolescents are managed in the same way as adults. This paper summarizes recommendations by the World Health Organization that services be more responsive to adolescent concerns about confidentiality, risk assessment be more attuned to their sexual behavioral patterns, and services be tailored to give more time for counseling, assessment of stage of maturity and continuity of reproductive health care. © 2001 WHO. Published by Elsevier Science Ireland Ltd. on behalf of International Federation of Gynecology and Obstetrics.

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1. Introduction

Sexually transmitted infections (STI) are a major health risk to all sexually active adolescents. Every year more than one out of 20 adolescents contracts a curable STI, not including viral infec-

tions [1] and the age at which infections are acquired is becoming younger [2]. This presents a real challenge to health care providers, many of whom feel uncomfortable dealing with adolescent sexual health needs. As the size of the problem becomes more evident, health professionals are being called upon to provide an effective and confidential clinical service for young people [3]. This paper aims to provide guidelines for service providers in developing countries who will be

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required to tailor their services to meet adolescent needs.

2. Background

There are differences in the epidemiology of STI in adolescents compared to adults which have not always been apparent due to the common practice of reporting adolescents (aged 10–19 years) in the same category as ‘youth’ (15–24 years) or together with ‘women of reproductive age’ (15–49 years) [4]. Very little representative age and sex specific STI data are available from developing countries, especially for adolescent males. This largely reflects the recognition that the burden of morbidity associated with STIs is far higher for women than for men [5–9] and that men are more likely to seek treatment for STIs [10,11]. However, ignoring men runs the risk of down playing the importance of gender in sexual relationships.

For biological reasons, adolescent females are thought to be more susceptible to STIs than older women, because protective, hormonally-driven mechanisms may not have had time to develop [12]. Cervical mucus protection and humoral immunity are absent until ovulation is established, and if exposed, the immature cervix may be readily colonized by pathogens [13]. Nonetheless, the significance of biological susceptibility during adolescence has been assumed rather than demonstrated. It may be the case that early exposure to STIs predisposes to later sequelae. High-risk type human papillomaviruses (HPV) are widespread in young women and steroid hormones interfere with persistent papillomavirus infections on several levels [14]. Yet most HPV infections resolve spontaneously. Similarly, only approximately 30% of infections with *Chlamydia trachomatis* will result in upper genital tract infection and pelvic infection. [15]. Nor is it the case that primary infections in adolescence give rise to increased morbidity as several infections (e.g. chlamydia, gonorrhoea, trichomoniasis) produce mild or no symptoms [16] and clinical presentation is similar to that in adults [5].

The clinical significance of early exposure to

STIs has not been well explored, but what is apparent is that adolescent females are not equally susceptible to STIs, nor are all STI pathogens equally likely to be contracted. Fig. 1, which collates data from studies in African and non-African countries [16–23], shows that chlamydia is more common than gonorrhoea and is especially high in adolescent subpopulations which engage in regular sexual relationships (i.e. adolescents who are pregnant, contracepting or commercial sex workers) (cf. also [24]). It is very easy to forget that adolescents enter into sexual relationships at different ages and levels of maturity and that their exposure to infection is highly variable [25–38]. For those who become pregnant, STIs pose a much greater problem than they do for older pregnant women. [39]. Thus, during adolescence, biological and immunological factors interact with sexual behavior patterns and networks [40], epidemiological transmission dynamics [41] and treatment-seeking behavior [2,42].

For clinicians, the challenge is to identify and treat infected individuals. STIs have serious sequelae and should be managed with a view to ensuring cure and prevention of reinfection — but adolescents are not easy to assess. The usual practice is to adopt a risk assessment approach, selecting screening tests and treatment based on the costs and benefits to the patient and the community [3]. To do this well for adolescents also requires a sympathetic understanding of the religious, cultural, economic and gender context in which they live [43–46]. For these reasons, the World Health Organization (WHO) is promoting the development of clinical guidelines and training for health care providers. It makes no stipulations about the clinical setting in which services should be delivered, recognizing that experiences will vary widely and that many countries will have to build on what is already available [1]. WHO also recognizes that improved clinical management is only one of several types of intervention required to lower STI rates and change behavior. It strongly supports HIV/STD prevention programs which tackle social, cultural and economic factors that are fuelling the transmission of infections [47].

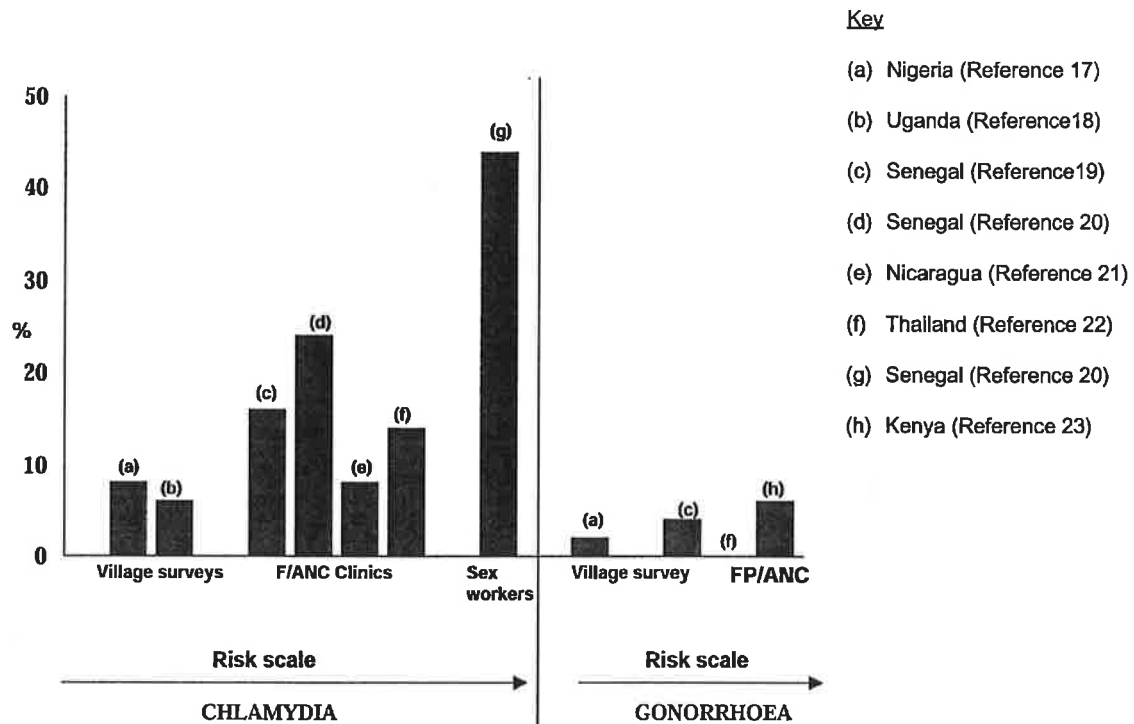


Fig. 1. Prevalence of chlamydia and gonorrhoea in sexually active females < 20 years.

3. What health workers need to know about STI management and adolescents

The four most prevalent STIs, trichomoniasis, chlamydial infections, gonorrhoea and syphilis, are preventable and curable provided that adequate antibiotic therapy is used and standardized protocols are available. For STI management in general, WHO recommends the use of the syndromic approach in resource poor settings where etiological diagnosis, requiring laboratory facilities, is not affordable [48]. Seven syndromes have been identified which enable primary health care workers to treat patients, using signs, symptoms and a risk assessment. Flow charts for the following syndromes are now widely available:

1. Vaginal discharge in women
2. Urethral discharge in men
3. Genital ulcer disease in men and women
4. Swollen scrotum
5. Lower abdominal pain

6. Inguinal bubo (swelling)
7. Eye discharge

Currently, adolescents are assessed in the same way as adults, which is acceptable given that the presentation of symptoms is similar irrespective of age. However, providers must take account of the real difficulties which adolescents experience when they use the services [49,50]. Often young people confront logistical and attitudinal barriers which discourage attendance, and the assessments are not tuned-in to adolescent thinking or behaviors [51]. These issues are addressed in the following paragraphs.

3.1. Being aware of care seeking practices

Table 1 summarizes some of the reasons why adolescents are reluctant to attend service delivery points [51–54]. Fear of disapproval of their sexual behavior by unsympathetic health care

Table 1
Factors discouraging adolescents from seeking STI treatment

Access

- They do not know about the services available
- The services may be too far away for adolescents who do not have money for transport or who are expected home at certain times
- Clinics are closed when adolescents leave school/work

Embarrassment

- Adolescents do not like to be treated like children and MCH/FP clinics often have long queues which deter young people
- They do not want to take the risk of meeting adults they know
- Many will not have acquired the skills needed for expressing a sexual health problem

Gender

- Adolescent females are concerned about family planning and gynecological conditions
- Adolescent males perceive clinics as being for females and may not go there for condoms
- For both sexes, STI treatment may be a low priority

Facility charges

- Costs of tests and drugs are often unaffordable for young people
-

providers is a main deterrent. As a result many adolescents — especially females — do not seek treatment. In a rural survey in Nigeria, only 2.8% of girls with symptoms of STI had sought any kind of treatment, including traditional medicine [15], and younger girls sought treatment less frequently than older girls.

As has been noted in the table, there are several factors which hinder the utilization of services by both male and female adolescents; in addition, there are some factors that are unique to males and others that are unique to females. It is important for health workers to be sensitive to this.

3.1.1. *What can be done to overcome this reluctance?*

- Providing the service in a less threatening environment is one option. Syndromic management has the advantage that it can be made available in a variety of settings and there have been experiments in youth and sports clubs, drop-in services and other venues [55]. Mobile services are probably required to reach high risk adolescents who are reluctant to come to health clinics [2]. It is advisable to conduct a situation analysis first [56]. Different types of services tend to attract different age and sex groups [57,58] and the target

population must be carefully defined and the uptake monitored. A new service should be well advertised through channels such as school health clubs, youth clubs, magazines, libraries and churches.

- Facilities are more likely to be attended if sessions are for adolescents only (especially when offered in a traditional clinic setting), open at times when young people are free to attend, are close to the place of work, easily and cheaply reached by public transport, are non-conspicuous and accessible at times when adolescents can be away from home without suspicion [55]. This makes demands on health staff who are not accustomed to working irregular hours and ways need to be sought to make flexible hours attractive for staff.
- Health care providers must be adequately trained, not only to monitor the acceptability of the service to adolescents, but to deal with opposition from parents and communities who resist sexual health services for this age group and may seek to close them down [59].

3.2. *Establishing rapport with the patient*

Adolescents are often anxious about a clinic visit [60]. For some it will be an entirely new

experience. Others will have had previous adverse encounters with authority figures, and their reservations can translate into non-communicative and even abrasive behavior which health care providers find difficult to handle [55].

3.2.1. *What can be done to overcome anxiety?*

Having a bright and information-rich environment, as well as tolerant and understanding staff (including auxiliaries) with good communication skills is important. Not all staff relate well to adolescents, therefore, selection and training is recommended. It is helpful to employ staff of both sexes. Privacy for the consultation will provide reassurance and constant interruptions should be avoided.

3.3. *Eliciting information about the nature of the problem*

Confidentiality is probably the most serious adolescent concern [61] and raises legal issues about which health care providers are sometimes unsure how to deal with. Each country should seek to provide standardized guidelines on the circumstances in which health professionals may prescribe, supply and treat young adolescents without parental knowledge [62]. In general, legislation on the control of sexually transmitted diseases is rarely concerned specifically with adolescents because the paramount concern is to ensure that any person suffering from such a disease is treated and takes responsibility for complying with treatment. This can result in a conservative and medically focused response to a young patient. Paxman and Zuckerman [62] have stated that any program providing reproductive health services to adolescents should:

1. provide care to those who need it, ensuring that they are fully informed of the foreseeable consequences of such care. With regard to treating very young patients, the Royal College of Obstetricians and Gynecologists of Great Britain [63] states that 'The health professional has a responsibility to help the young person to understand the implications of sexual activity and the value of confiding in

his/her parents. However, it is also important to realize that the developing sexuality of young people creates a barrier between them and their parents that is part of the process of growing up'.

2. clarify the position of health care personnel providing treatment to minors. Often providers refuse to treat without parental consent unless the law clearly allows it. Unfortunately the laws, regulations and policies affecting access are in disarray, and even where laws have been liberalized, they are not necessarily implemented. Health workers may, for example, provide STI treatment but be reluctant to actively encourage or to supply condoms, simply telling the young person to refrain from sex in future. Such attitudes were detected in a study of family planning nurses, many of whom were mothers of teenage children and brought a maternal perspective to their work [64]. In such circumstances, it is not surprising that there is often tension and lack of communication between adolescents and service providers.

3.3.1. *How should the health care provider elicit information from a patient?*

After confidentiality, the second priority is to maintain a non-judgmental approach and to avoid any reaction which suggests disapproval, otherwise young people will not disclose details of their sexual involvement [65]. Questions on sexual history are usually left until towards the end of an interview, to give the provider time to establish rapport with the patient. Other details on present illness and medical history should be dealt with first and the WHO's Training Manual provides guidance [48].

3.4. *Carrying out a physical examination*

Consent is required for carrying out a physical examination. Consent to examination does not extend to permission to take forensic samples (e.g. in sex abuse cases) or to provide reports to third parties, for which specific informed consent is required.

Adolescents tend to dislike examination and can be deterred from attending health facilities if this is thought to be a routine procedure [66]. Syndromic management means that a physical examination is not always required, and could be left out if logistical or other problems make it difficult for the health worker to examine the genital area. However, it must be noted that an examination would be useful to do in the presence of genital ulcers or scrotal swellings, or if the patient complains of lower abdominal pain, which may have a serious underlying cause. In the case of vaginal examination too, it would be useful to carry out an examination, but if this is not possible for some reason, treatment should be provided on the basis of history, symptoms and risk assessment with instructions to return if symptoms persist.

3.4.1. *What can be done to minimize the discomfort of pelvic examination?*

Explaining why an examination is necessary and what is entailed is helpful, and it is important to avoid keeping a patient waiting for the procedure. Some groups in the United Kingdom have raised the issue of chaperoning policies in geni-

tourinary practice [67]. The Working Party of the Royal College of Obstetrics and Gynecology concluded that a chaperone should be offered to all patients having intimate examinations in gynecology and obstetrics, irrespective of the sex of the gynecologist [68]. Much of the concern about chaperoning is to avoid allegations of impropriety. In practice, many women decline a chaperone, but some adolescents prefer a relative to be present during pelvic examinations in other settings [69,70]. If pelvic examinations do deter adolescents in developing countries, more qualitative research is warranted to see how these fears could be reduced. Besides fear of discomfort, other factors are important, particularly the surroundings which should be comfortable, quiet and have adequate lighting.

Health workers should be experienced in conducting pelvic examinations and thoroughly understand the change in the anatomy and physiology of females which occurs at different ages [12,71]. While guidelines for examining males and females are usually included in standard training courses for implementing the syndromic management of STIs, this does not extend to re-training in the physical and hormonal changes of adolescence as outlined in Table 2.

Table 2
Growth and development at puberty^a

Sequence of events:

- A spurt in growth
- Early development of secondary sexual characteristic (breast development and pubic hair)
- Onset of menstruation
- Completion of development of secondary sexual characteristics-growth spurt

Vaginal development:

- Begins at about the same time as the breast, and final length (about 10 cm) is reached at the time the adolescent reaches final height
- In the pre-pubertal girl, the vaginal epithelium is red and shiny; in the post pubertal girl mucus secretion begins

Uterine development

- Uterine growth starts with the production of estrogen. It grows longer and thicker, and changes are complete at about the same time as breast development is complete
- Cervical secretion begins

Menstruation

- Occurs when a girl has attained Tanner stage 4–5 of breast development

^aReferences: Marshall and Tanner [71]; Garden [12].

3.5. Arriving at a diagnosis

Risk assessment for syndromic management differs from what is practiced in western settings where the sexual history is detailed and would normally include [3]:

- Early age of sexual debut
- Multiple sexual partners
- History of sexual abuse/rape
- Lack of condom use
- Men who have sex with men
- Anal/oral sex
- History of past STIs
- Substance abuse
- History of sex in exchange for food, shelter, money, drugs

Based on these behavioral risks, the clinician will select appropriate STI screening tests, whether or not the patient is symptomatic. In developing countries, in the absence of laboratory diagnosis, the presenting symptom suggests the possible etiological cause and the behavioral assessment is introduced secondarily as a way of assessing exposure. This is highly problematical for vaginal discharge, because the symptom correlates very poorly with the presence of infection [72] and a behavioral assessment can do relatively little to offset this. The behavioral assessment also lacks specificity when applied to adolescents presenting with vaginal discharge because it classifies too many as high-risk. Several of the screening questions are bound to be positive in adolescents [73]:

1. Does your partner have a urethral discharge or sores on the penis?
2. Are you less than 21 years of age?
3. Are you single?
4. Do you have more than one partner? (i.e. in the last 3 months)
5. Have you had a new partner during the last 3 months?

According to the scoring criteria, if the patient answers yes to the first question or to any two of the other four questions, her risk assessment for

cervicitis is positive. On the basis of criteria two and three, very many adolescents will be considered high risk. This could lead to considerable over-treatment, unnecessary anxiety and stigma.

3.5.1. What can be done to increase the sensitivity and specificity of the behavioral risk assessment for adolescent females?

One solution would simply be to raise the cut-off score for adolescents. Given the importance normally accorded to a good sexual history, however, it would be more useful to train health providers to elicit a more detailed history. This, and some knowledge of the epidemiologic pattern of infections in the location, could be used to inform the diagnosis as well as provide the basis for appropriate counseling and sexual health advice.

Behavioral adaptations of the WHO syndromic profile have scarcely been tested for adolescents. One study in Nigeria examined the following social risk factors for being positive with any STI: pregnancy, age at first sexual activity, condom use, symptomatic partner, number of partners in the last 3 months, the last year and in a lifetime, age and occupation of recent partners [74]. The only two factors related to STI positivity, after controlling for confounding factors, were having a partner > 24 years ($P = 0.00$) and having a partner whose occupation was 'other' (i.e. a miscellaneous category, $P = 0.03$). Having an older partner has been indicated as a possible risk factor in other studies though this has rarely been demonstrated by microbiological studies. A study by Amazigo et al. [75] reports female students taking older male partners who have money 'to buy make-up' or give them gifts 'to fashion up and show off' and there are many anecdotal stories of older men seeking out young girls as 'clean' partners. It is plausible, nonetheless, to assume that a more sexually experienced partner will expose a young female to a wide spectrum of infections, including gonorrhoea, syphilis and HIV infection, which are probably less common in younger men [76].

The only flow chart derived from and for an adolescent population is one from Port Harcourt, Nigeria [77] and differs from the WHO algorithm

in that it begins with the risk assessment and assesses symptoms thereafter. Cervical infections were not detected in adolescents who did not have a sexual partner in the previous 3 months and this was considered useful information for determining the level of risk. It also suggests treatment for non-sexually active girls with vaginitis. Until more suitable diagnostic tests become available, working to improve syndromic management by such means would seem to be the only option. Obviously, protocols such as this would need to be developed and tested in different settings.

3.6. Communicating the diagnosis and discussing treatment options

Treatment options for adolescents are essentially the same as for adults [48]. WHO currently recommends that both gonorrhea and chlamydia should be treated when cervicitis is diagnosed, although co-infections are probably less common in adolescents than in adults. A study in Nigeria [17] detected few mixed infections in adolescent females, but other studies would be needed to confirm the generality of this finding.

WHO guidelines [48] seek to ensure that a patient, before leaving the clinic, has a clear understanding of the following:

1. How the infection is cured
2. How the infection can be prevented from spreading
3. Why sex partners need to be treated
4. Why a further check up will be required
5. How to prevent reinfection through safe sex practices.

The very short time normally available to providers at a general clinic for talking about the implications of an STI diagnosis is inadequate for adolescents [50]. More time needs to be taken, especially for younger patients who have little previous experience to call upon. In just minutes, these young people are required to assimilate a lot of new information on infections and drug regimes, their responsibilities to partners and the life-style changes required to prevent re-infection.

One real advantage of the adolescent clinic is the possibility of improving the quality of this aspect of STI management. For a start, health workers dealing with adolescents will need to understand the psychological and cognitive developments that differentiate early and late adolescence. Stage of development influences the kinds of information and arguments to which the adolescent is receptive [60]. Early adolescents have difficulty in thinking abstractly and in seeing another person's point of view. Older adolescents exhibit more efficient strategies for storing and retrieving information. In terms of moral development, early adolescents are more likely to blame extenuating circumstances and are less likely to accept responsibility for their own actions. Health workers need to learn how to tailor their messages to fit the age and background of the patient.

Enhancing protective behaviors is central in these encounters. Certain sexual practices can reduce the risk of STI. Most adolescents do not consistently use condoms. A US study found that although young women were more willing than older women to use barrier methods, a protective effect deriving from their use was not observed [78]. This was attributed to inappropriate and inconsistent use. Male use is highest at the beginning of a relationship and declines after the partner is considered 'safe' [79]. Adolescents have yet to learn that appearances can be deceptive. In a study from Malawi, Helitzer-Allen [80] noted that girls believe they know the boys/men with whom they develop their relationships ('My mother knows his mother'). In steady relationships, girls are often far more concerned to prevent a pregnancy rather than an STI and as oral contraception increases, condom use decreases [81]. Health workers have to help young people to assess their relationships more objectively.

3.6.1. Can counseling of adolescents be improved?

Counseling aims to assist an individual to deal with problems and situations by enabling him/her to understand his/her situation, to examine available options to deal with it, and to make sound decisions to do so [82]. In many cultures, adolescents receive little guidance in making decisions about sex. Counselors are trained to help clients

make decisions about life situations, and this includes how to avoid an STI. There is often a need to counter misinformation. Counseling is only sporadically available to the majority of young people living in developing countries and collaboration with other services may be crucial to ensure this kind of follow-up which requires a greater investment of time. It would appear to be essential for traumatized individuals, particularly those who have suffered sexual abuse [83].

It is worth noting here that the psychological effects and the social implications of STI vary depending on the sex and the circumstances of the individual. This in turn will influence the counseling and social support that the individual needs. For example, although the nature of STI that a male college student from a well to do family in an urban area gets from an encounter with a sex worker may be similar to one that an illiterate young woman in a rural farming community gets from her husband, the effects of the infection/disease on their lives and the assistance they need are likely to be very different.

3.7. Ensuring continuity of care

One of the most important needs of the adolescent client is long-term follow-up — not just test-of-cure, but ongoing support to deal with their sexual health needs [84]. Ongoing contact will provide the greatest chance that knowledge and behaviors are positively modified. Young people, therefore, need to be connected to programs where information and skills-building programs, contraceptives and supplies are regularly available. It may be impossible to provide this kind of follow-up service in a health center where space is available for an adolescent clinic only for specified hours each week.

3.7.1. How can better provision be made for continuity of care?

In principle, the best solution should be a dedicated adolescent service, where provision of primary and follow-on care are combined. Some schools in the US have provided reproductive

services and counseling to secondary school children within the school system, but programs have met with difficulties [85]. This model is unlikely to work in many developing country settings where school health services are barely functional and sex education still raises parental opposition. Multi-purpose youth centers have been widely adopted in Latin America and, more recently, in Africa. The problem with exclusively adolescent services is their relatively high running costs and an apparent lack of impact in reaching the target group [86]. The Mexican Centro de Orientacion para Adolescentes (CORA) in Mexico City, for example, attracted only 16% of its target population. There is virtually no information on how well such centers manage STIs. In Nigeria, over a 6-month period, an Action Health Youth Center received an average of only nine clients a day [59]. The clinic did not have any equipment to screen blood for HIV and was not referring any clients to a hospital or laboratory.

To add to the problem, high risk adolescents are those least likely to spontaneously present themselves at health facilities and outreach strategies are nearly always required to reach them. This might include, for example, mobile clinical teams working with groups appropriately trained to reach, talk to and follow-up the most vulnerable adolescents [2]. In such activities, so-called 'opinion leaders' — those whose sexual behavior is perceived by young people to be more risky — are more effective at influencing and shaping ideas than even peer educators [87].

4. STIs in the pregnant adolescent

Little attention has been given to STI management of pregnant adolescents for whom antenatal care is made available on the same basis as that for older women. They are treated, to all intents and purposes as older women, simply because they have married or are fertile. Yet pregnant adolescents are far more likely to be chlamydia-positive than older women, and a study in Nigeria found that they were equally likely to have tri-

chomonal infections [17]. At present, the only STI for which routine screening in pregnancy is recommended is syphilis [88], although rates of chlamydia and trichomoniasis must be high in some clinic populations. In a rural study in Malawi, for example, 52.3% of all nulliparae attending for antenatal care were adolescents and 25.0% were ≤ 16 years [89]. The effect on the placenta, fetus, uterus and tubes make pregnancy infections very important in developing countries and the young age, immaturity and inexperience of the adolescent girls are significant factors for an adverse outcome of pregnancy.

4.1. *Should STI management of pregnant adolescents be modified?*

Just because they are pregnant and possibly married, does not nullify any of the needs that young girls have for sexual health information, skills and support. Many of them will have married after an unwanted pregnancy and remain woefully ignorant on sexual health matters and poorly prepared to be wives or mothers. They are sensitive to health provider attitudes which can discourage them from coming for antenatal care, especially if they are unmarried [90] and are, therefore, more likely to miss out on syphilis screening and treatment [91]. Pregnancy provides the opportunity for repeat contacts which, as noted above, is often lacking for non-pregnant adolescents. Adolescents with symptoms of STIs should be treated and encouraged to attend for post-partum care so that mother and baby can be closely monitored. Every effort should be made to contact and treat partners, and counsel them to use condoms. Given the numbers of women seen in antenatal clinics each week, referring pregnant adolescents to an adolescent clinic might be a preferable option. Providing a dedicated adolescent service might be difficult to achieve. The current view is that adolescents who have adequate antenatal care have successful pregnancies [92]. The fact remains that adverse outcomes are common because adolescents are immature and have needs beyond routine antenatal care.

5. Conclusions — what needs to be done

- STIs are serious infections that require good clinical management. It is, therefore, appropriate to provide management and training guidelines and to ensure that the needs of adolescents are properly foreseen within these. There is abundant evidence that health workers need guidance on how to treat young people and that many services are not youth friendly. Fig. 2 incorporates some of these suggestions into a pictorial mini-guide for health workers.
- Many clinicians are content to operate independently of community programs, although in reality, STI provision will only reach some groups if less conventional means are used to deliver services. Health workers are busy and do not see it as part of their remit to go beyond assessment and treatment. There are also many constraints on their time and the resources available to them. What can be done is to identify staff who have a special interest in young people and encourage them to work with outside agencies to establish referral mechanisms and communications channels that optimize patient management.
- Easy access to condoms in the community is essential, especially for males who are less likely to go to clinics. Young men and girls should be encouraged to use both hormonal contraceptives and condoms in steady relationships. In developing countries, this requires that hormonal contraceptives should be readily available to adolescent unmarried females. Condom use has increased because they are perceived to protect against HIV/STI, but their context specific use (in other words, predominantly for casual contacts) will ultimately leave young girls and women who are in steady relationships exposed to STI/HIV. Until pregnancy prevention and STI management are part of the same sexual health strategy [93], and young men are party to this, mistrust between partners will frustrate STI control.

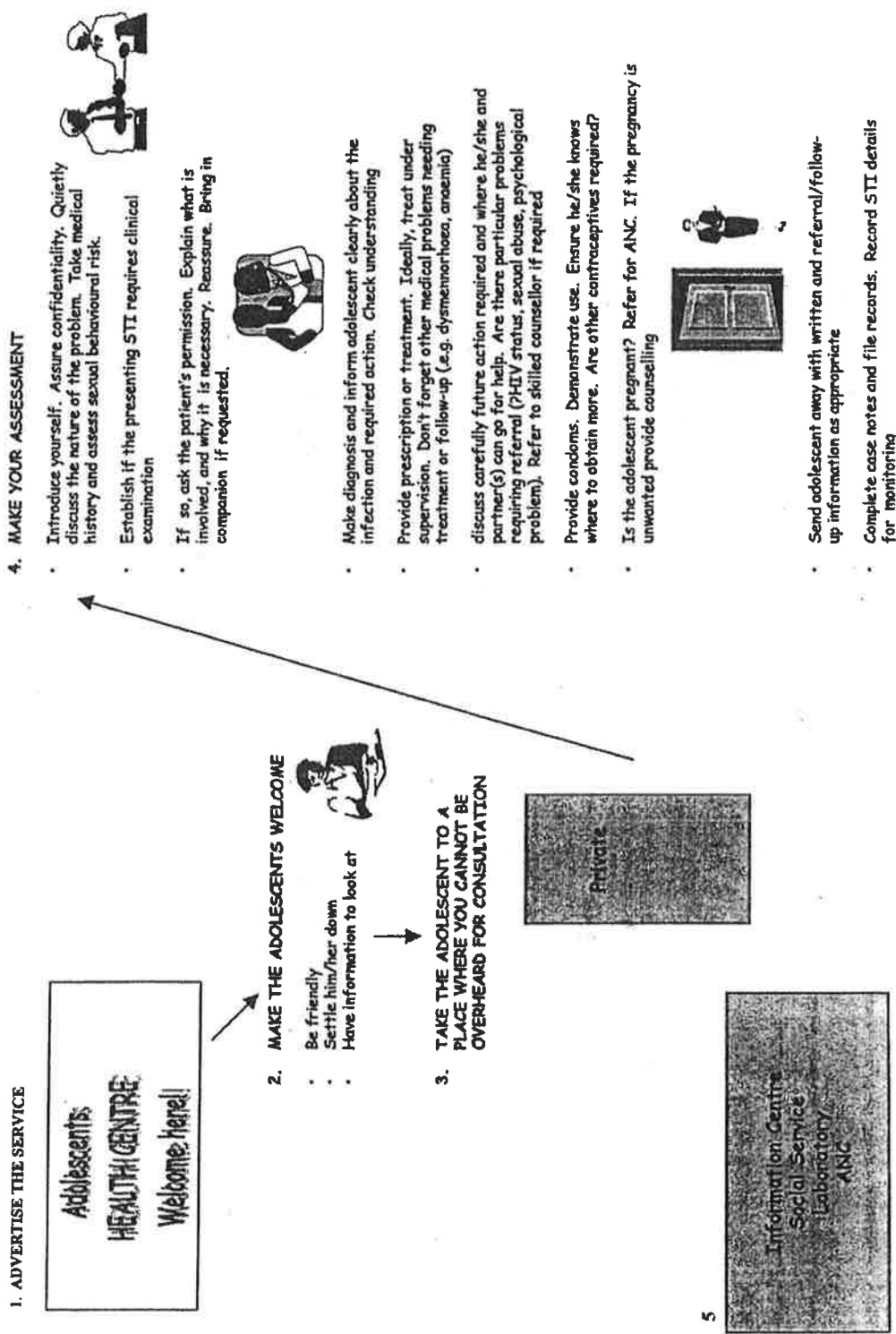


Fig. 2. Health provider's mini-guide.

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