

Reproductive Health Care for Adolescents

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Introduction

In 1983, the Society for Adolescent Medicine published "Position Papers on Reproductive Health for Adolescents," written by an Ad Hoc Committee composed of Drs. Richard Kreipe, Catherine MacDonald, and Elizabeth McAnarney (1). Much of the information contained in the previous position papers is as relevant now as it was in 1983. This update includes some of the many advances in research on adolescent sexuality, such as factors contributing to contraceptive compliance, the promotion of behavioral change, and the relationships of ethnic origin to the context of adolescent pregnancy. The inclusion of males in studies of adolescent reproductive health has become increasingly recognized. With the current political climate the possibility of limitations on the availability of abortion is likely to have significant consequences, especially for poor women and adolescents. Most importantly, the major impact of the morbidity and mortality of sexually transmitted disease (e.g., human immunodeficiency virus, human papillomavirus, and Chlamydia trachomatis) in the 1990s will have major impact on the provision of health services to adolescents.

Sexual Activity and Pregnancy Among Adolescents

The number of sexually active adolescents has risen dramatically in the past 15 years. The percent of never-married girls 15-19 years old reporting premarital intercourse increased from 28% in 1974, to 42% in 1982, and to 49% in 1988 with 25% of 15-year-old and 75% of 19-year-old never-married women, both black and white, having experienced sexual intercourse by 1988 (2-7). Recent data from the 1988 National Survey of Adolescent Males indicated that 60% of never-married young men 15-19 years old are sexually active. The rate of sexual activity for males 17-19 years old increased from 66% in 1979 to 75.5% in 1988 (71 to 88 percent for black males and 64.5 to 73 percent for nonblack males) (8).

A multitude of factors including the lack of sex education, inadequate access to reliable contraception, poverty, limited educational and career options, and substance abuse have combined to give the United States the highest teen pregnancy rate among western nations and one of the highest legal abortions rates (7,9). The pregnancy rate in the United States is twice as high as England, Wales, and Canada, three times as high as Sweden, and seven times as high as the Netherlands (7). Between 1974 and 1980, the pregnancy rate for all teens increased, but the pregnancy rate for sexually experienced teens declined. The pregnancy rates declined both among all teens and among sexually

experienced teens from 1980 to 1983 (2,10). The percentage of out-of-wedlock births to women less than 20 years old increased from 30.5% in 1970 to 54.1% in 1983 (11). More recently, the data show that the pregnancy rate for all young women 15-19 years old was 127.4/1000 women in 1982 and 126.8/1000 women in 1987, with the birth rate stable at 64-65/1000 in those 2 years (4). (It should be noted that some published pregnancy rates include only the number of live births plus induced abortions, and other rates include miscarriages in the total). Among sexually experienced 15-19-year-old women, the pregnancy rate fell from 270.6/1000 in 1982 to 243.4/1000 women in 1987. An estimated 1,014,620 teens became pregnant in 1987 with 50% of the pregnancies resulting in birth, 36% in abortion, and 14% in miscarriage (7). Nearly three-quarters of pregnancies resulting in birth were unintended (4), and just under 300,000 out-of-wedlock births occurred to adolescent women. The pregnancy rate for nonwhite teens was twice as high as that for white teens in 1987 (7). The birth rate for 15-17-year-old young women jumped in 1988 to 33.8/1000 from 30.6/1000 in 1986. The number of pregnancies among the under 15-year-old group has risen over the last two decades (12). In 1987, 16,090 teens younger than 15 years old had abortions (13); and in 1988, 10,558 births were reported to teens younger than 15 years old (7). Although young adolescents less than 15 years old represent a small percentage of the total pregnancies in the United States, they are usually from low socioeconomic, high-risk families and are particularly likely to suffer the adverse consequences of early pregnancy and childbearing.

The adolescent's desire to avoid pregnancy can be an important motivating force. Adolescents who reject the idea of having children before marriage or view pregnancy as a negative experience are less likely to become pregnant (14-16). However, denial of the consequences of a sexual relationship and the inability to plan ahead often put the adolescent at risk of unwanted pregnancy (17). Accepting the consequences of sexual activity and using contraception are often at odds with the cognitive level of the adolescent and conflicting messages from society. Messages portrayed in movies and television often appear to promote premarital sexuality at the same time that the topics of disease prevention and contraception are avoided (18).

Even for adolescents who acknowledge their sexual activity and obtain contraceptives (either prescription or nonprescription), effective use requires daily motivation. Adolescents frequently overestimate the risk of oral contraceptives and therefore choose less effective forms of birth control or discontinue use with the occurrence of side effects (17,19,20). Inner city low socioeconomic status adolescent girls are less likely than their suburban counterparts to use nonprescription methods in the early months of sexual activity before obtaining a prescription method (19). On the encouraging side, more teen women used a contraceptive method at first intercourse in 1988 than in 1982 (65% versus 48%), but a significant percentage still used no method at first or subsequent intercourse (7).

In the past few years, concern has increased about the safety of oral contraceptives in teenagers (21). The benefits of oral contraceptives include: reduction in ovarian and endometrial cancer; lower rates of hospitalization for pelvic inflammatory disease; fewer ectopic pregnancies; and less dysmenorrhea, ovarian cysts, benign breast disease, and iron

deficiency anemia (21,22). The risk of death for teenagers from oral contraceptive use is virtually nil (21,23). Of ongoing concern, however, is the possible association between breast cancer and the use of oral contraceptives. Although there appears to be no increased risk of breast cancer related to oral contraceptive use over a lifetime, subgroup analysis has raised questions about long duration of use, use before age 25 years, or use before the first term pregnancy (24,25). A committee on the relationship between Oral Contraceptives and Breast Cancer has recently issued a report evaluating published studies. Its recommendations include: 1) epidemiological surveillance of 20-40 years of appropriate cohorts to monitor risks and benefits, especially with use from an early age; 2) international, cooperative research; and 3) consideration of integration of Food and Drug Administration (FDA) premarketing and postmarketing requirements to assess long-term safety (26). Although no fundamental change in clinical practice was recommended, the committee called for repeated NIH consensus conferences (beginning no later than 3 years hence) and suggested that women be provided with counseling about the current state of ambiguity about the possible relationship. To date, health benefits and protection from pregnancy (and its risks) outweigh the risk of oral contraception in teens (21).

The impact of the introduction of long-acting contraceptives such as Norplant (Wyeth-Ayerst, Philadelphia) on the reduction of adolescent pregnancy is currently unknown and will likely depend on the cost and availability of the method and teens' acceptance of this method (including insertion discomfort and tolerance of menstrual irregularity). Teens who select Norplant must give informed consent free of coercion in both insertion and removal. It is likely that this method will initially be used by teens who are school-aged mothers.

Care of the Pregnant Teen

Studies on teenage pregnancy in the United States are intertwined with social and economic confounders since school-age pregnancy is often associated with low socioeconomic status, minority status, low educational and career aspirations, poor family relationships, and residence in a single parent home (14). Although in the North and South regions of the United States, school-age childbearing has often been thought of as a problem predominantly of young black women, different patterns have emerged in the past decade and in other areas of the country. In the western United States, 75% of pregnant adolescents are non-Hispanic white, Mexican-American, or Native American (11). Risk factors for single parenthood appear to vary with ethnic group; for example, the Rand study (14) found a decreased risk in white adolescents with good parent-child communication, in Hispanic with increased religiosity, and in blacks with good parental supervision. Plans to attend college reduced the likelihood of single parenthood in all groups but most significantly for blacks. Because the causes of adolescent pregnancy are multifactorial, the ability to target risk reduction is difficult (15).

With the availability of rapid sensitive urine pregnancy testing, the diagnosis of pregnancy is now possible in physicians' offices. Since adolescents may initially deny the

possibility of pregnancy or present with vague symptoms, physicians must be able to ask sensitive questions and to diagnose and date pregnancy. Counseling pregnant adolescents about options begins during the initial evaluation (27,28). One or several visits may be necessary to help the adolescent deal with her ambivalent feelings. Nonjudgmental counseling is crucial to allow the adolescent to make the best decision for her. Although parents can often provide support for the teenager making difficult choices, not all parents are helpful to their adolescent, and thus many adolescents will choose to make decisions and obtain an abortion without parental involvement. Statutes vary in different states and Supreme Court decisions are likely to impact further on parental notification or consent (29,30) and counseling concerning options. Mandated parental involvement may lead to delay in decision making and to travel to out-of-state facilities (31). If fully implemented, the regulations allowed by *Rust v. Sullivan* would have a chilling effect on the ability of poor adolescents to obtain needed medical care and counseling about legal and medically safe options for an unwanted pregnancy. Safe, effective alternatives to current abortion techniques such as the new synthetic progesterone antagonist RU-486 will require further testing in the United States, and studies will be needed in adolescent patients.

The teenager who elects to continue to term deserves comprehensive, age-appropriate, multidisciplinary prenatal care. The increased risk of low birth weight infants and increased neonatal mortality associated with pregnancies in adolescents, especially in those under age 15 years, likely results from a multitude of maternal factors including poor nutrition, low socioeconomic status, substance abuse (cigarettes, alcohol, and illicit drugs), and genital infections (32). In general, adolescents who receive good prenatal care and support can have good obstetric outcomes and postpartum contraceptive compliance (9,11,33,34). Felice et al. (35) found that high-risk inner city (93% black) teens served in a multidisciplinary clinic had only 9% low birth weight infants compared to a rate of 20.9% in a regular clinic. Ideally one health care provider should provide continuity of care throughout the pregnancy as a member of a multidisciplinary team which can include nutrition, education, job training, nursing, social work, medicine, and obstetrics. Educational programs optimally include family members, as well as fathers of the babies, and interventions are targeted with consideration of ethnic diversity (36,37).

Serious maternal and fetal sequelae may result if the adolescent prenatal patient acquires sexually transmitted disease such as herpes simplex, *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, human papillomavirus, or human immunodeficiency virus (HIV). Patients should be screened for genital infections and encouraged to use condoms throughout gestation (and beyond). Current recommendations call for screening for *C. trachomatis* and *N. gonorrhoeae* at the first prenatal visit and in the third trimester (38), and serologic testing for syphilis performed at the first prenatal visit, at 28 weeks, and at delivery in high-risk patients. The current joint recommendation of the Centers for Disease Control (CDC), American College of Obstetrics and Gynecology (ACOG), and the American Academy of Pediatrics (AAP) is for all women to be routinely screened for HBsAg during an early prenatal visit in each pregnancy since a history taken for risk factors does not select all the positive patients. Cytologic screening with Papanicolaou (PAP) smears are generally obtained at the first antenatal visit and repeated at the postpartum visit.

Active squamous metaplasia, altered immune function, and hormonal changes during pregnancy may place the pregnant adolescent at an increased risk for cervical intraepithelial neoplasia. Most adolescent patients will be uncertain of their risk factors for HIV infection, especially in relation to the possibility of drug use or sexual history of partners, or may be unwilling to give an accurate self-report of substance abuse (39,40).

Although many programs have focused on the pregnant adolescent and the immediate postpartum period, needs are clearly long term. Some studies have found that school-aged children of adolescents do less well on intellectual test and have more behavioral problems than children of adult mothers (7,9,27,41,42). These outcomes are likely to result from multiple factors such as mother-child interaction and low socioeconomic status. Indeed, McAnarney et al. (41) have found that younger adolescents tend to show less sensitivity, acceptance, cooperation, and more negative verbal communication with their 9-12 month-old babies than do older adolescent mothers (41). Encouragement of verbal interaction and early educational interventions may promote improved functioning.

Postpartum programs have been instituted on several models, within school systems, clinics, and hospital out-patient centers (43-47). Innovative school-based programs have combined educational and social support with health care to prevent a second pregnancy and to help teens stay in school (43,44). Teen-tot clinics that provide the adolescent with contraceptive and general health care and social services and the infant with well-child care have been successful in promoting increased rates of immunization of infants, appointment keeping, and contraceptive use (45,47). Such a model has been instituted in settings where the health care provider has expertise and interest in serving both age groups. In other settings, two practitioners, working together in the same clinic or with ongoing communication, have optimized the outcome for the adolescent parent and her child. For example, a pediatrician and adolescent medicine specialist can collaborate to provide continuity of care. Interventions have involved outreach, education, job placement, and development of coping and decision-making skills.

Sexually Transmitted Diseases

With the high prevalence of sexually transmitted disease (STD) in adolescents, health care providers have a new responsibility to educate patients about the use of condoms and spermicides and the risks of serial monogamy, often thought by adolescents to be "safe sex." Depending on the adolescent population studied, 8-25% of sexually active adolescent girls have endocervical infection with *Chlamydia trachomatis* and 0.4-12% have endocervical infection with *N. gonorrhoeae* (48-55). One million cases of pelvic inflammatory disease (PID) occur each year with 16-20% of cases in adolescent patients (56). Adolescents are at higher risk of PID than adult women because of the presence of endocervical pathogens and perhaps also immunologic and biologic immaturity (56). Thus, adolescents represent a special group in need of screening for STD; vigilance is needed in diagnosing the signs and symptoms of PID. Human papillomavirus (HPV) infection of the cervix is found in 15-38% of sexually active adolescent girls (57,58) and

has been associated with anogenital neoplasia (59-61). The increased prevalence of HPV types 16/18 and the active transformation zone of the cervix in adolescent girls suggests that sexually active adolescents may be at particular risk of cervical intraepithelial neoplasia (58).

After a steady decline in primary and secondary syphilis and congenital syphilis through the early 1980s, the disease showed a dramatic increase starting in 1986 (62,63). In the United States between 1981 and 1989, the incidence of primary and secondary syphilis increased 34% from 13.7 to 18.4 cases per 100,000 persons, the highest rate since 1949 with an increase in the black-to-white incidence rate ratio from 14.5 in 1981 to 47.8 in 1989 (63). In a juvenile detention center in New York City serving juveniles aged 9-18 years, Alexander-Rodriguez and Vermund (64) reported that the prevalence of syphilis was 0.6% for boys and 2.5% for girls. The high prevalence of HPV and syphilis is likely to be mirrored by increased acquisition of HIV. Teens frequently underestimate their own and their partner's risk profiles.

Human Immunodeficiency Virus (HIV)

Given the prevalence of STD in the adolescent population, the spread of HIV is particularly worrisome to health care providers. The first reported cases of acquired immunodeficiency syndrome (AIDS) in youths 13-21 years of age was in 1982 (although one case was diagnosed in retrospect from 1969). Since then the number of reported cases has doubled every 14 months, and as of March 1990 1429 cases in adolescents 13-21 years of age had been reported to the CDC. Although this number represent only 1% of the total reported cases, undoubtedly many of the cases in persons 22-29 years old, who represent 22% of AIDS cases, had acquired the infection during adolescence, given the long latency period from HIV infection to development of AIDS (65-67). The total number of HIV-infected adolescents is unknown, but some recent seroprevalence studies document the prevalence of HIV among many subpopulations of adolescents. Studies in the Job Corps, branches of the military, and in groups of out-of-home (runaway and homeless) youth document the presence of HIV in adolescents throughout the nation. However, geographic differences exist with the highest concentration of HIV-infected people in the urban areas with the highest reported cases of AIDS (68). Among the first 129,754 Job Corps members tested, 0.39% were positive. In military recruits screened between October 1985 and March 1989, the seroprevalence was 0.34/1000 among adolescents aged less than 20 years (17-19 years old) (69). Minority group applicants and those from high-risk geographic areas have a higher seroprevalence; for example, black male military recruits from the Bronx had a seropositive rate of 6.2/1000 (66,69). New York City, with roughly 1 million adolescents (approximately 3% of the United States adolescent population) accounts for 20% of all reported cases of AIDS in youths aged 13-21 years. The male:female ratio in adult cases is 13:1 in the United States (excluding New York City), whereas among adolescents the ratio is 7:1 nationwide and 2.9:1 in New York City. Among adolescents females, approximately one-half of all reported cases are

attributed to heterosexual spread, as compared to 21% of adult female cases in New York City.

If the pattern of spread of HIV infection follows the course of other sexually transmitted disease, other subpopulations of adolescents are likely to become infected rapidly. Preventive interventions and services for high-risk and HIV-positive youth are urgently needed now (65-67,70).

The risk and benefits of HIV testing should be carefully explained to adolescents and specific counseling techniques and protocols implemented (71). Confidential counseling and testing should be available in physicians offices, family planning clinics, and anonymous and confidential test sites. The mandatory HIV testing policies that are part of entrance requirements for joining programs such as the military and the Job Corps already in place need reassessment unless age-appropriate follow-up services are provided for HIV positive adolescents. New protocols and modification of existing protocols in the national AIDS Clinical Trials Program must include age-appropriate assessment of efficacy, toxicity, appropriate dosing, and outcome assessment (e.g., laboratory value ranges of normal, neuropsychiatric assessments, and growth parameters) for adolescents.

New clinical services are needed for high-risk and HIV positive youth, and HIV-related services need to be integrated into programs for hemophilia, adolescent pregnancy and parenting programs, drug treatment programs, and delinquency prevention programs, to name a few. Mental health services should be accessible to the "worried well" and to adolescent age and other family members of HIV-infected patients.

The Male Adolescent

The role of the male patient is frequently forgotten in a discussion of adolescent reproductive health. The HIV/AIDS epidemic and the resurgence of interest in both delaying the onset of coitus and promoting the use of condoms and monogamous relationships for the prevention of pregnancy and STD has increased research in the area of male sexuality. Inclusion of males in sex education programs, school-based clinics, and community education has the potential to promote responsible behavior. The age of initiation of sexual activity is different in various racial/ethnic groups with early initiation more frequent among black adolescent boys than among all whites (8,72-74). For example, in a study of youths gleaned from the National Longitudinal Survey of Youth Labor Market Experience (NLSY), 6.8% of non-Hispanic white young men and 9.9% of Hispanic young men reported having had intercourse before their 14th birthdays compared with 30.4% of black young men (72). The correlation of the use of alcohol and drugs with the early onset of sexual activity is more evident in girls than boys and among boys more apparent in white youth than in black youth. For boys, initiating sexual intercourse does not seem either to follow or to lead to the use of alcohol and drugs (72). Initiation of sexual activity may be an isolated phenomenon that relies more on cultural

norms and economic conditions than on the occurrence of psychosocial problems in the individual male.

The questions then arise how to intervene early enough to influence these young men to delay the initiation of their "sexual" lives. Older males are likely to be more effective contraceptors and might be more likely to put into practice the means to prevent the acquisition of STD than younger males. Although the data from the 1988 National Health Survey (8) do not suggest that current strategies have influenced males to delay becoming sexually active, condom use has increased. Among metropolitan males 17-19 years old, condom use at last intercourse more than doubled from 21% to 58% (8). The use of condoms was lower than average in the young men at highest risk of STD: those who had ever used drugs, those who had ever had sex with a prostitute, and those that had 5 or more partners in the past year.

Many studies have examined the factors that may relate to girls' use of contraception, but few have examined boys' beliefs. Many young men feel that contraception is the girl's responsibility and some may actually want to father a child as a sign of manhood. When asked about the good ages for parenthood and marriage, poor black youths thought that parenthood was most appropriate at about 21 years of age and thought marriage most appropriate at 24 years of age (75). Cultural acceptance of unwed parenthood may be covertly sanctioning early sexual activity and lack of contraceptive usage, at least in young black men.

Although many high-risk young men know the major ways that HIV can be spread, they have the misconception that heterosexual activity is not among them (76,77). If they are not homosexual, they feel AIDS cannot happen to them. More than school education and public service announcements directed at middle class adolescents are needed to counter prevailing attitudes and effect behavioral change. As is the case among young women, the highest risk population for STD and early parenthood are school drop-outs who are often missed by the educational messages.

Testing for STD in males has traditionally been relegated to the symptomatic male. Needed are frequent serologic screening for syphilis, diligent tracing of male contacts of young women infected with Chlamydia, gonorrhea, and HPV (including abnormal PAP smears), and the further development of screening tests such as dipstick leukocyte esterase of the first catch urine to detect males infected with *C. trachomatis* and *N. gonorrhoeae* (78,79).

Interest in involving fathers in prenatal care and postnatal intervention programs has increased in the past decade. Many males suffer negative psychosocial consequences such as isolation and depression from adolescent parenthood (80,81). Adolescent fathers are more likely to have a history of delinquency than are their non-father peers (82). Adolescents who father children appear to have a considerable number of problems including low educational achievement, lower paying jobs or employment, and high rates of drug and alcohol problems (83,84). Males may quit school trying to provide financial support, and effort often counterproductive in the long run. Because many fathers

continue to be involved with their children, inclusion in a program that offer job skills and placement would be ideal. Provision of job training can encourage young men to contribute voluntarily to the care of their children. Contraceptive teaching is also vital since teenage fathers have a higher risk of fathering a second child than do adolescents for fathering a first child (85). Since many of the partners of teenage mothers are older, they are not usually included in research or delivery of services for adolescents, an omission which requires new solutions (81). In summary, programs need to help these young men maintain meaningful contact with their infants, to assess and augment their academic and employment skills, to encourage the maintenance of the relationship between the young mother and young father, and to enhance their ability and desire to be financially supportive of their children.

Sexual Abuse in Adolescents

Both adolescent girls and boys may have been subjected to sexual abuse as children or may be victims of sexual assault, including date rape, as teenagers. In the 1987 National Survey of Children, 7% of Americans aged 18-22 years reported at least one episode of nonvoluntary sexual intercourse (86). By age 20 years, 12.7% of white women, 9% of black women, 1.9% of white males, and 6.1% of black males had experienced nonvoluntary sexual relations. Risk factors for young white women included living apart from parents before age 16 years; poverty; physical, emotional, or mental limitations; and parental drinking, smoking, or drug use (86). In a study of adolescent sexual assault victims presenting to an emergency ward, Jenny reported that risk-taking behaviors such as alcohol and drug use and hitchhiking were associated with sexual assault in adolescents (87).

During an office visit, physicians need to be able to ask sensitive questions that allow teenagers to discuss the possibility of sexual abuse. Pregnancy, STD, injuries, psychological problems, and psychosomatic illnesses may result from abuse. Johnson noted that 25% of victimized males identified in their adolescent clinic reported sexual dysfunction compared to only 5% of controls; none of the molested boys had been previously identified by the legal or medical system (88). In medical-legal situations, histories and examinations should follow established protocols (22,89,90) and adequate medical and psychological support should be given. Preventive measures should be targeted at the developmental age of the patient; adolescents should be counseled about personal safety and risk-taking behaviors and information conveyed about sexuality, birth control (the availability of "morning-after" protection), and STD (89,91).

Gay and Lesbian Youth

The needs of gay and lesbian youth have gradually become recognized by the medical profession in the 1980s. The prevalence of homosexuality among adolescents is unknown because gender roles and sexual identity may take years to evolve and to be

acknowledged. In the Minnesota study of teens in schools, 90% of males and 83% of females reported themselves as exclusively heterosexual (92). Although only 1% of 12th-grade males and less than 1% of 12th-grade females viewed themselves as mostly or completely homosexual, 10% were unsure of their sexual orientation.

Problems encountered by gay and lesbian youth can be both psychological and medical (93-96). Although lesbians have a low risk acquiring STD, homosexually active males are at risk of infections with organisms such as *N. gonorrhoeae*, *C. trachomatis*, herpes simplex, HPV, syphilis, HIV, and enteric organisms and of anogenital trauma (93,95,96). Provision of excellent medical care (including hepatitis B vaccination) and counseling about all aspects of the gay adolescent's life is critical to the health of these young people. Education about safer sex practices must be continued at each visit to try to prevent the acquisition of HIV and other infections (96).

Interventions

Widespread lack of information on reproduction and STD is still a major problem for adolescents. The HIV/AIDS epidemic has forced more school systems to consider presenting some form of sex education, but the subject may be relegated to one or two lectures and deal only with the biology of the virus rather than the behaviors that transmit it (97-100). With many current courses, students may show an increase in their knowledge level without a corresponding change in sexual behavior (100,101). Few courses include the necessary skills to postpone sexual involvement or incorporate safer sex practices into the individual's behavior. Effective courses must aim to increase communication skills, improve the adolescent's sense of worth, and help both boys and girls become more in touch with feelings. Wider availability of condoms is needed as part of age-appropriate risk-reduction programs.

Education must be disseminated to adolescents in a variety of settings including home, clinics, schools, recreational and community-based facilities, and juvenile justice centers. A review of prevention strategies around the nation point to a number of promising new programs and approaches (70,102-110). For example, the Grady Memorial Hospital successfully targeted eighth-grade students in a local school system with a curriculum to postpone sexual activity (103). Michael Carrera's Family Life and Adolescent Sexuality Program in New York City has aimed at enhancing life options through employment, tutoring, and involvement of families for teens in Harlem. Zabin et al. (104) have reported favorable results for both boys and girls in a Baltimore program providing education in a school setting, and concrete services in a nearby health clinic. Age of first coitus was actually delayed and both boys and girls made more visits to the clinic.

School-based clinics have reduced adolescent birth rates in some communities, but not in others (43,104,108,111). Use condoms and oral contraceptive pills is more likely in clinics that place significant emphasis on AIDS education and pregnancy prevention (111); however, clinics aimed at providing excellent comprehensive health care for adolescents, rather than just "birth control," are more likely to be accepted by

communities. Unfortunately, some school-based clinics may be forced to stop providing contraception because of community pressure.

Other interventions have aimed at medical clinics or entire communities. During an educational program in South Carolina targeted at parents, ministers, community leaders, and children enrolled in public schools, the estimated pregnancy rate for girls 14-17 years old declined from 62/1000 to 25/1000 (105). In an adolescent clinic setting, Paperny and Starn (106) have pioneered efforts to use computer assisted instruction to increase knowledge and change attitudes. These studies and others need to be funded and replicated in other communities. Creative solutions are also desperately needed to reach teenagers who do not attend school or who are homeless or runaways, a particularly high-risk group for both early parenthood and STD.

Reproductive Health Care of Adolescents With Disabilities and Chronic Illnesses

The reproductive health care needs of the disabled and chronically ill adolescent have often been ignored. The medically ill adolescent usually is seen regularly by health care providers although sexually related health care issues may be overlooked. Subspecialists may not consider that a seriously ill adolescent is or may become sexually active, and they may not have the skills or equipment available to perform a proper genital examination.

The medically ill adolescent may have an increased risk of reproductive health problems. For example, the immunosuppressed renal transplant patient is at a 16-fold increased risk of cervical intraepithelial carcinoma (CIN) (112), and at a 100-fold increased risk for vulvar cancer (113). HIV-positive adolescents are also at increased risk of CIN. HPV infections in other immunocompromised patients such as patients on steroids (asthmatics, rheumatoid diseases) and patients with Hodgkin's disease are often difficult to treat. Pregnancy can have significant mortality and morbidity in some patients with congenital heart disease and pulmonary compromise (e.g., cystic fibrosis). Many commonly used seizure medications are teratogenic and thus reliable contraception assumes increased importance. Males with neurologic deficits, those taking some medications, and those who are HIV positive or have AIDS are likely to have major concerns about sexual functioning and their ability to begin or maintain sexual relationships.

Patients with medical illnesses and disabilities should receive sensitive counseling about the risks and potential problems associated with becoming sexually active before the onset of coitus. Gynecology, family practice, internal medicine, and pediatric residents should be trained to understand and deal with the sexually related problems of these adolescents.

Training of Primary Care Physicians

The Society for Adolescent Medicine has been in the forefront of supporting education about adolescent medicine and encouraging physicians in residency programs to gain the technical skills to care for the reproductive needs of adolescents patients. More teaching is required in residencies in pediatrics, internal medicine, family practice, and obstetrics and gynecology to help deliver optimal care to adolescents. In the past few years, the new organization, the North American Society for Pediatric and Adolescent Gynecology, has collaborated with the Society for Adolescent Medicine to present information at national meetings on the reproductive health of adolescents and to assure that residency programs in both pediatrics and obstetrics and gynecology have teaching in this important area. Age-appropriate histories should include menstrual pattern, sexual practices, and drug use. Signs and symptoms of pregnancy (including ectopics and miscarriages), PID, and STD need to be recognized. Physicians need to gain knowledge of how to screen for STD in males and females, how to do PAP screening of adolescent girls (as soon as they become sexually active or age 17-18), how to counsel adolescents on HIV testing, and how to deliver medical care to HIV-positive youth (114). Laws governing confidential delivery of reproductive services need to be understood. Johnson et al. (115) have shown that residents can increase knowledge with the use of a curriculum put in place in a teaching hospital. More curriculum materials need to be developed to provide both residents and practicing physicians and nurses with relevant clinical information.

Ad Hoc Committee on Reproductive Health

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Position Statements on Reproductive Health Care for Adolescents

Adolescent Sexuality

The Society for Adolescent Medicine hereby resolves to support and encourage the development of responsibility toward sexuality on the part of adolescents; to support and encourage an awareness and acceptance by adults that sexuality is a part of adolescent development; to affirm the need for families to be involved in their children's sexuality education; to support innovative efforts to delay the age of onset of coitus in adolescents but to affirm the importance of self-exploration and intimacy; to increase awareness of the problem of sexual abuse and to provide services to adolescents who have been sexually victimized; to improve the reproductive health care of adolescents with

disabilities and chronic illnesses; and to support health care and to enhance life options to meet the needs of heterosexual, gay, and lesbian youth.

Sex Education

The Society for Adolescent Medicine hereby resolves that all states should mandate the teaching of health and sex education from kindergarten through the 12th grade, as part of the overall curriculum in schools; that the content of this education should include discussions of sexuality, reproduction, fertility, decision making, delaying first intercourse, abstinence, methods of contraception, abortion, parenting, and sexually transmitted diseases; that this education will place special emphasis on human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS), teaching risk assessment and risk reduction with the use of explicit language and illustrations applicable to the student population; that schools and communities have available services including condoms; that school personnel responsible for teaching health and sex education should have proper training in biological, psychological, and moral aspects of human sexuality and undertake a nonjudgmental approach; and that parents should be integrally involved in the development and implementation of the sex education curriculum planned for their children. In addition, the Society for Adolescent Medicine resolves that sex education should not be limited to the schools but that messages and education should be targeted to youth in high-risk situations not attending schools; that the impact of the media on adolescent behavior needs further assessment; and that relevant messages about responsible sexuality and contraception should be encouraged in magazines, newspapers, movies, and television.

Contraception

The Society for Adolescent Medicine hereby resolves that contraceptive education, counseling, and services should be made available to all male and female adolescents desiring such care on the adolescents' own consent without legal or financial barriers. Parental involvement should be encouraged, but this should not be required through either consent or notification. Low or no cost contraceptive services should be available to male and female adolescents in communities and schools, and counseling and screening for sexually transmitted diseases and prevention strategies should be part of contraceptive health care. Follow-up care and compliance should be stressed. The Society for Adolescent Medicine endorses contraceptive advertising on television and other media targeted to adolescents. Long-term surveillance of teenagers initiating oral contraceptive use is essential to assess safety. Funding of research and development for new safe, effective contraception should be high priority for the United States.

Adolescent Childbearing and Childrearing

The Society for Adolescent Medicine hereby resolves that pregnancy detection and subsequent prenatal care, counseling, educational, and postnatal services (including child care) should be available and accessible to adolescents who choose to continue their pregnancies, without legal or financial barriers; that services should be available to the

adolescent's partner and family, if she desires, and should include counseling on adoption and/or parenting. Services should be available on a confidential basis. The special needs of the school-age mother, especially those under 16 years, should be recognized and interventions designed to lessen the potential for low birth weight babies. Counseling and screening for sexually transmitted infections should be included to prevent serious maternal and fetal sequelae. Interventions must be long term and include educational and social services, health care including contraception, and vocational counseling. Programs should also be aimed at the needs of the infants' fathers to help them maintain meaningful contact with their infants, to augment their academic and employment skills, and to enhance their ability to be financially supportive of their children. The Society for Adolescent Medicine should promote the evaluation of all these intervention programs to determine if elements of some programs can be replicated in other areas and to determine what components are cost effective.

Abortion

The Society for Adolescent Medicine hereby resolves that although prevention of unwanted pregnancy is the highest priority, adolescents (whether indigent or well-to-do) must have access to counseling about all options and access to elective termination of pregnancy as a legal, safe, available alternative to continuing a pregnancy; that the adolescent should have access to abortion without legal or financial barriers and without interference from anti-abortion demonstrations; and that the decision to terminate a pregnancy should rest with the pregnant adolescent in concert with the advice and counsel of her physician. Although involvement of significant others should be strongly encouraged, particularly for minors, mandatory parental consent and/or notification should not be required. When determination of maturity is necessary, that determination is best made by a knowledgeable health professional. The Society for Adolescent Medicine encourages further research on the safety and effectiveness of new methods of abortion such as RU-486 that have the potential to improve health care to adolescents.

Sexually Transmitted Diseases

The Society for Adolescent Medicine hereby resolves that adolescents should have access to education, counseling, and health care services for the prevention, screening, diagnosis, and treatment of sexually transmitted diseases; and that minors should have access to these services on their own consent. Education and testing for sexually transmitted diseases should be integrated into the delivery of all adolescent health care services, including those providing contraceptive and prenatal care. Practitioners need to be educated about the signs and symptoms of pelvic inflammatory disease and early diagnosis and treatment instituted in adolescent females. Condoms and foam should be more widely available, and teenagers should be instructed in their use and how to integrate them into their sexual relationships. Messages about risk reduction should be targeted to adolescents, both those in and out of school, in a variety of setting including home and health-related, educational, recreational, and other community-based facilities. HIV-testing programs must include a continuum of counseling not limited to one session of pre- and post-test counseling and must have linked medical and psychosocial services.

Access to HIV/AIDS services must be expanded and new protocols for AIDS clinical trials need to include age-appropriate assessments.

Training of Health Care Providers

The Society for Adolescent Medicine hereby resolves that education about the special needs of adolescent patients, including those with chronic illness and disabilities, and the technical skills to care for problems of reproductive health and sexually transmitted diseases should be included in the curriculum of residency programs in pediatrics, internal medicine, family practice, and obstetrics and gynecology.

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