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**Reproductive Health Programs For
Young Adults:
SCHOOL-BASED PROGRAMS**

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I. INTRODUCTION

A. Reproductive Health: The Importance and Urgency

With the Cairo Programme of Action at the International Conference on Population and Development (ICPD) and again with the Beijing Platform at the Fourth International Conference on Women (ICW), the global community resolved to “Protect and promote the rights of adolescents to sexual and reproductive health information and services” (UN, 1994; UN, 1995). Delegates more than 180 countries at the Cairo conference agreed to a comprehensive definition of reproductive health, specifically, a state of “complete physical, mental and social well-being, and not merely the absence of disease or infirmity in all matters relating to the reproductive health system and to its functions and processes” (UN, 1994).

Family planning and pregnancy/sexually transmitted disease (STD) prevention were soon seen as central but insufficient components of a more encompassing approach to reproductive health. In December 1994, the United Nations Population Fund (UNFPA) convened a two-day expert consultation on reproductive health and family planning in which the focus of reproductive health was further broadened; participants urged that stronger emphasis be given to prevention and health promotion prior to conception (UNFPA, 1994).

Reoriented to meet the needs of adolescents, both male and female, integrated reproductive health (RH) education and services were subsequently charged to include the promotion of voluntary abstinence as well as family planning information, counseling and services for sexually active adolescents; sex education and information for the prevention of STD and HIV/AIDS; counseling on gender relations, violence and sexual abuse against adolescents and responsible sexual behavior for both sexes; confidential mental health services for youth who have experienced any form of violence; and prevention and treatment of abuse and incest (UN, 1994).

There is an urgent need for the global community to act on the preceding principles and recommendations. Currently comprising more than 1.5 billion people, young adults,¹ defined by the World Health Organization (WHO) as those individuals aged 10 to 24, face considerable threats to their reproductive health. Adolescents, 83 percent of whom live in developing countries, are vulnerable to sexual assault, rape and prostitution, too-early pregnancy and childbearing, infertility, anemia, genital mutilation, malnutrition, unsafe abortion, and reproductive tract infections (RTI) including STD and HIV/AIDS. Findings from 17 studies in Africa, Asia and the Pacific, and Latin America and the Caribbean led Weiss and colleagues of the Women and AIDS Research Program to note that

¹ The term *young adults* is used interchangeably with *adolescents* and *young people* throughout the document.

adolescent sexual experiences are “driven by a wide range of factors” including not only romance and sexual desire but economic gain and sexual coercion (Weiss, Whelan, & Gupta, 1996).

Young people themselves have brought attention to the realities that threaten their reproductive health daily. In a recent essay contest in which the UNFPA invited adolescents all over the world to discuss responsible reproductive health, more than 500 boys and girls from 107 countries eloquently highlighted the lack of equality between the sexes and argued the need for the following: better information regarding the joys and dangers of early sexual relationships; accurate information about AIDS and other STD; access to advice relating to early marriage; greater male involvement in family responsibilities; and support and guidance as they make their transition to adulthood (Popnews, 1996).

Despite the concerns voiced by the United Nations, 180 member countries, international organizations, and individual adolescents everywhere, the RH concerns of young people are too often neglected. Herbert Friedman, chief of WHO Adolescent Health Programme Division states that although “young people can make great use of knowledge and skills, they are often denied access to information and services for their health” (Friedman, 1995). This stems in part from societal beliefs and attitudes about adolescent sexual behavior and contraception and from subsequent policies and regulations preventing adolescents from receiving services.

The repercussions from this neglect will be exacerbated as the number of adolescents grows rapidly during the next decade. In 2010, demographers project that there will be more 10 to 19 year olds on the planet than ever before — approximately 1,253 million, versus 1,073 million in 1995 (McCauley & Salter, 1995). The state of their health and education will determine greatly the strength and fate of the nations in which they live. Cohen explains, “As their individual development and social contribution will shape the future of the world, investment in children’s health, nutrition and education is the foundation for national development” (WHO, 1996b).

B. The Power and Potential of Schools to Address Health

With more children than ever receiving an education, schools are an efficient way to reach school-age youth and their families in an organized way. In the developing world, more than 70 percent of children currently complete at least four years of school. The last 30 years have seen an impressive improvement in enrollment rates, particularly in developing countries. Girls’ primary school enrollment grew from 39 percent in 1960 to 72 percent last year (UNICEF, 1996c). In secondary schools, the rate of enrollment of young women more than tripled in Africa and nearly doubled in Asia between 1960 and 1980. The campaign of basic Education for All² by 2010, endorsed by 155 nations, has mobilized practical and political momentum behind the effort to enroll more young people in schools. In the last five years alone, the number of children enrolled in primary school has jumped by some 50 million (UNESCO, 1990; UNESCO Education News, 1996).

² Basic education encompasses early childhood and primary education, literacy and life skills training for youth and adults.

The promotion of children's health through schools is being recognized globally as an important means of influencing health behavior. It has been an important goal of WHO, UNESCO, UNICEF, and other international agencies for more than 40 years — a goal which has gained significant momentum in recent years.

In 1992, the European Network of Health Promoting Schools (ENHPS) was developed under the auspices of the Council of Europe, the Commission of the European Communities, and the World Health Organization Regional Office for Europe. The Network now consists of 40 countries and addresses structural changes and ideas and methodologies at all levels of school operations to promote health (WHO, 1996c). Its objective is to increase the number of schools that are “health promoting schools.”

A health promoting school is one which incorporates into its overall mission, policies, and daily activities, from preschool through primary, secondary, and higher education levels, ways to promote the health of students and school personnel. Such a school *fosters health with all the measures at its disposal*, but primarily through curriculum and training; health, mental health, and nutrition services; and the psychosocial and physical health environment (See Figure 1).

In 1993, UNICEF initiated a School-Based Interventions Technical Support Group, an international effort to improve health through schools. The Group provides support for the acceleration of school-based programs that can contribute to the health and development of youth, including the promotion of sexual and reproductive health. In 1995, a WHO Expert Committee on Comprehensive School Health Promotion and Education, with participants from 16 countries, was charged to encourage education and health institutions and other agencies and individuals to support health promotion through schools. The resulting WHO Global School Health Initiative was designed to improve the health of students, school personnel, families, and other members of the community by sharing many of ENHPS' components of a health promoting school (WHO, 1996c). In addition, Education International, a worldwide trade secretariat with a membership of 25 million educators, has adopted policies of the health promoting school and together with Education Development Center, Inc. (EDC), WHO, and UNESCO, is offering training to its members on HIV prevention, reproductive health, and general health promotion.

Kolbe and colleagues (1994) note that, as yet, “school health programs are underdeveloped in practically every nation.” Limited resources and supplies, time, and qualified professionals render the concept of a “coordinated” approach to school health more advanced than its practice (WHO, 1996c). Still, more and more countries are recognizing the different areas of school health and attempting a more integrated approach to school health. Kolbe et al. (1994) encourage promotion of school health on an international and national level, arguing that school health programs that coordinate delivery of health education and health services and that provide a healthy environment could become one of the most efficient means to significantly improve the well-being of young people.

C. The Potential of Schools to Address Reproductive Health

There is substantial evidence to show that education has a profound effect on the reproductive lives of young people. Most of this research has focused on girls and women. McCauley and Salter (1995) write: “In most areas women who attain more formal education are more likely to delay childbearing, as well as marriage, than their peers with little or no schooling.” Similarly, last year’s *State of the World’s Children* notes that educated girls are likely to marry later and have fewer children. Specifically, “cross-country studies show that an extra year of schooling for girls reduces fertility rates by 5-10 percent” (UNICEF, 1996).

Research and program interventions have also demonstrated that education is more likely to improve a young woman’s economic earning potential, strengthen her decision-making and negotiation skills, her self-esteem, and productivity (Hill & King, 1991). Furthermore, ensuring access to and participation in education can prevent or at least reduce the risk of children falling prey to commercial sex (UNICEF, 1996b). Educating girls also holds benefits for their children and for society: “Children of an educated mother are more likely to survive. In India, the infant mortality rate of babies whose mothers have received primary education is half that of children whose mothers are illiterate” (UNICEF, 1996). In 13 African countries between 1975 and 1985, a 10 percent increase in female literacy rates reduced child mortality by 10 percent, while changes in male literacy had little influence (World Bank, 1993).

Such evidence underscores the importance of keeping girls in school. Although enrollment rates rose and the gap between male and female primary school enrollment rates narrowed between 1960 and 1995, girls are still disproportionately absent, beginning at the primary school level (UNICEF, 1996). Whereas one-sixth of 6- to 11-year-old boys is not in school, one-quarter of 6- to 11-year-old girls is denied an education and the benefits it confers. Sixty percent of the 105 million school-age children not attending schools are girls (WHO, 1996b).

Efforts to improve girls’ enrollment and to utilize the potential of schools in addressing their reproductive health require the development of policies and guidelines. These are necessary to ensure the identification, allocation, mobilization, and coordination of resources at the local, national, and international levels (WHO, 1996). Strategies for developing appropriate policies and guidelines as well as for keeping children in schools are discussed later in this report.

D. Rationale for Incorporating RH Programs into Schools

Because they hold the potential to have a positive effect on the health and learning of students, schools are an appropriate setting in which to contribute to the development of healthy sexuality. The promotion of reproductive health through a coordinated school-based approach is desirable for the following financial, developmental, and practical reasons:

1. Financial Incentives

Cohen and Vince-Whitman indicate that health problems in developing countries, including reproductive health problems such as HIV/STD and early pregnancy, can be prevented, reduced, or controlled through efficient and cost-effective school-based education and treatments (WHO, 1996). This claim is supported by the World Bank's World Development Report 1993, *Investing in Health*, in which Jamison and colleagues review the costs and benefits of addressing school-age children's health problems. In an assessment of cost and effectiveness of school-based interventions, Leslie and Jamison (1990) conclude that "Under a broad range of assumptions, cost-benefit analyses suggest that appropriate health and nutrition interventions in the schools are likely to prove to be a very high-yield investment." Schools can also contribute to improved health, including reproductive health, among children and staff by referring them to local health and counseling services, requiring little financial expenditure.

2. Developmental Needs

During puberty, adolescents go through profound changes that they need to understand as part of growing up. Young people are in the early stages of developing attitudes, communication patterns, and behavior related to sex and relationships (Weiss et al., 1996). Weiss and colleagues also note that many youths are enrolled in school when they initiate intercourse. By providing RH programs early, particularly before the initiation of sexual activity, it is still possible to encourage the formation of healthy reproductive health attitudes and practices instead of changing well-established unhealthy habits (Kirby, 1994). Schools can promote healthy messages and establish helpful norms about sexuality and reproductive health. In particular, primary schools have the opportunity to reach the many children who drop out before secondary school.

3. Practicality and Appropriateness of the School Setting

Many of the elements upon which to build RH programs in schools already exist. Health services of some form or another are provided for students in almost every country, and most countries have an ongoing school health program that could become the starting point for a more integrated approach (WHO, 1996b).

As an example, schools have the benefit of a staff equipped with tools of teaching and learning. With almost 43 million at the primary and secondary school levels around the world, teachers can have an immense impact on the health behavior of adolescents (WHO, 1996c). As Briggs (1994) observes, "In many developing countries teachers have a tremendous input in the activity of the community. Even more, they are the role models to many adolescents."

In many cases, school may be the only place for adolescents to receive accurate RH information. Surveys in many countries reveal that the main source of information about sexuality is friends, peers, and often the media, but youth would also like to speak with parents, teachers, and health workers

(Weiss et al., 1996; MEC & UNICEF, 1993). Talking to friends can be unsatisfying because friends are similarly uninformed (Kurz & Johnson-Welch, 1994). Family members are often unable or unwilling to provide instructions on sexual matters, a role that in some traditional societies was performed by relatives or a community elder. Oikeh (1981) points out that many parents are either not knowledgeable on sexual matters or are afraid to discuss them. Intergenerational studies have found that when there is communication between parents and children regarding RH issues, it is often limited to threats and warnings without explanations (Wilson, Mparadzi, & Lavelle, 1995). Similarly, a study in Nha Trang, Vietnam, reported a common complaint among teenagers that discussions on HIV/AIDS with adults often became discussions on morality rather than on practicalities of prevention (Thanh & Efroymsen, unpublished).

Just as sexual/reproductive health attitudes and practices are shaped by numerous factors in the lives of young people, they can be supported through many facets of school life. Reproductive health taught in classroom curricula can be supported and reinforced by a range of services. Health services are necessary for early screening and prevention of RH problems as is the distribution of family planning devices. Counseling and mental health services can address relationship issues or intervene to address sexual and physical abuse. The psychosocial and physical environment of the school can play a role through policies and practices that support gender-equity for teachers and students and punish harassment or assault with sanctions. Finally, as schools are settings through which not only children but also the rest of the community can be reached, links with parents and community members can ensure that students are receiving consistent reproductive health messages.

E. Purpose and Organization of Report

This background paper on school-based RH programs was written as part of a process to set a practical action and research agenda for the many agencies and partners that work with developing countries on young adult RH programs. The paper uses existing research and expert opinion to provide information for policy makers, program planners, and researchers to improve the quality and quantity of RH programs provided to young people through schools at the primary, secondary, and higher-education level.

The report is organized into the following five major sections:

- I. Rationale, arguments for and benefits of addressing reproductive health through schools;
- II. Types of school-based RH programs;
- III. Lessons learned from published and unpublished literature and from experts in the field, used to inform (A) the process of planning, designing, and implementing a school-based program, and (B) the components of a school-based reproductive health program, including (1) curriculum and training, specifically curriculum content and selection, classroom teaching methods, youth involvement and training of instructors and nonteaching staff; (2) health services,

school-based or school-linked, incorporating clinic, counseling, nutrition, and contraceptive services; (3) the psychosocial and physical health environment of the school; and (4) a coordinating mechanism to integrate the components and to link schools with parents and the community. A summary of key elements in the process of implementing and sustaining a school program is outlined in Table 2.

- IV. Addressing the challenge of keeping children in school;
- V. Critical research questions and recommendations.

For this paper, information about school-based RH programs has been gathered from Medline and Popline searches of published literature, reference sections of relevant reports, the Internet, unpublished literature collected by FOCUS and EDC, and a Consensus Panel (January 1997) of experienced RH researchers, programmers, and educators convened by FOCUS to inform and review this document.

II. DESCRIPTION OF SCHOOL-BASED PROGRAMS

School programs addressing reproductive health vary tremendously between and within countries. The major types of educational efforts that address the health effects of sexuality and reproduction, while differing in their goals and content emphases, are family life education (FLE), sexuality education, population education (PopEd) and HIV/AIDS education programs. Many of these programs, particularly those addressing HIV/AIDS, involve youth as trained sexuality/RH educators (peer educators), mental health/RH counselors (peer counselors), or providers of reproductive health services (peer promoters; CPO, 1989; Rowley, 1989). For the most part, however, school programs provide information and education and not services (McCauley & Salter, 1995). Even though the number of school-based clinics that include the provision of reproductive health services and contraceptives are growing rapidly in some countries, such as the United States, few schools in developing countries have health services available in the school setting.

A. School-Based Education

1. Family Life Education

Most existing school-based RH programs are described as family life education, which International Planned Parenthood Federation (IPPF) defines as “an educational process designed to assist young people in their physical, emotional and moral development as they prepare for adulthood, marriage, parenthood, aging as well as their social relationships in the socio-cultural context of the family and society” (IPPF, 1985). The information content of FLE generally encompasses population growth in addition to personal health and nutrition, life planning, encouragement of sexual abstinence, decision-making and respect for both women and men (McCauley & Salter, 1995). Few FLE programs include sexuality and reproductive health information, such as sexual behavior and contraception (Judith

Senderowitz; personal communication). Often the result of reluctance or inadequate training of teachers, FLE programs generally aim to avoid controversy by focusing on the family and parenting responsibilities.

2. Sexuality Education

In contrast, sexuality education focuses on the individual: specifically, individual sexual activity, biology, relationships, sexual orientation and sexual behavior, STD, gender roles, attitudes, and values (Ford, D'Auriol, Ankomah, Davies & Mathie, 1992). The Sex and Information Council of the United States (SIECUS) defines sexuality education as a “lifelong process of acquiring information and forming attitudes, beliefs and values about identity, relationships and intimacy” (SIECUS, 1991). With the ultimate goal of promoting sexual health,³ sexuality education generally aims to provide the following content: sexual development, reproductive health, interpersonal relationships, affection, intimacy, body image, and gender roles, in addition to helping young people acquire skills to make decisions and take care of their sexual health.

More recently, sexuality education has been taught in conjunction with life skills and become “life planning,” which is often more acceptable to adolescents and adult professionals (Judith Senderowitz; personal communication).

3. Population Education

The United Nations Population Fund (UNFPA) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) currently support national or regional population education programs in schools in more than 80 countries. The first of these programs began in the mid-sixties when population issues became prominent in the field of development. Population education (PopEd) was designed to “help people understand the nature, causes and implications of population processes as they affect, and are affected by individuals, families, communities and nations” (UNFPA, 1993).

Though in variable stages of development and adapted to unique country and school needs, PopEd generally addresses population dynamics and family life education, including family planning. Pop Ed has increasingly included sexuality education, STD and HIV/AIDS education and information, gender equality and equity. PopEd has developed unevenly in different regions and countries because of differing political and social attitudes toward sexuality and reproduction. In Fiji and Gambia, for example, population education is a separate course. In most other countries, however, components of PopEd are integrated into existing subjects such as biology, civic education, home economics, geography, and mathematics. UNFPA has found that most countries have been willing to incorporate HIV/AIDS education (Uyen Luong, UNFPA; personal communication).

³ Sexual health was defined by WHO in 1975 as the “integration of the physical, emotional, intellectual, and social aspects of sexual being in ways that are positively enriching and that enhance personality, communication and love.”

4. HIV/AIDS Education

AIDS — in many countries the greatest public threat of this century — is already responsible for an increase in the acceptability of sex education. Ford and colleagues (1992) claim: “Practically all countries are seeking to develop school-based AIDS education as part of their wider public education strategies.” In many countries, such as in Zimbabwe, subjects that were once taboo are now discussed frankly in the context of HIV/AIDS prevention. Education planners in many countries of the world have come to realize that parents support AIDS education in schools, “even if it includes aspects of sexuality which were never allowed to be discussed in schools before” (Baldo, 1992). In some cases, AIDS education has been incorporated into existing FLE programs. In general, AIDS education teaches how HIV is and is not transmitted and prevented. It tends to specifically promote condom use, rather than discussing a variety of contraceptive options.

B. Peer Education

Many school-based RH programs involve a peer education, or child-to-child, component. Peer educators are typically the same age as or slightly older than the group with whom they are working. They may work alongside the teacher, run educational activities on their own or actually take the lead in organizing and implementing school-based activities (Vince-Whitman, 1992). To promote pregnancy and STD/HIV prevention, peer educator tasks often consist of informal discussions, video and drama presentations, and one-to-one time talking with fellow students and/or handing out condoms. These activities are not confined to a classroom when the teacher is present, but can also happen during informal time spent eating, talking, and playing sports (Vince-Whitman, 1992).

Williams (1996) notes that while “peer education has been a staple of HIV/AIDS prevention for the past decade,” peer educators are now being challenged to do more than provide information. A recent AIDSCAP study of 21 USAID HIV/AIDS projects that use a peer education strategy found that, in a number of countries, peer educators are beginning to make a shift from raising awareness to supporting behavior change. Young people are increasingly looking to peer educators for skills training, counseling/support, and access to contraceptive services.

C. School-Based Reproductive Health Services

Unfortunately, school clinics that exist are predominantly in the United States. State funding coupled with support from community leaders, local schools, hospitals and community health centers has allowed the number of school-based health centers in the United States to double in the last two years for a total of 913 currently in operation (Making the Grade, 1997). School-based and school-linked health centers evolved to provide young people with services in an environment that is easily accessible and overcomes many of the barriers that youth face in accessing “traditional” medical services (Cate Lane, AFY; personal communication). School-based health centers (SBHC) offer comprehensive health care centers providing medical and mental health screening and treatment for young people on or near school

grounds (AFY, 1995). School-linked health centers (SLHC) are located off school grounds and have a formal relationship with at least one school.

In addition to comprehensive medical services, SBHCs/SLHCs can be a particularly effective way of providing reproductive health clinical services to adolescents, including family planning counseling, oral contraceptives, condoms, and referral to other related services. In a study of 607 school clinics in 1994, 64 percent of which were in schools and the remainder near schools, more than 85 percent were found to offer family planning counseling, more than 70 percent performed gynecological exams including STD diagnosis and treatment, and 39 percent offered HIV testing (AFY, 1995).

1. School Condom Programs

Some schools make condoms available to students who are sexually active, often through school-based health services, but also through other mechanisms. In a study of 421 U.S. schools with condom availability programs, Kirby and Brown (1996) found that condoms were provided through school nurses at 54 percent of the schools, through teachers at 52 percent, counselors at 47 percent, other health workers at 29 percent, and school principals at 27 percent. Condoms were provided in bowls or baskets at only five percent, through vending machines at three percent and through other students at two percent. Most schools make condoms available through more than one of these sources and almost all offer them as part of a comprehensive program which also includes education, counseling, and other activities. Restrictions to condom access are usually in place. This can include the requirement of parental consent and/or counseling, or limits on the times condoms are available or the number that can be taken at one time.

The Appendix provides detailed descriptions of selected programs that represent different types of school-based RH programs at different levels: primary and secondary school-based programs and university programs. Programs were selected on the basis of available descriptive and evaluative information and the recommendations of experienced researchers. The descriptions demonstrate the range and creativity of RH programs in developing countries.

III. LITERATURE REVIEW AND PROGRAMMATIC LESSONS LEARNED

A. Brief Overview of Literature

An issue confronted worldwide is whether it is appropriate to address reproductive health in schools. The content and goals of school-based RH curricula are often a source of great controversy. One major concern frequently voiced by parents, teachers, and school officials is that sex education and the availability of family planning services will increase young people's interest and involvement in sexual behavior. Research overwhelmingly points to the contrary.

A study commissioned by WHO analyzed 1,000 reports on RH programs primarily in developed countries and found no evidence that the provision of sex education, including the provision of contraceptive services, encourages the initiation of sexual activity. In some cases, sex and HIV/AIDS education delayed the initiation of sexual intercourse, decreased sexual activity, and increased the adoption of safer sexual practices among sexually active young people (Grunseit & Kippax, 1993). In addition, of the 19, predominantly U.S.-based studies reviewed by WHO and presented at the Ninth International Conference on AIDS, none showed evidence of sex education leading to earlier or increased sexual activity. Rather, six of the studies reported that sex education either delayed the onset of sexual activity or decreased overall sexual activity (Baldo, Aggleton & Slutkin, 1993). In sum, research repeatedly shows that sex education and RH programs do not lead to more frequent or earlier engagement in sexual activity, as many fear.

Unfortunately, the vast majority of RH programs in developing countries have not been evaluated or even described in detail. Much information remains within countries and is difficult to access. Evaluation that has been conducted is generally weak, because of a number of factors including limited resources and evaluation expertise, lack of clarity about the purpose, goals, and objectives of program efforts, and limited access to essential RH data. Methodological problems in studies include incomparable or no control groups, no pretests, very small samples, no long-term outcome assessment, and unclear or poor measurement procedures, such as content-validity and reliability (WHO, 1995f). Senderowitz (1995) points out that the few projects that include scientific evaluation are too new to allow an assessment of quantitative outcomes. As a result of such limitations, little is known about the effect of school-based RH programs in developing countries or whether most programs achieve their respective RH objectives.

In addition, research is virtually nonexistent comparing the combined effect of several or all major components of a coordinated school approach — instruction, services, and environment — and has focused heavily on the educational component of reproductive health delivered through schools. A summary of findings follows.

B. Reproductive Health Education

1. FLE/Sex Education.

Table 1 presents the results of selected studies that have evaluated school-based RH programs. From the results that are available, the impact of RH programs has been modest, but promising. A consistent finding in the literature is that FLE/sex education can effectively increase knowledge and improve attitudes but does not necessarily influence sexual/RH-related behavior when that is an objective. Eight months after receiving the *Planeando tu Vida* curriculum in Mexico, for example, students reported increased knowledge of and positive attitudes toward contraceptives and sexuality (Pick de Weiss, Andrade, & Townsend, 1990). Participants of MUDAFEM in Nigeria reported increased knowledge of the menstrual cycle, contraceptive methods, and HIV transmission, along with increased support for contraceptive services (Ajiboye, 1994).

Unfortunately, evaluative evidence of changes in sexual- and RH-related behavior following school-based education remains sparse. The reviews by Grunseit and Kippax (1993) and Baldo et al. (1993), however, suggest that education programs addressing reproductive health can have positive effects on sexual risk-behavior. Upon reviewing 23 school-based sex education programs in the United States, Kirby et al. (1994) also concluded that educational programs do not hasten the onset of intercourse, but specific programs were found to delay the onset of intercourse and reduce the frequency of sex and the number of sexual partners. It should be noted that the effects reported by Kirby and colleagues (1994) were modest and changes were measured on a short-term basis.

Although the research is too limited to identify characteristics necessary for a successful RH education, past findings offer some insight. There has been no evidence that programs which focus only on abstinence from sexual intercourse significantly delay the onset of intercourse (Kirby, 1997). More research is necessary to determine their effectiveness. The programs that have had success in delaying intercourse and reducing risky sexual behavior have been those promoting a variety of family planning options, including monogamy, abstinence and condom and spermicide use, and providing information on their relative effectiveness. The FLE/sex education programs in Table 1 that provided information about contraceptives, how to prevent pregnancy, and/or where to obtain contraceptives were shown to increase contraceptive use whereas those that did not cover this information failed to do the same.

In a review of 49 evaluation studies of sexuality education and STD/HIV prevention programs in the United States, Kirby (1994) found the programs that significantly improved safe sexual behavior shared the following characteristics:

- Clearly focused on reducing one or more specific sexual behaviors that lead to unintended pregnancy or HIV/STD infection, such as delaying the initiation of intercourse or using protection;

- Incorporated behavioral goals, teaching methods, and materials that are appropriate to the age, sexual experience, and culture of the students;
- Are based upon theoretical approaches that have been demonstrated to be effective in influencing other health-related risky behaviors;
- Provided models of and practice in communication, negotiation, and refusal skills;
- Selected teachers or peers who believe in the program and then provide them with training, usually including practice sessions;
- Last long enough to allow participants to complete important activities — specifically, they were at least 14 hours long or involved intense small group exercises;
- Provided basic, accurate information about the risks of unprotected intercourse and methods of avoiding unprotected intercourse;
- Employed a variety of teaching methods designed to involve the participants and have them personalize the information; and
- Included activities that address social pressures related to sex.

2. HIV/AIDS Education.

Kirby and DiClemente (1994) found that some AIDS education programs in the United States successfully delay initial intercourse, increase condom use, and reduce the number of sexual partners. In fact, in a recent review of research findings on teen pregnancy reduction programs, Kirby (1997) writes, “A disproportionate number of the programs that significantly increased contraceptive use were AIDS education programs that increased condom use.” It is unclear whether this is due to better funding, trained staff, and studies with larger sample sizes or because AIDS education programs are more effective in reaching this goal.

AIDS education programs have also highlighted the benefits of interactive teaching methods and teaching negotiation skills. Kirby and DiClemente (1994) found that negotiation skills enhance students’ ability to delay sex or to use condoms. Wilson and colleagues (1992) concluded that interactive teaching methods are “better than lectures at increasing condom use and confidence in using condoms and at reducing the number of sexual partners.” The researchers randomly allocated 84 female Zimbabwean student teachers to either an information-based or a skills-based AIDS intervention. The former group attended a 60-minute lecture about HIV prevention and transmission, while for 90 minutes the latter practiced condom-fitting and assertiveness skills in negotiating condom use in addition to watching a psychodrama and video about AIDS. Four months later, those in the skills-based group were more knowledgeable about condoms and their correct use, higher in self-efficacy, perceived fewer barriers in the previous month, and reported fewer sexual partners and coital acts without condom use in the previous month. Finally, school-based AIDS education programs have shown to yield benefits for groups other than in-school youth. In a review of four pilot projects for school-based AIDS education in Africa, Baldo (1992) found that AIDS education in schools contributes to increasing awareness in the family and community.

3. Peer Education.

There have been very few evaluations of peer education programs, particularly in the area of sex education. It is thus difficult to determine their effectiveness. Qualitative information indicates, however, that peer education and peer counseling are valuable assets to school health programs in countries all over the world. This is likely because peer groups increase in importance during adolescence; peer education allows youth to exchange information in colloquial language and can take advantage of any moment and place for teaching or counseling.

In AIDSCAP's interviews with 22 project managers, 80 peer educators, and 121 target audience members in 10 countries in Africa, Asia, Latin America, and the Caribbean (Williams, 1996), almost all target audience members agreed that they were comfortable talking to peer educators about HIV and AIDS and found it a good way to obtain important information, including how to use a condom, how not to rush into sexual activity, fidelity, and negotiation skills. More than nine out of ten of the audience members reported that they had shared the information and skills they had learned from the peer educators with their families, partners, friends, or colleagues. Ninety-five percent of the educators themselves said that they had changed their own behavior since becoming a peer educator. The following are demonstrated increases in acceptability and accessibility associated with peer education/promotion in school-based RH programs:

- Peer education allows participating youth to develop their leadership skills and improve their sense of self-worth (Peplinsky, 1995).
- RH peer educators often become respected by students as a source of credible information. Researchers in Chiang Mai, Thailand, found that being a peer educator gave girls social legitimacy to talk about sex without the risk of being stigmatized as someone who is sexually promiscuous. The peer educators were successful in facilitating group discussions about sex, educating their peers about their bodies, helping them to develop communication and assertiveness skills, and changing social norms (Cash & Anasuchatkul, 1995).
- Teachers in a Puerto Rican community in the United States found that working with peer educators allowed them to have more fulfilling relationships with young people and to see their students as a valuable resource (Vince-Whitman, 1992).
- Peer counselors in Khon Kaen, Thailand helped adolescents use information and health service resources (Thongkrajai, Stoeckel, & Kievying, 1994).
- Peer promoters can provide a valuable link to health services. In the experience of Mojisola Opabunmi, a peer promoter for MUDAFEM in Ibadan, Nigeria, "The peer promoter program makes services more acceptable and accessible than health centers, which are located away from the easy reach of students and, in most cases, manned by adults."

4. Timing of Education.

Programs seem to increase the use of contraception if they reach adolescents before they begin having intercourse instead of after they have initiated intercourse and have established habits of not always using contraception (Kirby, Barth, Leland, & Fetro, 1991). Pick de Weiss and Townsend (1990), for example, noted a greater likelihood of contraceptive use when *Planeando tu Vida* was provided before the adolescents became sexually active. Programmers often recommend the age of menarche as an appropriate time to instigate RH programs in schools, whereas studies conducted by the International Center for Research on Women (ICRW) have determined that some girls have sex before menarche and/or before their teenage years. Weiss et al. (1996) remind us that the biological event of menarche is not a prerequisite for the sexual initiation of girls, “thereby challenging the conventional wisdom that family life education for girls should begin with the onset of menstruation or when girls enter their teenage years.” In recognition that attitudes and beliefs are formed early in life, more RH education programs are being implemented in primary schools, before young people begin having sex and before substantial proportions of students drop out of school.

C. Reproductive Health Services

Experienced RH programmers bemoan the inadequate link between school education and services since the most effective and sustainable programs for adolescent health and development offer not only education but a variety of services to facilitate behavior change (Kurz & Johnson-Welch, 1994; Network, 1993; Consensus Panel, 1997). It has been shown, for example, that strengthening connections between sex education and family planning services can both delay sexual intercourse in nonsexually active students and increase contraceptive use in those who are sexually active (Koo, Dunteman, George, Green, & Vincent, 1994).

To benefit from family planning, STD treatment, and prenatal care, many young adults depend on the same service centers used by people of all ages in the community. Unfortunately, numerous barriers impede their access to such facilities. Community-based health services often restrict service to youth who are married, those who already have a child, or those of a certain age. Consent requirements for the use of services which may call for the presence of a parent, or a husband, in order for the adolescent girl to have access to family planning methods or safe abortion services where it is legal, are also a great deterrent to young people. Such regulations frequently put the lives of young people at risk by this major hindrance to service accessibility (WHO, 1995b). Other constraints for youth include attitudes from service providers, inconvenient locations, lack of confidentiality, and the perception that health centers do not serve adolescents (Cate Lane, AFY; personal communication). Finally, young people are even more financially restricted than others in their community, so that if RH and contraceptive services are not cost free or low cost, then they will probably be totally inaccessible (WHO, 1995b).

School-based or school-linked clinics have shown to facilitate student access to the services often necessary to support behavior change. Research on multiservice health centers in schools indicates that students use them not only for primary care but for more sensitive issues, such as mental health, sexual abuse, and reproductive health (Edwards et al., 1980; WHO, 1996b; Koo et al., 1994). Furthermore,

some SBHCs/SLHCs have yielded positive changes in sexual/reproductive health outcomes. Zabin (1986) showed that girls enrolled in a school-linked pregnancy prevention program postponed sexual involvement seven months longer than girls not enrolled. Reports and commentary from educators and health care providers also indicate that school health centers can improve school attendance, school suspension, and dropout rates (McCord, Klein, Foy, & Fothergill, 1993).

The evidence is not clear regarding the effects of SBHCs/SLHCs on pregnancy rates. In a study of six school-based health centers, Kirby and colleagues (1991) found no statistically significant effect on schoolwide pregnancy rates. In the school-linked pregnancy prevention program studied by Zabin (1986), however, pregnancy rates reduced by 30 percent among participating girls who received sexual education complemented by individual and group counseling and medical and contraceptive services during a three-year period. Pregnancy rates among girls in a comparison group increased by 58 percent.

1. Contraceptive Availability

As with RH education, there is widespread concern that school contraceptive availability programs will promote sexual activity among young people. Among the six school-based health centers, Kirby et al. (1991) did not find greater levels of sexual activity or increased frequency of intercourse in schools with SBHCs that made contraceptives available compared with those that did not. Similarly, in Sellers and colleagues' (1994) assessment of whether condom promotion and distribution increases sexual activity among Latino teenagers in the United States, no effect was found on the onset of sexual activity for females or the frequency of intercourse for males or females. Vocational school students in Thailand who received health education training and contraceptive services did not increase sexual activity but increased contraceptive use when they did have sex (Sakondhavat, Leungtongkum, Kanato, & Kuchaisit, 1988).

Although "substantial proportions of sexually experienced students do obtain contraceptives from the [school-based] centers," as Kirby (1997) points out, it is not clear whether SBHCs providing contraceptives encourage students to actually use them. Evaluations have shown that clinic-users can be more likely to use contraceptives than students from schools without a clinic. However, the majority of data concerning the relationship between school-based clinics and the use of condoms is inconclusive. Kirby and colleagues (1991) found that providing contraceptives was insufficient to significantly increase their use; the authors did not find greater condom use among students in the three schools with school-based clinics providing condoms. This may be because students in the United States have a wide variety of sources other than schools from which to obtain condoms and contraceptives. In 1994, Kirby wrote: "A panel of experts that reviewed the research on school-based clinics concluded that there is not yet sufficient evidence to determine whether or not school-based clinics providing contraception significantly increase the use of the contraception by adolescents" (Kirby et al., 1994). To this date, there have been no published studies of the effect of condom availability programs (using mechanisms other than the school clinic to provide condoms) alone on student sexual behavior or condom use.

D. Obstacles to Implementation of School-Based RH Programs

In the last decade, many countries in Africa, Asia, Europe, the Middle East, the Caribbean, and the United States have attempted to implement reproductive health programs in schools. In almost every country, the provision of sex education has faced legal, financial, cultural, and religious barriers as well as opposition from school leaders, teachers, parents, and students themselves. Other obstacles to implementation common across most countries include a lack of (1) active support, commitment, and coordination from ministries of health and education and school officials; (2) national resources in terms of skilled personnel, training, and materials; (3) mechanisms to supervise, monitor, and evaluate programs; (4) research and infrastructure in school health programs; (5) well-defined national strategies for promotion, support, coordination, and management of school health programs; and (6) innovate approaches in development of instructional material (WHO, 1995b).

The provision of reproductive health services also faces numerous barriers. They are often controversial and politically charged, and many health centers opt not to provide them. Regarding school health services in developing countries, a recent UNICEF survey conducted in a number of sub-Saharan countries indicated that school health services (1) are often not based on any assessment of need; (2) lack effective strategies for social mobilization of support; (3) are undercut by a lack of intersectoral collaboration; (4) suffer from fragmentation and duplication of interests on the part of donor agencies; (5) lack the appropriate mechanisms for monitoring and evaluation of services; and (6) are not sustainable (WHO, 1995b).

Suggestions for overcoming common barriers to the implementation of school-based RH education and services are provided in the next section. Further details regarding lessons learned from literature on RH education, health services, and environment are also discussed, as they relate to specific components of a school RH program.

IV. THE PROCESS OF PLANNING, DESIGN, AND IMPLEMENTATION: Lessons Learned

The ability of any program to produce change in policies and practice depends largely on a *process to guide its design and implementation*. Successful implementation that has an effect on practitioners and the ultimate audience, in this case young adults, requires careful planning and consideration of several key factors. Though there is little demonstrated evidence to inform the implementation of school-based RH programs, much can be learned from the experience of programmers, practitioners, and teachers around the world. Numerous international Education Development Center, Inc. (EDC) programs and research related to diffusion of innovation and organizational change, particularly in schools, have identified several factors as instrumental in changing policy and practices to promote health (Vince-Whitman, 1996). Figure 2 presents many such factors that play a major role in successful program design and implementation. They include the following:

- Vision and Big Ideas
- National Guidelines or Creation of a Movement
- Leadership Skills
- Data-Driven Planning and Decision Making
- Critical Mass and Supportive Norms
- Administrative and Management Support
- Attention to External Forces
- Adaptation to Local Concerns
- Dedicated Time and Resources
- Skill-Based Team Training

A. Vision and Big Ideas

It is a challenge to successfully move school administrators and teachers away from daily practices to embrace and adopt new ones. In general, they resist change. It takes time, often requires the development of new working relationships, and can involve changes in role or authority. More often than not, change in institutions occurs as a result of outside pressures.

A vision or big idea about the ways in which schools can improve their quality and efficiency is an important factor in galvanizing human interest and motivation. Research has shown that big ideas requiring large changes are more likely to be embraced than small, incremental changes. According to several large educational studies, the larger the scope and personal demand of the change — new organizational arrangements and behaviors — the greater the chance for success. Or, the greater the practitioner effort and energy expended in implementing a new practice, the greater the potential outcome (Berman & McLaughlin, 1975)

Such research suggests that reproductive health for young adults should be addressed in the larger context of the health promoting school, a big idea with great potential for improving the health and learning of young people. Or, if the focus is limited to reproductive health, an exciting vision or big idea specific to reproductive health is needed to harness administrator and teacher interest.

B. National Guidelines or Creation of a Movement

Although local schools decide whether or not to adapt and deliver program innovations, there is no doubt that their efforts are often stimulated by and rely on the presence of national policies and guidelines from ministries of education and health. Studies of physician behavior change in clinical practice, for example, have found that the dissemination of national guidelines about practice produce at least a 10 percent change in the number of physicians who conduct that practice (Cohen, Halvorson, & Gosselink, 1994).

In numerous EDC projects aimed at changing the policy and practice within individual schools, the existence of national guidelines, and the involvement and influence of well-known and respected leaders in the movement have been the single reason that many state or local agencies cite for their participation. Similarly, the European Network of Health Promoting Schools was inspired by the concept of and criteria for how to become a health promoting school. Since 1991, when WHO's Regional Office for Europe first promoted clear, specific guidelines for how to become a health promoting school, 500 schools and 2,000 affiliate schools, reaching half a million students in 40 countries have become involved. In EDC's experience, time and time again, schools and health agencies have attributed their participation in the implementation of innovative programs to the desire to be part of a national or international movement, and not simply to take part in a single, isolated professional development activity.

Policies alone are unlikely to ensure widespread implementation, but their very existence lends importance and direction to local institutions. Indeed, change will occur only when more education leaders from countries around the world understand and speak out about the connection between reproductive health, healthy development, and learning. Unfortunately, youth policies are often unknown, exist only on paper, or do not specifically address reproductive health and sexuality issues (Cate Lane, AFY; personal communication).

The creation of a movement can be enhanced by collaboration across sectors and by grassroots advocacy efforts. WHO claims that the development of school health policies and programs is ideally "encouraged and assisted by intergovernmental organizations, national governmental agencies, and a wide range of groups, including professional health and education organizations, national commissions, universities and national, regional and local agencies" (WHO, 1996c). It is suggested, and increasingly is the case, that school health programs are introduced by a country's ministry of education, collaborating with the ministry of health. In such cases, financial and administrative control typically lie with local or national government authorities. In the experience of some programmers, the success of programs relies on institutional support of the ministry of education (Consensus Panel, 1997).

Policies and guidelines play a critical role in gaining support and action for RH programs in and with schools. In El Salvador, for example, the Ministry of Education and the Legislative Assembly, in particular the Commission for the Family — Women and Children, support a formal population education project. As a result of this government commitment, a team of 1- population education specialists has been assigned to three regions in the country and a Technical Unit on Population has been formed. The Technical Unit consists of six technical officers at the central level and ten technical officers at the regional level, who oversee training, the design of materials, and the incorporation of population education themes across all areas of the national curriculum.

C. Leadership Skills

Probably no factor is more important to the implementation of new programs than leadership skills; few programs succeed without it. Effective leadership moves people in a direction that is genuinely in their long-term best interests. It does not waste their scant resources (Kotter, 1988). Leadership provides the inspiration and the ability to galvanize and motivate people to achieve a mission and goal. Leaders convene talented people to use their best abilities to achieve those goals, constantly reminding participants about the ultimate vision and mission.

For complex programs to succeed, leadership talent in schools and communities must be developed and used across levels and sectors, and not rest with just one or more individuals at the top of any hierarchy. To guide planning, implementation, and evaluation of a school-based RH program, it is important to establish a leadership team of committed individuals who have a stake in seeing the vision become reality. The leadership team should consist of representatives of the target audience and decision-makers, including in this case school administrators, students, parents, teachers, and community leaders.

D. Data-Driven Planning and Decision Making

Whether in clinics, schools, or community agencies, data is invaluable in driving the planning, decision making, implementation, and design of ongoing monitoring and evaluation. Timely data can help ensure that programs focus on the real health needs, experience, motivation and strengths of the target population, rather than on problems as perceived by others (Baldo, 1994). Though it is essential to understand the needs of any target audience for purposes of program design, schools offer few opportunities to segment audiences in order to deliver specified messages and services. To avoid stigma, RH or other health programs rarely separate young people into different groupings, such as high risk and low risk, sexually active and nonsexually active, married and nonmarried. Programs can, however, be structured by grade level and need to consider group characteristics such as age, sex, marital status, learning capacities, religion, residence, and cultural background.

Below are methods for gathering information regarding characteristics and needs of the target group as well as the institutional resources with which to design and deliver programs and services. Based on these data, measurable *goals and objectives* can be designed, with program activities to achieve them.

1. Needs Assessment.

A variety of qualitative and quantitative methods such as surveys, assessment of knowledge, attitudes and practice (KAP) of the target group, assessment of teachers' attitudes and skills, in-depth interviews, participant observation, and focus-group discussions are useful in determining the reproductive health needs of the target group. For example, valuable information can be learned through interviews with members of the target audience as well as with youth counselors, community health doctors, religious leaders, public health nurses, and parent/teacher association representatives (OPS/PAHO, 1997).

Understanding the reproductive health needs of the target group is essential in program and curriculum design and is useful in advocating the need for RH education. It can convince communities of the importance of early prevention and keeping adolescents safe and healthy in the face of threats to their health and learning (Baldo, 1992). In many cases, policy makers are not aware of the extent of teen pregnancies, STD, HIV infection and AIDS, and other RH problems among youth. Information gained through the needs assessment can also serve as a useful baseline from which changes can later be determined.

2. Resource Mapping and Action Planning.

Resource mapping provides information about specific resources and services available to utilize in implementation. Recently, in several Latin American countries, for example, EDC tested a Rapid Assessment and Action Planning Tool (RAAPT) for school health. In Bolivia, EDC convened approximately 40 people from the ministries of education, health, and nongovernmental agencies to involve them in this process. Using a relatively simple instrument that asked a variety of questions about the country's capacity and infrastructure to promote the health of young people through schools, participants were trained to collect data through interviews. People across agencies, who had never sat in the same room before, came together to work on a common task. Within a week, it became clear what policies did and did not exist, what school capacities (both national and local) existed to address the major health threats to youth, and new resources or ways in which agencies would need to work together to respond. Based on the data, a new dialogue began among key stakeholders, with critical information to begin the action planning process.

Findings in the initial quantitative and qualitative assessments can be used to determine the main goals and objectives of the program. In *Changing the School Culture*, Dalin (1993) suggests a creative process to help the school formulate its visions and goals, and to "transform intentions into concrete plans that can be realized in the school."

All activities and curriculum content should reflect the objectives made clear from the outset. Those responsible for designing policies and programs, instructional activities, services, changes in the school environment, and evaluation of the program should be able to refer to the objectives for clear guidance. Though evaluations have not studied this issue specifically, agencies such as UNFPA have learned, "The

clearer and more specific the objectives, the easier it will be to select appropriate educational topics and approaches to teaching them.” In addition, objectives must be formulated with evaluation in mind; evaluators should be able to determine the achievements of the project against the set objectives (UNFPA, 1993). Too often RH programs are asked for outcomes that are difficult to measure because the objectives and activities were not designed to do so.

3. Evaluation Design and Monitoring

Evaluation is a critical element of a school-based program that needs to be considered from the outset. Unfortunately, few programs are designed with consideration of evaluation. An evaluation plan and monitoring mechanisms established at the start are necessary to measure the degree to which objectives are achieved. As Marx and Northrop (EDC, 1995) write, “The groundwork for evaluation is laid at the very beginning of the implementation process when needs are assessed, objectives set and activities planned.” Specific recommendations for process and outcome evaluation are discussed in Part V of this report.

E. Critical Mass and Supportive Norms

People in groups or communities tend to conform to normative behavior, which is consistent with theories of social psychology. It is important to consider the social norms of practitioners in a school — what are their beliefs? their daily practices? their view of young people and the role of the school concerning reproductive health? as well as their individual responsibilities and roles? Change cannot happen in schools without enough people to create a critical mass — enough people who share the same beliefs and who are trained to carry out some new practices. Professional development activities and training, therefore, needs to be delivered to teams from an individual school for there to be a critical mass of people dedicated to new practices and able to perform them.

Creating a critical mass is especially important in the area of reproductive health as teachers, health workers, parents and others often have strong personal views. An important initial step then is developing a sense of shared values about RH as a topic as well as ways to use the school to support the reproductive health needs of young adults.

Securing a common core of people who support the RH program is important in developing a strong foundation as school-based RH programs may be inhibited by those it is intended to benefit. As WHO and UNESCO (1992) have noted, successful implementation of a school sexuality education program “depends upon its acceptance by and support from: school administrators; teachers; government representatives; the community in general; parents; students; other specific groups of people, for example, cultural and religious groups.” Conflicts over values and norms are likely to arise in response to the idea of a RH program. Rather than responding to such conflicts with frustration or avoidance, Dalin (1993) suggests that planners use conflicts to learn. Conflicts can provide opportunities for understanding the reality of the school, for clarifying issues, for putting unresolved issues on the table and

for helping to understand another point of view (Dalin, 1993). WHO and UNESCO (1992) suggest the following strategies for embracing differences and improving program acceptance:

- identifying and addressing the concerns of people or groups that may have difficulty in accepting the program;
- creating opportunities for extensive communication about RH issues;
- creating a process for welcoming feedback.

Below are rationale for and ways of involving stakeholders (youth) and influentials (families and communities) from the earliest stages of planning and implementation.

- ***Youth***

“Apart from the general right of children to participate in decisions that affect them, programmes are more likely to succeed when youth are allowed to articulate their own views and concerns regarding their difficult circumstances” (UNICEF, 1996b).

In general, there is little involvement of young people in educational programs or services that are provided for their age group, neither in contributing to an understanding of their needs nor in assessing and extending the effectiveness and scope of those services (WHO, UNFPA, & UNICEF, 1989). Program planners and international agencies, such as WHO, UNESCO and UNICEF, however, recommend that the energy and creativity of young people be involved on many levels: needs assessments; identification of problem areas in services; design and planning; promotion of programs; implementation; teaching; counseling; organizing activities; distributing information and over-the-counter contraceptives; assessing materials; and evaluation.

Though further research in this area is needed to determine the roles and activities most suitable for youth involvement, experienced programmers have found that the participation of young people can have numerous benefits. Participation of young people in the RH program leadership team and program planning, for example, plays an important role in attending to the specific needs and concerns of the target population, ensuring that these needs are met in a culturally and socially appropriate manner (Consensus Panel, 1997). It can also foster commitment on the part of the adolescents to program success or ownership, which enhances its sustainability.

The Narrative Research Method is one approach that has shown to be useful in gaining the insight of young people in the process of program planning. The method facilitates young people in studying the behavior patterns of their peer group through the development and testing in the community of prototypical stories (WHO/ADH, 1993b). In 11 African countries, approximately 13,000 young people reviewed and completed stories developed by young leaders. The narratives were then used to develop messages and training materials and to create role-playing activities (WHO/AHP/ROA, 1993).

- ***Families and Communities.*** There is often controversy about the appropriate content and age at which to deliver the programs. Schools need to involve parents and community leaders in the design and delivery of programs, so as to respond to their concerns (WHO, 1995a). They should

be involved early on in discussions and sensitization about RH topics. Parent-teacher associations, adult-education activities, formal presentations, open houses, civic clubs, religious centers, and community group meetings are appropriate forums for collaborating with families and communities (UNFPA, 1993).

Other methods to build community participation and support for school-based RH programs have been used successfully in developing countries (WHO/ADH, 1993b). These include the Gatekeeper Method, a process used to solicit the opinions, support, and recommendations of “gatekeepers.” Administrators and teachers can be asked about problems, how to handle them, what information they need, how they react to suggested plans or reforms, and who else should be interviewed. In addition, Drama as a Research Tool engages students and key adults in discussions and decision making after seeing a student performance on a key topic. By providing a shared experience to stimulate audience reaction, dialogue is stimulated.

F. Administrative and Management Support

Once big ideas and guidelines are embraced, top administrative and management support are critical to the task of implementation. (This element differs from leadership, as leaders are not necessarily in management or administrative positions.) Committing the institution and its resources to carry out the changes, with planning, scheduling, and monitoring, is key. Noting progress and conveying it to senior administrators and to other stakeholders and surrounding communities can sustain commitment and dedication to the effort. To advance the health of young adults through schools often requires the creation of multidisciplinary and multiagency management structures. Clearly defining roles, responsibilities, and communication channels in new structures that cut across territorial boundaries and the traditional roles of agencies is an important part of implementation success.

G. Attention to External Forces

Change efforts can be enhanced or hindered by external factors. Knowing what they are and paying attention to them can make a difference. Political, economic, and social issues in the country at large or in the local community can set a supportive climate or present controversy and conflict. To promote health through schools, countries and local communities need to know about and use international and national efforts in support of both education and the health promoting school initiative.

H. Adaptation to Local Concerns

For innovative programs to become rooted in individual institutions, whether it is within one ministry, one school, or one clinic, requires local ownership, often achieved through involvement and adaptation of the ideas and strategies to local concerns. Few programs, if any, are truly replicated. Almost all, like evolving organisms, are adapted to thrive in a specific culture or milieu. Very simple data collection efforts, like those used in the needs assessment and those developed for the RAAPT, can provide both

a process and information for local adaptation and customization. Suggestions for adapting specific components of a school-based RH program are discussed in the next section.

I. Dedicated Time and Resources

Implementation of any new program in schools takes time, minimally three to five years. Patience is required in the change process as results are not often evident immediately. In fact, when teachers or health workers try to master new skills, there is often an initial dip in proficiency, followed by improvement and mastery. Too often policy makers, planners and evaluators, eager for results, attempt to measure changes as a result of innovations too early in the experimental learning phase. Dedicating adequate time and resources, with patience in the change process is another key factor that affects the success of implementation, and ultimately the impact of the program (WHO, 1996c).

J. Skill-Based Team Training

A critical mass of people is required within any school for change to take place. Team training is one vehicle to create that critical mass. Training just one person from a school or community is likely to be ineffective. Further, as discussed later in this report, training for those involved in RH programs is an essential component for the transmission of accurate information, the generation of shared values, and the acquisition of skills for active learning.

V. COMPONENTS OF A SCHOOL-BASED REPRODUCTIVE HEALTH PROGRAM: Lessons Learned

Outlined in Table 2 and discussed below are programmatic lessons learned from published and unpublished literature and the experience of RH programmers regarding affordable and sustainable components of RH programs delivered through schools. Classroom instruction is but one of the components that may shape the sexual attitudes and practices of in-school youth. A health promoting school aims to provide a broader RH promoting strategy. The discussion below addresses the following mutually reinforcing components in which schools can promote reproductive health: curricula and training, health services, and school environment. Examples are provided to demonstrate ways in which components can be tailored to the cultural, economic and political context as well as the specific program goals and objectives agreed upon at the outset.

Given the explosion predicted in the population of young people and the need to address their reproductive health needs through schools, policy and program planners can build on what is known and strive to deepen the research to identify effective strategies. As McCauley and Salter (1995) have noted: “Research has been too limited to assure that all the successful approaches have been identified. The crucial characteristics that distinguish successful programs need to be further identified, refined, adapted to other places and cultures and tested again.”

A. Curricula and Training

Research has highlighted the value of addressing multiple learning domains, specifically cognitive, affective, and behavioral, in health education curricula (SIECUS, 1991; EDC, 1990). This is particularly relevant in the realms of sexual and reproductive health which integrate physical, emotional, intellectual, and social dimensions of human experience. SIECUS (1991) notes that, “Sexuality education addresses the biological, sociocultural, psychological and spiritual dimensions of sexuality from the cognitive domain, the affective domain, and the behavioral domain, including the skills to communicate effectively and make responsible decisions.”

This section describes ways in which, through the classroom, students can not only receive sexuality/RH information but also explore their own values and attitudes and acquire personal skills needed to maintain healthy behavior. In short, we suggest a curricula focused on (1) specific behaviors and conditions that promote reproductive health or that prevent risk or disease; (2) skills needed to practice those behaviors or to address those conditions both personally and collectively; (3) specific knowledge along with attitudes, beliefs, and values related to those behaviors and conditions; and (4) learning experiences that allow students to model and practice skills.

As (1994) noted by Kirby, the most effective sex education programs provided teachers with training. Health education research has found a significant difference in student learning outcomes when teachers are trained and has shown that training teachers in the use of a health curriculum improves their implementation of the program (Ross, Nelson, & Kolbe, 1991; Connell, Turner, & Mason, 1985). The progress of a RH/sex education program is thus likely to depend on the training of educators. Members of the school staff have a role in reinforcing classroom instruction. To learn about a new curriculum and support it, it is suggested that a school team, consisting of teachers, youth educators, administrators, school nurses, and counselors receive training (EDC, 1995). A discussion of issues related to curriculum and training follows.

1. Information Content

The cognitive learning domain relies on the provision of facts and information and the promotion of understanding (Tones, 1981). There exists a wide range of reproductive health information that can be taught in schools, including, for example, puberty, reproductive anatomy/physiology, conception and birth, sexual identity and orientation, body image, relationships, STD transmission and prevention, HIV transmission and prevention, abstinence, pregnancy prevention, sexual abuse and coercion, sexual exploitation, nutrition, population, family planning, parenting, and more.

Rather than attempting to cover more issues than practical, however, relevant and appropriate content areas should be determined by local RH concerns and specific objectives agreed upon in the planning stage. As the National Guidelines Task Force (SIECUS, 1991) notes regarding sexuality education, “The characteristics of the local situation determine the exact content of the local curriculum. Community attitudes, developmental differences in children, local socioeconomic influences, parent expectations, student needs and expectations, and religious and other cultural perspectives must be paramount in the design of the local sexuality education program.”

It is important to establish a minimum of content requirements to be taught in the classroom, such as contraception, gender roles, decision making, and skill development. When minimum contents are not specified, teachers often choose not to teach some of the difficult, yet essential topics, such as contraception (Judith Senderowitz; personal communication). The National Guidelines suggest that all students in the United States receive accurate information about the following key concepts and topics in a developmentally appropriate manner: growth and development, human reproduction, anatomy, physiology, masturbation, family life, pregnancy, childbirth, parenthood, sexual response, sexual orientation, contraception, abortion, sexual abuse, HIV/AIDS, and other sexually transmitted diseases.

Baseline prevalence statistics garnered from focus groups, interviews, KAP studies, school medical records, and national and local epidemiologic public health data can assist program planners in determining content priorities that address the program goals and objectives. The Russian Sexological Association, for example, designed a comprehensive, sequential sexuality education program for high schools titled “Principles of Sexology and Family Life,” after considering recent RH changes in Russia. Because such changes included an increase in early pregnancies, continued spread of HIV and

increasing numbers of reported sexual harassment incidents, the curriculum emphasized these issues (Popova, 1996).

2. Values Clarification

Values clarification enables learners to understand their own values and to come to terms with their attitudes toward sexuality (Tones, 1981). By exploring and clarifying their values through debates and discussions, students can reflect on the implications of their decisions and the attitudes and values that influence them. Values clarification ensures that information and skills are learned in a context of human relations and value development.

In looking at issues relevant to values clarification, authors and programmers increasingly recommend the inclusion of gender sensitization in RH curricula (Consensus Panel, 1997). Gender sensitization aims to facilitate self-respect among young women and sensitize young men to the notion that they have no rights over a female or her body. Gender issues and power differentials can be taught in the context of human rights, with explanations of rights violations and respect for the rights of others. In the experience of Dr. Josephine Moyo, director of the Zimbabwe National Family Planning Council, gender sensitization has the potential to reduce gender-based violence, including harmful traditional practices and sexual abuse, and can equip people with the knowledge and skills necessary to negotiate safer sex (UNFPA, 1994).

Experts convening at the Netherlands Institute for Health Promotion and Disease Prevention (NIHPDP) in 1995 recommended that programs work to develop self-esteem, respect, and awareness of gender stereotypes among both boys and girls (UNFPA, 1994). Sex-specific programs for girls, participants argued, should emphasize decision making, expression of sensitivity and individuality, communication within relationships, protection and awareness of the range of relationships, including hetero-, bi-, and homosexual. Boys should discuss feelings about sex and sexuality, personal and societal perceptions of masculinity, understand sexual needs, practice honest communication and negotiation, practice responding to sexual negotiation and to unwelcomed sex, express needs, and discuss homophobia. This is particularly relevant in the light of the essay writings of young adults, in which young men express being victims of societal pressure as much as their female counterparts. Many felt pressured by elders in deciding when to get married and when and how often to have children.

3. Skill-building

Many existing school programs are information-based and focus on anatomy, the biology of reproduction, and symptoms of STD. Though important, such information alone rarely equips young people with skills to lead a healthy sexual life and adopt behaviors that prevent reproductive health problems (Tones, 1981). Models that are based on theories of behavior change and social learning have been shown to help youth who have not yet initiated sex to continue to delay onset (Kirby, 1994). In such programs, students acquire not only RH-related knowledge but also values, skills, and practices.

Learning activities focus on skills for responsible behavior in the context of *specific RH issues*, and confidence in using them.

Students need to know exactly how to protect themselves. Necessary skills to reach this end may include communication, assertiveness, negotiation and refusal skills, proper use of contraceptives, including condoms, and responding effectively to social pressures from friends and media. The reasons why adolescents in the target group have sex should be considered in determining what strategies are most appropriate for them to protect themselves (Consensus Panel, 1997). Refusal skills may not be appropriate, for example, if students are engaging in sexual activity for financial gain.

In many cases, life skills education can enable children to make healthy choices and adopt healthy behavior throughout their lives. Skills-based curricula are particularly relevant in the light of research which demonstrates that students who are at risk of engaging in one unhealthy behavior (such as smoking, early sexual behavior) are often at high risk of engaging in others as well (EDC, 1995). The positive actions that can protect young people from harm (such as the ability to communicate with parents, to resist peer pressure) apply not just to one risk, but to many. Figure 3 uses the metaphor of an iceberg to illustrate the relation between underlying issues, student risk behaviors, and skills that enable students to make healthy choices across related topics.

Life skills education also offers an opportunity to look at cultural influences on attitudes toward sexuality/RH and sexual behavior, and to clarify the differences and similarities of different cultures that may be present in the same society (WHO, 1995d).

4. Age and Developmental Appropriateness

It is important to employ a curriculum that is age and developmentally appropriate, in both content and teaching methods. Curricula that are designed as a sequence, from the primary through the secondary levels, respect the idea that sexuality is an evolving life experience. Writes the Organización Panamericana de la Salud (OPS; 1997), “A sequential programme is preferable, because learning can be reinforced at regular intervals; it is not as time-consuming as a one-year programme; and students are able to relate knowledge and skills to specific situations encountered at different ages.” The National Sexual Education Project of Colombia employs a curriculum that emphasizes child and adolescent developmental stages. NPSE has developed sequential curricula that vary each year, from preschool to Grade 11, taking into account changing physiology and sociology. The SIECUS guidelines for comprehensive sexuality education also suggest specific age-appropriate developmental messages for the different concepts and topics taught between Kindergarten and Grade 12.

5. Curriculum Selection or Development

In many countries, it is possible to select from existing curricula and make minor adaptations to meet local needs. In some cases, curricula developed in one country have been successfully adapted within other countries. Guidelines for comprehensive sexuality education, developed by SIECUS, for example, have been adapted in Brazil, Nigeria, and Russia. Efforts were made in each case to be consistent with community norms and diversity, while care was taken to not compromise the integrity of the content.

In Nigeria, for example, a Nigerian National Task Force, consisting of 20 key agencies and institutions working in the areas of adolescent health, education, and development, developed *Nigerian Guidelines* to “help young people acquire knowledge and develop responsible behavior to help reduce the high rates of unwanted teenage pregnancies, complications from unsafe abortions, STDs and HIV/AIDS in Nigeria today” (Shorridge, 1997). By their publication date, the guidelines had received formal endorsements from more than 75 national Nigerian organizations.

If new curricula are needed, it may be feasible to collaborate with health personnel and specialists from universities in the development of curriculum, including learning and teaching materials. Teachers should also be used, as they often are, in curriculum development so that they are comfortable with the material they are to present.

6. Classroom Teaching Methods

In contrast with traditional didactic teaching methods, active, informal, personalized, and participatory learning methods that are culturally appropriate have shown to be most effective in influencing the development of attitudes and changing sexual behavior. Learner-centered and interactive teaching methods have shown to have a positive impact on the relationship between teachers and pupils and can help to improve children’s classroom behavior (Parsons, Hunter, & Warne, 1988), young people’s enjoyment of learning, teacher job satisfaction, and rates of dropout and absenteeism from school (WHO, 1995d). Some examples include the following:

- puppetry and theater
- songs that emphasize the roles and responsibilities of boys and girls
- role-plays and rehearsal of skills
- small and large group discussions
- journals/story writing
- activities oriented by peer leaders or community speakers
- interactive radio and community action projects
- analysis of broadcast and print media to identify positive and negative messages about reproductive health and gender roles
- anonymous question box and comments from students in the areas of sexuality and gender perspectives

WHO and UNESCO (1992) recommend that participatory activities take place in “an environment based on respect, trust, and acknowledgment of similarities and differences so as to facilitate the growth of knowledge, the development of skills, and the examination of values.” Ford and colleagues (1992) warn programmers to consider the nature of student-teacher relationships in the country of interest. In Africa, for example, students are often reluctant to confide and discuss sexual issues with teachers. Ford et al. (1992) write, “Certainly the ‘liberalization’ to be introduced must be gradual in order not to jeopardize the disciplinary norms of the formal school setting.”

Young people themselves can be an excellent source for creative teaching ideas. In Bogota, Colombia, for example, the Colombia Human and Social Development Foundation brought together a group of 15 youth volunteers who identified, designed, and tested the following ways to bring the subject of STD/HIV/AIDS prevention into their peers’ daily lives: suggestion boxes to collect the questions and opinions of adolescents; radio programs with brief, upbeat messages on prevention; word murals, posters, flyers, bulletin boards, and pamphlets to share the project’s work; sexuality education workshops hosted in schools; and community involvement (Saavedra, 1996).

In Kingston, Jamaica, members of Calabar High School’s Drama Club performed a skit about two sex education tutors and a class of curious boys. Reflects 17-year-old Dervan Malcolm, one of the student actors, “The people who saw the skit were awed by its boldness. But the real beneficiaries were the performers — the boys. We learned that having sexual feelings is normal, and in instances where we get sexual urges it is important that we exercise self-control.” Dervan understands the importance of sharing the lessons he learned from participating in this creative exercise. He writes, “Obviously, we cannot prevent boys from having sexual intercourse. What we can do is what the sexually explicit movies don’t do, and that is to teach boys how to practice safe sex” (Network, 1993).

In a recent reconsideration of ways to reach and teach young people about sexuality, the Swedish Association for Sex Education (SASE) warns educators against focusing on problems. They write, “young people very seldom look upon their sexuality as a problem. If they meet adults who start by talking about diseases and unwanted pregnancies, they will probably stop listening” (Lindahl & Laack, 1996). SASE also stresses the importance of being clear and concise, rather than teaching in the abstract: “Educators must use words that are understandable and that are comfortable.”

In many countries, RH/FLE is not viewed as an academic class and is thus not treated with the same rigor as other courses, e.g., there is no homework or examination (Ford et al., 1992). Some programmers and researchers have found that testing students on the RH information they receive encourages them to take the class more seriously (Consensus Panel, 1997). FLE, for example, is given more attention when included in standardized examinations (McCauley & Salter, 1995). UNFPA recommends that key concepts of PopEd be part of national or state examinations in order to be given sufficient classroom time and attention (UNFPA, 1993). There is considerable debate, however, among experienced programmers about whether to examine RH curricula. Many are concerned that

testing emphasizes factual knowledge over attitudinal changes or acquisition of skills. The result may be that teachers give high priority to information content and overlook other important domains.

7. Placement of RH in School Curriculum

Different approaches have been taken to include FLE, PopEd, sexuality education, and HIV/AIDS programs in school curricula. In general, an initial assessment of resources helps to determine the most appropriate approach to implementation. This decision may also be determined by policy decisions made at high levels of the Ministry of Education (OPS/PAHO, 1997). A discussion of four strategies often used to incorporate RH curricula in schools follows:

- *Implementation of a Separate Course or Unit.* In some cases, school staff members assume responsibility for the curriculum, either as a separate course or unit. This may occur through a single class of FLE or Health. If FLE, Health, or PopEd is already taught in a school, sexuality and reproductive health can be incorporated into these courses and covered intensively in a two- or three-week unit.

Implementation of a separate course is generally seen as the best approach, as it is most likely to guarantee inclusion of RH information and reduce dilution of the content. Delegates at the Cairo and Beijing recommended the establishment of comprehensive school-based education covering a range of health issues, including basic health and nutrition, the physiology of reproduction, reproductive and sexual health, family planning, STD, and HIV/AIDS prevention (Family Care International, 1995). The guidelines for sexuality education published by SIECUS (1991) and developed by a group of experts, also support integrating sexuality education into an overall comprehensive health education initiative, stating that “sexuality education can best address the broadest range of issues in the context of health promotion and disease prevention.”

The Teenage Health Teaching Modules, now utilized in every state in the United States and adapted for use in several developing countries, provide a model of a comprehensive health education approach. A total of 16 developmentally appropriate instructional modules allow students to acquire skills and apply them to various health topics. The framework for this approach is illustrated in Figure 4 (EDC, 1990). As shown, key concepts of sexuality/RH education can be integrated as one of the health modules in such an initiative. In many cases, implementation of a separate course is often not feasible as curricula in some countries and schools are already overcrowded.

- *Infusion.* Another approach is the ‘infusion’ method, in which RH education is incorporated into core subjects taught by different teachers. This method utilizes structures that are already in place and is often politically more acceptable than a separate course of FLE or sex education (UNFPA, 1993). RH issues are directly or indirectly related to most subjects taught in schools, covering elements of such subjects as biology, health, demography, sociology, psychology, language, geography, history, and mathematics (UNFPA, 1996).

Evaluation studies are needed to determine the efficacy and effectiveness of the infusion method in different school settings. Infusing may mean diffusing the impact. Spreading RH education throughout different courses has the potential to dilute the effects of RH education. Clear and focused RH/sex education objectives set by a school will help to ensure that the goals of the program are understood and specific RH information will not be overlooked. In many cases, however, teachers of core subjects are often too reluctant, embarrassed, or ill prepared to address sensitive issues of sexuality and reproductive health (Judith Senderowitz; personal communication). As a result, teachers may cover only the issues with which they are most comfortable, whether or not these are the topics students need or want most to learn. Selection and training of teachers are emphasized below as means for overcoming teachers' reluctance and fears and ensuring effective implementation of the curricula.

- *Outside Educators.* A third method used by schools is to bring outside trained health educators into the classroom. In six English-speaking Caribbean countries, this approach was best received by the students because it alleviated concerns about confidentiality, utilized innovative educational techniques, and tended to be more participatory and interactive. Outside speakers may also be more knowledgeable about reproductive health information and more willing to talk about sexual behavior than teachers. They may also facilitate student access to health services in the community. Unfortunately, inviting outside educators from time to time is unlikely to assure sustainability of RH efforts, to allow sufficient classroom time devoted to RH to yield changes in behavior, or to ensure guidance to students and teachers should questions arise after the visits.
- *HIV/AIDS Programs.* An additional approach to introducing RH-related content in schools is through new HIV/AIDS prevention efforts. SIECUS recommends including both HIV-prevention and sexuality education rather than only the HIV-prevention or sexuality components (SIECUS, 1997). RH/sexuality education can be integrated into existing HIV/AIDS education programs and vice versa (Ford et al., 1992).

Unfortunately, the placement of health education has not been adequately studied. For example, the relative merits of infusing school health in existing curricular areas as compared with a stand-alone course of health education are unknown (WHO, 1995c) and are addressed in the Research and Evaluation discussion below. The experience of implementing PopEd programs in developing countries leads Sikes to suggest as an ideal a separate course made up of units which would allow focused attention to priority topics, complemented by infusion in selected areas such as language courses (where students could select appropriate topics for research papers), geography, history, math (O.J. Sikes, UNFPA; personal communication). Similarly, a review of the literature led Ford and colleagues to conclude, "It makes considerable sense to integrate the cognitive/informational aspects of population (and family life and sexual) education into existing courses where appropriate. However, the affective and behavioral dimensions of such education have necessarily to be imparted within a separate course" (Ford et al., 1992).

8. Selection of Instructors

The role of RH educator can potentially be filled by a wide range of people, including teachers, parents, youth, students, and medical and health professionals from within and outside the school. Not all individuals within these groups are ideal candidates for the responsibility. For all subjects, but particularly for RH, the knowledge, skill, character, and other qualities of the educator are important factors in the learning process of the student. As UNFPA has learned in its experience of implementing PopEd in schools, “Issues of cost and quality are now forcing educators to ask whether all teachers who teach the relevant subjects should receive training in population education, or whether it might not be better to be selective in some instances” (UNFPA, 1993).

It is worthwhile for countries or individual schools to develop criteria for selecting educators according to their needs. The Swedish Association for Sex Education explains that the best teacher of sexuality education is “a person who feels comfortable talking about sexuality and who wants to educate. This person must also command trust and give respect... As long as young people have faith in this individual, they will listen, ask questions, discuss issues and learn” (Lindahl & Laack, 1996). In the *Curriculum Guide and Resource Manual for Family Life Education* developed by the Ministry of Education of Zanzibar, a list of characteristics of effective teachers in family life education programs includes the following:

- the belief that education about family life and sexuality is important and necessary, and enthusiasm about teaching it;
- a healthy attitude toward their own sexuality and a comfort with the topics covered, and a respect for the values, attitudes, beliefs and behaviors of others;
- a commitment to the rights of parents as the primary sexuality educators of their children;
- a respect for the confidentiality of private and personal material communicated to them (Zanzibar MOE, 1992; UNFPA, 1993).

As with teachers, it is necessary to determine criteria for selection before recruiting young people as educators. Not all students are appropriate sexual/reproductive health peer educators. It is generally advised that peer educators share the above criteria as well as represent the audience you hope to reach, are motivated to participate in the program, demonstrate positive behaviors in a group, and are committed to the program and to healthy behaviors (Vince-Whitman, 1992).

9. Pre-Service Teacher Preparation

A valuable means of preparing teachers for reproductive health education is through RH programs in teacher training institutes and universities. This way, teachers can receive time-intensive and specialized training in sexuality education and reproductive health. Some efforts are being made in developing countries to provide academic courses or programs in schools of higher education. Through Colombia’s National Project for Sex Education, for example, efforts are currently underway for universities to implement undergraduate and postgraduate studies in sexuality education for future teachers.

10. In-Service Training for Teachers

Teachers can function as healthy role models, advocates for healthy school environments, gatekeepers for students in need of services, resource people for accurate information, and effective instructors. Results from studies have shown that some teachers can successfully assume the role of RH educator and that both students and teachers respond favorably to teachers' involvement in sex education in a more participatory manner (Bassett & Sherman, 1994). In almost all cases, however, teachers and other staff need to learn and be motivated if they are to contribute to a healthy school environment. UNICEF (1996b) reflects, "Teachers are often powerful influences in children's lives. At the same time, they can mirror unthinking social attitudes and behaviors."

In particular, selected teachers need in-service training to teach a RH curriculum. A new curriculum often includes content, activities, and teaching methods with which a teacher has little or no experience. The National Guidance Task Force argues that sexuality education should only be taught by specially trained teachers (SIECUS, 1991). If teachers have not received pre-service training in sexuality/RH education, the Task Force advises that "at a minimum, teachers should participate in extensive in-service courses, continuing education classes, or intensive seminars."

In some countries, governments have successfully collaborated with NGOs to facilitate in-service RH training for teachers. NPSE in Colombia, for example worked with more than 25 NGOs to provide 120-hour workshops in sexuality education to thousands of teachers. In Thailand, over 80 percent of secondary and vocational school students have been reached with family life/sex education primarily because of the close collaboration between the Planned Parenthood Association of Thailand (PPAT) and the government. PPAT helped to train teachers while the government supported the program (Ford et al., 1992). Universities and teachers unions are also potential resources in training programs.

Teachers are often poorly paid and unwilling to take on further responsibilities without remuneration. They are also sometimes reluctant to be involved in a difficult topic such as sexuality, which some feel may threaten their jobs (WHO/UNESCO, 1992). Some may feel overburdened with responsibilities. Teacher interest can be stimulated and attendance may be facilitated by conducting a needs assessment, involving teachers in planning of training sessions, paying for release time, offering continuing education units or recertification credit, or offering financial incentives such as free materials, free manuals, or reimbursement (EDC, 1995).

11. Content and Design of Training Programs

Traditional formats for continuing education, ones that have individuals from separate institutions attending occasional workshops on topics of interest, have shown little success in changing the daily behaviors of practitioners. Changing the practice of practitioners requires team training with colleagues who work side by side every day. Team training results in shared values, skills, and colleagues who can critique and support the change effort.

Team training for RH instructors, administrators, and the RH leadership team should include the following:

- Review of national and local policies;
- Inspirational keynote for the vision or big idea;
- Understanding the concept of the health promoting school, and how and where RH can be supported across components;
- Review of leadership, management, and coordinating mechanisms for program delivery, including the roles and responsibilities of key players;
- Information on when, how, and to what extent staff should be involved in the prevention and/or early intervention of pregnancy, STD infection, and HIV/AIDS;
- Understanding of principles and techniques of behavior change;
- Teaching skills in areas such as class discussion, role playing, cooperative group activities, community involvement activities, games, simulations, and case studies;
- Overview of related risk factors;
- Overview of policies and procedures for handling sensitive issues;
- Awareness of available community-based services for student referral and how to link with and use them (Majer, Santelli, & Coyle, 1992); and
- Reassurance that classes will vary and presentation of the curriculum will not be uniform among educators.

The content of RH education involves values and sensitive issues — both in students’ and teachers’ lives. RH instructors need to recognize their own concerns or problems so that they can successfully work with the materials in the classroom. Training in reproductive health may require that participants openly discuss issues of sexuality for the first time. A critical component of training, then, is to help instructors feel comfortable discussing sexual topics, including their own sexuality.

Experts convening at NIHPDP in 1995 to discuss the relevance of gender-specificity and AIDS prevention for youth urged “gender awareness” among educators. More specifically, educators must be willing to understand the dynamic and complex roles of women and men, and the impact of these roles on sexual health. In this way, training can promote instructors’ own positive health behaviors to enhance their role as models.

12. Training Peer Educators

Peer educators also need RH training, motivation, and continued support. Training of peer educators to work with other students in educational and counseling activities should focus on providing accurate RH information and practicing techniques of problem solving, listening, nonjudgmental communication, giving feedback, conflict resolution, decision making, counseling, and basic education. Peer promoters should also be aware of sources of support for students who need information, counseling or health services. Training methods and resources that are practical, interactive, and can be replicated in the classroom should be used. As there is often a high turnover of peer educators, some recommend regular retraining of peer educators each year (Ford et al., 1992).

It is important to value the contribution of peer educators. Programs have done this through public recognition, certificates, and incentives such as program T-shirts, food and money stipends or scholarships.

13. Including Administrators in Training

Majer et al. (1992) write, “Administrators set the tone...by conveying the message that adolescent sexuality and sexual activity are legitimate topics for teachers, counselors, and nurses. Administrative support through allocation of time, space and interest can influence the success of many school programs.” As an example, in South Africa, where sexuality education is required by law, it is often blocked by headmasters, teachers, administrators, and families. Administrator training which addresses issues of concern for those involved and which enables participants to feel a substantial degree of ownership, can build commitment, understanding, skills, and attitudes that support RH curricula and health promoting schools.

14. Ongoing Training and Support

Research and experience has shown that change in teaching practice is unlikely unless initial training is followed by ongoing coaching and technical assistance (Consensus Panel, 1997). Ongoing coaching bolsters confidence, offers redirection as challenges and problems are faced, and reinforces the content and skills learned in the training. Reinforcing strategies can include peer coaching, working with a mentor teacher, peer support groups, and booster sessions.

UNFPA suggests, “There should be a mechanism for teachers to raise questions later, either by mail, phone or brief refresher face-to-face sessions, after they have tried out new subject matter in the classroom,” (UNFPA, 1993). Marx and Northrop propose that RH instructors share ideas through newsletters, informal get-togethers, and meetings or conferences that enhance teachers’ skills and relevant knowledge (EDC, 1995). They explain, “Depending on a curriculum’s complexity and uniqueness, it can take two to three years for a teacher to feel comfortable with it and up to five years for full mastery.”

15. Training Materials

Numerous guides and materials are available to assist individual teachers, institutions, or governments develop training sessions. For example, PAHO, in collaboration with UNESCO and UNAIDS, have developed teachers' guides for school health education to prevent AIDS and STD (OPS/PAHO, 1997). The guides include training, teaching, and learning activities in English and Spanish.

As with curricula, training and learning materials may also be available within countries, through government and nongovernmental agencies or universities. Particularly useful for schools in rural and remote settings, the Population Education Mobile Units for Teacher Training and Creation of Community Awareness, supported by UNFPA, makes available audiovisual resources and technology to support the permanent training process of teachers in El Salvador. The project has six mobile unit vehicles, each equipped with a TV, VHS, video projector, and educational materials such as games and videos, which visit the three regions of the country in order to broaden the reach of population education. Sri Lanka has also established a mobile library that regularly delivers supplies to education centers around the country. Ministries of education in numerous other countries have prepared teaching guides, workbooks, bulletins, leaflets, educational games, and audio/visual tapes (Beverley Kerr, UNFPA; personal communication).

Training materials can also be generated by teachers and students themselves, a strategy which has proven successful in some countries. In a UNESCO population education program on the island of Galapagos, Ecuador, for example, teachers, parents, and pupils from rural schools identified their own learning needs and produced training materials to cover specific problems in the community. The program aims to develop self-esteem and good family relationships to help learners plan their future and adopt responsible parental attitudes. Teaching and learning aids, including a video and newsletter which spread educational messages in clear, straightforward language, were carefully designed (Beverley Kerr, UNFPA; personal communication).

B. Health Services

Schools have a role to play in facilitating the access of young people to necessary RH services and to link education and services so that students may bridge knowledge and attitudes with action. Schools can work to enhance access to services within the school as well as referral to the external health system. The following general recommendations for strengthening school health services are followed by specific health services that can be offered through schools:

- Schools and communities should consider what preventive and treatment services are best provided at school sites. What services available in the community, for example, need to be duplicated in the school setting?
- School health services should be provided during the regular school hours, with provision made for full-time availability when the school is closed or out of season.
- School health services providers should be trained in skills to work with young men and women, married and unmarried, in a supportive, nonjudgmental way.

- School health services should improve outreach and parent education as a means of improving student access to health services and student motivation to utilize the services.
- Schools should provide contraceptives and information about contraception to both male and female and married and unmarried students (WHO, 1996c).

School-based and school-linked health centers should aim to “overcome barriers that discourage adolescents from utilizing health centers, including lack of confidentiality, transportation, inconvenient appointment times, prohibitive costs and general apprehension about discussing personal health problems” (Advocates for Youth, 1995). Adolescents need a range of confidential and low-cost RH services that can be provided in a school-based or school-linked health center. These include contraceptive services, STD/HIV testing and treatment, pregnancy tests, prenatal care, safe birth services, postpartum care, Pap smears and gynecological exams, mental health services, substance abuse treatment, nutritional supplements including folic acid, detection and treatment of anemia and iron supplementation to combat high prevalence of anemia among women of reproductive age.

Because most schools in developing countries may lack the resources to establish a *school-based* clinic, students can benefit enormously from a *school-linked* health center. School-linked health centers accept referral from school personnel, provide priority appointments for students and market the services of the center in the school, sometimes providing classroom health education (Duncan & Igoe, 1996). School-linked services may also be preferable since in the experience of some RH programmers, school boards often fear sparking controversy if they provide contraceptives on school grounds and are more supportive if such services take place off campus (Consensus Panel, 1997).

Whether school or community-based, it is preferable that RH services are provided in the context of a primary care clinic. It has been found by some practitioners that, to avoid stigma, adolescents are more likely to use RH services at a comprehensive health service center rather than a RH-only clinic (Consensus Panel, 1997).

1. School Nurses

Though often underutilized, school nurses can take a central role in school health initiatives. The role of school nurses vary according to the particular country in which they work. Though their conventional roles typically include screening, immunization, and treatment, school nurses are often resource persons for teachers who teach health education. Through pre- and post-registration training, the role of school nurses can be expanded to facilitate not only treatment of RH problems, but also prevention, and RH promotion.

In a review of 25 reports on U.S. school health programs, Uphold and Graham (1993) found that school nurses play a key role in the partnership between school personnel and community residents. In South London and other parts of Britain, T. Turner (1994) noted that nurses in secondary schools need counseling skills and more knowledge about adolescent health needs. Training workshops were specifically designed to equip school nurses with skills to handle sensitive issues such as sexuality. In a

small evaluation of the role of school nurses' in teaching HIV/AIDS, the London Health Authority found that even though nurses were committed to the topic, they needed more knowledge and training in appropriate teaching methods (Goodeve, 1993). Nurses are thus ideal candidates for team training in reproductive health.

2. Counseling Services

Adolescents often feel there is no one with whom they can privately discuss questions, concerns or crises related to reproductive and sexual health. Write Duncan and Igoe (1996), "Students with pregnancies, sexually transmitted diseases including HIV infection and other complex health problems often face severe emotional and physical challenges for which they need specific health counseling." For example, students who become pregnant often need special assistance in disclosing their pregnancies to family members and boyfriends.

In addition, young adults and children all over the world suffer the emotional traumas of sexual assault and rape (McCauley and Salter, 1995). High rates of sexual abuse and incidence of rape, especially among young teenage mothers, are only just beginning to surface in Latin America and the Caribbean. In the United States, it has been established that students who become pregnant, particularly when the pregnancy is unintended (which is most often the case among adolescents), experience high rates of violence and abuse (Guard, 1997). Pregnant teens are battered more frequently than are older pregnant women, and the abuser is not necessarily the boyfriend: teens reveal that they are also beaten by parents, siblings and other family members. Rarely do they share this experience with anyone or seek help to change the situation.

The study in Thailand by Sakondhavat et al. (1988) indicates that education complemented by referrals for personal counseling can achieve its objectives. More recently, Chandeying (1991), also in Thailand, found that group education and peer counseling contribute to improved knowledge and practices about HIV risk reduction. Psychosocial counseling and support from school counselors who guarantee confidentiality and peer counselors can provide assistance to students with personal sexual and RH problems. Unfortunately, few school counselors in most countries are trained or encouraged or have time to handle RH/family planning concerns (Judy Senderowitz; personal communication).

On an informal level, teachers and peer promoters can be a valuable source for students who need support or advice. WHO's Adolescent Health Program has developed a guide to train teachers and students to work in the areas of adolescent sexuality and reproductive health — *Counseling Skills Training in Adolescent Sexuality and Reproductive Health: A Facilitator's Guide* (WHO/ADH, 1993). Used with participants from more than 60 countries since 1986, the guide promotes the use of nondirective counseling to help adolescents clarify their feelings about sexuality and reproductive health and to make their own decisions.

3. Nutrition Services

Schools should be aware of the various ways in which they can promote reproductive health through nutrition services. For example, the following are suggested for micronutrient supplementation: promotion of medical (daily ferrous sulfate tablets) and food-based solutions (consumption of dark green leafy vegetables) to treat iron deficiency; relatively inexpensive dietary supplements or iodized salt for iodine deficiency; and large dose capsules every three to six months, depending on the severity of risk, for vitamin A deficiency, which can be obtained in most countries through UNICEF.

School feeding programs have been used effectively to address the issue of temporary hunger and frequently serve as an incentive for increased enrollment and attendance. Where possible, school feeding programs should rely on local commodities to avoid dependence on external food supplies and provide a nutritious supplement that is consistent with local dietary practices and food resources (WHO, 1995e).

Finally, school gardens have been effective in teaching children all over the world how to grow and prepare nutritious food. They have also provided a source of occasional income for some schools and food for schools and communities (WHO, 1995e).

4. Contraceptive Services

Even when sexuality education is successful in convincing sexually active adolescents to use a contraceptive method, there are often none available to them. In many African and Asian countries, for example, contraceptive services are only available to married women. Baldo (1994) writes, "Reports abound of young people who duly follow HIV/STD prevention messages, only to be denied condoms by primary health care nurses, of family planning staff not adjusting their advice to the fact that condoms protect from HIV and STD as well as from pregnancy, and thus wasting precious contact time with motivated clients."

Other than through a school health services center or clinic, there are creative ways in which schools can provide contraception to students and promote contraceptive availability among community sources. Condom promotion, for example, is a necessary and feasible way for schools to protect the reproductive health of students, particularly in areas where pregnancy and STD rates are high. Condoms can be provided in bathrooms and promoted in posters or murals. In many schools all over the world, male and female peer promoters are responsible for distributing condoms to their fellow students. In Addis Ababa, Ethiopia, for example, the Family Guidance Association of Ethiopia (FGAE) works with peer promoters in 10 high schools. Peer promoters distribute condoms to both teachers and students. Wondayehou Kassa, the FGAE director, assures they "make every effort that such activities do not create unnecessary controversies" (Network, 1993).

Condom distribution is a way to encourage young men's roles as partners in school-based RH programs. Ideally, condom distribution should be supplemented with education and counseling so that male and female students know where to obtain them, how to use them, and the importance of consistent and correct condom use.

5. Linkages to Community-Based Health Services

Given the limited resources of schools to provide RH services, and the fact that few schools in developing countries provide health services on site, it is necessary for schools to explore ways to establish or strengthen linkages with sources of health services in the community. An array of services may be available to students through formal referral systems for diagnostic and treatment services off campus. These may include health clinics, STD clinics, pharmacies, chemists, private doctors, places to buy or obtain condoms, counselors, social workers, or an AIDS hotline. Where they exist, school clinics can maintain close and ongoing relationships with medical, mental health, pharmacists, social service and legal service providers in the community and coordinate care with all of the other providers and health care institutions through which students receive health services (WHO, 1996b).

The feasibility of developing these linkages depends on the availability of local resources and the availability of school staff time to foster such relationships (Majer et al., 1992). An initial school assessment might involve a simple summary of existing programs and services offered at school and, if available, student utilization of the services. This information could be used to formulate ideas for possible linkages with existing community agencies.

C. School Environment

Both the physical and psychosocial environment of the school can have a powerful effect on reinforcing or contradicting health messages or practices in the school (WHO, 1996c). A healthful school environment includes functional lighting, heating, ventilation, safe water, cleanliness, and sanitary facilities. In relation to RH, the absence of such essentials like adequate sanitation, water facilities, or single-sex toilets can reduce the participation of girls, particularly during the days when girls are menstruating because they cannot wash or care for themselves in privacy (UNICEF, 1996d). Recently in Aguablanca, an extremely poor section of urban Cali, Columbia, schools worked to create more healthful school environments. They collaborated with NGOs and community members to improve sanitary facilities, school buildings and classroom lighting in 64 percent of schools (Carvajal Foundation, 1993).

Students' quality of education is also affected by the psychosocial environment of school. This includes the absence or presence of discrimination, harassment and violence, double standards or abuse between students and between staff and students. A reason often cited by parents for refusing to send their daughters to school is their concern about the risks their daughters will face at school; girls are sexually harassed, sometimes raped, by their fellow students, their teachers and sometimes by strangers as they walk to school (UNICEF, 1996d). School-based surveys of high school students in the United States also reveal high numbers of boys who report sexual harassment or abuse by other boys (EDC, 1995). School policies, programs, and environments should advance relations between students that are respectful, nondiscriminatory, and nonabusive. Instances of discrimination or abuse between students

and between staff and students should be condemned openly, to promote appropriate social norms (WHO, 1996c).

Other policies that can create a supportive environment include school safety patrols, early intervention through perceptive problem solving, teachers acting as student advocates, and flexibility of procedures in handling individual students (WHO, 1996c). At the Kair High School in Sydney, Australia, for example, relationships between teachers and students, among teachers, and between teachers and parents have been enhanced through the school's "critical incident management plan," a policy for dealing with student crises. Teachers act as advocates for students, spending time with students, sharing information and personal experiences, and intervening early through perceptive problem solving (WHO, 1996c).

D. Extending RH Activities to Families, Communities, and Out-of-School Youth

So that the messages young people receive regarding sexuality and reproductive health are consistent between teachers, peers, parents, and community members, schools should be encouraged to extend RH activities into the community and facilitate RH training of key community leaders and groups (WHO, 1995b). Schools around the world have found creative ways to accomplish this goal. Ideas include organizing exhibitions, photo expositions, poetry or essay contests, concerts, drama and entertainment for the community on RH themes, such as sexual abuse and prevention of STD/HIV/unwanted pregnancy. Peer education projects can be organized where trained students act as peer leaders in church or other community organizations. The word murals, posters, flyers, bulletin boards, and pamphlets suggested and designed by young people in Bogota, Colombia, as prevention methods also served to explain the objectives, strategies, and activities of the project to the community; nearly 9,000 people in the community were reached through bulletins, pamphlets, posters, and flyers (Saavedra, 1996).

In many communities, schools have organized health fairs. Parents, students, teachers, other community members, and out-of-school youth come together to spend an enjoyable afternoon learning about health and about the availability of preventive services. Often such fairs are used by community health educators and health care providers to screen for important and treatable health conditions, such as high blood pressure or the need for eyeglasses. These types of events are particularly valuable in countries, such as many in Sub-Saharan Africa, where a large proportion of young people do not attend school and cannot benefit from in-school efforts.

To target parents or guardians specifically, the Brazilian NGO, Grupo de Trabalho e Pesquisa em Orientação Sexual (GTPOS) suggests that parents participate in designated classroom discussion and in special parental guidance programs. GTPOS has found that such programs enabled parents in Sao Paulo, Brazil to improve their relationships with their children (Egypto, Pinto, & Bock, 1996). UNFPA suggests that programs for parents be offered prior to introducing new classroom curricula: "Each year an introductory session can inform parents about what the courses will cover, alert them to any child

homework that may involve them, and reassure them so they will not be embarrassed or uncomfortable. The curriculum or sample materials may be sent home, and parents may be given the option to contact the teacher with questions or remove their children from a sensitive course” (UNFPA, 1993).

Parents can also learn about reproductive health through the messages children bring home from school. This was demonstrated in an interactive radio instruction program in which Bolivian fifth graders learned from radio classes in reproductive health. Programs featuring question-and-answer sessions, written and oral responses and short dramatic presentations, covered biological changes, preadolescence, menstruation, ejaculation, nutritional needs of the mother and infant and care for the newborn. It was found that students were eager to share what they had experienced and learned with their parents at home (EDC, 1994). This demonstrated how schools have the potential to offer accurate RH information to students and their families, while also promoting positive communication within the family.

E. Coordinating Mechanisms to Integrate Components

Mechanisms are needed to coordinate the education, services and environmental components outlined in the preceding discussion, so that all aspects work together to improve reproductive health. Success in sexuality/RH programs is most likely to occur when schools deliver education and services in an environment where there is gender equity and respect and where social norms favor the delay of sexual activity and faithful use of condoms. Personnel providing education, health services, counseling, nutrition services, or facilities related to reproductive health need to collaborate and increasingly work toward integrated activity.

In addition, programs are strengthened when schools forge trusting and ongoing relationships with parents and community organizations (WHO, 1996c). Messages to young people need to be consistent, reinforced, and acceptable within the community and family cultures.

Coordination will require commitment of the leadership team to coordinate a multidimensional program. Leaders will need to identify points of intersection among the components that are related to reproductive health. One suggestion is for the leadership team to identify key people involved in promoting reproductive health through different aspects of the school. Some of those players can be asked to serve on a committee that can oversee coordination and plan opportunities for collaboration.

IV. SUMMARY OF PROGRAMMATIC RECOMMENDATIONS FOR STRENGTHENING SCHOOL-BASED REPRODUCTIVE HEALTH PROGRAMS

Though there is little demonstrated evidence to identify the most effective strategies for promoting reproductive health through schools, the following has been learned from a review of published reports and the wisdom of experienced programmers, practitioners, and teachers around the world.

- Schools should attempt to use all the resources at their disposal to provide a broad RH promoting strategy. This includes RH curriculum, teaching and learning methodologies, management practices, health services, the school environment, and research and evaluation.
- The reproductive- and sexual-health related attitudes and practices of adolescents are shaped by numerous forces, of which schools are just one. Schools should foster interaction with the community, parents, and local services so that school RH initiatives are reinforced and so that young people are supported and guided in all realms of their lives as they make their transition to adulthood.
- The teaching and practice of RH information and life skills should be introduced early, before students face high-risk situations and before the average school-leaving age, and at levels appropriate to the age and development of the students.
- Team training of selected teachers, peer promoters, and school staff in the RH curricula and participatory teaching methods is essential to the understanding, support and effectiveness of a school-based RH program.
- Schools and communities need to reorient health services so that, without duplicating services that are already available, they provide enhanced access to free and confidential services within the school and referral to the external health system.
- Schools should aim to provide a physical and psychosocial environment that reinforces the RH messages taught and promotes the reproductive health of students.

VII. KEEPING CHILDREN IN SCHOOL — A RH INTERVENTION

In much of the world, reproductive health is unlikely to improve significantly without a focus on increasing enrollment, participation, and completion rates, particularly, but not exclusively, for adolescent girls. This necessitates a change in community attitudes about the value of education. UNICEF (1996) has learned that meeting these goals requires the following:

- Parent and community involvement in managing children's education;

- Low-cost and flexible timetables (including financial incentives such as scholarships and stipends when possible) so that children can attend school and still have time for domestic responsibilities;
- Schools close to home;
- Preparation for school, such as early childhood care;
- Relevant curricula, in the local language, that avoid gender stereotypes.

In its 1996 Progress of Nations report, UNICEF (1996d) documents the following individual country responses that have shown to be effective in keeping girls in school:

- Establishing schools with a policy of compulsory parity, as has been done in 75 village schools in Mali;
- Promoting technology to replace the work of girls, e.g., the Tostan organization in Senegal promotes energy-efficient stoves to save girls hours typically spent collecting firewood each day;
- Separate schools for girls;
- The training of more women teachers for coed schools, as is the goal of the mobile female teacher training unit in Pakistan, which allows women with eight to ten years of education to train as teachers without leaving their villages; and
- School feeding programs.

Scholarship programs encouraging girls to stay in school exist in Guatemala and Bangladesh. The Daughters' Education Programme, working in more than 50 hill tribe and lowland villages of Northern Thailand, is an educational sponsorship scheme that allows girls to complete at least three years of secondary school. When necessary, the program covers the cost of all school fees, uniforms, equipment, and transport (UNICEF, 1996b). In addition, UNICEF has embarked on a major initiative with governments, other agencies, and international NGOs to remove cultural, economic, and social barriers both within and outside the classroom to girls' full participation in education.

For many girls around the world, getting pregnant means leaving school. Young women who begin childbearing early rarely return to school, either because they are forbidden by schools to do so or because child care responsibilities prevent it (McCauley & Sautler, 1995). Some countries are finding ways to bring these young mothers back to school. This is sometimes attempted by the school itself, through a dropout outreach coordinator or a school counselor who supports reentry into school. Some schools provide childcare facilities for parenting students. Bearss, Santelli, and Papa (1995) recommend that school-based and school-linked clinics be encouraged to allow the continued participation of school dropouts.

In Botswana, where 77 percent of female dropouts are due to pregnancy, the YWCA has established a one-year study program to help young mothers continue their education. An integrated program of education, counseling, day care, and family life education prepares young women to sit for their junior certificate examinations so that they can enter secondary or vocational schools.

VIII. CRITICAL RESEARCH QUESTIONS AND RECOMMENDATIONS

“Far from being an optional extra, evaluation should be an integral component of the school health education program” (WHO/UNESCO, 1992).

Evaluation is a powerful tool that can be used to inform and strengthen RH programs at both local and global levels. Data collected through carefully designed evaluations provide essential information to national, state, and local programs as they set goals and objectives for current and future efforts. As mentioned, methodological problems in RH studies, such as incomparable or lack of control groups, no pretests, too small samples, no long-term outcome assessment, and unclear or poor measurement procedures, limit their usefulness (WHO, 1995f). Strengthening evaluation efforts has the potential to strengthen programs in at least four vital ways:

- by identifying the most pressing RH needs of adolescent males and females in different locales;
- by providing solid evidence of program effectiveness, undeniably the most compelling argument for continuing and expanding RH efforts;
- by informing individual programs and planners with information on which interventions work best, which do not, and how to advance efforts in the future; and
- by identifying and correcting implementation problems, thereby improving the efficiency and effectiveness of RH programs (EDC, 1995).

A. Research Needs

The paucity of information on the RH status of adolescents worldwide hinders efforts to develop and evaluate the effectiveness of many programs. More data is needed to answer such basic questions as these:

- What are the RH behaviors and needs of adolescents in different countries and circumstances (including such factors as age at first intercourse, sexual practices, the prevalence of voluntary versus nonvoluntary sexual activity, and differences in perceptions of desirable and healthy sexual development)?
- What are the gender-specific risks and needs of adolescents at different ages and developmental stages?
- What are positive, culturally appropriate models of healthy male and female sexual and RH development?
- What types of information and skills do adolescents at different ages and development stages need to reinforce responsible sexual attitudes and behaviors?

In its comprehensive definition of reproductive health, WHO has drawn attention to the need for gathering information about related health risks faced by many adolescents, including the threat of violence and sexual abuse. For example, we need better data to answer questions such as these:

- What is the extent and circumstances of sexual abuse, assault and exploitation? What groups are most likely to be affected by such abuse?
- To what extent does sexual abuse, assault and violence take place within the school environment, and what is its effect on students health status, absenteeism, and dropout?

B. Evaluation Needs

Besides expanding knowledge about adolescent sexuality and development in general, there is a dire need for information that can be used to guide the development and expansion of school health programs. This type of information must be collected through evaluations that have been developed and implemented with sufficient care so that their findings are convincing.

Evaluation of RH efforts are essential to understanding overall program effectiveness:

- What are current levels and types of efforts by schools for adolescent reproductive health? To what extent are programs providing services that meet the definition of comprehensive reproductive health? To what extent do programs involve parents, community leaders, health service providers, and school personnel?
- What types of programs have been most successful in gaining community and political support and becoming institutionalized in school settings?
- What types of programs have been successful in addressing gender-specific issues in reproductive health? Are school-based programs reaching both boys and girls? Are gender-segregated or gender-integrated approaches most effective in promoting positive attitudes and behaviors?
- What types of programs have been successful in meeting the needs of youth at high risk of unintended pregnancies, STD, HIV, and other reproductive health problems?
- What is known about the cost-effectiveness of school health programs?
- To what extent can schools improve the health of out-of-school youth? What is the cost-effectiveness of this approach?
- How can schools reach older men that are often the sexual partners of teenage girls, and frequently the first person with whom they have sexual intercourse?

- How can schools help adolescents deal with coercion?

Regarding curricula and training in particular:

- What types of educational programs have been most effective in delaying sexual activity, encouraging contraceptive use, reducing pregnancies and STD/HIV infections?
- What are the relative merits of infusing school health in existing core subjects versus implementing a separate course or unit of reproductive health?
- Has the infusion approach yielded positive changes in student knowledge, attitudes and practices?
- Is it more feasible and effective to fuse different RH programs or develop separate programs, i.e., incorporate family life/sex education material into existing population education or HIV/AIDS programs? Incorporate HIV/AIDS prevention into existing FLE curricula?
- What is the best approach to join FLE programs already in place with new HIV/AIDS prevention efforts?
- What are the most effective and appropriate ways to include reproductive health in the school and/or national curriculum?
- How can school-based RH education be sensitive to different learning needs and capacities of students?
- What types of teachers are most successful in teaching young people in sexuality/reproductive health?
- What teaching strategies are most effective in increasing knowledge and changing attitudes and sexual behavior?
- What training approaches, including content, techniques, and length of training are most effective in preparing RH teachers and school staff?
- Should students be tested on their knowledge of sexual/RH education in order to advance in school? Is RH education given more attention by teachers and seriousness among students when it is examined?
- How much exposure to RH information and education is necessary to produce desired positive outcomes?

Regarding health services and the school environment:

- Which services can most efficiently and cost effectively be provided through school-based health clinics?
- What training approaches, including content, techniques, and length of training are most effective in preparing providers of reproductive health services to young people?
- Within different settings, what is the actual and potential role of the school nurse in relation to a reproductive health program?
- Within different settings, what is the actual and potential role of the school counselor in relation to a reproductive health program?
- How can such factors as open communication among students and faculty be assessed?

Most tested interventions tend to focus on single categorical areas and often do not include the broad range of school health components (e.g., environment, policy, service). To move toward the goal of addressing comprehensive RH needs through school programs, it will be important to evaluate the success of coordinated models that integrate multiple intervention components. For example, what is the added value of reinforcing classroom health instruction with school-based RH services and efforts to promote a healthier, more respectful school environment?

One of the barriers to answering such questions has been the absence of key indicators which permit the assessment of school-based RH programs at different levels of implementation. At a minimum, this requires the development of simple, adaptable tools for assessing the school's physical and psychosocial environment and integration of school health services. Regarding existing indicators, such as those developed by the EVALUATION Project (EVALUATION, 1995), it is important to ask what we have learned about evaluation using these different kinds of outcome measures.

What is also needed are simple tools which can be used to facilitate the collection and interpretation of pertinent evaluation data. One such approach is the Rapid Assessment and Action Planning Tool (RAAPT), noted in reference to implementation (EDC, 1996). RAAPT is currently being developed by WHO, the Pan American Health Organization (PAHO), Education Development Center (EDC), and the ministries of health in Bolivia and Costa Rica to assess and strengthen a country's capacity to plan, implement, and evaluate school health programs. RAAPT will utilize key informant interviews, informal interviews, focus group discussions, community interviews, and direct observations to develop national, regional, and local plans of action in an effort to improve school health within the limits of available resources.

C. Recommendations

The need for evaluation does not mean that all programs must be evaluated to the same extent. Given limited evaluation resources, the goals of any given evaluation must be realistic and clearly defined. For some programs, *process evaluation* — an examination of whether and how well implementation occurs — may be sufficient. More specifically, process evaluation, as explained by a CDC (1996) report, “focuses on tracking and measuring program implementation (i.e., the accomplishment of activities and the achievement of short-term outcomes), and the way in which program achievements and failures relate to the production of intermediate outcomes.” Information on the implementation process is particularly useful, the report continues, for “facilitating the replication of successful programs as well as for learning how to strengthen the effectiveness of programs, contain costs and achieve sustainability.” In addition, such information can identify whether negative outcomes are due to an ineffective program or because the program was not implemented properly.

The implementation process can be evaluated through both qualitative and quantitative methodologies. For example, records of the numbers of adolescents served and their characteristics and the range of services offered and used are useful in monitoring the extent of RH efforts, and should be the minimum standard for accountability. The study of adolescents in Northeast Thailand, conducted by Khon Kaen University, found that the use of interactive data collection instruments, e.g. student counselor “workbooks,” greatly facilitated process evaluation. In these workbooks, counselors kept confidential records of their activities, which were periodically reviewed with supervisors and researchers (Thongkrajai et al., 1994). Other process evaluation methods can include observations, focus group discussions before and after educational programs, pre- and post-intervention surveys, a suggestion box, rating scales, student diaries, records of staff meetings, interviews, feedback sheets, and supervised teaching reports (WHO/UNESCO, 1992).

Such methods would be particularly useful in order to answer the following practical questions related to the implementation process of a school-based program:

- How does the idea for a school-based RH or FLE program in a developing country move forward in the most initial stages?
- What are the steps necessary for pilot programs to increase in scale and duration?
- How have some FLE programs been implemented successfully? What has been the nature of partnerships between schools, NGOs, government, and community agencies? How can Ministries of Education and Ministries of Health be encouraged to work together?
- Where sexual or RH education is mandated, what are the factors that have led to the mandate? How does having a mandate affect the implementation and outcomes of a program?
- How can boys and young men be more fully involved in family life?
- How can the process of program implementation best be monitored and replicated?

Process evaluations can assess implementation at many levels: the administration; the teachers; the family; and the students (EDC, 1995). Most evaluations analyze impact on the individual student level and overlook factors operating at the classroom or school level (WHO, 1995e). To determine what influences learning, Wang, Haertel, and Walberg (1990) provide a research-based overview of factors mediating the impact of curriculum implementation on students' outcomes. They found that individual factors such as students' metacognition (e.g., self-regulatory strategies) as well as the quantity of instruction (e.g., time on task), student-teacher interaction (e.g., goal-directedness, classroom management), classroom climate, and peer culture seemed to be at play. It is important in process evaluation to take note of factors on the individual, classroom, and school level in order to facilitate replication of programs.

To continue to garner resources for RH programs, it will be critical to show evidence of their effectiveness. To do so requires carefully planned *outcome evaluations* that can show what changes have occurred as a result of program implementation and, more important, that these changes are the result of the program itself, not some other factors. Outcome evaluations measure the extent to which program objectives have been achieved and whether there are significant changes in specific key indicators of reproductive health (such as rates of unintended pregnancies, STD, HIV infection, sexual assaults). Outcome evaluations can collect data through health surveys, interviews, focus group interviews, rating scales, questionnaires, and public health records (WHO/ UNESCO, 1992). Clearly, there is no substitute for rigorous outcome evaluation. Data showing a program has achieved its objectives and resulted in measurable changes in key RH indicators is essential to furthering comprehensive RH efforts. A priority should be placed on conducting such evaluations of promising programs.

Action research provides a useful process model for improving school-based reproductive health programs. As Sashkin and colleagues (1973) explain, the "action research model adds to our knowledge about the change process and problems of change." Data collection, data feedback, and discussions that are conducted in the research phases lead to the action phases, consisting of planning and implementation. Research comes into play again as the results of the action phases are evaluated. Thus, the authors add, a "continuous cycle of research and action provides a general model for problem-solving and change."

To be successful, school-based RH efforts require the input and involvement of adolescents, their parents, and their communities at every stage, including evaluation. Involving adolescents in the research and evaluation process helps guarantee the relevance and the applicability of findings; it also contributes to youths' continued investment in programs. Adolescents have participated in evaluations of RH programs as field interviewers, by helping design data collection instruments, by discussing and interpreting results, and by planning intervention programs based on findings (Weiss et al., 1996). Involving key decision-makers in the research process can determine the extent to which research is responsive to their information needs. Ministry officials, NGO representatives, politicians, and other

decision makers can participate in setting research objectives, selecting methods, and interpreting research findings and their implications for action (Seltzer, 1995).

Finally, the information obtained through evaluation needs to be shared with those who can help shape and improve reproductive health in the future. Knowledge generated by research is often not applied in practice. Research and evaluation results, including nonsignificant findings that fail to show effects, should be shared widely with relevant policy makers, administrators, sponsors, teachers, and the community. Experience can then point to new directions.