THE STATUS OF SCHOOL HEALTH

Prepared for:
Health Education and Health Promotion Unit
Division of Health Promotion, Education, and Communication
World Health Organization, Geneva

The School Health Working Group
The WHO Expert Committee on Comprehensive School Health Education and Promotion

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The World Health Organization (WHO) is a specialized agency of the United Nations with primary responsibility for international health matters and public health. WHO came into being on 7 April 1948, when the 26th United Nations member ratified its Constitution.

The objective of WHO is the attainment by all peoples of the highest possible level of health. Health, as defined in the WHO Constitution, is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. Through WHO, the health professions of some 190 countries exchange their knowledge and experience with the aim of making possible the attainment by all citizens of the world a level of health that will permit them to lead a socially and economically productive life.

The World Health Assembly is the policymaking body of WHO and meets in annual session. The Executive Board, which meets twice a year, acts as the executive organ of the Assembly. WHO activities are carried out in six regions, each comprising a regional committee and a regional office. Regional committees meet in annual sessions. The Secretariat consists of a Director-General, six Regional Directors, and such technical and administrative staff as is required.

The first World Health Assembly, held in June 1948 and attended by 53 delegates from WHO’s 55 Member States, approved a programme of work that listed its top priorities as malaria, maternal and child health, tuberculosis, venereal diseases, nutrition, and environmental sanitation. In 1979, the World Health Assembly unanimously endorsed the Declaration of Alma-Ata, which stated that primary health care was to be the key to attaining the goal of health for all by the year 2000.

Over the years, the WHO’s programmes have responded to, and often anticipated, the major health concerns of Member countries. WHO’s ninth general programme of work (1996–2001) fixes goals and targets for the organization’s global health action. It focuses on lessening of inequities in health, control of rising costs, the eradication or elimination of selected infectious diseases, the fight against chronic diseases, and the promotion of healthy behaviour and a healthy environment.

Reflecting the concerns and priorities of the Organization and its Member States, WHO publications provide authoritative information and guidance aimed at promoting and protecting health, and preventing and controlling disease.

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Promoting the health of children through schools has been an important goal of WHO, UNESCO, UNICEF, and other international agencies since the 1950s. Since the 1990s, WHO's work in school health has steadily increased. In May 1994, WHO's commitment to and support for school health was further enhanced by the creation of the Division of Health Promotion, Education, and Communication (HPR).

The Director-General of WHO charged the new Division with strengthening WHO's capacities to promote health through schools. He recognized that many WHO programmes have the capacities to provide technical support for a wide range of school-based health promotion, health education, and disease and injury prevention efforts. He also recognized that the support of many WHO programmes is needed to foster the development of integrated and comprehensive approaches to school health, and to provide leadership and direction for a Global School Health Initiative. The new Division established a School Health Team as an integral part of the Division's Health Education and Health Promotion Unit. An interdivisional Working Group on School Health was created through which WHO programmes support the Global School Health Initiative.

The Initiative is designed to improve the health of students, school personnel, families, and other members of the community through schools. Its objective is to increase the number of schools that are "health promoting schools." WHO works in partnership with other organizations to:

- revitalize and enhance worldwide support for promoting health through schools
- build on research and experience worldwide, and particularly on international, national, and local efforts to help schools become health promoting schools
- enable organizations to maximize the use of their resources
- unite the diverse school health initiatives of the United Nations family
- provide full partnership to all organizations involved

The WHO Expert Committee Meeting on Comprehensive School Health Education and Promotion in 1995 serves as the foundation for WHO's Global School Health Initiative. The overall objective of the Expert Committee was to make recommendations for policy measures and actions that WHO, its Regional Offices, other United Nations agencies, national governments, and nongovernmental organizations could take to enable schools to use their full potential to improve health. This document has been prepared to help achieve that objective.

The Global School Health Initiative is founded on partnerships, both within and outside WHO, and fosters new partnerships among organizations with capacities, constituencies, and expertise that can help the world's schools become institutions for health as well as education.

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Other Expert Committee Documents Available from WHO (HPR/HEP)


Improving School Health Programmes: Barriers and Strategies (WHO/HPR/HEP/96.2).

Research to Improve the Implementation and Effectiveness of School Health Programmes (WHO/HPR/HEP/96.3).
1.0 Introduction

The past 50 years have brought unprecedented gains in health, education, and economic status: advances in average life expectancy; reductions in child death rates; and improved nutrition programmes, immunization levels, disease prevention, and school attendance around the world. Because of these advances, about 2.5 million fewer children will die in 1996 than in 1990. (1) As more children survive to school age, the number attending school, at least in the early grades, has increased dramatically. In many nations, there has been progress in achieving the goal of basic education for all. Figures for 1993 suggest that the proportion of children in the developing world who now complete at least four years of primary schooling has reached 71 percent overall. (1)

However, we cannot turn our attention away. There are millions of other children plagued by health threats who drop out of school early or do not attend at all. International progress to improve the well-being and development of children must be sustained and strengthened. Malnourishment, intestinal parasitic diseases, and other infectious diseases remain prevalent in many areas, thriving in climates of rapid urbanization, poor sanitation without access to clean water, unstable political climates, and uncertain economies. Where traditional childhood killer diseases have been reduced or eliminated, they sometimes have been replaced by injuries, mental illness and behavioural problems, chronic diseases, and threats rooted in preventable social, behavioural, or environmental factors.

In many countries, developing and developed alike, traditional family and social structures have been abandoned or radically changed. Poverty deprives millions of children all over the world of housing, food, health care, and schooling. Wars and civil chaos plague many regions, with significant damage to children’s health and schooling. And the majority of deaths in these conflicts, as many as 80–90 percent, have been among civilians, most of whom were women and children. (2) These conditions of want and dramatic social, physical, and economic uncertainty result in poor health for children, threatening their opportunity to stay and succeed in school and their ability to become responsible, productive members of society.

The inextricable connection between a child’s health and education grows ever more apparent. Recent research has demonstrated the strong links between health on the one hand and school attendance and educational attainment on the other. (3) Among the health conditions that have been linked with failure to attend school or poor academic performance are:
• nutritional deficiencies (protein-energy malnutrition, or PEM; and iron, vitamin A, or iodine deficiencies)
• helminthic infections (especially schistosomiasis, roundworm, and other intestinal parasites)
• other health problems (ranging from malaria to dental caries)
• physical and mental disabilities
• reproductive problems (premature fertility, sexual violence, and sexually transmitted diseases)

How can nations continue to make progress in the face of new or enduring problems? “Educating children at school on health should be given the highest priority, not for their health per se, but also from the perspective of education, since if they are to learn they need to be in good health,” according to Hiroshi Nakajima, M.D., Ph.D., Director-General of the World Health Organization. As health professionals around the world have embraced a broader definition of health, they have intensified their attention to the capacities that people need and that society, including schools, must provide to create healthy individuals and healthy societies. Health as defined by WHO and UNICEF in the Declaration of Alma-Ata is “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity [and] is a fundamental human right.” By focusing on what the child brings to the schoolroom or the “quality of the child” and whether he or she is healthy enough to take advantage of opportunities to thrive, schools and communities can ensure that their teaching programmes and school facilities are used to their maximum potential. (4)

Bolstering the emphasis on health promotion (as opposed to a disease-specific, clinical/curative approach to care) is the Ottawa Charter for action adopted at the first International Conference on Health Promotion in 1986. Designed as a guide to achieve Health for All by the year 2000 and beyond, the Charter advances health promotion as the process of creating health. The Charter describes the importance of people becoming involved in their own learning about health and health promotion. Health, it notes, “is created by people in the settings where they live, caring for oneself and others, being able to make decisions and have control over one’s life circumstances and ensuring that society creates conditions that allow the attainment of health by all its members.” Thus, the responsibility for health promotion, as does its mandate, goes well beyond the health care sector to include governments, the private sector, nongovernmental organizations, media, and local agencies. And by attending to the five elements of health promotion action as detailed in the Ottawa
Charter (public policy, supportive environments, community action, personal skills, and reorientation of health services), we can revitalize the process by which schools can contribute to and enhance health around the world. (See Section 1.4.)

School health programmes delivered through health promoting schools are one of the critical factors in realizing Health for All. The health promoting school, a concept advanced and practiced throughout Europe, is the combined result of external conditions (common vision among the populace; political will and commitment; and organization, coordination, and management) and internal actions. School personnel, students, parents, and community members create a health promoting school when they develop its capacities to provide (1) health education, (2) a healthy school environment, (3) school health services, (4) school-community projects, (5) health promotion programmes for staff, (6) nutrition and food programmes, (7) physical exercise and sport, and (8) mental health and counseling services. In the United States of America, the integration of these eight components has also been promoted by the federal Centers for Disease Control and Prevention (CDC) under the rubric of a “comprehensive school health programme.”

Promoting the health of children through schools has been an important goal of WHO, UNESCO, UNICEF, and other international agencies since the 1950s. Major international efforts promoting school health include the WHO Expert Committee on School Health Services in 1950, the WHO Expert Committee on Health Education in 1954, the joint WHO/UNESCO Expert Committee on Teacher Preparation for Health Education in 1959, the UNESCO/WHO collaboration to publish Planning for Health Education in Schools in 1966, the International Conference on Primary Health Care organized by WHO and UNICEF in 1978, the WHO Expert Committee Report on New Approaches to Health Education in Primary Health Care in 1983, the WHO/UNICEF International Consultation on Health Education for School-Age Children in 1985, the WHO Technical Discussions on the Health of Youth in 1989, the WHO/UNESCO/ILO World Consultation on AIDS for Teachers’ Union Representatives in 1990, the WHO/UNESCO/UNICEF Consultation on Strategies for Implementing Comprehensive School Health Education/Promotion Programmes in 1991, and the EI/WHO/UNESCO Global Conference on School Health and HIV Prevention in 1995.
To encourage education and health institutions and agencies to coordinate efforts to promote health through schools, the World Health Organization (WHO) convened in 1995 an Expert Committee Meeting on Comprehensive School Health Education and Promotion. This committee has made recommendations on policy and action steps that international, national, and local organizations should implement to improve the health of young people, school staff, and families through schools and communities.

This background paper, the first of three developed for the WHO Expert Committee, synthesizes the practices, findings, and conclusions of school health practitioners, researchers, and administrators regarding key features of school health programmes around the world. Drawing on documents prepared by WHO staff and other experts on school health internationally, this paper will discuss (1) the health and educational status of children and the role of schools in promoting their health; (2) the rationale for investment in such an approach; (3) the major health problems that can be reduced through comprehensive school interventions, current practice, and guidance for the future; (4) considerations for taking action; and (5) the components, players, and methods in a school health programme. Appendices include a summary of selected national and international reports, new policies and strategies maximizing the potential of schools, and case studies from around the world.

1.1 The Status of Children

More than half of the world’s population is below age 25; 29 percent are between 10 and 25, of whom 80 percent live in developing countries. (5) In 1990, young people under the age of 25 constituted 64 percent of the population of Africa, 57 percent of that of South Asia, and 56 percent of that of Latin America. (6) By the year 2001, there will be 2 billion teenagers on the planet, more than ever in history. These teenagers have already been born, and they live mostly in Asia, Latin America, and Africa. (7) In an era of increasing technological access and rapid technological innovation, the potential of this population is unbounded. Or, if we fail to nurture their health, their hopes, and their skills, their destabilizing effect on the political, social, and economic systems could be immense.

Consider children’s condition: While children’s health has improved steadily over the past several decades, today’s youth face new threats. The changing social and political conditions, local and global economic decline, and growing marginalization of the poorest communities and countries affects the ability of millions of youth in every region to
achieve their physical and mental potential, to complete school, to find work, and to become well-adjusted, economically productive, and socially responsible adults who can contribute to the growth of their communities and nations. (1) Children who in the past would have died in infancy are surviving into childhood, adolescence, and adulthood with multiple threats or impairments to their physical, mental, and social health.

Consider their future:

• By the year 2000, 26 million people will be infected with HIV/AIDS and 2 million will die annually. (8)

• Tobacco accounts for three million premature deaths a year, contributing to skyrocketing health care costs. (9) Unless smoking behaviour changes, three decades from now premature deaths caused by tobacco in the developing world will exceed the expected deaths from AIDS, tuberculosis, and the complications of child-birth combined.

• Numerous bacteria have become drug-resistant, causing a resurgence of tuberculosis, malaria, and some strains of sexually transmitted diseases. (10) The role of prevention is and will be predominant.

The health and education of girls is of special concern. Globally, girls face continued discrimination, increasing violence, and preventable ill health. Overall in developing countries, there has been a steady rise in school attendance: From 1960 to 1990, the percentage of boys between 12 and 17 enrolled in school increased from 43 percent to 53 percent; that of girls, from 26 percent to 42 percent. Yet 60 percent of the school-age children who do not attend school worldwide are girls. Even where education is available, many are absent because of economic, cultural, or religious reasons; early marriage; or household responsibilities (e.g., caring for relatives).

Improvements to girls’ health will in turn improve women’s health, and dramatically improve the health of their children and families. The single most important determinant of a child’s health is a mother’s level of education. Educated girls are healthier; when they become mothers, they are better able to care for their children. Educated girls and women seek prenatal care earlier, give birth to healthier babies, and bring them home to healthier environments. Education strengthens women’s ability to create healthy households; it increases their ability to benefit from health information and to make good use of health services; it increases their access to income and to healthier lives. (10) Education results in delayed
first pregnancy, which in turn means a safer pregnancy. Consider the evidence:

- Surveys in 25 developing countries show that 1–3 years of materna1 schooling reduce child mortality by about 15 percent. (10)

- Many national reports state that the more years of education a female receives, the more likely it is that her children will survive the first five years of life. (11)

- Data from 13 African countries between 1975 and 1985 show that a 10 percent increase in female literacy rates was accompanied by a 10 percent reduction in child deaths. (10)

- In Peru, seven or more years of schooling for girls reduced children’s mortality risks by 75 percent.

- In some developed countries, gains in gender equality are evident but the major reason girls drop out continues to be unintended pregnancy.

- Domestic violence is the leading cause of injury to women in some countries; it is the reason 22 to 35 percent of women visit emergency rooms.

1.2 The Role of Schools

School age is a critical time in the development of a human being, and the school setting provides a strategic point of entry for improving children’s health, self-esteem, life skills, and behaviour. In addition to providing a site where interventions that promote health and prevent many of the specific diseases noted above can be implemented (efficiently and economically), schools can provide the setting to introduce health information and technologies to the community and can lead the community in advocating policies and services that promote health.

School health programmes that coordinate delivery of health education and health services and that provide a healthy environment “could become one of the most efficient means available for almost every nation in the world to significantly improve the well-being of their people. Consequently, such programmes could become a critical means to improve the condition of humankind globally. Unfortunately, school health programmes are underdeveloped in practically every nation.” (12) Scant resources and supplies, time, qualified professionals, public and political—will all hinder the development of school health programmes worldwide.
Clearly, the concept of a "comprehensive" or "coordinated" approach to school health, of the truly "health promoting school," is more advanced than its practice. While terminology and definitions may differ, most of the world's countries recognize and address three areas of school health—school services, health education, and a healthy environment. However, the responsibility for these activities seldom rests in a single institution. In recent years, many countries have attempted to organize the planning and development of these "traditional" areas, and other related areas, into a more integrated approach to school health.

1.3 The Status of School Health

A complete assessment and portrait of school health resources, services, and conditions worldwide is unavailable. Descriptive literature on school health programmes is inadequate and largely focused on single-problem interventions. Geographically, the literature is extremely uneven, with far more information available for Europe, the United States of America, and Canada than countries in other regions of the world. However, an assessment of school health, as reflected in background documents for this paper, reveals five broad concerns and challenges for the future of school health throughout the world.

1. The theories and frameworks for a coordinated and integrated approach to school health are relatively sophisticated; their practice and adaptability to different nations and cultures, as well as their evaluation, are far less developed.

2. Policies regarding the importance of school health, the necessity of intersectoral collaboration, and organizational infrastructure for implementation are essential for successful programmes but only infrequently developed. Administrative as well as financial support is critical, but lacking in many countries.

3. Although successful interventions have been devised to address specific health problems, the measures typically are disconnected from the rest of the school programme or connected through only one component.

4. While there is evidence for the effectiveness of some of the components of school health programmes (e.g., school health curriculum, environment, or school health services), overall there is a lack of practical guidance on implementation.

5. Little information exists on a truly comprehensive approach to school health programmes. While the concept of the health promoting school
is generally accepted, continued development, implementation, and especially evaluation of such programmes are a critical requirement to advance the health and education of the world’s children.

1.4 Rationale for an Investment in a Comprehensive Approach to School Health

Policymakers and decisionmakers at the national and local levels must be persuaded that school health programmes are a most efficient and cost-effective way to improve students’ health and therefore their school performance. And quality education and student retention can improve health status. Policymakers must understand that health promotion through the schools is desirable financially, educationally, culturally, and politically. There is ample evidence:

School health expenditures result in substantial savings. Spending money on school health programmes can be justified on purely economic grounds. A U.S. study (13) estimated that:

- Money spent on preventing the use of tobacco was worth 19 times as much as money spent treating the consequences of that behaviour.

- Money spent on preventing alcohol and drug abuse was worth 6 times as much as money spent on treating the consequences of that behaviour.

- Money spent on education to prevent early and unprotected sex was worth 5 times as much as money spent on the consequences of that behaviour.

A 1993 World Bank analysis determined that most regions of the world could benefit greatly by implementing an “essential public health package” with five central elements: (1) an expanded programme on immunization, including micronutrient supplementation, (2) school health programmes to treat worm infections and micronutrient deficiencies and to provide health education; (3) programmes to increase public knowledge about family planning and nutrition, about self-care or indications for seeking care, and about vector control and disease surveillance activities; (4) programmes to reduce consumption of tobacco, alcohol, and other drugs; and (5) AIDS prevention programmes with a strong sexually transmitted disease (STD) component. This package could reduce 8 percent of the burden of disease in low-income countries for US $4 per capita (1.2 percent of income/capita) and could reduce 4 percent of the burden of disease in middle-income countries for US $7 per capita (.3 per-
cent of income/capita). (10) Although school health programmes are explicitly mentioned in only one of the above elements, schools, in fact, could efficiently provide all five elements of the recommended package for a large portion of the world’s population.

Better health improves academic performance. Examples abound throughout the world of school-based treatment of medical problems resulting in improved academic performance. For example, Jamaican children who were treated for moderate whipworm infection raised their scores, which had lagged 15 percent, up to the level of uninfected children. (10) School food programmes also have a marked effect on attendance and school performance. (4)

School-based programmes can reach most of the world’s school-age children:

- Such programmes can reach about 1 billion students worldwide and, through them, their families and communities. “The formal education system is therefore the developing world’s broadest and deepest channel for putting information at the disposal of its citizens.” (15) In Korea, for example, a prevalence of intestinal worms among children was reduced from 80 percent to .2 percent over 30 years through a school-community chemotherapy, health education, and sanitation programme. (16)

- Teachers can have an immense impact on children’s health. (17) Around the world, there are almost 43 million teachers at the primary and secondary levels (23.94 at primary; 18.8, secondary).

Health education and services have far-reaching effects:

- Studies in the United States have documented that carefully designed and implemented comprehensive health education curricula can prevent certain adverse health behaviours, including tobacco use, drug use, and dietary patterns that cause disease; sexual behaviours; and physical inactivity. Further, they reduce school absences by reducing adverse effects of diseases, drug and alcohol use, injuries, and pregnancies; and improve cognitive performance through diet, exercise, sleep, and stress reduction. (18, 19, 20, 21, 22, 23, 24, 25, 26, 27)

- Healthy habits learned during the early years (e.g., safe food handling) will be applied throughout life. (28)

- School-based clinics show evidence of improving students’ knowledge about being effective consumers of health services, reducing substance abuse among the students they serve, and lowering hospitalization rates for students. (29, 30, 31)
• Health promotion for school staff—one of the least visible elements of school health programmes but one of the most critical—can decrease teacher absenteeism, improve morale, and improve quality of classroom instruction. (32, 33, 34, 35) One U.S. programme for school staff demonstrated reductions in body weight, resting pulse, serum cholesterol, and blood pressure. (36)

• A review of 35 evaluated studies of sexuality and HIV/AIDS education in schools found that the provision of sex education, including the provision of contraception, does not increase the initiation of sexual activity among young people. It showed that sex and HIV/AIDS education may delay the initiation of sexual intercourse, decrease sexual activity, and increase the adoption of safer sexual practices among sexually active young people. (37)

Strategies that use varied approaches and the maintenance of stable school health infrastructures respond to the world’s changing disease patterns. “Scientists no longer predict that the history of human infection will progress steadily toward the total elimination of disease,” according to a new study on emerging diseases. Instead, the world will see a pattern of “disease turnover” resulting from changing biological, climatic, and economic patterns around the world. (38)

School health programmes, delivered through health promoting schools, can affect many of the major challenges to health throughout the world: HIV/AIDS and sexually transmitted diseases; violence and injury; reproductive health; helminths; nutrition and food safety; sanitation and water control; immunization; and the prevention of alcohol, tobacco, and illicit drug use. Each of these is discussed in the following section.

2.0 Major Health Problems That Can Be Reduced Through School Health Programmes

The following sections (2.1–2.12) describe the major health problems that school health programmes must address. How they are and could be addressed in a school health programme and who plays a role will be discussed in Section 3.

2.1 HIV/AIDS and Sexually Transmitted Diseases

• Of the 6,000 new HIV infections every day, more than half are estimated to occur among adolescents and youth. (39)

• Projection: By the year 2000, 26 million people will be infected and 2 million will die annually. (10)
• In some areas of Africa, 25–30 percent of pregnant women who visit prenatal clinics are HIV-positive. About one-third of their babies will be born HIV-positive and most will die before age 5. (1)

• Two-thirds of all new AIDS cases are occurring in Africa. (1) In Zimbabwe, AIDS is the biggest killer of children under five. (1) In Thailand, 1 in 50 adults is HIV-positive. (10)

• Worldwide, the age of first intercourse has been declining and the proportion of adolescents having had sex is increasing. (39)

• The incidence of sexually transmitted diseases (STDs) globally has increased dramatically over the past 20 years. (40) Annually, there are 250 million new cases of curable sexually transmitted diseases around the world. (41)

2.2 Violence and Injury

• Injury or “accidents” include car crashes, burns, falls, drownings (unintentional injuries), violence, and suicide (intentional injuries), and disproportionately strike the young. (42)

• There are few countries where injury is not one of the five leading causes of death among children. (43)

• Around the globe, there are 2.7 million deaths each year from unintentional injuries. (44)

• Worldwide each year, 1 child in 10 suffers an injury that requires health services. (43)

• Deaths are the “tip of the iceberg” of the public health problem created by injuries. In the United States, one study documented that for every injury death among children up to age 19, there were 45 hospitalizations and 1,300 visits to emergency rooms. (45)

• Injuries worldwide are responsible for up to one-third of all hospital admissions, and the annual medical and social costs of injury are estimated by WHO to exceed US $500 billion. (46)

• In the decade of the 1980s, more than 1.5 million children were killed in wars and more than 4 million were physically disabled. (1)

• Accounts from service providers indicate that violence to women is reaching alarming proportions in developed and developing countries. For example, in Norway 25 percent of female gynaecological patients have been sexually abused by their partners. (47)
• In recent years, homicide has claimed an increasingly larger share of adolescent and young adult lives. Among some population groups—for example, African Americans ages 15–34—murder is the leading cause of death overall. (48)

• Risk factors for injury include male sex, age, low socioeconomic status, early and hazardous employment, alcohol use, hazardous products, and poor safety education. (49)

2.3 Reproductive Health

• Reproductive health is central to general health. It encompasses the reproductive processes, functions, and system at all stages of life, and it implies that people are able to have a responsible, satisfying, and safe sex life, and that they have the capability to reproduce and the freedom to decide if, when, and how often to do so.

• Serious health consequences follow pregnancy before age 18; the younger the mother is, the greater the risk of maternal death. In Jamaica and Nigeria, pregnant women under 15 have been found to be four to eight times more likely to die during pregnancy and childbirth than those ages 15 to 19. (50)

• Early pregnancy disrupts the physiological, social, and intellectual development of young girls, which in turn affects their education, training, and economic opportunities and, as noted earlier, the health and education of their children. Increased opportunities in education result in delayed onset of childbearing.

• Unwanted or unplanned pregnancies may result in death, illness, and injury to the mother or child as well as in neglected or abandoned children, family violence, and unsafe abortion.

• Numerous health problems can impede adolescent girls’ school attendance and success, including reproductive and urinary infections, menstrual problems, and so forth.

• Becoming pregnant before age 17 is hazardous for young girls, especially where access to health care is poor. Attempts to self-abort or have a clandestine, dangerous abortion are common; girls are vulnerable to STDs and HIV infections. Frequently, girls who have early intercourse have been the victims of abuse (violence or psychological pressure).
• Data show that self-abortion or seeking abortion from an unqualified practitioner is an increasingly likely choice for a pregnant unmarried adolescent. (51) An estimated 20 million unsafe abortions are performed around the world every year. (52) Where abortion is illegal, in the Congo, Kenya, Liberia, Mali, Nigeria, and Zaire, between 38 and 68 percent of women seeking treatment for abortion complications are under 20. (53) Health consequences include infection from blood poisoning, chronic ill health, and, in some cases, death. (54)

• An especially serious and preventable source of reproductive health problems is female genital mutilation. A common practice in many African countries, Malaysia, Indonesia, and number of countries in the Middle East, (55) it is inflicted on an estimated 2 million young girls each year. (56) Along with fear and trauma, the immediate consequences include death, hemorrhage, tetanus, sepsis, fistula, and HIV. In the longer term, it affects normal sexual functions and general reproductive health; it can lead to bladder and urinary tract infections, chronic reproductive tract infections that can lead to pelvic inflammatory disease and infertility, keloid formation, cysts, difficulty with menstruation, and increased risk of problems during childbirth. (56)

2.4 Helminthic (Worm) Infections (57, 58, 59)

• About 400 million school-age children are infected with intestinal helminths (cestotodes, trematodes, and nematodes). Schistosomiasis alone infects 88 million children under 15. (60)

• While helminthic infections cause limited mortality, their manifestations include anemia, intestinal obstruction, lesions, blindness, diarrhoea, and cough. Consequences include diminished well-being and activity, impairment in growth and development, inability to attend school, and chronic disability.

• Treatment with anthelmintics achieves the maximum return in terms of reduction of morbidity. Schoolchildren are also one of the most accessible groups for treatment, and health care can be integrated efficiently with education programmes.

• With progressive urbanization of the developing world, conditions are favourable for transmission of helminths due to overcrowding, contamination of the soil of shanty towns by human excreta, and environmental degradation.
2.5 Nutrition Problems

- Poor nutrition lowers resistance to disease, impairs bone and muscle development, weakens eyesight and hearing, and "also means disruption in the miraculous process by which neutrons migrate to the right location in the brain and begin to form the billions of subtle synapses that make lifelong learning possible." (1) The most common problems of malnutrition are protein-energy malnutrition (PEM), iodine deficiency, vitamin A deficiency, and iron deficiency.

- Protein-energy malnutrition (PEM), caused by poor diet and largely occurring in areas of extreme poverty, affects more than one-third of all children under 5 in the developing world with poor weight gain, listlessness, lack of concentration, frequent illness, and poor memory. (1) A 1992 study in Honduras found an association between students who repeated grades and those who were below height for age norms. (61) Similarly, a 1988 study revealed that Kenyan children who were better nourished had higher composite scores on a test of verbal comprehension. Further, better-nourished girls were more attentive than their malnourished female counterparts. (62)

- Iodine deficiency disorders affect at least 60 million schoolchildren worldwide. (63) Its effects are cretinism, mental retardation, and a range of subtle degrees of mental and physical impairment. The solution is inexpensive (5 U.S. cents a year per person) and simple (adding iodine to common salt).

- Vitamin A deficiency at its most extreme causes blindness. In less extreme cases, it impedes a child’s growth and brain development. In many countries, acute respiratory infection, a condition related to vitamin A deficiency, is the leading cause of school absence. The degree to which vitamin A deficiency also influences the severity of both measles and diarrhoeal disease suggests a linkage to school attendance and, therefore, to school achievement. (63)

- Iron deficiency, largely caused by inadequate diet but in some cases exacerbated by helminthic infection, affects 210 million school-age children. (64) The effects—mental retardation, mental and motor development, and anemia—can be reversed with treatment. The highest levels of anemia among schoolchildren are estimated to be in South Asia and Africa.
• Although no reliable estimates exist on the number of children who come to school every day hungry, short-term or temporary hunger is unquestionably pervasive in developing countries and increasing in developed countries. In the United States, 22.7 percent of children were living in poverty in 1993; (65) one-third to one-half of impoverished children consume significantly less than the federally recommended amount of calories and key nutrients needed for normal learning and thinking. (66)

• Studies in Honduras, Kenya, and the Philippines have also found that the academic performance and mental ability of pupils with good nutritional status were significantly higher than those of pupils with poor nutritional status, even when controlling for family income, school quality, teacher ability, and mental ability. (61, 67, 68)

2.6 Unsafe/Inadequate Sanitation and Water

• While progress toward having access to safe water and sanitation for all is dramatic, the lack of safe water continues to undermine quality of life, spread disease, and disrupt family life. These problems are acute in urban slums and in extremely rural areas.

• It is estimated that well over 1 billion people still lack safe water and even more have no safe sanitation. (56) For example, more than 80 percent of India's population has no sanitation system and almost 30 percent lack access to safe and plentiful water. (10)

• In and near schools, the presence of animals and their droppings and the proximity of garbage dumps that are often burning present dangers, health risks, and hygiene problems.

• Waterborne, parasitic diseases seriously impair the growth and development of children. Improvement of hygienic facilities, when paired with changes in individual and communitywide behaviour, offers the potential to improve infection rates over the long term. (69)

2.7 Immunization

• Immunization rates have steadily and radically improved around the world, due to unprecedented collaboration among nations, organizations, and localities around the globe. In the 1970s, fewer than 10 percent of the world’s children were being immunized; 13,000 children died every day from measles, whooping cough, tetanus, and diphtheria. (1)
• By the end of 1990, 80 percent of all children had received polio, diphtheria, pertussis, and tetanus (DPT); and measles vaccines. (10) Thirty-five percent of pregnant women were receiving tetanus vaccines. (10) The lowest vaccine coverage was in sub-Saharan Africa. (10) Immunization had prevented an estimated 3.2 million deaths from measles, neonatal tetanus, and pertussis, and 445,000 cases of paralysis from polio. (70)

• Still, 2 million children die every year from vaccine-preventable diseases. (56) A clear role exists for schools in mass immunization programmes.

• Sustaining immunization rates is daunting: “Every year, a new cohort of approximately 140 million newborns must be reached with the right vaccine at the right temperature at the right time on four or five separate occasions during the child’s first year of life.” (1)

2.8 Alcohol, Tobacco, and Other Drugs

2.8.1 Alcohol

• Alcohol-related diseases affect 5–10 percent of the world’s population each year. (10) Alcohol consumption is mostly stable in the industrial world but is on the rise in many developing countries. (10) The highest per capita consumption is found in Australia, New Zealand, North America, and Europe, the most economically developed regions. (73)

• The costs to society, to families, the health care system, the criminal justice system, the workplace, and the population at large are immense. In Europe, several countries estimate that the social costs to society from alcohol use are between 2 and 3 percent of the gross national product. (74)

Youth drinking is especially problematic, for beyond the harmful effects of intoxication are the risks of injury, crime, unsafe sex, and negative impact on educational achievement.

2.8.2 Tobacco

• In many populations, prolonged cigarette smoking is the greatest single cause of premature death. (10) Tobacco accounts for three million premature deaths a year. (10) If current trends continue, deaths from tobacco worldwide are projected to reach 10 million a year, or more than 10 percent of total deaths, by the second quarter of the next century. (10)
• Per capita consumption of tobacco is decreasing slowly in industrial countries and has remained relatively unchanged in the formerly socialist economies. (10) In developing countries, however, per capita consumption is rising and is expected to increase by about 12 percent between 1990 and 2000. (10)

• An Australian study shows the strong and progressive relationship between smoking prevalence and students' views about school, their perceived academic achievement, and their intention to continue with education. These results have been reproduced for other behaviours, such as alcohol use, and in other countries. (71) Thus, the students who might benefit most from school health education are least likely to be engaged in the school or to share the school's values. Alternatively, students who like school and feel they are performing well are less likely to smoke.

• In some Latin American and Caribbean cities, more than half of the young people smoke; by the mid-1980s, an estimated 100,000 deaths in this region were caused by smoking. (72)

2.8.3 Other Drugs

• Reliable data on the extent and nature of substance abuse are scarce. Users are typically between the ages of 15 and 24. It appears that the production and consumption of illicit drugs, especially cocaine, have intensified in recent years. In some developing countries, psychoactive drugs such as inhalants are a serious problem. (10)

• In 1988, the economic impact of drug abuse in the United States alone was about US $75 billion, according to the National Institute on Drug Abuse.

• The damage from all kinds of substance abuse is not limited to the individual users; others suffer from drunken driving, fires, injuries, passive smoking, and drug-related crime and violence. (10)

2.9 Oral Health

• The major concerns regarding oral health are dental caries, periodontal diseases, teeth positioning problems, and injuries; soft tissues of the mouth can be affected by oral cancers, infection, and other conditions.
• From 5 to 20 percent of most surveyed populations around the world have destructive periodontitis of a “clinically significant” degree. (75)

• In developed countries, dental caries has decreased tremendously during the past several decades; in some developing countries, the opposite has occurred. (76) Dental caries are prevalent where the consumption of refined sugars is high and preventive measures (e.g., education, fluoride in water supplies) are unavailable or unused.

• New methods and products show promise of improving dental health. Mouth rinses, topical applications, and tablets inhibit plaque or attack bacteria. Research continues on vaccination against dental caries as well as improvement of fluoride products and sugar substitutes.

• In the coming decades, education programmes highlighting the importance of prevention should be retained even when the prevalence of dental caries subsides. These programmes will be essential to maintain decreases that have occurred and to prompt decreases in developing countries.

2.10 Malaria

• About 110 million cases of malaria develop annually. Some 270 million people are infected, carrying malaria parasites, although not developing symptoms. (77)

• Studies suggest that children in endemic situations suffer from up to three episodes per year. (77) Malaria affects school performance both during an attack and after, when the child is still very ill.

• Only 27 percent of the world’s population is unaffected by malaria; 32 percent live in areas where control has been effective; 32 percent live in areas where campaigns were successful but are deteriorating. Nine percent of the world’s population live in areas (mostly tropical Africa) with endemic malaria that has not been addressed by an antimalarial campaign. (79)

• Eighty percent of the cases reported to WHO (not including tropical Africa) are concentrated in 11 countries (India, Brazil, Afghanistan, Sri Lanka, Thailand, Indonesia, Vietnam, Cambodia, China, Solomon Islands, and Papua New Guinea). (77)
• Malaria prevalence is determined by a number of factors, including rainy weather, discontinuation of insecticide application, influx of nonimmune populations, exploitation of natural resources, and drug-resistant strains of certain malaria parasites.

• The most common approach to malaria is chemical control of the mosquito population and the treatment of fever cases with drugs. Environmental improvements such as drainage or filling of water bodies is also frequently employed.

• Instability due to war, natural disasters, and political conflicts exacerbate malaria transmission.

2.11 Respiratory Infection

• Acute respiratory infection (ARI) is the most frequent illness globally. (80) Infections include colds, ear infections, tonsillitis, epiglottitis, laryngitis, bronchitis, bronchiolitis, and pneumonia. Four million children under 5 die annually from ARI, mostly from pneumonia. Pneumonia mortality is 10 to 50 times higher in developing countries.

• Poverty and overcrowding are known risk factors for infection. Additionally, poor nutrition lowers resistance to infections; incidence of pneumonia is 12 to 20 times greater in undernourished children than in children of normal weight for their age. (81, 82) Indoor and outdoor pollution also increases risk.

• Globally, ARIs account for an average of 35 percent of all outpatient visits. (83)

2.12 Mental Health Problems

• An estimated 700 million people around the world suffer from mental health problems. Many of these people suffer from stress-related mental health problems. (84)

• According to a World Bank study, mental health problems are one of the largest causes of lost years of quality life. (10) Together, psychosocial factors and mental disorders contribute to an estimated one-quarter of the global burden of disease.

• Suicide is among the top 10 causes of death in most countries that report rates and is one of the top 2 or 3 causes of death among young people. (85) Ninety percent or more of suicides are linked to psychopathology. (86)
• Psychological problems affect almost one-quarter of users of general health care services and have been found to cause greater impaired physical and social functioning than major chronic diseases. (87) An estimated proportion of 18 percent of young people (15–19 years) using general health care services suffer from mental disorders; depression accounts for almost two-thirds of the mental health problems in this age group.

• The scale of child mental health problems has increased worldwide. A 15-year study in Sudan confirms that the prevalence of mental health problems has increased significantly even though standards of living and the physical health of the children have improved. (88, 89)

• Nearly one in five children and adolescents will have an emotional/behavioural disorder at some time during his or her youth. (90, 91, 92)

• Wherever brutality and fear are rife, children and adults suffer mental health problems. In a study of children who had witnessed murders and suffered family losses in Mozambique, one-quarter were significantly handicapped by their psychological distress. (93)

• Worldwide, mental health problems cause a tremendous amount of human suffering. The social and economic costs due to lost productivity and the use of medical and welfare services are immense. The distress of individuals and the anguish of their families are incalculable.

3.0 Moving from Problems to Action

The implementation of school health programmes lags far behind the vision. "The availability of school health programmes is more the exception than the rule in developed as well as developing countries," according to Ilona Kickbusch, director of WHO's Division of Health Promotion and Education. How do we move from vision and an understanding of the problem to action? This section will discuss the connections between school health programmes and the action steps embodied in the Ottawa Charter and then describe, in more detail, selected fundamental, society-wide strategies that schools and countries can employ to create health promoting schools.

The research on how schools change and accommodate innovation is a powerful reminder that producing change in schools and communities is a long, locally driven, and evolutionary process that involves the entire
system. “Quick fixes” do not work; implementation and institutionalization of reforms often take 20 years. A new international study of the change process in education reform efforts reveals that successful reform has three main ingredients: (1) a national commitment that is “well planned and evolving,” made concrete through management practices and support structures, and that is sustained over at least 10 years; (2) strong local capacity; and (3) a coherent linkage system between central, district, and local school levels, via information, assistance, pressure, and rewards. (94)

The five strategies below provide a framework for planning actions to strengthen school health programmes. They are based on the Ottawa Charter, sound theory, and the experience of health professionals and educators around the world. They are:

- Fostering public policies for school health with accompanying resources and commitments that will enhance health and education

- Creating supportive environments that are the result of assessment and improvement of the physical and psychosocial environment of the school

- Enhancing community action that supports the process of health promotion and the linkages between the school and other relevant institutions

- Helping individuals acquire personal skills (through both the curriculum and the teaching and learning process) needed to maintain healthy behaviour, and to create the underlying conditions needed to support health

- Reorienting health services so that they:
  - provide enhanced access to services within the school as well as referral to the external health system
  - include specific health interventions that are best carried out through the school
  - integrate curative medicine, prevention, and health promotion interventions

These are not discrete strategies of change to be adopted individually. Nor are they the ordered steps of a prescribed sequence of actions. Rather, they are strategies for an integrated, mutually reinforcing, and holistic framework for change. How can this framework be used to identify key activities to be undertaken in addressing health problems through schools?
3.1 **Major Strategies**

Two major strategies, consistent with the Ottawa Charter’s guidance, help countries and districts move from problems to action: development of national policies and building intersectoral collaboration.

3.1.1 **National Policies**

For nations to foster development of children as healthy and productive adults requires a long-term commitment and the support and participation of all institutions in society. Without national-level direction and policy, local initiatives can be rudderless and unable to have utmost impact.

- Countries around the world have created policies to promote health among schoolchildren. (78)
- Many require immunization upon entry to primary school.
- In several countries, schools are required to keep records on the health status of children (e.g., in Thailand every student must have a “health record card” provided by the Ministry of Education and Ministry of Health).

Numerous countries have policies that mandate provision of meals at school to some or all students.

- Ministries of education and health in most countries set standards and guidelines for school construction and maintenance (e.g., in Zimbabwe standards must be met by the local community before a school is certified and textbooks and teachers provided). Standards can also be promulgated for appropriate environmental sanitation, ventilation, lighting, and classroom space.

Ideally, the development of school health policies and programmes is 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.

3.1.2 **Intersectoral Collaboration**

Coordinating mechanisms at the national, state/district, and local levels transform policy into action and build consensus that health is a concern for all sectors of society. For example, a ministry of education, most likely the lead agency for school nutrition and health, does not have the resources, experience, or bureaucratic jurisdiction to contribute technical, medical, or treatment information regarding children. (78) By build-
ing mutual collaboration with the ministry of health, the two agencies’ missions can be advanced. A country’s acceptance in the European Network of Health Promoting Schools is conditional upon the signing of a formal agreement to collaborate by the ministries of education and health. This partnership is essential to the success of the process.

However, the need for intersectoral collaboration goes beyond these two agencies, which are often the least well-funded within governments. Unfortunately, there are not yet good examples of collaboration among the sectors (e.g., planning, transportation, public welfare, development) that can benefit school health programmes. This is a fertile and important area for policy change. Coordinating mechanisms that must be developed to provide direction, guidance, monitoring, and linkages to the key players (95) can include committees within and between ministries, advisory councils on policy matters, and programme management roles. A similar configuration of coordinating mechanisms is beneficial at the regional, provincial, state, local, and school levels. At the local level, for example, reproductive health programmes in schools should be connected with health providers, social services, the juvenile justice system, parents, community and religious groups, and other relevant organizations. Young people, even those in schools with health services, may seek care elsewhere; coordination, outreach, referral, and consultation among sectors help to ensure appropriate and timely services.

Policies and legislation related to young people are often contradictory and unevenly applied, as are social norms, messages, and cultural expectations. Consolidation of regulations, or at least collaboration among relevant agencies, might reduce some of these problems. For example, coherent policies and legislation across sectors are needed to deal consistently with the requirements for consent, confidentiality, legal constraints, and adolescents’ access to information, education, guidance, counseling, and clinical services to prevent pregnancy and childbirth and sexually transmitted diseases.

4.0 Components of Comprehensive School Health Programmes

School health programmes are conducted in numerous settings and by a variety of individuals within a school. Ideally, they will not operate in isolation but coordinate internally and externally to provide a multifaceted approach to health promotion. This section will describe each component of a school health programme, review implementation issues, suggest recommendations, and provide brief examples from around the
world. The challenge for the future is to use wisdom and evidence of effectiveness from each area to construct the most powerful, multifaceted, integrated approach to health promotion.

4.1 School Health Services
Models for providing school health services vary tremendously, not only from developed countries to developing ones but also among and within developed nations themselves. School health services reflect how health care is organized and provided in a society in general. The amount of financial support available to health services varies greatly across localities and nations and fluctuates year to year. The funding base in turn affects the scope and amount of services provided, the availability of appropriately trained staff, and the capacity to plan and evaluate efforts.

4.1.1 Issues in Implementation

Developed Countries

- In the United States, traditional or generic school health service programmes (organized to meet immunization screening requirements) have recently been found to be too limited to make an impact in such critical problem areas as school failure, school dropout, teen pregnancy, substance abuse, and violence. (161)

- Most full-service school programmes (which connect high-risk students and family members with community-based providers) have been under way only a short time, and little is known about utilization and cost; and evaluations have focused on process, not outcomes.

- When compared to adolescent visits to physicians’ offices, data suggest that school-based health centers provide greater access to care, a wider range of services, and a greater depth of attention to adolescent issues. Although not much outcome data are available, reports and commentary from educators and health care providers indicate that school-based health centers can improve school attendance, school suspension, and dropout rates. (162)

Developing Countries

- In developing countries, school health services’ activities are likely to include health problem identification, treatment of common ailments and injuries, growth monitoring and checkups, monitoring of outbreaks, and vaccinations.
• A review of school health services in sub-Saharan Africa reveals a focus on six areas: (1) increasing access to services, (2) focusing on targeted diseases, (3) involving the community in problem solving, (4) focus on extracurricular activities, (5) Child-to-Child activities, and (6) curricular developments. (97)

• Screening and treatment for helminthic infection in school populations can be an excellent entry point to establish health delivery services in schools. (95)

• Where chemotherapy-based interventions to control morbidity due to helminthic infection have been implemented (all at relatively low cost), the symptoms and overall school functioning and performance have improved. (98, 99, 100, 101, 102, 103) For example, a study of school-based treatment in Montserrat, West Indies, showed overall reduction in prevalence and intensity of infection. Medications can be given on a mass scale where a high prevalence of infection exists, within existing health infrastructures, and by nonmedical providers. (10, 104)

• A 1988 study found that school-based clinics in the United States succeeded in reducing the pregnancy rate among teenagers. (105) This finding echoes a 37-country study that “found that those countries with greater availability of sex education and birth control for young people had the lowest rates of teenage pregnancy, abortion, and childbearing.” (106)

Recommendations

• In establishing school health services, communities must consider: (1) What preventive and treatment services are best provided at school sites? How does variation in need and community resources inform that determination? (2) What services available in the community need to be duplicated in the school setting? (3) What communication systems need to be developed between school health providers and community-based providers? (4) When applicable, to what degree can school health services be financed through private and public health insurance? How will nonreimbursable services be financed? (5) How will issues of equity be addressed across school systems?

• Schools are increasingly being used as a delivery site and partner in the fight against helminthic infection. The Partnership for Child Development, in collaboration with WHO, UNDP, and several private foundations, is investigating how a package of interventions, including distribution of medication and micronutrient
supplements, can be delivered through schools. These steps can be easily integrated with other operational programmes of high priority, such as immunization, nutritional programmes, maternal and child health activities, and tuberculosis, leprosy, and sleeping sickness surveys, as well as the control of diarrhoeal diseases. Successful control of helminthic infections can be attained only if the programme is expanded to the communities and sustained.

• 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 session. Service providers need to have an effective system of coordination so that they are aware of each other’s efforts when they treat those with multiple problems.

• Outreach and parent education are essential to improve student access to health services.

• In-depth baseline data help to identify priority needs, monitor trends, and evaluate the effectiveness of the programme. (97)

• Pregnancy tests, cervical smears, and gynaecological exams; services for the prevention of STDs and HIV; and referral, counseling, and treatment services are all valuable. Students should have access to information about contraception. Students should also have access to contraceptives and information about contraception. Good-quality abortion services, where legal, should be made easily accessible to all females.

• Youth and peer counseling programmes should be established to promote sharing of responsibilities between males and females in their relationships and reproductive health. Where feasible, telephone hotlines can play an important role in providing anonymous yet personalized information to a large number of young people.

• In areas where the primary care infrastructure is insufficient to accommodate immunization initiatives, assigning the school as a setting for immunization delivery can serve as a catalyst for comprehensive primary care.

4.1.2 School Nurses/Health Personnel

School nurses can take a central role in school health initiatives. Their role is highly varied around the world, flexible, independent, and, ultimately, underutilized. Nurses work in the schools in a number of ways around the world. They may be part of a specialist school health service
within schools or serve as generic community nurses with input into schools. Their conventional roles include screening, immunization, and treatment, especially with the integration of children with special needs into mainstream schools. In some districts, they are resource persons for teachers who teach health education and pupils with special needs. Increasingly, the traditional roles are seen as “inadequate to confront the increasingly complex care needs of children in our [United States] schools where often their only access to health care is through schools.” (107)

**Recommendations**

- Pre- and post-registration nurse training is desirable, with workshops and exposure to a range of materials and models of working in order to improve integration and expand the nurse’s own role.

- Nurses, other health workers, and teachers need to be exposed, through networking databases and packages, to the full range of literature, resources, and research on the health promoting school, especially those innovations that seem to work.

- Research is needed on the actual and potential role of the nurse in relation to comprehensive school health programmes.

- Training is needed for nurses and other health care workers in adolescent development, communication skills, and mental health sequelae of children of war.

**4.2 School Health Education**

This element of a school health programme is typically the most fully developed. Health education is provided as a specific subject, as part of other subjects, or, as a combination of both. School health education at its best includes a planned sequential course of instruction from the primary through the secondary levels to address the physical, mental, emotional, and social dimensions of health. Classroom teaching aims to influence students’ understandings, attitudes, and conduct concerning health practices. In reality, school health education is often a less expansive endeavour, featuring single-topic curricula or single interventions.

School health should be focused on (1) important behaviours and conditions that promote health or that prevent risk or disease; (2) skills needed to practice those behaviours or to address those conditions both personally and collectively; (3) knowledge, attitudes, beliefs, and values related to those behaviours and conditions; and (4) learning experiences that allow students to model and practice skills.
School health education is “comprehensive” when it:

- Views health as more than absence of disease.
- Utilizes all educational opportunities for health, formal and informal, traditional and alternative, inside and outside the school.
- Harmonizes all of the health messages.
- Empowers students to act for healthy living and to promote conditions supportive of health.
- Fosters the interaction between schools, the community, parents, and local services.
- Ensures a healthy environment at school.

4.2.1 Issues in Implementation

- In the United States, three large-scale evaluations of comprehensive school health curricula have found that (1) school health education increases students’ knowledge of healthy behaviours and decreases risk behaviours, especially substance use; (2) teacher training has a significant effect on student outcomes; (3) “booster shots” are necessary after two to three years as effects dwindle; (4) larger gains in knowledge can be achieved after 50 hours of instruction; and (5) moderate gains in behaviour can be achieved after 30 hours. (28, 108, 109)

- Effectiveness of school health education is affected by the amount of classroom time devoted to the programme, the extent to which school administrators support the programme, and the extent to which teachers feel prepared and are motivated to implement the programme. (111)

- Building knowledge about the link between infection and personal and home hygiene, food safety, and sanitary water practices is the aim of educating the school population in developing countries. Information about children’s and parents’ values, beliefs, and attitudes should be produced and used in health education interventions.

- Training for teachers, supervisors, and school administrators can be available in curriculum development, provision of services, and school environment improvement, as well as in the content area.

- A number of studies make “a strong case for the power of a life skills approach to health education as an effective and cost efficient
health promotion strategy.” (110) A number of studies of categorical (or topic-specific) health education curricula have found that they do reduce the incidence of specific risk behaviours.

- Interactive education (e.g., role plays, anonymous questions and comments, discussions, negotiation skills for safe practices, refusal skills to respond to peer pressure) improves classroom health education.

- Education for prevention is more effective if it starts before the onset of risk behaviours, such as having unprotected intercourse. Programmes offering abstinence as the only prevention option are among the least effective.

- Children can be encouraged to take home health education messages to their own family.

- School programmes to reduce substance abuse must acknowledge that stress and social pressures are not the only reason young people experiment with drugs. Most people experiment in search for pleasure. A challenge for health promotion programmes is to identify healthy ways to seek pleasure and escape pain.

The “Let’s Talk” programme in Zimbabwe aims to reduce sexual risk-taking behaviour and drug and alcohol use. Sponsored by the Ministry of Education in collaboration with UNICEF, the programme uses gradespecific activity booklets (grades 4–12). The programme does not focus on the biomedical aspects of health risks (that information is contained in a reference section), but instead uses a variety of classroom activities (e.g., scenarios and stories) to help students focus on feelings, examine alternatives, think through situations of risk, and make decisions. Scenarios and stories focus on growing up, friendship and love, dating, career choices, self-esteem, and gender roles. Sexual abuse is addressed openly, including family abuse and advances by teachers; teenage pregnancy and social norms are discussed. Students also complete community projects. Teachers receive extensive training at both pre- and in-service levels. The success of the programme depends on a high level of political commitment, broad-based community support, adequate financial resources, assessment research, and the creation of training capacities and support systems.

4.2.2 Distance Learning

Interactive radio instruction has gained worldwide attention as a low-cost means of improving primary school students' academic achievement. (112) In 1989, Bolivia was the first country to apply this technology to
health education; results are very promising. In response to the country’s high infant mortality rate and the health and sanitation problems resulting from a massive rural and urban migration, Bolivian education and health authorities began an interactive radio instruction programme to teach easily applicable health concepts and influence behaviour change. The programme targeted diarrhoea prevention and oral rehydration to children between the ages of 8 and 13, who often act as caretakers for younger siblings and engage in household activities relating to food preparation and sanitation. The programmes, which feature question-and-answer sessions, written and oral responses, and short dramatic presentations, emphasize active participation by the child. (113) Both qualitative and quantitative data gathered by the project indicate that the radio lessons have had a positive impact on children’s attitudes and habits. There is evidence of more handwashing than before, more households are filtering water, and more children know how to recognize and respond to the problem of dehydration brought about by diarrhoea. Most important, children are beginning to understand the concept of “being healthy.” Based on the results of the radio health pilot test, programme developers are working on a comprehensive preventive-health curriculum for children in grades 3–5. In addition, fifth graders have been attending radio classes in reproductive health that cover biological changes, preadolescence, development of the reproductive system, menstruation, ejaculation, development of the fetus, nutritional needs of the mother and infant, and care for the newborn.

4.2.3 Teacher Training

Several studies show that training teachers in the use of a health curriculum improves their implementation of the programme. (114, 115) Teacher training also builds commitment, understanding, skills, and attitudes that enable a teacher to use curricula effectively and comfortably. A complete training programme should have four broad goals: (1) to develop positive attitudes toward and commitment to a comprehensive approach to school health; (2) to increase understanding of principles of behaviour change that are effective in health education; (3) to improve teaching skills in areas such as class discussion, role playing, cooperative group activities, small-group discussion, community involvement activities, family communication activities, games, simulations, and case studies; and (4) to prepare teachers to deal with sensitive issues and refer students with additional needs.

Successful teacher training:

- Addresses issues of concern recognized by teachers themselves.
- Takes place as close as possible to the teacher’s own working environment.
- Covers theory, demonstration, practice, feedback, and peer coaching in the classroom.
- Has support of both colleagues and the school administration.
- Enables participants to feel a substantial degree of ownership.
- Draws on adult learning theory.
- Takes place over an extended period of time.
- Provides opportunities for reflection and feedback.
- Involves a conscious commitment on the part of the teacher.
- Builds skills.
- Involves groups of teachers rather than individuals.

In India, the Teacher Empowerment Project (TEP) aims to boost school enrollment and reduce dropout, and it strives to transform primary schools “from places of drudgery to friendly environments filled with games, dance, song, art, and cultural activities.” (136) Launched by the governments of India and the state of Madhya Pradesh with UNICEF assistance, the programme focuses on improving teachers’ self-confidence and status. Teachers use their skills and creativity in short training/motivation seminars, where they collaborate on devising educational materials and strategies and practice among themselves. The seminars, which are also available to local decision makers and community members, are followed by monthly meetings. The programme has stringent academic requirements and tracks progress and attendance rates. Rough estimates indicate that attendance and learning retention rates have doubled and tripled since the project started in 1992. The project is relatively inexpensive, with UNICEF contributing US $16–US $26 per school.

**Recommendations**

Recommendations for improved teacher training include the need to: (1) review and upgrade teacher training at the pre-service, in-service, and continuing education levels; (116) (2) ensure that student teacher educators receive field experience; (3) carefully design and implement routine workshops, seminars, and short courses; (4) train health teachers and staff, as well as nonteaching school personnel; and (5) develop mechanisms for continuing education and supportive supervision to maintain and enhance the quality of teaching.
• Education aimed at preventing HIV infection should be provided as part of a broader programme that includes education about sexuality, other sexually transmitted diseases, and issues relevant to the healthy development of adolescents. Education about HIV and AIDS should be complemented by the implementation of policies and norms that support existing AIDS prevention strategies and that help prevent sexual abuse and discrimination. Education aimed at AIDS prevention and related issues should be interwoven into relevant areas of the school curriculum.

• Ideally, health will be given the status of a separate subject in the curriculum and integrated into other subjects where appropriate.

• Minimum guidelines for school-based smoking prevention programmes have been proposed. (117) They address number of instruction hours, classroom themes, age-appropriate programming, student roles, parent roles, and teacher training. Unless backed by school booster sessions and communitywide and/or mass media anti-tobacco programmes, sustainable success is unlikely. Whether these theoretical guidelines are successful in “real-life” settings is unknown.

• Health education—whether for prevention of tobacco, alcohol, or other drug use or for sound nutrition, good hygiene, prevention of infectious diseases, or other important public health concern—is most effective if it takes place in a supportive environment, an environment that encourages the capacity for “reflection on one’s own desires, ideals, motives and actions while at the same time trying to bolster self-esteem as far as possible.” (118) School health education programmes should complement the physical, social, and cultural environments where they take place.

• School health education ideally involves students, teachers, and parents in promoting actions for their own health as well as the health of their families and communities, and includes actions to educate out-of-school youth. (119)

4.3 School Environment

Supportive school environments depend on both the physical (buildings, grounds, interior structure) and psychosocial environment. Increasingly, the concept of school health environment is understood to include the community in which the school is located. The condition of the physical environment (cleanliness, availability of trash receptacles, safe water, clean and sanitary facilities) and policies regarding its use (smoking poli-
cies, weapons policies, kinds of food in the cafeteria) can have a powerful effect on reinforcing or contradicting other health messages or practices in the school. Indeed, when the basics—safe, drinkable water and safe, sanitary facilities—are not present, it is difficult to describe a school as health promoting.

The psychosocial environment is strongly affected by the culture of a school. A supportive social culture has a buffering effect on psychosocial transitions or stressful life events experienced by students. (120) For adolescents, whose lives are characterized by change, school environments play an important role in their well-being. For students and staff, a school environment that values mutual respect and encourages their participation in decisionmaking enhances their working life and thus the school experience.

Community members should feel that the neighbourhood school is open and receptive to their ideas and participation. Schools in turn should be supported by community members by their participation in school programme development and through the provision of adequate financial resources to carry out the school’s mission. Such community support is essential for an effective school nutrition and health programme. It is also needed to multiply the effect of training and service delivery, promote environmental and behavioural change, ensure successful compliance with screening programmes, and reinforce relationships between parents and children.

4.3.1 Issues in Implementation

- Many schools have policies and philosophies that support the well-being of students; the key to a supportive environment is turning philosophy into action. It includes such things as teachers acting as student advocates, school safety patrols, problem solving based on the exchange of information, flexibility in procedures in handling individual students, the sustainability of staff as role models, and early intervention through perceptive problem solving.

- Recent studies indicate that schools with coordinated school smoking education policies, including education, environmental restrictions, and liaison with parents, have significantly lower rates of smoking among students. (121)

- In Japan, national regulations require annual checks on: (1) quality of drinking water, pool water, and drainage; (2) disinfection of the water supply and drainage equipment; (3) classroom lighting and general illumination; (4) ventilation and heating and noise
levels of the classrooms; and (5) any additional problems specified by the principal. (122)

The Kair High School, a large, multicultural, comprehensive high school in the Sydney, Australia, metropolitan area of New South Wales, has built a supportive school environment by enhancing relationships between teachers and students, among teachers, and between parents and teachers. One aspect of the school’s psychosocial environment is the important role that teachers can play as adult role models and as mentors in fostering trusting relationships with students. One way the school formally conveyed this approach was through the school’s “critical incident management plan,” a policy for dealing with student crises (deaths, injuries, traumatic events). The formal policy outlines philosophy, guidelines, roles, and actions for staff, parents, students, community members, professionals, and clergy. The practices include teachers acting as advocates for students, spending time with students, sharing information and personal experiences, and intervening early through perceptive problem solving.

**Recommendations**

- In schools, the presence of quality latrines, safe water for drinking and washing, waste collection and disposal, and proper food-handling procedures is essential. Schools can be the places where communities are introduced to new technologies and methods of sanitation.

- School policies, programmes, and environments should advance relations between girls and boys that are respectful, nondiscriminatory, and nonabusive. Instances of discrimination, double standards, or abuse between students and between staff and students should be condemned openly, to promote appropriate social norms.

- The biggest source of disease-producing organisms, such as helminth eggs and human excreta, is the key element in contaminating the environment, spreading pathogens, and transmitting diseases. The sanitary facilities, such as school latrines, safe water for handwashing and drinking, waste collection and disposal, and insect control, are essential for establishing and maintaining a healthy environment. (123)

- Schools can improve the school environment only if they bring together a broad range of individuals who can address policy, physical plant and maintenance, psychosocial concerns, academics, and legal/legislative issues. Leadership concerning vision, enactment, and enforcement is central to success.
• An infrastructure environment (e.g., school-community coordinating committee, school health committee, school work teams, school health coordinator) helps promote a healthy school.

• The school climate improves when security and safety measures are in place.

4.4 Health Promotion for School Personnel

Health promotion for school personnel means applying the concepts, principles, and strategies of health promotion to the workplace, its employees, their families, and the organizational, managerial, and environmental characteristics of the school. (124, 125, 126)

While health promotion programmes have become popular among the general population in developed countries, health promotion programmes for school personnel are not widely available in developed or developing countries. (127, 128) Existing programmes are generally not well documented, and few well-designed research studies exist to evaluate them. A large gap exists between the theory and current practice of providing health promotion services for school personnel.

4.4.1 Issues in Implementation

Important elements include:

• A public health approach that targets all school employees rather than only high-risk personnel or teachers.

• Content including exercise, nutrition, weight control, stress management, substance abuse, safety, and women’s health issues.

• Products and services such as print, audio, and visual materials; classes; counseling; assessment and screening; and community resources.

• Pre- and in-service teacher training.

• Theoretical base in social learning theory, diffusion of innovations and stage theories, and health promotion models.

Implementation problems emerge in a number of areas:

• Unrealistic expectations for rapid change. (129)

• Low priority on overall school agenda. (130)

• Lack of substantial empirical support for the programmes. (131)

• Limited district, school, or teacher interest.
• Insufficient staff skills to implement.

• Inadequate school policies to support programme changes (e.g., smoke-free environment).

• Lack of clearly defined national, state, or local government health goals.

• Inadequate funds.

While few programmes have been evaluated empirically, and those which have been are only for developed countries, studies do support the feasibility and value of these programmes, both to teachers and to their students. Improvements in absenteeism rates, morale, and the quality of classroom instruction have been documented. (32, 33, 34, 35)

Many initiatives are being developed to educate school personnel about the importance of school health promotion. For example, a number of countries in Asia and the Pacific (India, Indonesia, Malaysia, the Philippines, Sri Lanka, Thailand) have initiated curricula revision for teachers as well as students. (132) The Syrian government addresses some aspects of school health through short health courses for school health staff and teachers. (133)

Teachers who have participated in school health promotion programmes report improved attitudes to their personal health and increased perceptions of general well-being. (32, 33, 34) In other studies, school personnel’s health knowledge and behaviours were found to have been positively affected. (134, 135, 136)

In Egypt, a school vacation Summer Club is used to provide health-related activities and behavioural change for students and teachers away from the school environment. The initiative is government funded and planned according to the findings of a needs assessment. A process evaluation to assess the effectiveness of the clubs found that teachers, children, and the wider community all benefited from the clubs and that teachers gained “personal and career advantages” from their participation in the programme. (137)

This component is generally underfunded and given lower priority because it is incorrectly seen as not affecting students directly. Schools are, however, ideal places for work site wellness efforts as they employ a significant number of adults and the potential exists for these adults to serve as role models and to provide positive learning environments. (138) Inevitably, the mental and physical health of school staff affects children directly in the quality of learning and teaching and in the attributes of the school’s psychosocial environment.
Recommendations

- Health promotion programmes are more likely to be sustained if they have been developed based on the needs and interests of school personnel.
- Teacher associations/unions or similar uniting organizations can play a powerful role in advocating and helping to develop and implement these programmes.
- Rigorous evaluations, while costly, are essential.
- Ideally, financial support comes from a broad range of sources.
- Leadership to establish policy or guidelines to encourage and support health promotion for staff should be part of all pre- and in-service training. (139)

4.5 School and Community Relationships/Collaboration

A health promoting school is an important part of the community that surrounds it, and the community is a critical component of the school environment. Community members should feel that their neighborhood school is open and receptive to their ideas and participation. Schools in turn should be supported by community members through their participation in school programme development and through their support for adequate financial backing to carry out the school’s mission.

“Community support is essential for any effective school nutrition and health programme. It is needed to multiply effects of training and service delivery, promote environmental and behavioural change, ensure efficacious and successful compliance with screening programmes, and reinforce relationships between parents and students.” (78)

4.5.1 Issues in Implementation

- “Sustainability and replicability of community based development projects depends entirely on how well the community participates in the project from the early states of planning and phasing in to the final stages of evaluation and phasing out,” according to the experience of the HESAWA School Health and Sanitation Package. (140) The process of soliciting and nurturing community participation is “long, slow, and tedious,” according to the report, which warns that there are “no short cuts for soliciting true community participation.”
- Schools can be the center for a number of community enhancement projects, including programmes to improve health and mental health. They can serve as training centers for parenting skills
where parents learn more about child development and parent effectiveness skills and receive support to enhance feelings of self-worth and competence. These educational programmes are most effective when groups of parents meet together.

- Peers and adult role models are important for helping young people to learn from experiences, master stressful situations, and make healthy choices. Schools can play an important role in bringing these different players together.

The Child-to-Child approach, introduced in 1978, demonstrates how school health and community health are interrelated and can be mutually reinforcing, as well as highlights the importance of student involvement in health promotion initiatives. At its core are beliefs in shared responsibility to improve health, faith in the power of children, and belief in joint action between schools and communities. Millions of children around the world are involved in Child-to-Child activities.

The programme builds upon the reality that older siblings are often the primary caretakers of younger ones. Older children are taught about the need for vaccinations, the use of oral rehydration therapy, and good eating habits. In Botswana, children ("little teachers") are trained in the first three grades of elementary school to care for themselves and work with younger children. The programmes allow the older children to participate and teach in school, family, and community health, as well as prepare for becoming parents themselves. The approach also focuses on direct action in the community. In Jamaica, for example, primary schoolchildren and their parents or guardians were taught about immunization and disease, dental care, diet, toy-making, and how to play with younger children. Conducted in a rural, poor area, the project had effects on the knowledge and actions of the primary schoolchildren, their parents or guardians, and on teachers. (141)

Community alliances are at the heart of efforts in Aguablanca (one of the poorest neighborhoods in Cali, Colombia) to improve delivery of education and school success. The programme aims to build educational resources in a poor urban area where there were no public services or urban facilities. The local university, the Carvajal Foundation, the municipal administration, parents, teachers, schools, and the Ministry of Education jointly assessed problems, constructed solutions, and worked for their success. The four-year-old programme, which is ongoing, reports that it reaches 23,468 students, nearly 40 percent of the schools, and 400 teachers. Sixty-four percent of the schools in the programme have improved their physical conditions; a database has been created, 65 percent of schools have institutional plans, teachers receive training, and educational materials have been developed. (142)
The HESAWA School Health and Sanitation Package, a community mobilization project in Tanzania, took a three-pronged approach to school-based improvement of health and sanitation: screening school-children to identify the main health problems affecting them (senior students conduct the survey), calling a parents’ meeting to analyze these problems by identifying underlying causes, and agreeing on specific actions they will take collectively and individually. (140) The effort was cosponsored by the government of Tanzania and the Swedish International Development Authority (SIDA). The programme’s evaluated results are positive: (1) the school health package created awareness of environmental, sanitation-related problems, their causes, and solutions among the target populations; (2) communities were motivated to participate in implementing activities; (3) the programme promoted use of available materials and increased sanitary facilities (latrines, dish racks, refuse pits, and bathrooms); (4) interaction among government extension workers, teachers, and community members was achieved in finding solutions to prevalent health problems, especially at the community level; (5) great potential exists for replication; and (6) the programme has promoted community participation in decisionmaking through parents’ meetings.

**Recommendations**

- Parent involvement should begin early and be sustained throughout school programmes. Educating parents about their own and their children’s health may be necessary.

- Helminth reduction, which affects the health status of everyone in a locality, may be a catalyst to mobilize community involvement. A collaborative and integrated effort by school and community should be encouraged to involve nonschool and preschool children, and, finally, the adult population, in the deworming interventions.

- WHO recommends several strategies to build community participation and support:
  - The grid approach, (143) a one-week workshop that enables participants to use a grid to identify health problems, examine existing responses, and identify actions to reduce the gaps between the two.
  - The gatekeeper method, (144) to solicit the opinions, support, and recommendations of “gatekeepers,” the practitioners who work in the field, about problems, how to handle them, what information they need, how they react to suggested plans or reforms, and who else should be interviewed.
Drama as a research tool, (145) to engage students and key adults in the community in discussion and decisionmaking after seeing a student performance on a key topic. By providing a shared experience to stimulate audience reaction, dialogue is stimulated.

4.6 Nutrition and Food Services

As discussed in Section 2.5, three major nutrition problems of primary-school-age children in developing countries are protein-energy malnutrition (PEM), micronutrient deficiencies, and short-term hunger. The principal methods for assessing, preventing, and treating the nutrition needs of school students include a school height census, micronutrient supplementation programmes, school feeding programmes, and education.

4.6.1 Issues in Implementation

- School feeding programmes (SFPs) are of great importance and value in relieving short-term hunger. SFPs are also an incentive for parents to send their children to school to save money in the family budget. The role of school meals in improving overall nutritional status and educational status is an area worthy of further research.

- Although there is some anecdotal evidence to the contrary, research on school feeding programmes (SFPs) has shown little long-term effect on overall nutritional status of children. More significant impact on improving nutritional status results from parental education, in particular mothers; increased family income; and mother’s employment.

- The composition of the school meals and their nutritive value (frequency of consumption of dairy products, protein, and calcium) plays a role in educational achievement. (146, 147) Cost-effective programmes tend to be targeted to malnourished children or those at risk of malnourishment.

- While the terms nutrition and food services are conceptually linked, in practice the two are rarely found within the same administrative structure. Nutritional needs of schoolchildren are generally addressed by the health care system, often chartered by the ministry of health. School food services are usually managed by public or private sector providers, often catered by the ministry of education.

The height of first-grade schoolchildren reflects their health and nutrition histories from birth and reflects the environment in which they grew up.
The School Height Census is a unique national instrument for locating the areas of greatest poverty and need. The cost of the census is no more than 10 cents per first-grade child in the most expensive cases and much lower when it becomes a routine task in the education system. A number of Latin American countries have taken a school height census, including Argentina, Chile, Ecuador, and Uruguay, as well as some countries in other regions of the world, such as the Philippines and Kenya.

Studies conducted in Jamaica and India found that school meals (lunch and breakfast) had a significant effect on attendance and school performance. In the United States, a study of the school breakfast programme found that low-income students who participated in the programme scored higher on basic skills and were less likely to be tardy or absent than were low-income students who did not participate.

Micronutrient supplementation programmes involve distributing ferrous sulphate tablets once a day to schoolchildren deficient in iron until they reach normal levels. Recent studies have found that the test scores of iron-deficient students improve after these students have been treated with ferrous sulphate. (63) Treatment for iodine deficiency involves a relatively inexpensive dietary supplement given to a child every two years at a cost of 12 U.S. cents. Iodine supplementation through iodized salt brought the average hearing capacity of a group of iodine-deficient schoolchildren close to that of other non-iodine-deficient children in Guizhou Province of China. (63) Treatment for vitamin A deficiency involves changing dietary practices or treatment with vitamin A capsules. Each capsule costs between 2 and 3 U.S. cents and can be obtained in most countries through UNICEF.

In the Islamic Republic of Iran, the healthy school programme stresses the importance of iodized salt. Children are asked to bring salt from home to school, where it is tested with a simple solution to determine if it is adequately iodized. The results are the basis for classroom discussions on iodine deficiency disorders.

**Recommendations**

- Administrative coordination or collaboration among the ministries and agencies involved will improve programme operation at all levels.
- Wherever possible, school feeding programmes should rely on local commodities in order to avoid dependence on external food supplies, provide a nutritious supplement that is consistent with local dietary practices and food resources, and stimulate local food production. (148)
• Best results occur when the school feeding programme and the nutrition programme are linked.

• School feeding and supplementation programmes can be enhanced by overall community awareness of the relationship between nutrition, health, and education. Many parents are convinced that their children will learn simply by being in school, and don’t see the connection between a child’s ability to learn and his or her overall physiological condition. Social marketing techniques can be used to persuade people to adopt new behaviours and better utilize existing resources.

4.6.2 Food Safety

Foodborne diseases continue to be a serious problem in developing and developed countries alike. While improved sanitation, safe piped water, better facilities for personal hygiene, and wide application of food safety technologies (largely in developed countries) have eliminated some diseases, overall incidence has not been reduced. In developing countries, the problem is more serious because of deteriorating sanitary conditions in the rapidly expanding towns and cities. Increased health education, directed toward the handlers and consumers of food, is needed to raise public awareness of the factors that lead to the spread of foodborne diseases.

Recommendations

• Introduce food safety into training curricula for schoolteachers.

• Introduce food safety into school curricula.

• Implement food safety education through various means (e.g., comics, television, radio).

• Provide Child-to-Child and child-to-parent educational programmes.

• Provide essential facilities (e.g., water, soap, latrines, waste disposal facilities).

4.7 Physical Education and Recreation

Traditionally, physical education has been focused on sports skills and motor development. In recent years, health fitness has emerged as a priority concern. Physical education and recreation activities provide opportunities for building self-confidence and strengthening friendships between boys and girls in nonpressured group situations.
4.7.1 Issues in Implementation

A range of conditions around the world affect the physical education needs and opportunities of children:

- In many countries in the developing world, children perform physical labor as well as walk long distances to school, often beyond their physical capacities.

- In some developed countries, children suffer from too little physical activity, becoming obese and at risk for cardiovascular disease.

- Religious or cultural traditions in some countries prohibit the participation of girls in physical activities.

- In some settings, a health-oriented approach to physical education (lifelong habit building) may be more valuable than a sports skills and motor development approach.

Some evidence exists to link physical education to improved academic performance. The Trois-Rivières study in Canada demonstrated significant gains in academic performance among elementary students as a result of increased time for physical education and decreased time for academic instruction. (149)

The Go for Health Programme combined classroom health education, changes in school lunch, and physical education to foster healthful diet and exercise among Texas (U.S.) children. The two-school programme produced statistically significant changes in diet, behaviour capability, self-efficacy, and behavioural expectations; use of salt; and exercise behaviour capability (fourth grade), self-efficacy (fourth grade), and frequency of participation in aerobic activity. (150)

The Trim and Fit (TAF) Programme in Singapore is a physical fitness programme complemented by educational activities, healthy food service, and pupil and parent involvement. School activities, which aim to reduce obesity and improve physical fitness and to provide incentives for pupils to keep physically fit, also include national-level advocacy activities with school leaders. Students are given the National Physical Fitness Award tests annually, and schools with overall good scores receive awards. A remediation programme for overweight students includes an exercise programme as well as counseling on proper nutrition. Changes to make a healthier school environment include guidance in the selection of healthy and nutritious food in the tuckshop and purchase of fitness equipment and facilities. Launched in 1992, the programme has succeeded in improving physical fitness results and shown
a small improvement in reducing levels of student obesity levels (.6 percent). Implementation of the TAF Programme is supported by the Ministry of Health, the Singapore Sports Council, and the Ministry of Defense.

4.8 Mental Health

Maintaining and supporting the psychological health of students and staff are as important as addressing physical health. An individual’s psychological well-being is a critical element in maintaining physical health, as well as the self-esteem and self-confidence with which healthy decisions can be made and high-risk behaviour avoided. An effective school counseling programme is an important component of a school health programme.

As discussed in Section 2.12, mental health problems represent a major public health concern. Mental health problems, such as suicide and depression and other stress-related disorders, affect large numbers of young people. Children with emotional disturbances exhibit their impairments in a variety of ways. They may fail academically, be rejected socially, and have a poor self-image. They may also have difficulties in relating to peers or adults and may have little respect for the laws of their country. These are preventable problems if the coping resources of children and young people can be enhanced and if steps are taken to identify and respond to the early signs and symptoms of mental health problems.

Mental health education should be part of an overall school health education programme. (153) Mental health education is thought to be most effective when (1) the content of teaching is in the present and is relevant to students’ lives; (2) young people take responsibility for and participate in the development and implementation of classroom activities; and (3) young people acquire health knowledge and health promoting values, and practice health promoting behaviour. (154)

4.8.1 Issues in Implementation

An effective school mental health programme: (151)

- Takes into account the relationship between the school and the community environment as well as any unique cultural values and identities.

- Identifies the sociopolitical conditions and processes likely to be associated with the establishment and survival of a comprehensive mental health programme in the school.
• Involves families and community members as active partners in planning, implementation, and ongoing evaluation.

• Utilizes the skills of school and community mental health professionals.

• Intervenes at multiple levels.

• Has a coordinating mechanism.

• Focuses on teacher training and parent training.

• Evaluates its effectiveness and utilizes this information in programme modification.

School mental health interventions can be environment-centered or child-centered. Environment-centered activities aim to improve the educational climate and provide opportunities for children to connect with a healthy school programme where they will find healthy role models.

A Norwegian programme to prevent bullying provided school systems with workshops for teachers and parents, booklets, videos, and problem-solving and social skills training for students, all with a firm, nonaggressive message that bullying would not be tolerated. (152)

In Rawalpindi, Pakistan, pupils work together to promote their own health as well as that of their families and communities. (155) The programme is reinforced through the use of slogans, essay and speech contests, mental health committees, parent/teacher associations and managerial training workshops for district education officers. Programme evaluation indicates improved grades, increased attendance and decreased dropouts, and increased general and mental health case referrals. Another innovative mental health education curriculum has been developed in Uganda as part of overall health education for secondary school students. (156) The extensive curriculum includes the relationship between physical and mental illness; the effects of stress and culture on mental disorders; the etiology, prevention, and treatment of mental disorders throughout the life cycle, substance abuse; sexual disorders; mental retardation; suicide; and mental disorders associated with AIDS.

Recommendations

• All countries should develop school mental health programmes as part of their current national health/mental health plans. The school mental health programmes should be multisectoral, involving health, education, and other related departments (sectors).
• In countries where some school mental health programmes already exist, efforts should be made to expand these programmes to reach wider geographic regions and to include additional components of school mental health programmes.

• A comprehensive school mental health programme should be concerned not only with the prevention and management of emotional and psychological problems of children, but also with the promotion of the value of a healthy lifestyle and improvement of the psychosocial environment.

• Mental health training should be arranged for individuals working in schools (school health professionals, teachers, social workers, counselors, etc.) and should be included in teacher training courses.

• Mental health education should be included in the school health education programmes at the regional and country levels.

• Resource centers should be developed for mental health services for young people, training, consultation, and research to support emerging school mental health programmes.

• National and community mental health programmes should extend school mental health programmes to include activities for children not attending school (the neglected, dropouts, those in remote areas, the poor, etc.).

• Nongovernmental organizations with an interest in youth at the community, country, and regional levels should be involved in school mental health programmes.

4.9 Coordinating the Components

Even schools in which all of the individual components of a school health programme are in place may not have a “comprehensive” programme or be “health promoting” in the fullest sense, unless the components are coordinated and well managed, to maximize and leverage their benefits. (157, 158)

Effective management of a coordinated school health programme or health promoting school depends on the following seven interrelated key competencies and characteristics: (159)

• Programme familiarity: Leaders understand all facets of the programme.
• Programmatic vision: Leaders have a vision of the power of a comprehensive approach, the unique contributions of each feature of the programme, and the value of their coordinating and reinforcing the links between them.

• Leadership and management skills: Tasks, such as budget preparation, acquisition and distribution of health promotion work plans, and policy statements, are as important as providing supervision and direction.

• Sufficient time: Coordinating a multidimensional programme that includes school personnel from several disciplines, plus family members and the community, requires specified and assigned time.

• Programme planning and evaluation skills: Health education programme leaders are able to account for their efforts, demonstrate successes, and plan future activities.

• Resource awareness: Leaders are aware of, tap into, and mobilize the education, health, and financial resources in the community to shape a truly comprehensive programme.

• Communication skills: Speaking and writing skills will enable school leaders to advocate for comprehensive school programmes.

4.9.1 Issues in Implementation

• In AIDS prevention, for example, the absence of an AIDS vaccine positions the adoption of safer practices as the greatest hope for prevention. Education about sexuality, risk behaviours, and decisionmaking is ideally complemented by health services and the development of school and community norms that advance self-esteem, mutual respect, and good health.

In Switzerland, between 1962 and 1988, a multifaceted dental health programme involving the school health education and fluoridation of the water supply improved dental health, reducing cavity restoration costs by SFr 2.5 million. The school programme runs from age 3 through secondary school and includes topical fluoride applications and oral hygiene instructions as well as dietary advice, largely provided by auxiliaries. In 1967, 0 percent of 15-year-old students were without caries. In 1988, 34 percent had no caries. The programme costs are estimated at SFr 240,000 for the education and SFr .5 per person per year for water fluoridation. Success was bolstered by the increased availability at the time of fluoridated toothpaste and fluoridated salt. In countries without
fluoridated water or salt, reduction in caries have been observed, if fluoridated toothpaste and school programmes are used. (76)

- Success in sexuality education occurs when schools deliver education and services in an environment where social norms favour the delay of sexual activity and the faithful use of condoms. Further, programmes are strengthened when schools forge trusting and ongoing relationships with parents and community organizations. Sexuality education, unlike other areas of school study, touches on values, practices, and teachings that traditionally may have been handled within the confines of the family or other intimate community settings. To be effective, messages to young people need to be consistent, reinforced, and acceptable within the community and family cultures. Health promotion programmes for staff can build teachers’ knowledge and skills in discussing sexuality and confront sexist or homophobic attitudes.

- Intervening successfully against injuries involves three main strategies: passage and enforcement of laws, education for behaviour change, and changes in the design of products or the physical environment. At the school site, schoolwide safety policies must be enforced; education about potential hazards should be available, and technological modifications such as removal of breakable glass in doors and concrete or asphalt under playground equipment need to be made. (160)

- School-based injury prevention programmes should include not only curricular interventions, but also collaboration with health services programmes to improve the school’s physical and psychosocial environment, and the training and active participation of administrators, staff, teachers, and parents. As with all health programmes, injury prevention initiatives are strengthened by the interaction with and support of the community.

New South Wales offers another example of a coordinated approach that highlights the school’s physical environment. In conjunction with the state cancer council, New South Wales schools enhance classroom instruction on cancer prevention by providing schools with advice on low-cost shade structures; developing teachers’ role modeling by encouraging them to wear hats while outside on duty; involving parents in outdoor “greening” projects in playgrounds; supporting the school policy “no hat, no play”; and providing low-cost sunscreen, hats, and sunglasses.

- Chemotherapeutic control of helminthic infection will have even greater success if health education, improved water supplies and
sanitation, and environmental management are integrated into control activities.

• On the whole, SFPs operate independently of school health initiatives. This isolation demonstrates how little it is realized that school feeding is unlikely to achieve any of its attendance- or performance-related objectives without complementary and reinforcing measures. Analysis and change in school feeding design and implementation cannot be done without intersectoral expertise, including at least sectors such as food aid management, education, health, and nutrition.

• To ensure that all dimensions of a programme cohere, they must be focused or integrated, a process that requires leadership and management. “However, effective leadership for the school health programmes is not an automatic outgrowth of professional preparation in school administration, effective overall district leadership or even well-developed programmes in the eight component areas of an expanded school health programme.” (159)

5.0 **Key Themes**

In this review of the variety of health problems and approaches to improving health, several themes surface repeatedly. Consideration of these may provide guidance as schools and nations coordinate their school health programmes.

5.1 **Overall School Concerns**

• National policy and resources in support of a comprehensive approach bolster and guide local efforts.

• Classroom instruction is but one part of a comprehensive approach to health; instruction is complemented ideally by services and a healthy school environment.

• To be effective, school health initiatives and teachings must be reinforced in other realms of a student’s life (community organizations, families, religious organizations).

• Many people and resources (e.g., school nurses, community health services, universities) are underutilized in schools and communities.

• The quality of a school health programme can be enhanced or undermined by the quality of the basic school programme and environment.
Improvement of girls’ health and education will in turn improve women’s health and dramatically improve the health of children and families.

5.2 Implementing Programmes

- Successful programmes are based on sound theoretical principles and local needs.
- Combinations of strategies are more effective than single measures.
- Student engagement in school is central; social mobilization of youth to improve personal, school, and community health is a powerful tool.
- Teacher and school staff training is central to success.
- The teaching and practice of life skills (critical thinking, decisionmaking, communication) are best when introduced early, so that mastery is accomplished before students face high-risk situations.
- School staff have the opportunity to influence children by being role models, talking with them about sensitive issues, helping them get further assistance, and giving them information and strategies to improve health.
- School policies and action plans regarding sexual harassment, racism, and sexual orientation can contribute to a positive psychosocial environment, and thus the educational achievement of children.

Appendices to this paper are attached, including:

- Annex 1: Summary of Selected Reports. This section samples assessed national, regional, and international programmes; provides a brief summary; and lists published reports.
- Annex 2: New Policies and Strategies Maximizing the Potential of Schools. This section details the health promoting school model from Europe and the comprehensive school health programme from the United States.
- Annex 3: Case Studies from Around the World. Examples of school health programmes from all WHO regions are supplied.
Acknowledgments

This document was edited by Daphne Northrop, Education Development Center, Inc. (EDC), Newton, MA, USA. It synthesizes the contents of feeder papers solicited by the World Health Organization from experts around the world. The authors' work forms the heart of the narrative. Experts and their topic areas are:

Allensworth, Diane: Comprehensive School Health Conceptualization
Baldo, Mariela: HIV/AIDS
Brelochs, Christel: School Health Services in the United States
Cohen, Stu: Violence and Injury
Collishaw, Neil: Smoking Prevention
Cross, Donna: Health Promotion for School Personnel
Goh, Piang Ek: Physical Education and Recreation
Hawes, Hugh: Comprehensive Health Education
Hendren, Robert L.: Mental Health
Israel, Ronald C.: Nutrition and Food Services
Kamau, Elizbeth: Health Promotion for School Personnel
Kolstad, Heige: Substance Abuse
Levinger, Beryl: School and Community Projects
Mokbel, Mirella: School Feeding Programmes
Motarjem, Yasmin, and Kaferstein Fritz K.: Food Safety
Mott, Ken: Treatment of Intestinal Helminths and Schistosomiasis
Nutbeam, Don: Tobacco Use
Orley, John: Mental Health
Rice, Marilyn: Reproductive Health
Rosenberg, Michael: Health Promotion for School Personnel
Rowling, Louiso: School Health Environment
Simpson-Hebert, Mayling: Sanitation and Water Control
Smith, Pam: Nursing Role in School Health
Williams, James H.: Health Promotion for School Personnel
Ziglio, Erio: The Health Promoting School

Additional materials were also contributed by the WHO Secretariat for this Expert Committee and by Bruce Dick, Joe G.H. Draijer, Clare Hanbury, Andri Isaksson, Lloyd J. Kolbe, Josie Matsumoto, Cheryl Vince-Whitman, and Piet Wijnsma.
Sources

8. WHO data.
11. (p67–68 of A/49/482 of 6 Oct. 94)

52 WHO Global School Health Initiative


64. Unpublished UNDP data.


WHO Global School Health Initiative 55


56 WHO Global School Health Initiative


WHO Global School Health Initiative


140. Mwasha, E.S. (nd). HESAWA School Health and Sanitation Package: An Effective Tool for Sensitizing and Mobilizing Communities to Participate Actively in Community Based Health/Development Projects. Mwanza, Tanzania: Zonal HESAWA Coordination Office.


ANNEX 1: Summary of Selected Reports

This section samples assessed national, regional, and international programmes; provides a brief summary; and lists published reports.

Summary of Selected Reports

A sampling of assessed national programmes comprise the following section. For each, a brief summary is followed by information on published reports concerning the programmes.

National Assessments

*Indonesia.* The Little Doctor programme has been widely applied and has the full support of the president. In the 15-year programme, selected students are trained to act as motivators to promote health and healthy behaviours in school, home, and community. As compared with nonparticipating schools, the schools employing the Little Doctor programme show greatly improved sanitation, environment, personal hygiene, and health awareness of parents and communities. Evidence of these results is reported in *Health Education Strategies in Southeast Asia*, WHO SEARO, 1991.

*Pakistan.* A model school mental health programme has been introduced in the Rawalpindi Division, with a school population of 1.5 million. The risk prevention programme is based on teaching life skills, and the schools are proactive in passing on the information to their parents and the communities. This project is reported in *Mental Health Programmes in Schools*, a draft report issued by WHO EMRO, 1994.

*Antigua.* Some 4,000 students took part in an intersectoral programme for the development of healthy lifestyles. The project, sponsored by the ministries of health and education, with the support of local NGOs, parents, and community leaders, aimed to enhance students’ capability to develop and maintain healthy lifestyles, and to monitor their individual progress. The lifestyles involved regular weighing, daily physical exercise, proper nutrition, and positive self-concepts. This is reported in *Cajanus, Caribbean Food and Nutrition Institute Quarterly*, 1990, 23(3).

*Canada.* A comprehensive study of views and behaviours of 11-, 13-, and 15-year-olds in Canada and 10 other countries has guided Canada’s modifications and improvements of the school health programme. This is reported in *Health of Canada’s Youth, National Health, and Welfare*, 1992. The major study is described in *Health-Related Behaviour in European School Children*, WHO EURO, 1991.
Bahrain. Almost all elementary schools employ WHO/EMRO's Action-Oriented School Health Curriculum for Primary Schools (Prototype WHO EMRO, 1988, including 22 units and a teacher's guide). This programme is a model of collaboration between ministries of health and education, and other ministries and departments in other sectors. It is reported on in Comprehensive School Health Education, UNESCO, WHO, and UNICEF, WHO 1992.

Philippines. This country also provides an excellent example of comprehensive school health education and school health services integrated into the curricula and programmes in all elementary and secondary schools throughout the country. It includes intensive pre- and in-service training programmes for teachers, and its success is ensured by strong national commitment. Involvement of students, school staff, parents, and community leaders encourages improvement in health and healthy behaviours among the general population.

WHO/HQ and WHO/RO Assessments

School Can Damage Your Health. Alienation from School and Its Impact on Health Behaviour, D. Nutbeam et al, Journal of Paediatric Child Health, 1993, 29, supplement 1, S2530. A study coordinated by WHO, based on data from 11 countries, shows a close relationship between alienation from school and the existence of health-compromising behaviours among students. Traditional health education is seen as insufficient to tackle this task. Recommendations are made for change in school environment, and the need to reach young people in their homes and community settings.

Consultation on School Mental Health Programmes. The effect of school mental health programmes, using life skills education as an integral part, is shown to have an important effect on the outreach to communities and to strengthen the proactivity of schools. The report describes life skills education in schools in 10 countries in the Eastern Mediterranean Region and discusses its effects on students, staff, and parents. For further information, see Mental Health Programmes in Schools, R. Henderson, R. Birrell Weisen, and J. Orley, WHO Geneva, 1994.

School Sanitation and Hygiene Education is discussed in two consultation reports by WHO Geneva (in Latin America, 1994, and in Francophone West Africa, 1995). These reports describe the constraints within which the schools have to function and the inadequate hygiene and sanitation conditions in schools, especially in West Africa. However, in West Africa (eight countries), communities take responsibility for maintenance and improvement in school environments. This is
not the case in Latin America (six countries): Neither communities nor school staff feel that they are in any way responsible for the school environment; even PTAs only collect money for school needs and do not take any active part in the school.

Life Skills Education for Children and Adolescents in Schools. Mental Health Division, WHO Geneva, 1993 (draft). Life-skills-based education programmes are more effective in bringing about behaviour change in staff and students than programmes that do not teach life skills (decision-making, problem solving, creative and critical thinking, communication and interpersonal skills, self-awareness and empathy, and coping with emotions and stress). Examples are given of curricular content from 11 national programmes, and the discussion stresses the outreach effect of this form of education as well as the long-term behaviour and attitude change developed among the students. See also Life-Skills Education in Schools, Mental Health Division, WHO Geneva, 1993, and Life-Skills Research background paper, R. Birrell Weisen, WHO Geneva, 1995, unpublished draft.

Comprehensive School Health Education: WHO, SEARO, 1992. This document describes the application of comprehensive school health education in nine countries in South-East Asia. The direct involvement of students and teachers in promoting healthy behaviours ensures the proactivity of the schools in improvement of the health of communities. A prerequisite for success has been the emphasis on pre- and in-service training of schoolteachers. The programme has been a collaborative action by WHO, UNESCO, and UNICEF.

WHO Global Programme on AIDS. This WHO programme has defined a global AIDS strategy and, since 1988, has been supporting the development of National AIDS Programmes, now established in virtually every country of the world. Such programmes coordinate the national response to AIDS, in terms of prevention, care, and human rights, and are multisectoral.

Health-Related Behaviour in European School Children, WHO, EURO, 1991. The findings of a cross-national survey on health-related behaviours in school students in 10 countries discusses the outreach element of school health education to their communities.

Assessments of United Nations Programmes Other than WHO

UNICEF. WHO’s strength in setting goals, standards, and direction for health work are complemented by UNICEF’s experience with generating commitment and mobilizing the technical and societal resources
required to achieve the goals and standards that had been set. UNICEF also has a strong field presence and helps countries build grassroots support of the implementation of programmes that improve the health and well-being of children and youth.

UNICEF’s School-Based Interventions Technical Support Group is an example of a recently developed international effort to improve health through schools. Initiated in 1993, this group provides support for the acceleration of school-based programmes and activities that can reasonably be taken to scale and that can contribute to the health and development of youth, including the promotion of their sexual and reproductive health. UNICEF draws on the experiences of the group, which is composed of representatives from selected country programmes and key organizational and technical partners (including WHO and UNESCO) that can contribute to the acceleration of national-level programming, which is the current priority.

UNESCO. Given its mandate within the United Nations’ system, UNESCO plays a key role in education. The organization’s activities in this field are intended to facilitate the transfer and sharing of knowledge, such as how to eliminate illiteracy and improve educational systems in an age where the main resources are intelligence, creativity, and adaptability. The aim of UNESCO is to foster, through regional and international efforts, the development of efficient educational strategies, adapted to various social and cultural contexts, in order to help young people in school and out of school to adopt responsible attitudes and behaviours toward their health.

**NGO/Other Agency Assessments**

Consultation on Evaluation of Health Education. International Union of Health Promotion and Health Education (IUHPE), Venice, 1989. This consultation of the European Office of the IUHPE discussed model evaluation processes for application in schools. It was agreed that the school (like the workplace) was well suited to the evaluation of the effects of health education because of its potential continuity of health education messages. Moreover, school teachers are already trained in valuation techniques.

Health through Sanitation and Water (HESAWA). This brochure describes a joint programme between the government of Tanzania and the Swedish International Development Authority (SIDA). Its aim is to promote better environment and health in villages, starting with the schools as a focal point. Senior students were trained to survey and col-
lect baseline data in their communities; at the same time, children in the schools were screened medically in order to identify main health problems. The next step was parents’ meeting, followed by meetings of community decisionmakers, to plan joint programmes to improve the health of both students and their communities School health clubs and village health committees were then established, village health volunteer workers were trained, and the planned activities were carried out by the schools and villages as a continuing activity.

Health Education for Third World School-Age Children, J. Ascroft, N. Muturi, November 1994, Edna McConnell Clark Foundation, New York. This paper contains a review of literature with a valuable second part describing 24 country projects in which schools are proactive in promoting health among school students and their communities Many of the national projects described apply the Child-to-Child approach.

The Child-to-Child Trust. The Child-to-Child (CtC) approach is now used extensively in schools in more than 80 countries. It not only provides another path to learning that involves parents and communities but also makes available to schoolteachers a wealth of activity sheets and readers at different levels of difficulty, depending on the children’s levels of language understanding. These materials are available in many languages, adapted to different countries’ cultures. A number of networks of schools using the CtC approach have been established in India, Uganda, Zambia, and other countries, similar in many respects to the health promoting schools targeted by WHO. Child-to-Child: A Resource Book, Child-to Child Trust, 1992, describes the CtC approach, illustrating it with many case studies drawn from CtC experience. The second part of the book contains 36 activity sheets, which can be integrated into the school curriculum.

**ANNEX 2: New Policies and Strategies Maximizing the Potential of Schools**

The health promoting school model from Europe and the comprehensive school health programme from the United States.

**The Health Promoting School**

As European countries acknowledge the importance of health to the education of children, health and education professionals and members of communities are asking:

- Does the school setting create health?
- Does it create health for all those who work and learn in the school?
• Which procedures and environments need to be changed in order for the school to become more health enhancing?

These are some of the questions being addressed by the European Network of Health Promoting Schools (ENHPS). WHO/EURO piloted the HPS project in 1991 in four countries. The ENHPS formally started in 1992 when international agreement was given for the project to develop under the auspices of the three main European organizations: the Council of Europe, the Commission of the European Communities, and the World Health Organization Regional Office for Europe. This Network of 34 countries is addressing the structural changes and ideas and methodologies at all levels of school operations to promote health.

The health promoting schools strive to:

• provide a health environment with regard to safety, meals, buildings, playgrounds, leisure facilities, and so on

• promote a sense of responsibility in respect of the individual’s, the family’s and the community’s health

• encourage a healthy way of life and present a realistic and attractive range of health choices

• enable all pupils to fulfill their physical, psychological, and social potential and promote their self-esteem

• make clear for staff and pupils the social aims of the school and its potential for the promotion of health

• foster good staff-pupil and pupil-pupil relationships in the daily life of the school and provide strong links between the school, the home, and the community

• utilize the potential of specialists and other resources in the community for advice and support in health education and action for health promotion

• plan a coherent health education curriculum with educational methods that actively engage pupils

• provide a health knowledge base and skills in obtaining, interpreting, and acting upon information related to health

International-, national-, and school-level cooperation contribute to the success of Network initiatives. Three major European agencies—the Council of Europe, the Commission of the European Communities, and the World Health Organization Regional Office for Europe—work together to support the project. In accordance with its respective man-
dates, each organization makes technical, financial, and political contributions to the project.

The project is coordinated by a technical secretariat at the WHO Regional Office for Europe. This individual is responsible for monitoring membership applications; providing advice and support to countries on how best to utilize the resources of their country and of the Network; organizing training and other events for the network; and developing a wide range of organizational, educational, and managerial roles for the implementation of HPS projects.

At the national level, health and education ministries are jointly providing support in the development of project activities, and at the local level, schools, parents, and community organizations are working together to implement plans. Countries entering the project have to fulfill a number of requirements laid down by the three European Organizations, which form the International Planning Committee. These include:

• the undertaking by Ministries of Health and Education to support the project
• the appointment of a National Coordinator
• the designation of a National Support Centre
• the drawing up of at least a three-year development plan
• the selection of a number of pilot schools

Schools intending to participate in the ENHPS have to meet a number of key basic conditions that commit them to:

• designing a long-term project (three to five years) in keeping with the notion of the health promoting school
• giving the HPS project a definite priority in school activities so that responsibilities and resources are allocated in order to carry out the necessary work, attend the agreed-upon meetings and, exchange relevant information and experiences
• promoting inter- and multisectoral participation and interdisciplinary collaborating by seeking cooperation with other organizations and use resources within and outside the educational and health service systems
• implementing programmes which tackle issues that are important locally and, at the same time, are of European relevance and can subsequently be used as models of good practice
• developing projects that are innovative in their approach and whose content and methodology is shared and judged desirable and feasible by staff, pupils, and the local community

• implementing actions that have a demonstrable effect on promoting the health of young people and that foster solidarity and support attitudes and behaviours favouring ecological and social responsibility for personal and community health

• providing all the necessary arrangements for ensuring visibility and credibility of the idea of HPS

• developing appropriate mechanisms for effective management of the project and securing accountability

• facilitating the evaluation of the projects and dissemination of results

As European educational systems undergo reforms and transitions, the ENHPS works to ensure that the concept and principles underlying the HPS are seen as direction for policy reforms and investment. The notion of the health promoting school requires schools to consider, introduce, and adopt and develop approaches and methodologies that have an impact upon the whole school and its organization. They include:

• the school environment
• teaching and learning methodologies
• the curriculum
• management practices
• democracy in the classroom
• relationships with the community
• research and evaluation

The ENHPS considers understanding and taking action on these challenges and issues to be prerequisite for the Network to continue to be an agent of change within the health and education systems of the European Region.

**Comprehensive School Health Conceptualization**

In the 1980s, the U.S. Centers for Disease Control (CDC) proposed that eight interactive components including health education; food services; physical education and other physical activities; the biophysical and psychosocial environment; health services; psychological, counseling, and social services; integrated efforts of schools and communities to improve the health of students; and school health programmes for faculty and staff.
The model suggests that school administrators and those responsible for each component work collectively as a team to maintain the health of students and staff.

To help improve school health programmes in the United States, the CDC has facilitated a national strategy to monitor and improve priority health outcomes among youth; health behaviours that most influence those outcomes; knowledge, attitudes, and skills that affect relevant behaviours; and school policies and programmes implemented to improve specific knowledge, attitudes, and skills and behaviours.

To help the nation’s schools implement effective programmes, CDC conducts evaluation research; has initiated research registries and meta-analysis databases to compile and synthesize results of research; has launched a system to identify school programmes that have credible evidence of effectiveness in reducing specific risk behaviours; and is developing research-based guidelines for school health programmes to reduce tobacco use and addiction, dietary patterns that cause disease, and physical inactivity.

CDC currently provides funding and technical assistance for 10 states to improve school health programmes in their states, and hopes to provide such support for all states in the future. CDC support allows each state to: (1) establish a senior policy position in the office of the state superintendent of education to oversee improvement of all elements of the school health programme; (2) establish a comprehensive school health education director position in the state department of education to implement and integrate efforts to prevent six categories of risk behaviours that lead to the nation’s leading causes of mortality and morbidity; and (3) provide direct support for the state department of education to help schools implement programmes to reduce the six categories of risk behaviours and to help people acquire knowledge, attitudes, and skills that are conducive to health.

The U.S. Comprehensive School Health Education Network, funded by the CDC, is a 58-member national network to develop and maintain state capacity to train teachers, school administrators, and other school personnel to promote and implement comprehensive school health education and HIV prevention at state and local levels. The Network includes 58 centers, one in every state and territory that has received CDC funds for comprehensive school health education. In the three recent school years, Network centers trained 363,709 teachers and school staff to provide comprehensive school health education.
To support the centers, CDC has a contract with Education Development Center, Inc. to conduct a variety of activities, including ongoing technical assistance; develop a system for supporting distinct regions of the Network; implement and continue to evaluate a process to disseminate effective research-based HIV prevention curricula/interventions through the Network; identify, develop materials for, and conduct training for that dissemination; continue exploring a process for linking Network training centers with institutions of higher education (IHEs); cooperate with training and demonstration sites to plan state-education-agency-level training that complements Network activities; strengthen collaboration between funded local education agencies and the Network training centers in their states; continue collaboration with CDC-funded national organizations to coordinate shared objectives and activities; publish and disseminate a curriculum review and a curriculum implementation guide; develop a guide for school administrators offering approaches to equity and diversity for comprehensive school health education; and continue to develop strategies for promoting comprehensive school health education.

ANNEX 3: Case Studies from Around the World

Examples of school health programmes from all WHO regions are supplied.

Local

Cali, Colombia (PAHO)

Collaboration between community members, municipality administration, schools, and nongovernmental organizations is at the heart of the improvements made to schools (via a comprehensive school health programme), municipal facilities, and overall economic development in Aguablanca, an extremely poor section of urban Cali, Colombia. While the programme has not been systematically evaluated, the city has witnessed substantial improvement of social conditions: Nearly 70 percent of the population has access to basic public services, including sewers, water, electricity, and paved roads; 64 percent of schools have improved their sanitary facilities, school buildings, and classroom lighting; 65 percent of schools have an institutional plan; and the programme has developed an onsite training for teachers that involves them for at least three years. (142) The Carvajal Foundation, one of the lead institutions, created a series of social development programmes such as self-built housing, economic development such as promotion of entrepreneurial skills and
food shop management, using revenues from recycling programmes to finance street paving, primary health care, and development of educational services.

The majority of the academic projects are related to health, nutrition, environment, and validation of cultural practices and traditions. The programme focused on the following guidelines:

- enhancing children’s self-image and critical thinking
- reinforcing children’s reading and writing by compiling and showcasing their work
- turning schools into centers of community projection
- establishing solidarity among schools
- providing teachers with teaching skills
- providing school managers with basic administration skills
- improving the school’s physical conditions

District/State

**New South Wales, Australia (WPRO)**

In urban New South Wales, health education, personal development, and physical education have central roles in the school programme. The government school population is about 750,000 students and 60,000 employees in 2,200 schools. State education agencies have mandated that health education and physical education have set hours of instruction and schools are allocated funds for that purpose. The government has made it mandatory that all senior students (grades 11 and 12) receive at least 25 hours’ instruction on such issues as drugs and HIV/AIDS. Further, the state education system has mandated that all government schools are nonsmoking environments; that schools have a policy to handle critical incidents (natural disasters, traumatic incidents, and deaths/injuries to students or staff); that teachers must report instances of suspected child abuse; and that schools develop student welfare policies, programmes, and structures. The New South Wales Department of School Education employs psychologists who are based in secondary or primary schools. Pastoral care is also provided through such activities as peer support programmes. The state health department and local health units provide screening services, immunization for rubella, and use the schools as sites for target health campaigns.
Strengths, as identified by a case study, include collaboration between health and education sectors, reports and policies at state and national levels are being used to support projects at the local level, the state Health Promoting Schools Association has recognized the role it can play, personnel and financial resources are available through categorical funding of specific health issues, and current education department priorities, such as safe schools and community participation, are being used for health outcomes.

Barriers include lack of public understanding of the connection between health and education, lack of structural and organizational support to sustain innovations, the “checklist” approach to a comprehensive approach that ignores the role of organizational structure, professional barriers, hierarchic principles of organization in schools, lack of attention to teachers’ health, and the need to reach parents who are intimidated by the school environment.

National Strategy

Philippines (SEARO)

School health programme initiatives in the Philippines draw on the Philippine Constitutions, which declares health and well-being of the citizenry, especially the young, as a fundamental value of the nation. From this constitutional provision flows a plan for schools to comprehensively address children’s health: a vision, mission, policy directions, objectives, specific activities, programme components, coordinating mechanisms, and monitoring plan.

The Integrated School Health and Nutrition Programme aims to be responsive to the Philippines’ large population, limited and inequitably distributed resources, and high prevalence of ill health among schoolchildren, teachers, and other school staff. The programme reaches a school population of more than 15 million.

The programme is guided by the following policies: (1) Programme planning and implementation shall be directed to improve the health and nutritional status of the total school population; (2) school health services shall be geared toward the protection and maintenance of health through early diagnosis and treatment; (3) health, nutrition, and environmental education shall be integrated in curricular and cocurricular activities to influence the development of desirable health and food habits of students; (4) the teacher-child-parent (TCP) approach shall be institutionalized; (5) curriculum enrichment shall be a continuing concern; (6) applied nutrition shall be self-help and shall pursue actual
involvement of the school, the home, and the community; (7) school feeding shall aim at rehabilitation of the undernourished and a tool for values education; (8) self-reliance shall be a value to be enhanced by producing and utilizing indigenous crops or plants; (9) formal research and evaluation studies shall be the basic tools in measuring the impact of the programme; (10) intra- and interagency collaboration at all levels shall be strengthened; and (11) a continuing staff development shall be instituted.

The programme includes four components: health and nutrition services, health and nutrition education/instruction, healthful school living, and school-community coordination for health. The programme is managed by the health and nutrition center at the national or central level, headed by a director with 16 technical staff. They are supported by the National Executive and Technical Committees. A regional working committee on health and nutrition manages at that level. A network of management exists at the school level as well.

**Bahrain (EMRO)**

Bahrain's comprehensive school health education programme aims to help primary schoolchildren to develop self-reliance, problem-solving skills, and practices that will sustain their own health and well-being as well as that of their families and communities. In a decentralized programme that features national collaboration, a multisectoral task force works to integrate health topics into other subjects, follow-up the implementation, prepare resource materials, design evaluation tools, and monitor and evaluate the programme. The programme includes teacher training. All indicators of the programme, which started in 1989–90, show a highly significant improvement of knowledge, attitudes, and behaviour of pupils of primary schools regarding most common diseases. The programme covers 57.4 percent of primary schools.

**Regional Intercountry (EURO)**

The Commission of the European Communities (CEC) is participating in a regional strategy to improve school health programmes in Europe. The treaty that established the European Communities included objectives for protecting the health of people in Member States.

The European Network of Health Promoting Schools (ENHPS) is a joint project of the CEC, the Council of Europe (CE), and the World Health Organization's European Regional Office (WHO EURO). The objectives of the Network are to include health education in the curricula at
all grade levels in Member States, encourage cooperation among Member States, and support and disseminate the results of demonstration projects. The Network is organized at the international level by an International Planning Committee comprising representatives of CEC, CE, and WHO EURO. Each participating nation assures intersectoral cooperation between education and health authorities and establishes a national coordinator and a national support center. In each nation, approximately 10 schools are selected to participate. In each school, a school project manager and school project team are appointed. As of June 1995, 33 countries are members of the Network, with 4 still to join.
Selected WHO Publications of Related Interest

Price (Sw.fr.) / Price for Developing Countries

School Health Education to Prevent AIDS and Sexually Transmitted Diseases. A Resource Package for Curriculum Developers Issued Jointly by the WHO Global Programme on AIDS & UNESCO, 1995 (275 pages) 18. / 12.60

School Health Education to Prevent AIDS and Sexually Transmitted Diseases. WHO AIDS Series, No. 10, 1992 (v + 79 pages) 12.60

Accidents in Childhood and Adolescence. The Role of Research. edited by M. Manclaux and C.J. Romer, 1991 (xiii + 217 pages) 35. / 24.50

The Health of Young People. A Challenge and a Promise, 1993 (x + 109 pages) 23. / 16.10

The Narrative Research Method: Studying Behaviour Patterns of Young People by Young People. A Guide to its Use, 1993 (38 pages) 8. / 5.60


Health Education in the Control of Schistosomiasis, 1990 (61 pages) 11. / 7.70


Further information on these and other WHO publications can be obtained from Distribution and Sales, World Health Organization, 1211 Geneva 27, Switzerland.