
Abstracts and Reports



World Health Day 1994: Oral Health for a Healthy Life¹

The need to improve oral health—as demonstrated by persistently high levels of dental caries, gum disease, tooth loss, and associated health problems in much of the world—has provided ample justification for making oral health the subject of World Health Day 1994. Indeed, despite marked oral health progress in most industrialized countries, both oral diseases and treatment costs are rising in much of the developing world. This is significant, because general oral health has a direct bearing on personal appearance, self-esteem, proper nutrition, and overall health, especially in older people, whose numbers are rising fast in many countries.

World Health Day is marked by a number of observances held each year around the globe to commemorate the occasion on 7 April 1948 when the World Health Organization's Constitution was adopted. These observances include addresses by the Director-General and Regional Directors of WHO as well as presentations by experts on the health topic singled out for special attention.

In his message for 1994 the WHO Director-General, Dr. Hiroshi Nakajima, pointed up a particular need to strengthen

care for the elderly and prevent the oral health problems linked with age, while continuing preventive measures directed at children and adolescents. He also noted that despite the deteriorating situation in many developing countries, "oral diseases are not an inevitable corollary of development. We have the means to prevent this health and economic disaster. . . .

"In the countries where the situation is deteriorating, this trend must be checked by launching effective prevention campaigns. We must ensure that the adoption of new lifestyles and new eating habits does not lead to an increase in dental caries in populations that have always had healthy teeth. We must find ways of incorporating and encouraging traditional methods of oral hygiene which have proved their efficacy and which are inexpensive and culturally acceptable."

PAHO's Director, Dr. Carlyle Guerra de Macedo, also noted the appropriateness of the oral health topic in his 1994 World Health Day message. Dr. Macedo drew particular attention to the work of PAHO's well-established Oral Health Program—including promotion of salt fluoridation and integration of oral health into broader national health activities and planning.

Stressing the need for greater efforts, Dr. Macedo said that "in many ways, progress in oral health is lagging behind

¹Sources: (1) Pan American Health Organization. *World Health Day, April 7, 1994: oral health for a healthy life*. Washington, DC: PAHO; 1994. [Information packet]. (2) World Health Organization. *World Health Day, 7 April 1994: oral health for a healthy life*. Geneva: WHO; 1994. [Information packet].

progress in other health areas. Prevalence and incidence of caries, gum disease, and tooth loss, which leave the individual more susceptible to disease and nutritional problems, are still unacceptably high. PAHO has estimated that approximately 70% of the [regional] population under age 30 is in need of dental treatment, and this proportion is much higher among the poor and among rural residents; in short, among those who are also at the greatest risk of other diseases.

"We will respond to these challenges by focusing our efforts for the remainder of this decade on highly cost-effective, high-impact strategies to promote oral health. This will involve fostering national oral health policy development and marshalling resources to incorporate oral health into more national health programs.

"We will also strengthen our efforts to extend salt fluoridation to uncovered populations in the Region. Currently, a majority of people are still not covered by any type of fluoridation whether through salt or water, even though fluoridation is one of the most cost-effective preventive measures available to modern public health. Coverage costs only a penny or two per person per year, and as much as US\$ 250 of treatment costs can be saved for every dollar spent . . . Fluoridation is not only one of the most cost-effective interventions known; it is also one of the most sustainable, as the cost of one or two cents a year can be passed on to consumers of fluoridated products indefinitely."

More generally, "PAHO will continue to provide leadership in oral health in Latin American and the Caribbean . . . Through a renewed and expanded effort by governments and other partners in the Region and with the participation of communities, families, and individuals, we will indeed move toward our goal of 'oral health for all' by the end of this decade."

CARIES AND PERIODONTAL DISEASES

Written presentations issued for PAHO's observance of World Health Day reviewed various oral health problems including caries and periodontal diseases.

As noted by Dr. María R. Watson, dental researcher for the United States Department of Veterans' Affairs, dental caries is an infectious bacterial disease that occurs worldwide with varying intensity and that left unattended can become the leading cause of tooth loss. If one were to average the rates of decayed, missing, and filled (DMF) teeth found for children 12 years of age in each country of the Americas, the overall average rate would be quite high, on the order of 5.5 per child.

Generally speaking, an increasing caries prevalence in many developing countries seems strongly tied to urbanization and resulting dietary changes, including greater intake of carbonated drinks and sugars. However, there is also a strong, more general relationship between oral health and overall nutrition that goes beyond the well-known roles of sugars and starches in dental caries. That is because diet and nutrition also affect the physiology, development, and maturation of oral tissues—as well as the volume and quality of tissue products, such as saliva, that play a major role in preventing caries.

Periodontal diseases, associated like caries with bacteria in dental plaque, affect the supporting tissues that anchor teeth in place. Ranging all the way from inflamed gums (gingivitis) to rapidly progressive diseases attacking both soft and bony tissues, these pathologic conditions tend to be reduced by oral cleanliness. However, they can also be aggravated by certain actions, such as smoking. To date, findings from both developed and developing countries indicate that caries far exceeds periodontal disease as

a cause of tooth loss in both children and adults.

NURSING CARIES

A pattern of tooth decay found in infants and young children, nursing caries (also called "baby bottle tooth decay," "nursing bottle syndrome," and "bottle caries syndrome") can occur when infants or young children are put to bed with a bottle filled with formula or some other liquid containing sugar; are allowed to breast-feed at will during nap times; or receive pacifiers dipped in sugar or honey.

As noted by Linda M. Kaste of the United States Institute of Dental Research, nursing caries can produce severe decay, pain, and loss of primary teeth. Such primary tooth loss, in turn, can prompt crowding and malocclusion of the permanent teeth—because primary teeth help to reserve space needed by the permanent teeth and help guide them into place. Such guidance is less likely to occur properly if the primary teeth are missing at an early age. Children with nursing caries are also likely to have caries in their permanent teeth, perhaps due to crowding or poor placement of the latter (making them harder to clean) or to persistence of improper feeding habits following eruption of the permanent teeth.

Limited studies of nursing caries in the Caribbean and the United States have produced widely varied findings. One survey, in Antigua and Barbuda nursery schools, found 4.6% of the children had nursing caries; another, in Saint Thomas (U.S. Virgin Islands), found 12% of a group of low-income preschool children had nursing caries; and a third, in Saint Lucia, found nursing caries in 25% of a group of children attending clinics for immunization. Similarly, while most studies conducted in the United States have found nursing caries prevalences ranging

from 1% to 5%, certain surveys focusing on particular population groups have found much higher rates. These diverse data strongly suggest that more information is needed about the extent of nursing caries in the Americas.

ORAL AND PHARYNGEAL CANCER

Cancers of the oral and pharyngeal mucosas are fairly common. Indeed, oral cancers rank as the sixth most frequent cancers in the world, and there are places (including certain urban areas of Brazil) where oral and pharyngeal cancers are the most common or one of the most common cancers among males.

These cancers generally manifest themselves as tumors, white or reddish patches on the mucosa, or ulcerations. Precancerous lesions, some of which can become malignant, typically appear as white or red spots or patches.

According to Roberto Beltrán of the Cayetano Heredia University of Peru and Eugenio Beltrán-Aguilar of the United States Centers for Disease Control and Prevention, about 75% of all oral and pharyngeal cancers are attributed to chewing or smoking tobacco. The practice of reverse smoking (putting the burning end of a cigarette inside the mouth), which is common in certain Caribbean populations, heightens the risks by strongly encouraging cancer of the palate.

Excessive use of alcohol, especially consumption of beverages with a high alcohol content, also increases the risk of oral and pharyngeal cancer. Furthermore, combining alcohol and tobacco has a synergistic effect, so that those who smoke and drink are at much higher risk of oral and pharyngeal cancer than those who only smoke or only drink.

Most of these cancers are fatal. Although the degree of danger varies with the anatomic site, about half of all pa-

tients with oral or pharyngeal cancer die within 5 years of diagnosis.

In general, the less the lesion has spread at diagnosis, the better the prognosis. Recently, there has been growing emphasis on visual and tactile self-examination of the mouth. However, regardless of who does the initial examining, all growths, lesions, or ulcers present for more than 7 days should be examined by a dental professional.

NOMA

This term, derived from the Greek word "nomen" (meaning "to devour"), refers to a disease of extreme poverty found mostly in Africa but also in parts of Asia and Latin America. Noma typically afflicts malnourished people with poor oral hygiene, most commonly after an attack of measles or (less often) after scarlet fever, chickenpox, or a bout of malaria. Nutritional deficiencies most often associated with it include vitamin and protein deficiencies and iron deficiency anemia.

While noma occurs almost exclusively in children under 6 years old, it is by no means an occasional problem confined to a few rare cases. Indeed, it seems likely that the number of children worldwide who fall prey to noma is on the order of several hundred thousand per year.

According to a WHO report on this subject,² "the great majority of cases begin with ulcers of the gums, a periodontal condition that takes a wide variety of forms. If the condition is detected at the gingival stage, it can be prevented from progressing towards noma by simple local disinfection procedures and by administering common antibiotics.

"If not treated, it can progress towards noma proper through transmission to the

soft tissues in contact with periodontal lesions.

"In this very painful stage, the cheeks or lips begin to swell, edema appears, and the patient's general condition deteriorates. In a few days the swelling becomes enormous, and a blackish furrow marks where loss of substance is occurring. The gangrenous process sets in and, after the scab falls off, leaves a gaping hole in the face.

"If the patients do not reach hospital, the mortality rate is horrific, on the order of 80%; most victims die of septicemia.

"The survivors suffer the twofold affliction of disfigurement and very frequent functional sequelae. The scar tissue restricts jaw movement, and the loss of substance is not always confined to the soft tissues. The lesion may have progressed into the nearby bone, causing loss of part of the maxilla, mandible, or even other facial bones.

"The child who survives will never again be able to speak or eat normally."

A five-point plan for controlling noma, cited in the report, was adopted by WHO and a number of individuals and associations at a meeting in Paris in 1992. The five points call for prevention and early detection, emergency care service, etiologic and epidemiologic research, treatment of sequelae, and opening of a complex care center. However, as the report points out, the basic need is to create far greater awareness of the extent of the problem. "Energies and resources need to be mobilized far beyond the dental profession itself, which has a key role to play in many areas but which cannot cope alone with all aspects of the problem."

HIV, AIDS, AND INFECTION CONTROL

Another grave problem with implications for oral health care is that of AIDS. At present the disease has reached epi-

²World Health Organization. *Noma, a little-known public health problem*. Geneva: WHO; 1994. (Document WHD94.6).

demic proportions throughout the Americas. As of mid-1993 WHO estimated that 400 000 AIDS cases had occurred in the Region (some 240 000 of them in Latin America and the Caribbean), and that an additional 2–2.5 million people (roughly half of them in Latin America and the Caribbean) were infected with HIV.

As noted in a report by William G. Kohn and Jaime S. Brahim of the U.S. National Institute of Dental Research, oral health care has a bearing on this matter, because studies have found oral lesions to be among the first opportunistic infections appearing after the immune system has been damaged by HIV. "The oral cavity is susceptible to HIV-related diseases, and candidiasis, hairy leukoplakia, herpes simplex, Kaposi's sarcoma, lymphoma, and squamous cell carcinoma, among others, have all been linked with the disease." Hence, oral health care providers can help with the early diagnosis of HIV—which has important implications for limiting further transmission, as well as for prolonging and improving the quality of life of those with AIDS.

The AIDS pandemic has also raised international interest in infection control procedures employed by the dental profession. Such interest seems justified, since dental workers commonly operate in a pathogen-rich, blood-contaminated environment with sharp instruments, and since the only documented transmission of HIV from a health care provider to patients involved a U.S. dentist in Florida and several of his patients.

However, the pathogen of greatest justifiable concern on this score may not be HIV but the hepatitis B virus (HBV). While HIV is relatively fragile (easily destroyed by heat, chemical sterilization, and most disinfectants), HBV is tough. Resistant to some sterilization techniques, it can survive for prolonged periods on operating surfaces or under the fingernails of health care workers. This presumably explains why some 12 000 health care workers in

the United States develop new HBV cases every year, 700–1 200 become HBV carriers, 500–600 are hospitalized, and 200–300 die. In general, hepatitis B (and also tuberculosis) are probably far better models for infection control programs than HIV, even though they lack the drama evoked by the AIDS crisis.

Because the carriers of these and other infectious diseases often show no symptoms and are unaware of their condition, universal infection control precautions seem in order. The basic elements of universal infection control include vaccination of health workers and staff members against locally endemic diseases; procurement of a thorough medical history from each patient before treatment; use of gloves, masks, protective eyewear, protective clothing, and other "barriers"; and sterilization of all invasive instruments.

TWO ALTERNATIVE MEASURES AGAINST CARIES

Salt Fluoridation

To help prevent caries, which remains the world's most widespread oral health problem, a number of Latin American and Caribbean nations have embarked on fluoridation of household or "table" salt as a worthwhile alternative to fluoridation of water. Both caries prevention measures are highly effective, widely used, and very cheap, and the results of both are easy to monitor and evaluate. In general, the method most suited to a particular country or situation will depend on local conditions, the human and economic resources available, education, community acceptance, and national policies.

New Filling Technique

A new method for filling carious teeth known as Atraumatic Restorative Tech-

nique offers a way of dealing with cavities that seems well-suited to people with limited access to dental care. The technique uses dental hand instruments and glass ionomer, a recently developed filling material that adheres tightly to teeth and so bypasses the need for carious areas to be cut and shaped with a dental drill. For this reason the method does not require the electricity and clean piped water demanded by traditional dental power drills and equipment. Instead, the diseased areas of teeth with small caries cavities are scraped out and removed with hand instruments, and the cavities are filled with glass ionomer—which besides affording physical protection can also have a preventive effect.

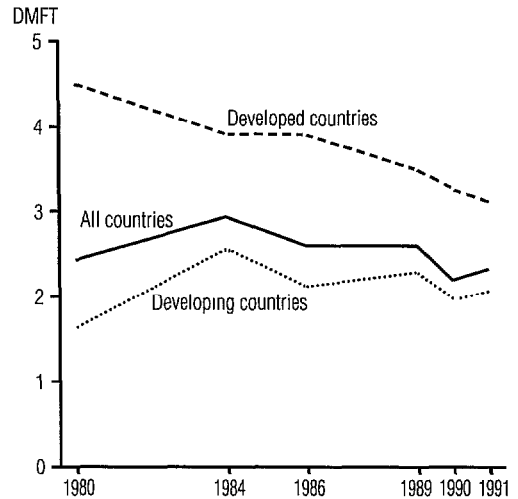
The main drawback of this method, which is well-suited to use in both developed and developing countries, is that it cannot deal effectively with large carious lesions. Therefore, it must be supported by a community organization that gets people to seek periodic examinations instead of demanding care only when they have dental pain—at which point the carious lesions are too big for effective treatment by this method.

CARIES PREVENTION

In general, throughout the developing world the recent trend has been for caries' prevalence to increase except where prevention programs have been established. Despite this, the data in Figure 1 (indicating global averages of DMFT—decayed, missing, and filled teeth—among children at age 12) suggest a dynamic balance in the developing countries since 1980 that gives grounds for guarded optimism, but that also demonstrates a clear need for more prevention.

Recent progress in the developed world has depended on introduction of fluoride into drinking water or salt in some countries, widespread use of fluoride tooth-

Figure 1. The mean global DMFT (decayed, missing, or filled teeth) at age 12 from 1980 through 1991, as calculated by the WHO Oral Health Unit.



Source: World Health Organization. *Oral diseases: prevention is better than cure*. Geneva: WHO; 1994. (Document WHD94.2).

pastes, effective nutritional advice (no sweets between meals, etc.), and promotion of oral hygiene. Moreover, it has also been found in the developing world—in places as widely dispersed as Bulgaria, French Polynesia, and Thailand—that wherever community prevention programs are set up, caries stops advancing.

Aside from water and salt fluoridation, the preventive oral hygiene measures cited above use simple techniques, cost little, and are well suited to promotion and application at the primary care level. Thus, as a result of progress made over the last 25 years, the developing countries now have the knowledge and means to prevent many of the caries-related problems that the developed countries have had to deal with and are still dealing with at a very high cost—assuming that the political will exists to give priority to prevention.