

ORAL HEALTH FOR A HEALTHY LIFE

NOMA, A LITTLE-KNOWN PUBLIC HEALTH PROBLEM

HUNDREDS OF THOUSANDS
OF CHILDREN DIE EACH YEAR

THOUSANDS OF SURVIVORS ARE HANDICAPPED
AND DISFIGURED FOR LIFE

THE UNHEEDED DEATHS AND UNTOLD SUFFERING CAUSED
BY NOMA ARE MOSTLY AVOIDABLE

From the past ...

In the history of human diseases, noma dates back to ancient times. It is sometimes referred to as "gangrenous stomatitis" or "cancrum oris". The name most frequently used, "noma", is derived from the Greek "nomen" which means "to devour". This name is believed to have been proposed in 1762 by Lund, the first to give a detailed clinical description of the disease. According to the researches of Grappin and Le Coustou (1), however, the disease was known to Hippocrates, Galen, Celsus and Aretaeus of Cappadocia.

In Europe, it is referred to in writings of the 18th century and throughout the 19th century in France and Britain. Cases of noma in the United States of America were reported in 1826 and 1848.

In the 20th century, noma has disappeared completely from the developed countries, with the noteworthy exception of the many cases reported in Nazi concentration camps (2), especially in Auschwitz and Belsen.

These facts, brought to light by a retrospective study of the etiology and epidemiology of noma, show that it should not be regarded as a "tropical" or "African" disease, as is still all too often the case. It can strike at any community without distinction of race or climate, wherever extreme poverty and malnutrition are present.

... to the reality of today

Noma today is yet another tragedy of poverty and underdevelopment.

The map WHO has compiled of "noma in the world today" is still very incomplete. It shows that most of the countries reporting cases are in Africa, but Asia and Latin America are by no means exempt.

This map, drawn up on the basis of bibliographical studies and reports by local correspondents, can be used to draw up a definitive list of the countries where noma is present **today**. On the other hand, it gives



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no quantitative indication in terms of either prevalence or incidence. Alarming reports have in fact been received from various African countries that noma may be on the increase.

Since no epidemiological study of noma has been conducted, it is difficult to obtain a realistic picture of the extent of the problem. It is extremely difficult to catalogue cases. Most occur in rural areas, well away from hospitals. The disease progresses so rapidly and mortality is so high, with reported rates ranging from 70% to 90%, that very few patients reach treatment facilities.

On the basis of bibliographical studies, accepted knowledge of the etiological factors, documented reports and the expertise of a number of internationally-acknowledged specialists, it has been possible to construct an arithmetic model for estimating the incidence of noma in the various regions concerned.

Contrary to an opinion widely held in the medical world, noma is not an occasional problem confined to a few rare cases.

It is likely that the number of children worldwide who fall prey to noma before the age of 6 years is of the order of several hundred thousand per year.

A retrospective study of referred cases has been launched in a number of countries, permitting calculation of the possible annual incidence. The first results for one West African country, unfortunately, fully confirm the figure of 2 cases per 10 000, the most pessimistic hypothesis put forward for the region.

A disease of early childhood

Although some cases of noma have been reported in adults, they are fairly rare. The disease occurs almost exclusively in children, most of them under six years of age, with a peak incidence between 3 and 4 years. The weaning period is regarded as extremely critical.

The disease occurs in persons weakened by malnutrition, in most cases it follows an infectious or parasitic disease, most commonly measles but also scarlet fever, chickenpox and, occasionally, a malaria attack. The nutritional deficiencies most frequently observed are vitamin and protein deficiencies and iron deficiency anaemia.

It is now generally accepted that noma results from a combination of many factors, chief among which are malnutrition and an infectious episode against a background of poor oral hygiene. Acute necrotizing ulcerative gingivitis is regarded as one of the etiological factors of noma, although the mechanisms whereby some cases develop into noma and others do not have not yet been clarified.

From gum ulcers ... to noma

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, oedema appears and the patient's general condition deteriorates. In a few days the swelling become 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, of 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.

What can be done?

Noma is a disease of extreme poverty. Does that mean we must wait until the socioeconomic conditions of the countries concerned improve?

Nowadays we know how to prevent, treat, cure, and to some extent, repair the sequelae of noma.

But repair is a lengthy, difficult and painful process and so expensive that very few can afford it.

The means can be found to prevent the suffering, disfigurement and death of a considerable number of children throughout the world.

In November 1992, at a meeting in Paris convened by WHO and Aide Odontologique Internationale, a number of individuals and associations (3) adopted a 5-point plan for controlling noma:

- prevention and early detection
- emergency care service
- etiological and epidemiological research
- treatment of sequelae in other countries
- opening of a regional centre for complex treatment in West Africa.

There is an urgent need for each country concerned to set up a noma control plan, giving priority to early detection and immediate treatment. These countries need to be provided with technical and material support, so that they have the necessary drugs and

food supplements for patients; they must be helped to organize the training of health personnel in the villages and primary health care centres. Within the existing social and health structures, there is a need to examine the children at risk and to inform mothers and pregnant women, not to mention the village leaders.

Finally, there is a need to support the individuals and associations who are fighting in the field, organizing transport of patients abroad for operations on the sequelae of the disease, and encouraging and supporting the setting-up of treatment services on the spot.

Nothing can be done without creating 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 cannot cope alone with all aspects of the problem.

On the occasion of World Health Day, WHO makes a solemn appeal to everyone - doctors, public health leaders at all levels, public and private partners, journalists - to support the international programme for noma control in all possible ways.

- (1) *This article draws extensively on Grappin, G. & Le Coustou, L. Noma. In: Encycl. Med. Chir., Paris, Stomatologie 6, 1978: 22045 L-10.*
- (2) *Dawson, J. Cancrum oris. British Dental Journal, 1945, 79, No 6, : 151-157.*
- (3) *This meeting was attended by representatives of Burkina Faso, Côte d'Ivoire, Madagascar, Niger, Togo, Médecins du Monde, Chaîne de l'espoir, Sentinelles, Geneva Cantonal Hospital, and the French Armed Forces Health Service.*

CORRIGENDA

Page 1, column 2, line 17:

Delete: used to draw up a definitive list of the countries...

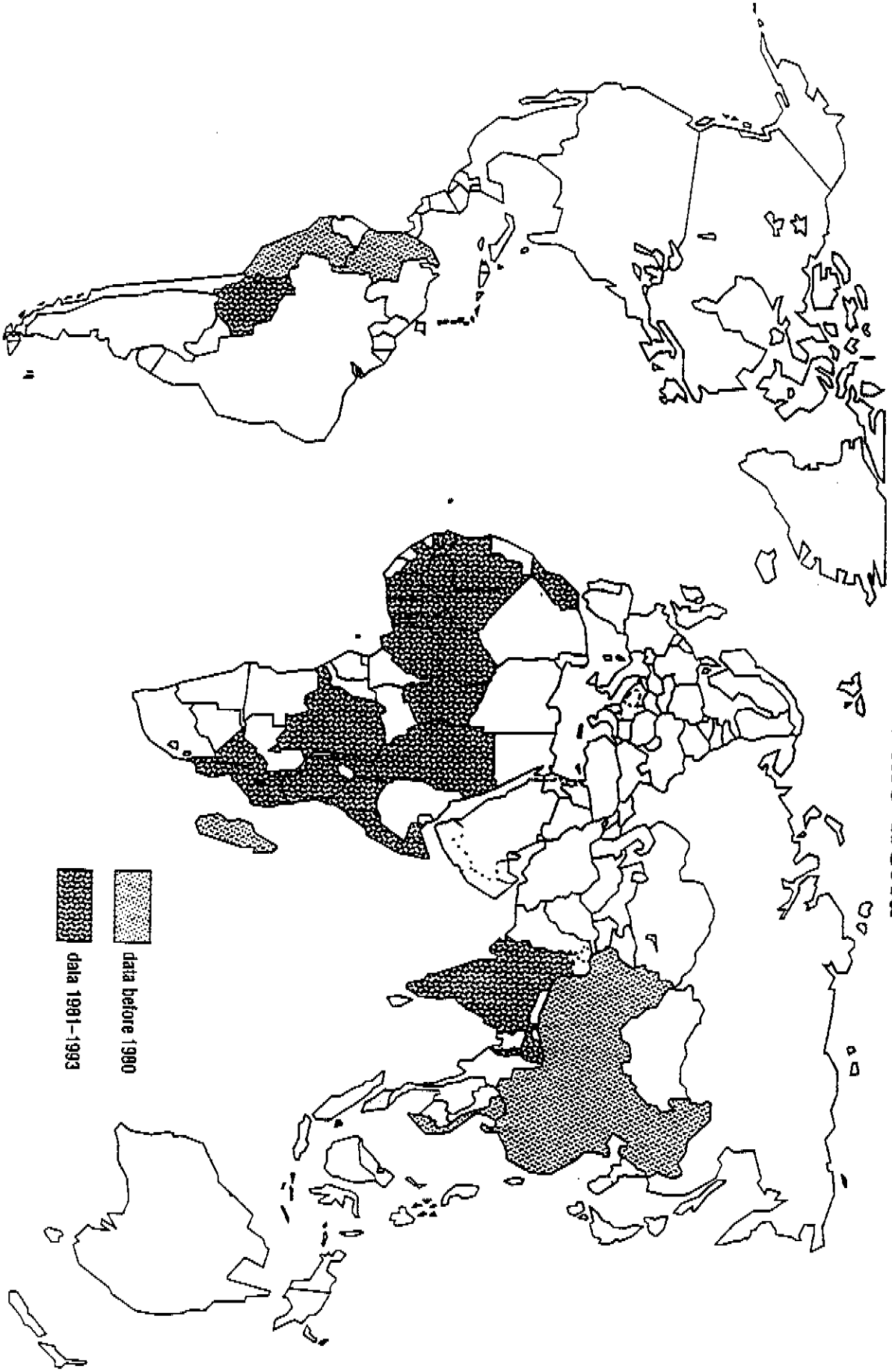
Insert: used to list the countries...

Page 2, column 1, line 30:

Delete: most pessimistic hypothesis...

Insert: most conservative hypothesis...

Noma in the world



data before 1990
data 1991-1993