

## Tanzania moves against iodine deficiency

Tanzania has reached the implementation stage of its iodization programme. The aim is to eradicate iodine deficiency disorders well before the year 2000.

In comparison with bacterial and parasitic diseases, endemic goitre, which is caused by iodine deficiency, hardly constitutes a serious health problem. However, iodine deficiency can have much worse consequences: impaired brain function in the fetus, newborn baby, and child, which may significantly hinder social and economic development; still births; and mental retardation, dwarfism, and neurological disorders contributing to the congenital iodine deficiency syndrome, otherwise known as endemic cretinism.

We present below our experience of a programme for the control of iodine deficiency disorders in Tanzania, which, being based on the model of Thilly & Hetzel (1), comprised the following stages:

- collection of epidemiological data on the prevalence of goitre and cretinism;
- analysis of data with a view to giving information in the mass media and planning an iodization programme, with the involvement of health professionals, the affected communities, administrators, and politicians;
- programme planning and obtainment of political agreement;

- programme implementation; and
- impact monitoring.

### The Data

Epidemiological data on iodine deficiency disorders in Tanzania refer almost exclusively to endemic goitre. Hospital records show an increasing incidence of goitre and thyrotoxicosis since 1923. In 1952 it became clear that endemic goitre was widespread in the southern highlands, and an article on this subject published by Latham (2) in 1965 sparked off considerable debate in the medical profession and in parliament. In 1971, almost 3000 patients received curative treatment involving surgery and the use of Lugol's solution. By 1972, plans were being made for salt iodization. Goettlieb (3) tried to define the problem of goitre by analysing hospital records, and designed an improved salt iodization programme; unfortunately, this was not implemented because of a lack of administrative and technical preparation. Thus it became clear that proper intersectoral arrangements and technical know-how were needed before a programme of prevention could be embarked upon.

In 1978 the Tanzania Food and Nutrition Centre convened an intersectoral meeting, and this led to the appointment of an expert committee on the control of goitre. When the committee met in 1979 it recommended short- and long-term preventive measures and laid down

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the responsibilities of certain institutions in this matter. A costed salt iodization plant was proposed for completion within two years.

Following another recommendation of the expert committee, a goitre prevalence survey was carried out in 1980–81. It covered some 56 000 children in 200 primary schools (4). The results indicated gross goitre rates ranging from 0.5% to 88%, and visible goitre rates ranging from 0% to 20.5% in different areas of the country.

The data have been published in local and international journals and have been described in newspapers and radio broadcasts. Various seminars and workshops have dealt with iodine deficiency disorders, and the survey results were discussed in the communities concerned. As a consequence of our efforts to disseminate information, we have had many requests for control programmes from people in the most affected areas.

### The Programme

Political approval for a national iodization programme was given in 1972. Some years later, a national implementation committee was set up, comprising representatives of the Ministry of Health (which provided the chairman), the Tanzania Food and Nutrition Centre (providing the executive secretary and programme coordinator), the State Mining Corporation, the Tanzania Bureau of Standards, the National Scientific Research Council, the Treasury, and the Tanzania Industrial Services Corporation; other bodies may be brought in if the need arises.

Aid has been provided by the Netherlands Government, the Swedish International Development Authority, the United Nations Children's Fund, and the World Health Organization, and donor agencies are invited to attend the meetings of the implementation committee as observers. The Netherlands Government and the Swedish International Development Authority have undertaken to support the installation of salt iodization machinery. Prevention will depend on the use of iodinated oil in the short term and on the use of potassium iodate in the long term. A timetable of action is being worked out by the

implementation committee. It is anticipated that the main problems will be personnel training, materials, and transport.

### Implementation

Pilot schemes were implemented in the districts of Njombe and Mbeya Rural, which the survey indicated to have very high goitre rates. In the village of Wangama (Njombe district), coarse salt containing potassium iodate at 32 parts per million was distributed after a study had been made of salt distribution and consumption and of the goitre situation. A survey of all primary school children 10 months before the start of the salt iodization trial showed gross and visible goitre prevalence rates of 92.5% and 60.9% respectively. There was a clear decrease in goitre prevalence during the distribution of iodized salt. Thus for visible goitre the figures after 6 and 12 months of iodine supplementation had fallen to 30.4% and 6.0% respectively. No adverse effects were reported.

Urinary iodine levels before the start of treatment were not significantly different from those measured after 1 year of supplementation, probably because heavy rains prevented the delivery of supplies towards the end of the period in question. In fact, urinary iodine levels were unusually high for an area of severe endemic goitre, indicating either analytical error or the presence of a goitrogenous factor.

In a trial with iodized oil injections in the Ukinga and Uwangi areas and in the Iringa district, where the prevalence of goitre varied

**There was a clear decrease in goitre prevalence during the distribution of iodized salt.**

from 65% to 96.5%, the level of thyroid-stimulating hormone in the blood was lower in newborn babies of treated mothers than in those of untreated mothers. Iodine supplementation in the same form led to a significant decrease in

elevated thyroid-stimulating hormone levels in schoolchildren and young women. The use of iodized oil is a good alternative where problems of salt distribution are likely. □

## REFERENCES

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3. GOETTLIEB, M. *The problem of goitre in Tanzania*. University of Dar es Salaam, Economic Research Bureau, 1973 (report No. 73.6).
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### *Third World cancer epidemic predicted*

*With regard to the debate about the role of preventive measures and therapy in cancer control, the possibility of preventing tobacco-induced cancers seems not to have been exploited very effectively, and has had little, if any, overall impact in reducing mortality from lung cancer. In addition, it would appear that such factors as non-specific life-style changes have been the major cause of the decline in stomach cancer. Early diagnosis through screening has certainly been a major factor in the decline of mortality for one site, namely cervical cancer. The impact of therapeutic treatment on overall mortality from cancer is less clear.*

*What is clear, however, is that the consequences of population aging for cancer control programmes are substantial. The lessons learned from this analysis have obvious implications for global cancer control strategies. In much the same way as observed for the developed countries, cancer will increase in the Third World too. Indeed, with continued increases in life expectancy in many developing countries (approaching 70 years in a number of cases), higher consumption of tobacco and further successes in the conquest of infectious diseases, it can be safely predicted that there will be an epidemic of cancer in the majority of the developing countries by the year 2000.*

— *Weekly epidemiological record*, **60** (17): 128-129 (1985).