Controlling iodine deficiency in Italy

Fabrizio Aghini-Lombardi and Lucia Antonangeli
ICCIDD West-Central Europe, Department of Endocrinology, University of Pisa, Italy

An Italian law “Final Arrangement for the Prevention of Endemic Goitre and other Diseases of Iodine Deficiency” became effective in November 2005. This law requires retailers to only make iodized salt available on the shelf. Non-iodized salt should be available behind the counter, but it has to be specifically requested by the customer. The law also foresees the possibility of using iodized salt in the food industry and in communal eating areas. Following application of the law, to activate a monitoring program, the Italian Parliament established at the Higher Institute of Health a National Observatory for Monitoring Iodine Prophylaxis (OSNAMI). OSNAMI will monitor and ensure the effectiveness of the IDD prevention program.

National Observatory for Monitoring Iodine Prophylaxis (OSNAMI)

OSNAMI will operate in tight contact with the National Committee for The Prevention of Goitre. For many years, this Committee has dealt with the consequences of nutritional iodine deficiency. The institution of OSNAMI foresees the introduction of a Coordinating Activity Group which includes various professional figures (thyroid specialists, biologists, chemists, nutritionists and epidemiologists). This group will be responsible for programming and coordinating work on the effectiveness of iodine prophylaxis. They will monitor variations in the frequency of thyroid diseases in the population, particularly cases of hyperthyroidism resulting from general use of iodized salt. They will also develop a campaign for direct information on iodized salt to the general population as well as doctors and health personnel.

Indicators of the effectiveness of iodine prophylaxis

In agreement with the guidelines of WHO, UNICEF, and ICCIDD, monitoring will be based on the following indicators:

1. Sales trends of iodized salt

Sales trends of iodized salt will be evaluated by collecting national sales data submitted to the Higher Institute of Health by the salt producers. The consumption of iodized salt should be >90% of total salt consumption for food use.

2. Iodine content in salt packages on the market

Verification of the iodine content in salt on the market will be carried out at the National Centre for Food Quality. Samples of the salt will be taken at the producers, and also at points-of-sale in areas pre-selected for epidemiological research to verify the iodine content and variation at the household level.
3. Urinary iodine concentration (UIC) in representative samples of school-age children
For determination of UIC, each child attending the selected school will provide a morning spot urine sample. The criteria for defining effectiveness will be an average UIC of at least 100 µg/L, with at least 50% of values >100 µg/L and not more than 20% with a value <50 µg/L.

4. TSH concentration in newborns
Data on neonatal TSH will be collected through the network of laboratories already participating in the National Register of Congenital Hypothyroidism. Effectiveness of prophylaxis program will be judged by an incidence of less than 3% of newborn TSH values >5 mU/L.

When financial resources are available, thyroid volume by ultrasound will be evaluated. A prevalence of goiter less than 5% in school-age children will be used to define the effectiveness of the IDD program.

Monitoring Plan
For the surveys in the schools, extra-urban “sentinel areas” will be identified in each region where the presence of iodine deficiency and endemic goiter has previously been documented. In each “sentinel area” a referral “urban area” should be specified. In both the sentinel and urban areas, a number of schools and children representing the general population of that region will be randomly selected. Epidemiological evaluation will include data on the median UIC in schoolchildren and TSH values in newborn screening.

The data from the surveys will be collected at regional centers in order to maximize the flow of information from the periphery to the Higher Institute of Health. To reduce variations between laboratories, four reference laboratories have been identified. In the first stages of the monitoring program, effectiveness studies will be done every two years; subsequently, they will be done every 3-5 years.

Surveillance of adverse events and circulation of information
The program will monitor the frequency of new cases of hyperthyroidism following general use of iodized salt. Surveillance will include use of anti-thyroid drugs in collaboration with organizations appointed for drug control by the Italian Agency of Drugs (AIFA). For new pathology cases, general practitioners will be involved. Surveillance of congenital hypothyroidism will be done by the Higher Institute of Health through coordination with the National Register of Congenital Hypothyroidism. Activity of OSNAMI will be presented annually to the Ministry of Health. There will be regular meetings between participants of the monitoring program to discuss potential interventions to improve the iodine prophylaxis program.