Iodine Deficiency Disorders in Thailand: Future Prospects

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Iodine Deficiency Disorders (IDD) in Thailand can be traced back to ancient times. Goitre was recognized by villagers many years ago, the historical evidence of which can be seen in ancient mural paintings at Wat Phumin, Nan Province that depict a crying woman with goitre.

The first reports of IDD in the northeastern and northern regions of Thailand, which were situated in the countries’ goitre belt, appeared in 1953. In 1965 a pilot project of salt iodisation was initiated in Phrae, and in 1968 was expanded into a national programme relocated in Bangkok. In 1988, a survey of IDD incidence was conducted in 14 provinces of the upper north, as well as Loei province in the northeast, which revealed a first reported IDD prevalence rate of 12%.

In 1989 the Ministry of Public Health launched a Campaign Program for IDD Control including 14 provinces in the north and Loei province in the northeast. In 1991, the IDD survey was expanded to 24 provinces in the northeastern and the central region, which revealed that these provinces were IDD endemic areas as well. Consequently, the campaign program for IDD control was expanded to cover these provinces in 1993. Subsequently, in 1995, the area of operations was increased to nationwide coverage.
The goitre rate in school children has been used as an IDD indicator to assess the IDD situation in Thailand.

**Strategy**

1. **Salt Iodisation**
   Iodised salt is a major measure to increase iodine intake. The Food and Drug Administration under the Ministry of Public Health has passed the Notification of the Ministry of Public Health No.153/1994, that edible salt must have an iodine content of not less than 30 ppm.

2. **Iodised drinking water**
   Iodised drinking water is a minor measure to increase iodine intake in people in endemic areas. This is done by dropping 2 drops of concentrated iodine solution into 10 litres of drinking water to produce 200 micrograms in 1 litre of drinking water.

3. **Iodised oil capsules**
   The iodised oil measure has been implemented in remote areas with over 20% IDD prevalence, which have difficulty in accessing to iodised salt and drinking water. Iodised oil is distributed only to target group populations including women of reproductive age, pregnant women and school children.

4. **Iodine fortification in other foods.**
   4.1 Iodised fish sauce
   4.2 Iodine fortification in instant noodles
   4.3 Iodine fortification of other food items, e.g. dried banana and chicken eggs

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**Table 1 IDD situation from 1989-1997**

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of province surveyed</th>
<th>Prevalence (%)</th>
<th>Prevalence (%) of first 15 provinces surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>15</td>
<td>19.3</td>
<td>19.3</td>
</tr>
<tr>
<td>1990</td>
<td>15</td>
<td>16.8</td>
<td>16.8</td>
</tr>
<tr>
<td>1991</td>
<td>39</td>
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<tr>
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<td>39</td>
<td>12.2</td>
<td>13.5</td>
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<tr>
<td>1993</td>
<td>57</td>
<td>9.8</td>
<td>13.0</td>
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<td>1994</td>
<td>57</td>
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<tr>
<td>1997</td>
<td>75</td>
<td>3.3</td>
<td>5.0</td>
</tr>
</tbody>
</table>
5. Communication Campaign
To strengthen the knowledge and awareness of IDD, a Communication Campaign has been carried out continuously since 1989. Printed materials and media have been produced and distributed to the public as part of this campaign.

6. Cooperation among relevant organizations
The National Committee on IDD was established in 1991 with HRH Princess Maha Chakri Sirindhorn as Chairperson. The committee members comprise high ranking officials and distinguished persons from relevant agencies and NGOs.

The following are some achievements accrued through the close collaboration of these groups:

- Iodised machine produced by the Technical College under the Department of Vocational Education of Ministry of Education.
- Financial and material support from Redd Barna and UNICEF.
- IDD control in hilltribes under the Princess Mother Medical Volunteer Foundation.
- IDD control in school children in Border Patrol Police schools through the Royal Initiatives of HRH Princess Maha Chakri Sirindhorn.
- Instant noodles fortified with iodine, vitamin A and iron.
- National Campaign on IDD Elimination on the occasion of the 50th Anniversary of His Majesty the King’s Accession to the Throne, organized jointly by Ministry of Interior, Ministry of Public Health and the Thai Red Cross Society.

Future Prospects

To maintain this achievement several measures must be considered and implemented:

1. Salt iodisation must remain as the major measure of IDD control program. However, the production and sale of iodised salt must be increased. All salt producers must produce iodised salt to insure full coverage in all areas.

The Ministerial notification may be modified to be able to control and standardize the quality of iodised salt production and packaging.

2. Other supportive measures.
Research and development should continue to be conducted in order to expand methods of fortifying iodine in other foods.
Moreover, studies of iodine fortification in animal feed must be strengthened since people can obtain iodine from fish and the meat and milk of animals fed with iodised salt.

3. Cooperation among relevant agencies.
Cooperation among relevant agencies is essential for the success of the IDD program and should be continued and encouraged.

Surveillance of IDD is established by the application of the total goitre rate as a parameter. However, other indicators, e.g., coverage of iodised salt, quality of iodised salt on sale in the market, rate of implementation of other iodine vehicles, TSH level in newborn, urine iodine levels in risk groups, and ultrasonic volumetry application, must be applied as IDD parameters.

The topmost aim of the IDD program is to reinforce the need for sustaining IDD elimination to ensure that IDD will not be a public health problem any longer. To achieve this aim, various measures, both major and supportive, must be effectively implemented. An effective and sensitive monitoring system must be applied for accurate and prompt IDD assessment. Close cooperation from relevant agencies is needed so that coordination and operation will be harmonious and in the same direction to achieve the ultimate goal together.

REFERENCE