

**INDEPENDENT SURVEY
EVALUATION OF UNIVERSAL SALT
IODISATION (USI)
IN MADHYA PRADESH**

By

International Council for Control of Iodine Deficiency Disorders
(ICCIDD)

Centre for Community Medicine
All India Institute of Medical Sciences
(AIIMS)

New Delhi – 110 029, India
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The International Council for Control of Iodine Deficiency Disorders (ICCIDD) is a not-profit non governmental organization dedicated to the sustainable elimination of Iodine Deficiency Disorders (IDD) throughout the world. The ICCIDD was granted an official status as an International NGO at the 47th World Health Assembly held in Geneva in 1994. It's activities are supported by donations/grants from the Australian Agency for International Development (AusAID), the Canadian international Development Agency (CIDA), the Micronutrient Initiative (MI), the Netherlands Ministry for Development Cooperation, the Swedish International Development Agency (SIDA), the United National Children's Fund (UNICEF), the United States Agency for International Development (USAID), the World Bank, the World Health Organization (WHO), and others.

TO THE GLOBAL PARTNERSHIP DEDICATED TO THE ELIMINATION OF IODINE DEFICIENCY DISORDERS

An Ancient Scourge of Mankind

*The People of the affected countries
The Government of the affected countries*

The Salt Producers of each country

*The International Agencies-especially
The World Health Organization
The United Nations Children's Fund
The World Bank*

*The Micronutrient Initiative
Program Against Micronutrient Malnutrition*

Kiwanis International

*The International Expert Network of
International Council for Control of
Iodine Deficiency Disorders
(ICCIDD)*

*The Bilateral Agencies especially
The Australian Agency for International Development
The Canadian International Development Agency
The Netherlands Ministry for Development Cooperation
The Swedish International Development Agency
The United States Agency for International Development*

**We would like to dedicate our efforts to the memory of James P. Grant who
was Executive Director of UNICEF for 15 years until his death in January,**

1995

and

to the children of Madhya Pradesh.

**They have inspired us to continue working towards the goal of sustaining
the elimination of IDD**

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Government of Madhya Pradesh
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All India Institute of Medical Sciences, Delhi
Centre for Community medicine
Department of Human Nutrition
Department of Paediatrics

Indian Council of Medical Research (ICMR), Delhi
National Institute of Nutrition (NIN), Hyderabad
Institute of Nuclear Medicine and Allied Sciences (INMAS), Delhi
Sanjay Gandhi Post-Graduate Institute (SGPGI), Lucknow
Assam medical College, Dibrugarh, Assam
ACP Medical College, Dhule, Maharashtra
Directorate of health Services, Andaman and Nicobar
Directorate of Health Services, Sikkim

International Council for Control of Iodine Deficiency Disorders
(ICCIDD)

International Clinical Epidemiology Network (INCLEN)

Clinical Epidemiology Unit (CEU);

All India Institute of Medical Sciences, Delhi
Christian Medical College, Vellore
Government Medical College, Nagpur
King George Medical College, Lucknow

Independent Survey Evaluation of Universal Salt Iodization (USI) in Madhya Pradesh

Planning & Co-ordination Team

Chandrakant S. Pandav
R. Sankar
N.K. Arora
F. Ahmed
M. G. Karmarkar
Rashid Ahmed
Smita Pandav
Shankar Chowdhury
Lalit M. Nath

Laboratory Team

M. G. Karmarkar
Bimal Rai
Smita Pandav
Sham Sunder
R. S. Solanki
Ranjana Satija

Field Survey Team

Lalit Kant
M. M. Godbole
K.V. Rameshwar Sarma
Vijay Gupta
Prashant Joshi
Y.K. Joshi
Dhananjay Deoskar
A. B. Sewarkar
N.K. Arora
Chandrakant S. Pandav

F. Ahmed
Kurien Thomas
Yogesh Jain
Bimal Rai
Rajiv Yadav
Girish Singh
S. B. Nagtilak
Rashid Ahmed
Arun Mallik
R. Sankar

Data Management & Report Preparation

R. Sankar
Rajesh Pandav
Rashid Ahmed
N. K. Arora
F. Ahmed
Chandrakant S. Pandav

Office & Administrative Support

Veena
D. Rajan
Ashok Negi
Saroja Narayan
Pritam Singh Tanwar
P. Ahuja
Binod Kumar

Edited by

Dr. Chandrakant S. Pandav

Regional Co-coordinator, South East Asia & Pacific
International Council for Control of Iodine Deficiency Disorders
(ICCIDD)

&

Additional Professor,
Centre for Community Medicine
All India Institute of Medical Sciences
New Delhi – 110 029

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EXECUTIVE SUMMARY

Iodine Deficiency Disorders (IDD) continues to threaten the health, well-being, social and economic productivity, and advancement of several hundred million people throughout the developing world. Brain development and intelligence have been shown to be adversely affected. Children living in Iodine deficient areas score significantly lower on I.Q. tests by 13 points than those from iodine sufficient areas. Iodization of salt is the preferred approach for iodine supplementation in Iodine deficient population. Universal Salt Iodisation Programmes are conceptually very simple; however, the successful implementation of an iodisation programme involves the complex behavioral modification of the affected population and changes in salt grade practices. Success of a salt iodisation programme therefore, requires the active support and commitment of all the key stakeholders. Critical elements for sustaining a programme are strong political will, supported by administrative infrastructure and active community participation.

In India, the National Goitre Control Programme under the Ministry of Health and Family Welfare has helped to provide a policy and advocacy framework from time to time. Some of the key events were the introduction of ID in Prime Minister Indira Gandhi's "20 Point Programme" in 1983, adoption of Universal Salt Iodisation (USI) in India by the Central Council of Health and Family Welfare in 1983, and participation of the private salt traders in the supply of iodised salt.

Iodine Deficiency Disorders were first reported as a public health problem in Madhya Pradesh as early as 1915. Remedial action, however, was initiated only in 1983 after the results of surveys carried out in 1978 and 1983, re-emphasised the gravity of the problem. An iodized salt programme was introduced in four districts of the state in 1983. Subsequently, all the districts of the state were gradually covered by the ban-notification banning the sale of non-iodised salt. The programme was given a major thrust forward in 1988-1990, when during a span of two years, 33 districts were brought under the ban notification, completing coverage of all the 45 districts of the state.

In addition to legislative measures, the need for community participation and a fast-track approach to achieve universal salt iodisation were considered essential for attaining the goal of IDD elimination and sustaining it thereafter.

The "Mission approach" has been adopted by the highest political level, wherever, a problem is perceived as requiring urgent action for tangible results. The Mission's approach entails clarity of objectives and strategies to handle a public issue. The plan of action is executed within a defined time-frame by a committed team. Fast-track procedures and collective action by an inter-sectoral effort are the major strengths of this approach. Close monitoring and transparent evaluation are also an integral part of this approach.

The Government of Madhya Pradesh launched seven missions to focus on the three basic needs of the State's rural population: education, health improvement, and employment. The Rajiv Gandhi Mission for Elimination of Iodine Deficiency Disorders is one of the seven missions. It was launched on 20th August 1994. A blend of scientific insight, social commitment, and political will has given this age old scourge a high priority on the human resource development agenda of the governments of Madhya Pradesh.

The Objectives of the Mission were to ensure availability of adequately iodised salt, in all villages and towns of Madhya Pradesh, by the end of 1997 and, to increase the awareness of the population on the importance of iodine and the disorders caused by its deficiency. The strategy adopted by the Mission has two clear components: 1) action on the demand side to make communities aware of the need to use adequately iodised salt and, 2) action on the supply side, to ensure distribution and sale of adequately iodised salt.

UNICEF has played a key role in giving technical inputs and in providing support on a regular basis demonstrating an excellent partnership with the Government of Madhya Pradesh.

On completion of the first year of the Mission, the Chief Minister presented a report entitled "Rajiv Gandhi Mission: A Report to the People". The salient achievement of the Mission as mentioned in the report was the consumption of iodised salt was more than 84 per cent of all salt consumed in the state. Therefore, it was proposed to announce the closure of this Mission by 26th January 1996. The Chief Minister also stated that "the closure will be preceded by an independent evaluation to be conducted by a reputed non government evaluation agency".

As a follow up, the International Council for Control of Iodine Deficiency Disorders (ICCIDD), was invited to independently evaluate the status of Universal Salt Iodisation (USI), in Madhya Pradesh.

The Primary objective of the evaluation was to determine the proportion of urban and rural households in Madhya Pradesh (MP), consuming adequately iodised salt. The other objectives were to determine the availability of iodised salt in the selected clusters at the retail level in rural and urban areas and, to determine the iodised awareness of the population about iodised salt, IDD, salt use patterns, storage, and cost at the households and retail level.

The Field survey was carried out in November 1995 by 20 senior physicians representing 12 premier national institutions and two international organizations. For the purpose of the survey, the state was divided into urban and rural strata. Probability Proportionate to size (PPS) Cluster Sampling Methodology was used to select 30 clusters in each of the strata. Field activities included the collection of salt samples from households and retail shops. In addition, the Knowledge,

Attitude, Practice and Behaviour (KAPB), of household members and retail shopkeepers were assessed through survey interviews.

Salt samples were analyzed for iodine content by iodometric titration- the internationally accepted gold standard – at the All India Institute of Medical Sciences (AIIMS), New Delhi, under the technical supervision of a senior advisor to the ICCIDD, All data collected were analyzed by a specially designed computer software package.

The results show that the state of Madhya Pradesh has achieved universal availability of iodised salt as 98.4 per cent of the salt samples were found to be iodised at the household level (urban = 98.9 per cent; rural = 98.3 per cent). With respect to adequate iodine content, 69 per cent of urban household and 61 per cent of rural households were found to be consuming adequately iodised salt. This truly represents a remarkable achievement for a state that imports all of its salt requirement.

The possible reasons for the inadequate level of iodine in salt found in over 31 per cent of urban and 39 per cent of rural households are: inadequate iodisation at the production level, problems with packaging, storage and transportation before it reaches it's destination and, quality assurance issues at the repacking units within the state.

In order to address these issues effectively, there is a need for organizing continuous dialogue with manufacturers, the salt commissioner's office, railways and road transport agencies. Stringent enforcement of P.F.A. rules is also necessary.

The positive awareness about iodised salt among urban and rural households was 65 per cent and 44 per cent, respectively. Television programmes and health workers were the major sources of information to those who had heard about iodised salt.

Other salient points revealed in the survey include:

- Most of the urban households (88 per cent) were consuming powdered salt.
- 32.1 per cent of rural households were using crystalline salt.
- About 30 per cent of powdered salt samples at both urban and rural households levels were inadequately iodised.
- As many as 38 per cent of the crystalline salt samples used in rural households were adequately iodised, contrary to popular opinion that all powdered salt is iodised and all crystalline salt is non-iodised.

- The practice of salt purchase and storage was found to be almost identical in both urban and rural households.
- Retail shops catering to the households included in the samples seem to sell only iodised salt both in urban (99 per cent) and rural (97.9 per cent) areas.
- It seems that 73 per cent of urban retail shop samples and 66 per cent of rural retail shop samples are adequately iodised. This was consistent with observations made at the households level.

The major achievement of the Mission was in streamlining and strengthening the IDD elimination measures that were already in place. The specific achievements of the Mission as perceived by the evaluation team were:

i) Involvement of the salt traders in implementing the Universal Salt Iodisation programme. “The Bhopal Declaration” by the salt traders was an important landmark in this respect.

ii) Forgoing partnerships between the programme managers and the key stakeholders to understand each other’s viewpoints and constraints.

iii) Nagarik Apoorti Nigam (NAN) was involved as a catalyst to ensure the availability of adequately iodised salt, particularly in the remote tribal and hilly areas. The NAN uses a social pricing strategy to maintain the price of the packaged iodised salt.

iv) The district administration, the health department, and the education department were involved on a larger scale in creating awareness, and monitoring of, the iodine content of salt.

In **conclusion**, the Mission approach has succeeded in giving a thrust to the ongoing IDD elimination programme. The achievements thus far obtained have to be sustained. This is the most critical period as complacency at this stage will lead to a “sliding down effect”. This transitional phase, from a “Mission approach” to a “System approach”, is crucial, especially at a time when the whole IDD programme has just taken off and has not yet gathered the critical momentum needed to progress on its own.

To consolidate the achievements of the Mission and sustain the elimination of IDD in Madhya Pradesh, the following **recommendations** are proposed:

1. The IDD elimination programme should continue to get the same level of priority and urgency in Implementation from political, administrative, and social sectors.

2. The intersectoral coordination so far achieved during the mission should be retained and preferably enhanced at all levels.
3. The approach of ensuring community participation in the programme has to be sustained and made more broad-based. The involvement of the educational system, Panchayat system and consumer organizations should be further strengthened for creating awareness and participation in monitoring.
4. The Mission Director's role has to be taken over by a responsible officer from any of the participating departments, which would consequently be identified as a nodal agency to implement the programme.
5. The monitoring system should include social monitoring, regulatory monitoring and health monitoring. Social monitoring should be done by schools, Communities, consumer organizations, Panchayats and opinion leaders on the availability of iodised salt, by testing it with a spot testing kit and by recording its price.
6. With respect to regulatory monitoring, the Directorate of Food and Drug Control, with the help of active support of health agencies, should enforce the P.F.A. Act.
7. In addition to monitoring the process indicators of the IDD elimination programme, health monitoring should include the impact indicators, namely goiter prevalence and urinary iodine in school age children and should be measured every five years.

The Success story of Madhya Pradesh in operationalising the scientifically sound and cost effective programme of USI in eliminating IDD should be widely communicated to the people of Madhya Pradesh and the nation at large. This role model will prove to be the guiding principle for implementing many other health related social development issues.

A one time, or time bound salt iodization programme cannot eliminate the spectrum of IDD disorders, as the human body requires 100-150 μg of iodine every day. Therefore, it is essential to sustain the political commitment which can be strengthened by broad public understanding of the issues. Policy needs to include quality assurance to sustain achievements towards IDD elimination. Equally important is the need to further involve the various groups that have a role to play in sustaining the elimination of IDD namely the stakeholders, for it is a venture that involves action by all, for all times.

**Inadequately Iodized Salt at Household & Retail Level in M.P.:
Probable Factors and Recommended Remedial Measures**

