Report on the

Regional technical consultation on iron deficiency anaemia and iodine deficiency disorders guidelines

Cairo, Egypt
26–28 April 2005
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1. INTRODUCTION

The World Health Organization (WHO) Regional Office for the Eastern Mediterranean (EMRO), in collaboration with the Centers for Disease Control and Prevention (CDC) in Atlanta, organized a technical consultation on iron deficiency anaemia and iodine deficiency disorders guidelines in Cairo, Egypt from 26 to 28 April 2005. The objectives of the consultation were to review draft guidelines on iron deficiency anaemia and iodine deficiency disorders and to obtain consensus on the final version of the guidelines.

A number of experts on micronutrient deficiencies were invited to the consultation. Representatives from UNICEF’s Regional Office for the Middle East and North Africa and the World Food Programme’s Regional Office for the Middle East, as well as the Regional Coordinator of the International Council for the Control of Iodine Deficiency Disorders (ICCIDD) also attended.

The consultation was inaugurated by the Dr Ahmad Mohit, Director, Division of Health Protection and Promotion, WHO/EMRO, who delivered a message from Dr Hussein A. Gezairy, WHO Regional Director for the Eastern Mediterranean. In his message, Dr Gezairy said that micronutrient deficiencies were widely prevalent in almost all countries of the Eastern Mediterranean Region. Of all the micronutrient deficiencies affecting the population, iron deficiency anaemia and iodine deficiency disorders remained the commonest. Despite the adoption of a diverse set of strategies by the national governments, a lack of standard approach to the epidemiological understanding of the problems persisted.

To overcome these lapses, WHO’s Regional Office for the Eastern Mediterranean, with support from the Centers for Disease Control and Prevention and the Regional Office for the International Council for the Control of Iodine Deficiency Disorders, had organized a series of training workshops on the assessment of iron deficiency anaemia and iodine deficiency disorders. Strong support was provided by UNICEF to these workshops through sponsorship of participants both from within and outside the Eastern Mediterranean Region. Dr Gezairy referred to these activities as an example of effectiveness of a coordinated approach.

In view of the large amount of material generated during the course of the workshops, both WHO and CDC had agreed to the compilation and development of the materials into guidelines to assist the national programme managers in standardized understanding of iron deficiency anaemia and iodine deficiency disorders. The technical consultation was the concluding stage in the finalization of the two guidelines. Dr Gezairy concluded by noting that developing guidelines that would address needs of the largest categories of health professionals was a daunting task, but one that would be possible at the consultation through the inputs of the experts present.

In his concluding remarks, Dr Mohit noted that the public health problems posed by iron deficiency anaemia and iodine deficiency disorders encompassed several areas, including that of behavioural and mental health through their deleterious impacts upon cognitive and motor development and functions.
The objectives and mechanics of the consultation were explained by Dr Kunal Bagchi, Regional Adviser, Nutrition, WHO/EMRO. The history of the development of the two guidelines, the process through which the two drafts had progressed and the outline of the programme were provided. Dr Bagchi informed participants that both drafts had been shared with WHO, UNICEF, World Food Programme (WFP), CDC, Emory University and the Global Alliance in Nutrition (GAIN).

The expected outcome of the consultation was the consensus on the final form and contents for the two guidelines. In their final forms, the guidelines were expected to act as standard, accurate and realistic technical guides for the programme managers; for use at the national, provincial, district and field levels; enabling simplified and accurate assessments of the prevalence of iron deficiency anaemia and iodine deficiency disorders and ultimately leading towards the development of national capacities for the prevention and control of micronutrient deficiencies programmes.

Dr Mahendra Sheth, Regional Health and Nutrition Officer, UNICEF Regional Office for Middle East and North Africa, was elected as Chair. The meeting agenda, programme and list of participants are attached as Annexes 1, 2 and 3, respectively.

2. TECHNICAL PRESENTATIONS

2.1 A field guide for the prevention and control of iodine deficiency disorders

Dr Fereidoun Azizi

An overview of the draft document *A field guide for the prevention and control of iodine deficiency disorders* was provided. The introductory section consisted of salient aspects of the universal salt iodization process including the iodization process itself, salt production and distribution, strategy for effective salt iodization and characteristics of effective salt iodization programmes. Relevant technical details like the spectrum of iodine deficiency disorders, recommended daily intake of iodine and data on the extent of newborn brains protected from iodine deficiency. A model showing the social process involved in a national iodine deficiency disorders (IDD) control programme was explained. This model comprised assessment, communication, planning, political decisions, implementation, monitoring and evaluation.

The second section consisted of different aspects of iodine assessment including data collection, data interpretation and analysis. This section also included classification of goitre palpation, association between the median urinary iodine excretion, total goitre rate and severity of IDD. The recommended action for different salt iodization situations described the status of salt iodization programme and corresponding action.

Subsequent sections of the draft guidelines addressed control of iodine deficiency disorders, communication, planning, implementation and political decisions. The section on monitoring, which was the most detailed section in the guidelines, comprised process, impact and external monitoring, quality control in laboratories, legislation and regulations, mechanics of quality assurance and enforcement. Detailed figures and tables had been prepared as part of
a general framework for a salt monitoring system. In the section on evaluation of IDD control programme, indicators for sustainable elimination of IDD were provided in addition to a special section on the global scheme for evaluation and monitoring of IDD control programme. There were additional sections dealing with references and annexes.

The presentation was followed by discussions that dealt with the size of the guidelines (number of pages), contents, number of references (to maintain at around 6–10) and the target audiences. It was agreed that the guidelines needed an executive summary. A suggestion was that key reference documents cited in the guidelines and that were freely available on the internet could be downloaded and attached to the guidelines as a compact disc.

A matrix showing the current status of IDD prevalence and household consumption of iodized salt would be added to the final document. The title of the document would be amended to *A Field guide for health workers on elimination of iodine deficiency disorders*. The introduction would include more of the fact that iodine protected the brain of the newborn and the architecture of the brain was affected by iodine deficiency. These facts should be pointed out for the purpose of advocacy and communication purposes. Figure 1, on household salt utilization, should also include data from Western Europe and case studies from successful countries with single or multiple sources of salt manufacturers should also be added. Several other suggestions were made: the ‘Hetzel cycle’ to be modified; the figure depicting the thyroid gland in the neck to be replaced with a diagram; the reference laboratories for urinary iodine estimation to be listed in a table; and the communication section of the document reviewed by a WHO communications expert.

2.2 Guidelines for health care professionals on assessment of iron status at population level

*Dr Omar Obeid*

The presentation on the draft document *Guidelines for health care professionals on assessment of iron status at population level* started with a definition of anaemia, followed by a description of the major and minor causes leading to anaemia, including iron deficiency which was described as the major cause of anaemia. The problems of basing anaemia on haemoglobin were highlighted, and a table was presented showing distribution of iron in the male and female bodies.

Several slides provided a detailed physiology of iron metabolism in the human body, definitions and classification of different types of anaemia and their physiological impacts upon the body, related cut-off values for categorizing the public health importance of anaemias, clinical signs and symptoms. A table showing the current methods for estimating the level of iron in the body including costs and interpretation of results was provided.

The concluding section of the presentation dealt with different aspects of monitoring and evaluation of anaemia, particularly iron deficiency anaemia. These comprised selection of appropriate methodologies, sample, data recording and analysis and interpretation. Annexes included haemoglobin and haematocrit values of different population groups and geographical areas and flow-charts for conducting different anaemia surveys.
Several questions were asked about the content of the document, particularly the increased focus on the theoretical aspect of anaemia. The author explained that because of the working title of the document, “guidelines for health care professionals on assessment of iron status at population level”, information had been provided for all categories of health professionals. The consultative group suggested that during the group work, members explore the possibility of rearranging and reducing the materials in the document.

3. GROUP WORK

Participants were divided into two groups for review of the documents; group work lasted from 26 to 28 April 2005. Electronic copies of the draft guidelines had been earlier forwarded to the participants for their information. During the group work, paper copies were also provided.

The first group, comprising Dr Mahendra Sheth, Dr Fereidoun Azizi, Dr Glen Maberly, Dr Peter Smythe, Dr Esmat Mansour, Dr Nabil Isseh and Ms Lilas Tomeh, reviewed the Field guide for prevention and control of iodine deficiency disorders. Dr Azizi was chosen as the Rapporteur / Chair for the group.

The second group, comprising Dr Omar Obeid, Dr Ezzat Amine, Dr Ibrahim Khatib, Dr Fikhrat Al-Sahn, Dr Pushpa Acharya and Dr Kunal Bagchi, reviewed the Guidelines for health care professionals on assessment of iron status at population level. Dr Obeid was chosen as the Rapporteur / Chair for the group.

During the group work sessions, additional reference documents (both published and unpublished) were also consulted for up-to-date information and data.

4. CONCLUSIONS

Both documents, Guidelines for health care professionals on assessment of iron status at population level and A Field guide for prevention and control of iodine deficiency disorders, will be published as joint WHO–UNICEF–WFP publications, with the inclusion of ICCIDD in the IDD document.

Guidelines for health care professionals on assessment of iron status at population level

- The guidelines will be targeted at programme managers for the control and prevention of anaemia working at the national, provincial and district levels and should provide standard, accurate and realistic technical information for programme managers at these three levels.

- The guidelines contain materials far in excess of the expected requirement. Some of these materials, particularly the sections on different types of anaemia, their pathophysiology and biochemistry, should be reduced and abridged. The working group recommended deletion of a number of sections of the guidelines.
• The assessment section should establish linkages with appropriate actions. Although the title of the document indicates assessment, an outline of intervention strategies needs to be incorporated to make the guidelines more comprehensive.

*A Field guide for prevention and control of iodine deficiency disorders*

• The working group expressed satisfaction at the overall content and structure of the draft guidelines.

• Specific comments were given to the author for inclusion in the text of the final draft.

• A matrix showing the current status of IDD and household consumption of iodized salt for the WHO Eastern Mediterranean Region and UNICEF Middle East and North Africa Region will be added to the document.

• The section on communications will be reviewed by a WHO communications expert.

5. **RECOMMENDATIONS**

*Guidelines for health care professionals on assessment of iron status at population level*

1. The guidelines should provide adequate accurate and practical information to the programme managers, including outline of appropriate intervention approaches based on findings from the assessments.

2. The guidelines should include an Executive Summary.

3. The sections on other nutritional anaemias, public health significance of different anaemias, and metabolism of iron, folic acid and vitamin B12 should be reduced.

4. All causes of non-nutritional anaemias should be compiled in a single table and requirements of all micronutrients included as an annex.

5. The section on monitoring and evaluation, including sampling techniques, should be revised in consideration of the several comments and suggestions from the group work. Additional situation scenarios should be considered and use of the words ‘refugees’ or ‘internally displaced persons camps’ should be avoided so as not to give the impression that the guidelines were only meant for refugees or internally displaced populations.

6. Tables, charts, figures should be adequately referenced. The total number of references should be kept between six and ten, citing only the most important and relevant ones.

7. The final draft should be made available to group members by end May 2005. All comments on the final draft should be received by the author by the third week of June.
2005. A final version of the guidelines, incorporating all comments, should reach EMRO by end June 2005.

*A Field guide for prevention and control of iodine deficiency disorders*

8. The guidelines should include an Executive Summary.

9. The models for improving IDD status of the populations in countries should be revised. In this regard, different scenarios should be considered and addressed in the guidelines.

10. The issue of sustainable monitoring and evaluation of national IDD programmes should be considered in the guidelines. Additional information on activities carried out by the salt producing sector for effective IDD control and prevention programmes should also be provided.

11. The guidelines should include other intervention strategies such as iodized salt administration, in addition to focus on the salt iodization programme.

12. The final draft should be made available to group members by end May 2005. All comments on the final draft should reach the author by the third week of June 2005 and the final version of the guidelines, incorporating all comments, should reach EMRO by end June 2005.
Annex 1

AGENDA

1. Registration

2. Welcome and opening address

3. Objectives and mechanics of the technical consultation

4. Overview of the field guide on iodine deficiency disorders

5. Overview of the field guide on iron deficiency and its anaemia

6. Working sessions in two groups:
   • Review of field guide on iodine deficiency disorders
   • Review of field guide on iodine deficiency and its anaemia

7. Group presentation: conclusions and recommendations

8. Closing ceremony
Annex 2

PROGRAMME

Tuesday, 26 April 2005

08:30–09:00  Registration

09:00–10:00  Inauguration
  Message from Dr Hussein A. Gezairy, Regional Director, WHO/EMRO
  Introduction of participants
  Election of Chair and Rapporteur
  Review of agenda and programme

10:00–10:10  Objectives and mechanics of the technical consultation, Dr Kunal Bagchi, RA/NUT

10:10–10:40  Overview of the field guide on iodine deficiency disorders, Professor Fereidoun Azizi, WHO Temporary Adviser

10:40–11:10  Overview of the field guide on iron deficiency and anaemia, Professor Omar Obeid, WHO Temporary Adviser

11:10–11:30  Questions and answers

11:30–11:45  Instructions on group work

11:45–15:30  Group work 1: Review of the field guide on iodine deficiency disorders
  Group work 2: Review of the field guide on iodine deficiency and anaemia

Wednesday, 27 April 2005

08:30–09:00  Status report on group work

9:00–15:30  Group work

Thursday, 28 April 2005

08:30–13:00  Group work

13:00–15:00  Group presentation: conclusions and recommendations.

15:00–15:15  Closing ceremony
Annex 3

LIST OF PARTICIPANTS

Temporary Advisers

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WHO Secretariat

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