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The Nutrition Foundation, Inc.



ANNUAL REPORT OF
COOPERATIVE AGREEMENT

DAN-5115-A-00-7114-00

1 October 1991 to 30 September 1992

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Table of Contents

	Page
Executive Summary	1
Individual Program Reports	
International Vitamin A Consultative Group (IVACG)	3
International Nutritional Anemia Consultative Group (INACG)	11
International Nutrition Planners Forum (INPF)	16
International Nutrition Network Exchange (INNE)	18
Joint Micronutrient Consultative Groups (JMCG)	19
General Cooperative Agreement Activities	
Monitoring and Tracking Requests for Information	21
Reporting Requirements	23
Financial Report	25
Cooperative Agreement Financial Standing	26
Project Allocation of Funds by Program	26
List of Appendices	27

Cooperative Agreement No. DAN-5115-A-00-7114-00
Annual Report, Fiscal Year 1992
1 October 1991 to 30 September 1992

Executive Summary

Fiscal year 1992 marked the fifth year of a five-year cooperative agreement between The Nutrition Foundation, Inc. and the Office of Nutrition, Bureau for Research and Development, U.S. Agency for International Development (AID). This cooperative agreement provides funding for four international nutrition programs: International Vitamin A Consultative Group (IVACG), International Nutritional Anemia Consultative Group (INACG), International Nutrition Planners Forum (INPF), and International Nutrition Network Exchange (INNE).

The activities of these programs are in three primary areas: providing a forum for new ideas through sponsoring international meetings, preparing and distributing state-of-the-art technical references, and fostering international liaison. Activities of these programs bring together those with an interest in improving nutritional status and strengthening food and nutrition institutions and personnel, particularly in developing countries.

The secretariat at the Nutrition Foundation provides managerial, administrative, and logistic support for each program. Because IVACG, INACG, INPF, and INNE are not formal membership organizations, the secretariat also provides essential continuity from year to year. International experts donate their time to determine priorities for the groups and to provide technical expertise through steering committees and task forces. These committees and task forces include individuals from donor organizations, those involved with intervention programs, and scientific authorities.

Perhaps the most important achievement of this year was the initiation of the Joint Micronutrient Consultative Groups, bringing together for the first time representatives of the three micronutrient consultative groups--IVACG, INACG, and the International Council for Control of Iodine Deficiency Disorders (ICCIDD). With guidance from AID, these three groups met several times to discuss areas of commonality that may lead to coordinated strategies to eliminate or greatly reduce these micronutrient deficiencies.

In addition, the advancement and completion of new technical references occupied a significant portion of the secretariat's attention during FY92. Significant progress was achieved in resolving task force manuscripts, meeting summaries, and activities on the following subjects:

- nutrition education and communication to reduce vitamin A deficiency,
- integration of vitamin A distribution with immunization programs,
- new techniques for assessing marginal vitamin A deficiency in children,
- policies for implementing a fortification program to control iron deficiency anemia,
- summary of the XII INACG Meeting on iron fortification of foods,
- research concerning the effectiveness of iron-fortified infant cereal,
- applications of sodium iron EDTA in fortification systems, and
- effective communication techniques to improve nutritional status.

Four significant reports from FY91 were published and distributed during FY92. During this process, the secretariat also considered ways to make existing publications and reports more useful to developing country readers, for example, translation of the action plan to control iron deficiency anemia into French and Spanish.

Responsibilities related to organizing international meetings, workshops, convocations, and task forces are also an important part of the secretariat's mandate. The secretariat organized the following events during FY92:

- November INACG Steering Committee meeting
- December IVACG Steering Committee meeting
- December JMCG meeting
- January JMCG meeting (conference call)
- April JMCG meeting
- May Third Annual INNE Meeting
- August IVACG Steering Committee meeting
- September Iron EDTA Task Force meeting

The secretariat used a variety of formats for these meetings and in every instance tried to increase their quality and make their outcomes relevant to those working in the developing world.

Communication with individuals and organizations throughout the year expanded the visibility of secretariat programs. Most information requests received by the secretariat originate in developing countries. This is a result of involving policy-makers, specialists in several disciplines, and news organizations from those countries in meetings and sending them information. Expanded efforts during FY92 to strengthen liaisons with other groups working to eliminate micronutrient deficiencies will enhance future collaboration.

During the year appropriate financial reports were filed. Total direct expenditures for FY92 were \$351,011.99.

As stated in the Standard Provisions of the Cooperative Agreement, the Nutrition Foundation, Inc. has continued to satisfy cost-sharing (matching) requirements. In accordance with Amendment No. 7 of the Cooperative Agreement, the agreed cost-sharing total is \$1,400,000 to be distributed among IVACG, INACG, SUSTAIN, INPF, and INNE. At the end of fiscal year 1992, the Nutrition Foundation's non-federal cost-sharing totals \$1,412,049, exceeding the agreed cost-sharing amount by \$12,049. As a result of the extension of the Cooperative Agreement for the period 1 October 1992 - 30 June 1993, during which time the secretariat may incur expenses relating to the XV IVACG Meeting and an IVACG technical meeting, the Nutrition Foundation expects to further exceed the agreed cost-sharing amount.

The secretariat staff worked closely with the AID project officers from the Office of Nutrition throughout FY92. Their collaboration was essential to the success of the secretariat's activities.

International Vitamin A Consultative Group (IVACG)

Introduction

The Nutrition Foundation, Inc. first received financial support as the secretariat for IVACG in 1975. Funding continued through the following years. The IVACG Secretariat receives its current support through a cooperative agreement between the Nutrition Foundation and the AID Office of Nutrition. The cooperative agreement began 1 October 1987. This annual report covers the fifth year of the five-year term of this agreement.

The mission of IVACG is to guide international activities for reducing vitamin A deficiency in the world. In order to carry out this mission, IVACG sponsors international meetings and scientific reviews. It convenes task forces to analyze and make recommendations related to the causes, treatment, and prevention of vitamin A deficiency in developing countries. Task force reports provide guidelines and strategies to assess the prevalence of vitamin A deficiency; refine assessment techniques; and develop, monitor, and evaluate intervention programs. The examination of these issues is important to the establishment of public policy and action programs.

IVACG guidelines and strategies are generally disseminated through IVACG's state-of-the-art monograph series. These monographs, along with IVACG meeting reports, achieve worldwide circulation through channels of the United Nations agencies, AID and other international aid agencies, nongovernmental organizations, educational institutions, and private industry, and through direct correspondence with professionals working in developing countries.

IVACG also provides information regarding country and donor program activities to interested individuals. Through its international meetings, IVACG provides a forum to foster the interchange of ideas, the presentation of new research findings and survey data, and discussion of action programs.

The IVACG Steering Committee recommends priorities for the organization's programs and publications. (A list of steering committee members is Appendix 1 of this report.) The IVACG Secretariat provides managerial, administrative, and logistic support to the IVACG Steering Committee and to IVACG task forces. In carrying out these functions, the secretariat collaborates closely with the AID Office of Nutrition. Dr. Frances R. Davidson, Senior Nutrition Advisor at the Office of Nutrition, serves as secretary of IVACG.

XV IVACG Meeting

Preparations for the XV IVACG Meeting were discussed at the December meeting of the IVACG Steering Committee. In an effort to focus on vitamin A program issues, the committee defined the theme of the meeting as "Toward Comprehensive Programs in Reducing Vitamin A Deficiency." Committee members also selected Tanzania as their first choice for the meeting location.

The call for abstracts was distributed in early January to more than 1000 publications and individuals. It was also published in *Xerophthalmia Club Bulletin* and *VITAL News*. The abstract deadline was 8 May 1992.

On 3 March 1992 the secretariat prepared a draft letter to the AID Mission in Tanzania on behalf of the AID project officer for IVACG. This letter was requested in early March by the IVACG project officer in order to facilitate AID approval for the meeting site.

AID approval of Arusha, Tanzania as the meeting location was given in the third quarter. Ms. Aomari, the IVACG project manager, immediately went to Tanzania to begin preparations for the meeting. Meetings with the local organizing committee, hotel and conference center staff, AID mission staff, Tanzanian ministries, and international donor agencies helped solidify support for the XV IVACG Meeting and arrange logistics. The trip report submitted to AID is Appendix 2.

At the direction of AID, secretariat staff met with Mr. Craig Sarsony, Debt-for-Development Coalition, during the third and fourth quarters in order to explore the possibility of using a debt conversion transaction to finance part of the meeting expenses in Tanzania. Based on these discussions, it was determined that estimated local expenses relating to the XV IVACG Meeting were not sufficient to warrant use of such a transaction.

The secretariat received 118 abstracts for the XV IVACG Meeting. These were circulated to the IVACG Steering Committee in preparation for their August meeting. The committee accepted 89 abstracts for presentation or exhibit. The secretariat also prepared a draft program for steering committee discussion during the August meeting. The draft program is included as Appendix 3.

Following the steering committee meeting, the secretariat sent letters to all who submitted abstracts, informing them of the committee's decision, and providing information for presenters. The status of several abstracts was not definitive at the close of the meeting. Ms. Aomari followed up with Drs. Davidson, Horwitz, and Underwood regarding these abstracts and unresolved program issues.

During the fourth quarter the meeting dates were established as 8-12 March 1993. Another news release was distributed giving the exact dates and location of the meeting. Information about the meeting was published in American Institute of Nutrition *Nutrition Notes*, *Development Communication Report*, and in *South-East Asia Nutrition Research-cum-Action Newsletter*. (See Appendix 4 for news releases concerning the XV IVACG Meeting).

At the close of the fiscal year, the secretariat staff continued with arrangements for the conference center, hotels, and optional study tours. A draft meeting invitation was prepared and will be distributed in Q1FY93.

XIV IVACG Meeting

The summary of the XIV IVACG Meeting was printed during the first quarter and distributed to all meeting participants and other interested individuals. The secretariat also sent 200 copies to the AID project officer for IVACG and 150 copies to Dr. Peter Greaves, Senior Advisor, Micronutrients, UNICEF. A news release announcing the meeting summary was sent to over 200 editors of international journals and newsletters and other individuals interested in the control of vitamin A deficiency. During the first quarter, the secretariat also provided a summary of the meeting evaluation forms to AID and the IVACG Steering Committee. (See Appendix 5 for the title page, table of contents and news release regarding the summary.)

Throughout fiscal year 1992 the XIV IVACG Meeting continued to be widely publicized. Articles relating to presentations made at the meeting were published in *SCN News*, *Xerophthalmia Club Bulletin*, and *DevelopNet News*. Availability of the meeting summary was announced in several periodicals, including *The Journal of Nutrition*, *Nutrition Today*, *South-East Asia Nutrition Research-cum-Action Newsletter*, *The Vitamin A + Sieve*, *Amaranth Newsletter*, *Nutrition Center of the Philippines Bulletin*, and *Community Eye Health*.

IVACG Steering Committee

Revised minutes of the IVACG Steering Committee meetings held in June 1991 were sent to the committee on 5 November 1991.

The steering committee met in Washington, D.C. at the ILSi offices on 4-5 December 1991. Topics of discussion included the XV IVACG Meeting, reports on micronutrient meetings, and task force and publication updates. Minutes of the meeting were distributed on 20 December 1991, and revised minutes were distributed on 2 March 1992.

In a discussion of IVACG's organization and strengths in combating vitamin A deficiency, the committee asked Dr. Alfred Sommer to draft a concept paper on IVACG's role, to be revised by other steering committee members. This

5

paper, "Strategic Placement of IVACG in the Evolving Micronutrient Field," was circulated to the steering committee during Q2FY92 after input from Drs. Davidson, Reddy, and Simmersbach.

During the December meeting, committee members agreed to invite Dr. Leonor Maria P. Santos, Federal University of Bahia, Brazil, to join the IVACG Steering Committee. The committee also agreed to invite Ms. Suttalak Smitasiri and Dr. Keith P. West, Jr. as non-voting members. Ms. Aomari drafted these invitations during Q2FY92 for review and signature by Dr. Horwitz. Dr. Santos accepted the invitation. The invitations for Ms. Suttalak and Dr. West were not sent due to pending approval by AID.

The second meeting of the IVACG Steering Committee during this fiscal year was held 3-4 August 1992 in Washington, D.C. The first day of the meeting was largely devoted to selection of abstracts for the XV IVACG Meeting. Other discussion relating to the XV IVACG Meeting concerned program ideas (see section on XV IVACG Meeting).

During the August meeting, the committee considered the concept paper drafted by Dr. Scmmer. Action based on the ideas expressed in the paper will be explored by Dr. Simmersbach through correspondence with the rest of the steering committee. It was also agreed that Ms. Suttalak and Dr. West should be invited to the next steering committee meeting in Tanzania. The minutes of this meeting and other steering committee meetings from FY92 are included as Appendix 6.

Other activities in which steering committee members participated include the meetings of the Joint Micronutrient Consultative Groups (JMCG). Drs. Underwood and Horwitz participated in the JMCG meetings on behalf of IVACG.

Task Force Activities

Communication/Education Task Force

Work on the task force manuscript "Nutrition Communications in Vitamin A Programs, A Resource Book" progressed continuously throughout fiscal year 1992. With frequent coordination between copy editor Ms. Carol Soble, graphic designer Ms. Adele Robey, task force member and IVACG Steering Committee representative Dr. Franz Simmersbach, and Ms. Aomari, the manuscript assumed its final form.

Dr. Simmersbach, Ms. Soble, Ms. Robey and Ms. Aomari met on 6 December 1991 to discuss necessary revisions and design ideas. Dr. Simmersbach clarified the manuscript's framework, and Ms. Aomari proposed the timetable for completion of the book. Throughout the next quarter, Ms. Aomari worked

closely with Dr. Simmersbach and Ms. Soble to incorporate additional material and revisions received from field programs, task force members, and reviewers. The secretariat obtained printers' bids, which were reviewed by Dr. Simmersbach. All IVACG Steering Committee members received the entire revised text and graphic ideas during the third quarter.

During the fourth quarter, Ms. Soble, and Ms. Aomari completed text revisions based on comments received from the steering committee. At their August meeting, the steering committee agreed that the book should be published and declared that the work of the IVACG Communication/Education Task Force is finished.

Ms. Aomari continued to work with Ms. Robey to prepare text and graphics for printing. Two sets of page proofs were reviewed by the secretariat staff and photographic illustrations were selected. A contribution toward printing costs was secured from Task Force SIGHT AND LIFE of F. Hoffmann-La Roche Ltd.

Printing of "Nutrition Communications in Vitamin A Programs: A Resource Book" will be completed and the book will be distributed in Q1 FY93.

Integration of Vitamin A Distribution with Immunization Programs

At their June 1991 meeting the IVACG Steering Committee confirmed their continuing interest in the IVACG monograph on this topic. The IVACG project manager followed up with colleagues at WHO and the responses were circulated among the steering committee. The committee again expressed its interest in this task force at their December 1991 meeting. Dr. Underwood presented information on vitamin A supplementation for infants to the Research and Development Committee of the Expanded Programme on Immunization (EPI) in May 1992.

On 30 June and 1 July 1992 an informal consultation co-sponsored by IVACG and WHO was held in Geneva. The purpose of the meeting was to discuss new information concerning the efficacy, safety, and operational issues surrounding incorporation of vitamin A supplements into the current EPI schedule, with the intention of drafting a new guidelines document. Dr. Vinodini Reddy gave a report of the consultation during the August steering committee meeting.

The draft document developed from the informal consultation, "Using Immunization Contacts to Combat Vitamin A Deficiency," builds on drafts developed earlier by the IVACG task force. The draft was reviewed by IVACG Steering Committee members, and their comments were forwarded to the WHO Nutrition Unit by the secretariat during the draft revision. It is anticipated that this document will be presented to the EPI Global Advisory Group during their October meeting.

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Other documents anticipated from the meeting are a statement of the scientific basis for the recommendations, a report of the consultation, and a training manual.

Staff of the WHO Nutrition Unit have requested IVACG endorsement of the draft. Endorsement was under consideration at the close of the quarter.

Assessment Methodology Task Force

During the first quarter, the draft manuscript "A Brief Guide to Current Methods of Assessing Vitamin A Status" was edited by Drs. James A. Olson and Barbara Underwood, co-editors of the manuscript and co-chairs of this task force. Two new sections from Dr. Alfred Sommer and Dr. Harold Furr were incorporated into the manuscript. The edited draft was circulated to task force members in January. After compilation of their comments by the secretariat, the manuscript was forwarded to the IVACG Steering Committee for review during the third quarter. (See Appendix 7 for a list of task force members).

Dr. Underwood reported on the task force during the IVACG Steering Committee meeting in August. She clarified the purpose of the manuscript and the intended audience. During the discussion, steering committee members recommended altering the title and the text of the manuscript so that it does not appear to endorse any particular assessment technique.

Following the meeting, written comments from IVACG Steering Committee members were forwarded to the co-editors. The secretariat is prepared to move forward with further editing and publication of the document in fiscal year 1993.

Task Force on the Effect of Food Preparation on Vitamin A Content of Meals

Although this proposed task force was mentioned by the IVACG Steering Committee during their December meeting, there was no recommendation to immediately establish an IVACG task force on this topic. The secretariat has no plans for initiating this task force until it receives further direction from the steering committee and AID.

Task Force on Community Level Programs

At their December meeting the IVACG Steering Committee members reiterated their interest in this task force, but agreed to postpone action until the work of other task forces is completed.

Other IVACG Activities

IVACG Regional Representatives for Africa

Dr. Festo Kavishe, Tanzania Food and Nutrition Centre, agreed to serve as an IVACG regional representative for southern and southeastern Africa. During the first quarter, the secretariat sent him a supply of IVACG publications and personalized stationery to use in this work. Secretariat staff also sent supplies to Dr. Pawlos Quana'a in order to facilitate his work as a regional representative in northeastern Africa.

The secretariat continues to refer individuals from Africa who request information and IVACG publications to the regional representatives, Dr. Kavishe, Dr. Quana'a, and Dr. Diallo.

Collaboration with Other Groups Active in Vitamin A Programs

The secretariat participated in the international conference on micronutrient malnutrition, "Ending Hidden Hunger," in October 1991. IVACG materials were displayed with other Nutrition Foundation publications.

The secretariat also participated in planning "Coordinated Strategies for Controlling Micronutrient Malnutrition: A Technical Workshop" co-sponsored by the International Life Sciences Institute Research Foundation and the Program Against Micronutrient Malnutrition (PAMM), a cooperative program of Emory University, U.S. Centers for Disease Control, and the Carter Center. This workshop was held in Georgia, 7-9 November 1991. IVACG information was available to meeting participants.

A brief summary of the workshop was mailed to international journals and individuals on the Nutrition Foundation mailing list (Appendix 8). The full summary of that workshop will be submitted to the *Journal of Nutrition* for publication.

During the third quarter, the IVACG project manager participated in three international conferences: the National Council for International Health (NCIH) Annual Conference, the Society of Nutrition Education (SNE) International Division Conference, and the International Medical Services for Health (INMED) Third Millennium Conference, "Involving Children in Community Partnerships to End Hidden Hunger." Members of the IVACG and INACG Steering Committees spoke at the INMED conference on the subject of micronutrient deficiencies. IVACG information was available for participants at the SNE and INMED conferences.

Ms. Aomari also participated in InterAction-sponsored meetings to discuss the FAO/WHO International Conference on Nutrition (ICN) draft Plan of Action,

especially the role of NGOs at the ICN and specific recommendations on micronutrient malnutrition.

IVACG Publications

Xerophthalmia Club Bulletin

Two issues of the *Xerophthalmia Club Bulletin* were printed during this fiscal year. Both issues contained information about the XIV IVACG Meeting, and the March 1992 issue contained the call for abstracts for the XV IVACG Meeting. These issues of the *Xerophthalmia Club Bulletin* are included as Appendix 9.

During the August IVACG Steering Committee meeting, members discussed the usefulness of *Xerophthalmia Club Bulletin*, noted that the editorial board was insufficiently used, and considered the pros and cons of continuing IVACG's financial support to the *Bulletin*. The committee expressed interest in a subscriber/membership survey to assess how the *Bulletin* could increase the benefits to its readers. Dr. Davidson agreed to work with the secretariat to carry out this survey. In September, the secretariat provided an advance to the editor to cover the IVACG share of expenses for preparation and distribution of the November 1992 issue.

Guidelines for the Development of a Simplified Dietary Assessment to Identify Groups at Risk for Inadequate Intake of Vitamin A

At their December meeting, the IVACG Steering Committee decided that *Guidelines for the Development of a Simplified Dietary Assessment to Identify Groups at Risk for Inadequate Intake of Vitamin A* should be revised and that Dr. Mohamed Mansour should be invited to head this effort. Dr. Underwood agreed to write to Dr. Mansour regarding a revision proposal and workplan.

During the August steering committee meeting, Dr. Underwood presented the proposed outline for the revision which she developed with Dr. Mansour. The secretariat has included this revision in its proposed FY93 Workplan.

International Nutritional Anemia Consultative Group (INACG)

Introduction

The Nutrition Foundation, Inc. first received financial support as the secretariat for INACG in 1977. Funding continued through a series of grants and extensions until the present cooperative agreement began 1 October 1987. This annual report covers the fifth year of the five-year term of this agreement.

The mission of INACG is to guide international activities for reducing iron deficiency and other nutritional anemias in the world. INACG sponsors international meetings and scientific reviews and convenes task forces to analyze and make recommendations related to the etiology, treatment, and prevention of nutritional anemias. Task force reports provide guidelines and strategies to assess the prevalence of nutritional anemia; refine assessment techniques; and develop, monitor, and evaluate intervention programs. The examination of these issues is important to the establishment of public policy and action programs.

INACG guidelines and strategies are generally disseminated through INACG's state-of-the-art monograph series. These monographs, along with INACG meeting reports, achieve worldwide circulation through channels of the United Nations agencies, AID and other international aid agencies, nongovernmental organizations, educational institutions, and private industry, and through direct correspondence with professionals working in developing countries.

INACG also provides information regarding country and donor program activities to interested individuals. Through its international meetings, INACG provides a forum to foster the interchange of ideas, the presentation of new research findings and survey data, and discussion of action programs.

The INACG Secretariat provides managerial, administrative, and logistic support for all INACG activities and the INACG Steering Committee. The steering committee consists of at least five members, including one representative from each of AID's three geographic regions (Latin America-Caribbean, Asia-Near East, and Africa), as well as the AID project officer for INACG. A list of the current steering committee members is included as Appendix 10.

In carrying out its responsibilities, the secretariat collaborates closely with the AID Office of Nutrition. Dr. Samuel G. Kahn, Senior Nutrition Advisor at the Office of Nutrition, serves as secretary of INACG.

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XII INACG Meeting: Combating Iron Deficiency Anemia Through Food Fortification Technology

The revised draft of the Action Plan developed at the XII INACG Meeting was distributed at the international conference, "Ending Hidden Hunger," held 10-12 October 1991 in Montreal.

Following additional review, *Combating Iron Deficiency Anemia Through Food Fortification Technology: An Action Plan* was printed and distributed to all meeting participants, additional policy makers, and other individuals who requested the document. A news release announcing its availability was distributed to international and domestic journals (See Appendices 11 and 12).

French and Spanish translations of the Action Plan were prepared and readied for printing. Based on direction from the Office of Nutrition, the translations underwent extensive review by experts in the field of iron deficiency anemia at Nestlé Research Center and the Pan American Health Organization (PAHO). French and Spanish translations will be printed during Q1FY93.

Review of the summary of the XII INACG Meeting was completed and the document was printed during the third quarter. Distribution included all meeting participants. The table of contents is included as Appendix 13.

INACG Steering Committee

The initial meeting of the INACG Steering Committee was held on 6 November 1991 in Atlanta, Georgia. Members of the committee attending were: Dr. Rodolfo Florentino, Philippines; Dr. Samuel G. Kahn, USA; Dr. T. N. Maletnlema, Tanzania; Dr. Richard Theuer, USA (chair); and Dr. Tomas Walter, Chile. In January, the secretariat distributed a news release to international and domestic journals announcing the formation of the steering committee (Appendix 12).

Enhancing the role of INACG in the developing world was seen as a major objective for the steering committee. An informational letter describing INACG and its activities was prepared and circulated to the INACG mailing list. Response forms enclosed with the letter enabled recipients to indicate their area of expertise and/or interest and to identify other individuals for the INACG network. This information has been entered into a database that can be searched to locate individuals with a particular expertise relating to iron deficiency anemia. There are now 119 names in the database representing 32 countries.

At this meeting, the steering committee also developed a mission statement outlining INACG's role in combating nutritional anemia. After revision, the

meeting minutes were sent to the committee on 30 December 1991. The minutes are found as Appendix 14.

Dr. Fernando Viteri, Group for Control of Iron Deficiency, ACC/SCN, was later invited to join the INACG Steering Committee, and he accepted. INACG representatives for the Joint Micronutrient Consultative Groups (JMCG) have been Dr. Theuer and Dr. Viteri. Dr. Sean Lynch, Veteran's Administrative Hospital, Hampton, Virginia, also participated in these meetings on behalf of INACG.

Task Force Activities

Task Force on NaFeEDTA

Several members of the task force met on 16 January 1992 at the NF office to discuss the draft monograph outline prepared by Dr. Sean Lynch, "Sodium Iron EDTA as an Iron Compound to Fortify Diets in Developing Countries." Participants included Dr. Lynch, Dr. Samuel G. Kahn, AID, and Dr. Richard Hurrell, Nestlé Research Center, Nestec Ltd., Switzerland. The draft outline is included as Appendix 15.

Task force members agreed to write the monograph chapters assigned to them and meet in Washington, D.C. to finalize the document. Chapters were circulated among the group prior to the task force meeting held 21-24 September 1992. Those contributing to the document include Dr. Thomas Bothwell, University of the Witwatersrand, South Africa; Dr. Richard Hurrell; Dr. Samuel G. Kahn; Dr. Sean Lynch; Dr. A. Patrick MacPhail, University of the Witwatersrand, South Africa; Mr. Arthur Pavlidis, Grace Chemical Co.; Dr. Paul Whittaker, Food and Drug Administration (FDA), USA; and Dr. John E. Vanderveen, FDA, USA.

Prior to this meeting, the secretariat contacted Dr. John L. Herrman, WHO Joint Secretary, Joint FAO/WHO Expert Committee on Food Additives (JECFA), for information about supporting documentation required for JECFA review of a compound. Dr. Herrman responded with information about JECFA review procedures, and indicated that the next JECFA meeting would take place in March 1993. The secretariat plans to submit portions of the task force monograph as part of the documentation necessary for a JECFA review of NaFeEDTA.

Task Force on the Relationship of Anemia to Mental and Behavioral Development

Material prepared by the task force was incorporated into a one-page handout, "Iron Deficiency Anemia in Infants and Children: A Factor in Intellectual Development," which was distributed at "Ending Hidden Hunger," the

international conference on micronutrient malnutrition held in Montreal in October 1991 (See Appendix 16).

Based on consultation with Dr. Kahn and other members of the task force, a second draft of the document was prepared by Dr. Sandra Shepherd. The draft was submitted to Dr. Kahn during the first quarter. No further work on the monograph has been initiated by the secretariat pending direction from AID.

Social Marketing Policy Paper

The INACG Steering Committee reviewed the draft document which was prepared in 1987. At the request of Dr. Kahn, the secretariat plans to invite a food company marketing department to review the feasibility of the specific steps outlined in the paper.

Other INACG Activities

Research Project to Determine the Effectiveness of Iron Fortified Infant Cereal in the Prevention of Iron Deficiency Anemia

The secretariat provided administrative and procurement services to Dr. Tomas Walter, University of Chile, the principal investigator for this research project funded through the Nutrition Foundation by the Gerber Products Company. The study is now complete and the results are being compiled for publication in a peer-reviewed journal.

Collaboration with Other Groups Active in Nutritional Anemia Programs

The secretariat participated in the international conference, "Ending Hidden Hunger," in October 1991. In consultation with Dr. Samuel G. Kahn, the secretariat developed materials for distribution at the conference.

The secretariat also participated in planning "Coordinated Strategies for Controlling Micronutrient Malnutrition: A Technical Workshop" co-sponsored by the International Life Sciences Institute Research Foundation and the Program Against Micronutrient Malnutrition (PAMM), a cooperative program of Emory University, U.S. Centers for Disease Control, and the Carter Center. This workshop was held in Georgia, 7-9 November 1991. INACG information was available to meeting participants.

A brief summary of the workshop was mailed to international journals and newsletters, and individuals on the Nutrition Foundation mailing list (Appendix 8). The full summary of that workshop will be submitted to the *Journal of Nutrition* for publication.

At the request of Dr. Frits van der Haar and PAMM, the secretariat organized visits for Dr. van der Haar and a group of PAMM trainees to two facilities in the United States where staple food fortification takes place. One facility is the Toledo flour mill owned by Nabisco Biscuit Company where flour is fortified with iron. The other is a Morton Salt Company facility in Silver Springs, New York where salt is iodized. The visits will occur in mid-November 1992.

INACG Publications

During fiscal year 1992, the secretariat published or prepared the following publications and informational brochures:

- *Combating Iron Deficiency Anemia Through Food Fortification Technology: An Action Plan* (English completed; French and Spanish translations prepared)
- *Combating Iron Deficiency Anemia Through Food Fortification: A Report of the XII INACG Meeting*
- *Iron Deficiency Anemia: A Micronutrient Priority* (prepared for the Montreal conference "Ending Hidden Hunger")
- Handout on the relationship between mental and behavioral development and iron deficiency anemia (prepared for the Montreal conference "Ending Hidden Hunger")

International Nutrition Planners Forum (INPF)

Introduction

The International Nutrition Planners Forum (INPF) is an informal organization of professionals from developing countries with expertise and responsibility for food and nutrition-related policies and programs. INPF provides opportunities and channels of communication for participants to exchange ideas and experiences; learn from one another; discuss common nutrition problems and possible solutions; formulate policy and technical recommendations; make points of view of developing countries known internationally; and influence important decisions made by international organizations and donors.

The Nutrition Foundation, Inc., serving as the INPF secretariat since 1990, provides managerial, administrative, and logistical support to INPF and the INPF Steering Committee. The INPF Steering Committee consists of seven members, including two representatives from each of AID's three geographic regions (Latin America-Caribbean, Asia-Near East, and Africa), and the AID project officer for INPF. A list of INPF Steering Committee members is included as Appendix 17 of this report.

INPF Steering Committee

A steering committee meeting was held in September 1991. The Office of Nutrition, in consultation with INPF Steering Committee chairman, Dr. Mamdouh Gabr, decided to postpone the next steering committee meeting until after the International Conference on Nutrition to be held in December 1992.

Sixth INPF International Conference: Effective Nutrition Communication for Behavior Change

Dr. Cheryl Achterberg, conference rapporteur, submitted a draft summary of the September 1991 conference to the secretariat in October 1991. Comments from the AID project officer for INPF and Mr. Mark Lediard, Academy for Educational Development, were sent to Dr. Achterberg in December 1991. A second draft from Dr. Achterberg was again reviewed by AID and AED. The finished document was printed in the fourth quarter (Appendix 18).

Effective Nutrition Communication for Behavior Change was distributed to all conference participants in August 1992. The secretariat received many requests for this document due to announcements in the American Public Health Association newsletter *Mothers and Children* and a news release from the secretariat announcing its availability (Appendix 19). The secretariat will

work with the AID project officer for INPF in distributing the report to AID missions.

French and Spanish translations of the report were initiated at the close of the fiscal year.

INPF Task Force Activities

Task Force on Communications

At the direction of the Office of Nutrition, no plans were made for this task force during FY92. However, information about the availability of INPF documents was widely circulated to a list of newsletters and publications maintained by the secretariat.

Task Force on Developing Guidelines for Using *Crucial Elements of Successful Community Nutrition Programs in Community-Based Nutrition Intervention Programs*

At the direction of the Office of Nutrition, no plans were made for this task force during FY92.

International Nutrition Network Exchange (INNE)

Introduction

The International Nutrition Network Exchange (INNE) is a two-day convocation of individuals from all organizations participating in AID Office of Nutrition funded activities under grants, cooperative agreements, and contracts. The purpose of this meeting is to foster the development of a strategy for enhancing information exchange and networking, strengthening nutrition programs, and identifying areas for policy development. The Nutrition Foundation, Inc., serving as the secretariat for INNE since 1990, provides managerial, administrative, and logistical support to INNE in implementing the decisions of the planning committee, organizing the annual INNE meeting, and maintaining correspondence and liaison with various international organizations.

Second Annual INNE Convocation

The summary of the Second Annual INNE Convocation, held in Rosslyn, Virginia on 5-6 May 1991, was published and distributed to all meeting participants in December 1991 (Appendix 20).

Third Annual INNE Meeting

During the second and third quarters, secretariat staff prepared for the Third Annual INNE Meeting. A planning meeting was held 4 February 1992 with representatives of several organizations that participated in previous INNE meetings. This group offered several program ideas based on the meeting theme, "Nutrition: Capacity-Building for Development." After consultation with Dr. Eunyong Chung, AID project officer for INNE, the secretariat invited speakers, participants, and group discussion leaders.

On 5-6 May 1992, the secretariat hosted the Third Annual INNE Meeting in Rosslyn, Virginia. Participants examined the concept of capacity-building as it relates to nutrition interventions. The meeting also provided an opportunity for implementors to display materials relating to their specific project activities, and for communication between Office of Nutrition implementors. The participant list and agenda are included as Appendix 21.

Evaluations by meeting participants were summarized and sent to the INNE project officer on 8 June 1992.

At the direction of the project officer, no meeting summary was prepared by the secretariat.

Joint Micronutrient Consultative Groups (JMCG)

Introduction

Establishment of the Joint Micronutrient Consultative Groups (JMCG) during fiscal year 1992 represents an initiative by the Office of Nutrition, AID, to respond to the growing international focus on micronutrient deficiencies by using an integrated approach to micronutrient malnutrition interventions. As such, this initiative is an evolving process which uses the resources available through IVACG and INACG, as well as the International Council for Control of Iodine Deficiency Disorders (ICCIDD). Discussions at JMCG meetings have focused on the development of a joint protocol for assessment and interventions which can be applied to vitamin A, iron, and iodine deficiencies.

Background

The first meeting of the Joint Micronutrient Consultative Groups took place in December 1991 immediately after two meetings significant to the field of micronutrient malnutrition. The first was the international policy conference "Ending Hidden Hunger" held 10-12 October 1991 in Montreal, Canada. This conference, co-sponsored by WHO, UNICEF, World Bank, CIDA, AID, FAO, and UNDP, represented the largest gathering of experts concerned with the issues of vitamin, iron, and iodine deficiencies. The second was the technical workshop "Coordinated Strategies for Controlling Micronutrient Malnutrition" co-sponsored by the International Life Sciences Institute Research Foundation and the Program Against Micronutrient Malnutrition (PAMM). Although much smaller than the Montreal conference, this workshop nevertheless examined the issues relevant to implementing an integrated approach directed at all three micronutrients.

JMCG Meetings

In accordance with terms of the Cooperative Agreement between the Office of Nutrition and the Nutrition Foundation, Inc., the first Joint Micronutrient Consultative Groups meeting included representatives of IVACG, INACG, and AID: Ms. Laurie Aomari, INACG/IVACG Secretariat; Dr. Frances Davidson, Secretary, IVACG; Dr. Suzanne Harris, INACG/IVACG Secretariat; Dr. Abraham Horwitz, Chair, IVACG; Dr. Lawrence Jindra, AID; Dr. Samuel G. Kahn, Secretary, INACG; Mr. Richard Seifman, AID; Dr. Richard Theuer, Chair, INACG Steering Committee; Dr. Fernando Viteri, INACG; and Dr. Barbara A. Underwood, Chair, IVACG Steering Committee. (This group is referred to as the Joint Consultative Group in the Cooperative Agreement.) Discussion focused on current AID programs in vitamin A and iron, and preliminary ways in which IVACG and INACG, as research exchange programs, could work

together and with the Administrative Committee on Coordination/Subcommittee on Nutrition (ACC/SCN). A commitment statement was endorsed by the group. Finally, it was suggested that a meeting including representatives of ICCIDD be arranged.

The second interaction among the consultative groups took place on 21 January 1992 via a conference call. The call served primarily for Drs. John Dunn and John Stanbury to introduce ICCIDD to the rest of the group. ICCIDD has a more formal membership structure than does IVACG or INACG, although it operates similarly through information exchange and support of current research findings. The rest of the discussion focused on possibilities for joint assessment methodology. All three groups agreed to circulate materials on assessment techniques in preparation for another meeting, at which a collaborative protocol for assessment would be drafted.

A third JMCG meeting took place in Washington, D.C., on 3 April 1992. Dr. Horwitz began the discussion with a history of the establishment of SCN's ad hoc groups on micronutrient malnutrition. Mr. Seifman continued with an update on the micronutrient sessions planned for the International Conference on Nutrition (ICN). The remainder of the meeting focused on assessment methods for each micronutrient, emphasizing those techniques which could be conducted simultaneously.

The minutes of all JMCG meetings are included as Appendix 22.

Follow-up

As a result of the discussion generated at the April meeting, secretariat staff developed a "Coordinated Assessment Methodology" matrix which summarizes the possibilities for joint assessment techniques in the field for all three micronutrients, including laboratory equipment needs and dosing requirements. This matrix was circulated among members of the JMCG and revised according to their comments (Appendix 23).

Efforts to organize another JMCG meeting over the summer were not successful. The next meeting will be held 23 October 1992, in order to discuss joint intervention strategies and continue discussion about a possible region or country where coordinated assessments and interventions may be implemented.

General Cooperative Agreement Activities

Monitoring and Tracking Requests for Information

Responding to information requests is one of the secretariat's most important functions. During fiscal year 1992, the secretariat tracked such requests through an interactive database, thus facilitating the secretariat's responses to requests and the secretariat's ability to summarize information about these requests. Table 1 indicates the number of requests by quarter.

Table 1

Number of Individual Requests for
 Publications and Information by Quarter, Fiscal Year 1992

Program	Number of Requests by Quarter				Total Number of Requests
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	
IVACG	75	93	109	91	368
INACG	51	85	81	108	325
INPF	5	3	2	65	75
TOTAL	131	181	192	264	768

Sources of Requests

Requests for publications and other information were received from many countries. Table 2 identifies the frequency of requests by country.

(Note: The total number of requests in Table 1 represents the total number of requests for each type of publication. The total listed in Table 2 represents the total number of individual requests from each country. Some of these requests were for IVACG, INACG and INPF documents).

Table 2

Source and Frequency of Requests for Information

Afghanistan	1	Greece	1	Papua New Guinea	2
Algeria	2	Guatemala	5	Peru	8
Angola	2	Honduras	1	Philippines	9
Argentina	8	Hong Kong	1	Paraguay	1
Australia	4	India	48	Poland	3
Bangladesh	14	Indonesia	8	Puerto Rico	1
Benin	3	Iran	3	Romania	1
Bolivia	3	Iraq	1	Rwanda	1
Brazil	6	Israel	4	Senegal	6
Burkina Faso	2	Italy	1	Sierra Leone	1
Burundi	1	Jamaica	1	South Africa	1
Cameroon	3	Kenya	9	Sri Lanka	5
Canada	20	Laos	2	Sudan	1
Chile	3	Lebanon	1	Sweden	3
China	6	Lesotho	1	Switzerland	10
Colombia	3	Malawi	1	Syria	1
Costa Rica	3	Malaysia	5	Tanzania	18
Cuba	3	Mauritius	1	Thailand	7
Cyprus	1	Mexico	1	The Congo	1
Denmark	3	Micronesia	1	Tunisia	1
Dominican Rep.	1	Myanmar	1	Turkey	2
Ecuador	4	Namibia	2	Uganda	3
Egypt	4	Nepal	1	United Kingdom	22
El Salvador	1	Netherlands	4	United States	207
Ethiopia	1	Niger	1	Venezuela	4
Fiji	2	Nigeria	111	Vietnam	3
France	4	Pakistan	9	Zambia	4
Germany	4	Palau	1	Zimbabwe	3
Ghana	3	Panama	1		

Total Number of Countries: 86

Total Number of Requests: 671

Reporting Requirements

Documents required by Cooperative Agreement No. DAN-5115-A-00-7114-00 were submitted to the AID project officer, Ms. Brenda J. Colwell, and other project officers as outlined below:

	<u>Type of Document</u>	<u>Date Submitted</u>
1.	Trip report relating to Sixth INPF Conference held 4-5 September 1991 in Paris, France	1 October 1991
2.	Summary of the XIV IVACG Meeting (also submitted to the AID project officer for IVACG)	9 October 1991
3.	Summary of XIV IVACG Meeting evaluation forms (also submitted to the AID project officer for IVACG)	25 October 1991
4.	Revised FY92 Workplans	10 October 1991
5.	Trip report of participation in the conference, "Ending Hidden Hunger," held 10-12 October 1991 in Montreal	24 October 1991
6.	Q4FY91 Report and Financial Statement	30 October 1991
7.	FY91 Annual Report	30 October 1991
8.	1991 Health and Child Survival Project Questionnaire (submitted to VITAL for AID project officer for IVACG)	31 October 1991
9.	Minutes of 6 November 1991 INACG Steering Committee meeting (submitted to AID project officer for INACG)	25 November 1991
10.	Report of the Second INNE Annual Convocation (submitted to AID project officer for INNE)	2 December 1991
11.	Draft minutes of the first JMCG Meeting held 3 December 1991 Revised minutes (submitted to AID project officers for IVACG/INACG)	18 December 1991 30 December 1991
12.	Draft minutes of the 4-5 December 1991 IVACG Steering Committee meeting (submitted to AID project officer for IVACG) Revised minutes	20 December 1991 2 March 1992

- | | | |
|-----|--|-----------------------------|
| 13. | Q1FY92 Report and Financial Statement | 30 January 1992 |
| 14. | Draft minutes of the JMCG conference call
on 21 January 1992
(submitted to AID project officers for INACG and IVACG) | 7 February 1992 |
| 15. | Projected Financial Summary for Q2-Q4FY92
(submitted also to INACG project officer) | 20 March 1992 |
| 16. | Q2FY92 Report and Financial Statement | 30 April 1992 |
| 17. | Draft minutes of the JMCG meeting on 3 April 1992
Revised minutes
(submitted to the AID project officers for INACG and IVACG) | 8 April 1992
15 May 1992 |
| 18. | Final summary of the XII INACG Meeting
(submitted to the AID project officer for INACG) | 13 May 1992 |
| 19. | Summary of evaluations from the Third Annual INNE Meeting | 8 June 1992 |
| 20. | Trip report relating to the May/June 1992 site visit to
Arusha, Tanzania in preparation for the XV IVACG Meeting
(also submitted to the AID project officer for IVACG) | 23 June 1992 |
| 21. | Request for extension of the Cooperative Agreement
and a financial projection for Q1 - Q3FY93 | 24 June 1992 |
| 22. | Q3FY92 Report and Financial Statement | 30 July 1992 |
| 23. | FY93 proposed Annual Workplans
(1 October 1992 - 30 June 1993) | 31 July 1992 |
| 24. | Draft minutes of the 3-4 August 1992
IVACG Steering Committee | 19 August 1992 |
| 25. | Summary of the Sixth INPF Conference | 21 August 1992 |

Financial Report

Summary of Direct Expenses for Fiscal Year 1992 Cooperative Agreement No. DAN-5115-A-00-7114-00

FY92 Yearly Totals	Vitamin A	Anemia	Sustain	INPF	INNE	Total
Direct Labor	67,116.84	29,206.37		10,932.04	10,257.70	117,512.95
Fringe Benefits	14,778.37	5,870.64		1,510.00	2,021.98	24,180.99
Temporary Help	3,887.80	513.40		1,304.52	51.93	5,757.65
Consultants	1,500.00	1,000.00		500.00	.00	3,000.00
Publications & Support	26,464.89	8,071.12		1,746.77	160.83	36,443.61
Travel	36,591.52	14,536.14		390.32	.02	51,518.00
Per Diem	7,025.08	4,023.28		2,806.89	.00	13,855.25
Supplies	2,447.03	980.76		2,195.41	688.51	6,311.71
Equip Purchase	.00	.00		.00	.00	.00
Office Rent	14,821.38	5,972.54		1,111.30	2,044.82	23,950.04
General Expenses	3,806.10	2,899.55		6,336.31	1,097.62	14,139.58
Fiscal Administration	14,475.41	5,813.22		2,939.94	2,810.97	26,039.54
Communications	21,235.83	7,461.86		2,473.13	1,391.95	32,562.77
Meeting Room Rental	16.35	16.35		(5,755.80)	1,463.00	(4,260.10)
Total Direct	214,166.60	86,365.23	.00	28,490.83	21,989.33	351,011.99
Indirect (12%)	25,699.99	10,363.83	.00	3,418.90	2,638.72	42,121.44
Total Amount	239,866.59	96,729.06	.00	31,909.73	24,628.05	393,133.43

Cooperative Agreement Financial Standing

	Increase	Total
Initial Obligated Amount 11/23/87		\$1,181,938.00
Modification #1 11/09/88	\$229,000.00	\$1,410,938.00
Modification #2 09/19/89	\$60,000.00	\$1,470,938.00
Modification #3 02/27/90	\$60,000.00	\$1,530,938.00
Modification #4 08/21/90	\$565,000.00	\$2,095,938.00
Modification #5 05/08/91	\$300,000.00	\$2,395,938.00
Modification #6 07/11/91	\$303,000.00	\$2,698,938.00
Modification #7 09/30/92	\$585,882.00	\$3,284,820.00
TOTAL OBLIGATED AMOUNT THROUGH 06/30/93		\$3,284,820.00

Project Allocation of Funds by Program

	IVACG	INACG	INPF	INNE	SUSTAIN	TOTAL
Initial 11/23/87	772,991	50,000	-----	-----	358,947	1,181,938
Mod. #1 11/09/87	-----	229,000	-----	-----	-----	229,000
Mod. #2 09/19/89	-----	-----	-----	-----	60,000	60,000
Mod. #3 02/27/90	-----	-----	-----	-----	60,000	60,000
Mod. #4 08/21/90	300,000	150,000	85,535	15,000	14,465	565,000
Mod. #5 05/08/91	300,000	-----	-----	-----	-----	300,000
Mod. #6 07/11/91	50,000	-----	228,000	25,000	-----	303,000
Mod. #7 09/30/92	313,357	131,294	103,942	37,289	-----	585,882
TOTALS	1,736,348	560,294	417,477	77,289	493,412	3,284,820

List of Appendices

1. IVACG Steering Committee
2. Trip report submitted to AID for site visit to Tanzania in preparation for the XV IVACG Meeting
3. Draft program XV IVACG Meeting
4. News releases regarding XV IVACG Meeting
5. Table of contents, title page, and news release concerning the summary of the XIV IVACG Meeting
6. Minutes of IVACG Steering Committee meetings
7. Assessment Methodology Task Force
8. Brief summary from "Coordinated Strategies for Controlling Micronutrient Malnutrition"
9. FY92 issues *Xerophthalmia Club Bulletin*
10. INACG Steering Committee
11. *Combating Iron Deficiency Anemia Through Food Fortification Technology: An Action Plan* (Title page and Table of Contents)
12. News releases announcing Action Plan and INACG Steering Committee
13. Report of XII INACG Meeting (Title page and Table of Contents)
14. Minutes of INACG Steering Committee meeting
15. Monograph outline "Sodium Iron EDTA as an Iron Compound to Fortify Diets in Developing Countries"
16. INACG handout "Compromising Intellectual Development: Iron Deficiency Anemia in Infants and Children" (prepared for Montreal conference)
17. INPF Steering Committee
18. *Effective Nutrition Communication for Behavioral Change*. Report of the Sixth INPF International Conference (Title page and Table of Contents)

19. News release announcing report of the Sixth INPF International Conference
20. Summary of the Second Annual INNE Convocation
21. Participant list and agenda from Third Annual INNE Meeting
22. Minutes of JMCG meetings
23. "Coordinated Assessment Methodology" matrix developed at JMCG meetings

Appendix 1



**International
Vitamin A
Consultative
Group**

Chairman
Dr. Abraham Horwitz, PAHO/WHO

Secretary
Dr. Frances R. Davidson, USAID

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Telex: 6814107 "NUFOUND"
Phone: (202) 659-9024
Facsimile: (202) 659-3617

IVACG Steering Committee

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Appendix 2



International
Vitamin A
Consultative
Group

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Dr. Frances R. Davidson, USAID

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Facsimile: (202) 659-3617

Trip Report IVACG Secretariat

Individual travelling with cooperative agreement funds:
Laurie Lindsay Aomari, R.D., IVACG Project Manager

Dates of travel:
22 May through 5 June 1992

Purpose of trip:

This trip was for discussions with members of the local committee for the XV IVACG Meeting and with individuals from organizations that may wish to provide additional support to the local committee, negotiations regarding meeting facilities and hotel rooms, and investigation of banking possibilities. The trip also allowed an opportunity to assess customs, immigration, transportation, safety, and other details necessary to ensure a successfully organized meeting.

Technical observations:

Tanzania Food and Nutrition Centre (TFNC) colleagues have a long history of working to combat nutritional deficiencies including vitamin A deficiency. These colleagues have experience both with technical aspects of control of micronutrient deficiencies and the logistical aspects of organizing conferences. In general, TFNC staff has good rapport with many ministries, agencies, and nongovernmental organizations (NGO's) in Tanzania through their collaborative work with different sectors and their application of community-based approaches to food and nutrition problems in Tanzania. These factors will contribute to development of a strong local organizing committee comprised of representatives of many organizations and to a productive national symposium in conjunction with the XV IVACG Meeting. In preparation for the meeting, five colleagues at TFNC have formed the nucleus of the local organizing committee and have begun to work with the IVACG Secretariat on meeting plans.

The secretary of the local organizing committee and Ms. Aomari met briefly with Ms. Dana Vogel and Mr. Michael Mushi at the USAID Mission in Dar Es Salaam. Both were affirmative and generally interested in the XV IVACG Meeting and asked to be kept informed as plans unfold.

There are several potential opportunities for XV IVACG Meeting participants to participate in study tours and visits to tourist attractions in Tanzania. Study tours related to community-based interventions and horticulture were discussed with staff of TFNC, UNICEF, World Vision, and the Horticultural Research Centre at Tengeru.

Arusha International Conference Centre (AICC) can easily accommodate meetings in its several meeting rooms, main conference hall, and public areas. Several of the available rooms are equipped with permanent interpretation facilities and appropriate support services (e.g., duplicating equipment and tour agents) are available for hire to conference organizers. AICC staff members seem experienced in the logistics and needs for international conferences similar in size and complexity to the XV IVACG Meeting.

As a result of satisfactory negotiation between Ms. Aomari and hotel management, Mt. Meru Hotel can provide comfortable accommodations within the US Government per diem rates for Arusha. Negotiations are still in progress with three other significantly more modest hotels to provide accommodations for meeting participants at even lower rates. Due to national circumstances beyond hotel control, power outages sometimes occur and communications services (telephone, telex, and fax) are not optimal.

All hotel and conference facilities room charges must be paid for in US dollars. It does not seem likely that the IVACG Secretariat can easily pay for charges in Tanzanian Shillings. It may be useful to investigate the possibility of a Tanzanian organization serving as the contracting or subcontracting organization for local facilities.

Suggestions and recommendations:

Due to the experience and networks of colleagues at TFNC, the local committee may wish to take a more active role in meeting planning than local committees of other recent IVACG meetings. The local committee for the XV IVACG Meeting may wish to extend meeting invitations to a broad group of Tanzanian and expatriate professionals who have an interest in or can contribute to the prevention and control of vitamin A deficiency in Tanzania.

The secretariat and colleagues at TFNC recommend the Arusha International Conference Centre as the site for most meeting activities. It is the best facility in the country and, due to the size and complexity of the IVACG meeting, the only suitable facility in Arusha. Mt. Meru Hotel is recommended as the main hotel for accommodating international participants. The secretariat also recommends smaller blocks of rooms at three other local hotels for those preferring more modest accommodations. Each hotel has conference rooms that may be appropriate for evening events and/or meetings for other groups adjacent to the XV IVACG Meeting.

To facilitate arrivals for international participants, special arrangements should be made for arrivals through several border points. It may be helpful to make special flight arrangements between Dar Es Salaam and Kilimanjaro airports and to inform meeting participants of the availability of nonstop bus service between Arusha and Nairobi.

Due to the distance between suitable hotels and the conference facilities, bus transfer/shuttles will be required throughout the meeting. The time necessary for this transportation must be considered during program development.

A debt swap or currency exchange presents several challenges, the largest being the requirement to pay hotel and conference room charges in foreign currency. These challenges will be discussed with knowledgeable staff at The Debt-for-Development Coalition, Inc.

Overall impressions of the site situation:

Ms. Aomari believes Arusha will serve as a suitable meeting site. It is a comfortable environment with adequate--yet potentially complicated--available transportation, appropriate meeting facilities, and reasonable weather. The local committee has a very capable core group at TFNC and the secretariat feels confident that the committee will be

able to provide or assist with the necessary local arrangements. Several ministries, agencies, and NGO's are supportive of the meeting and are likely to cooperate with TFNC in these local arrangements.

List of persons visited with their title and organization affiliation:

A list of these individuals is given on the following pages.

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Mrs. Rose Kingamkono
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National Bank of Commerce
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Mrs. Masha
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Mrs. M. Rutaihwa
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Mount Meru Hospital
Arusha
Tanzania

Mrs. Janeth Shoudi
Regional Village
Health Worker Coordinator
c/o Mount Meru Hospital
Arusha
Tanzania

Dr. Nashara
Acting Regional Medical Officer
c/o Mount Meru Hospital
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Appendix 3

XV IVACG
MEETING

**Toward Comprehensive Programs to Reduce Vitamin A Deficiency
XV IVACG Meeting**

Draft Program Overview

Sunday

All day Nongovernmental organization meetings

Morning IVACG Steering Committee meeting

Evening Early registration

Monday

Morning Inauguration of XV IVACG Meeting
National Symposium sessions

Afternoon National Symposium sessions

Evening Opening reception

Tuesday

Morning Summary of Tanzanian experience (from National Symposium)
Keynotes (international and national) on meeting theme

Afternoon Meeting theme presentations continue
Official meeting photo
Agency presentations

Evening Skill-building workshops

Wednesday

- Morning** Plenary related to poster sessions I and II
Poster sessions I and II with presenters available
Summary of poster session I
Panel discussion of poster session I
Summary of poster session II
Panel discussion of poster session II
- Afternoon** Agency presentations continue
Nongovernmental organizations presentations
- Evening** IVACG Steering Committee Meeting with IVACG Regional Representatives for Africa

Thursday

- Morning** Plenary, country experiences, and panel on Linking Vitamin A to Other Micronutrient Issues, e.g., Iron and Iodine
- Afternoon** Plenary, presenters available at posters, summaries, panel discussions related to topics of poster sessions III and IV using same format as previous day (Wednesday morning)
- Evening** Optional informal dinner groups

Friday

- Morning** Plenary (not related to poster session V)
Presenters available at posters of session V
Video viewing
- Afternoon** Plenary, summary, panel discussion related to poster session V with same format as used previous days
Closing events
- Evening** Closing celebrations

Saturday/Sunday

- All day** Optional study tours

DRAFT

**Toward Comprehensive Programs to Reduce Vitamin A Deficiency
XV IVACG Meeting**

Draft Program

Sunday

0900-1200 Concurrent events by invitation such as....
IVACG Steering Committee Meeting
NGO workshops/meetings

1800-2130 Early Registration

Monday

(Note: The local committee will take the lead in proposing a program for the inauguration and National Symposium).

0800 Registration continues

0900 Inauguration

Master of Ceremonies (a Tanzanian)

Host country/agency welcome I

Host country/agency welcome II

Host country/agency welcome III

US Agency for International Development, Mission to Host Country welcome

Mr. Richard Seifman, Director, Office of Nutrition, Bureau for Research and Development, US Agency for International Development

Host Country Minister of Health and/or Minister of Agriculture welcome

Dr. Abraham Horwitz, IVACG Chair

1030 Break

1050 National Symposium session

Chair:

1230 Lunch

1400 National Symposium sessions continue

1700 End of day's formal sessions

1900 Reception

Host:

Tuesday

- 0900 National Symposium
- 1030 Break
- 1045 Projects to Programs: What does it take?
Chair: Dr. Abraham Horwitz
- 1045 International Perspective (maybe 1?)
Dr. V. Ramalingaswami or Dr. Franz Simmersbach
- 1105 National Perspectives (maybe 2?--20 minutes each)
Dr. Festo Kavishe--Tanzania/community development
Dr. Soekirman--Indonesia/food fortification
Dr. Tontsirin--Thailand/poverty reduction
Dr. Chirambo--Targeted supplementation programs in Africa
- 1145 Reaction to these presentations from chair or other important individual
- 1205 Discussion and announcements
- 1230 Lunch
- 1400 Projects to Programs: How do we know it's working?
Chair:
- 1400 International Perspective
Per Pinstrup-Anderson or J.P. Habicht
- 1420 National Perspectives
Philippines
Bangladesh
Nepal
- 1500 Reaction to these presentations from chair or other individual
- 1520 Discussion
- 1545 Break
- 1605 Official meeting photo
- 1630 Agency Presentations (work agencies and NGO's into program earlier so people can discuss ideas with them throughout the week)
Chair:
FAO

WHO
UNICEF
1715 Discussion and announcements
1745 End of day's formal sessions
Evening Skill-building workshops

Wednesday

0800-0830 Poster sessions I and II set up
0830-1800 Poster sessions I and II on display, presenters available 1050-1150
0830 Plenary for 4 20-minute oral presentations of outstanding abstracts submitted relating to topics of poster sessions I and II--include 2 discussion periods of 20 minutes each or allow one more presentation and have total discussion time (only Q&A?) amount to 20 minutes spread across the presenters)
Chair:
1030 Break
1050 Posters sessions I and II with presenters available
1150 Summary of poster sessions I and II
Chair:
1150 Summarizer poster session I
1205 Panel of presenters poster session I
1220 Summarizer poster session II
1235 Panel of presenters poster session II
1300 Lunch
1430 Plenary: Agency Presentations continue
Chair:
1430 USAID
1445 CIDA
1500 another agency e.g., UNDP, SIDA, or World Bank

- 1515 Discussion
- 1530 Plenary: Nongovernmental Organization Presentations
- Chair:
- SightFirst
Christoffel Blindenmission
Sight Savers
- 1615 Break
- 1630 Nongovernmental Organization Presentations continue
- Chair:
- International Eye Foundation
HKI
World Vision Relief and Development, Inc.
(last meeting had 5 groups present--the above but not SightFirst)
- 1715 Discussion
- 1730 Announcements and end of day's formal sessions
- 1830 IVACG Steering Committee Meeting with IVACG Regional Representatives for Africa

Thursday

- 0800-0900 Poster sessions III and IV set up
0900-1800 Poster sessions III and IV on display, presenters available 1300-1400
- 0900 Linking Vitamin A to Other Micronutrient Issues, e.g., Iron and Iodine
- Chair:
- 0900 Overview and Update of Iron Deficiency
Iron expert
- 0920 Questions
- 0930 Overview and Update of Iodine Deficiency
Iodine expert
- 0950 Questions
- 1000 Report of Joint Working Group activity IVACG/INACG/ICCIDD

- 1020 Linking Vitamin A to Other Micronutrient Issues: Country Experiences
 Chair:
 (one or more oral presentations)
- 1040 Break
- 1100 Linking Vitamin A to Other Micronutrient Issues (continued)
 Chair:
- 1100 UNICEF panelist
- 1110 FAO panelist
- 1120 Vitamin A panelist
- 1130 Discussion
 Iron speaker, Iodine speaker, National speaker join the above panel for the
 discussion
- 1200 Lunch
- 1300 Posters sessions III and IV with presenters available
- 1400 Plenary for 4 20-minute oral presentations of outstanding abstracts submitted
 relating to topics of poster sessions III and IV--include 2 discussion periods of
 20 minutes each or allow one more presentation and have total discussion time
 (only Q&A?) amount to 20 minutes spread across the presenters)
 Chair:
- 1600 Break
- 1620 Summary of poster sessions III and IV
 Chair:
- 1620 Summarizer poster session III
- 1635 Panel of presenters poster session III
- 1655 Summarizer poster session IV
- 1710 Panel of presenters poster session IV
- 1730 Announcements and end of day's formal sessions

Could run Thursday afternoon until 1800--could make afternoon plenary shorter and have break at 1530 with then a larger slot here at the end to use for something else.

1900 Informal dinner groups (this is just an idea to consider)--about 10 max/group--different restaurants at participant's own expense--with a topic and leader/expert--no reporting back to plenary required--organize with assistance of local committee

Friday

0800-0900 Poster session V set up (training and private sector initiatives)
0900-1300 Poster session V on display, presenters available 1100-1200

0900 Plenary

Chair:

1045 Break

1100 Poster session V with presenters available
Video-viewing room open?

1200 Lunch

1400 Plenary: Training and private sector initiatives

Chair:

1400 Outstanding private sector initiative

1420 Outstanding training initiative

1440 Discussion

1500 Summarizer poster session V

1515 Panel of presenters poster session V

1535 Break

Could insert another plenary or other activity here that would take about 1 hour--bringing everything to conclusion by 1745. Lunch could be cut down too which would then allow for about total of additional 90 minutes for afternoon plenary.

- 1600 Closing events
Chair:
- 1600 IVACG Secretariat Report and Announcements
- 1620 Closing Remarks
Dr. Abraham Horwitz
- 1645 End of formal sessions
- 1830 Closing celebrations
Host:

Saturday/Sunday

Optional study tours organized by local committee

Appendix 4



International
Vitamin A
Consultative
Group

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Secretary
Dr. Frances R. Davidson, USAID

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CALL FOR ABSTRACTS XV IVACG MEETING

For Immediate Release

Contact: Laurie Lindsay Aomari, R.D.
(202) 659-9024

Washington, D.C. -- February 1993 will be the date of the XV International Vitamin A Consultative Group (IVACG) Meeting. The theme of the meeting, which will take place in Africa, is "Toward Comprehensive Programs to Reduce Vitamin A Deficiency." The program will include invited presentations on this topic as well as presentations selected from submitted abstracts on the following topics:

- ▲ vitamin A program issues (e.g., integration with other programs, cost, or management)
- ▲ progress in changing dietary behaviors related to vitamin A
- ▲ newer methodologies for assessing subclinical vitamin A deficiency
- ▲ consequences for human health and development of vitamin A deficiency
- ▲ new human research related to the functions of vitamin A

Abstracts must contain sufficient specific data to enable evaluation by the selection committee. If you wish to submit a paper for presentation, prepare your abstract as follows:

Type double spaced in black ink on a single page with one-inch margins on all sides. Begin with the title in capital letters, followed by a period. Continue with the name(s), address(es), and affiliation(s) of the author(s), followed by a period. Underline the name of the presenter. Begin the presentation description on a new line indented three spaces. Proofread your abstract for accuracy. All abstracts must be camera-ready for inclusion in the meeting summary.

On a separate page, provide your address and telephone, facsimile, telex, and cable numbers where you can be reached between July 1992 and January 1993. Also, please indicate whether you will bring copies of your paper to the meeting for distribution if your paper is selected for presentation.

Mail both pages to: Laurie Lindsay Aomari, R.D., IVACG Secretariat, The Nutrition Foundation, Inc., 1126 Sixteenth Street, N.W., Washington, D.C. 20036, USA. Your response must be postmarked by 8 May 1992. The IVACG Steering Committee will select abstracts for presentation that relate to the stated themes. If your paper is selected for an oral presentation, a full paper will be requested by 15 November 1992.

The International Vitamin A Consultative Group was established in 1975 to guide international activities for reducing vitamin A deficiency in the world. Through its international meetings, IVACG provides a forum for new ideas, encourages innovations, recognizes important research findings, increases awareness of the latest survey data, and promotes action programs.

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International
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**ARUSHA, TANZANIA
THE SITE FOR MARCH
IVACG MEETING**

For Immediate Release

**Contact: Laurie Lindsay Aomari, R.D.
(202) 659-9024**

Washington, D.C. -- "Toward Comprehensive Programs to Reduce Vitamin A Deficiency" will be the theme of the XV International Vitamin A Consultative Group (IVACG) Meeting, 8-12 March 1993, in Arusha, Tanzania. The meeting will begin with a national symposium focussing on programs and accomplishments in Tanzania. Following this, the meeting will feature invited presentations on the meeting theme as well as oral, poster, and video presentations on the following:

- ▲ vitamin A program issues (e.g., costs, management, or integration with other programs)
- ▲ progress in changing dietary behaviors related to vitamin A
- ▲ newer methodologies for assessing subclinical vitamin A deficiency
- ▲ consequences for human health and development of vitamin A deficiency
- ▲ new human research related to the functions of vitamin A

Through its international meetings, IVACG provides a forum for new ideas, encourages innovations, recognizes important research findings, increases awareness of the latest survey data, and promotes action programs. The published conclusions of these meetings reflect the perspectives of those addressing vitamin A issues in varied settings.

IVACG welcomes to its meetings participants from international agencies, national ministries, educational institutions, and nongovernmental organizations. Among the 200 participants expected to attend the XV IVACG Meeting are policy makers, programmers, and scientists in health, nutrition, biochemistry, agriculture, horticulture, and development.

The XV IVACG meeting is sponsored by the Tanzania Food and Nutrition Centre, the National Vitamin A Consultative Group of Tanzania, the International Vitamin A Consultative Group (receiving funding through a cooperative agreement with the US Agency for International Development), and others.

To receive more information about the meeting, write or call the IVACG Secretariat, The Nutrition Foundation, Inc., 1126 Sixteenth Street, N.W., Washington, D.C. 20036, USA. The secretariat telephone number is (202) 659-9024; the secretariat fax number is (202) 659-3617.

The International Vitamin A Consultative Group was established in 1975 to guide international activities for reducing vitamin A deficiency in the world.

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Appendix 5

XIV IVACG Meeting

18–21 June 1991
Guayaquil, Ecuador



The purpose of the International Vitamin A Consultative Group (IVACG)[®] is to guide international activities aimed at reducing vitamin A deficiency in the world. The group offers consultation and guidance to various operating and donor agencies that are seeking to reduce vitamin A deficiency and its accompanying blindness. As part of this service, IVACG has prepared guidelines and recommendations for

- ▲ Assessing the regional distribution and magnitude of vitamin A deficiency;
- ▲ Developing intervention strategies and methodologies to control vitamin A deficiency;
- ▲ Evaluating the effectiveness of implemented programs on a continuing basis; and
- ▲ Research needed to support the assessment, intervention, and evaluation of programs.

These guidelines and recommendations are available through IVACG's publications program. A list of publications available from IVACG, along with ordering information, is given on the inside back cover of this meeting summary.

The publication of this meeting summary is made possible by support from the Office of Nutrition, Bureau for Research and Development, U.S. Agency for International Development, under Cooperative Agreement No. DAN-5115-A-00-7114-00 with The Nutrition Foundation, Inc., Washington, D.C.

Table of Contents

Introduction	i
Program	iii
Opening Session	3
Invited Keynote Presentations	4
Community-Based Interventions for the Control of Vitamin A Deficiency	7
Special Session on Community-Based Interventions	14
Perspectives on Vitamin A Fortification	15
Vitamin A and Childhood Morbidity and Mortality: Reports from Clinical Trials	17
Vitamin A and Childhood Morbidity and Mortality: Related Reports	20
Special Session on Vitamin A Status and Childhood Morbidity and Mortality	21
Update on Assessment Techniques	21
Special Session on Assessment Techniques	24
Nongovernmental Organization Presentations	25
Agency Presentations	28
Report on a Joint Consultation on Intervention Trials: Consensus Statement	33
IVACG Secretariat Report	34
IVACG Chairperson: Closing Remarks	35
Acknowledgments	37
References	41
Abstracts	51
Participants	113
Local	115
International	119



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**SUMMARY OF THE XIV IVACG
MEETING, ON "COMMUNITY-BASED
INTERVENTIONS," NOW AVAILABLE**

For Immediate Release

**Contact: Laurie Lindsay Aomari, R.D.
(202) 659-9024**

Washington, D.C. -- "We must not have children going blind nor dying prematurely because they lack on time an essential nutrient, vitamin A, that nature generously provides. This is our collective moral responsibility. As long as we keep it constantly in mind, we will succeed," said Dr. Abraham Horwitz, chair of the International Vitamin A Consultative Group (IVACG), as he encouraged participants at the XIV IVACG Meeting in their battle to eliminate vitamin A deficiency within the next decade. A complete summary of the meeting is now available from the IVACG Secretariat.

Representatives from 39 countries were among the 193 policy makers, programmers, and scientists in health, nutrition, biochemistry, agriculture, horticulture, and development who participated in the XIV IVACG Meeting, held 16-18 June 1991 in Guayaquil, Ecuador. Speakers addressed the major theme of the four-day meeting: prevention of vitamin A deficiency and its morbid consequences through community-based interventions.

A consistent theme concerned the need to combat vitamin A deficiency within the context of the social, economic, dietary, and health needs and resources of a population. Speakers emphasized the need to recognize vitamin A deficiency as a nutritional problem rooted in the community. They argued for solutions that are effective, practical, and sustainable and that will be accomplished through full investment in human resources. Institutional links across public and private sectors that would strengthen nutritional priorities and tie them into economic development was offered as a vital step toward long-term control of vitamin A deficiency.

Also included in the program were brief presentations of selected research reports related to the assessment of vitamin A status and the effect of vitamin A

- more -

55

status on morbidity and mortality. Mortality intervention studies presented at the meeting reaffirmed the IVACG statement made after the XIII IVACG Meeting in Nepal in 1989: "Evidence is accumulating that [vitamin A] also reduces mortality," taking note that one trial presented at the meeting did not show a significant difference in mortality. Reports of presentations and discussion sessions contained in the meeting summary reflect current perspectives and activities of United Nations agencies, bilateral agencies, nongovernmental organizations, private industry, and other private and educational institutions and foundations. These reports, along with abstracts of presentations and lists of participants, make this meeting summary a valuable resource for professionals interested in the problem of vitamin A deficiency and the solutions for its control.

A local committee in Ecuador and IVACG cohosted the meeting. The IVACG Steering Committee and the IVACG Secretariat planned and organized the IVACG meeting through a cooperative agreement between The Nutrition Foundation, Inc. and the Office of Nutrition, Bureau for Science and Technology, U.S. Agency for International Development. The meeting summary and other IVACG publications are available from the IVACG Secretariat, The Nutrition Foundation, 1126 Sixteenth Street, N.W., Washington, D.C. 20036, USA.

The International Vitamin A Consultative Group was established in 1975 to guide international activities aimed at reducing vitamin A deficiency in the world.

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Appendix 6



International
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Minutes of the IVACG Steering Committee Meetings 17 and 19 June 1991 Guayaquil, Ecuador*

Participants: Dr. Frances R. Davidson, Dr. Abraham Horwitz, Dr. Norge W. Jerome, Dr. Timothy A. Morck, Dr. Vinodini Reddy, Dr. Franz Simmersbach, Dr. Alfred Sommer, Dr. Barbara A. Underwood, and Ms. Laurie Lindsay Aomari. (Steering Committee member Dr. Demissie Habte was unable to attend this meeting. Dr. Vinodini Reddy participated in the deliberations only on 19 June. Dr. Wilma Freire participated in the last 30 minutes of the meeting on 17 June.)

As chairperson of the IVACG Steering Committee, Dr. Underwood opened the meeting on 17 June at 0905. Dr. Underwood opened the meeting on 19 June at 1830.

XIV IVACG Meeting

Those present reviewed the tightly scheduled final program for the meeting. Ms. Aomari noted that the inauguration was revised after consultation with several Ecuadorians involved with local arrangements for the meeting. Dr. Horwitz agreed to welcome Dr. Freire, local committee chairperson, to the platform as mistress of ceremonies for the inauguration. Dr. Sommer agreed to summarize the sessions on the primary meeting theme "Community-Based Interventions." Dr. Davidson agreed to give a presentation titled "Report on a Joint Consultation on Intervention Trials" on the final meeting day. Ms. Aomari drew attention to two other additions to the program: a panel on fortification and a video viewing room.

Dr. Freire reported that Ecuadorian nationals have positive expectations about the meeting and that the Minister of Health has assured her of his participation. Those present expressed concern about cholera in Guayaquil and agreed that during the first day of the meeting Dr. Freire should remind the audience of necessary precautions. Dr. Freire stated that the number of cases of cholera in Guayaquil is increasing but that the problem is primarily in the very poor areas of the city.

Ms. Aomari reported that Dr. Keith West and Dr. J. Peter Greaves will serve as meeting rapporteurs and reviewed other meeting logistics including social events sponsored by Ecuaroche and Atlantic Industries, Ltd. (Coca-Cola Ecuador). The committee expressed hope that the photo from the XIII IVACG Meeting in Nepal, as well as that from the XIV IVACG Meeting, would be made available to meeting participants.

Terms of Reference of the IVACG Steering Committee

As continuation of discussions during the steering committee meeting in January 1991, the group considered the IVACG Steering Committee terms of reference which were last revised 12 February 1988. This version of the terms of reference is not in accord with 1990 changes

* These minutes were revised on 5 November 1991. An earlier version was distributed on 5 August 1991.

in the cooperative agreement between the Nutrition Foundation and the Agency for International Development. Dr. Underwood and Dr. Sommer believe the steering committee began in 1986 and they reviewed some of the circumstances that lead to its formation. Dr. Sommer noted the value of the steering committee for administration, direction, and continuity of IVACG.

Dr. Morck reviewed the steering committee structure specified in Cooperative Agreement No. DAN-5115-A-00-7114-00 (July 1990):

IVACG is not a formal membership organization, but does have a Chairperson and a Secretary. The Chairperson has usually been a person affiliated with the United Nations (UN) system. The Secretary is the S&T/N Project Officer for the "Vitamin A for Health" project (936-5116). Program decisions for IVACG are made by a Steering Committee consisting of seven members, including the Chairperson and Secretary of IVACG and five other members which include one representative from each of the three geographic regions (i.e., Latin America and the Caribbean [LAC], Asia and the Near East [ANE], and Africa [AFR])....The IVACG Secretariat provides managerial, administrative, and logistic support to IVACG and the IVACG Steering Committee, and implements the decisions of the IVACG Steering Committee...

Dr. Underwood pointed out that this wording makes the chairperson and the secretary voting members of the steering committee and increases the total voting membership from five to seven members. Dr. Davidson remarked on the importance of regional representation on the committee (three members). Dr. Jerome commented that the allowance for an additional two members not bound to regional representation will permit the steering committee to retain the necessary expertise of the current steering committee. Several present observed that the role of the steering committee remains the same under the terms of the cooperative agreement.

Dr. Underwood mentioned that the term of office has been five years with rotation and Dr. Davidson clarified that the term of office is not specified in the cooperative agreement. After discussion, the group determined that it would be more appropriate and feasible to have a two year term with the option for renewal up to a maximum of 3 terms (i.e., the maximum time of service as an official IVACG Steering Committee member would be 6 years). All agreed on the importance of attendance at steering committee meetings and that inability to attend two consecutive meetings would be cause for replacement.

Those present decided that the secretariat staff should remain as ex officio members of the IVACG Steering Committee.

Regarding the guidelines of the steering committee, Dr. Horwitz urged the group to consider IVACG's role in this decade and its role in relation to micronutrient initiatives. Dr. Sommer recommended that the steering committee guidelines should allow IVACG to take on appropriate work as it becomes apparent and not be limited to the listing in the steering committee terms of reference.

As a result of this discussion, Ms. Aomari will revise the steering committee terms of reference so they are consistent with the cooperative agreement and provide them to the steering committee members for review.

Membership of the IVACG Steering Committee

Dr. Sommer noted the need for a member who resides in Africa. Because it is unlikely that Dr. Habte will return to Africa soon and because his other responsibilities limit his participation, the group felt it prudent to consider other individuals for membership. Dr. Moses Chirambo and Dr. Festo Kavishe were both recommended. Dr. Chirambo was selected on the basis of his experience with IVACG as an IVACG Regional Representative for Africa and because of his experience with governments and NGO's working in the African region. His knowledge, expertise, and enthusiasm were emphasized.

Dr. Underwood addressed the need for a steering committee member from Latin America and the Caribbean (LAC). After brief discussion of several individuals, Dr. Simmersbach suggested Dr. Leonor Santos and Dr. Wilma Freire as possibilities. Others commented on Dr. Santos's involvement with a major morbidity study in Brazil, her programmatic orientation, and her influence in government decisions. Dr. Freire's recent involvement with vitamin A issues has been as a result of Ecuador's national nutrition survey and serving as chairperson for the local committee for the XIV IVACG Meeting. The current steering committee will be polled to determine which individual should be invited to serve as the LAC representative on the IVACG Steering Committee.

Dr. Underwood and Dr. Sommer acknowledged their willingness to resign from the steering committee due to their length of service and due to the general agreement to rotation off the committee after a total of six years (see page 2 of these minutes). Dr. Underwood and Dr. Sommer have served on the committee since its inception. Both expressed their enjoyment in participating in the activities. Those present agreed that an abrupt rotation of both individuals could result in a loss of necessary expertise on the committee and be detrimental to IVACG. Dr. Horwitz described the existing situation with the AGN of the SCN whereby Dr. George Beaton serves as special advisor to the chairman. During this steering committee meeting there was no decision regarding the possible resignations of Dr. Underwood and Dr. Sommer.

Dr. Jerome recommended that the steering committee be given greater recognition during the IVACG international meetings and that there be an announcement concerning the selection of members. Ms. Aomari confirmed that steering committee members are listed in each IVACG publication. There was a suggestion that steering committee members be listed on the IVACG letterhead.

IVACG Task Forces

Dr. Davidson informed the steering committee of a recent meeting held to discuss three documents related to vitamin A and communications that are funded by the Office of Nutrition. As a result of the meeting, the Academy for Educational Development and IVACG will work together to make their documents complete a document nearly completed by

VITAL. Dr. Simmersbach and Ms. Aomari reminded the steering committee that in completing the IVACG document the goal will be to prepare a resource book for what can be done for nutrition education and communication for vitamin A deficiency. The audience will be nutritionists who are responsible for working with nutrition education and communication programs as well as those who are producers of nutrition messages. The emphasis will be on the resource aspect and examples rather than on methodology. Because of difficulties experienced with obtaining the services of an appropriate writer, Dr. Simmersbach and Ms. Aomari will confer with VITAL staff and determine whether it is possible for IVACG to engage the editor currently working on their document.

Dr. Underwood mentioned studies underway related to the safety of implementing the schedule of vitamin A supplementation outlined in the draft IVACG document *Guidelines for the Use of Vitamin A in Immunization Programs*. She asked the committee members whether they feel it is still advisable to wait for the results of these studies before publishing the document. She remarked that written revisions have not been received from UNICEF. Dr. Sommer stated that safety data for large dose supplementation in early life is now available from Nepal and studies are planned in Indonesia and Bangladesh. After discussion, the group recommended that the secretariat write a letter to the WHO group considering these issues. The letter should remind them of IVACG's initiation of this task force, request invitations to future deliberations on this issue, propose a meeting prior to 1 October 1991 to review the available safety data, reiterate IVACG's continuing interest in publishing this document collaboratively with WHO and UNICEF once adequate safety data is available, and inquire as to their intentions.

Dr. James Olson and Dr. Underwood are preparing a draft document from the contributions provided by individual members of the IVACG Assessment Methodology Task Force. Dr. Olson will give a brief overview of this task force effort during the XIV IVACG Meeting.

IVACG Regional Representatives for Africa

The IVACG Steering Committee met with the IVACG Regional Representatives for Africa on 19 June. At the suggestion of Dr. Davidson, Dr. Mohamed Mansour participated in this meeting. A separate report of this discussion is included as an appendix to these minutes.

Dr. Kavishe was suggested to replace Dr. Chirambo as an IVACG Regional Representative for Africa. Those present felt that his leadership in Tanzania and experience with vitamin A programs will allow him to serve well in this capacity.

Xerophthalmia Club Bulletin

A brief report from the editor, Dr. Donald McLaren, was included in the meeting packets for steering committee members and is included as an appendix to these minutes. At the request of the editor, the steering committee considered the possibility of publishing back issues of *Xerophthalmia Club Bulletin* for purchase and developing an index for the *Bulletin*. There was not agreement that these endeavors are necessary and several agreed that these ideas should not be carried forward if they jeopardize the possibility of publishing new IVACG documents. It was suggested that Dr. McLaren arrange for photocopying back issues as needed until there

is evidence of sufficient demand to justify the effort and expense of publishing a set of back issues. Some commented that an index is necessary only for those who already have a complete set of issues.

The steering committee agreed to the completion of Dr. Lester J. Teply's service on the editorial board and to the appointment of Dr. Frances R. Davidson. The other two editorial board members are Dr. Vinodini Reddy and Dr. Gordon Johnson. Steering committee members and secretariat staff noted the short time allowed for editorial board comments on the draft issues of *Xerophthalmia Club Bulletin* and the very rough quality of the draft provided for review.

Dr. Sommer commented on the considerable effort of the editor to develop material for each issue. Dr. Underwood and Dr. Horwitz mentioned that the steering committee could suggest themes for issues and appropriate authors for specific articles. The group agreed to review the XIV IVACG Meeting program and select presentations that could be adapted as articles for *Xerophthalmia Club Bulletin*.

XV IVACG Meeting

The committee briefly discussed topics for the next meeting in early 1993. Members suggested that the theme should be able to encompass the following: a report of progress in controlling vitamin A deficiency, a current review of the magnitude of the problem of vitamin A deficiency, a description of projects that have become programs, encouragement for new projects to become programs, a reevaluation of the criteria for vitamin A deficiency as a public health problem, follow up to the 1991 meeting proposed for Montreal, and follow up to the 1992 International Conference on Nutrition. Dr. Underwood said that additional ideas about the XV IVACG Meeting theme can be circulated by mail to steering committee members.

During the steering committee meeting on 19 June, there was a brief discussion of concerns arising from the XIV IVACG Meeting that could be addressed in plans for the XV IVACG Meeting. Several present commented on the difficulty presenters have in adhering to the meeting schedule. Suggestions to alleviate this problem for the XV IVACG Meeting program included additional correspondence with speakers urging them to practice and time their presentations prior to their arrival at the meeting, having a mixture of plenary presentations and shorter presentations, and review of abstracts with the goal of fewer speakers that will give more significant presentations. Dr. Morck reminded the group that a slot on the program is necessary for many participants to obtain funds for their participation. There was not agreement as to the best time to handle questions for presenters. Some felt that it would be useful to include both the author and country for each presentation on the next program rather than just the author.

The steering committee members agreed that the next meeting should be in Africa. Country sites for the meeting were discussed with the IVACG Regional Representatives for Africa and Dr. Mohamed Mansour present. Zimbabwe and Tanzania were selected as the best options. All agreed that Zimbabwe's facilities are appropriate but that there is a longer history of

*Revised minutes of IVACG Steering Committee meetings in Guayaquil
17 and 19 June 1991, page 6*

vitamin A work in Tanzania. Secretariat staff will investigate the possibilities for having the next meeting in one of these countries.

Dr. Underwood closed the meeting on 17 June at 1225. The steering committee meeting on 19 June closed at 2015 following the meeting with the IVACG Regional Representatives for Africa.

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Vitamin A
Consultative
Group

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Minutes of the IVACG Steering Committee Meeting 4-5 December 1991 Washington, DC

Participants: Dr. Moses C. Chirambo, Dr. Frances R. Davidson, Dr. Suzanne Harris, Dr. Abraham Horwitz, Dr. Vinodini Reddy, Mr. Richard Seifman (4 December only), Dr. Franz Simmersbach, Dr. Alfred Sommer (4 December only), Dr. Barbara A. Underwood, Ms. Laurie Aomari.

As chairman of the IVACG Steering Committee, Dr. Underwood opened the meeting on 4 December 1991 at 0910. She welcomed the travellers and Mr. Seifman. Mr. Seifman extended a welcome to the committee as well. He noted IVACG's important past and expressed confidence in its positive future.

At Dr. Sommer's suggestion, the order of the agenda was changed to allow discussion of recent micronutrients meetings prior to discussion of the XV IVACG Meeting.

Report on "Ending Hidden Hunger, A Policy Conference on Micronutrient Malnutrition"

Dr. Underwood reported that the observance of this conference was to build political support at the highest policy levels for ending hidden hunger, particularly mild-to-moderate deficiencies of vitamin A, iodine, and iron. She noted the attendance of 300 policy makers, ministry of health personnel, and scientists. The products of the meeting were:

- increased visibility of micronutrient deficiencies and promising interventions to overcome them;
- formal commitment of resources of WHO, UNICEF, and other donors, to set ending vitamin A, iodine, and iron deficiencies as their next major public health priority, and to cooperate on ending micronutrient disorders; and
- linkage among the three micronutrients as a common policy agenda, rather than three competing agendas.

The steering committee members recognized the importance of micronutrient initiatives and considered the contribution IVACG can make to these efforts. The committee discussed the importance of defining overlaps among micronutrient interventions, especially as they relate to food-based strategies.

Copies of "Ending Hidden Hunger, Follow-up to Montreal: UNICEF's position" were provided for consideration. In this document, UNICEF recognizes IVACG's work and

states support and encouragement for further development of its capacity to provide technical assistance to requesting countries.

Those present commended Dr. Sommer for his presentation at the Montreal meeting. They thanked Dr. Davidson for her contributions to the planning committee and especially for her efforts to ensure prominent developing country contributions to the meeting.

Report on "Integrated Strategies for Controlling Micronutrient Malnutrition: A Technical Workshop"

This technical workshop held in November in Atlanta offered an opportunity for increased communication among technical experts working with vitamin A, iron, and iodine. The small size of the meeting contributed to the success of the working groups on information (laboratory and epidemiology), fortification and supplementation, and food-based strategies. Dr. Horwitz mentioned that the laboratories discussion included an attempt to identify what assessment indicators are most useful for each micronutrient. Dr. Underwood noted the innovative ideas and emphasis on community involvement that emerged during discussion of food-based strategies.

Dr. Horwitz informed the committee of his discussion with Dr. Alex Malaspina regarding continuation of the process started by the ILSI-supported technical workshop on micronutrient malnutrition in Atlanta. Dr. Horwitz will write to Dr. Malaspina and propose further activities in relation to the discussions on micronutrients of the Administrative Committee on Coordination-Subcommittee on Nutrition of the United Nations (ACC/SCN).

Dr. Underwood described an informal discussion in Atlanta among a few of the lead persons in vitamin A, iron, and iodine. As follow-up suggested by Dr. Rick Trowbridge, Dr. Underwood communicated with Dr. Richard Theuer (INACG Steering Committee Chairman) and Dr. John T. Dunn (ICCIDD Secretary) to explore the potential for joint projects. All are interested in cooperation. Assessment, communication, education, and program administration are topics of concern to all three groups. The IVACG Steering Committee agreed that it is worthwhile to explore a joint task force on a topic yet to be determined.

Joint Consultative Group (JCG) Meeting

Mr. Seifman summarized this meeting held on 3 December. Participants included the chairpersons of IVACG and INACG, representatives of the AID Office of Nutrition, Nutrition Foundation staff, and others. The group considered core functions of the consultative groups and cited research information exchange as important to both groups. Also discussed was the diversity of those involved in IVACG and INACG

65

activities and the issue of membership in these non-membership groups. Communication between SCN and the IVACG and INACG leadership was encouraged. Mr. Seifman expressed interest in attracting other donor funds to support IVACG and INACG while affirming AID's intention in maintaining core financing for the two consultative groups. JCG participants wish to meet again and include ICCIDD, and wish to explore exchange of technical information between the three groups. If a common effort develops between the three groups, the Office of Nutrition would welcome financial support from other donors for the activity.

IVACG Membership

Existing groups concerned with micronutrients, including IVACG, were described to those present. The chairs of each of SCN's ad hoc micronutrient groups, i.e., vitamin A, iron, and iodine, primarily report activities that have occurred between SCN meetings and current research to meetings of the SCN. IVACG, INACG, and ICCIDD are primarily sources for scientific and technical information, and secondarily advocates as they bring experts together for sharing information and stimulating new work in the field. The new Program Against Micronutrient Malnutrition (PAMM)--a collaborative effort between the US Centers for Disease Control, Emory University, and the Carter Center--has capabilities for training especially in epidemiology, laboratory methods, and management.

Dr. Sommer recommended that IVACG continue to translate new research into practical terms. He suggested that IVACG could be proactive in advancing the agenda of vitamin A worldwide without necessarily abandoning its scientific orientation. Dr. Chirambo supported IVACG's role in providing technical advice. Dr. Simmersbach described IVACG's strength in terms of its solid scientific basis and urged that IVACG give attention to program innovations as well, e.g., expanding the concept of food fortification. Dr. Davidson noted that other groups depend on IVACG for unbiased and reliable reports. Dr. Horwitz described IVACG as the source of science and knowledge and pointed out that IVACG must validate research breakthroughs and reevaluate earlier advice. He said that IVACG should then transfer that knowledge to government and community levels. Dr. Reddy suggested that IVACG could work closely with UN agencies and convey more information to governments through these channels.

Dr. Underwood expressed concern that apart from the steering committee and regional representatives for Africa, IVACG is amorphous. Discussion followed concerning an appropriate way for IVACG's scientific expertise to be available at regional and national levels. Expertise closer to the government level could facilitate requests to agencies for appropriate assistance.

Further discussion included suggestions to

- work more closely with existing FAO and WHO collaborating centers and the training centers of other institutions,
- be more visible on other organizations' meeting programs,
- function more proactively as a technical advisor to U.N. agencies, and
- consider a roster of experts who can be called on to offer assistance.

Appropriate marketing of IVACG's willingness to serve in these capacities will be considered in more detail at the next steering committee meeting. In the interim, Dr. Sommer will draft a brief concept paper to describe what IVACG can promise to do and how to proactively fulfill that promise. The concept paper will be revised in consultation with Dr. Davidson, Dr. Reddy, and Dr. Simmersbach. This will then be presented to the entire steering committee. At this time, the steering committee did not support the establishment of a formal IVACG membership.

IVACG Steering Committee Membership

During the June steering committee meeting, the committee discussed the desirability of having a committee member from Latin America. Dr. Leonor Santos of Brazil and Dr. Wilma Freire of Ecuador were nominated. During the current meeting, the committee selected Dr. Santos. Ms. Aomari will draft a letter of invitation to Dr. Santos with membership effective immediately. This letter will be revised and sent to Dr. Santos by Dr. Horwitz.

Dr. Harris confirmed that having an additional member on the committee is now agreeable to AID. Therefore, it is not imperative that any current steering committee members resign. For future reference, Ms. Aomari noted the committee's June recommendation that each member serve a two-year term with the possibility of three consecutive terms (i.e., a total of six years).

Dr. Underwood announced her detail from the National Eye Institute (NEI) to WHO effective in January 1992. She expressed willingness to continue as the IVACG Steering Committee Chairman.

Those present discussed the desirability of preparing for steering committee rotation by inviting two additional individuals to participate in steering committee deliberations as non-voting members. The current members acknowledged the desire for varied expertise on the committee and also the advantage of having individuals on the committee who understand the many facets of the vitamin A problem and its solutions. Several present underscored the importance of members' dedication and

commitment to this voluntary activity. The importance of availability during each entire steering committee meeting scheduled was stressed as a criterion for new members. Appropriate geographic representation remains important and several commented that this should also be considered in the choice of new members.

After nomination of five individuals from North America and five individuals from Asia and Africa, Dr. Keith West and Ms. Suttalak Smitasiri were chosen as the two individuals that will be asked to participate in steering committee activities. They will assume voting power at a future time under conditions yet to be determined. Ms. Aomari will draft a letter of invitation that will be revised and sent by Dr. Horwitz to these individuals.

Dr. Underwood commented that the original IVACG planning committee dissolved in the early 1980's and that the IVACG Steering Committee began in 1984. When IVACG began there was more emphasis on the involvement of U.N. agencies. Those present considered the benefits of inviting individuals that work for U.N. agencies and private voluntary organizations to participate in one day of discussion with the IVACG Steering Committee just prior to the IVACG meeting. However, this participation could not be financed by IVACG. Dr. Horwitz recommended that the role of these individuals and the purpose for their participation in this way be defined in advance of the meeting.

XV IVACG Meeting: Meeting Themes and Format Options

In June the committee generally agreed on the theme "From Projects to Programs in Reducing Vitamin A Deficiency." Those present in the current meeting continued discussion of this theme and agreed that it could be useful to show how small projects become larger programs or how specific projects become comprehensive programs. Further comments and discussion concerned the following points:

- Keynote addresses can emphasize the actions necessary for this to happen and give guidance on how to measure progress during the process.
- National perspectives can make these concepts more tangible, particularly if presenters respond to a specific series of questions concerning the decline of vitamin A deficiency in their countries.
- Although many projects have not yet become programs, there could be value in learning about some programs still in the planning stages.

As a result of this discussion, a revised theme emerged: "Towards Comprehensive Programs in Reducing Vitamin A Deficiency." There was general agreement that on the first meeting day more time should be allowed for discussion of the formal presentations in the general session. This could be followed by a panel that described

national experience, including obstacles to program development. Further general audience participation could follow the panel presentation. Dr. Horwitz noted the importance of closing this with a positive tone. Dr. Reddy remarked that although the problems are enormous, the progress is also enormous.

The committee agreed that a half day of the meeting could be devoted to issues of assessment, monitoring, and evaluation. Although the committee favored the idea of workshops on these themes, they decided it was more supportive to the comprehensive approach to allow the opportunity for all participants to take part in discussions on each of these topics.

Because evaluations from the XIV IVACG Meeting favored fewer, longer formal presentations, the committee considered other roles for the many meeting participants that have useful expertise to share during the meeting. Dr. Underwood proposed that more poster presentations can be selected from submitted abstracts. Also, the posters can be on display for a longer period of time. Individuals could be designated to introduce and summarize the posters in thematic groups during the plenary sessions. Poster session themes suggested were health consequences, program issues, assessment methodologies, and basic metabolism. The private sector should be encouraged to submit abstracts for consideration for the poster session.

To continue the micronutrients momentum and increase communication, the committee considered including in the program an overview and update presentation on iron and a similar presentation on iodine. These could be followed by a workshop or panel discussion concerning integrated approaches. "Linking to Iron and Iodine: Micronutrient Initiatives" was suggested as a session title for this part of the XV IVACG Meeting.

Other suggested topics for inclusion in the meeting were: manpower development, for example, training; reports from related meetings, for example, the International Conference on Nutrition (December 1992) and the Montreal policy conference on micronutrient malnutrition (October 1991); and progress in changing dietary behaviors.

Based on this discussion, Ms. Aomari will develop and circulate a skeleton meeting program including times.

XV IVACG Meeting: Site

As follow-up to discussion during the last steering committee meeting, Ms. Aomari reviewed the responses and invitations received, as well as basic travel and immunization issues, related to Tanzania, Zimbabwe, and Ghana. The ministry of health in Zimbabwe is unable to offer an invitation for the meeting due to earlier commitments and plans. The government of Tanzania is willing to send an invitation to host the meeting and colleagues at the Tanzania Food and Nutrition Centre are

enthusiastic about this opportunity. The director of medical services of the ministry of health in Ghana sent a telex officially inviting IVACG and offered to host the meeting. Earlier during this steering committee meeting, Mr. Seifman encouraged the committee to also consider Egypt as a site for the meeting.

After discussion of the vitamin A situation in these countries; the benefits that might accrue to the host country, neighboring countries, and vitamin A initiatives; and the support for meeting logistics, the committee selected Tanzania as the meeting site. If it is not possible to gain cooperation from the AID Mission in Tanzania for the meeting, Egypt is the steering committee's second choice for the meeting site.

XV IVACG Meeting: Other details

To facilitate the ability of all presenters to seek funds for their meeting participation, Dr. Reddy suggested that the secretariat separate the invitation to present from the details concerning the type of presentation.

The committee agreed on the first week of February 1993 as the preferred time for the meeting. If this is not agreeable to colleagues in Tanzania, the meeting could be held the last week in January to which they have already agreed. Ms. Aomari will discuss this with the Tanzanians.

The committee agreed that trips of professional interest are valued by some participants. Ms. Aomari will discuss various possibilities with Dr. Kavishe and determine with him whether it is appropriate to offer a one or two day trip in conjunction with the meeting.

The committee agreed on May as the call for abstracts deadline. Ms. Aomari will prepare the call for abstracts, consulting with Dr. Underwood as needed, and distribute the call for abstracts to individuals and to newsletters by 10 January 1992. The announcement will encourage authors to be as specific as possible. Abstracts received will be circulated to the steering committee prior to their summer meeting. The secretariat will offer an opportunity for presenters to update their abstracts just prior to the IVACG meeting so that abstracts printed in the meeting summary include the most recent data available.

Dr. Underwood presented the secretariat's concern regarding the cost of distributing a meeting photograph as a gift to meeting participants. She suggested that a professional photographer take a photo at the beginning of the meeting that can be sold to meeting participants. There was no dissent from committee members.

Guidelines for the Development of a Simplified Dietary Assessment to Identify Groups at Risk for Inadequate Intake of Vitamin A

Dr. Underwood reminded the committee that when *Guidelines for the Development of a Simplified Dietary Assessment to Identify Groups at Risk for Inadequate Intake of Vitamin A* was published, the task force felt that a revision or update might be necessary later. During the past six months, VITAL, in consultation with IVACG, evaluated use of the document in the field. Dr. Underwood introduced Mr. Robert Pratt who was a guest during this part of the steering committee meeting. He presented a brief explanation of VITAL's survey which was undertaken by VITAL consultant, Dr. Rudi Horner. Each committee member received a copy of the report of the survey. VITAL also provided copies of the report to those who contributed information about use of the method. VITAL does not feel further distribution of the report is appropriate and the steering committee concurred. Dr. Underwood thanked VITAL for its significant contribution.

The committee considered the time and commitment needed for applying this method. They also considered what might be gained by revision of chapters in the document and by adding more country applications to the appendices. Dr. Simmersbach suggested including a new section on using the method for evaluation purposes. The committee agreed that *Guidelines for the Development of a Simplified Dietary Assessment to Identify Groups at Risk for Inadequate Intake of Vitamin A* should be revised.

Dr. Underwood reported that another VITAL consultant, Dr. Mohamed Mansour, has significant experience with both applying the method and teaching others how to use it. He recently revised one chapter of the document for use in Uganda. The committee agreed to invite Dr. Mansour to chair the revision effort, and should a task force be appropriate, to serve as chair of the task force. The committee also agreed that Dr. Horner could serve as a consultant to the task force without officially serving as a member of the task force. Mr. Pratt and Dr. Davidson indicated that the availability of VITAL funds to support Dr. Mansour and Dr. Horner during this effort depended on the scope of work.

Dr. Underwood agreed to review Dr. Horner's report in more detail and write to Dr. Mansour concerning terms of reference for this task. The terms will include preparation of a revision proposal and workplan that can be reviewed by Dr. Underwood in February 1992. After that, Dr. Mansour and Dr. Underwood will advise the secretariat regarding the need for formation of a task force.

Ms. Aomari reported that supplies of this publication are nearly exhausted. There was general agreement that the secretariat can simply distribute photocopies of the document with a cover letter indicating that a new edition of the document will be available following revision.

Communication/Education Task Force

Dr. Simmersbach reported on progress with this task force report since the June steering committee meeting. Following additional editing by Ms. Carol Soble and communication with the secretariat, Dr. Simmersbach clarified the sections of the report as follows: part 1 will provide background concerning appropriate steps in developing and implementing the nutrition communication strategies for vitamin A, part 2 will include case studies and examples of work done in various countries, and part 3 will contain a recommended reading list and an index. Dr. Simmersbach, Ms. Aomari, Ms. Soble, and a graphic artist will meet just following this steering committee meeting to revise the text with this framework in mind and make other decisions concerning design of the publication. Dr. Simmersbach expressed confidence that the IVACG report will not overlap with related documents from VIT^AL and the Academy for Educational Development Nutrition Communications Project.

Dr. Simmersbach proposed that the introduction to the publication flag the reasons for IVACG publishing something of this nature. Dr. Simmersbach anticipates sending the draft report to the IVACG Steering Committee prior to their summer meeting so final discussion can occur at the summer meeting. The finished document should be available for distribution at the XV IVACG Meeting.

Assessment Methodology Task Force

Dr. Underwood reviewed the scope of the task force and distributed the draft table of contents for the task force report. Since the last steering committee meeting, co-editor Dr. James Olson edited the contributions received from task force members. Dr. Underwood then revised the draft to make the sections shorter and more uniform in tone and depth of information, as well as to give less weight to promising assessment methods that have not yet been rigorously applied under field conditions. Short descriptions of two of the promising new methods still must be written. Following Dr. Olson's review of Dr. Underwood's revision, task force members will receive the draft for review. If there is sufficient agreement with the draft, it may not be necessary for the task force to meet.

Dr. Reddy suggested consideration of an additional methodology that uses the ratio urinary ammonia nitrogen to creatinine. The methodology will be made available for review by Dr. B. Sivakumar.

The committee recommended that the document contain criteria to be used for establishing a public health problem. To develop this criteria, a meeting of task force members and other key individuals is likely to achieve consensus.

Dr. Underwood expressed hope that the document will be ready for distribution to steering committee members early enough that they can provide their comments during the summer meeting.

"Guidelines for the Use of Vitamin A in Immunization Programs"

As follow-up to the last steering committee meeting, Ms. Aomari wrote to colleagues at WHO to inform them of IVACG's continuing interest in completing this task force document. Steering committee members received copies of Dr. Nicholas Cohen's 3 December response. The secretariat has not received responses from Drs. B. Thylefors, A.D. Negrel, R. Pararajasagaram, and G. Clugston. Dr. Underwood confirmed that safety of administering low doses of vitamin A before six months of age remains the major concern.

Several present confirmed their support of IVACG's continued involvement in this issue. They suggested that the document's foreword put this approach in the context of other interventions, describe situations where it is most useful, and clearly indicate that it is not appropriate in all countries.

Dr. Underwood will discuss the document directly with WHO colleagues in Geneva over the next several months and inform the steering committee of the outcome.

Future Task Forces

Dr. Simmersbach described the need for expanded criteria for establishing vitamin A deficiency as a public health problem. He noted that WHO uses primarily ophthalmologic surveys which do not assess subclinical vitamin A deficiency. FAO's vitamin A program works only with countries that WHO has designated with a problem of public health significance. He also noted that the World Summit for Children goals push governments to make their plans to control vitamin A deficiency.

Dr. Underwood informed the committee that the ACC/SCN approved an analysis of recent studies concerned with the impact of vitamin A on morbidity and mortality of children under five years of age. The Canadian International Development Agency (CIDA) contracted with the University of Toronto, Department of Nutrition to develop this analysis. Dr. George Beaton will chair the group preparing the analysis which will be provided to ACC/SCN. The reviewers will seek those significant variables likely to influence outcomes for the purpose of program planning.

Note was made that a meeting of principal investigators was held late in May 1991 and sponsored by WHO, USAID, and NEI. The group at the May meeting made an initial effort to evaluate the data available for similar purposes. Dr. Underwood also noted the micronutrient deficiency information system of the WHO Nutrition Unit.

This system will include information about the variables considered in many vitamin A studies.

The committee agreed that it is too early to form a task force on expanded criteria for establishing vitamin A deficiency as a public health problem. They agreed that it may be appropriate to do so after data analysis of the Ghana Vitamin A Supplementation Trials (VAST) and other soon to be completed clinical trials, and after Dr. Beaton's group finishes their review.

On a related topic, Dr. Simmersbach described governments' need for ways to measure their achievements in attaining their vitamin A program goals. The IVACG publication *Methodologies for Monitoring and Evaluating Vitamin A Deficiency Intervention Programs* was mentioned as helpful. Dr. Underwood commented that the Assessment Methodology Task Force report will provide additional guidance. Several present suggested that it may be useful to have a meeting with INACG and ICCIDD colleagues to consider governments' need for program monitoring and evaluation. Dr. Underwood will write to Dr. Theuer and Dr. Dunn to see if they have INACG and ICCIDD documents that similarly review assessment methods for iron and iodine. She will keep Dr. Trowbridge, the Nutrition Foundation, and the AID Office of Nutrition informed. Dr. Davidson offered to assist Dr. Underwood with this activity.

Dr. Davidson asked about the need for developing the proposed IVACG task force on the effect of food preparation on the vitamin A content of meals. Dr. Reddy and Dr. Underwood reported that VITAL is supporting work to standardize the assessment of carotenes in commonly eaten foods from rural and urban markets. Later the researchers will look at the effect of local preparation and preservation processes. Institutions in Thailand, India, and Indonesia are collaborating in this work. Mr. Pratt may encourage work in Africa; Dr. Davidson noted related work underway at INCAP; and Dr. Simmersbach encouraged involvement of colleagues in Vietnam in these investigations.

Dr. Underwood reminded the committee of their earlier interest in a task force on community level programs. Although the committee expressed continued interest in reexamining the role of primary health care in control of vitamin A deficiency, as well as placing more emphasis on the role of communities in program sustainability, the committee felt that development of a plan for a task force on community level programs should be pursued after some of the current task force projects are completed.

Dr. Simmersbach suggested that when IVACG looks at criteria for vitamin A deficiency, and at criteria for achieving changes, they likewise give adequate attention to the food consumption side. The steering committee agreed that food-based approaches are the sustainable long-term solution to vitamin A deficiency. IVACG will need to address this issue with more vigor in the future.

Other Business

At the request of Dr. Horwitz, Ms. Aomari briefly reviewed the secretariat's general policies on publications distribution. Currently the secretariat provides single copies of publications free to colleagues in developing countries. Colleagues in developed countries pay a small amount for each publication. Ms. Aomari noted the increased number of requests received since the secretariat increased the circulation of IVACG news releases.

The committee agreed that the first week of August 1992 is a good time for the next steering committee meeting. Ms. Aomari will consult steering committee members concerning specific dates.

Closing Comments

Dr. Horwitz summarized this steering committee meeting. He commended Dr. Underwood's chairmanship, noted the significance of the discussion points, and confirmed the large agenda ahead for the nineties.

Dr. Underwood closed the meeting at 1515 on 5 December 1991.

Signed:

Laurie Aomari
Laurie Lindsay Aomari, RD
IVACG Secretariat

Date:

2 March 1992



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Minutes of the IVACG Steering Committee Meeting 3-4 August 1992 Washington, DC

Participants: Dr. Moses C. Chirambo, Dr. Frances R. Davidson, Dr. Suzanne Harris, Dr. Abraham Horwitz, Dr. Vinodini Reddy, Dr. Leonor Maria P. Santos, Mr. Richard Seifman (afternoon of 4 August only), Dr. Franz Simmersbach, Dr. Alfred Sommer, Dr. Barbara A. Underwood, Ms. Laurie Aomari.

As chairman of the IVACG Steering Committee, Dr. Underwood opened the meeting on 3 August 1992 at 0915. She welcomed the committee members and extended a special welcome to Dr. Santos who was participating in a steering committee meeting for the first time. Dr. Horwitz, chairman of IVACG, wished the group well for the process of selecting abstracts for presentation during the XV IVACG Meeting which was the first topic on the meeting agenda.

Abstract Selection for the XV IVACG Meeting

Dr. Underwood noted the committee's previous interest in having more poster presentations and fewer, but longer, oral presentations at the XV IVACG Meeting as compared with the XIV IVACG Meeting. Dr. Sommer also noted the committee's interest in discussing poster sessions during related plenary sessions. Previously determined topics for meeting sessions were listed for reference as follows:

- ▲ vitamin A program issues (e.g., costs, management, or integration with other programs)
- ▲ progress in changing dietary behaviors related to vitamin A
- ▲ newer methodologies for assessing subclinical vitamin A deficiency
- ▲ consequences for human health and development of vitamin A deficiency
- ▲ new human research related to the functions of vitamin A

Referring to materials received prior to the meeting, the committee members next discussed the 118 abstracts submitted for possible presentation during the XV IVACG Meeting. They assigned each abstract to one of the following groups: oral presentations, poster presentations, exhibits, and abstracts not accepted for presentation. During the selection process, other topics deserving attention during the XV IVACG Meeting emerged, e.g., survey reports and appropriate use of serum retinol as an assessment tool for prevalence. Of the submitted abstracts, 89 were accepted for presentation or exhibit. The steering committee requested that each presenter submit a revised abstract before the XV IVACG Meeting or send verification that the abstract submitted previously is complete.

XV IVACG Meeting Program

Steering committee members advised that the meeting's inauguration should be held on the morning of 8 March. The remainder of that day should be devoted to a national symposium focussing on efforts to reduce vitamin A deficiency in Tanzania.

Members decided that presentations related to the XV IVACG Meeting theme--Towards Comprehensive Programs to Reduce Vitamin A Deficiency--should begin on Tuesday morning. Invited presenters will present global perspectives and national perspectives related to two topics: "Projects to Programs: What does it take?" and "Programs: How do we know they are working?" Preferred presenters and alternates were suggested by steering committee members.

The committee recommended that oral and poster presentations during Tuesday afternoon of the XV IVACG Meeting focus on vitamin A program issues. Presentations concerning consequences for human health and development of vitamin A deficiency will be given on Wednesday morning. Presentations concerning newer methodologies for assessing subclinical vitamin A deficiency will be given on Wednesday afternoon. WHO updates on vitamin A distribution through immunization programs and on the vitamin A component of the Micronutrient Deficiency Information System will also be included in the program for Wednesday afternoon.

Steering committee members planned a Thursday morning session on linking vitamin A to other micronutrient issues, e.g., iron and iodine. Part of Thursday morning and Thursday afternoon will be devoted to responses from agencies and nongovernmental organizations to the question, "How is your organization going to contribute to the virtual eradication of vitamin A deficiency by the year 2000?" Presentation of new human research related to the functions of vitamin A was recommended for the close of the IVACG meeting.

Due to a very full agenda for this steering committee meeting, the committee requested that Ms. Aomari prepare a draft program incorporating these ideas. In the draft program she will also include a session on progress in changing dietary behaviors related to vitamin A and a poster session for survey reports. Dr. Davidson recommended that the secretariat issue letters to individuals who submitted abstracts to let them know if their abstracts were accepted.

Other XV IVACG Meeting Business

Steering committee members advised that the secretariat and the local organizing committee should jointly issue invitations to inauguration speakers.

Ms. Aomari briefly reviewed the process through which 8-12 March 1993 was selected as the meeting week in Arusha, Tanzania. She confirmed that an

announcement of the site and dates for the meeting will be issued by the secretariat within one week. Ms. Aomari also described the Arusha International Conference Centre, the planned site for the meeting sessions, and the hotels that will be suggested for lodging during the meeting. Transportation logistics were mentioned as a challenge that will be met with the counsel of the local organizing committee for the meeting.

Dr. Underwood noted that at the time of the IVACG meeting the WHO regional office in Africa would like to hold a one-day meeting to establish a working group for vitamin A in Africa. Steering committee members did not object to this meeting.

Financial support for presenters was discussed briefly. Ms. Aomari informed the committee that IVACG funds could likely support no more than 10 meeting participants in addition to steering committee members, IVACG regional representatives, and secretariat staff that are typically supported through these resources. Dr. Davidson recommended that the secretariat prepare a budget for the meeting. This will facilitate further consideration of IVACG financial support for meeting participants.

Some steering committee members expressed a preference for having the next steering committee meeting on one of the evenings during the XV IVACG Meeting rather than immediately prior to the start of the XV IVACG Meeting. Members agreed that the secretariat can make the last-minute decisions on site concerning the XV IVACG Meeting that have in previous years been made by the steering committee.

"Nutrition Communications in Vitamin A Programs: A Resource Book"

Dr. Simmersbach reported that in May and June, steering committee members had an opportunity to review this IVACG task force report and some of the design ideas proposed for the publication. He indicated that the comments received from steering committee members were accommodated and that the text was nearly ready for printing; some graphic work remained. The steering committee agreed that the book should be published, and congratulated the group for bringing the document to this stage.

During the discussion, concern was expressed by Dr. Horwitz regarding the importance of behavioral change, the appropriate role of vitamin A supplementation, and the need for national self-sufficiency in carrying out nutrition communications programs; by Dr. Sommer concerning the appropriate role of vitamin A supplementation; and by Dr. Santos concerning information missing from the description of the vitamin A program in Caruaru, Brazil. Following the meeting, and before the document proceeds to press, Dr. Simmersbach and Ms. Aomari will reconsider specific parts of the document in light of these concerns.

18

Dr. Underwood declared that the work of the IVACG Communication/Education Task Force is now completed.

"A Brief Guide to Current Methods of Assessing Vitamin A Status"

This manuscript was provided to steering committee members for their review in May and June. Dr. Underwood reported that several members sent comments to the IVACG Secretariat. Some concerns raised in the comments have already been considered and addressed by the editors, Dr. Underwood and Dr. James Olson. Dr. Underwood reiterated that this manuscript describes the essence of various assessment methods, with their limitations and advantages, but does not include complete detail about the use of each method.

Some committee members asked for clarification of the manuscript's intended audience. Dr. Underwood stated that the co-editors have agreed that the primary audience for this manuscript is scientists. Dr. Sommer and Dr. Santos recommended clearly distinguishing between the methods that are well tested and those that show promise but have not been thoroughly tested in the field. Dr. Underwood agreed to consider altering the title and text of the manuscript so that it does not appear definitive. Dr. Davidson suggested that it may be useful to have several additional reviewers for this manuscript.

Dr. Davidson and Dr. Santos agreed to send the secretariat written comments about the manuscript following the meeting. At the end of August, the secretariat will compile the comments received and forward them to the editors for consideration as they prepare the final text of the manuscript.

Integration of Vitamin A Distribution with Immunization Programs

Dr. Reddy gave a report on an informal consultation on vitamin A supplements through the Expanded Programme on Immunization (EPI) held 30 June and 1 July in Geneva. The consultation was co-sponsored by WHO and IVACG. The consultation included a review of progress made to incorporate vitamin A into immunization programs, a review and update on the impact of vitamin A with special attention to early dosing, recommendations on the frequency and dosage schedule within EPI, and modifications to the draft guideline for program managers. Three documents are anticipated as a result of this consultation: recommendations for EPI and the EPI Global Advisory Group (GAG), the scientific basis for recommendations, and a report of the consultation. Consultation participants recommended that the first document include a list of the various intervention options to reduce vitamin A deficiency. They also recommended that a separate manual be prepared for training purposes.

Dr. Harris drew members' attention to a draft document just received from WHO by the secretariat. This manuscript, "Using Immunization Contacts to Combat Vitamin

A Deficiency," was given to the members on 3 August. It is the document that will be completed for presentation to the EPI GAG. The document is intended for program planners and managers of immunization and nutrition programs. Dr. Harris stated that Dr. Underwood and Dr. Graeme Clugston of WHO requested review of the manuscript by the IVACG Steering Committee. They also expressed their hope that IVACG will co-sponsor the final document.

Steering committee members raised questions and concerns about the recommended dosage of 25,000 IU; the recommendation of dosing the mother or the infant rather than both; and several other points. Dr. Harris requested that steering committee members submit written comments about the manuscript to the secretariat within two weeks. These comments will then be compiled by the secretariat and forwarded to Drs. Underwood and Clugston.

Xerophthalmia Club Bulletin

Dr. Davidson asked the steering committee whether it is still useful for IVACG to support the *Xerophthalmia Club Bulletin*. She remarked that there is insufficient time for editorial board comment on each issue and expressed concern regarding the tone of the publication. Dr. Reddy, also a member of the editorial board, remarked that comments from the editorial board are not seriously considered. Ms. Aomari informed the steering committee that IVACG and Sight Savers each cover half of the expenses related to the *Bulletin*.

Dr. Simmersbach mentioned the wide readership of the *Bulletin* and noted the usefulness of the information it contains. Dr. Chirambo affirmed the wide African readership of the *Bulletin*. Dr. Sommer asked if IVACG could help to strengthen the publication. Mr. Seifman reminded the committee that IVACG activities should be those that have true value and asked about Sight Savers' views on the publication. Dr. Underwood recalled Sight Savers' support of the editor's freedom with the publication. Mr. Seifman asked how the publication could be more beneficial. Several members remarked on the need for a subscriber/membership survey in this regard and Dr. Horwitz suggested that this be carried out independently of the *Bulletin*. Dr. Davidson agreed to work with the secretariat to carry out this survey and to inform Dr. McLaren of this activity.

Revision of Guidelines for the Development of a Simplified Dietary Assessment to Identify Groups at Risk for Inadequate Intake of Vitamin A

During the IVACG Steering Committee meeting in December 1991, the committee recommended a revision of *Guidelines for the Development of a Simplified Dietary Assessment to Identify Groups at Risk for Inadequate Intake of Vitamin A*. Dr. Underwood said that after the December meeting she met with Dr. Mohamed Mansour and that they prepared an outline for the revision. However, they decided not to

proceed with the revision until there was assurance of the steering committee's support of the revision.

Dr. Horwitz asked whether the revision would be based on country experiences with the method. Dr. Davidson expressed her understanding that addition of more country experiences was the reason for a revision. She questioned whether a revision is a valid use of resources. Dr. Underwood recalled that a new section on using the method for evaluation purposes had been suggested at the last steering committee meeting. Dr. Underwood gave committee members copies of the proposed outline for the revision. There was no further discussion of this activity.

IVACG Concept Paper

Dr. Sommer described the development of a strategic statement for IVACG. It was prepared by Drs. Davidson, Reddy, Simmersbach, and Sommer. The statement, "Strategic Placement of IVACG in the Evolving Micronutrient Field," was circulated to steering committee members at the end of June. Dr. Sommer commented that the background section of the document was intended primarily for the steering committee. The section regarding the proposed role of IVACG could be used internally or be disseminated.

Mr. Seifman observed that this effort sharpens the idea of IVACG. He voiced his view of IVACG as an institution that provides technical advice at the higher institutional levels and not at the operational levels. He recommended that the document clearly convey this point. He mentioned that IVACG draws its members from developed and developing countries and from public and private institutions and that this diversity is a strength of IVACG. He suggested that IVACG also welcome private sector membership. Although IVACG is unstructured and flexible, Mr. Seifman felt that this, too, was a strength.

Dr. Horwitz noted his general agreement with the document and commended IVACG for its work concerning the science of vitamin A deficiency. He indicated that this should continue as IVACG's highest priority. In his view, IVACG should consider very carefully any departures from this priority into the realm of application of the science.

Dr. Simmersbach recommended that the document now be used as a reference when making decisions about IVACG activities. Dr. Underwood commented on the usefulness of the document, advised the steering committee to consider whether IVACG is organized to meet the roles outlined in the document, and recommended that the steering committee consider the application of this document during the next IVACG Steering Committee meeting. Dr. Davidson observed that other groups have come forward in part because of what IVACG has done in the past. She agreed that this document should be considered further at the next steering committee meeting.

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Dr. Sommer agreed to incorporate final comments into the document but questioned how IVACG's goals should be implemented. Dr. Simmersbach agreed to work on this and Dr. Horwitz agreed to share ideas with him. Dr. Underwood encouraged other steering committee members to communicate with Dr. Simmersbach as well.

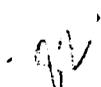
Other Business

Early in the meeting Dr. Davidson suggested that the committee consider holding smaller, more frequent IVACG-sponsored meetings on specific vitamin A issues. Due to time constraints, discussion of this idea was postponed for a future steering committee meeting.

At the last steering committee meeting, Ms. Suttalak Smitasiri and Dr. Keith P. West were chosen to be invited to participate in steering committee activities. This would facilitate future steering committee rotation. They would assume voting power in the future under conditions yet to be determined. During this meeting, Dr. Davidson asked the committee whether these individuals should be invited to attend the next IVACG Steering Committee meeting. Dr. Harris mentioned that these individuals were not invited to the current meeting because of unresolved questions surrounding the resources to support their participation. Several members voiced their support for inviting these individuals to the next steering committee meeting. Dr. Harris remarked that it should now be possible to proceed with the invitations.

Dr. Simmersbach inquired about the steering committee's role in IVACG decision making and whether it is really the secretariat that makes decisions. Dr. Harris responded that the secretariat tries to carry forward the recommendations of the IVACG Steering Committee, provided funds are available to implement these recommendations. She indicated that funds are available to the IVACG Secretariat through the cooperative agreement between USAID and The Nutrition Foundation, Inc. Secretariat decisions and actions related to IVACG must be in accord with this legal agreement.

Dr. Underwood requested clarification on communication channels for IVACG business. Dr. Harris emphasized the need to keep all steering committee members in the communication loop and she suggested that much of IVACG correspondence can be channeled through the secretariat. However, Dr. Harris emphasized that communications between IVACG and other organizations should be more formal and IVACG's response should come from Dr. Horwitz, as chair of IVACG. Correspondence of this type can be directed to Dr. Horwitz and copied to the secretariat. Confidential documents should be clearly designated. She noted that the secretariat seeks to provide support to the steering committee and that it does not make decisions independently of Dr. Horwitz, USAID, the steering committee, or the cooperative agreement. She recommended that she be informed if communications are not meeting the needs of the steering committee.



In light of this discussion, Dr. Simmersbach disclosed interest in the details of the cooperative agreement and asked that these be clarified during the next steering committee meeting. He also asked who makes the decisions concerning IVACG priorities. Dr. Harris stated that the secretariat submits an annual workplan to AID that outlines activities recommended by the steering committee. This workplan is often renegotiated with AID based on funds available from the US Congress. Dr. Davidson agreed to find out if the workplan can be shared with all steering committee members.

Dr. Harris noted that the cooperative agreement formally ends on 30 September 1992. An extension of this agreement through June 1993 has been discussed with USAID and the secretariat believes that this will be accomplished. At that close of the extension, USAID will determine whether to continue the agreement.

Dr. Underwood noted the importance of these issues in relation to the voluntary contribution steering committee members make to IVACG activities. She stressed the need to know if sufficient resources are available to see outcomes from these activities.

Closing Comments

Dr. Horwitz commended the committee on an excellent meeting. He said it was constructive to analyze the next IVACG meeting and expressed hope that the innovations planned for the XV IVACG Meeting would prove successful. He also remarked on the very important consideration of IVACG's future.

Dr. Underwood closed the meeting at 1705 on 4 August 1992.

Signed:

Laurie Lindsay Aomari
Laurie Lindsay Aomari, RD
IVACG Secretariat

Date:

25 September 1992

Appendix 7



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Vitamin A
Consultative
Group

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Appendix 8

**COORDINATED STRATEGIES
FOR CONTROLLING MICRONUTRIENT MALNUTRITION:
A TECHNICAL WORKSHOP
Summary**

BACKGROUND

Twenty percent of the world's people are at risk for micronutrient malnutrition, and they are concentrated in developing countries. Effective control strategies have been proposed for each micronutrient deficiency, but the opportunity for coordinating these strategies has not yet been fully explored.

A technical workshop was convened in November 1991 to examine the feasibility of coordinated strategies for controlling micronutrient malnutrition caused by iodine, vitamin A, and iron deficiencies. The workshop was sponsored by the International Life Sciences Institute (ILSI), in collaboration with the Centers for Disease Control (CDC) and the Program Against Micronutrient Malnutrition (PAMM). Workshop participants, drawn from multiple agencies and organizations from government, industry, and academia, represented a wide range of disciplines and technical expertise, including nutrition, nutritional epidemiology, nutritional biochemistry, nutritional anthropology, health care delivery, agriculture, economics, and food technology.

The workshop participants concluded that coordinated strategies for controlling micronutrient malnutrition are technically feasible and should be given consideration in planning control efforts. This paper summarizes the workshop conclusions and the most important implementation issues.

INFORMATION COLLECTION/DISSEMINATION

Several opportunities exist for coordinated assessment of multiple micronutrients. Because population groups at risk for vitamin A, iron, and iodine deficiencies frequently overlap, surveillance mechanisms used to assess one micronutrient may be adaptable to others. Coordinated surveys can be conducted that include clinical assessment related to multiple micronutrients along with simultaneous collection of blood samples for biochemical assessment of iron, vitamin A, and iodine deficiencies. Dietary assessment can also be used for vitamin A, iron, and other micronutrients as well as for additional dietary factors such as energy and protein.

Advocacy: National and international advocacy efforts can be strengthened by using the following types of information:

- The prevalence and severity of micronutrient malnutrition. Common definitions and criteria should be used so that information is compatible worldwide and comparisons can be made among populations, countries, and regions.
- The significance of micronutrient deficiency. This

information would include the physical, developmental, social, and economic consequences of micronutrient deficiency for individuals, populations, and entire countries, and the benefits of alleviating deficiencies.

- The cost-effectiveness of feasible solutions for addressing the problem.

Much of this information is available but needs to be shared more widely with the persons who can best use it, including government officials and decision makers, community leaders, health professionals, and students in training programs. Industry can provide technical expertise, help reach populations at risk, and advocate to achieve increased awareness of the problem among political officials.

Indicators: Table 1 lists the various clinical and biochemical indicators available and anticipated for defining baseline prevalence and characterizing the nature and extent of micronutrient malnutrition in a population.

Planning: Coordinated strategies should be planned in collaboration with community health workers to ensure that the strategies meet local needs and constraints. Rather than relying solely on outside expertise, these health workers or other volunteers from the local area should be trained to conduct or assist in the assessments.

A major obstacle to coordinated assessment is the lack of uniform guidelines that ensure standardized application of appropriate assessment methodologies. Such guidelines could address common methods for establishing baseline prevalence, conducting surveys, analyzing data, and using results to plan programs. The World Health Organization (WHO) is currently initiating a coordinated data base that should include baseline data on the prevalence of micronutrient deficiencies in all countries and provide information on indicators appropriate for measuring the success of control efforts. Use of these indicators worldwide would allow consistent and valid monitoring of progress toward the year 2000 goal of eliminating micronutrient malnutrition.

Evaluation: Many of the indicators (Table 1) are also useful for program evaluation. Process measures are also needed to assess individual/consumer behaviors associated with micronutrient intake as well as knowledge, attitudes, and beliefs of health workers and consumers about micronutrient deficiency and how to control it. National surveillance systems should be strengthened to enable continuous program monitoring and evaluation.

FORTIFICATION AND SUPPLEMENTATION

Table 2 lists several opportunities for multiple fortification, including:

- Double fortification of salt with iron and iodine.
- Fortification of processed rice with vitamin A and iron.
- Fortification of sugar with vitamin A and iron.
- Multiple fortification of widely consumed specialty foods, citrus drinks for schoolchildren, soft drinks, cookies, and nutribubs.

Supplementation efforts should be integrated with existing delivery systems whenever possible. Use of maternal and child health (MCH) programs, primary health care programs, and Expanded Programme on Immunization (EPI) activities should be explored.

When plans for coordinated strategies are made, care should be taken to address a variety of issues, potential obstacles, and constraints by doing the following:

- Involve all relevant sectors (government, industry, and consumer groups) in planning and implementation.
- Communicate with consumers to determine their perceived needs and to educate them about demanding a better product and accepting a slightly higher price for that product.
- Build an adequate infrastructure, including trained personnel and program management.
- Recognize and take advantage of opportunities for fortifying new products to increase the consumption of fortified foods.
- Identify mechanisms (e.g., subsidies and regulatory relief) to stimulate industry involvement, increase availability, and reduce costs to consumers of fortified products.
- Monitor and evaluate process and outcome variables.

Iodine: Fortification of salt with iodine has been successful and should be expanded to all countries where deficiency exists. Fortification levels, which depend on per capita consumption of salt and anticipated storage losses, range from 20 to 100 parts per million. Potassium iodate is the preferred additive because it is more stable than other compounds.

Supplementation was considered as an important short-term adjunct to a salt fortification program, which more effectively addresses the long-term problem in most countries. The main forms of iodine supplementation are oral iodized oil and iodized water.

Iron: Fortification of foods with iron is much more complex than fortification of salt with iodine because variations in dietary absorption and dietary patterns in different countries influence iron availability. In addition, because the required dosage of iron is at least 50 times more than the required dosage of iodine, taste and color changes occur in some iron-fortified foods. The vehicles used to disseminate iron include wheat flour, cereals, sugar, and salt. Some specialty foods, such as citrus drinks for children, have been tested with good results. However, these foods may not be appropriate for

distribution on the open market because of the amount consumed. In controlled situations, such as schools, these products can be helpful.

Iron EDTA is a promising fortificant. Because it is absorbed much better than other fortificants, smaller amounts can be used, and color and taste are more acceptable. Use of iron EDTA in countries with a high prevalence of nutritional anemia seems desirable.

Supplementation with iron is also complex because of the amount of iron needed, the dosage schedule, and because of absorption and toxicity issues. Supplementation is usually made by one of several types of tablets. A new product, the gastric delivery system, appears promising and should be tested further.

Vitamin A: Vehicles used for vitamin A fortification include sugar, rice, and some specialty foods. The workshop participants were intrigued by the idea of fortifying and reprocessing broken grains of rice. This process may enable the development of a premix that would permit control of color and stability and would allow fortification with iron as well as vitamin A. Rice fortified by this process is being produced but needs extensive testing to ensure quality control, consumer acceptability, and stability of fortificant.

Supplementation with oral vitamin A capsules has been tested in many countries. Dosage has been reviewed, and standard guidelines have been published. Cost is minimal, but some concerns about toxicity remain--particularly in pregnant women.

FOOD-BASED APPROACHES

Food-based strategies are also effective. The best examples have been community-based and have included a strong nutrition and health education component designed to change food consumption patterns, improve food preservation and preparation practices, and link income-generating activities with food production activities. The advantages of food-based strategies are that they:

- Can address multiple micronutrient problems.
- Have a community-based emphasis that promotes general community and human development.
- Are feasible in most countries but may need to be augmented by other interventions such as fortification and supplementation.
- May result in long-term changes in consumption patterns, infant and child feeding practices, and food preparation practices.
- Are cost-effective over time, and the nutrition, health, and economic status of both individuals and communities benefits.

Food Sources Available but Underused: When food sources are available but underused, education in nutrition and health is the main strategy. Such education is most

effective if it is designed to:

- **Change food consumption patterns.** Educational strategies should promote increased consumption of locally available foods rich in micronutrients, such as eggs, papayas or other yellow fruits and vegetables, dark-green leafy vegetables, and animal products (when affordable).
- **Change food preservation and preparation practices** to overcome seasonal factors and guarantee a supply of micronutrient-rich foods all year long. Proper preparation would increase the bioavailability and dietary appeal of some foods, particularly to persons in greatest need (women and young children).
- **Link income-generating activities with food production activities** when economic factors are a primary constraint on food availability.

Food-based approaches should identify the micronutrient problems and potential local food sources of each community. Lists of micronutrient-rich foods that can either be grown or be bought locally are extremely valuable.

Nutrition and health education would be most effective if it were:

- Promoted at national, regional, and local levels to develop multiple supportive constituencies.
- Designed to bring about behavioral changes among consumers so that they will select, process, prepare, and preserve foods in ways that optimize micronutrient consumption.
- Directed at policy-level officials to improve their understanding and obtain better technical and logistic support for programs.
- Integrated with other health education, agricultural, and social messages being conveyed at the community level.

Food Sources Unavailable: When food sources are unavailable or limited, food-based strategies must address the issues of food production and transportation. Unavailability may affect both urban and rural populations. Use of food coupons and promotion of kitchen gardens are two possible strategies for urban settings. Small, backyard gardens might be more appropriate for rural settings.

All too often, micronutrient-rich foods are produced at a distant site and must be transported to and marketed in the area of need. Analysis of existing infrastructures for food transport is critical to ensure local distribution of these foods without incurring unnecessary expense. Transported foods should be packaged hygienically to preserve their quality and appeal. Nutrition education is essential to ensure consumption of the new foods.

IMPLEMENTATION OF COORDINATED STRATEGIES

Workshop participants concluded that the success of a coordinated control effort rests not only on technical expertise, but also on strong political commitment and a supportive infrastructure. Close communication and cooperation among policy makers, technical experts, industry representatives, and health workers is essential.

National Coordinating Bodies: Establishment of some type of national coordinating body was suggested for each country interested in initiating or strengthening its program against micronutrient malnutrition. This body should involve relevant parties in all stages of program planning, from inception through evaluation, so that they are able to advocate for improved micronutrient status. The group should include representation from technical experts in public health, social science, food technology, and communications and should represent all interested sectors (e.g., industry and consumers).

Communication: The workshop participants also recognized the need for close communication among all parties involved in controlling micronutrient deficiencies including policy makers, government officials and staff, medical personnel, industry representatives, and consumers. An effective micronutrient information network is needed to ensure the ongoing exchange of technical information that is consistent and accurate.

Future Technical Exchange: Participants recommended continued interchange on new technical developments toward the elimination of micronutrient deficiencies. They suggested that mechanisms be established to ensure continuous sharing of new technical knowledge (e.g., through an information network, technical workshops, newsletters, and manuals). Conferences on specific technical issues could be sponsored by interested agencies or organizations. Participants also identified the need for additional training and technical assistance for health professionals that will enable them to analyze problems in their own countries and develop appropriate control strategies.



TABLE 1: INDICATORS FOR SURVEILLANCE OF MICRONUTRIENTS

<i>Micronutrients</i>	<i>Indicators Currently Available</i>	<i>Indicators Available In 2-5 Years</i>
Vitamin A	History of night blindness Bitot's spots Serum retinol Conjunctival impression cytology Relative dose-response Modified relative dose-response	Dark adaptation measurement Blood spot retinol Retinol by fluorescence (capillary tube sample)
Iodine	Goiter diagnosed by palpation Blood spot thyroid-stimulating hormone (TSH) Urinary iodine Thyroid size determined by ultrasound	
Iron	Hematocrit Hemoglobin Erythrocyte protoporphyrin Serum ferritin	Blood spot ferritin Blood spot transferrin receptor

TABLE 2: POSSIBLE COORDINATED FORTIFICATION STRATEGIES

<i>Food</i>	<i>Iodine</i>	<i>Iron</i>	<i>Vitamin A</i>	<i>Comments</i>
Salt	X	X		Technology is now available to produce a stable formulation, but considerable testing of stability and absorption (as influenced by different dietary patterns) is required.
Rice		X	X	
Sugar		X	X	
Specialty foods, citrus drinks for schoolchildren, soft drinks, cookies, nutricubes	X	X	X	These foods are consumed in irregular amounts, which makes intake monitoring difficult. For these reasons, the work group advised against fortifying a wide range of products targeted at the same populations.

Appendix 9



XEROPHTHALMIA CLUB

BULLETIN 49

MARCH 1992

**Supported by Sight Savers (Royal Commonwealth Society for the Blind)
and the International Vitamin A Consultative Group**

Bulletins are *sent free* to anyone seriously concerned with xerophthalmia
Please apply for membership to the Club Secretary

Secretary and Editor: Dr. D. S. McLaren, International Centre for Eye Health,
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Dr. H. Flores, Brasil; Dr. Jane Kusin, Netherlands; Dr. Florentino Solon, Philippines;
Dr. A. Sommer, U.S.A.; Dr. Andrew Tomkins, U.K., Dr. G. Venkataswamy, India.

ANTOINETTE PIRIE

'Tony' Pirie, as she was known affectionately to her very many friends and colleagues, died on October 11, 1991 aged 86. The sad news came just as the October issue of the Bulletin was being mailed out and therefore too late to carry a mention then. Her outstanding contributions to our knowledge of the biochemistry of the eye as director of the Nuffield Laboratory of Ophthalmology in Oxford have received appropriate recognition elsewhere. Here we especially pay respect to the spirit of devotion and warm-hearted concern which she brought to her service in the cause of xerophthalmia when she 'retired' in the early 1970s. It was then as a consultant for the Royal Commonwealth Society for the Blind under Sir John Wilson that she helped Dr Venkataswamy in Madurai set the first and indeed only nutritional rehabilitation centre devoted to children suffering from xerophthalmia and their mothers. About the same time the Xerophthalmia 'Club' was brought into being by a group of concerned doctors meeting at the International Congress of Ophthalmology held in Jerusalem. Tony was their natural choice as Secretary and Editor of the Bulletin. From the first number in June 1972 until she felt unable to continue in June 1985 (no 31) Tony built up and maintained interest and information all around the world through this newsletter which is really like no other; all on an entirely voluntary basis and which was for her a real task of love.

I was glad to be able to represent you all at the funeral service in Oxford and to be among the

many who joined with Tony's husband Bill, the authority on leaf protein and its relevance to global malnutrition, and other family members to pay our last respects to this gracious and great lady scientist.

Donald S. McLaren

CALL FOR ABSTRACTS XV IVACG MEETING

February 1993 will be the date of the XV International Vitamin A Consultative Group (IVACG) Meeting. The theme of the meeting, which will take place in Africa, is 'Toward Comprehensive Programs to Reduce Vitamin A Deficiency.' The program will include invited presentations on this topic as well as presentations selected from submitted abstracts on the following topics:

- vitamin A program issues (e.g. integration with other programs, cost, or management)
- progress in changing dietary behaviors related to vitamin A
- newer methodologies for assessing subclinical vitamin A deficiency
- consequences for human health and development of vitamin A deficiency
- new human research related to the functions of vitamin A

Abstracts must contain sufficient specific data to enable evaluation by the selection committee. If you wish to submit a paper for presentation, prepare your abstract as follows: Type double spaced in black ink on a single page with one-inch margins on all sides. Begin with the titles in capital

92

letters, followed by a period. Continue with the name(s), address(es), and affiliation(s) of the author(s), followed by a period. Underline the name of the presenter. Begin the presentation description on a new line indented three spaces. Proofread your abstract for accuracy. All abstracts must be camera-ready for inclusion in the meeting summary. On a separate page, provide your address and telephone, facsimile, telex, and cable numbers where you can be reached between July 1992 and January 1993. Also, please indicate whether you will bring copies of your paper to the meeting for distribution if your paper is selected for presentation. Mail both pages to: Laurie Lindsay Aomari, R.D., IVACG Secretariat, (tel. 202 659 9024; fax 202 659 3617) The Nutrition Foundation, Inc., 1126 Sixteenth Street, N.W., Washington, D.C. 20036, USA. Your response must be postmarked by 8 May 1992. The IVACG Steering Committee will select abstracts for presentation that relate to the stated themes. If your paper is selected for an oral presentation, a full paper will be requested by 15 November 1992.

SURVIVAL UPDATE

Many expressions of appreciation were received of the summary of the literature I prepared for the March 1991 Bulletin. This Bulletin has a unique responsibility in this field to try to keep its readers well informed. Besides attempting to summarise fairly the views expressed I shall be pleased to hear yours, especially if you feel I have made an important omission, although this is not intended to be exhaustive.

In this 12-month period to my knowledge three international meetings have discussed the public health implications of vitamin A deficiency and child survival – a Consultation at WHO, Geneva, May 28-29; the XIV IVACG Meeting in Ecuador, 18-21 June; and Policy Conference on Micronutrient Malnutrition, October 10-12, Montreal. In effect they have reendorsed measures that have been proposed on endless previous occasions. Gopalan through the pages of the Bulletin of the Nutrition Foundation of India has continued to dispute the evidence for an effect of vitamin A supplementation on child survival (vol 13, no 1 pp 4-7).

Correspondence in *The Lancet* (vol 337, p849-50; 1409-10) has criticised various aspects of the Hyderabad study which gave negative results (*Lancet* 336 p1342-5) and the authors have responded (337, p1410). Other correspondence in *The Lancet* (338, p701 and p1208-9) has drawn attention to differences and inadequacies in design of four published intervention trials that hamper comparison or interpretation of conflicting results.

Three more definitive papers have been published. West et al (*Lancet* 338:67-71) from Nepal reported a 30% reduction in mortality, supporting the results obtained by this group in Indonesia in 1986. Rahmathullah et al (*Amer J Clin Nutr* 54: 568-77) were unable to show a reduction in various types of morbidity, possibly due to insensitivity of indicators or other factors, although the mortality was found to be reduced by

60% as reported previously. Of considerable practical significance is the claim of Daulaire et al (*Brit Med J* 1992; 304: 207-10) that in high risk children in Nepal a single large dose of vitamin A as part of an ongoing primary health programme reduced overall mortality by 26%. Most of the deaths were diarrhoea-related. The extra cost per death averted was as little as about \$11 and occurred for every 55 capsules distributed. In this context two questions should be considered by bodies responsible for child survival programmes 1) is it ethical in these circumstances to withhold vitamin A capsule distribution? and 2) how many more research studies are required?

Donald S. McLaren

ABSTRACTS FROM XIV IVACG MEETING

FORTIFICATION: MOST PROMISING, MOST IGNORED INTERVENTION TO CONTROL VITAMIN A DEFICIENCY. *M.C. Latham*, Cornell Univ., Progr. Internat. Nutr., Ithaca, NY 14853.

The 3 interventions most advocated to control vitamin A deficiency are (1) provision of medicinal supplements, (2) combined horticulture, nutrition education and health actions, and (3) fortification. These 3 strategies, combined with poverty reduction, should *all* be introduced in most countries. The only controlled study to compare the effectiveness, and cost, of these 3 strategies was conducted in Cebu Province in the Philippines (Solon, Fernandez, Latham and Popkin, 1979). It showed that fortification of MSG was more effective than either high dose capsule distribution or a PH/ horticulture intervention. MSG fortification was judged to be the cheapest and most feasible of the 3 interventions for wider use. It was successfully introduced in Marinduque and Nueva Vizcaya Provinces (Latham and Solon, 1986). It was not adopted nationally. Rice fortification is now being investigated there. Influenced by the Philippines research, MSG fortification has been tested in Indonesia. In a controlled trial it was found to be related to better vitamin A status, improved child growth and reduce child mortality (Muhilal et al., 1988). Fortification of MSG, and other foods such as cereal grain products, oils and sugar, is a sustainable approach to improve vitamin A intakes. In contrast the provision of medicinal vitamin supplements to large populations will often require a very expensive delivery system, may lead to decreasing participation over time, and may miss the most needy children. It is an intervention better used widely within the PHC system. In the past most poor nations have sought a single food for fortification, whereas industrialized countries successfully, but unnecessarily, fortify hundreds of foods. Where vitamin A deficiency is a PH problem, efforts are now needed to fortify several commonly consumed foods. The market becomes the delivery system, the costs to the government and consumer will be low, legislation can ensure compliance, and above all the approach is sustainable. Other interventions will supplement its effectiveness.

ENCOURAGING PRODUCTION AND CONSUMPTION OF VITAMIN A-RICH FOODS

Suttalak Smitasiri & George A. Attig

Division of Communication and Behavioral Sciences Institute of Nutrition at Mahidol University, Nakhon Pathom, Thailand

From October 1988 – September 1991, the Institute of Nutrition at Mahidol University, Thailand, conducted a USAID –sponsored project entitled the 'Social Marketing of Vitamin A-Rich Foods'. The research district contained 134 villages and approximately 100,000 people. The project's main objectives were to increase knowledge, attitudes and practices concerning the consumption of vitamin A-rich foods among preschool children, pregnant and lactating mothers. To achieve this, the project applied a systematic social marketing approach and operational plan containing three dimensions. First, it created a 'nutrition information society' to give community members greater awareness and a firm knowledge base. The second stage used social advertising to promote the production and consumption of the ivy gourd plant (*Coccinia indica*). This dark green leafy vegetable is readily available and culturally acceptable. Lastly, the project utilized concrete village action programs, such as home and school gardening, to activate community participation.

According to evaluation results, the project successfully achieved its objectives. Inappropriate food habits and preparation practices have begun to change, and vitamin A status improved among key target group members. The project's sustainability also looks promising, since local government officials have initiated their own food and nutrition activities and/or integrated project action programs into their regular work schedules.

This social marketing project, amongst others, demonstrates that dietary diversification programs can succeed if they effectively use a three-pronged 'Triple-C' implementation approach:

Communication (for assessing, analyzing and taking action) *Collaboration* (to increase social mobilization) and *Concentration* (to increase project relevance for community members and local government agents).

The communication component is necessary for creating a local 'need and demand' for change. Based on sound formative research about existing community constraints and target audience needs, the social marketing process works to determine ways of reducing the psychological, social and practical obstacles which hinder the adoption of new behaviours. Its main mechanisms, moreover, should entail not only the use of mass media, but also coordinated interpersonal and community programs.

Social mobilization requires collaboration. To develop this, the project's process was strongly participatory in nature. It required a synergistic 'top-down' (for coordination and support) and 'bottom-up' (for planning, implementation and evaluation) process. Key to this was the project's decentralized orientation which allowed community members, local development agents and project personnel to work together amicably as *project collaborators*.

Dietary diversification programs also need a three-fold concentration. First, vitamin A or other micronutrient concerns should be integrated into a participatory community-based program. Second, project objectives should become integral parts of how people see that they can fulfill their felt needs. And finally, project activities must be integrated into larger institutional and community development processes if they are to be sustained. This integrated strategy is not new. However, it is often assumed that it happens automatically which, in most instances, is not the case. It requires dedication, sensitivity, patience and compromise.

DETERMINANTS OF HOUSEHOLD AND PRESCHOOLER VITAMIN A CONSUMPTION IN SOUTHWESTERN KENYA

Eileen Kennedy and Ruth Oniang'o

Income-generating policies that increase the purchasing power of poor households are seen as one means of improving household food security including micronutrient consumption. The Government of Kenya has been encouraging entry of small farmers into commercial agriculture (cash cropping) as one means of increasing household income which, in turn, would increase food consumption and ultimately improve the health and nutritional status of individual household members. The present study conducted from 1984 to 1987 examines the effect of cash crop production on household and preschooler macro and micro nutrient consumption as well as preschooler morbidity and nutritional status. A representative sample of 617 households including 1,677 preschoolers was included in the study (see Kennedy, 1989 for more details on the research design and sampling plan).

The present study indicates that there are subsets of the population in which chronically low intakes of dietary vitamin A exist. 20% of preschoolers come from households which have dietary vitamin A adequacy levels that are chronically less than 30%. In addition, 30% of preschoolers have dietary vitamin A intakes that are consistently below 100%. As the preschooler's energy intake increases the vitamin A intake declines; the diet becomes more diversified resulting in a decrease in the consumption of B-carotene rich vegetables. Results from this study indicate that a low dietary vitamin A consumption in preschoolers does not occur concurrently with low anthropometric measures. There is, however, a relationship between preschooler dietary vitamin A adequacy and morbidity.

Multi-variate analyses show that the level of dietary vitamin A adequacy has a beneficial effect on the child's morbidity that is distinct from the influence of household income and the influence of weight for age. As the level of dietary vitamin A adequacy increases, the incidence of total illness, diarrhoea and lower respiratory infection declines. The level of dietary vitamin A adequacy is also associated with a decrease in the length of total illness and lower respiratory infection. In addition, probit results indicate that dietary vitamin A consumption by decreasing the incidence and

am

time ill with lower respiratory infection, decreases the risk of mortality.

In the present study, vitamin A deficiency was diagnosed only with repeated dietary measures. Dietary measures serve as early warning indicators for identifying those at risk of xerophthalmia. Research continuing in the study area provides opportunity to reidentify those children who, five years earlier, had chronically low intakes of vitamin A and determine whether this is associated with any longer term adverse changes. An early warning indicator for vitamin A deficiency would have major public health implications, particularly in children.

Kennedy, Eileen (1989).

The Effects of Sugarcane Production on Food Security, Health, and Nutrition in Kenya: A Longitudinal Analysis.

IFPRI, Washington, DC, Research Report No. 78.

A PROGRAM TO COMBAT VITAMIN A DEFICIENCY IN PERNAMBUCO, BRAZIL

The Secretary of Health of the State of Pernambuco, Brazil, has launched a Program to combat and control vitamin A deficiency in the state. Following a model already tested in Caruaru, (see Bulletin 42) a country city in the state, vitamin A supplements (100,000 and 200,000 I.U. for children below and above 1 yr of age) will be distributed along with the vaccines appropriate for the 0-5 yr age range, in pre-existing Health Posts. The program includes several stages, and has successfully started in several major cities: sensitization of health workers from the State Secretary and from the Municipalities staff; training health workers in the use of vitamin supplements; sensitization of the population regarding the need for this program; stocking several Central Posts with all necessary materials, all with follow-up and supervision by the staff of the Maternal-Child Care staff of the Secretaries of Health of the State and of the Municipalities. The Program has started in the ten cities where the State Secretary has representatives, and will be later expanded to all the state. The necessary vitamin supplements, in an oily solution delivered through an adequate dispenser, will be donated by Sight and Life and by Roche Chemicals and Pharmaceuticals (São Paulo, Brazil).

Northeast Brazil is included in the WHO map of areas where VAD is a public health problem. The Department of Nutrition of the Federal University of Pernambuco, which will act as Consultant for this Program, has estimated, using different pre-pathological indicators, that VAD affects 40% of children under 6 years of age. An ongoing similar Program, implemented in Caruaru in 1985, has shown that the efficacy and the efficiency of the program nears 100%. Caruaru was first to incorporate the distribution of vitamin A supplements into ongoing Primary Health Care activities, and first to implement a vitamin A program that has been sustainable over the last six years.

Hernando Flores

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PUBLICATIONS

Infant and Child Nutrition Worldwide:

Issues and Perspectives, edited by Frank Falkner published by CRC Press 1991. In a foreword James P. Grant, Executive Director of UNICEF States 'the three components of food, health and care are necessary but the greatest of them is care, for whatever foods and health services may be available they are unlikely to benefit the child below two years of age if care and developmentally sensitive interreaction are lacking'.

The State of the World's Children 1992, the Annual Report of the Executive Director of UNICEF describes the African AIDS epidemic in which 2 million children will die and probably 10 million be orphaned this decade as 'the final assault on the spirit of a continent sliding back into poverty, warfare, hunger and environmental disaster. The only hope of saving Africa is to cancel all its \$90 billion debt'.

Ghana Vitamin A Supplementation Trials (VAST) Reports of activities of Survival and Health Studies, April 1990 - March 1991.

Both studies will have completed field data collection by the end of 1991. The Ministry of Health will continue research at Navrongo. Copies of these progress reports may be obtained from the Department of Epidemiology and Population Sciences, London School of Hygiene and Tropical Medicine, London WC1E 7HT.

A Source of Bias in Studies of Bi-directional Associations: Hypothetical Example of Malnutrition and Diarrhoea. Simon N. Cousens, WHO, Diarrhoeal Disease Control Programme.

Indicators for Assessing Breast-feeding Practices. Report on Informal Meeting, June 1991, Division of Diarrhoeal and Acute Respiratory Disease Control, WHO.

Annual Report 1989-90, National Institute of Nutrition, ICMR, Hyderabad 500 007, India. pp100.

Acta Paediatrica Scandinavica, Suppl 373, 1991
Food for the Future, the Interface of Child and Adult Nutrition. Edited by Brian Wharton.

LETTERS

The Relative Dose Response (RDR) in Malnourished Children

With regard to the potential of RDR as indicator of VAD in children with PEM and infection, I would like to support the comments of Professor Olson, in the October 1991 issue of the Xerophthalmia Bulletin (page 2), with excerpts of data (as yet unpublished) from a VAD survey conducted in Recife by our Department. As in the examples given by Professor Olson, abnormal values of RDR have been independent of the anthropometric parameters (χ^2 , t test, ANOVA) of the children. When weight for age was below 75% of the standard, there were 48.6% positive RDR tests and

59.3% of the children responded to vitamin A treatment with an increase of serum vitamin A levels of more than 20%. In children with higher weight for age, these proportions were 40.7 and 41.8%. At a cutoff point of 6.5 g/L, 13.6 and 10% of the children with hypo- and normoproteinemia presented with a positive RDR. The test was abnormal in 40.3 and 60% of the children with normo- and hypoproteinemia respectively. RDR was positive in 48% of children with clinical signs of infection, and in 40% of children without infection. As Professor Olson points out, one cannot exclude the possibility of conditions that might limit the relative dose response in a few individuals, but these data, as those quoted by him, support the value of RDR at the population level, even in the presence of infection and PEM. Our study did not include parasitological examinations, but this is an area where parasite infestations are very highly prevalent, and RDR was positive in 41% of all children who underwent this test (473 to this date), while 55.8% (of 778) responded to the administration of the massive dose with an increase of serum vitamin A levels greater than 20%.

Hernando Flores of the LBQN group,
Universidade Federal de Pernambuco
Department of Nutrition

Dear Sir,

I write in response to Dr. Tsvetkov's query (see Bulletin 48, page 6). I think I can give an answer on the Ugandan situation. There is no doubt now that xerophthalmia complicates many cases of Kwashiorkor. Certainly this is the clinical impression in Uganda. Vitamin A deficiency appears more prevalent in parts of Uganda where Kwashiorkor is more prevalent (Northern and Eastern provinces). In the other two provinces – Central and South-Western – where a diet rich in Vitamin A is consumed the prevalence of Vitamin A deficiency appears to be very low indeed, (West Nile is in the Northern Province). I have just completed a Vitamin A deficiency survey in Eastern province, and preliminary results show that Vitamin A deficiency is a problem of health importance.

Dr. Medi Kawuma,
Principal Investigator,
Kamuli Project Survey,
Makerere University,
Kampala, Uganda.

NOTES AND NEWS

CORRESPONDENTS – Dr Jane Kusin of the Royal Tropical Institute, Amsterdam has replaced Dr Simon Franken who asked to be relieved. The editor's heartfelt thanks go to them both for received and promised help and also to **Professor Andrew Tomkins** of the Centre for International Child Health in London who also joins us.

BACK COPIES – very few of you were prepared to take up my proposal about providing copies of these made in the last Bulletin and so the matter is laid to rest.

ANOTHER OFFER! – It has occurred to me that

many of the publications noted in the Bulletin might be found of value to those of you who could not otherwise obtain them (some are for sale). Therefore I am prepared to send any by surface mail in response to your request, to make them go round, only one per person. I think I can do this for anything from 1990 to the present issue. Allow plenty of time but if you receive nothing assume you have been unsuccessful: I will not enter into correspondence on the subject!

IAPB NEWS, No 15 December 1991 (note this is now obtainable from hq of Sight Savers – PO Box 191, Haywards Heath, West Sussex RH16 4YF, UK). A report of the IVACG meeting in Ecuador is included.

DIALOGUE ON DIARRHOEA – issues 45 June, 46 September 1991 (AHRTAG, 1 London Bridge Street, London SE1 9SG, UK), highlights – Support groups for breastfeeding mothers, Update on dangers of artificial milk feeds, and Growing food for family health.

HEALTH EXCHANGE – newsletter of BOMS, bimonthly, Africa Centre, 38 King St., London WC2E 8JY, UK (advertises positions overseas in health).

FOOTSTEPS, no 8 September 1991 (Tear Fund, 100 Church Road, Teddington TW11 8OE, UK) includes Update on vitamin A.

ORANA/VITAL bibliography on vitamin A issued monthly (ORANA, 39 Avenue Pasteur, BP 2089, Dakar, Senegal). (Ed. includes authors, titles, references. Addresses for reprint requests would be additionally useful).

CESAP (Coordinadora de Equipos de Salud Popular) Apartado 17-15-91B, Quito, Ecuador is an NGO in primary health care; issues a bulletin but needs to charge \$10.00/year.

SEWA RURAL (Jhagadia - 393 110, Dist. Bharuch, Gujarat, India) has just produced a thorough review of its Community Health Project over 9 years, in English.

ACTION HEALTH 2000 produces a newsletter (no 16 Autumn 1991) and continues to send health workers to a number of countries (The Bath House, Gwydir Street, Cambridge CB1 2LW, UK).

THE VITAMIN A+ SIEVE July 1991 published semiannually (Janet Glassman, Rodaie Press Information Services, 33 E.Minor St., Emmaus, PA 18098 USA). Very useful abstracts as well as full references and addresses for reprint requests. Review article "Plant breeding efforts to boost vitamin A in vegetables" by P.W. Simon of University of Wisconsin.

HUNGER RESEARCH BRIEFING AND EXCHANGE – Fifth Annual meeting 8-10 April 1992, World Hunger Program, Box 1831, Brown University, Providence, RI 02912, USA.

SPIRIT OF SERVICE – Spring/Summer, Fall/Spring 1991-2 Seva Foundation, 108 Spring Lake Drive, Chelsea, MI 48118-9701, USA (Ed. one item especially caught my attention. Dr Venkataswamy, well known to most Bulletin readers as founder of Aravind Eye Hospital, the largest in the world, was honoured recently by the Harvard Divinity School where his speech included these memorable words "Try to throw out the things inside us that are against love – hatred, anger, jealousy, material greed – to

transform these things into love through purifying and clearing the mind, this is the essence of the higher consciousness". Some might feel incapable of so doing without outside help and the present state of the world is poor testimony to the effectiveness of man's unaided efforts).

ESSENTIAL DRUGS MONITOR Nos 11 and 12 (from Essential Drugs Monitor, WHO, CH-1211 Geneva 27, Switzerland). In the Notes and News section of the Autumn 1991 issue no 48 a note was included on the stability of drugs, including retinol, during shipment to third world countries. A letter in Lancet 1991, 338; 754-5 now summarises the results of an inland stability study in Sudan and reported fully in WHO/DAP/91.4. The consignment studied was shipped from Netherlands in May 1989 to Nile Province, arriving in Port Sudan in July where the containers were kept in the open for 8 months. More than 1 year later samples of drugs never kept under controlled climatic conditions were tested. Out of 11 drugs, three showed significant deterioration; serious in the case of adrenaline and ergometrine; not serious for retinol capsules – the original potency was 110.5% of stated amount, falling to 98% in the field. This is very reassuring, as is the fact that all antibiotics tested showed almost no deterioration.

WHO PROGRAMME FOR CDD, Update no 9 August 1991 on breast-feeding and the use of water and teas; Indicators for assessing breast-feeding practices; and Interventions for the control of diarrhoeal diseases among young children: fly control (from WHO Programme for Control of Diarrhoeal Diseases, Geneva as above).

WIPHN NEWS, publication of Women's International Public Health Network, 7100 Oak Forest Lane, Bethesda MD 20817, USA. Vol 10, Winter 1991 (Ed. a note from the editor with this number mentioned that the next number will feature Refugee Women and asked if I had anything to contribute. Only to say that I have recently refereed a paper that reported an extremely high rate, nearly 50%, of children in a refugee area of Ethiopia with clinical eye signs of xerophthalmia, some with corneal damage causing blindness. They were subsisting entirely on food aid which when examined was found to contain absolutely no vitamin A).

MOTHERS AND CHILDREN, vol 10, no 2, 1991 (from Clearinghouse, American Public Health Association, 1015 15th Street NW, Washington DC 20005, USA).

FIND YOUR FEET, Newsletter no 5, Autumn 1991 – new address is 37-39, Great Guildford Street, London SE1 0ES (tel 071 401 8794).

CIIR OVERSEAS PROGRAMME (Catholic Institute for International Relations, Unit 3, Canonbury Yard, 109a New North Road, London N1 7BJ), supports health work in developing countries.

NUTRITION NEWS, vol 12, no 3, May 1991 (National Institute of Nutrition, Tarnaka, Hyderabad/500 007, India) main feature results of National Nutrition Monitoring Bureau.

NFI BULLETIN, vol 12, no 4, October 1991 (Nutrition Foundation of India, B-37, Gulmohar Park, New Delhi, India). An article provides evidence that the use of iodised oil injection for

goitre prevention may be hazardous.

CONTACT, bimonthly from Christian Medical Commission, World Council of Churches, 150 route de Ferney, 1211 Geneva 2, Switzerland; nos 121 and 122, August and October 1991.

ACTION IN INTERNATIONAL MEDICINE, a charitable organization set up to 'promote the development of the infrastructure of health care around the world' (Windeyer Building, 46 Cleveland Street, London W1P 6DB, UK).

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS – INDIA, April and July 1991 issues of publication Hamari Aankhen in English (from T.K. Parthasarathy, National Society for Prevention of Blindness – India, Dr Rajendra Prasad Centre, A.I.I.M.S., New Delhi 110029, India).

NUTRITION CENTER OF THE PHILIPPINES Bulletin April – June 1990 (articles on vitamin A), Jan – March; April – June 1991 (NCP, PO Box 653, MCPO, Makati, Metro Manila).

DIETARY ASSESSMENT METHODS First International Conference Sept 20-23, 1992, St Paul, Minnesota, USA (contact Sharon Vegoe, Department of Professional Development and Conference Services, University of Minnesota, Minneapolis MN 55455).

VITAL NEWS, Vitamin A Field Support Project (AID funded) vol 2, no 2 (Managing Editor, 1601 N Kent Street, Suite 1016, Arlington, Va 22209, USA). This issue together with a 36 page brochure "Vital Nutrients" highlights the policy conference on micronutrient malnutrition entitled "Ending hidden hunger" held October 10-12, 1991 in Montreal, Canada. It was called to address the goals of the World Summit for Children for the year 2000 of: virtual elimination of vitamin A and iodine deficiencies and reduction of iron deficiency anaemia by one third of 1990 levels.

DIETARY STUDIES IN EUROPE, WHO Collaborating Centre on Nutritional Epidemiology, Institute for Social Medicine and Epidemiology of the Federal Health Office (BGA), Berlin, General-Pape-Strasse 62-66, D-1000 Berlin 42, Germany requests reports in this field to be sent to them. From the same office they produce CCN Newsletter (no 2 1991)

SIGHT and LIFE vol 6, no 3, December 1991. This Task Force and two physicians in South America have been awarded the HKI Award for 1991 "in profound gratitude for the exemplary role they have played in preserving the vision and health of third world populations". F. Hoffmann-La Roche Ltd. is committed to provide WHO and UNICEF free of charge sufficient bulk vitamin A to dose 115 million children in 37 countries over the next 3 years.

SUSAN EASTMAN has recently left New York after working with HKI for many years and is now free-lance at 470 Collingwood St. no5, San Francisco – she described her move as 'like going from the trenches to R&R'!

DEWITT GOODMAN – just as we were going to press the tragic news came that this outstanding scientist and physician died from pulmonary embolism following abdominal surgery on November 4. During a brilliant career as professor of medicine at Columbia University,

New York, he made fundamental discoveries on cholesterol, retinol – binding protein and other areas of vitamin A biochemistry.

CORRECTION – Franz Simmersbach of FAO kindly pointed out that the shortfall of funds mentioned in Bulletin 48, p6 is \$3.5m, not \$35m.

LITERATURE DIGEST

Dose-response tests in field surveys.

Methods for assessment of vitamin A status. *J Nutr* 1990; 120: 1455-8 (Underwood BA, Office of International Program Activities, National Eye Institute, NIH, Bethesda, MD 20892, USA).

Efficacy of vitamin A in reducing preschool child mortality in Nepal. *Lancet* 1991, 338:67-71 (West KP Jr et al Dana Center for Preventative Ophthalmology, Wilmer Eye Institute, Room 120, 600 North Wolfe Street, Baltimore, MD 21205, USA). A randomised, double-masked, placebo-controlled community trial of 28,630 children aged 6-72 months was carried out with randomisation by administrative ward. Vitamin A supplemented children received 60,000 retinol equivalents every 4 months, controls received identical capsules with 300 retinol equivalents. After 12 months the trial was discontinued with a 30 per cent reduction of mortality achieved in the supplemented group. Reduction was present in both sexes at all ages and unrelated to acute nutritional status.

Serum concentrations of carotenoids, retinol and alpha tocopherol in healthy persons determined by HPLC. *Clin Chim Acta* 1990; 194:131 (Ito Y et al. Fujita Health University School of Medicine, Department of Hygiene, Dengakngakulo 1-98, Toyuake Aichi 47011, Japan).

Maximising the amount of beta carotene in leaf protein. *Proc. 3rd International Conference on Leaf Protein Research* 1989 p416-9 (Pirie NW, AFRC Institute of Arable Crops Research, Rothamsted Experimental Station, Harpenden AL52 2JQ, UK). Leaves should be taken from positions on plants and at times of day associated with maximum beta carotene content. Heating is preferable to ageing for coagulating leaf protein, then pressed and washed. Storage loss is minimised by excluding air and/or adding inhibitors. Thermostable catalysts of beta carotene destruction have greatly enhanced activity against beta carotene after extraction with liquid solvents.

Uptake of chylomicron remnant retinyl ester enter via the low density lipoprotein receptor: implications for the role of vitamin A as a possible preventive for some forms of cancer. *J Int Med* 1990; 228:207-10 (Blomhoff R et al Institute of Nutrition Research, School of Medicine, University of Oslo, Oslo, Norway).

Epidemiologic characteristics, predisposing factors, and etiologic diagnosis of corneal ulceration in Nepal. *Amer J Ophthalmol* 1991; 111:92-99 (Upadhyay MP et al Tribhuvan University, Institute of Medicine, Box 2162, Kathmandu, Nepal). Between September 1985 and August 1987, 405 patients with microbial keratitis were examined in the Department of Ophthalmology. Only about 7% of these were children 0-10 years and "one third of these were due to malnutrition, xerophthalmia or measles"

(Ed. this study is not representative of the occurrence of corneal ulceration in Nepal – not only are hospital statistics unrepresentative, but within the hospital many children, especially those with malnutrition and measles would have been cared for outside the eye department).

Biochemical evidence suggestive of suboptimal zinc and vitamin A status in school children in Northeast Thailand. *Amer J Clin Nutr* 1990; 52:564-7 (Udomkesmalee E et al Institute of Nutrition, Mahidol University, Salaya Campus, Nakorn Chaisri, Nakorn Pathom 73170 Thailand). Serum zinc and RBP were significantly correlated ($p < 0.001$) whereas vitamin A and zinc were not correlated.

Plasma concentrations of carotenoids after large doses of beta-carotene. *Amer J Clin Nutr* 1990; 52:500-1 (Mathews-Roth MM, Channing Laboratory, 180 Longwood Avenue, Boston MA 02115, USA). 180mg/day was administered and plasma levels reached a plateau in 1.5 to 4 weeks. There was much individual variation but most subjects had carotenodermia but no toxicity.

Tolerance of preschoolers to two dosage strengths of vitamin A preparation. *Amer J Clin Nutr* 1990; 52:694-700 (Florentino RF et al; reprint requests to Sommer A, Dean, School of Public Health, Johns Hopkins University, Baltimore, MD, USA). Nausea and/or vomiting and headache occurred twice as frequently with 60mg as with 30mg dosing. Severe vomiting, in 1.2%, was confined to 60mg dose. Almost all symptoms occurred within 24h of dosing. Diarrhoea and fever were no different in dosed groups and placebo treated group.

Structural and geometrical isomers of carotenoids in human plasma. *J Nutr* 1990; 120:1654 (Krinsky NI. Tufts University School of Medicine, Department of Biochemistry, Boston, MA 02111, USA).

Determination of beta-carotene and its cis-isomers in serum. *Clin Chem* 1990; 36:1986 (Rushin WG et al; reprints from Catignani GL, Carolina State University, Department of Food Science, Raleigh NC 27695, USA).

Intramuscular relative-dose-response determination of liver vitamin A stores in rats. *J Nutr* 1991; 121:187-191 (RD Zachman and X Chen, Departments of Pediatrics and Nutritional Sciences, University of Wisconsin, Madison WI 53715, USA). This study confirms that this test is a valid approach to assessing vitamin A status in the rat.

Modified RDR assay as an indicator of vitamin A status in a population of well-nourished American children. *Amer J Clin Nutr* 1990; 52:1064-7 (Vitamin A status in preschool age Indonesian children as assessed by the modified RDR assay *ibid* 1068-72 (SA Tanumihardjo et al Dept of Biochemistry and Biophysics, Iowa State University, Ames, Iowa 50011, USA). A tentative DR-R (dehydroretinol-retinol) ratio for a satisfactory vitamin A status in healthy American children is 0.03. With a DR-R ratio of 0.03 as cut off point 62% of Indonesian children were judged to be of marginal vitamin A status.

Prevalance of malnutrition and vitamin A

deficiency in the Diourbel, Fatick and Kaolack regions of Senegal. Amer J Clin Nutr 1991; 53:66-9, 70-3, 74-7. Carlier C et al (INSERM U 56, Hopital de Bicetre, Kremlin-Bicetre, 94270, France). These studies are mainly about the use of conjunctival impression cytology for the detection of marginal vitamin A deficiency. The first paper shows that active eye infection, especially trachoma, can bring about changes in the bulbar conjunctiva indistinguishable from those of vitamin A deficiency. Another problem, not commented upon here, is the likelihood that subclinical infection not detectable by the ophthalmologist may also cause changes. Protein energy malnutrition may also reduce the specificity of CIC.

Concentrations of selected carotenoids and vitamin A in human liver, kidney and lung tissue. J Nutr 1991; 121:1613-21. Schmitz HH et al (reprint requests to J W Erdman Jr, Dept of Food Science, University of Illinois, Urbana III 61801, USA).

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Carotenoid composition of a leafy vegetable in relation to some agricultural variables. J Agr Food Chem 1991; 39:1094 Mercadante AZ and Rodriguezamaya DB (Universidade Estadual Campinas, Faculty Engineering Alimentos, Dept Ciencia Alimentos, Caixa Postal 6121 BR-13081, SP Brasil).

Liver damage caused by therapeutic vitamin A administration: estimate of dose-related toxicity in 41 cases. Gastroenterology 1991; 100:1701 AP Geubel et al (St Luc University Hospital, Dept of Gastroenterology, 10 Ave Hippocrate B-1200 Brussels, Belgium). The largest series of cases reported with liver damage.

The acute phase response and vitamin A status in malaria. Trans Roy Soc Trop Med Hyg 1991; 85:194. Thurnham DF et al (Dunn Nutrition Research Laboratory, Milton Road, Cambridge CB4 1XJ, UK).

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Vitamin A status of preterm infants during

infancy. Amer J Clin Nutr 1991; 53:1455-9. Peoples JM et al (reprints SE Carlson, Newborn Center, 853 Jefferson Ave, Room 201, Memphis, TN 38163, USA). Suboptimal vitamin A status may occur for many months after preterm infants are discharged from hospital.

Nutrition and household risk factors for xerophthalmia in Aceh, Indonesia: a case-control study. Mele L et al. Amer J Clin Nutr 1991; 53:1460-5. (reprints KP West Jr, DCPO, Wilmar 120, Johns Hopkins Hospital, 600 North Wolfe St., Baltimore MD 21205, USA). These factors included low socioeconomic status and poor hygiene; also low consumption of dark green leaves, yellow fruits, or egg during weaning.

Plasma response to oral B-carotene in Guatemalan schoolchildren. Amer J Clin Nutr 1991; 54:539-47. Canfield LM et al. (Dept of Biochemistry, University of Arizona, Tucson, AZ 85721, USA).

Diarrhoea, respiratory infections, and growth are not affected by a weekly low-dose vitamin A supplement: a masked, controlled field trial in children in southern India. Rahmathullah L et al. Amer J Clin Nutr 1991; 54:568-77 (reprints Underwood BA, National Eye Institute, NIH, Building 31, Room 6A-17, 9000 Rockville Pike, Bethesda MD 20892, USA). In the same study the supplement was previously reported to reduce mortality by 54% and excess mortality was associated with concurrent symptoms of infection. Comparisons are made with results from similar studies and possible explanations of these findings are presented (see also Editorial).

Breast feeding and vitamin A deficiency among children attending a diarrhoea treatment centre in Bangladesh: a case-control study. Brit Med J 1991; 303:493-6. Mahalandbis D (Clinical Sciences Division, ICDDR, PO Box 128, Dhaka, Bangladesh). "These results indicate that breast feeding was associated with a substantial reduction in the risk of vitamin A deficiency extending to the third year of life and support the recommendation that mothers in developing countries should be advised to breast feed as long as possible". (Ed. This carefully conducted study shows the association claimed but the advice may be quite unsuitable elsewhere and breast feeding beyond the sixth month without adequate supplementation will be disastrous).



XEROPHTHALMIA CLUB

BULLETIN 50

JULY 1992

Supported by Sight Savers (Royal Commonwealth Society for the Blind) and the International Vitamin A Consultative Group

Bulletins are *sent free* to anyone seriously concerned with xerophthalmia
Please apply for membership to the Club Secretary

Secretary and Editor: Dr. D. S. McLaren, International Centre for Eye Health,
27-29 Cayton Street, London EC1V 9EJ, U.K. (Fax 903 206770).

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Prof Gordon J. Johnson, Director, International Centre for Eye Health, London;
Frances Davidson, Ph.D., Office of Nutrition, A.I.D., U.S.A.

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Dr. A. Sommer, U.S.A.; Dr. Andrew Tomkins, U.K., Dr. G. Venkataswamy, India.

CELEBRATING 50 ISSUES IN 20 YEARS A MESSAGE FROM SIGHT SAVERS

Sight Savers' sponsorship of the Bulletin since its first issue in 1972 has brought us into contact with some of the leading figures in this field, starting with Dr. "Tony" Pirie and Dr. Venkataswamy, and has stimulated our involvement with the Madurai Nutritional Rehabilitation Centre from 1974 onwards, with a Xerophthalmia Programme in India from 1982-86 and with the inclusion of measures to combat child blindness in every eye care programme we currently support.

Throughout each of those twenty years, children in developing countries, in their hundreds of thousands, have continued to go blind through vitamin A deficiency. Despite the advocacy and the work of public health programmes, often supported by international aid, the coordinated effort which Sir John Wilson spoke about in his Foreword to bulletin No. 1 has, seemingly, not come about. And now, in every developing country and in a series of international conferences, attention has been drawn to the alarming potential of cataract blindness as millions of adults enjoy a longer life through improved standards of living. This is a statistic with which most people can identify, since, whether they live in developed or developing countries, they come into contact with cataract blindness in their own families. Very few, though, have witnessed the misery of a child in a deprived community, blinded for life as a result of keratomalacia.

We have to ask ourselves whether we are doing enough to project, in language and visual presentation readily understandable to the majority of people, the critical need to address child blindness as well as cataract blindness in developing country eye care programmes. On a personal note, I fear we are not and I speak with add-on experience of encountering blind infant children in my work and listening to strategy proposals at many conferences. I and my colleagues in Sight Savers congratulate the Editor and all associated with the Bulletin on its production and circulation to date, but we would like to feel that this 20th anniversary marked a new beginning for **advocacy, awareness and action** in defeating xerophthalmia.

*Alan W. Johns
Executive Director, Sight Savers*

THE EDITOR AS JANUS

Janus was the Roman god who gave his name to the first month of the year, and who was able to look both back into the past and forward into the future. Fifty issues and twenty years on it is perhaps fitting for the editor to play Janus. Remarkable progress has certainly been made in some directions since the first two issues appeared in 1972. The first article was entitled 'Cinderella' and referred to the neglect of the nutritional blindness problem that the Club was formed to help correct; this it certainly has succeeded in doing. Difficulties over nomenclature

1/80

2 and terminology were also highlighted; largely through the efforts of two WHO expert committees these were resolved long ago. The aim of the Club was stated to be 'to collect and to spread information on the clinical aspects of vitamin A deficiency, especially as a blinding disease'. Over the past decade the emphasis has shifted to extraocular aspects of deficiency, especially in relation to child survival, and on the other hand to educational, horticultural, health care and other means of prevention.

People who receive the Bulletin often write to ask how they may also join the Xerophthalmia Club. In reality it does not exist except that in those early days every opportunity was taken to hold a meeting of the Club at any international, national, or even local meeting where paediatrics, ophthalmology, nutrition, or food science was the theme. The club meeting at the International Congress of Nutrition in Mexico City was reported in 1972. This practice could profitably be revived and I would be very pleased to discuss arrangements with anyone interested, give notice in the bulletin of such a meeting and publish an account of the meeting in due course.

There is, however, no cause for complacency. Commenting on the present event Alan Johns of Sight Savers mentioned that it has caused him 'to appreciate how much has been said without an equivalent progress in actually reducing an incidence which we are only, imperfectly, aware of. 'For example, since 1972 the most prolonged and largest prophylactic programme of distribution of megadoses of vitamin A has been going on in India without evidence that it is any longer efficacious. There are many similar examples. Although it is generally agreed that xerophthalmia should theoretically be the easiest nutritional deficiency disease or cause of blindness to eradicate, in practice it turns out to be stubbornly persistent. Virtual elimination by the year 2000 according to Health for All appears hugely optimistic. Just increased effort of the same kind as before will not succeed. I would suggest that inadequate concepts may sometimes be a greater bar to progress than lack of knowledge or effort.

Specialisation according to body systems is entirely appropriate, and indeed essential, for treatment of the individual patient. Clinical ophthalmology is among the most successful instances of this principle. The prevention of disease and the promotion of health transcend such a straightjacketed concept. Their techniques of intervention are directed to whole communities designed to modify for the better their way of life. These interventions relate to the causes of the diseases to be prevented, and not to the organs affected. Major causes of blindness such as cataract, glaucoma, onchocerciasis, xerophthalmia and trachoma in terms of aetiology, global distribution, epidemiology, and at risk groups have nothing in common. Preventive measures are consequently equally diverse and unrelated; all the way from surgery and screening, parasite destruction, improving the diet and personal hygiene. Each of these health interventions, but

especially giving vitamin A, has implications far beyond just preserving sight and preventing blindness. There are now more than 65 countries that have set up national prevention of blindness programmes. There is urgent need to consider their role in relation to these broader issues.

Finally, to return to the present position; despite considerable effort and some progress in the traditional 'homes' of xerophthalmia e.g. India, Bangladesh, Indonesia new endemic areas have been identified recently in parts of Latin America, Africa, some Asian countries and Pacific islands. It certainly looks as though there will be a job for the Bulletin to do for the foreseeable future!

Donald S. McLaren

CONFERENCE

Vitamin A deficiency and childhood mortality

The World Summit for Children and the WHO/UNICEF Conference "Ending Hidden Hunger" called for a reduction in childhood blindness and mortality by the worldwide control or elimination of vitamin A deficiency. Scientists and health officials met at the Rockefeller Study Center in Bellagio, Italy, in February to evaluate the scientific basis for these objectives and to examine the policy implications. Meeting participants* unanimously concluded:

- Vitamin A is essential for normal health and survival.
- Vitamin A deficiency increases mortality among children from 6 months to 6 years of age; improving the vitamin A status of deficient children increases their chance of survival.
- Vitamin A deficiency increases the severity, complications, and risk of death from measles. Improving vitamin A status before the onset of measles (prophylaxis), or after development of measles (treatment), reduces the severity of complications and associated mortality.
- Vitamin A deficiency increases childhood morbidity, particularly the severity of infectious episodes (eg, diarrhoea, pneumonia). Improvement of vitamin A status reduces the severity of infectious episodes.
- Vitamin A is essential for normal vision and ocular function. Deficiency results in nightblindness and other manifestations of xerophthalmia, including corneal destruction (keratomalacia) and blindness.
- Increased morbidity and mortality occur at levels of vitamin A deficiency less severe and chronic than required for nightblindness and xerophthalmia. Therefore, the definition of vitamin A deficiency for public health purposes must be revised and made more sensitive to milder degrees of deficiency.

- Tens of millions of the world's children are vitamin A deficient; one million or more needlessly die or go blind every year.
- Improving the vitamin A status of deficient children and treating all cases of measles with vitamin A, even in populations in which xerophthalmia is rare, can substantially reduce childhood disease and mortality.
- Increasing the vitamin A intake of deficient children through diet or supplementation is an important component of a comprehensive child survival strategy.

These conclusions were based on consistent evidence from studies in animals and man and emerging data on vitamin A regulation of gene expression, cellular differentiation, and immune status:

- (1) Progressive depletion of vitamin A in animals results in alterations in cellular differentiation and immune function, followed by severe infection, death, and in animals surviving longest, blindness.
- (2) For over 60 years, clinicians have reported that vitamin A deficient children show histological changes of the respiratory and genitourinary tracts (among other organs) similar to those that precede xerophthalmia and an increased severity of infections that are responsive to vitamin A.
- (3) Childhood mortality has been associated with the severity of vitamin A deficiency, other factors apparently being equal, in both hospital and field observational studies.
- (4) The severity of measles complications and measles-associated mortality was reduced by at least 50% among children assigned supplemental vitamin A in hospital-based studies in England (1930), Tanzania, and South Africa, and in three community-wide prophylaxis studies in Nepal and India.
- (5) All six controlled community-based prophylaxis-mortality trials published in the past decade (two each in Indonesia, India, and Nepal) registered a reduction in mortality in the vitamin A groups. Pooling of the six trials (100,000 children and 1000 deaths) in a meta-analysis yielded an overall reduction in childhood mortality (6 months to 6 years) of 34%. The impact observed in each was consistent with the 34% overall reduction (heterogeneity, $p \geq 0.32$). The probability that the vitamin A programmes reduced childhood mortality was highly significant ($p < 10^{-9}$). The consistency of these findings was particularly persuasive in view of variations in the underlying mortality and other health indices of the study populations and differences in the design and conduct of the six trials.
- (6) Cause-specific mortality was examined in three of the community-wide mortality intervention trials; in all three, there were striking reductions in deaths associated with diarrhoea (the major cause of death in children over 5 months of age) and measles.
- (7) In a study specifically designed to detect the impact on severity of subsequent infections

(Ghana), vitamin A supplementation reduced the natural severity of both diarrhoea and pneumonia.

Although the precise mechanisms by which vitamin A exerts its impact on mortality are yet to be determined, vitamin A is known to affect the expression of at least three hundred different genes, which in turn affect cellular differentiation, epithelial integrity, and immunological functions.

Alfred Sommer

*The meeting was supported by the Charles A. Dana Foundation, organised by Helen Keller International, and chaired by Professor Abraham Horwitz. Participants were W. Berggren, F. Chytil, F. R. Davidson, N.M.P. Daulaire, T. Gopaladas, A. Horwitz (chairman), G.D. Hussey, F.P. Kavishe, B. Kirkwood, R. S. Lawrence, E. Messer, R. Northrup, J.M. Palmer, J. Rohde, A. C. Ross, R.M. Seifman, A. Sommer, I. Tarwotjo, J.A. Tonascia, F. L. Trowbridge, K.P. West, Jr. Reprinted with permission The Lancet 1992; 339:364

**ABSTRACT FROM XIV
IVACG MEETING
CONTROL OF NUTRITIONAL
BLINDNESS IN CHILDREN
THROUGH COMMUNITY
PARTICIPATION
BY
DR. GOPA KOTHARI, ADVISER,
CHILD DEVELOPMENT SERVICES
SIGHT SAVERS, INDIA**

The Government of India has initiated several nutrition programmes on a national scale to control/prevent major nutrition problems from the time of the first five year plan. A programme for the prevention and control of nutritional blindness through massive vitamin A dose prophylaxis has been included in the fourth five year plan of the Government of India. But at the end of two decades, nutritional blindness due to vitamin A deficiency is known to be still a public health problem in the Eastern and Southern parts of the country and in a few areas of West and occasional areas of North. Thus even today blinding malnutrition in children below six years is a problem in spite of the various nutrition programmes run by Government and voluntary agencies in India, 50% of preschool children and 30% of school-age children have moderate to severe generalized malnutrition.

Sight Savers launched a countrywide programme to prevent blindness in children from June 1981 in remote rural areas, desert areas and urban slums and are now developing in India, Child Development Service Projects (C.D.S.) with stress on primary health care approach to child survival with special reference to primary eye care.

The C.D.S Projects are initiated after detailed dialogues with the community and hence the approach results in community participation, community awareness and ultimately resulting in sustaining of the project by the community.

102

4 In one of the C.D.S. Projects an innovative approach to health education has been developed. 30,000 rural population of Tirupati (Andhra Pradesh) was adopted for the project and the population divided into Control Area and Test Area. Before initiation of the project the community health workers (C.H.W.) and the team members of Burrakatha (folk art) were given similar training for health and nutrition education.

Both the areas have similar medical intervention of eye check-up, treatment of eye ailment, vitamin A prophylaxis, growth monitoring and immunisation for under six year-old children. In the Control Area health and nutrition education is carried out by the C.H.W.s. while in the Test Area, health and nutritional messages are conveyed by Burrakatha team members.

On reviewing the data at the end of one year, in Control and Test Areas it was observed that both areas had similar impact with reference to control of xerophthalmia problem, improvement in nutritional status and immunization coverage. In Control Area only women participated in the project interventions while in Test Area the entire community was involved in the interventions and it resulted in mass awareness for child care and utilisation of existing services.

A project on prevention of blinding malnutrition in children was initiated by Operation Eyesight Universal (O.E.U.), in slums of Bombay in 1981, with the objective that it should generate community participation and demand so that it could be handed over to people or local agency to be continued as ongoing programme at the end of three to five years.

The programme developed five categories of interventions namely, medical, nutrition, health education, horticulture and social. Eye checkup, treatment of eye ailment, vitamin A prophylaxis, deworming, growth monitoring, immunization, treatment of diarrhoea and training of mothers in O.R.T. were important medical interventions. Cooking demonstrations, follow-up of malnourished children, and nutrition education on weaning foods were important nutrition interventions. Development of small model kitchen gardens with locally available dark green leafy vegetables (DGLV) and motivating mothers to grow DGLV were important horticulture interventions. The use of posters, flipcharts, flannel graphs, puppet shows, role playing were important methods used to convey health education messages. Formation of different groups (youth, women, adult men), group discussions and periodical meetings with local leaders constituted important social interventions. Literacy classes and self-employment schemes were started for women to raise their status.

This holistic approach and active community participation from inception, helped in the control of xerophthalmia, improvement in nutritional status in underfives and material knowledge with respect to child feeding and rearing practices within 3 years. From the year 1981 to 1991, the project has maintained the cycle of active intervention in a given area for 2 to 3 years and

later the programme will be sustained by the community.

Thus to bring a xerophthalmia problem under control what is required is not implementation of vitamin A prophylaxis programme in isolation but co-ordinated primary health care approach from community development with active community participation along with raising women's status through literacy and self-employment schemes. The continuation of interventions with a community initiative creates more health awareness and helps in changing their habits leading to improvement in child feeding and rearing practices, eye care and ultimately resulting in prevention of blinding malnutrition in children.

NOTES AND NEWS

COMMUNITY EYE HEALTH BULLETIN - No. 8, 1991 - (Dr Murray McGavin, ICEH, 27, 29 Cayton Street, London EC1V 9EJ, UK)

features two articles on Severe Measles and Measles and Childhood Blindness of special interest. This issue provides details of a series of new courses in various aspects of Preventive Ophthalmology being offered at ICEH in 1993 - all enquiries to Course Coordinator at ICEH.

ACTION HEALTH - No. 17 Spring 1991 (The Bath House, Gwydir Street, Cambridge CB1 2LW, UK) - advertises a number of positions vacant overseas and carries articles on Participation: Can Aid Agencies and Communities Work Together? and Towards Sustainability in Health Care.

PROFESSOR JOHN HANSEN - congratulations on the award of an honorary DSc by the University of Cape Town in June. Over many years in Cape Town and then in Johannesburg John made outstanding contributions to our understanding of malnutrition problems in children.

FIND YOUR FEET Newsletter No. 6, Spring 1992 (37-39 Great Guildford Street, London SE1 0ES, UK) - describes work with leaf concentrate in a number of countries.

AGENCY FOR INTERNATIONAL DEVELOPMENT (AID) (R&D/H, Room 1200, SA-18 Washington, D.C. 20523-1817, USA) - Health Herald, issue No. 5 March 1992, the Office of Health newsletter. From the same address Office of Health Directory November 1991 containing details of projects supported around the world.

VITAL NEWS, Vol 3. No. 1 (Vitamin A Field Support Project, 1601 N. Kent Street, Suite 1016, Arlington, VA 22209, USA) - highlight is a review of vitamin A deficiency in Latin America and the Caribbean. This calls for a revision of the 1988 WHO country classification. On the basis of data obtained the present position is considered to be: 1) Significant public health problem in all or part of Brazil, Haiti, El Salvador, Guatemala, Dominican Republic; 2) problem of significant proportions in Belize, Bolivia, Ecuador, Honduras, Mexico, Nicaragua, Panama, Peru; and 3) not a problem in Costa Rica, Jamaica, Paraguay, Uruguay and Venezuela (Ed. Other countries in the region are not commented upon. The data from

Guatemala gives particular cause for concern. Only a few years ago the nationwide programme of fortification of sugar with vitamin A was hailed as highly successful. A national survey in 1989 showed low serum retinol, less than 20µg/dl, in 26.0% of children 0-5 years.)

OCULAR SURGERY NEWS, Vol 3. No. 4, 1992 (SLACK Incorporated, 6900 Grove Road, Thorofare, New Jersey, 08086-9447, USA) – reports that a diet rich in fish oil may protect against the development of open-angle glaucoma. This was first suggested by the low incidence of this disease in Greenland Eskimos who consume a lot of fatty fish like mackerel.

WAGENIGEN COURSES – 9th International Course on Food and Nutrition Management (October 25 – December 5, 1992) and 24th International Course on Food Science & Nutrition (January 11 – June 12, 1993). Full information for these and many other courses offered by the International Agricultural Centre can be obtained from the Director, P.O. Box 88, 6700 AB Wagenigen, The Netherlands (FAX +31-8370-18552.)

I/D/E/C/G ANNUAL REPORT 1991 – (International Dietary Energy Consultancy Group, Executive Secretary, c/o Nestle Foundation, PO Box 581, 1001 Lausanne, Switzerland).

Dr BARBARA A. UNDERWOOD – Chairperson of IVACG Steering Committee and Special Assistant for Nutrition Research and International Programs, Office of the Director, National Eye Institute, USA has been awarded by the American Institute of Nutrition both the Conrad A. Elvehjem Award for Public Service in Nutrition and the Borden Award in Nutrition. Her work has been especially in the area of human vitamin A deficiency and xerophthalmia. Congratulations, Barbara, on a most unusual double event.

HEALTH UNLIMITED – Annual Review 1990-91 and other publicity material (3 Stamford Street, London SE1 9NT, UK). They currently work in ten countries and plan to extend this to 20 by 1995. 'Health Unlimited works to strengthen threatened communities in areas of conflict through the development of lasting and effective health care systems'.

AFRICA HEALTH, Vol 14. No. 2, January 1992 (57/59 White Chapel Road, London E1 1DU, UK). – Published six times a year, price £37 in UK and £54 other countries £54, circulated free of charge to qualified readers in most African countries. One section is devoted to Nutrition.

DIAGNOSTICS IN AFRICA – quarterly newsletter from Wellcome, issue 5, December 1991 (PO Box 393, Cambridge, CB3 1DN, UK).

DIALOGUE ON DIARRHOEA, issue 47, December 1991 (AHRTAG, 1 London Bridge Street, SE1 9SG, UK).

MCH NEWS PAC Vol 5, No. 8, December 1991 – This issue states that the Pacific Basin MCH Resource Center in Guam that publishes this bulletin is closing after 7 years.

NUTRITION CENTER OF THE PHILIPPINES – Annual Report 1990 and Bulletin July-September 1991 (Nutrition Center of the Philippines, P.O. Box 653, MCPO, Makati, Metro Manila).

HORIZONS – the occasional bulletin of Sight Savers, PO Box 191, Haywards Heath, West Sussex, UK.

PROJECT HOPE – has produced in Portuguese a document entitled 'Vitamin A deficiency and strategies for its control: a guide for municipal health departments'. The project was supported by a grant from USAID. The Director, Dr Jay McAuliffe writes to say that it is being distributed to all of the 1500 municipalities of the North East of Brazil where vitamin A deficiency is endemic. This attractively produced monograph may be obtained from Dr McAuliffe, Project Hope, C. Postal 3151, Rodolfo Teofilo, Fortaleza, Ceara 60414, Brazil.

PUBLIC HEALTH NUTRITIONAL EPIDEMIOLOGY 4th European Postgraduate Summer Course, July 20 – August 7, 1992 – for details write to Lorna du Lac, Course Administrator, Department of Human Nutrition, University of Southampton, Bassett Crescent East, Southampton SO9 3TU, UK.

(Ed. I receive many notices of meetings which I cannot use because they are sent much too late in relation to the time of the meeting. Those concerned kindly note that the Bulletin is published not more frequently than once in 4 months, usually March, July and November. Moreover, those interested in attending/submitting papers/registering require many months and probably at least one year's notice.)

CONTROL OF DIARRHOEAL DISEASE – Programme of WHO-Update No. 10, February 1992 – Indicators for Assessing Breast-Feeding Practices. The report of the recommendations of an informal meeting organized in June 1991 is available from WHO, Geneva.

NUTRITION NEWS Vol 12, Nos 4-6, 1991 (National Institute of Nutrition, Tarnaka, Hyderabad 500 007, India). – Topics include Nutrition Monitoring by Village Level Workers, Diet and Nutritional Status of Tribal Groups, and Blue Green Algae Spirulina; a source of vitamin A in children's diet ('freshly harvested and sun-dried or spray-dried spirulina contains 3-4 mg carotenes/gm dry powder, half of which is beta-carotene').

ACTION IN INTERNATIONAL MEDICINE (AIM) – issued its first bulletin in January 1992. This followed its first world assembly held in Toronto, Canada, August 25-28, 1991. 'AIMS's focus, as differing from other organizations working in the field, is upon the frontline professional health worker at the district level in developing countries'. The Bulletin, to be issued quarterly, gives a full account of the objectives and the projects with which it is associated around the world (details from AIM, Windeyer Building, 46 Cleveland Street, London W1P 6DB, UK; Fax +44(0)71-636 3612).

VITAMIN A SIEVE January 1992 (Janet Glassman, Rodale Press Information Services, 33E Minor Street, Emmaus, PA 18098 USA) – this semiannual abstraction service of the vitamin A literature includes also in this issue a review of vitamin A and acute respiratory infection by Stephen Berman,

6 Department of Paediatrics, University of Colorado.
Coverage now includes announcements and a book review.

SCN NEWS No. 7 mid -1991

(Subcommittee on Nutrition, John Mason, Technical Secretary ACC/SCN, Room 48, c/o WHO, 12211, Geneva 27 Switzerland). – With this issue is included a supplement called 'Some options for improving nutrition in the 1990's'. There are Features on Refugees' Nutrition Crisis; Breast feeding, birth spacing and nutrition; Community-based development; and Micronutrient intakes, incomes and prices. A veritable mine of information from around the world. All libraries in institutes in third world countries where nutrition is taught should be on the mailing list.

STABILITY OF VITAMIN A IN FOOD – an American ophthalmologist who often teaches on 'tropical eye diseases' wrote to ask 'how long can vitamin A-containing foods be cooked and still be effective?'. Both retinol and carotenes are stable to ordinary cooking methods. Some loss may occur at temperatures above 100°C as when butter or palm oil are used for frying. Fish oils should be bottled in brown coloured bottles to prevent oxidation during display. A project in Haiti supported jointly by USAID and Save the Children is introducing inexpensive solar drying processes to preserve the high carotene content of mango. The short growing season and transport problems normally mean that much goes to waste. Haiti is the seventh largest producer of mangoes in the world and the dried fruit is very acceptable to young children, which contrasts very strongly with dglv like spinnach – the 'greens' so universally detested by youngsters and the object of derision as 'poor man's food'.

WORLDWIDE INTERNATIONAL FOUNDATION (House Ho. 76A, Road No. 12A, Dhanmondi, Dhaka 1209, Bangladesh) – has produced an excellent video documentary entitled "From Darkness Into Light"; an account of their Nutritional Blindness Prevention Programme in that country that has been going on since 1984. The work has been extended over the years and now covers a population of 5.74 million in Rangpur, Dinajpur, Lalmonirhat and Gaibandha Districts.

The Annual Report for 1990 is also available, describing the many other activities this organization supports, with headquarters in Norway.

NUTRITIONAL EPIDEMIOLOGY – 4th Meeting in Berlin, October 12-15, 1992; theme 'Validation issues: quality control and measurement error in nutritional epidemiology'. Full particulars from Secretariat of the 4th Nut-Epi Meeting, Institute for Social Medicine and Epidemiology, Bundesgesundheitsamt, General-Pape-Strasse 62-66, D-1000 Berlin 42, Germany.

BASANTI DEVI AMIR CHAND PRIZE – for the year 1992 in the field of biomedical science has been awarded by the Indian Council of Medical Research to Dr Vinodini Reddy, Director of the National Institute of Nutrition, Hyderabad, India.

SIGHT AND LIFE TASK FORCE – F. Hoffman-La Roche Ltd, P.O. Box, CH-4002 Basle, Switzerland: Annual Report 1991 which gives details of its support for research studies, intervention programmes, training and education, and information activities, all of which have continued to expand.

CONTACT No. 123, December 1991, February 1992 (Christian Medical Commission, World Council of Churches, 150 Route de Ferney, 1211 Geneva 20, Switzerland). – This double number is devoted to contributions to the ongoing debate on the Third World Debt Crisis. It is particularly critical of SAPs (Structural Adjustment Programmes).

DR DERRICK B JELLIFFE – as we were going to press came the shock of the deeply sad news of the death of 'Dick' on March 18 aged 71. Always accompanied and assisted by his charming and accomplished wife 'Pat' he had taken a leading role in the world of tropical child health and nutrition for decades. His influence will continue through his many books and other publications and his students at UCLA and now around the world. Dick's patient, amused yet quizzical and incisive presence will be sorely missed. We will not see his like again.

BOOK NOTICES

MICRONUTRIENT DEFICIENCIES IN ETHIOPIA AND THEIR INTER-RELATIONSHIPS – a thesis by Zewdie Wolde-Gebriel. It consists of 9 chapters, some of which have already been published and the others submitted for publication. The micronutrients studied were vitamin A, iodine and iron. A nationwide study of prevalence of xerophthalmia was carried out on 6636 children aged 6 months to 6 years. X1B averaged 1.0% with 1.6% in pastoral and 1.1% in cropping agro-ecological zones, but only 0.4% in cash crop and 0.0% in false banana zones. X1A and X1B were twice as common in boys as in girls. Serum retinol was deficient (less than 0.35µmol/l) in 16% and low (0.35-0.69µmol/l) in 44% children; thus a problem of public health magnitude by WHO criteria. 721 pupils in six blind schools showed 70% had corneal blindness with measles possibly responsible in 40%. In one village of Hararge Region blinding malnutrition of a most serious degree (X3A,B 6.3% and XN 5.8%) was found among the 240 young children who had been subsisting on relief foods devoid of vitamin A. Similar field studies of iodine and iron status were carried out.

VOLUNTARY EFFORT IN COMMUNITY HEALTH BY R. Khanna, N.R. Mehta, and A. Bhatt. – A review of the Community Health Project of SEWA-rural. August 1991.

This 240 page report is an external review of the first 5 years or so (from 1984-89) of the Society for Education, Welfare and Action-Rural in Gujarat, India. There is much to commend in this evaluation, those especially interested should seek a copy from SEWA RURAL, Jhagadia 393 110, Dist. Bharuch, Gujarat, India. Comparative vital

statistics taken from the report tell their own story of solid progress.

	Baseline	Present Status		HFA Targets	
	1982-84	S 1987-89	G/I 1987-89	1990	2000
Crude birth rate	35.6 G	27.0	29.6 G	27.0	21.0
Crude death rate	12.7 S	8.0	9.9 G	10.4	9.0
Child mortality rate (0-4)	32.0 S	21.0	40.9	NA	NA
Severe PEM (%)	16.1 G	11.5	NA	N	NA
Childbirths attended by trained personnel	25.0	90.0	NA I	80	100
Measles immunisation	-	73	17	85	85

S = SEWA-Rural I = Govt. of India
G = Govt. of Gujarat NA = Not available

LITERATURE DIGEST

Vitamin A levels and severity of measles in New York City. Amer J Dis Child 1992; 146:182-6 (Frieden TR et al, New York City Dept. of Health, 125 Worth St., Box 22, New York, NY 10013). In 89 children under the age of 2 years with serologically confirmed measles the serum retinol was low (less than 0.70µmol/l) in 22%. These children had higher temperature for a longer time and were more likely to be hospitalized and to have lower measles specific antibodies.

Plasma carotenoid levels in human subjects fed a low carotenoid diet. J Nutr 1992; 122:96-100 (Rock CL et al Program in Human Nutrition, School of Public Health, University of Michigan, Ann Arbor, MI 48109-2029 USA). The data suggest two body pools of these compounds. A significant decline in plasma carotenoid levels over two weeks on a low carotenoid diet suggests that such determinations may be useful only in the assessment of short-term intake.

Evaluation of the preruminant calf as a model for the study of human carotenoid metabolism. J. Nutr 1992; 122:262-8 (Poor CI et al, reprints from Erdman JWJr, Department of Food Science, University of Illinois at Urbana-Champaign, Urbana, IL 61801, USA). 'The preruminant calf shows promise as an animal model for the study of absorption and metabolism of carotenoids by humans'.

Vitamin A deficiency in Micronesia: a statewide survey in Chuuk. Nutr Res 1991; 11:1101. Lloydpuryear MA et al (requests to Humphrey JM, Johns Hopkins Hospital, 600N Wolfe Street, Baltimore MD 21205, USA).

An evaluation of a food frequency questionnaire for assessing dietary intake of specific carotenoids and vitamin E among low-income black women. Am J Epidemiol 1991; 134:658-71. Coates RJ et al (Division of Epidemiology, Emory University School of Public Health, 1599 Clifton Road, N.E., Atlanta, GA 30329 USA). The National Cancer Institute questionnaire was found to be as valid for use in this population as in other populations.

Direct mobilization of retinol from hepatic perisinusoidal stellate cells to plasma. J Biol Chem 1992; 267: 1340-4. Andersen KB et al.

(reprints from Blornhoff R, Institute for Nutrition Research, School of Medicine, University of Oslo, PO Box 1046, N-0316 Oslo, Norway). The study suggests that stellate cells mobilise retinol directly to the blood and that vitamin A-storing cells in liver, lungs, and probably also other organs may synthesise their own RBP (or alternatively use exogenous RBP) and mobilise holo-RBP directly to the blood.

Depressed immune response to tetanus in children with vitamin A deficiency. J Nutr 1992; 122:101-7. Semba RD et al (Dana Center for Preventive Ophthalmology, Wilmer Institute, Baltimore MD 21205 USA). These results suggest that children with mild vitamin A deficiency have a relative immune depression compared with children who have been supplemented to normal vitamin A levels'.

Breathing rate and pneumonia. Brit Med J 1992; 304:637 Morley D and Brown R (Centre for International Child Health, Institute for Child Health, London WC1H 1EH, UK). Pneumonia is the number one cause of death in many developing countries. Rapid breathing is the most important sign and this letter describes how its detection can be taught by use of a simple string and stone metronome.

Conjunctival impression cytology (CIC) and vitamin A deficiency in children. Proc Nat Symp cum Workshop on Child Nutrition - the Indian Scene, Sept 7-8, 1990 Bombay pp217-21 Mehta NJ (Department of Biochemistry, Seth GS Medical College, KEM Hospital, Parel, Bombay 400 012, India). In 90 children the following results were obtained: in 31 with mild xerophthalmia, mean serum retinol 12.98µg/dl, CIC +ve in 20/20; in 20 with no eye signs but serum retinol less than 20µg/dl, CIC +ve in 8/12; and in 39 normal eyes and mean retinol 29.79µg/dl, CIC +ve in 11/22.

Test de l'impression oculaire de transfert pour la surveillance du status vitaminique A. Rev Int du Trachome 1990, pp 263-7. Chassot P et al (Clinique haute Vallee de l'Aude, Chemin de Lasserre, 11500 Quillan, France).

Vitamin A supplementation reduces measles morbidity in young African children: a randomized, placebo-controlled, double-blind trial. Amer J Clin Nutr 1991; 54:890-5. Coutsooudis A et al (Department of Paediatrics, University of Natal, PO Box 17039, Congella 4013, South Africa. Yet another confirmation of the beneficial effect of vitamin A.

Diurnal and seasonal variation of five carotenoids measured in human serum. Amer J Clin Nutr 1992; 55:659-63. Cantilena LR et al (requests to DW Nierenberg, Dartmouth Medical School, Hinman Box 7506, Lebanon, NH 03756 USA). The study concludes that a single blood sample does not give representative values of these carotenoids (lutein/zeaxanthin, cryptoxanthin, lycopene, alpha-carotene, beta-carotene).

Evaluation of vitamin A absorption by using oil-soluble and water-miscible vitamin A preparations in normal adults and in patients with gastrointestinal disease. Amer J Clin Nutr 1992; 55:857-64. (Johnson EJ et al USDA Human Nutrition Research Center on Aging at Tufts University, 711 Washington Street, Boston

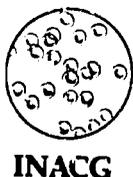
8 MA 02111, USA). Physiologic rather than pharmacologic doses may be used in absorption tests but more work is needed before these tests could be developed for clinical use.

The cost of successful adolescent growth and development in girls in relation to iron and vitamin A status. Amer J Clin Nutr 1992; 55:955-8) Brabin L and Brabin BJ (Liverpool School of Tropical Medicine, Pembroke Place, Liverpool, L3 5QA, UK). A review of the small literature suggests that vitamin A has a role in sexual maturation and the marginal deficiency may have clinical effects at this time.

Childhood mortality after a high dose of vitamin A. Brit Med J 1992; 304:1381. Daulaire NM (Intercept PO Box 168, Hanover, NH 03755, USA). Reply to letter on p 640. (Ed. see pp 2-3 for latest conclusions and recommendations on this subject. I hope to have a statement from WHO for the next issue).

Footnote: with the opening of the new building of the Institute of Ophthalmology from August 17 the address of the Bulletin will be International Centre For Eye Health, Institute of Ophthalmology, Bath Street, London EC1V 9EL.

Appendix 10



INACG

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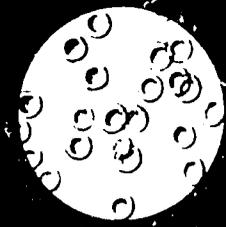
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102802

109

Appendix 11



**Combating
Iron
Deficiency
Anemia
Through
Food
Fortification
Technology.**

WORLD
FOOD
PROGRAM

CONTENTS

Introduction	i
Background	1
Consensus Statement	2
Recommendations	2
Facilitating and Implementing Roles	3
National Coordinating Committee	3
National Agencies	5
Provincial, State, and Community Agencies	6
Country Institutions	6
International Community	6
Industry (National or Multinational)	6
Industry (Local)	7
Consumers	7
INACG	7
Implementing the Action Plan: Immediate Steps	7
Public Health Leaders in Developing Countries	8
Donor Agencies	8
INACG	8
Industry	9
Template for Action	9
Conclusion	9
● ● ● ●	
Figure 1. Linkages and Partnerships: National Level	4
Figure 2. Linkages and Partnerships: Community Level	5
Table 1. Developing a National Iron Fortification Program: Responsibilities During Each Phase	10-11

Appendix 12



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**INACG RELEASES ACTION PLAN
ON IRON FORTIFICATION OF
FOOD**

For Immediate Release
Contact: Dr. Suzanne S. Harris
(202) 659-9024

Washington, D.C.-- Iron deficiency anemia is the most prevalent nutritional deficiency today, affecting more than 1 billion people worldwide. Iron fortification of food has proven successful in developed countries in combating iron deficiency anemia. This latest publication from the International Nutritional Anemia Consultative Group (INACG) provides a course of action for implementing a national iron fortification program in the developing world.

Combating Iron Deficiency Anemia Through Food Fortification Technology: An Action Plan presents guidelines for implementors at the local, national, and international levels for conducting a country-specific iron fortification program. The Action Plan also shows the partnerships between industry, donor agencies, and country leadership necessary to build a successful strategy for combating iron deficiency anemia.

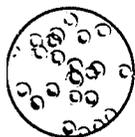
This Action Plan represents the synthesis of ideas generated at the XII INACG Meeting, held 5-7 December 1990 in Washington, DC. The meeting brought together representatives from industry, academia, governments, and nonprofit organizations to discuss the theme "Combating Iron Deficiency Anemia Through Food Fortification Technology."

Single copies of *Combating Iron Deficiency Anemia Through Food Fortification Technology: An Action Plan* and other INACG publications are available free of charge to developing countries and for \$3.50 (USD) to developed countries. Order copies from the INACG Secretariat, The Nutrition Foundation, Inc., 1126 Sixteenth Street, NW, Washington, D.C. 20036, U.S.A.

The International Nutritional Anemia Consultative Group was established in 1977 to guide international activities aimed at reducing iron deficiency anemia in the world.

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114



INACG

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Nutritional Anemia
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Group**

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**INACG FORMS
STEERING COMMITTEE**

**For Immediate Release
Contact: Dr. Suzanne S. Harris
(202) 659-9024**

Washington, D.C.-- The International Nutritional Anemia Consultative Group (INACG) has formed a steering committee of experts to guide governments, donor agencies, and others involved in reducing iron deficiency anemia (IDA) worldwide.

Micronutrient malnutrition has gained increasing attention in recent years, with considerable support being given to vitamin A and iodine deficiency programs. INACG, under the leadership of its newly-formed steering committee, now has the opportunity to move to the forefront of the micronutrient campaign, giving the fight against iron deficiency anemia the social, political, and financial support it deserves.

Members of the INACG Steering Committee include Dr. Richard C. Theuer (Chairman), Beech-Nut Nutrition Corporation, U.S.A.; Dr. Samuel G. Kahn (Secretary), USAID, U.S.A.; Dr. Rodolfo Florentino, Food and Nutrition Research Institute, The Philippines; Dr. T.N. Maletnlema, AFRONUS, Tanzania; Dr. Fernando Viteri, University of California, U.S.A.; and Dr. Tomas Walter, Institute of Nutrition and Food Technology, Chile. Their combined expertise will aid INACG in its efforts to eradicate IDA worldwide.

The International Nutritional Anemia Consultative Group was established in 1977 as a non-formal, non-membership entity composed of groups active in reducing nutritional anemias. INACG was first chaired by the late Dr. E.M. DeMaeyer and more recently by Dr. Alberto Pradilla.

To obtain more information about INACG activities, or to join the INACG network, please contact the INACG Secretariat, The Nutrition Foundation, Inc., 1126 Sixteenth Street, NW, Washington, D.C. 20036, U.S.A.

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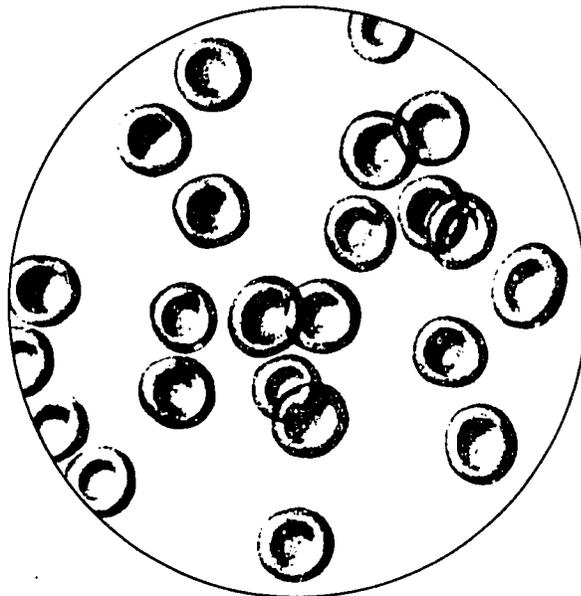
115

Appendix 13

SUMMARY

XII INACG Meeting

**COMBATING IRON DEFICIENCY ANEMIA
THROUGH
FOOD FORTIFICATION TECHNOLOGY**



International Nutritional Anemia Consultative Group

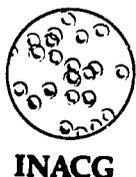
5-7 December 1990

Washington D.C.

TABLE OF CONTENTS

	<u>Page</u>
Introduction	i
Opening Session	1
Welcoming Remarks	1
Introductory Remarks	2
Opening Remarks	3
Session 1. Current Operational Iron Fortification Systems	4
Case Study: Wheat Flour and Cereal-Based Foods *	4
Case Study: Infant Cereal Products	6
Case Study: Infant Formula and Milk Products	6
Discussion Points	7
Session 2. Experimental Iron Fortification Systems	8
Fortification of Condiments *	8
Fortification of Salt *	9
Fortification of Rice *	11
Session 3. Safety and Other Considerations	12
Safety in Iron Fortification *	12
<i>Codex Alimentarius</i> : Current Status of Sodium Iron-EDTA	12
Inhibitors of Iron Absorption in Food *	13
Session 4. Chile: A Case Study *	13
Session 5. Costs of Iron Fortification	15
Iron Fortification in Indonesia *	15
Iron Fortification -- Is It Cost-Effective?	16
Cost of Fortificants	17
Cost Issues for Industry	17
Discussion Points	20
Session 6. Marketing Issues	20
Marketing Concerns in Ecuador *	20
Is There a Role for Marketing?	21
The Role of Consumer Research *	22
How Industry Markets a New Food Product	23
Discussion Points	23
Session 7. Issues in Implementing National Programs	23
The Philippines *	24
Egypt	25
The Caribbean *	26
Southern Africa Region *	27
Discussion Points	28
Sessions 8 and 9. Working Groups	28
Closing Remarks	29
Appendices	
Participants	33
Program	43
Abstracts (* included)	47

Appendix 14



INACG

**International
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**MINUTES OF INACG STEERING COMMITTEE MEETING
November 6, 1991
Coca-Cola Headquarters
Atlanta, Georgia**

Participants

Dr. Richard C. Theuer, Chairman
Dr. Samuel G. Kahn, Secretary
Dr. Rodolfo Florentino
Dr. T.N. Maletniema
Dr. Tomas Walter

Dr. Suzanne S. Harris, Secretariat

Guests: Dr. Alex Malaspina, ILSI
Dr. Maxime Buyckx, FAO

I. Call to order with welcome and introductions

Dr. Richard Theuer, chairman, called the meeting to order at 9:15 a.m. As this was the initial meeting of the Steering Committee, Dr. Theuer asked that each member of the committee introduce themselves.

II. Purpose of organizational structure of INACG

Dr. Sam Kahn, USAID and secretary of INACG, reviewed the history of the organization. In 1976 a group of donor organizations met to coordinate their funding efforts in nutritional anemia. By-laws (attached) were written at a second meeting held in Geneva in 1977. INACG was organized as a non-formal, non-membership entity supported by a secretariat funded by USAID. The first INACG chairman was Dr. Edward DeMaeyer, WHO. After Dr. DeMaeyer died, Dr. Alberto Pradilla became the INACG chairman, though he used the title senior advisor. He was instructed to use this title by his Agency, W.H.O. Dr. Pradilla resigned the position when he retired from WHO this past summer. Since then the position has been vacant.

The Steering Committee is new for INACG and is patterned after the long-standing International Vitamin A Consultative Group (IVACG) Steering Committee. Its purposes are (1) to help guide donor agencies and governments involved in reducing nutritional anemia and (2) to bring together a critical mass of expertise in the field. INACG recommends research that will lead to successful programs,

120

rather than sponsoring research. Also, on request it has advised governments on strategies and programs to control iron deficiency anemia (IDA). Iron deficiency anemia is the most significant problem but INACG may also wish to address other nutritional anemias such as folate deficiency.

Past accomplishments include state-of-the-art monographs and support for research projects. Funding for the monographs has come solely from U.S. government agencies. The research projects were carried out with industry funds. USAID has been the primary government funding agency though other U.S. agencies have provided support. INACG also has been advisory to the governments of Chile, Indonesia, India, Thailand and the Philippines.

III. Review and discussion of other micronutrient activities

In October, UNICEF and WHO cosponsored a conference, "Ending Hidden Hunger" to spark interest among developing country ministers in attacking micronutrient malnutrition. Vitamin A, iodine and iron were given special attention. Both vitamin A and iodine are receiving considerable support. The U.S. Congress earmarked funds for programs to combat vitamin A deficiency. Efforts to eliminate iodine deficiency are being led by ICCIDD, a vocal network with strong leadership. UNICEF has been active in projects for the control of iodine deficiency.

Iron, on the other hand, receives less attention from AID and other donors. IDA is a "sleeping giant" affecting one billion women and children worldwide. With the new interest in micro-nutrients, INACG, with its new steering committee, has the opportunity to be a leader. INACG has a history in this area and the necessary organization. However, additional funding is necessary. The steering committee could provide the forceful direction to secure these funds.

Other groups--UNICEF, WHO, and PAHO--have been involved in providing iron supplements and fortification efforts. The ACC/SCN has appointed a committee under the direction of Drs. Nevin Scrimshaw and Fernando Viteri to pull together U.N. activities with iron. The World Bank has proposed a super-consultative group to coordinate efforts for all 3 micronutrients.

INACG needs to promote itself. In 1986, a marketing document, "Social Marketing of Programs to Control Iron Deficiency Anemia," was written. Part of this document was used to develop the IDA pamphlet printed for the Montreal meeting. Dr. Kahn urged the committee to consider further implementation of this plan.

The following points were raised during the committee's discussion.

- INACG needs to encourage industry involvement by showing how INACG can help companies develop iron-fortified products.
- INACG should reach out to U.N. agencies as well.

- Rather than approaching governments directly, INACG should work to build demand among the people, who in turn would encourage the government to take action. However, Dr. Maletnlema reminded the committee that in the poorest countries, the government is the only resource for an intervention.
- INACG should collect additional data on prevalence. Data on productivity, pregnancy and development will be useful as well.
- INACG should be the umbrella under which all groups interested in nutritional anemia can gather. INACG needs to build a network with regular communications.
- A network to include technical focal points such as Dr. James Cook at University of Kansas, Dr. Walter in Chili, and Dr. Serge Herschberg in France may be beneficial. INACG could provide its network with slides from these focal points to use in presentations. This would be similar to the IVACG regional representatives in Africa.
- Dr. Maletnlema described the national nutritional anemia consultative group in Tanzania for which the Food and Nutrition Center is the secretariat. There will be a food and nutrition meeting in Nairobi, Kenya next September. INACG may want to participate.
- Membership in the INACG is a key objective. Even though an individual cannot technically join INACG, INACG should urge individuals in industry and academia, and LDC program managers to participate in the INACG network.

IV. Review of FY92 INACG workplan

Dr. Suzanne Harris reviewed the FY92 work plan which was submitted to AID and approved following revisions. The committee reinforced the need for regular communication with the INACG network as a way of expanding and strengthening it. The committee encouraged the secretariat to develop communication vehicles. A directory of interested people with areas of expertise was proposed.

Dr. Harris asked the committee to review the available publications. These will be mailed to each member with a response form including the following options: current, needs revision, priority for revision, and who should revise.

There was some concern that the social marketing document should be reviewed. The committee agreed to do this and provide comments.

The committee expressed interest in the iron EDTA efforts. The mental and behavioral development material might be a topic for the African regional food and nutrition meeting.

V. Development of INACG mission statement and recommendations for future activities

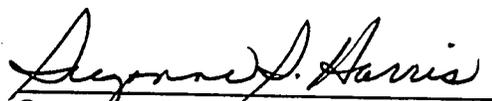
Based on the 1977 By-Laws and the steering committee's view of what INACG should be, the following mission statement was drafted:

"To facilitate the efforts of private industry, governments, U.N. agencies, bilateral agencies, private voluntary organizations and non-governmental organizations to reduce nutritional anemia and its consequences by providing guidance and know-how through an established international network of experts."

The committee urged the secretariat to take on expansion the INACG network as its first priority.

VI. Adjournment

The meeting was adjourned at 3:50 p.m.



Suzanne S. Harris, Ph.D.
INACG Secretariat

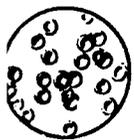
Appendix 15

**NaFeEDTA AS AN IRON COMPOUND TO FORTIFY DIETS
IN DEVELOPING COUNTRIES**

<u>Monograph Chapter</u>	<u>Author</u>
I. Introduction: Brief Outline of Nutritional Iron Deficiency and Iron Deficiency Anemia	S. Lynch
1. Prevalence	
2. Causes	
3. Consequences	
4. Strategies for Controlling Iron Deficiency	
II. NaFeEDTA	
1. Chemical properties of NaFeEDTA, NaEDTA, and CaEDTA (including information on stability)	S. Lynch
2. Absorption, distribution, metabolism, and excretion of EDTA	S. Lynch
3. Effect of EDTA on absorption of Fe and other metals	R. Hurrell
4. Toxicology of EDTA compounds	R. Hurrell
5. Manufacture: A) NaEDTA, CaEDTA B) NaFeEDTA	
6. Current use and regulatory issues	A. Pavlidis P. Whittaker/ J. Vanderveen
III. Iron absorption from meals containing NaFeEDTA and NaEDTA in human beings	
	T. Bothwell/ P. MacPhail
1. Clinical studies	
2. Effect on absorption from the common pool	
3. Effects of enhancers and inhibitors	
4. Importance of EDTA:FE ratio	
IV. Field Trials	T. Bothwell/P. MacPhail
V. Conclusion	M. Gabr
1. Cost effectiveness	
2. Policy implications and needs	
3. Recommendations	

125

Appendix 16



INACG

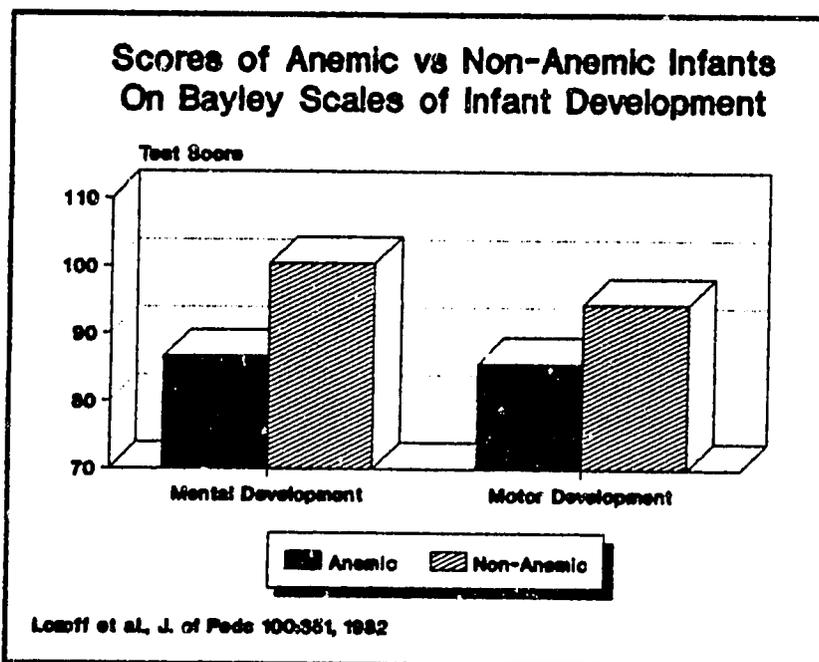
International
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IRON DEFICIENCY ANEMIA IN INFANTS AND CHILDREN: A FACTOR IN INTELLECTUAL DEVELOPMENT

Infants and young children with iron deficiency anemia test poorly in development, especially in tests requiring physical coordination. The recent report by Lozoff *et al* (N. Engl. J. Med. 1991;325:687-94) also indicated that failure to correct the iron deficiency anemia may lead to permanently compromised intellectual and physical development in these children.



Fortunately, we can combat and prevent iron deficiency anemia and help our children reach their optimal potential as productive citizens of tomorrow.

Attention to alleviating iron deficiency anemia is an action that reinforces child survival and focuses beyond to child development.

The INACG Secretariat stands ready to help guide countries in addressing this major nutritional problem. For further information contact: INACG Secretariat, The Nutrition Foundation, Inc., 1126 16th Street, N.W., Washington, D.C.; telex: 6814107 "NUFOUND"; phone: (202) 659-9024; facsimile: (202) 659-3617.

Appendix 17

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Appendix 18

EFFECTIVE NUTRITION COMMUNICATION FOR BEHAVIOR CHANGE

Report by:
Cheryl Achterberg, Ph.D.

Sponsored by:
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TABLE OF CONTENTS

Executive Summary	1
A. INTRODUCTION	2
3. KEYNOTE ADDRESS	3
2. SUMMARY OF PROGRAMS REVIEWED	4
Case Study 1: Africa	4
Case Study 2: Egypt	6
Case Study 3: Thailand	8
Case Study 4: Brazil	11
Case Study 5: Peru	12
Case Study 6: Mali	15
Case Study 7: The Philippines	16
Case Study 8: Indonesia	17
. GENERAL DISCUSSION	18
APPENDICES	
1. List of Participants	21
2. Conference Program	24

Appendix 19

International Nutrition Planners Forum

Secretariat:
The Nutrition Foundation, Inc.
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Washington, DC 20036
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SIXTH INPF
CONFERENCE REPORT
NOW AVAILABLE

For Immediate Release
Contact: Dr. Suzanne Harris
(202) 659-9024

Washington, D. C.--As community-based nutrition interventions become more and more prevalent, learning the mechanisms of effective communication in promoting behavior change has become a critical step in planning successful programs. No longer the sole domain of professional nutritionists, nutrition interventions now require the collaboration of communications specialists, policy makers, and the health-care community. *Effective Nutrition Communication for Behavior Change* provides the key principles necessary for successful planning of collaborative interventions.

This report summarizes the Sixth International Conference of the International Nutrition Planners Forum (INPF) held 4-6 September 1991 in Paris, France. Participants from 18 developing countries were organized into country teams comprising a technical nutrition specialist, a nutrition practitioner responsible for nutrition education programs, and a media specialist. Each country team presented a case study of a nutrition communication program from their country. The conference provided a unique hands-on learning experience, offering participants the opportunity to incorporate what they learned from the presentations into plans for new communication projects for their countries.

The report provides a synthesis of the discussions generated at the conference and the content of the case studies. French and Spanish translations of this report will be available in late 1992.

Also available from the INPF Secretariat is *Crucial Elements of Successful Community Nutrition Programs*, the report of the Fifth International INPF Conference, held in 1989 in Seoul, Korea. Copies of both reports may be ordered from the INPF Secretariat, The Nutrition Foundation, Inc., 1126 Sixteenth Street, NW, Suite 700, Washington, DC, USA.

INPF is an informal organization of technical experts and professionals from developing countries with expertise and responsibility for nutrition and related policy and programs. It was established in 1981 through the initiative of the U.S. Agency for International Development to provide better opportunities and channels of discussion among developing country nutrition professionals.

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Appendix 20

135



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International Nutrition Network Exchange
Second Annual Implementors Convocation
"Empowering Families"

Washington, DC
6-7 May 1991

Meeting Summary

SESSION 1

INTRODUCTORY REMARKS AND WELCOME

The meeting was convened at 9:00 a.m. by Dr. Timothy A. Morck, International Nutrition Network Exchange (INNE) Secretariat Director. Dr. Morck reviewed the purpose of the convocation, indicating that such convocations are important to the effort of the Agency for International Development (A.I.D.) to communicate its new perspectives on programs and policies to those who are responsible for translating these perspectives into effective development programs in the field.

Dr. Norge Jerome, Director of the A.I.D. Office of Nutrition, introduced Mr. Bradshaw Langmaid, Acting Director of the Food and Agricultural Directorate of A.I.D., who, in turn, welcomed participants on behalf of the Agency Director for Food and Agriculture. Dr. Jerome then introduced Dr. Richard Bissell, Assistant Administrator, Bureau for Science and Technology.

Dr. Bissell reported that while assessing the complex and changing environment of the 1990s A.I.D. has also reassessed its role, purpose, and direction as an agency. The result is a renewed clarity of purpose for A.I.D., which is captured in a revised mission statement. A.I.D.'s program strategy for the 1990s will emphasize three major program initiatives: the Family and Development Initiative, the Democracy Initiative, and the Partnership for Business and Development Initiative.

Dr. Bissell also reported that A.I.D. is striving for more effective strategic management, with an organizational goal of quality assurance in programs, services, and operations. Quality assurance is more than purely technical because it will force

136

the Agency to focus increasingly on the impact of programs; providing selection criteria and direction to nutrition programs in various countries.

These initiatives, established for A.I.D. under the direction of the Agency's new leadership, clearly signify where and how the Agency expects to make an impact during the 1990s. They contain important concepts that can be translated into practical programs by implementors such as participants in this convocation.

Dr. Bissell briefly described the Family and Development Initiative. Many programs have been developed over the years that have sought to address macroeconomic issues, and much good work has been accomplished at that level. Attempts to reach individuals through development programs have allowed the Agency to bring conceptual tools to bear on development issues. However, barriers exist between the individual and macro issues at the practical level of program implementation. These barriers may be cultural, economic, or psychological in nature and origin. By looking more closely at the family unit, the Agency hopes to bridge the gap between the micro and macro levels.

It is well recognized that many sociological changes have occurred that have caused a shift in decision-making from the individual to the family. Consequently, efforts to educate must reach the family as a whole rather than be targeted to individuals.

Through the Family and Development Initiative, A.I.D. will focus on three areas: research and analysis, where changes in the role of the family with regard to a particular sector are to be examined at the conceptual level; program implementation, where the dynamics of inter- and intrafamily reactions to and interactions with society at large are to be considered; and project design, where the family unit cuts across sectoral boundaries, particularly in relation to nutrition and projects must be redesigned in response to the greater interplay of family issues. Dr. Bissell indicated that the Family and Development Initiative is not purely an A.I.D. initiative, but rather a cooperative exercise between different units of A.I.D., contractors, and people from developing countries.

Dr. Jerome provided an overview of the convocation, expanding on the comments of Dr. Bissell. She indicated that, from the perspective of the Office of Nutrition, the family unit has always been linked with an intersectoral, community-based approach.

FIRST KEYNOTE ADDRESS:

EMPOWERMENT FOR HOUSEHOLD FOOD SECURITY

Keynote Speaker

Dr. Jane Jaquette, Professor of Political Science, Occidental College

Following her introduction by Dr. Norge Jerome, Dr. Jaquette prefaced her remarks by indicating that the literature on families is now providing information on how families fit into sectoral policies and is also considering the family as a new evaluation unit. This approach is a departure from the economist's view of the family as the invisible unit. The traditional way of looking at families was to treat the household as a productive unit rather than to consider the issues of intrahousehold dynamics and resource allocation. The new approach is sensitive to the variety of existing family forms and looks more closely at the roles of culture and tradition in assigning rights and responsibilities as well as decisionmaking and resource distribution. Intrahousehold dynamics show who does what, what decisions are made, and how input is provided for and used by members of the family unit.

This new thrust of linking development with the family unit involves empowering the family. This objective must be viewed, however, in light of the current devastation of families by modernization, which has resulted in a breakdown of values, destruction of kinship patterns, and reinforcement of some patriarchal aspects of traditional family forms by the state. Institutionalized family distribution patterns, with mothers and children getting fewer benefits than other members of the family, have significant nutritional implications.

Modernization has also induced more migration, which destroys family structures. The number of households headed by women is increasing, and in all cultures these constitute the poorest households. It has also caused women's sources of power to decline and has increased male dominance, e.g., greater incidence of rape and imposition of dowries. In some societies, e.g., religious fundamentalist, there is a resurgence of older family forms that deny the complementarity of gender roles. These trends, which run counter to the prerequisite climate for empowerment, must be recognized and addressed.

Current literature on the family also focuses on survival strategies, with family decision-making the unit of analysis. Unfortunately, many development interventions worsen the ability of families to survive and increase the rapid process of family breakdown. Preserving family integrity is particularly important for the survival of mothers and children. Women's decisions on the health and feeding of children make it incumbent upon project personnel to focus on women as a unit of income allocation within the family. Women should also be seen as a unit of production, and it cannot be assumed that only men farm and generate income.

The issue of food availability must be viewed in relation to how food is allocated within the family. In most developing countries, there is a pecking order by which women, even pregnant and lactating women with recognized superior nutritional needs, are deprived of their nutritional rights. The household food-allocation strategy followed in these societies tends to favor men at the expense of women and children.

Household economic theory in the past looked at the family as a unit of consumption, which differs from the contemporary view of it as a unit of production. Current thinking also looks at intrahousehold resource distribution and on women's entitlement to resources based on their productivity. Productivity may include measures of status as well as economics. Shifts in status may encompass components not necessarily measured by economic indices but may determine whether women will have entitlements and whether their decision-making will have an impact within families.

Some broad examples reflecting household economic theory are illustrative. As women's incomes rise, the family's nutritional level also rises. It is women's, not men's, income that is correlated with family nutritional well-being. Adult men, not children, eat better when men's incomes rise. In Africa, women are expected to provide for their children, but when their resource base shrinks as a result of modernization, they are still expected to provide for their children's needs. Further, women's longevity is directly related to access to nutritional resources and health care in both developing and industrialized societies. This has implications for girls because of differing perceptions of female productivity. Both women and girls are viewed as a wasted investment in S.E. Asia, whereas in Latin America, where children are relied upon as old-age insurance, there are equal education rates for both boys and girls.

Conclusions

1. When women can accrue income, their role in family decision-making increases. Thus, it is important to increase women's income because their decisions will protect female children and bring equity into the family decision-making structure.
2. A generally accepted feeling on the part of North American program designers is that increasing women's income somehow undermines the family. In Latin America and S.E. Asia the opposite perspective prevails. Men view the cost of the family as too great relative to their own input, often resulting in male migration. The addition of women's incomes increases the possibility that men will look on the family as an asset. The net result of both men and women perceiving of the family as an economic unit will enhance rather than undermine family stability.
3. There are benefits to be derived for women's health through increasing women's income. If women are perceived as having more value, efforts will

139

be made to enhance and prolong their lives. This has implications for the health of children as well. It also implies that one of the best investments a family can make is to add 1 year of female education.

4. Measurement of intrahousehold dynamics is essential in evaluating the total impact of programs. Efforts to put women back into a limited role within the family decrease their productivity and mobility and are counterproductive to the goals of family stability and economic viability.
5. Empowering the family through programs and projects requires an understanding of family structure and the nature of intrafamily dynamics. Sensitivity to the generational differences in some cultures with respect to access credit, land titles, and resources by women is imperative.
6. The role of women's organizations and other organizations outside the family needs to be assessed with respect to improving women's perceptions of their own productivity and in support of their empowerment.
7. The empowerment of women has implications for the success of development interventions and their impact on women.

Question and Answer Session

Dr. Jaquette's responses to specific questions posed by participants are summarized below:

- Factors such as the availability of technology, marketing, and food policies that allow the movement of food to the household are all important in addition to gender and interhousehold dynamics, but unless the latter are taken into account, these other factors may not have an impact on what happens at the household level and may not reach the family. Many policies are gender-blind and as a result fail to get resources to women.
- Culture-sensitive approaches should be used in gathering empirical information on family dynamics and on family-community relations for project planning. The availability of rich and varied data on women and intrafamily dynamics resulting from the work done by independently funded researchers can help project planners to acquire greater sensitivity to these issues.
- The time constraints on women involved in both productive and nurturing roles reflect the scarcest resource in the development equation. Projects should consider the use of women's time in tasks that cross sectoral lines and devise intersectoral responses.

- Although modernization is disempowering to the household, projects and policies nonetheless should regard increases in women's income as increasing women's options and should recognize the connections between increases in household income and household well-being, i.e., family survival and improved nutrition. Although a trade-off, projects and policies must be gender-sensitive, particularly when dealing with households headed by women.

SESSION 2

EMPOWERING FAMILIES TO ACHIEVE HOUSEHOLD FOOD SECURITY

Dr. Frances R. Davidson, Nutrition Advisor, Office of Nutrition

Dr. Davidson, serving as chair of the panel discussion on this topic, opened the session by defining food security as access by all people at all times to enough food for an active, healthy life, including, at a minimum, the ready availability of nutritionally adequate and safe foods and the assured ability to acquire acceptable foods in socially acceptable ways. Dr. Davidson also suggested that measuring the achievement of food security involves the use of reliable, clear, culturally relevant indicators identified through an intersectoral perspective. She then introduced the members of a panel assembled to speak to this topic.

Panelists:

Dr. Timothy Frankenberger, Office of Arid Lands Studies, University of Arizona
Dr. Eileen Kennedy, International Food Policy Research Institute
Dr. David Tschirley, Dept. of Agricultural Economics, Michigan State University
Dr. Jane Jaquette, Occidental College

The main points raised by panel members during their opening remarks are summarized below:

- The dilemma facing farmers with limited resources when coping with threats to their household food security comprise a trade-off between immediate subsistence and long-term sustainability. To effectively empower farm families to meet their food security needs, timely interventions must be implemented that allow the families to retain their productive assets and enable them to pursue nondegrading coping strategies. Interventions oriented toward improved natural-resource management during drought years will reduce the vulnerability of these farm families to future droughts. The timeliness of these interventions will depend solely on the effectiveness of decentralized food-security monitoring for detecting food-deficit areas early enough and the preparedness of the local government and other development organizations to respond.

- There is a strong relationship between increased household income and household food security as well as increased household income and nutrient security. Yet, as household income and expenditure rise and there is a corresponding increase in caloric intake, with caloric intake of children usually lower than that of adults. The common assumption is that mothers do not understand their children's caloric needs and do not give them enough food, but ethnographic research shows that children in poor societies become adjusted to a lower food intake. Research has shown that women's control over household income has statistically significant implications for household food security, but strategies are needed to increase nutrient density of foods. When income-generation policies are developed, the long-term implications of women's work outside the home in relation to household food security should be considered.
- Developing efficient and flexible marketing systems is one strategy for achieving food security at the household level. Effective policy reform for markets depends on using former indigenous nonmarket coping strategies to ensure improved food security. Examples of such coping strategies are seasonal migration, collection of wild foods, changes in crop planting practices, and use of interhousehold transfers. When markets function effectively, they can play a major role in determining household entitlement to food and the options the household can exercise in achieving food security.
- Women's motives about family nutrition in general are influenced by their role as consumption decision-makers, whereas markets and state policies affect household decision-making on survival issues. Factors influencing these decisions include the status decisions resulting from their productive roles, i.e., employment-yielding, increased family income may lead to abandonment of breastfeeding.

SESSION 3

WOMEN: THE KEY TO FAMILY NUTRITION

Co-Chairpersons

Ms. Susan Anthony and Dr. Eunyong Chung, Office of Nutrition

Dr. Chung opened the session with brief remarks followed by introductions of the panel members assembled to discuss the topic in depth.

Panelists:

Ms. Margaret Parlato, Academy for Educational Development, Inc.
Ms. Maria Otero, ACCION International, Inc.
Ms. Bibi Essama, Educational Development Center, Inc.

A summary of the main points made by panel members during their opening comments follows:

- The commercial food production sector uses information on family decision-making in its effort to develop communication campaigns. To determine target groups, commercial food producers need to know who shops for and prepares food and who makes food-related decisions. They have found mothers to be the chief decision-makers. However, fathers play a pivotal role in controlling the amount of food accessible to the family and the access to resources for purchasing food. Consequently, multifaceted strategies aimed at diverse audiences are critical to effect behavioral change in women. For example, all family members should be included in message formulation to ensure that an environment encouraging the desired behavior change is created. Nutrition education field studies find similar patterns.
- There is an emergence of a growing urban economy composed of self-employed people practicing a wide variety of income-generating activities outside the formal economy. Survival strategies are available to women in urban settings in food-related activities, i.e., the production of food or its distribution--purchasing, preparing, processing, and selling food. Because their limited resources usually necessitate working through intermediaries, the establishment of credit becomes a necessary adjunct to their activities. The acquisition of even small amounts of credit can increase their negotiating power, enable them to produce more, and improve the quality of their goods. Because their income can have a substantial impact on overall family income, credit not only empowers women but translates into family empowerment. At the same time, women increasingly are the sole source of family income. Credit not only enables them to continue earning an income but also increases their control of their productivity and allows them to reinvest their income in their families and related human resources, e.g., education.

Question and Answer Session

During the question and answer session the comments focused on two primary points: the effectiveness of credit programs and of family-focused nutrition-education programs.

- With respect to effectiveness of credit programs, panel members responded that the experience with women's credit programs is that they work, contrary

to the prevailing myths about poor people's capacity to produce and save. Loans provided to the segment of society that need small loans are economically sound and financially viable. Eligibility criteria include current employment in a productive situation. Simplicity of awarding credit is important in light of literacy and numerical skill levels.

- In regard to family-focused nutrition-education programs, small demonstration projects that target the entire family were cited, but without definitive statements as to their effectiveness.

SESSION 4

SECOND KEYNOTE ADDRESS

EFFECTIVE EMPOWERMENT -- WHY TEACHING A MAN TO FISH IS NOT ENOUGH

Keynote Speaker

Mr. G. David Miller, Associate Professor,
Community Economic Development Program, New Hampshire College

Mr. Miller began his remarks by suggesting that the program goals of development policies must be framed in the "language of empowerment." Social and economic development goals must now be accomplished by a consideration of where and how the beneficiary will achieve full participation in the process, with full control over actions and resources necessary to live a healthy and productive life. If empowerment is not seen as the ultimate goal, programs will be patronizing and elitist. Programs should be approached in a manner that redefines the concept of donor, beneficiary, and recipient. To empower in a measurable way involves using participation as an indicator.

"Teaching a man to fish" means teaching him to participate more fully in managing his own life, but this is not enough because he lacks the rights and privileges of control. The goals should be economic growth, social welfare, and empowerment. He may be given the authority to make decisions but is far from being empowered; he needs to have power to participate in the control of exogenous factors impinging on his life.

Conclusions

1. Empowerment is a goal, not just a means to an end. Those in a dependency relationship, no matter how well taken care of, are not fully empowered because the giver of benefits retains the capacity to withdraw them.

2. Empowerment is a developmental agenda that looks at poverty as a lack of access to the control mechanisms determining the quality of life. Empowerment requires building new kinds of relationships and networks of people, power-sharing, and dialogue.
3. The process of empowerment applied to projects means forming a power-sharing partnership between projects and target populations. People will become activators of their own development when they are asked how projects work and have worked. Facilitators should recognize that both problems and solutions exist with the people. They should enable people to define problems and formulate and articulate the right questions and should prepare people to conduct research leading to solutions.
4. When looking at empowerment in households, attention should be given to the different roles people play in managing and controlling resources and in redistributing and reallocating time. Nutritionists have to identify and measure process indicators related to these activities. This is as important as measuring access of the household to external resources.
5. Families and communities should be encouraged to participate in a process of self-evaluation whereby they will be able to determine the factors that will lead to their empowerment and measure the extent to which these are achieved.

SESSION 5

EFFECTIVE EMPOWERMENT

Presenters

Dr. Samuel G. Kahn, Senior Nutrition Advisor, Office of Nutrition
Mr. G. David Miller, New Hampshire College

Dr. Kahn and Mr. Miller offered key variables for a successful empowerment program: institutions that might be involved, long-term goals to achieve through empowerment, ways to measure achievement of these goals, potential problems that may be encountered and selection of appropriate strategies. In addition to these decisions, it is important to identify the following key individuals at the local level: beneficiary, workers, owners of needed resources, trainers, supervisors, managers, and policymakers. Effective coordination of these individuals is an essential component of a successful empowerment program.

Three small discussion groups were charged with identifying:

- Who are the beneficiaries of our activities and who are we empowering?
- What are our objectives?
- What are the results of the empowerment?
- What are the measures of success?

SMALL GROUP SESSIONS

CHILD SURVIVAL AND HUMAN DEVELOPMENT

Discussion Leader

Ms. Susan Anthony, Office of Nutrition

The discussion centered on empowering the caretakers of children to help ensure a better quality of life for the children.

HOUSEHOLD FOOD SECURITY

Discussion Leader

Dr. Frances R. Davidson, Nutrition Advisor, Office of Nutrition

The discussion focused on modifying projects to incorporate strategies for training people to access resources. As a precondition, factors that are necessary to achieve food security should be identified and assessed at the household level, and inhibitors that prevent the achievement of food security should be defined. It was pointed out that food security differs from nutritional status because the latter involves making choices within the family and/or household.

NUTRIBUSINESS

Discussion Leader

Ms. Carolyn Coleman, Policy Analyst, Office of Nutrition

This session focused on the role of the private sector in providing foods to meet the nutritional needs of various populations. It was suggested that to ensure that nutribusiness does in fact provide quality foods and food products at affordable prices, both sides of the producer-consumer equation should be addressed. Nutritional

empowerment implies an increased level of participation by consumers in food production via the establishment of consumer groups. These groups could include both consumers and producers to ensure liaison.

SESSION 6

EMPOWERING IMPLEMENTORS

Chairperson

Ms. Brenda Colwell, Program Analyst, Office of Nutrition

Panelists

Mr. Jay Bergman, Food and Agriculture Branch, Office of Procurement
Ms. Carolyn Coleman, Bureau for Science & Technology, Office of Nutrition
Mr. Barry Sidman, International Science and Technology Institute, Inc.
Ms. Nena Vreeland, Policy & Program Coordination, Center for Development Information and Evaluation

Panelists representing A.I.D. presented operational information and concerns. Salient points raised are as follows:

- A strategy planning process whereby each country focuses on a small and specific number of objectives to be achieved within 3-7 years is relevant to empowerment. The process must include the ability to measure the impact of nutrition programs. Information on family nutritional status and food security will continue to be among the chief resources drawn on over the next 10 years. Experience indicates that the process of selecting objectives is not easy and that measurement criteria indicating success relevant to a country's specific circumstances are difficult to define, especially those that are intermediate indicators. Experience also suggests that evaluations have not generally been objective, because they are carried out by program managers who are ego-involved in the project. These difficulties notwithstanding, serious efforts to strengthen evaluation skills and measures, including measures of the strengths of the supported institutions, must be continued.
- A contract implies an acquisition relationship based on a legal document. The focus should be on the scope of the evaluation, whether a grant for financial assistance or a cooperative agreement having greater A.I.D. involvement. A.I.D. uses design specifications, i.e., contracts for service at a given level of effort on the assumption that if the design specs are followed, the goals, objectives, and targets will be accomplished. In the future, A.I.D. will move

more in the direction of performance specifications as the basis for awarding contracts for services, i.e., a results-oriented approach.

- A.I.D. uses a variety of contractual forms, including cost-reimbursement contracts, where the contractor is reimbursed up to a predetermined ceiling; fixed-price contracts, where A.I.D. agrees to pay a given amount on submission of a receivable or completion of a task (indefinite quantity contracts meet short-term needs with little lead time); and buy-in contracts where activities funded elsewhere are combined into one contract. In each instance procurement integrity needs to be maintained.
- When communicating with missions, implementors are viewed as representatives of A.I.D.'s programs. Missions are the intermediaries between A.I.D. and the government, and communications need to be clear, concise, and precise to ensure that programs are in line with the scope of work and implementation mechanisms. Nutritional concerns are addressed through various aspects of the missions. The program needs to relate to what the mission is already doing to effectively integrate nutritional concerns that should complement other programs.

Cables are the official means of communication and are preferable to telefacsimiles. Telephone calls must be confirmed in writing. Cables should contain background information sufficient for recipients to understand the facts presented.

Regular reports help missions assist in full implementation of projects by keeping them fully informed. Quarterly reports are monitoring reports. Semiannual reports are standard agency requirements, are circulated to all missions, and are filed in the library.

SESSION 7

THE FAMILY-HOUSEHOLD FOCUS AND THE SCIENCE & TECHNOLOGY/OFFICE OF NUTRITION PORTFOLIO

Presenter

Dr. Norge W. Jerome, Director, Office of Nutrition

Dr. Jerome began her discussion by indicating that interventions to prevent disempowerment of families and people involved in development programs should be based on offering them the resources to do what they know needs to be done. As the contemporary family experiences change, changes in survival strategies need to

be recognized by policy makers and program designers, whose roles may also require modification.

Dr. Jerome related this to A.I.D. by asking the question: What kinds of opportunities can be provided via the new initiatives to establish partnerships that will achieve family well-being and serve to anchor the family, and how can A.I.D. use its focal areas to incorporate concerns related to the family? She suggested that modernization in all of its forms is changing the contemporary, nonnuclear family. The contemporary family must always be viewed within a specific context. Macro as well as immediate micro changes are taking place at national and local levels. New family forms and structures, e.g., the blended family, are emerging. There is a loss of traditional support structures and the growth of new ones that are not necessarily replacements. There are changes in the roles of family members in styles and patterns of communication, patterns of resource, time and empowerment allocations, and shifting dynamics within the family structure.

Project field personnel, if they are to provide the tools to advance the process of development, must first consider these changes. The coping strategies of prototypical families should be developed as partnerships. The challenge is to find new opportunities for partnering to help families achieve well-being as part of their social and economic development.

In her closing remarks, Dr. Jerome summarized the major themes of the convocation. She thanked all of the convocation leaders and participants for making the Second Annual INNE Implementor's Convocation a success, while recognizing that the true measure of success will only become evident as their effectiveness as facilitators and agents of change is evidenced by improved nutrition of peoples around the globe.

Appendix 21



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International Nutrition Network Exchange (INNE) Third Annual Meeting

NUTRITION: CAPACITY BUILDING FOR DEVELOPMENT

5-6 May 1992
Rosslyn Westpark Hotel
Rosslyn, Virginia

Tuesday, 5 May 1992

0800-0900 Registration and Exhibit Installation

0900-0920 Welcome and Introduction

Dr. Suzanne S. Harris
INNE Secretariat, Nutrition Foundation, Inc.

Mr. Richard Seifman
Director, Office of Nutrition, Bureau for Research and Development, USAID

0920-0940 Role of the Bureau for Research and Development in Human Capacity Building for Development

Dr. Richard Bissell
Assistant Administrator, Bureau for Research and Development, USAID

0940-1040 Nutrition Issues in Human Capacity Building for Development: Congressional Perspectives

Moderator: Ms. Dorothy Rayburn
Bureau for Legislative Affairs, USAID

Ms. Margaret Goodman
House Foreign Affairs Committee Staff

Mr. Rick Leach
Select Committee on Hunger Staff

1040-1100 Discussion

1100-1130 Break and Viewing of Exhibits

1130-1150 **Capacity Building Among Implementors: Where is the Office of Nutrition Heading?**

Mr. Richard Seifman
Director, Office of Nutrition, Bureau for Research and Development, USAID

1150-1200 Discussion

1200-1330 Lunch on your own (Exhibits open)

1330-1430 **USAID Field Mission's Views on Human Capacity Building for Development**

Moderator: Mr. Barry Sidman
International Science and Technology Institute, Inc.

Ms. Connie Collins
Office of Operations and New Initiatives, Bureau for Africa, USAID

Mr. Alan Hurdus
Office of Agriculture, Bureau for Research and Development, USAID

Mr. Tom Kellermann
Program Office, Bureau for Research and Development, USAID

1430-1450 Discussion

1450-1520 Break and Viewing of Exhibits

1520-1640 **Examples of Human Capacity Building in Developing Countries**

Moderator: Dr. Chris Kjolhede
Department of International Health, Johns Hopkins University
Technical Training (Impression Cytology for the Assessment of Vitamin A

Status)

Dr. Jean Humphrey
Wilmer Eye Institute, Johns Hopkins University

Institution Building (Lactation Management Program)
Dr. Ann Brownlee
Wellstart

Building Communication Networks
Ms. Gayle Gibbons
American Public Health Association (Newsletter)

Mr. Peter Gottert
Academy for Educational Development, Inc. (PVO networking)

1640-1700 Discussion

1700-1830 Reception and Viewing of Exhibits

Wednesday, 6 May 1992

0900-1000 Implementor Opportunities for Leveraging and Collaboration

Moderator: Dr. Anne J. Swindale
International Science and Technology Institute, Inc.

Title III Funds
Dr. Thomas J. Marchione
Office of Program, Planning, and Evaluation
Bureau for Food and Humanitarian Assistance, USAID

PVO Child Survival Grant
Ms. Rose Robinson
Office of Private and Voluntary Cooperation
Bureau for Food and Humanitarian Assistance, USAID

Debt-For-Development
Mr. Craig Sarsony
The Debt-for-Development Coalition, Inc.

1000-1020 Discussion

1020-1040 Break (Move to break-out rooms)

1040-1200 **What Works in Human Capacity Building?**

	<u>Leader</u>	<u>Rapporteur</u>
Technical Training	Dr. Chris Kjolhede Johns Hopkins University	Ms. Bibi Essama Education Development Center, Inc.
Institution Building	Dr. Ann Brownlee Wellstart	Dr. Kathleen Kurz International Center for Research on Women
Communication Networks	Ms. Gayle Gibbons APHA	Ms. Anne Ralte Helen Keller International

1200-1230 **Summaries from Working Groups**

Moderator: Dr. Suzanne S. Harris, INNE Secretariat

1230-1245 **Adjournment**

Dr. Suzanne S. Harris, INNE Secretariat

15

**International Nutrition Network Exchange
Third Annual Meeting
5-6 May 1992**

Participants

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Appendix 22



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JOINT CONSULTATIVE GROUP MEETING

The University Club
Washington, D.C.

December 3, 1991

SUMMARY

I. Introductions

The meeting of the Joint Consultative Group was called to order at 9:45 a.m. at The University Club by Mr. Richard Seifman, Director of the Office of Nutrition, Bureau for Research and Development, U.S. Agency for International Development. Mr. Seifman welcomed everyone to the meeting and asked those present to introduce themselves to the group. An attendance list is attached.

II. Current A.I.D. Activities Relevant to INACG and IVACG

Mr. Seifman began the discussion by stating that the potential for the consultative groups has grown significantly since the international conference in Montreal, "Ending Hidden Hunger." He distributed position statement (attached) issued October 29, 1991 by UNICEF, following the conference. The statement specifically refers to INACG and IVACG. These two groups, INACG and IVACG, are viewed by A.I.D. primarily as information collection and exchange groups, rather than operational groups. While A.I.D. provided their core funding, other donor groups supported meeting participants, task force activities, publications and specific research projects. INACG and IVACG might be called "non-member member organizations".

Since INACG and IVACG were established in the 1970's other groups have emerged relatively recently with different organizational and funding mechanisms. A.I.D. is interested in reviewing the needs of the consultative groups to determine if organizational or funding pattern changes are necessary to enhance the ability of these groups to achieve the level of collaboration envisioned in Montreal. A.I.D. is prepared to consider other formulations of core funding to encourage other donor participation.

Dr. Frances R. Davidson reviewed briefly the range of vitamin A activities currently being carried out under A.I.D.'s vitamin A nutrition program. She described and distributed copies of the publication "VITAL NUTRIENTS". This was produced to

coincide with the Montreal conference. These activities operate in a symbiotic relationship with IVACG. For example, research projects to demonstrate a decline in child mortality and morbidity with improved vitamin A status were organized in Nepal, Philippines, Tanzania and Guatemala. The Office of Nutrition tries to assure operationalization for such projects by working with the A.I.D. missions to apply the scientific findings.

Though these programs initially focused on research, the agency is now moving toward broadly based nutrition interventions including increasing regular consumption of vitamin A-rich foods both as naturally available and as preserved and fortified foods.

Not all research efforts prove feasible for program implementation. For example, MSG fortification on a small scale appeared to be a very useful food-based strategy in some areas. However significant acceptability problems were encountered during the scaling-up phase. Integration of vitamin A supplementation into health services programs such as immunization has encountered resistance because of fears about toxicity.

A.I.D. is identifying training opportunities for developing country professionals and working with NGOs and PVOs at the local level to build support for vitamin A programs. Dr. Davidson distributed copies of the Vitamin A Nutrition Strategy published by A.I.D. in September.

Dr. Samuel G. Kahn reported on the non-IVACG iron activities of A.I.D. These are primarily research oriented and the total program is small. The focus is on fortification of available foods since supplements should not be the only strategy for iron deficiency anemia. The research program has two major components -- assessment procedures and methodologies for delivering bioavailable iron via fortification and supplementation. Specific activities include:

- The University of Kansas Medical Center is engaged in assessment and monitoring methodology research. A promising new technique measures transferrin receptor. Kansas also conducts research in the development of new delivery systems. This includes fortification and supplementation research. Novel work in iron-EDTA and new slow-release iron capsules were conducted under this project.
- Mothercare, one of the field operations co-sponsored by A.I.D.'s Offices of Nutrition and Health, plan to field test the slow-release iron capsules in Indonesia.
- Rutgers University is studying a binary system to use in fortifying rice. Nestlé has provided radiolabeled iron for testing of the rice.
- A country project in Grenada is to start soon in which all white flour will be fortified with iron. The Caribbean Food and Nutrition Institute

will coordinate the project with technical backstopping from the University of Kansas.

III. Comments by INACG and IVACG Steering Committee Members on Current INACG and IVACG Activities and Plans

The INACG and IVACG steering committee members offered their views on the role of consultative groups and how they should function. This lively discussion is summarized in the following points:

- Dr. Barbara Underwood encouraged the consultative groups to re-examine their mandates with a broader perspective than a single micronutrient. Dr. Horwitz reminded the group that the World Summit on Children set the targets. The consultative groups must determine how they can contribute to the achievement of these targets.
- INACG and IVACG are important as vehicles for scientific information exchange. Dr. Richard Theuer encouraged development of a membership network for INACG as a way of providing sound information to those trying to solve iron deficiency in the field. Such a membership of consultants would help in collaboration with vitamin A programs as well. Dr. Underwood encouraged membership as a means of providing legitimacy to individuals working at the national and regional levels.
- The question of advocacy was raised, but the group decided that the consultative groups should remain primarily in the scientific arena. Their job is to translate the scientific findings into information that can be used locally by policymakers, governments or grassroots groups to achieve the Summit goals. These could be in the form of guidelines.
- Communication channels were discussed. The ACC/SCN communicates findings to donor agencies (bilateral and multilateral) that in turn communicate with governments. The consultative groups communicate with the SCN through the groups for the control of the various micronutrient deficiencies. Dr. Horwitz and Dr. Underwood form the Group for the Control of Vitamin A Deficiency (GCVAD); Dr. Viteri is in the Group for the Control of Iron Deficiency (GCID) and there is a similar group for iodine. These groups should complement the work of IVACG and INACG, respectively. For example, Dr. Viteri is identifying people in Latin America with programmatic interests in iron deficiency anemia. He offered to share these names with INACG saying that INACG has more industry expertise and scientific know-how than the GCID.
- Training is a valuable contribution to the micronutrient question. Dr. Underwood encouraged strengthening regional institutions and

supporting integrated training for the three micronutrients. Management training is as important as technical training. The consultative groups could serve to identify and promote training opportunities.

- Funding is a major issue for the consultative groups. Dr. Fernando Viteri applauded A.I.D.'s steadfast support of iron programs when no other donors were doing so. Dr. Underwood encouraged A.I.D. to find ways to use contributions from other U.S. agencies interested in the micronutrients. Rather than seeking support for core activities from other donors, the group favored identifying specific projects that would appeal to these donors and soliciting their support. Core activities should be "unbundled" as much as possible to provide the broadest package of activities available for outside support.
- Core activities were defined by the group as: network building, communication with the network and accumulation of a state-of-the-art knowledge base that is applicable to solving micronutrient deficiency problems. "Keep science up-to-date and make it applicable" said Dr. Horwitz.

IV. Areas for Possible Future INACG/IVACG Coordination and Collaboration

Joint projects should address programmatic questions. They may involve all three consultative groups or only two groups depending on the question asked. Dr. Underwood shared a letter she wrote to Dr. Theuer and Dr. John Dunn, ICCIDD, at the suggestion of Dr. Frederick Trowbridge who encouraged her to continue the dialogue begun at the micronutrient workshop in Atlanta. In her letter she suggested two areas as possible collaborative projects: 1) identifying the most appropriate age/sex groups for micronutrient interventions and 2) food-based strategies. Dr. Dunn was interested in pursuing the first option adding that food-based strategies were not a priority for iodine deficiency. Dr. Theuer also indicated support for these options.

The participants believe governments in developing countries are under pressure to develop micronutrient programs but many need guidance in developing a country plan. Flexibility is a key component of successful collaboration. There is no one prescription that will fit all countries, their needs and resources.

A joint meeting with representatives of ICCIDD was discussed. Dr. Horwitz indicated that he had received a letter from Dr. Malaspina, President of ILSI, suggesting that he organize such a meeting as an extension of the Atlanta workshop. The ACC/SCN will meet in late February and a report from the three groups could be made at that time.

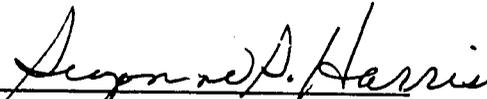
Mr. Seifman indicated that the VITAL News publication had been expanded to cover iron and iodine activities in addition to vitamin A. Dr. Horwitz indicated that the ACC/SCN News is issued intermittently. It covers agency reports and symposia arranged by the ACC/SCN. Both of these may be available for sharing information with the expanding micronutrient network.

To summarize the consensus reached during the group's deliberations, Mr. Seifman offered the following list:

- Consultative groups provide research information exchange. They work with scientists to better define the state of knowledge.
- The core funding issue should be delayed, though the groups may wish to seek outside support for specific projects.
- The groups will work to achieve complementarity with the ACC/SCN.
- A potential joint consultative group project may be in the area of a joint prevalence assessment for multiple micronutrient status in the population.
- A meeting with ICCIDD should be arranged. The agenda should cover ways to enhance exchange of information and identification of a test project for which outside support would be solicited.

Mr. Seifman distributed a draft commitment statement for INACG and IVACG (revised version) and asked those present to read it and give him their comments.

The meeting was adjourned at 12:55 p.m.

Signed: 
Suzanne S. Harris
The Nutrition Foundation, Inc.

Attachments



The Nutrition Foundation

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MINUTES OF MICRONUTRIENT CONSULTATIVE GROUPS CONFERENCE CALL January 21, 1992 11:00 a.m. - 12:30 p.m. (EST)

Participants

Mr. Richard Seifman, AID
Dr. John Dunn, ICCIDD
Dr. John Stanbury, ICCIDD
Dr. Richard Theuer, INACG
Dr. Fernando Viteri, INACG
Dr. Abraham Horwitz, IVACG
Dr. Barbara Underwood, IVACG
Dr. Eunyong Chung, AID
Dr. Frances Davidson, AID
Dr. Samuel Kahn, AID
Dr. Suzanne Harris, Nutrition Foundation

I. Call to order with welcome

Mr. Richard Seifman called the meeting to order at 11:05 a.m. (EST) and welcomed Dr. John Dunn and Dr. John Stanbury as representatives of the International Council for Control of Iodine Deficiency Disorders (ICCIDD). He stated that this conference call resulted from the positive exchange between the International Nutritional Anemia Consultative Group (INACG) and the International Vitamin A Consultative Group (IVACG) at a meeting of the Joint Consultative Group in December 1991.

USAID views INACG and IVACG as informally chartered groups that serve as vehicles primarily for information exchange and examination of research findings by academia, government, and industry experts. Integration and coordination of micronutrient efforts is gaining increasing momentum. It should be noted that in its bilateral field activities, USAID has already undertaken combined assessment efforts which address both vitamin A and iron deficiency in Panama, Paraguay, and Uganda.

Mr. Seifman stated that though there was no fixed agenda or outcome for the conference call, he hoped the three micronutrient groups would explore possible cooperative efforts in the areas of assessment and communication. To get the discussion started, he asked the ICCIDD representatives to describe their organization.

166

II. ICCIDD

Dr. John Stanbury described the organizational structure of ICCIDD which includes more than 300 members. Criteria for membership include interest and some level of expertise in iodine deficiency disorders. There is a 30-35 member governing board. Two-thirds of the board members are from less developed countries, and the remainder are from UNICEF, WHO, the World Bank, and other donor organizations. The board elects additional members from the general membership with use of a nominating committee. The organization has elected officers -- chairman, executive-secretary, and secretary -- and an eight-member executive board.

In addition to these organizational structures, ICCIDD has coordinating groups operating in China, Southeast Asia, Africa, the Near East, Europe, and Latin America. These groups may include representatives from other international groups. For example, the Latin American coordinating group includes representatives from the Pan-American Health Organization (PAHO) and the Program Against Micronutrient Malnutrition (PAMM) in addition to ICCIDD. There are also regional coordinators who monitor in-country activities and advocate attention to iodine deficiency disorders. The ICCIDD Board holds annual meetings and the next one will be at the end of April in Brussels. These meetings are open to outside guests, though they are not widely advertised.

In terms of activities, ICCIDD does not carry out field trials, nor does it fund local projects. They do help in-country programs find financial support. ICCIDD sets up working groups to review scientific issues and assess research needs. In addition, ICCIDD produces a quarterly newsletter with a circulation of 3,500.

Dr. Horwitz pointed out that ICCIDD interfaces with the Administrative Committee on Coordination - Subcommittee on Nutrition (ACC/SCN) through Dr. Basil Hetzel, ICCIDD chairman, who serves on the Group for the Control of Iodine Deficiency Disorders (GCIDD). The role of ICCIDD at the country level is similar to that of INACG and IVACG, though ICCIDD is more involved in training than the other two. Mr. Seifman concurred that the structures and memberships of the three organizations seemed broadly similar.

Dr. Stanbury said ICCIDD had no cross-micronutrient activity underway at the present time. However, its membership includes many who are active with IVACG or INACG. For example, Dr. Festo Kavishe and Dr. Fritz van der Haar are active in both ICCIDD and IVACG.

III. Possible combined efforts

All three micronutrient groups agreed to submit assessment manuals to the Nutrition Foundation in order to devise a protocol for a collaborative assessment of all three micronutrients. These manuals will be reviewed by a task force made up of John Dunn, John Stanbury, ICCIDD; Richard Theuer, Fernando Viteri, INACG; and Barbara Underwood, IVACG. A new assessment manual, developed by IVACG, is currently in draft form, but could be distributed internally among the working group members. Dr. Viteri, representing INACG, felt there is a need to update and revise current INACG documents regarding assessment. ICCIDD is working on an assessment manual and will provide a summary of it. The Nutrition Foundation, Inc. will serve as secretariat for this joint micronutrient consultative group, sharing the collected materials among the three groups. Dr. Theuer urged that topics other than biochemical measures be included in the manual. Anthropometric measures and appropriate marketing strategies are also important for successful assessment programs.

The conference call participants agreed that combining survey data on the prevalence of vitamin A, iodine, and iron deficiencies would be beneficial. WHO is creating a database which will provide such information eventually regarding all three micronutrients. Also, cross-micronutrient activities can be developed within the present activities of ICCIDD. An assessment in Ghana for iodine deficiency funded by the International Development Research Centre (IDRC) could include vitamin A assessment as well. Dr. Andrew Tompkins in London already has the serum samples from Ghana. Dr. Horwitz cautioned that guidance offered must be viewed as minimum requirement, keeping in mind the needs of developing countries.

In the area of supplementation, the group agreed there are opportunities for multi-micronutrient fortification. Salt and sugar offer possibilities as vehicles for multiple fortification. In Guatemala, an evaluation of vitamin A fortification in sugar showed that it was highly successful. This could be used as a model of success for multiple micronutrient fortification. The issue of iron overload resulting from fortification was raised. Potential genetic predisposition for this problem may be present in some Africans. Bioavailability and stability of iron, iodine, and vitamin A as fortificants need to be evaluated.

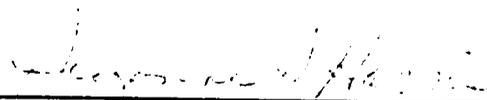
The group agreed that it would be valuable to identify possible areas for multi-micronutrient interventions to demonstrate the feasibility of this approach. For example, Nepal is a likely site because vitamin A deficiency is already known and there are reasonable prospects that iodine and iron deficiencies may also be prevalent. Successful coordination of all three micronutrient programs would prove more influential to governments, as well as impressive to donor agencies. Such an effort needs to evaluate resources available, both financial and manpower. Dr. Horwitz cautioned the group to consider practical problems only and to use the

ACC/SCN as the vehicle for contacting the governments. He offered to seek guidance from WHO and UNICEF in identifying specific countries.

The group decided to schedule a working group meeting for mid-April. This meeting would address consolidating current assessment procedures for the three micronutrients into a single manual. A second working group for identifying specific countries/regions for a possible cooperative intervention could meet in the spring as well. Dr. Stanbury offered to share ICCIDD's list of planned workshops with the group to see if any were likely candidates for broader micronutrient coverage.

IV. Adjournment

Richard Seifman thanked all the representatives for their efforts and input. The meeting ended at 12:30 p.m. (EST).



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MINUTES OF MICRONUTRIENT CONSULTATIVE GROUPS MEETING

April 3, 1992

10:00 a.m. - 2:40 p.m. (EST)

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Dr. John Stanbury, ICCIDD
Dr. Richard Theuer, INACG (via telephone)
Dr. Sean Lynch, INACG
Dr. Abraham Horwitz, IVACG
Dr. Barbara Underwood, IVACG
Dr. Samuel Kahn, AID
Ms. Laurie Aomari, The Nutrition Foundation, Inc.
Dr. Suzanne Harris, The Nutrition Foundation, Inc.

I. Welcome and Opening Remarks

Mr. Richard Seifman called the meeting to order at 10:02 a.m. (EST) and asked each of the participants to introduce themselves. He stated that the meeting was called to give the participants a face-to-face opportunity to discuss issues related to controlling micronutrient malnutrition. AID was pleased to serve as the facilitator of this meeting.

Mr. Seifman offered his view of the overall micronutrient picture as one of looking for commonalities between the three micronutrients. The goals for this meeting were (1) identification of commonalities between assessment methodologies that could serve as common ground for developing an assessment protocol and (2) identification of a country where the multiple micronutrient malnutrition prevalence assessment protocol could be verified.

He assured the group that this was not an exercise in futility. If such a protocol were developed and a suitable country identified, AID would make every effort to finance the assessment.

II. Report on Micronutrient Issues Discussed at the Administrative Committee on Coordination-Subcommittee on Nutrition (ACC/SCN) Meeting

Dr. Abraham Horwitz briefly described the historical support for micronutrients. When the SCN was created by the Economic and Social Council of the United Nations (EOSOC) in 1977, it included among the terms of reference the examination of the

170

activities of the United Nations system with reference to the implementation of the resolutions of the World Food Congress in 1974 related to nutritional improvement. Among them, item V of Resolution 9 states that "Government should explore the desirability and the feasibility of meeting nutrient deficiencies through fortification of staples or other widely-consumed foods, with amino acids, protein concentrates, vitamins and minerals, and that, with the assistance of the World Health Organization in cooperation with other organizations concerned, should establish a world-wide control program aimed at substantially reducing deficiencies of vitamin A, iodine, iron/folate, vitamin D, riboflavin, and thiamine as quickly as possible."

This was proclaimed in 1974. Now, eighteen years later we are still struggling with all these deficiencies, particularly vitamin A, iron, and iodine.

The SCN did not approach this issue in a systematic fashion until 1987 when Basil Hetzel, Peter Greaves, John Dunn, John Stanbury, Alan Berg, and others formed the Group for the Control of Iodine Deficiency Disorders (GCIDD) that was supported by the SCN. Since then, GCIDD has provided annually a comprehensive report to the SCN through an ad hoc group on IDD. Peter Greaves is the Chairman and Basil Hetzel, the Executive Secretary.

The IDD model was successful and provided the impulse for the formation of other micronutrient groups within the SCN. In 1990, an ad hoc group on vitamin A was created with Graeme Clugston as Chairman and Barbara Underwood as Executive Secretary. Dr. Underwood provided an update on the impact of vitamin A deficiency on morbidity and mortality at the last meeting. In 1991, the SCN established an ad hoc group for the control of iron deficiency anemia (GCID) with Nevin Scrimshaw as Chairman and Fernando Viteri as Executive Secretary. Among other activities, GCID has proposed a series of regional meetings to discuss modern methods of iron deficiency control. In addition, the World Health Organization has asked Dr. Viteri to prepare a ten-year plan for controlling iron deficiency anemia (IDA).

Through these ad hoc groups the SCN is regularly informed of progress towards the prevention and control of these specific conditions. These issues are gaining an increasing momentum since the Montreal Conference that endorsed the objectives stated at the World Summit for Children, namely the virtual elimination of vitamin A and iodine deficiencies and the reduction of iron deficiency in mothers and children to a third of the 1990 level by the year 2000.

Jointly with the World Bank, Dr. Horwitz actively promoted in 1991 a Micronutrient Initiative to stimulate national and international efforts towards the attainment of the above mentioned goals. Specifically, it would include adequate quantification and mapping of the problems, strengthening global and regional institutions for assessment and training, development of national plans and institutions for sustainable policies and programs, including monitoring and evaluation, facilitating operations research,

and disseminating information. The initiative would be realized by governments and the international community of agencies, the SCN having a coordinating role, its usual responsibility. Despite assurance that the SCN Secretariat would not have an operational responsibility, some of the major U.N. agencies viewed the initiative negatively. They insisted that the SCN harmonizes policies and programs relevant to nutrition and does not deal with governments, as agencies do. The proposal was returned to the SCN Chairman to decide any further steps.

Dr. Horwitz urged the World Bank to continue its efforts towards the implementation of the Micronutrient Initiative because it would make a significant contribution for reaching the stated goals. The Bank had already committed \$0.5 million to this end.

Later in 1991 following the suggestion of the World Bank, the International Development Research Centre (IDRC) of Canada took up the charge of developing the Micronutrient Initiative. They stimulated the contributions of the Canadian International Development Agency (CIDA), the World Bank, and the United Nations Development Program (UNDP) with a total of \$3.5 million Canadian dollars. The IDRC proposal includes coordination of multilateral and bilateral agencies involved in micronutrient deficiencies prevention and control programs. WHO suggested an alternative in a document introduced in the XIX Session of the SCN, last February in Rome at the World Food Program. The document states: "Some of the difficulties that have made these proposals impractical so far, seem to result from a non-realization that several international organizations are already at the forefront of the global movement and currently implementing extensive collaborative support programs with many countries (as well as at the regional level), addressing IDD, vitamin A deficiency and iron deficiency anemia."

Instead, WHO proposed that the "ACC/SCN, with its mandate to foster harmonization and coordination between the U.N. system's nutrition-related activities, would seem to provide a well-placed, reasonably neutral, already functional forum which could be extended in some way so that all agencies involved in micronutrient malnutrition could come together to harmonize their plans and activities."

WHO also recommended that each of the three SCN ad-hoc groups be strengthened and expanded, while maintaining its own separate identity. There is no need to duplicate the work of IVACG, INACG, or ICCIDD which, in any case are represented at the ad hoc groups. In addition, WHO proposed that, within the SCN, a Micronutrient Forum could be established with the particular purpose of linking all three of the ad hoc groups, drawing on the experience of many interested agencies, and, in particular, exploring policies and strategies that are common to all three micronutrient deficiencies.

This extended role of the SCN was approved at the 19th Session last February. It was further agreed that the first meeting of the Micronutrient Forum could take the

form of the symposium that usually precedes each session of the SCN. It will occur at the 20th Session, February 1993 at WHO Headquarters. It will focus on cross-cutting issues such as the setting of priorities for interventions, exploring complementarities between interventions, and investigating the resource flows and cost-effectiveness of different interventions. Other topics may be included.

Papers on these topics will be drafted and reviewed by the SCN ad hoc groups and other scientists; then, a comprehensive version will be prepared for a preparatory meeting in September or October 1992. A final report will be published after the February 1992 symposium.

While progress occurs in common methods of assessment and interventions for the three major micronutrient deficiencies, cost-effective programs for the prevention and control of these conditions should start or expand in developing countries, even if each one is addressed separately. Time is running short and many deaths and much suffering can be averted. Funds to supplement national investments do not seem to be the problem if one considers the remarkable contributions of the World Bank in the field of nutrition.

In answering a question, Dr. Horwitz explained that the budget of the SCN was limited and based on an assessment scale contributed by U.N. member organizations. For some specific activities, extrabudgetary funds have come from both multilateral and bilateral agencies.

III. Update on Micronutrient Issues for the International Conference on Nutrition

Mr. Seifman reported that FAO and WHO briefed the SCN on the progress toward the International Conference on Nutrition (ICN). Micronutrient malnutrition will be a separate agenda topic at the ICN. The SCN will be asked to comment on the Plan of Action and Declaration being drafted for the ICN at a special session in May. It is hoped that the SCN will provide needed technical expertise to bring the Plan of Action into reality. After the ICN occurs next December, the SCN will evaluate what emerges from it, prospectively.

Mr. Seifman distributed copies of the portion of the U.S. country paper dealing with international nutrition assistance (attached). AID has helped finance some of the developing country papers and will participate in the ICN preparatory committee meeting in Geneva this coming August.

Recent Congressional interest in the ICN resulted in a March hearing before the House Select Committee on Hunger. Mr. Seifman distributed copies of AID Assistant Administrator Richard Bissell's statement to the committee (attached). Others addressing the committee included U.S. Department of Agriculture Assistant Secretary

Catherine Bertini, who will become the Executive Director of the World Food Program; Dr. Michael McGinnis, U.S. Department of Health and Human Services; Dr. Vulimiri Ramalingaswami, WHO; and Mr. John Lupien, FAO.

IV. Discussion of Joint Assessment Issues

At Mr. Seifman's request, Dr. Samuel Kahn led the discussion based on the assessment methodology materials collected earlier from the three consultative groups and circulated among the participants prior to the meeting. Dr. Kahn asked the group to consider how to integrate these procedures to allow simultaneous assessment for micronutrient prevalence or monitoring and evaluation of interventions. He asked representatives of each of the micronutrient groups to describe the most appropriate methodologies for field work, including laboratory requirements, and to identify possible countries that would be suitable for a pilot study.

Vitamin A

Dr. Underwood briefly described the three classical approaches to identifying vitamin A deficiency--diet, biochemical measures, and clinical eye signs. Though the latter have been used routinely, they are not sufficient to identify marginal vitamin A deficiency which is now known to be a specific health risk.

Though dietary intake assessment is imprecise, IVACG developed a semi-quantitative approach that identifies frequency of intake for low, medium and high provitamin A- and vitamin A-containing foods. Since the sources of dietary vitamin A are limited in countries with vitamin A malnutrition, one is able to rank populations at risk of vitamin A deficiency using this tool. The assessment includes a market survey to identify foods locally available. So far it has been used in 20 countries.

The semi-quantitative approach might be useful in assessing the availability of iodine-fortified salt, or at least the source of salt, and the consumption of animal foods as a measure of iron intake. The questionnaire would provide information about food staples that might be useful for iron fortification if iron deficiency anemia (IDA) is a problem.

Physiological measures for nightblindness are only valid if there is a word for nightblindness in the native language. At present the tests for dark adaptation are not validated especially for young children.

Serum retinol is the standard biochemical measurement for vitamin A status and provides sound information for population prevalence. The current cut-off points do not include marginal vitamin A deficiency, but WHO will convene an expert panel to address this problem in the near future. A good quality spectrophotometer is required

for this assay. Capillary blood may be used--100 microliters (μ l)--but all blood samples must be protected from light and air to prevent destruction of the retinol. Field studies need to separate and chill the serum for transport to a suitable laboratory.

Blood drawing for serum retinol would allow a micro hematocrit measure for anemia as well, provided a good quality hematocrit centrifuge is used.

Other useful biochemical measures are the relative dose response (RDR) test and the modified relative dose response (MRDR) test. These are useful in determining critically low liver stores of vitamin A that are not reflected in the serum retinol test and need only be done on a subsample. Capillary blood may be used, but high performance liquid chromatography (HPLC) is required for measuring the very small amount of non-metabolized natural vitamin A analog (3,4 didehydroretinyl) in the 200 μ l of serum used in the MRDR test. The RDR test requires two blood samples taken five hours apart. Only one blood sample is required for the MRDR, though it must be taken five hours post-ingestion of the vitamin A analog.

Whereas a dried blood spot is not suitable for vitamin A per se, it may prove valid for measuring retinol binding protein (RBP) with immunoassay techniques. At present there are no survey data verifying its use as an indirect measure of vitamin A deficiency. Protein-energy malnutrition may reduce serum RBP complicating the interpretation of RBP values in field surveys.

Dr. John Stanbury pointed out that drawing blood can lead to complications. For example, a report of a recent outbreak of hepatitis in Africa was traced to a contaminated finger stick machine.

Urine measures for vitamin A status are not useful. Retinol, per se, is not excreted in the urine and the vitamin A metabolites that are excreted are not known to be related to vitamin A status. Saliva is not a useful fluid for determining vitamin A status either.

Though epithelial cells respond to vitamin A status, buccal cells are not reliable indicators. Conjunctival impression cytology has been used in the field, but requires additional validation. A single sample (one from each eye) from each individual may miss up to 50 percent of the vitamin A-deficient cases. Dry, dusty climates make the test less reliable. It is not a completely non-invasive technique, particularly with children.

Dr. Horwitz pointed out that one finds few eye signs of vitamin A deficiency in Latin American populations, though the deficiency is present. Each method has drawbacks. He urged the group to use infection (malaria and measles) and mortality rates to identify populations potentially at risk.

175

Having identified such a group at risk, Dr. Underwood's first choice of a biochemical test would be a serum retinol determination to give a vitamin A status distribution picture and a RDR or MRDR test on a subsample to give a measure of body stores. Clinical signs are too infrequent to be reliable except for very large sample sizes and they do not reveal the extent of the marginal or subclinical problem.

Iodine

Dr. John Dunn reviewed the paper he submitted to the group on iodine deficiency disorders. Thyroid size, determined by palpation, is the most obvious indicator of deficiency even in moderate deficiency states. However, measures of thyroid enlargement are less reliable in small children who have small thyroids. Error rates can be as high as 30 percent.

Thyroid ultrasound avoids this problem by being more precise and has been used in the field. The instrument costs \$18,000, weighs 20 pounds, and requires electricity which can be provided by a car battery. It is possible to screen 200 children a day. ICCIDD uses the concept of sentinel communities in determining the prevalence of iodine deficiency disorder.

Urinary iodine is a very reliable marker for iodine deficiency. The process requires a heating block, a thermometer, and a spectrophotometer (estimated cost for equipment is \$2000). Approximately 150 samples can be processed in one day at a cost of 50 cents each. Over 90 percent of ingested iodine is excreted in the urine. Twenty-four hour urine collections are the first choice, but are not necessary for population screens. Casual samples can be used successfully to titrate degree of IDD prevalence and severity in a population. Ranking, or stratifying, the results into groupings is used.

Blood spot thyroid-stimulating hormone (TSH) measurements are a sensitive indicator of iodine deficiency in neonates, but their value in school age children is less certain. In a study of different doses of iodized oil in Algerian children, serum TSH was a less reliable indicator than urinary iodine, thyroid size by ultrasound, or serum thyroglobulin (TG). The TG is adaptable to blood spot technology by ELISA. Serum thyroid hormone levels - T4 and T3 - are not very useful, and radioactive iodine uptake by the thyroid is not often practical in the field.

Dietary information on use of iodized salt has been used as a very practical indicator in Ecuador. Using a dietary survey to identify goitrogens may be counter productive as they are only a minor problem in most areas. However, if identified, policy officials may focus on the avoidance of the goitrogens rather than iodization of salt.

Children are the most important population to screen, as adult goiter may indicate a past problem now corrected. Young children are more difficult to screen as their

thyroids are too small for accurate assessment by palpation and it is difficult to collect their urine.

In Drs. Dunn and Stanbury's opinions, it will be easier to add IDD screening to IDA or vitamin A deficiency screening than the other way around. This is because IDD screening does not require blood determinations. When ICCIDD goes to a new country, they identify likely areas for iodine deficiency by checking goiter reports. Then they assess thyroid size and urinary iodine levels in areas with reported goiters. UNICEF has provided ultrasound machines and the necessary training to 15 centers around the world to further assist assessment teams.

Iron

Dr. Sean Lynch reviewed the IDA materials that were circulated. In his opinion, assessment of IDA was more similar to vitamin A than iodine. Dietary data are valuable, since no IDA should exist if meat or fish are eaten and parasites and pregnancy are not involved. Bioavailability of non-heme iron has been enhanced in the developed world by the consumption of vitamin C-containing foods. This model should be tested in developing countries.

Clinical signs are not useful. It is difficult to separate normal from abnormal unless severe anemia is involved. As with vitamin A, marginal IDA and iron deficiency without anemia may be as important in terms of health impact as severe IDA.

Biochemical measures can give a precise picture of iron status. Both hemoglobin and packed cell volume are valid. Packed cell volume or hematocrit is more practical. About 20 percent of those with hematocrits at the cut-off point level will not be anemic based on repletion studies. This should not be a major problem when adequately sampling for population prevalence surveys. Hematocrit alone will give "a feel" of the extent of anemia. However, anemia can also be due to folate deficiency, malaria, and hemoglobinopathies. Nevertheless, the most prevalent anemia is IDA.

Total iron-binding capacity (TIBC) and erythrocyte protoporphyrin (EP) are not useful for a variety of reasons, including sample size of blood needed for TIBC, and cost and fragility of instrumentation for EP.

As with vitamin A, measuring body stores is important. This can be done with iron. The most useful measure is serum ferritin, an immunoassay (ELISA method) requiring 10-20 μ l capillary blood. The test however is confounded by inflammatory disease such as malaria and other infections which can give a false high reading. A concomitant sedimentation rate is a good correlate for inflammation.

A useful new technique using the ELISA method is the circulating transferrin receptor test, which provides the best measure of tissue iron deficiency. It is not affected by

pregnancy or infection. Although this test is still undergoing standardization, it may soon be commercially available.

The algorithms in Dr. Viteri's manuscript (modifications of the Cook algorithms) and in the back of the INACG manual show how iron status is determined from these measurements. Status measurement is particularly important for evaluating iron interventions. These equations are largely empirically derived. Target populations for such screening are women of child-bearing age and young children.

Dr. Horwitz urged the group to consider why so little had been done to solve the IDA problem even though we have good tools for evaluation.

Dr. Kahn briefly recapped the discussions reminding the group that the overall goal of micronutrient programs is to improve diets. Thus dietary intake is an appropriate tool to use in prevalence surveys and intervention evaluations. In addition to looking at intake of micronutrient-rich foods, the intake of food and condiment staples that might be considered for fortification and the inspection of food preparation methods could be assessed. In addition, in the case of iron, there are enhancer and inhibitor foods, and in the case of iodine, goitrogens.

In terms of biochemical measures, urine is useful for iodine but not vitamin A or iron. A finger stick sample could provide whole blood for a hematocrit, serum or plasma for retinol determination, with additional immunoassays providing body stores data (these could be done on subsamples). Such a protocol would require a hematocrit centrifuge, a way to store the serum samples on site (cold-chain), and a central laboratory with a spectrophotometer and ELISA set-up for micro techniques. For a prevalence screen, a single measurement on a larger population was preferred over duplicate measures on half the sample size.

Clinical data are important for vitamin A and iodine, but not for iron. The recommended target populations for all assessment measures are young children (younger for iron and vitamin A than iodine) and women of child-bearing age.

V. Discussion of Possible Sites for Multiple Intervention Projects

Mr. Seifman distributed a set of maps showing the regions of the world where the three micronutrient deficiencies are prevalent and a list of AID-designated child survival priority countries (attached). This list was provided to generate discussion--not to narrow the possible sites. The goal is to identify an area where AID could test the validity of integrated assessment.

Dr. Dunn indicated that Haiti and Yemen have no identified iodine problem. Ecuador and Bolivia are very active sites for iodine intervention and he did not believe much

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more could be learned from prevalence studies in these countries. Less is known about Niger, Morocco, and Egypt.

AID has a vitamin A program underway in Uganda. Dr. Underwood indicated that a new vitamin A survey may begin soon in Nigeria. Both of these sites were of interest to Drs. Dunn and Stanbury as not much has been done on iodine in these countries.

Dr. Stanbury suggested that the important question was how to decide where to apply the assessment methods. Dr. Underwood encouraged the use of high risk parameters, i.e., mortality and infection rates, to determine points of entry for prevalence surveys.

VI. Identification of Next Steps

The draft document on assessment methods for vitamin A will be published by IVACG later this year. ICCIDD has several assessment manuals available in the field. Still the group felt a summary description covering the points discussed in this meeting might be of help to others deciding on the most appropriate assessment approaches.

The Nutrition Foundation will draft minutes of this meeting and circulate them for comments. These minutes will form the basis of the summary document.

Mr. Seifman asked the group to consider another meeting to discuss commonalities in intervention strategies including cost effectiveness and to continue the discussion of target countries. He reiterated AID's commitment to try and implement what the group decided was feasible.

VII. Adjournment

Prior to lunch the group congratulated Dr. Underwood on being selected for two awards by the American Institute of Nutrition -- the Conrad A. Elvehjem Award for Public Service in Nutrition and the Borden Award in Nutrition. The group also congratulated Dr. Horwitz who will receive an Honorary Doctor of Humane Letters degree from The Johns Hopkins University.

As there was no further business, the meeting was adjourned at 2:40 p.m.



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attachments

Appendix 23

Joint Micronutrient Consultative Groups

Coordinated Assessment Methodology

	<u>Clinical</u>	<u>Biochemical</u> (urine/blood)	<u>Dietary</u> (questionnaire)
<u>Iodine</u>	neck palpation thyroid ultrasound (requires specific instrument)	urine iodine (casual sample) neonatal blood spot TSH	salt source iodization foods outside community goitrogens
<u>Iron</u>		hematocrit serum ferritin (10 μ l) transferrin receptor (20 μ l)	semi-quantitative assessment for: -meat/fish consumption -identification of staple foods -vitamin C-rich foods -iron inhibitors
<u>Vitamin A</u>	Night blindness Bitot's spots Corneal xerosis	serum retinol (100 μ l) RDR (100 μ l) or MRDR (200 μ l) *	semi-quantitative assessment for vitamin A-containing foods

* requires dosing with 3,4-didehydroretinyl acetate and five hour wait.

Equipment Needs

Field: thermometer, hematocrit centrifuge (100 and 200 μ l size), capillary tubes, finger stick device, and thyroid ultrasound instrument.

Central laboratory: heating block, spectrophotometer capable of microassays for vitamin A and iodine, equipment for ELISA immunoassays (ferritin and transferrin receptor), and high-performance liquid chromatography (HPLC) for MRDR.

181