**UNIT**

**2**

**Planning Micronutrient Programmes**

## Introduction

Welcome to the second unit of the *Micronutrient Malnutrition* module which introduces a range of tools and competences you may need in planning and developing micronutrient intervention programmes. In this Unit, we will introduce two helpful models to assist you in developing micronutrient interventions. These include the UNICEF Conceptual Framework of Malnutrition and the Triple A planning Cycle. The other session focuses on a key process of the planning cycle – monitoring and evaluation, which is essential to successful programming.

There are three Study Sessions in this Unit.

Study Session 1: The UNICEF Conceptual Framework of Malnutrition. Study Session 2: The Triple A Cycle.

Study Session 3: Monitoring and Evaluating Micronutrient Programmes.

In Session 1, you will be introduced to the UNICEF Conceptual Framework for Malnutrition and how to use it to identify the causes of malnutrition. In Session 2, we address the application of the Triple A Cycle in designing a programme. Session 3 focuses on issues concerning monitoring and evaluation of micronutrient programmes.

Some of you will note that this Unit addresses topics and learning outcomes that have been covered in other SOPH modules that you may have completed. In this module, these learning outcomes are applied to micronutrient programming. Those of you who have taken either SOPH’s *Public Health Nutrition: Policy and Programming* or *Monitoring and Evaluation in Primary Health Care* may find some sessions familiar: you could move through them quickly, consolidating your understanding of these processes in relation to micronutrient malnutrition. We have also tried to make use of some of the same references.

Before you start with Session 1, study your first assignment topic in detail. You will find it in the Module Introduction. As you work through the sessions, bear the assignment in mind and try to develop it as you proceed.

**Unit 2 – Session 1**

The UNICEF Conceptual

Framework of Malnutrition

## Introduction

Malnutrition, including micronutrient malnutrition, results from an inadequate intake of nutrients, or from diseases that affect the digestion, absorption, transport and utilisation of nutrients. The factors that influence inadequate intake of nutrients are complex and diverse, ranging from physiological to social and economic. Yet they are usually interlinked. This is evident in the link between diseases that cause malnutrition and inadequate intake. Such diseases influence dietary intake negatively: because of lower dietary intake, and therefore lower nutrient intake, the disease will worsen. Consequently nutrient metabolism is further affected, which again leads to a lower dietary intake.

Understanding micronutrient malnutrition as a Public Health problem requires a close analysis of the causes of the problem at levels broader than biochemistry or physiology. The United Nations Children’s Fund (UNICEF) Conceptual Framework of Malnutrition has been designed to group a broad range of causal factors systematically and is a useful tool for micronutrient programme planning. This is the focus of this Study Session. For those of you who have studied SOPH’s *Public Health Nutrition: Policy and Programming,* there is also a session there on the UNICEF Conceptual Framework, to which you may wish to refer.

## Session Contents

1. Learning outcomes of this session
2. Readings
3. The UNICEF Conceptual Framework of Malnutrition.
4. Using the UNICEF Conceptual Framework in micronutrient programme planning
5. Session summary
6. Further reading

## Timing of this session

This session contains four readings and two tasks. It should take you about three hours to complete. A logical break is at the end of Section 3.

## LEARNING OUTCOMES OF THIS SESSION

|  |  |
| --- | --- |
| **In the course of this session, you will be addressing the Session Outcomes in the left column; they relate to the Module Outcome indicated in the right hand column:** | |
| **Session Outcomes** | **Module Outcomes** |
| § Explain the UNICEF Conceptual Framework of Malnutrition.  § Use the UNICEF Conceptual Framework to analyse causes of micronutrient deficiencies.  § Apply the UNICEF Conceptual Framework in planning micronutrient intervention strategies. | § Analyse the causes of micronutrient deficiencies using the UNICEF Conceptual Framework. |

1. **READINGS**

You will be referred to the following readings in the course of this session.

|  |
| --- |
| UNICEF. (1990). *Strategy for Improved Nutrition of Children and Women in Developing Countries: A UNICEF Policy Review.* New York: UNICEF: 5 - 36. |
| UNICEF. (1998). Ch 1 - Malnutrition: Causes, Consequences and Solutions. In Bellamy, C. *The State of the World’s Children 1998.* Oxford University Press for UNICEF, New York: 7 - 35. |
| Scott, V., Chopra, M. & Sanders, D. (2000). Ch 11 - Conceptual Framework of Micronutrient Deficiencies. In *Micronutrient Malnutrition Course for Southern Africa.* Unpublished Chapter. University of Wageningen, The Netherlands: 24 - 55. |
| Souganidis, E. (2012). The relevance of micronutrients to the prevention of stunting. *Sight and Life; 26: 10-18* |

## 3 THE UNICEF CONCEPTUAL FRAMEWORK OF MALNUTRITION

The UNICEF Conceptual Framework was developed in 1990 as part of their nutrition strategy. This framework reflects the biological and social causes of a nutrition problem, and also the multi-sectoral nature of the problem at both macro- and micro-levels. Food, health and caring practices are included, and the causes of malnutrition are classified at different levels. These levels include Immediate Causes (at the individual level), Underlying Causes (at the local, community, household or family level) and Basic Causes (at the societal level). Underpinning the framework is the assumption that factors at one level influence other levels.

According to UNICEF, this framework can be used to guide assessment and analysis of the causes of a nutrition problem and to plan appropriate and effective interventions at local, district or national level (UNICEF, 1998). Using UNICEF (1990 & 1998) and Scott, *et al* (2001), try Task 1.

#### READINGS

UNICEF. (1990). *Strategy for Improved Nutrition of Children and Women in Developing Countries: A UNICEF Policy Review.* New York: UNICEF: 5 - 36.

UNICEF. (1998). Ch 1 - Malnutrition: Causes, Consequences and Solutions. In Bellamy, C. *The State of the World’s Children 1998.* Oxford University Press for UNICEF, New York: 7 - 35.

Scott, V., Chopra, M. & Sanders, D. (2000). Ch 11 - Conceptual Framework of Micronutrient Deficiencies. In Micronutrient Malnutrition Course for Southern Africa. Unpublished Chapter. University of Wageningen, The Netherlands: 24 - 55.

Souganidis, E. (2012). The Relevance of Micronutrients to the Prevention of Stunting. *Sight and Life; 26: 10-18*

#### TASK 1 – APPLY THE UNICEF CONCEPTUAL FRAMEWORK TO IDENTIFY THE CAUSES OF MICRONUTRIENT MALNUTRITION

Read the following case and then analyse the causes using the UNICEF Framework. Do so by listing the possible Immediate, Underlying and Basic Causes of Thando’s Iron Deficiency Anaemia.

*Thando is a 17 year old girl living with her grandmother in a traditional village in a rural area where very few families have livestock. Her younger brother and sister also live with them. Grandmother receives an old age pension every month and also grows some maize for household use. Thando walks to school every weekday and it takes her about an hour to get there. She is currently two months pregnant. There is a mobile clinic that is supposed to come around once every two months and parks at the school. Thando visited the clinic a month ago, because she “did not feel good”. The health worker told Thando, after questioning, a urine test and a finger prick, that she is about two months pregnant and that she also suffers from possible Iron Deficiency Anaemia. The clinic has no iron supplements in stock, because they were not available at the hospital from which the mobile clinic operates. This is because there is a shortage from the supplier as well as delivery problems.*

#### FEEDBACK

You should have considered the Immediate Causes (at the individual level), the Underlying Causes (at the local, community, household or family level) and the Basic Causes (at societal level).

#### Immediate Causes

Thando’s Iron Deficiency Anaemia arises from low dietary intake of both heme and non- heme iron. Thando is pregnant, so her need for iron has increased. Without any iron supplementation, her anaemia will worsen. It is not clear if Thando has any infections,

(e.g. a sexually transmitted disease). Infections will compromise her immunity, and because of infections, her iron need will increase, but because of her iron deficiency, her immunity is already compromised.

#### Underlying Causes

Thando’s low dietary intake is because of her household’s food insecurity. Household food insecurity is the result of low income and therefore not enough money for food (affordability). Affordability of iron-rich foods is worsened by the distance from food shops (accessibility) and there is no animal husbandry in their village (availability). There is also low availability of foods that are good sources of bioavailable iron, and not enough money to buy enough of these animal food sources even if they are available from a nearby village or farm. The foods that are available have a low iron content.

The health service is available (but not regularly enough), and it is difficult to access. The clinic comes around only every second month and parks at the school; however walking there will take Thando about one hour. Currently no supplements are available, thus Thando will have to go without them for the next two months, which puts her in the second semester of pregnancy.

#### Basic Causes

There are also broader basic economic and health service related causes as to why the supplements are not available and why the mobile clinic only comes every second month. We do not know about the water and sanitation at home and school, but this may also play a role in infections.

From this example, you will see that you can go deeper into each of the Immediate and Underlying Causes, and for each of the other levels, there may also be a deeper cause. All these causes are inter-related and interlinked. This is how the UNICEF Conceptual Framework can be used during the assessment phase of programme development.

## USING THE UNICEF CONCEPTUAL FRAMEWORK IN MICRONUTRIENT PROGRAMME PLANNING

The UNICEF Conceptual Framework can be applied to different types of micronutrient malnutrition and for individuals and communities. It can also be used to analyse vitamin A, iron, iodine deficiency and the causes of deficiencies in any of the other micronutrients. When the causes at the different levels are identified, they can be grouped; this can then be used to select and target groups and appropriate intervention strategies. It must also form the basis for monitoring and evaluation indicators.

In the next task, you are asked to use the UNICEF Framework for planning purposes. You should use the following readings for this activity:

#### READINGS

UNICEF. (1990). *Strategy for Improved Nutrition of Children and Women in Developing Countries: A UNICEF Policy Review.* New York: UNICEF: 5 - 36.

UNICEF. (1998). Ch 1 - Malnutrition: Causes, Consequences and Solutions. In Bellamy, C. *The State of the World’s Children 1998.* Oxford University Press for UNICEF, New York: 7 - 35.

Scott, V., Chopra, M. & Sanders, D. (2000). Ch 11 - Conceptual Framework of Micronutrient Deficiencies. In *Micronutrient Malnutrition Course for Southern Africa*. Unpublished Chapter. University of Wageningen, The Netherlands: 24 - 55.

Souganidis, E. (2012). The Relevance of Micronutrients to the Prevention of Stunting. *Sight and Life; 26: 10-18.*

#### TASK 2 - USING THE UNICEF CONCEPTUAL FRAMEWORK TO PLAN INTERVENTION STRATEGIES

Go back to Task 1 and the causes that you identified. Using the UNICEF Framework strategy, list a range of possible micronutrient intervention strategies to address the Immediate and Underlying Causes of Thando’s malnutrition.

#### FEEDBACK

In planning interventions, you must always be aware of the inter-relatedness of the causes and their interaction with the other levels.

Your answer could include some of the following:

#### Planned interventions to address Immediate Causes

Supplement Thando’s dietary iron intake with:

§ Iron supplements from the clinic.

§ Dietary modification i.e. higher intake of iron rich foods, through nutrition promotion and education.

#### Planned interventions to address Underlying Causes

To address the problem of insufficient household food security, one intervention could be to encourage animal husbandry. This could be combined with an education programme on micronutrients, which includes information on good food sources, how to preserve food, how to spend money wisely on food and even selling excess produce to other villages. Such a programme should take account of cultural beliefs and practices around food in the village. This programme would increase access to food sources that contain high bioavailable iron, as well as increasing household income. Both outcomes would increase household food security.

Secondly, as Thando is now anaemic, the unavailability of iron supplements must be addressed. A possible intervention could be to motivate that iron supplements are

always in stock at the mobile clinic. Coupled with this, there is a need for education alongside supplementation, to inform women on how and in what combination to take the supplements, the possible side effects, and how to overcome the side effects. A breastfeeding promotion programme should also form part of this education programme.

Please take note of the other underlying factors that affect Thando’s situation, which may not seem like direct micronutrient interventions. A maternal health service is not available regularly enough, and requires an anaemic pregnant woman to walk a long distance, therefore some intervention is required. The problem would need to be brought to the attention of the relevant authorities, which may involve some level of advocacy or research.

#### Planned interventions to address Basic Causes

You might also need to do advocacy on the Basic Cause level, to develop political will to provide resources necessary for animal husbandry in the community, and to increase the regularity of the mobile clinic, its location when it comes, and regular supplies of supplements to address the Immediate and Underlying Cause levels. There could also be intervention programmes planned to address problems around a healthier environment, such as sanitation programmes to control water-related infections.

## SESSION SUMMARY

Well, you have made it through another session. Well done! You should now be developing a better understanding of how to apply the UNICEF Conceptual Framework in micronutrient malnutrition programme planning.

In the next session, we will consider the use of the Triple A Cycle in conjunction with the UNICEF Conceptual Framework, another strategy you might use in micronutrient programme planning.

## FURTHER READING

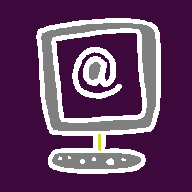
ACC/SCN. (1991). *Managing Successful Nutrition Programmes*, Geneva: ACC/SCN. ACC/SCN. (1991). *Nutrition-relevant Actions.* Geneva: ACC/ SCN.

Berg, A. (1993). Sliding Towards Nutrition Malpractice: Time to Reconsider and Redeploy. *American Journal of Clinical Nutrition*, 57: 3 - 7.

Department of Health. (2012). *Roadmap for Nutrition in South Africa. 2012 -2016.*

Department of Health. South Africa.

**Internet Resource**



UNSCN. (2010). *Progress in Nutrition. 6th Report on the World Nutritition Situation*. [Online], Available: [www.unscn.org](http://www.unscn.org/) [Downloaded 12.06.12]

**Unit 2 – Session 2**

The Triple A Cycle

## Introduction

In your work as a health professional, you may well have come across a model to guide planning, called the Planning Cycle. Those of you who have completed *Health Management II* will know it well. In the field of nutrition, this cycle has been simplified and called the Triple A Cycle.

In designing any intervention to improve nutrition, it is important to understand the processes involved. The Triple A Cycle is a useful tool to use, in conjunction with the UNICEF Conceptual Framework. The Triple A Cycle can be used as a participatory strategy with communities or groups of people that are affected by micronutrient malnutrition; in this way, you are able to tackle the problem of micronutrient malnutrition in that community or group at large.

## Session Contents

1. Learning outcomes of this session
2. Readings
3. Describing the Triple A Cycle
4. Using the Triple A Cycle in micronutrient programme planning
5. Session summary
6. Further reading

## Timing of this session

This session contains three readings and two tasks. It should take you about three hours to complete. A logical break is at the end of Section 3.

## LEARNING OUTCOMES OF THIS SESSION

|  |  |
| --- | --- |
| **In the course of this session, you will be addressing the Session Outcomes in the left column; they relate to the Module Outcome indicated in the right hand column:** | |
| **Session Outcomes** | **Module Outcomes** |
| § Describe the Triple A Cycle.  § Apply the Triple A Cycle in micronutrient programme planning. | § Critically analyse success factors in Public Health micronutrient interventions. |

1. **READINGS**

You will be referred to the following readings in the course of this session.

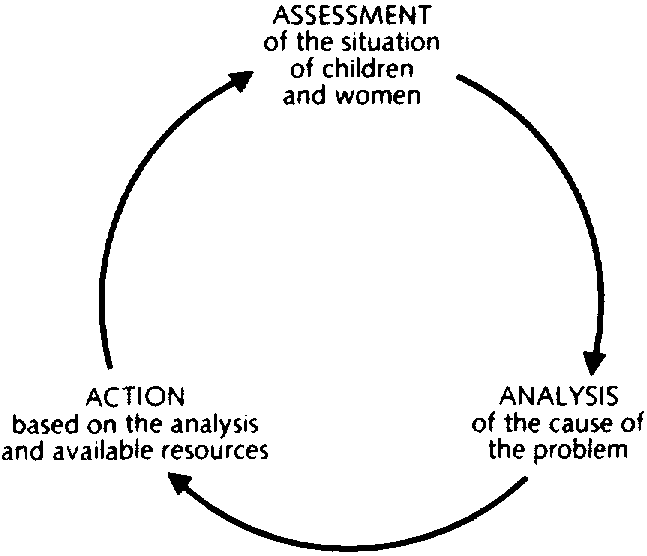
|  |
| --- |
| UNICEF (1990). *Strategy for Improved Nutrition of Children and Women in Developing Countries: A UNICEF Policy Review.* New York: UNICEF: 5 - 36. |
| Jonsson, U. (1995). Towards an Improved Strategy for Nutrition Surveillance. *Food and Nutrition Bulletin*, 16(2): 102 - 111. |
| Scott, V., Chopra, M. & Sanders, D. (2000). Ch 11 - Conceptual Framework of Micronutrient Deficiencies. In *Micronutrient Malnutrition Course for Southern Africa.* Unpublished Chapter. University of Wageningen, The Netherlands: 24 - 55. |
| Souganidis, E. (2012). The Relevance of Micronutrients to the Prevention of Stunting.  *Sight and Life; 26: 10-18* |

## 3 DESCRIBING THE TRIPLE A CYCLE

The Triple A Cycle is comprised of three components that form consecutive steps which are:

1. Assessing the problem.
2. Analysing its causes.
3. Taking action based on the analysis.

The results of the action are usually re-assessed (monitored), analysed again and new and better actions are taken, thus forming a cycle, called the Triple A Cycle (UNICEF, 1990). Here is a diagram for clarification.



#### READINGS

UNICEF. (1990). *Strategy for Improved Nutrition of Children and Women in Developing Countries: A UNICEF Policy Review.* New York: UNICEF: 5 - 36.

UNICEF. (1998). Ch 1 - Malnutrition: Causes, Consequences and Solutions. In Bellamy, C. *The State of the World’s Children 1998.* Oxford University Press for UNICEF, New York: 7 - 35.

Jonsson, U. (1995). Towards an Improved Strategy for Nutrition Surveillance. *Food and Nutrition Bulletin*, 16(2): 102 - 111.

Souganidis, E. (2012). The Relevance of Micronutrients to the Prevention of Stunting. *Sight and Life; 26: 10-18*

#### TASK 1 – USING THE TRIPLE A CYCLE

Describe how the Triple A Cycle can be used to design micronutrient programmes.

#### FEEDBACK

You should have noted that in micronutrient malnutrition programme development, it is important to understand the different processes that will make the programme successful, and that the Triple A Cycle helps one to address these stages – Assessment, Analysis and Action. You should also note that it could be used in conjunction with the UNICEF Conceptual Framework.

In the course of Assessment and Analysis, the UNICEF Conceptual Framework can be used to assess the size of the deficiency problem and then to analyse the causes of the problem at different levels, i.e. Immediate Causes, Underlying Causes or Basic Causes. The Action step includes developing strategies or interventions to address the specific causes of the micronutrient deficiency that you have identified using the UNICEF Conceptual Framework.

It is important to identify indicators for re-assessing the problem (or monitoring it) and also to evaluate the outcome and impact targets in repeat assessments.

## USING THE TRIPLE A CYCLE IN MICRONUTRIENT PROGRAMME PLANNING

The Triple A Cycle, used together with the UNICEF Conceptual Framework is helpful in developing comprehensive and effective strategies to address any micronutrient deficiency in groups of people or communities.

During the Assessment stage of the Triple A Cycle, the size (or prevalence) of the deficiency is determined. This information can be used in various ways within projects:

§ for advocacy;

§ for setting monitoring indicators;

§ for determining outcome and impact targets (indicators).

If you look back at Unit 1 - Session 2, you will now understand the significance of the prevalence indicators for the specific micronutrients in relation to this process. Now use these readings to do Task 2.

#### READINGS

UNICEF. (1990). *Strategy for Improved Nutrition of Children and Women in Developing Countries: A UNICEF Policy Review.* New York: UNICEF: 5 - 36.

UNICEF. (1998). Ch 1 - Malnutrition: Causes, Consequences and Solutions. In Bellamy, C. *The State of the World’s Children 1998.* Oxford University Press for UNICEF, New York: 7 - 35.

Scott, V., Chopra, M. & Sanders, D. (2000). Ch 11 - Conceptual Framework of Micronutrient Deficiencies. In *Micronutrient Malnutrition Course for Southern Africa*. Unpublished Chapter. University of Wageningen, The Netherlands: 24 - 55.

Jonsson, U. (1995). Towards an Improved Strategy for Nutrition Surveillance. *Food and Nutrition Bulletin*, 16(2): 102 - 111.

#### TASK 2 - USING THE TRIPLE A CYCLE TO PLAN INTERVENTION STRATEGIES

In a community with vitamin A deficiency in children under five:

* 1. List what information should be assessed. This is the Assessment step of the Triple A process. Categorise them into the different levels suggested by the UNICEF Conceptual Framework.
  2. List possible interventions for the likely Immediate, Underlying and Basic Causes. This is the Action step of the Triple A process.

**FEEDBACK**

1. Information that should be assessed in a community with vitamin A deficiency in children under five:

#### Immediate Causes:

* + Inadequate dietary intake
  + Nutritional status including anthropometry
  + Vitamin A status including biochemistry and clinical indicators
  + Other health indicators including worm infestations.

#### Underlying Causes:

* + Household food security
  + Breastfeeding practices
  + Childcare practices
  + Health services including supplementation and education programmes.

#### Basic Causes:

* + Socio-economic factors and demographic factors
  + Land availability
  + Environmental health factors
  + Welfare services
  + Health services including supplementation and education programmes
  + Community resources.

1. Possible Interventions, i.e. Action

#### Immediate Causes:

For inadequate dietary intake:

* + Dietary modification through nutrition promotion and education programmes.
  + Supplementation of diet, targeted and universal.
  + Food fortification.

To treat diseases:

-Treatment of worm infections.

* + Increased immunisation coverage, e.g. through Expanded Immunisation Programmes.

#### Underlying Causes:

To improve household food security:

* + Dietary modification through nutrition promotion and education, e.g. food preparation and technological advances in food preservation.
  + Home or community food gardens.
  + Small animal husbandry.

To improve maternal and health care:

* + Dietary diversification through nutrition promotion, breastfeeding promotion and education on weaning diets.

- Advocacy at local level to ensure that iron supplements are always in stock at the mobile clinic. This depends on the issue being addressed at a broader level (as a Basic Cause) as well.

#### Basic Causes:

To address inadequate health services:

* + Advocacy to local and provincial health authorities regarding the regularity of the mobile clinic, its location when it comes, and regular supplies of supplements.

To address inadequate availability of iron-rich food sources:

* + Advocacy on food policies regarding prices and availability of micronutrient rich food.
  + Advocacy on supplementation programmes and better health services.

To improve the quality of the environment:

* + Advocacy to increase access to clean drinking water.
  + Advocacy for improved sanitation.
  + Advocacy on land rights, which may lead to agriculture animal husbandry.

To explore more about advocacy go to the resources on advocacy listed under section 6 below. You will also explore advocacy in the Health Promotion for Public Health module.

## SESSION SUMMARY

Congratulations, you should now have a good understanding of where to start and what tools to use in planning a micronutrient intervention strategy or programme.

## FURTHER READING

Chopra, M. & McCoy, D. with assistance from Sanders, D. & Piwoz, E. (August 2000). *How to Conduct a Rapid Nutrition Situation Assessment, A Guide for Health Districts and Sub-Districts in South Africa.* Durban: Health Systems Trust.

[Online] Available: <http://legacy.hst.org.za/isds/nutri_asses.htm>[Downloaded 14.07.12]

Elder, L. K., Kiess, L. & de Beyer, J. (1996). Ch 3 - Project Preparation. *Incorporating Nutrition into Project Design.* World Bank.

Werner, D. & Sanders, D. with Weston, J. Babb, S. & Rodriguez, B. (1997). *Questioning the Solution: The Politics of Primary Health Care and Child Survival*. Palo Alto:

Health Wrights. Resources on Advocacy:

Galer-Unti, R.A., Tappe, M.K., Lachenmayr, S. (2004). *Advocacy 101: Getting started in Health Education Advocacy.* Health Promotion Practices; 5: 280-288. [Online] Available [http://hpp.sagepub.com](http://hpp.sagepub.com/) [Downloaded 14.05.12]

Christoffel, K.K. (2000). *Public Health Advocacy: Process and product.* American Journal of Public Health; 90: 722-726

American Public Health Association. (2000a). *APHA advocate’s handbook: A guide for effective public health advocacy.* Washington, DC

**Unit 2 – Session 3**

Monitoring and Evaluating Micronutrient Programmes

## Introduction

Welcome to the last session of Unit 2. If you think back to the Triple A Cycle of Assessment, Analysis, Action, we are back to the Assessment stage in the Cycle. This is the second time round, and this time you are undertaking Assessment in the form of monitoring and evaluating your micronutrient programme.

Monitoring and evaluating is an extremely important aspect of micronutrient programming, enabling you to describe the success of the intervention, to identify difficulties and to ensure better impact. The basics of monitoring and evaluating a nutrition programme will be the same, whether it is a growth monitoring programme or addresses micronutrient deficiency control.

In this session, we will look at the differences between monitoring and evaluation, and you will also review indicators for monitoring and evaluating micronutrient programmes. For those who completed *Public Health Nutrition: Policy and Programming*, you could refer to the Module Guide, Unit 3 - Session 4 for additional information. However, some of the information from that session will be incorporated into this one.

Some of you may also have studied the SOPH module *Monitoring and Evaluation in Primary Health Care* and would benefit by looking back at that module.

## Session Contents

1. Learning outcomes of this session
2. Readings
3. Introduction to monitoring and evaluation
4. Steps in conducting monitoring and evaluation activities
5. Indicators for monitoring and evaluation
6. Session summary
7. References and further reading

## Timing of this session

This session contains seven readings and six tasks. It should take you about five hours to complete. A logical break is at the end of Section 4.

## LEARNING OUTCOMES OF THIS SESSION

|  |  |
| --- | --- |
| **In the course of this session, you will be addressing the Session Outcomes in the left column; they relate to the Module Outcome indicated in the right hand column:** | |
| **Session Outcomes** | **Module Outcomes** |
| § Differentiate between monitoring and evaluation of programmes.  § Explain the importance of monitoring and evaluation in micronutrient programmes.  § Describe the process of monitoring and evaluating micronutrient programmes.  § Select appropriate programme  indicators for monitoring and evaluation. | § Describe monitoring and evaluation strategies for each micronutrient deficiency control strategy. |

1. **READINGS**

You will be referred to the following readings in the course of this session.

The Applied Nutrition Programme, University of Nairobi. (1999). *Monitoring and Evaluation of Nutrition and Nutrition-Related Programmes. A Training Manual for Programme Managers and Implementers.* University of Nairobi & the School of Nutrition, Science and Policy, Tufts University, Nairobi: 1.15 - 1.30.

Rossi, P. H., Lipsey, M.W. & Freeman, H. E. (2004). Ch 6 – Assessing and monitoring program process *Evaluation: A Systematic Approach*. 7th ed. Thousand Oaks, Ca: Sage Publications: 169 - 201.

Feuerstein, M. (1986). Ch 1 - Understanding Evaluation. In *Partners in Evaluation: Evaluating Development and Community Programmes with Participants*. London: Macmillan: 1-12.

Cervinskas, J. & Houston, R. (1998). Ch 2 - Monitoring: A Tool for Decision-Making.

*Monitoring Vitamin A Programmes.* Ottawa : The Micronutrient Initiative:1-8.

Cervinskas, J. & Houston, R. (1998). Ch 4 - Supplementation Programmes.

*Monitoring Vitamin A Programmes.* Ottawa: The Micronutrient Initiative: 1 - 13.

Cervinskas, J. & Houston, R. (1998). Ch 5 - Dietary Improvement Programmes.

*Monitoring Vitamin A Programmes.* Ottawa: The Micronutrient Initiative: 1 - 13.

Houston, R. (2003). *Why They Work: An Analysis of Three Successful Public Health Interventions. Vitamin A Supplementation Programs in Ghana, Nepal and Zambia.* 1

– 41. Arlington, VA: MOST Project, USAID. [Online], Available:

[www.mostproject.org/](http://www.mostproject.org/)

## INTRODUCTION TO MONITORING AND EVALUATION

Monitoring and evaluating micronutrient malnutrition programmes is an integral part of programme planning. It is very important to be able to describe the success of a programme and to establish what interventions are working or not working and why. Planning the monitoring and evaluation design should be part of the planning stage of the micronutrient programme. This is the re-assessment and re-analysis of the Triple A Cycle.

Use these readings to work out the difference between monitoring and evaluation in Task 1.

#### READINGS

The Applied Nutrition Programme, University of Nairobi. (1999). *Monitoring and Evaluation of Nutrition and Nutrition-Related Programmes. A Training Manual for Programme Managers and Implementers.* University of Nairobi & the School of Nutrition, Science and Policy, Tufts University, Nairobi: 1.15 - 1.30.

Rossi, P. H, Lipsey, M.W. & Freeman, H. E. (2004). Ch 6 – Programme Monitoring for Evaluation and Management. In *Evaluation: A Systematic Approach*. Newbury Park, Ca: Sage Publications: 163 - 213.

#### TASK 1 - DEFINING MONITORING AND EVALUATION

Define these concepts:

* 1. Monitoring
  2. Evaluation

**FEEDBACK**

Your answer should include the following (Swart *et al*, 2003: Unit 3 - Session 4, Task 1).

|  |  |
| --- | --- |
| **a) Monitoring** | **b) Evaluation** |
| Monitoring is a systematic attempt to examine programme operations (including coverage and the delivery of services) by assessing what was supposed to have been done and determining if it was actually done as planned, within the planned time frame, for the targeted population, and in an effective way. | Evaluation is the systematic collection of information on the conceptualisation, design, implementation and/or impact of an intervention or programme.  Evaluation serves two important functions, by determining (i) the extent to which desired changes have occurred in the light |

Monitoring can also include the collection of information about programme activities to see if they comply with legal and regulatory requirements.

Monitoring is the process of continuous and periodic surveillance of the physical implementation of a programme through timely gathering of systematic information on work schedules, inputs delivery, targeted outputs, and other variables required for the programme to have the desired effects and impact.

Monitoring is an integral part of the management information system.

Monitoring is a management support function and monitoring reports can be used as a basis for internal review (evaluation) of programme operations at the management and technical levels.

of programme objectives, and (ii) whether the project is responsible for such changes.

Evaluation is the process by which the relevance, effectiveness and impact of a programme are determined, as objectively and systematically as possible, in relation to the expected results and outputs.

Evaluation is a programme tool and a verification process for measuring achievement of programme results and assessing a programme’s relevance, efficiency and effectiveness in relation to its objectives within a given budget or available resources.

Evaluation examines the effectiveness of institutional arrangements and management systems for programme delivery, and also provides information for programme design and approval.

Evaluation is an accountability tool that enables programme management to show the achievements of the programme to the stakeholders, as objectively as possible.

Now that you have clarified the definitions of monitoring and evaluation, complete Task 2.

#### TASK 2 – THE IMPORTANCE OF MONITORING IN A MICRONUTRIENT PROGRAMME

Refer to your answer in Task 1, and explain why monitoring and evaluation are important for a facility based vitamin A supplementation programme for children under five.

### FEEDBACK

Your answers should include some of the following points:

Monitoring a vitamin A supplementation programme will assess coverage and targeting, thus how many supplements were given to how many children, at what ages, by whom within a specific period of time. Monitoring will also assess if the correct dosage was given in the correct manner. Monitoring provides information to improve targeting and helps to identify operational constraints to programme effectiveness. For example:

*Does the staff know about the programme?*

*Do they know how, when and to whom to give the supplement?*

*Do the care-givers of the children know about the programme, and if “yes”, why and if not, why not?*

*Are the correct supplements delivered to the health facility on time so that there is always stock?*

*Does the availability of supplements affect health facility attendance?*

Answers to all these questions will help managers to improve implementation.

#### Different Types of Evaluation

There are different types of evaluation, i.e. mid-term, summative, impact and process evaluation. The table below specifies why should it be done, when should it be done, who should do it, what kinds of questions evaluators might ask in the different types of evaluations and how the findings should be used. Study this table before attempting task 3.

#### TASK 3 – SELECTING EVALUATION PROCESSES FOR A MICRONUTRIENT PROGRAMME

Consider this micronutrient programme objective and the descriptions of evaluation types that follow.

*Programme Objective: Start community micronutrient nutrition education programmes in five selected districts of your province next year.*

Which two types of evaluation described in the table would you choose for it, and why would you prioritise them?

The table that follows contains descriptions of the different types of evaluation.

|  |  |
| --- | --- |
| **A. MID-TERM / ON-GOING EVALUATION** | **B. SUMMATIVE / FINAL EVALUATION** |
| **What it is**  An assessment of the effectiveness and efficiency of a programme when it is half way through the planned period.  **Why we do it**  To assess the effect so far of the programme.  To give an idea of whether the set objectives will be met within the programme period.  To justify the existence of the programme to stakeholders and implementers.  **When it is conducted**  It is done halfway through the planned programme period.  **Who conducts it?**  Project implementers, donors, project managers, the beneficiaries, and an external evaluation team.  **Questions answered by a Mid-term Evaluation**  Are the programme components being  delivered to the right and intended target group?  Are there other people who should have been included in the target group?  Is the coverage of the programme adequate?  Are the supplies being delivered on time  and being properly utilised?  Are there any deviations in programme implementation, and if so, have such deviations restricted the possibility of reaching the outcomes or objectives? Are there any constraints identified and what are their corrective measures?  **How the findings should be used**  All stakeholders should be involved in using the findings in modification of the programme, if the need arises. | **What it is**  The final assessment done at the end of a programme. Results obtained help in making decisions about continuation/termination of a programme.  **Why we do it**  To determine the extent of achievement of the programme.  To determine the ability to move from one level to the next.  **When it is conducted**  At the end of a programme.  **Who conducts it?**  Project implementers.  External evaluators and project implementers.  **Questions answered by a Summative Evaluation**  Have the objectives been met?  How effective were the systems which were put in place?  What strategies were used in implementing programme activities?  Have the needs changed?  **How the findings should be used**  It allays the fears of researchers/implementers and other stakeholders.  To justify extension of the programme. As a learning opportunity.  For replication of the same programme in other  areas.  To solicit more/further funding.  To show stakeholders that the programme went as planned / for satisfaction of the stakeholders. |

(Swart et al, 2003: Unit 3 - Session 4)

|  |  |
| --- | --- |
| **C. IMPACT/OUTCOME EVALUATION** | **D. PROCESS EVALUATION** |
| **What it is**  It gauges the extent to which the intervention has caused change in the desired direction at a given time.  **Why it is conducted**  To determine the extent to which the intervention has achieved its set objectives. It also assists in exposing the positive and negative outcomes of the intervention.  To highlight whether it is important to document the intervention as a recommendation to stakeholders.  **When it is conducted**  At a set time depending on the programme type.  **Who conducts it** Implementers. External evaluators.  **Questions answered by Impact Evaluation**  Is change the result of the intervention? Are there other external factors influencing the change?  **How the findings should be used** To help a similar programme. Documentation and recommendation To help re-planning. | **What it is**  Assessment of the efficiency and effectiveness of individual pre-determined stages of project implementation, beginning with the problem identification.  It helps to identify external factors that impact on  the project outputs.  **Why it is conducted**  To determine the cost effectiveness of strategies in each component of the project cycle.  **When it is conducted**  At every stage of the project cycle.  **Who conducts it**  Project staff and other stakeholders (beneficiaries, donors).  **Questions answered by Process Evaluation**  How was the problem identified?  How were beneficiaries involved in project design?  What external factors impacted on the project?  What was the input cost compared to the output? Was it cost effective?  To what extent are short-term objectives being met?  **How the findings should be used**  To help in redesigning and making amendments in project implementation.  To identify positive factors that need to be reinforced.  To help in re-allocation /re-classification of funds. |

(Swart et al, 2003: Unit 3 - Session 4)

#### FEEDBACK

*Programme Objective: Start community micronutrient nutrition education programmes in five selected districts of your province next year.*

Faced with choosing two types of evaluation for this programme, I would choose Mid- Term and Summative Evaluation.

I would choose Mid-term Evaluation because it has the potential to assess the effect of the programme before the year ends, and will also give some idea of whether the objectives will be met within the programme period. In addition, if positive results can be

reported, it will reassure stakeholders and implementers and increase stakeholder motivation towards the goals of the programme. It will also be helpful to identify any problems early on, so that any necessary changes can be made.

Summative Evaluation will be important because it will help to determine the extent of achievement of the programme when it is completed, especially as it may be necessary to advocate its continuation to the provincial authorities. It may also help to clarify any inefficiencies or areas of ineffectiveness, so as to be accountable for resources and to be able to re-plan more effectively in future.

Although Process Evaluation also sounds important, the programme is scattered across five districts. It will be more effective to evaluate it at specific points rather than to hope for ongoing evaluation. Impact Evaluation will be difficult to achieve, as one will need to isolate the effects of the education programme. This is particularly difficult in the case of education amongst people from under-resourced communities. You may not know what prior knowledge they have and they may not read and write. It will therefore be difficult to assess direct impact, except through proxy indicators like usage of the clinic.

## STEPS IN CONDUCTING MONITORING AND EVALUATION ACTIVITIES

In this section, we look at the processes of monitoring and evaluation.

#### Conducting Monitoring Activities

The process of monitoring a programme can be broken down into a series of steps:

§ Review existing information related to the programme;

§ Make a conceptual framework of the project for monitoring;

§ Identify monitoring goals and objectives;

§ Identify indicators;

§ Determine which categories of workers, supervisors or other staff will be responsible for the collection of each category of monitoring data;

§ Develop a timetable for frequency of monitoring;

§ Develop/strengthen a management information system;

§ Develop monitoring instruments;

§ Conduct monitoring activities;

§ Analyse monitoring data;

§ Write reports;

§ Make recommendations;

§ Implement recommendations;

§ Identify new indicators based on the recommendations;

§ Modify the monitoring system if necessary;

§ Continue to monitor.

(Swart et al, 2003).

These three chapters by Cervinkas & Houston (1998) in the following readings provide the basis for the next task which concerns monitoring two kinds of vitamin A interventions.

#### READINGS

Cervinskas, J. & Houston, R. (1998). Ch 2 - Monitoring: A Tool for Decision-Making.

*Monitoring Vitamin A Programmes.* Ottawa, Canada: The Micronutrient Initiative:1-8.

Cervinskas, J. & Houston, R. (1998). Ch 4 - Supplementation Programmes. *Monitoring Vitamin A Programmes.* Ottawa, Canada: The Micronutrient Initiative: 1 - 13.

Cervinskas, J. & Houston, R. (1998). Ch 5 - Dietary Improvement Programmes. *Monitoring Vitamin A Programmes.* Ottawa, Canada: The Micronutrient Initiative:1- 13.

#### TASK 4 - MONITORING A MICRONUTRIENT PROGRAMME

* 1. Try to identify some of the steps above for monitoring a vitamin A supplementation programme.
  2. Identify some of the steps above for monitoring a vitamin A food diversification programme.

#### FEEDBACK

You should have found reference to monitoring supplementation programmes on Ch 2, page 3 in Cervinskas & Houston (1998), and also an argument as to why monitoring is important. Take note of the framework (Table 4.1) in Ch 4 , page 4 which addresses monitoring vitamin A supplementation programmes. Note that you can apply most of the issues addressed in this reading to iron supplementation programmes. If you look at the issues concerning food diversity in Chapter 5 of Cervinskas & Houston (1998), you can also apply it to dietary programmes to increase iron intake.

#### Conducting Evaluation Activities

Here are some guidelines for conducting evaluation activities.

**Phase A - Plan the Evaluation** Determine the purpose of the evaluation. Decide on the type of evaluation.

Review existing information in programme documents including monitoring information.

Describe the programme.

Develop/refine a conceptual framework. Assess your own strengths and limitations.

Put together an evaluation team including stakeholders.

#### Phase B - Select Appropriate Evaluation Methods

Identify evaluation goals and objectives.

Formulate evaluation questions and sub-questions. Decide on the appropriate evaluation design. Develop an evaluation schedule.

Develop a budget for the evaluation.

#### Phase C - Collect and Analyse Information

Develop data collection instruments. Pre-test data collection instruments. Undertake data collection activities. Analyse data.

Interpret the data.

#### Phase D - Report Findings

Write the evaluation report.

Decide on the method of sharing the evaluation results. Decide on communication strategies.

Share the draft report with stakeholders and revise as needed. Disseminate the evaluation report.

Meet with project stakeholders to discuss and follow-up on findings, once they have accepted the findings.

#### Phase E - Implement Evaluation Recommendations

Develop a new/revised implementation plan in partnership with the stakeholders. Monitor the implementation of evaluation recommendations and report regularly on the implementation progress.

Plan the next evaluation.

(Swart et al, 2003, Unit 3 - Session 4)

Take a look at this reading by Houston (2003) which presents several examples of programme evaluation.

#### READING

Houston, R. (2003). *Why They Work: An Analysis of Three Successful Public Health Interventions. Vitamin A Supplementation Programs in Ghana, Nepal and Zambia.* 1 –

41. Arlington, VA: MOST Project, USAID. [Online], Available: http/[www.mostproject.org/](http://www.mostproject.org/)

## INDICATORS FOR MONITORING AND EVALUATION

A very important element of the monitoring and evaluation process is having effective indicators. Explore these readings and clarify in your mind what is meant by an indicator and what constitutes a good indicator.

#### READINGS

Feuerstein, M. (1986). Ch 1 - Understanding Evaluation. In *Partners in Evaluation: Evaluating Development and Community Programmes with Participants*. London: Macmillan: 1 - 12.

Cervinskas, J. & Houston, R. (1998). Ch 2 - Monitoring: A Tool for Decision-Making. *Monitoring Vitamin A Programmes.* Ottawa, Canada: The Micronutrient Initiative: 1 - 8.

Cervinskas, J. & Houston, R. (1998). Ch 4 - Supplementation Programmes. *Monitoring Vitamin A Programmes.* Ottawa, Canada: The Micronutrient Initiative: 1 - 13.

Cervinskas, J. & Houston, R. (1998). Ch 5 - Dietary Improvement Programmes. *Monitoring Vitamin A Programmes.* Ottawa, Canada: The Micronutrient Initiative: 1 - 13.

#### TASK 5 - WHAT ARE INDICATORS?

Define the concept “indicator” and name the characteristics of a good indicator.

**FEEDBACK**

Your answer should include the following:

An indicator is a marker or measurement. In nutrition programmes, it is a measure of the outcome or impact of the intervention. It shows what changes have occurred and the extent of the change. An indicator always reflects a single aspect of a programme. An indicator can be a percentage, a ratio, a rate and is usually quantifiable.

In summary, the characteristics of a good indicator are that it is:

§ Measurable, and thus quantifiable;

§ Comprehensible, i.e. it must mean the same to everyone;

§ Valid, meaning it must measure what it claims to measure;

§ Verifiable, meaning that it can be checked;

§ Sensitive, meaning that it must be sensitive to change over time.

In programmes, we want the indicator to change value either positively or negatively, depending on the monitoring and evaluation goals that were set for the intervention

For those of you who have it, you may want to refer to Swart et al (2003) *Public Health Nutrition: Policy and Programming* Module Guide, Unit 3 - Session 4 for more

information about indicators. (If you don’t have a copy of this reading, contact the student administrator for assistance.)

#### TASK 6 - DEVELOPING INDICATORS

Use the same readings as in Task 5 to guide you - Feuerstein (1986) and Cervinskas & Houston (1998).

Develop possible indicators for monitoring and evaluating a vitamin A supplementation programme.

#### FEEDBACK

**Indicators for monitoring**

The first indicator will be provision: this indicator will reflect how many facilities offer the supplementation programme, thus how accessible the programme is to the population. It can be expressed as a proportion of the target population. This needs to be monitored over time, during the total period for which the intervention is planned.

Another indicator is the quality of the provision: this involves monitoring how many of the staff responsible for distributing the supplements have adequate knowledge about the supplementation programme and the supplements.

Utilisation is another important indicator for monitoring, and is expressed as the number of capsules distributed per 1000 children or post-partum women.

In addition, coverage is an important indicator: coverage gives an indication of the percentage of children or post-partum women receiving supplements on a regular basis on schedule, e.g. capsules/year/selected population.

#### Indicators for evaluation

When deciding on an indicator, always take into account the preferred characteristics of the indicator and also if it is a feasible and acceptable one. Some people, for example, prefer not to let children give blood samples. Also consider its technical feasibility and cost.

When evaluating vitamin A intervention programmes, sub-clinical indicators can be used, for example, the percentage of the population with night blindness before the intervention versus the percentage of the population with night blindness after the intervention. Another indicator is infection incidence, which is especially useful in young children, before the intervention versus after the intervention.

Biochemical indicators are usually also used for evaluation purposes and Mean Serum Retinol level, before, during and after intervention is a good indicator.

In relation to vitamin A deficiency diseases, the changes in prevalence of biological indicators such as Xerophthalmia, e.g. Bitot’s spot and corneal xerosis, can also be used.

Please note that when you use sub-clinical or biochemical indicators for any of the micronutrients, refer to the indicators used to assess deficiencies as discussed in Unit 1 - Session 2.

## SESSION SUMMARY

You have now completed this session. Well done! You should now have a better understanding of monitoring and evaluation and how important it is to monitor and evaluate micronutrient intervention programmes. This brings you to the end of Unit 2. In the next Unit you will study different types of micronutrient programmes in which you will see that monitoring and evaluation is essential to success in such interventions.

## REFERENCES AND FURTHER READING

ACC/SCN. (1991). *Managing Successful Nutrition Programmes*. Geneva: ACC/SCN. ACC/SCN. (1991). *Nutrition-relevant Actions.* Geneva: ACC/ SCN.

The Applied Nutrition Programme, University of Nairobi. (1999). *Monitoring and Evaluation of Nutrition and Nutrition-Related Programmes*. *A Training Manual for Programme Managers and Implementers.* University of Nairobi & the School of Nutrition, Science and Policy, Tufts University, Nairobi.

Berg A. (1993). Sliding Towards Nutrition Malpractice: Time to Reconsider and Redeploy. *American Journal of Clinical Nutrition*, 57: 3 - 7.

CDC. (1999). *Framework for Programme Evaluation in Public Health. MMWR; 48 (No RR11).* Atlanta: Centers for Disease Control and Prevention (CDC): 1 - 40.

FAO. (1999). *Field Programme Management: Food, Nutrition and Development.* Rome: FAO.

Feuerstein, M-T. (1986). *Partners in Evaluation: Evaluating Development and Community Programmes with Participants*. London: Macmillan.

Puoane, T., Alexander, L. & Matshanda, N. (2005). *Monitoring and Evaluation in Health and Development Programmes.* SOPH Module Guide. Bellville: SOPH, UWC.

Swart , R., Chopra, M., Sanders, D., Gachuhi, D. & Alexander, L. (2003). Unit 3 - Session 4 of *Public Health Nutrition: Policy and Programming.* Bellville: SOPH, UWC.

UNICEF. (1992*). Towards an Improved Strategy for Nutrition Surveillance. Report of a Workshop Held at UNICEF/ NY, 29 - 30 Jan. 1992.* New York: UNICEF.

WHO/UNICEF. (1996). *Indicators for Assessing Vitamin A Deficiency and their Application in Monitoring and Evaluating Programmes.* WHO/NUT/96.10. Geneva: World Health Organization (WHO).

WHO. (2007). *Assessment of Iodine Deficiency Disorders and Monitoring Their Elimination: A guide for programme managers. 3****rd*** *ed.* Geneva: WHO.

WHO. (2001). *Iron Deficiency Anaemia: Assessment, Prevention and Control. A Guide for Programme Managers. (*Document WHO/NHD/01.3).Geneva: WHO.

WHO/CDC. (2005). *Assessing the Iron Status of populations: report of a Joint World Health Organisation/Centers for Disease Control and Prevention Technical Consultation on the Assessment of Iron Status at Population Level, Geneva, Switzerland, 6-8 April 2004. Geneva:WHO*

Klemm, R.D.W., Harvey, P.W.J., Wainwright, E., Faillace, S. & Wasantwisut, E. (2009). *Scaling up micronutrient programs: What works and what needs more work? The 2008 Innocenti Process.* Micronutrient Forum. Washington, DC