

**Summary report on the
Regional expert consultation
on the prevention and
management of anaemia
among women in the Eastern
Mediterranean Region**

Beirut, Lebanon
17–18 May 2023



**World Health
Organization**

Eastern Mediterranean Region

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Contents

1.	Introduction	1
2.	Summary of discussions.....	2
3.	Recommendations and conclusions	3

1. Introduction

Anaemia prevalence in the WHO Eastern Mediterranean Region ranges between 22.6% and 63% amongst pregnant lactating mothers, 27% and 69.6% amongst women of reproductive age, and 23.8% and 83.5% amongst children under 5. Overall, the Region is not on course towards meeting the global nutrition target, endorsed by the World Health Assembly in 2021 in resolution WHA65.6, of a 50% reduction of anaemia in women of reproductive age by 2025.

Anaemia is a multifactorial condition, with a complex etiology that involves both nutritional and non-nutritional factors. The misconception that iron deficiency is equivalent to anaemia may mask the need to address other potential causative factors; the contribution of iron deficiency anaemia to anaemia has been found to be less than half. Other potential contributors to anaemia in the Eastern Mediterranean Region have been identified, including micronutrient deficiencies, parasitic infestations and poor sanitation.

There is therefore a need for a framework of action to address anaemia in the Region and provide a roadmap to meet the target set by the World Health Assembly. In this context, and to promote an integrated approach to addressing anaemia among women, the WHO Regional Office for the Eastern Mediterranean held an in-depth expert consultation on 17–18 May 2023 in Beirut, Lebanon, to bring together experts in nutrition, women’s health and public health to discuss and propose a regional framework and the way forward.

Dr Ayoub Al-Jawaldeh, Regional Adviser for Nutrition, and Dr Mohamed Afifi, Regional Adviser for Women’s Health, WHO Regional Office for the Eastern Mediterranean, welcomed participants, highlighting the integrated nature of the meeting, which brought together experts from different disciplines to address the subject.

Dr Rana Hajjeh, Director of Programme Management, WHO Regional Office for the Eastern Mediterranean, in her opening remarks, highlighted the slow progress in the Region towards the World Health Assembly target of a reduction of anaemia by 50%.

2. Summary of discussions

Presentations were given on the prevalence and determinants of anaemia in the WHO Eastern Mediterranean Region and the recently-developed guidelines on the haemoglobin cut-off points to define anaemia in individuals and populations. This was followed by an extensive discussion on the WHO comprehensive framework for action to accelerate anaemia reduction.

It was noted that the lack of progress in anaemia prevalence in the Eastern Mediterranean Region is due to the lack of an in-depth analysis of anaemia (mild, moderate and severe) in countries. Most cases of anaemia (70%) in the Region are mild, with minimal severe cases. However, the focus of policies has been on moderate and severe cases instead of mild ones, hence anaemia prevalence remains at 30–40%. In Jordan, the data on anaemia was revisited and the majority of anaemic subjects were found to belong to the mild and moderate categories, and not in the severe category, which showed progress in the country. In Oman, 90% of the cases are mild, despite the presence of iron fortification. There is therefore a need to address both iron deficiency anaemia and anaemia as a whole.

Panel discussions held on the first day of the meeting addressed: 1) the strengthening of health systems and services to address anaemia; 2) barriers and opportunities to reduce the burden of anaemia; and 3) the need for a comprehensive approach involving coordination among numerous sectors and actors to implement effective actions to accelerate progress towards the global targets.

Country experts from Egypt, Jordan, Lebanon, Morocco, Oman and Pakistan shared their country-specific experiences in addressing anaemia, on the second day of the meeting. This was followed by discussion in working groups on developing a roadmap for implementation of WHO anaemia guidelines in the Region and a comprehensive regional framework for action on the prevention, diagnosis and management of anaemia among women. Extensive discussion took place on the development of a technical guide, including its different components and sections. Finally, there were presentations and discussions on global and regional strategic interventions to address anaemia through food fortification, supplementation, and diet diversity and awareness.

3. Recommendations and conclusions

Recommendations highlighted during the meeting

1. A well-defined, comprehensive, holistic approach is required to tackle anaemia through an interdepartmental and interdisciplinary initiative. To achieve this:
 - a clear understanding and diagnosis of the problem is important before taking action;
 - intersectoral analysis should be done to understand the role of different sectors at national and subnational levels;
 - it is important to address the social determinants, along with other factors/determinants (such as financial), of anaemia due to the unequal progress in the Region;
 - strong leadership and collective action should be sought;
 - priorities for each country should be assigned jointly by all sectors;
 - diagnosis and intervention ought to be at all levels of the health system and governance structures;

- mapping should be done at the provincial level to identify those provinces with the highest number of severe cases for priority intervention;
 - tools and a roadmap should be used to support advocacy with policy-makers at the national level;
 - budgeting, based on evidence and results, should be undertaken to obtain government approval for what is being advocated for;
 - a technical guide and regional agenda should be developed to support national governments;
 - data-driven platforms should be considered as an option for countries;
 - interventions should be local and context-specific;
 - operational tools should be disseminated;
 - operational tools and indicators should be country-specific, to account for the diversity of countries in the Region;
 - guidelines on implementation may be beneficial;
 - the roles of stakeholders should be outlined;
 - multisectoral responses should be strengthened rather than relying on a single delivery channel;
 - there is a need to build on ongoing efforts and embrace integration opportunities with all sectors;
 - a user-friendly monitoring system should be established.
2. A multi-system approach is necessary, rather than a health systems approach alone. This should reduce fragmentation and promote coordination with other systems, such as the education and social development sectors, for greater impact.
 3. An effective communication strategy based on formative research is needed for every action to ensure better outcomes. To achieve this, consider centralizing information. Educators need to be able to be effective in communication and the delivery of messages.

4. There is a need to strengthen data collection and monitoring due to limited and inconsistent data. Better monitoring and evaluation is needed for the enhancement of programme targeting and implementation. New modalities can help strengthen systems in countries.
5. There is a need to empower and engage communities and policy-makers. Identify high-level champions to rally commitment from decision-makers, raise awareness on the issue, secure resources and obtain buy-in from communities for sustaining the programme.
6. Implementation data from countries should be reviewed, taking into account any crises. There is a need to identify implementation challenges on the ground; these should be addressed by local solutions.
7. Strategic thinking and technical advice is needed on interventions to reach people with severe nutritional deficiencies and anaemia, while ensuring that all age groups are covered.
8. Increasing health literacy levels, with a focus on anaemia, will help people take action regarding their health. Let people take the lead on key messages and help them know where to look for the needed information.
9. Effective coverage of a package of interventions to address anaemia at key moments in the life course is foundational for improving health and well-being, and for preventing the irreversible consequences of anaemia.
10. There is a need to identify food consumption patterns in a country before deciding on how to intervene.
11. There is a need for research and data on adolescent girls, especially in areas with high adolescent birth rates and early marriages. Interventions could begin with school programmes comprising an educational curriculum, school gardens and having diverse meals in schools, as an investment in the nation's future.
12. Consider premarital screening plans for adolescents.

13. Consider supporting adolescents/youth through social innovation in health initiatives.
14. There is a need to adopt a life-course approach, with an emphasis on women of reproductive age (i.e. 15–49 years) to ensure they are included in health education efforts.
15. Due to the limited research on folate deficiency and insufficiency, folate assessment should be considered. Researchers are encouraged to undertake small-scale research on folate vitamin B12 deficiency and insufficiency. Folic acid should be included in fortification initiatives in countries of the Region.
16. Prevention usually occurs through nutritional education and awareness, supplementation, fortification and promoting dietary diversity. It should encompass reproductive health, the periods before and during pregnancy, and family planning services for women and adolescent girls, to encourage dialogue and promote adequate birth spacing. Education on the significance of micronutrients in routine diet, is highly recommended. Awareness should be increased on traditional and local foods rich in micronutrients.
17. Consider promoting the perception that putting iron tablets next to your bed can increase adherence and consequently intake.
18. Review the quality/bioavailability of iron; a diet containing adequate amounts of bioavailable iron should underpin all efforts for prevention and control of anaemia.
19. There is a need to strengthen communication between parents/caregivers and adolescents/youth.
20. Develop and implement evidence-based behaviour change communication strategies. Consumer attitudes to food might be a factor behind poor dietary diversity.
21. Revisit new recommendations and their operational aspects. Consider stratifying according to mild, moderate and severe anaemia cases.

22. Do not forget food availability and food security. High-priority actions include:

- creation of healthy food environments;
- front-of-pack labelling;
- raising awareness on safe, healthy and sustainable diets;
- fiscal policies for healthy and sustainable diets;
- public food procurement and service policies;
- food product reformulation.

23. Consider anaemia through a primary health care lens, identifying opportunities for introducing or scaling up relevant interventions. There is a need to:

- identify priority screening in health systems;
- develop, test and iterate strategies for improving the screening process for anaemia and anaemia prevention/management interventions within the existing health system;
- enhance scientific evidence, governance and monitoring capacities of health systems;
- develop policies, overall strategies and innovative models for the health system;
- ensure fit-for-purpose interventions that reflect the data, needs and demands;
- revisit the different grades and groups of anaemia;
- enhance outreach to be more sensitive and directed towards outcomes;
- have sufficiently functional frontline health services;
- have technical tools and equipment suitable for supporting frontline services;
- ensure there are sufficiently trained and motivated health care workers;

- strengthen the knowledge and counselling skills of facility-based health care workers; by giving basic knowledge on anaemia to all staff, mixed and confusing messages could be avoided;
 - ensure proper training of staff, including physicians and nurses;
 - understand the barriers and facilitators for the uptake of interventions;
 - sustain capacities, achieve effective and equitable coverage, and secure sustainability (through financial and other factors).
24. Consider the implementation of a registry in all maternal hospitals.
 25. The different sectors should address women's health, in general.
 26. Systems need to be sensitive to addressing malnutrition and the factors affecting it, while respecting national and subnational contexts.
 27. Review the method of measuring anaemia. Cheap equipment that might generate high levels of error, should be avoided. Small-scale studies that give more accurate results are highly encouraged.
 28. Cost-effective analysis should be undertaken before intervening and as a way to convince policy-makers.
 29. Consider obtaining haemoglobin and anaemia estimates using venous blood data, which are more reliable than data based on capillary blood.
 30. More research is needed on advocacy tools.
 31. Develop practical guidelines that are adapted to the country's context and are sustainable.

Additional discussion points

- There is no link between physicians, nurses, midwives and procurement personnel. Innovative thinking is needed on how to engage these groups in the prevention of anaemia.

- There is confusion on the hematocrit levels that define when to take supplements, especially when ferritin levels are low. The difference between the two needs to be properly explained.
- Four out of 10 older women are diagnosed with anaemia, but there is not enough evidence to consider them as a separate age group.
- Fortification alone is not a magic solution; while some recommend asking government and ministries to switch to whole grain flour fortification rather than white wheat flour, this approach is controversial due to phytates and cation absorption.

WHO comprehensive framework for action for accelerating anaemia reduction and guideline on haemoglobin cut-off levels

The WHO comprehensive framework for action for accelerating anaemia reduction includes the following five action areas:

- Analyse data on causes and risk factors
- Prioritize key preventive and therapeutic interventions
- Optimize service delivery across platforms and sectors
- Strengthen leadership, communication and coordination, and governance at all levels
- Expand research, learning and innovation.

The WHO is also launching a guideline on haemoglobin cut-off criteria to define anaemia among individuals and populations. The guidelines will address the following questions:

- What should the cut-offs be to define anaemia in individuals and populations?
 - How will they be defined? (based on a statistical approach or functional/clinical outcomes);
 - How should mild, moderate and severe anaemia be defined at the individual level?

- Should haemoglobin cut-offs be adjusted according to exposure to external factors/settings known to affect haemoglobin?
- How should haemoglobin concentration be measured?
- Is haemoglobin concentration an adequate marker for assessing the impact of iron deficiency interventions?
- What should the population cut-offs be to define the public health burden of anaemia?

Discussion among the working groups on developing a regional roadmap for implementation of the WHO anaemia guidelines in the Region, noted the following:

- There is a need to adopt a comprehensive step-wise approach and develop a clear roadmap (nutrition, including fortification, supplementation and dietary diversity, vs. non-nutrition) with a clear structure. This:
 - requires assigned responsibilities;
 - requires the generation of data, with a focus on the needs;
 - necessitates that each country selects which parameters and indicators are country-specific;
 - requires survey appraisal to identify what is on the ground and what is missing;
 - ensures accountability; and
 - serves as a guide for the implementation process.
- There is a need for a comprehensive technical booklet/guide for policy-makers on tackling malnutrition.
- There is a need for a national screening programme.
- There is a need to include evidence-based interventions that generate greater impact.
- Activities should be prioritized within strategies and context-specific action plans, and include targeted interventions at different levels of the health system and legislation.

- There is a need for an implementation and monitoring framework
- Mapping and engagement through multisectoral committees for implementation should include:
 - undertaking a mapping exercise of existing programmes;
 - equipping countries with practical tools to support implementation (such as a cost-benefit analysis tool and feasibility analysis);
 - engaging influential people and pioneers for support as solutions do not always stem from the health system; and
 - creating a healthy environment.

Components of the technical guide for the Region

It was suggested that the guide should:


- possibly include “iron deficiency anaemia” or “anaemia” in the title
- contain nutrition section and non-nutrition sections;
- include stakeholders in each section divided among different groups (such as governmental, dietitians, and so on);
- identify for each task an identified purpose, interventions and outcome measures.

The different sections of the guide, as agreed among the experts, should include:

- road mapping (nutrition and non-nutrition) and a search of the literature to see what has been previously done and what is currently being done (assigned authors: Dr Lara Nasreddine and Dr Nahla Hwalla);
- different clusters and multisectoral coordination (assigned authors: Dr Gihan Fouad and Eng. Rawhieh Barham);
- planning and setting cut-offs and indicators (global or national indicators) (assigned authors: Dr Hassan Aguenou and Dr Khalid El Kari);

- multisectoral implementation and methodology/techniques (authors not yet assigned);
- monitoring, evaluation and surveillance (assigned authors: Dr Lisa Rogers and Dr Quentin Johnson);
- age group; women's health (assigned author: Dr Mohamed Afifi, Dr Maissa Shawky and Dr Maha Ghobashi);
- role of health systems (assigned authors: Dr Maha Elrabbat and Dr Ibrahim Akl).

It was recommended to have a section on experiences from different countries to support implementation. This could include country-specific programmes, key messages and success stories. Including a section on risks and assumptions was also suggested.



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