

**Tackling anemia, malnutrition and food systems: An Indian perspective**

**Sukarya**



## Executive Summary

**Sukarya**, a maternal child health and nutrition organization in India, hosted the country's first International Conference on Maternal Child Health & Nutrition (ICMCHN2023) on September 22-23, 2023, in New Delhi. ICMCHN2023 provided a platform to address critical issues and challenges faced in ensuring optimal nutrition for mothers and children and to tackle anemia, malnutrition, and the food systems affecting their health. The conference brought together health experts, researchers, policymakers, public health officials, educators, and community representatives to share best practices, experiences, and promote evidence-based research.

India is facing a triple burden of malnutrition, with high rates of undernutrition, including micronutrient malnutrition, among children and increasing prevalence of overweight and obesity. Anemia is also a severe public health problem in India and impacts women, adolescent girls and young children. Investment in nutrition is crucial to achieving all the sustainable development goals (SDG), especially SDG 3, which aims to ensure healthy lives and well-being to achieve the target of reducing neonatal and child mortality and maternal mortality.

The deliberations at the conference arrived at a consensus that health and nutrition challenges must be addressed within the broader context of social, economic, and cultural factors with a holistic approach. Nutrition-specific focus areas must be closely integrated and aligned with a range of important nutrition-sensitive priorities, especially during critical periods for improved growth and development, like minimizing gender bias, adolescent and women empowerment, and promotion of hygiene and WASH practices.

Moreover, a strong political will is essential for the success of any nutrition or health intervention. In India, renewed investment in maternal nutrition and a holistic approach, including improved health, nutrition and education, should contribute to achieving the ambitious targets set by the Prime Minister's Overarching Scheme for Holistic Nutrition (POSHAN) Abhiyaan 2022. While government policies and programmes to combat undernutrition have been operational for several years, now, strengthening these initiatives and capacity building are the need of the hour.

For effective implementation of policies, all stakeholders including the government, industry, academia, NGOs, civil society and activists have to partner together. Multisectoral policies to combat anemia and malnutrition are the need, with proper coordination between various sectors. Policy implementers and policymakers should work closely together for the effective formulation of policies and their translation at ground level. Convergence between departments working in the area e.g. Women and Child Development, Health, Education is very essential. More and more nonprofit organizations should be involved with successful initiatives of government like Anemia Mukh Bharat. Issues of convergence, inclusivity and accountability should be deliberated and clearly defined in the conceptual frameworks.

The conference also reiterated that empowering local communities, particularly women, with knowledge, resources, and interventions is often transformational. Further, bringing in better policies and legislation empowering women as key change agents, ensuring protection from early marriage, and unwanted pregnancies, granting better control of resources etc. would be supportive.

A review of the approach to breaking the inter-generational cycle of malnutrition suggested investing in nutrition over the lifespan, as this has an impact over generations. The inter-generational approach can also have a lasting impact on the underlying factors of poverty and education levels in women.

The adolescent period is a critical period for intervening to break the cycle of poor growth and development in offspring. Stringent implementation of adolescent reproductive and sexual health programmes can break the vicious cycle of malnutrition by protecting and supporting adolescent health and well-being.

There is a need to identify infants at risk of poor growth and development and hence a systematic follow-up of the nutritional status of both mothers and children up to 2 years of age must be undertaken to identify growth faltering and address it at the earliest. Any growth faltering needs attention at the ground level and therefore there is a strong need to build the capacities of frontline workers to detect and prevent anemia and malnutrition by timely and regular training.

Both policymakers and policy implementors have a key role to play in making a dent in anemia. The Government's Anemia Mukht Bharat 6x6x6 strategy refers to six age groups, six interventions and six institutional mechanisms and hence requires an integrated multidisciplinary approach to achieve Anemia Mukht Bharat. Issues of compliance, absorption, palatability, convergence, timely procurement, availability, last mile delivery and regular reporting need to be addressed within this program. It was recommended that social marketing of priced IFA tablets in ANC services of private clinics, in private schools and among women of reproductive age who are in the university, in women's cooperatives, employed in factories and so on should be adopted. This marketing should follow the 4Ps of marketing – product, price, promotion and place.

The promotion of fortified foods is one of the simplest, cost-effective and sustainable public health strategies to address the challenge of micronutrient deficiencies. Fortification of staples like wheat, flour, rice, oil, milk and salt provides micronutrients to bridge the gap between need and consumption and they reduce dietary deficiencies across all population groups.

Social Behavior Change Communication (SBCC) communication should be aspirational to be effective. SBCC needs a multi-pronged approach through the use of both physical and digital tools to communicate about nutrition-specific and nutrition-sensitive interventions. A combination of SBCC strategies usually is more effective than a single one.

The mobilization of men to engage them in changing norms within families is another effective strategy. Intensifying social and behavior change communication especially by engaging men and family members and creating and engaging local champions and influencers from Women's SHGs, PRIs, teachers, and religious leaders would be effective in bringing about behavioral change.

The food system has four major components, namely the food supply chains, food environment, individual factors and consumer behavior which connect to influence the diet of a person. Hence, policymakers must adopt a food systems approach to improve nutrition security among communities i.e. a farm to fork approach. One of the priorities would be the universalization of entitlements with quality and equity, and making these systems nutrition-sensitive by introducing foods like pulses or millets.

Sustainable, healthy diet and eating practices need to be promoted as they can limit the developmental impact of nutritional deficits from early childhood. It is therefore essential to identify the barriers to food availability, accessibility and affordability for ensuring food security and develop strategies to overcome them. The promotion of local and seasonal foods like fruits and vegetables assumes great importance. Avenues of employment or value chain opportunities should be promoted to improve access to nutritious food either through the PDS or the MDM scheme or programs like community gardens/kitchen gardens.

In view of the increased prevalence of overweight and obesity, it is also critical to address the influence of advertising nutritionally deficient foods. Advocacy campaigns are needed for front-of-package labelling and warning labels on junk foods together with promotion of and support for health-affirming behavior. Media campaigns, school-based interventions, public public-private partnerships could be channels to not only create awareness and improve diets but also include marketing and advertising for nutritious foods for the poor...

Suitable strategies to ensure planetary health and sustainable food while ensuring healthy eating practices in the community need to be developed.

A multi-pronged systems and SBCC strengthening approach is needed with continued strong and comprehensive prioritization of maternal nutrition in policy and programming. The importance of delivering an evidence-based package of maternal nutrition interventions integrated within the maternal health services, ANC and postnatal care was stressed upon. Multisectoral and interdepartmental coordination and cooperation are necessary to ensure the success of any program.

The government must provide adequate budgets for programs like ICDS as well as strengthen the social protection and food entitlements framework and back this with adequate budgets. Hence, PDS must be expanded to include pulses, millets, oil, etc. Universalize entitlements, with quality and equity. Welfare measures must be a part of the mainstream and not an add-on.

Interventions must address individual, household/ community and system-related factors. A systems approach must be prioritized in integrating nutrition-specific and sensitive interventions for women and girls across sectors. Systems strengthening solutions such as skilling of FLWs & facility-based providers can be adopted.

Today, technology is another very crucial element in the planning and execution of programs. Integration of different sectors through technology linkages between frontline workers can help in faster and more coordinated action in tackling malnutrition. Tele medicine and remote monitoring AI driven tele-platforms can expand access to health services in remote and underserved areas. Health education and awareness powered chat Bots and virtual assistant can provide accurate and timely health information. Using artificial intelligence for solutions to problems is successful, based on the availability of large sets of data. Models wherein the use of technology is involved as a public-private partnership or research-business model need to be developed professionally and systematically. There is a need to also strengthen data-driven reviews, including capacity building and guidance on the use of routine data for program improvements. Research and scientific rigour must back any policy or program to be implemented. Best practices must be documented and hence, investment in research, evaluation, documentation and sharing is of utmost importance.

Nutrition is complex, and challenging and cross-cuts many domains. Therefore, an integrated approach is needed to tackle malnutrition. While agriculture and food systems need to be strengthened, community issues like nutrition education, access to safe drinking water and WASH practices also have to be addressed. Apart from increased production, transport, storage, availability, and access to nutritious food, growth monitoring, addressing adolescent health, and engagement of women and self-help groups are also essential for a powerful concerted response to multiple forms of malnutrition.

### **About Sukarya**

**'Sukarya'** is a GuideStar India Platinum-certified NGO since 2018 and has been an accredited member of 'The Credibility Alliance for Desirable Norms' since 2015. Over the last 25 years, through different projects, **Sukarya** has worked with women and children in more than 760 villages and 190 slums. The focus is on improving Maternal Child Health and Nutrition through advocacy, promotion and sensitization of communities regarding the importance of primary health care, reproductive health care and family planning, and achieving economic empowerment. Sukarya works in sync with government policies and the UN sustainable development goals. They have succeeded in making progress in reducing anemia and malnutrition in some villages and slums and have to go a long way to achieve substantial reduction.

## Introduction

**Sukarya**, a maternal child health and nutrition organization in India, hosted the country's first International Conference on Maternal Child Health & Nutrition (ICMCHN2023) on September 22-23, 2023, in New Delhi. The conference aimed to address critical issues and challenges faced in ensuring optimal nutrition for mothers and children and to tackle anemia, malnutrition, and the food systems affecting their health in developing countries. The conference sought to bring together health experts, researchers, policymakers, public health officials, educators, and community representatives to share best practices, experiences, and promote evidence-based research and enhance the understanding of maternal and child nutrition and its profound impact on lifelong health.

ICMCHN2023 provided a platform to discuss priorities for nutrition in India and feed into policy perspectives and programs. It also focused on leveraging health technologies to accelerate the reduction in maternal, child, and newborn mortality and realign integrated MCHN innovations towards improving nutritional outcomes.

## Background

India is facing a triple burden of malnutrition. On one hand, children are suffering from undernutrition coupled with hidden hunger (micronutrient deficiencies), on the other hand, the prevalence of overnutrition and/or obesity is on the rise. This substantial growth and development in the country in the past few decades has not translated into the improvement of nutrition indicators. Stunting in children (< 5 years of age) has reduced marginally but remains alarmingly high at 35.5%, while overweight has risen to 3.4% (NFHS 5, 2019-2021). Anemia is a severe public health problem in India and impacts women, adolescent girls and young children with 57% women of reproductive age and 67.1% of children under five years reported to be anemic (NFHS 5, 2019-2021). Among adolescents, more than half (10-19 years) are short, thin or overweight, while above 80% suffer from under-nutrition and micro-nutrient deficiencies and about 40% suffer from anemia according to the Comprehensive National Nutrition Survey data.

*The inter-generational cycle of malnutrition:  
A vicious cycle leading to child growth failure*

Inadequate dietary intake is often the cause of poor nutritional status in women. Less than half the women consume a wholesome diet. Undernourished women, in all likelihood, become undernourished mothers with a greater chance of giving birth to low birth-weight babies more prone to infections and growth failure. This perpetuates an inter-generational cycle of malnutrition.

Investment in nutrition is crucial to achieving all the sustainable development goals (SDG), especially SDG 3, which aims to ensure healthy lives and well-being to achieve the target of reducing neonatal and child mortality and maternal mortality.



## Proposed solutions

Ms Meera Satpathy, the founder of Sukarya, recognizing that true progress comes from addressing health challenges within the broader context of social, economic, and cultural factors, emphasized that the approach must always be holistic. Nutrition specific focus areas must be closely integrated and aligned to also address a range of important nutrition-sensitive priorities like minimizing gender bias, adolescent and women empowerment, and promotion of hygiene and WASH practices. Empowering local communities with knowledge, resources, and interventions is often transformational.

- ✓ **A Holistic Approach**
- ✓ **Strong Political Will**
- ✓ **Strengthen and Capacity-build Existing Programs**
- ✓ **Empower Communities, particularly Women**

There is an urgent need to link maternal child health, nutrition, malnutrition, and food system with human and economic progress; to strengthen nutrition interventions and ensure more efficient use of available resources. Interventions must address individual, household/community and system factors to have maximum impact. It is imperative to reach the unreached through the public health system, including the higher wealth groups, the masses and specifically young women i.e. 20-25-year-olds who are neither covered by school programs nor the public health programs.

Dr Deepika Anand reiterated that strong political will is essential for the success of any nutrition or health intervention. In India, renewed investment in maternal nutrition and a holistic approach — including improved health, nutrition and education — should contribute to achieving the ambitious targets set by the Prime Minister's Overarching Scheme for Holistic Nutrition (POSHAN) Abhiyaan 2022, the World Health Organization's Global Targets 2025 and the SDG 2030. Shri Bandaru Dattatreya, Governor, Haryana urged that more and more nonprofit organizations should be involved with successful initiatives of government like Anemia Mukh Bharat, Ayushman Bharat, Shree Anna, Surakshith Matritva Abhiyan, Pradhan Mantri Matru Vandana Yojana.

While government policies and programmes to combat undernutrition have been operational for several years, now, strengthening these initiatives and capacity building are the need of the hour. Dr Neha Bainsla reiterated that we require a comprehensive policy and a programmatic approach to curb the problem of malnutrition. Dr Vandana Prasad reiterated that it is imperative to choose effective strategies and plan suitable community interventions, keeping in mind that the processes involved are equally important. Also, with the use of MIS, research and documentation, bring learnings to the government, policymakers and other stakeholders. Larger campaigns are needed to intervene at the policy level.

## Tackling Anemia and Malnutrition

A review of the approach to breaking the inter-generational cycle of malnutrition suggests investing in nutrition over the lifespan, as this has an impact over generations. The inter-generational approach can also have a lasting impact on the underlying factors of poverty and education levels in women.



Dr Vandana Prasad supported the lifecycle approach outlined in the National Nutrition Strategy with a focus on solutions for both nutrition-specific and nutrition sensitive interventions during critical periods for improved growth and development. Dr Shobha Suri said that a focus on nutrition education, hygiene and sanitation and the adolescent girls is also necessary to deal with anemia and malnutrition.

According to Dr Monica Ruiz and Dr Uma Koirala, the adolescent period is a critical period for intervening to improve the fragile health and food behavior of the adolescent girl and to break the cycle of poor growth and development in offspring. Improving adolescent nutrition requires increased support for education about healthy nutrition, reproductive and sexual health, promoting and supporting health-affirming behaviors and habits that carry

into adulthood as well as addressing poverty, lack of access to education, lack of access to health care etc.

- ✓ **Adopt a Lifecycle Approach**
- ✓ **Focus on Nutrition-Specific & Nutrition-Sensitive Interventions**
- ✓ **Improve Adolescent Nutrition**
- ✓ **Systematic Follow-up of Mothers & Children upto 2 Years of Age**
- ✓ **Address Growth Faltering on Priority**
- ✓ **Build Capacity of Health Workers to Detect & Prevent Anemia & Malnutrition**

Several speakers spoke about the importance of the first 1000 days. Dr Basanta Kar emphasized that stunting can be irrevocable if not addressed in the first 1,000 days, leading to the inter-generational cycle of malnutrition. Actions to prevent nutrient deficiencies should be prioritized for this period.

Preventing early marriage, teen pregnancies and improving women's nutritional status especially in the preconceptual period, can go a long way in reducing stunting in the offspring. Stringent implementation of adolescent reproductive and sexual health programmes can break the vicious cycle of malnutrition by protecting and supporting adolescent health and well-being.

Professor Praveen Kumar stated that systematic follow-up of the nutritional status of both mothers and children up to 2 years of age must be undertaken to identify the gaps and address them at the earliest. There is a need to identify infants at risk of poor growth and development such as those below 1.8 kg birthweight, determine their anthropometric measurements, track their weight gain, assess the breastfeeding practices, and lastly assess maternal nutritional, health and psychosocial status. It is important to also identify mothers with psychosocial problems. Based on mothers' and children's assessment, the course of action for the management of growth faltering must be determined. Dr Richa Pandey emphasized that introduction of a nurturing care framework is crucial for proper development of the child.

Any growth faltering needs attention at the ground level and this requires that we build the capacities of frontline workers by timely and regular training. Dr Kirk Tickell suggested that empowering mothers and other family members to monitor growth faltering helps to reduce the prevalence of malnutrition among their offspring. Simple protocols must be developed for nurses and ANMs, and not just for doctors,

regarding what has to be done in high-risk conditions. Vacancies among staff delivering critical health and nutrition programs must be filled on priority.

It is important to build capacities of health workers regarding the basics of malnutrition; know existing programmes, schemes and services; respect indigenous and experiential knowledge and use Participatory Learning and Action to develop and implement contextually relevant infant and child feeding, understanding of food groups and dietary diversity, nutrition, understanding anemia, etc.

Anemia is a universal health problem in India, affecting all sections of society, though more prevalent in women of reproductive age as compared to men. Maximum women, adolescent girls and children have either mild or moderate anemia, posing a risk of maternal mortality, low birth weight and a higher risk of anemia in the newborn. However, there is a lack of recognition of anemia, which needs to be overcome. Dr Shweta Khandelwal stated that anemia prevention and management requires work on three domains (PIN): (i) the policy landscape in public health and nutrition; (ii) innovative, locally relevant solutions; and (iii) nature, nurture and nourishment. Both policymakers and policy implementors have a key role to play in making a dent in anemia.

- ✓ **Tackle Compliance, Absorption, Palatability, Convergence, Timely Procurement, Availability & Last Mile Delivery of IFA Tablets**
- ✓ **Adopt Social Marketing of Priced IFA Tablets**
- ✓ **Promote Food Fortification**

Dr Zoya Ali Rizvi threw light on the Government's Anemia Mukht Bharat 6x6x6 strategy. This refers to six age groups, six interventions and six institutional mechanisms. The strategy focuses on ensuring supply chain, demand generation and strong monitoring using the dashboard for addressing anemia, which can be due to nutritional, genetic and non-nutritional causes. An integrated multidisciplinary approach is needed to achieve Anemia Mukht Bharat because unless all sectors are aligned, success cannot be attained.

She also reiterated that issues of compliance, absorption, palatability, convergence, timely procurement, availability, last mile delivery and regular reporting need to be addressed within this program. Ongoing capacity building programs and awareness campaigns are needed. Motivated FLHW/AWW/ANM are pivotal to the success of the program. Community involvement as well as Participatory Learning Action with local contextualization is important.

At present, free distribution of iron and folic acid tablets is limited to the public health system. It may be worthwhile ensuring IFA distribution during ANC visits, through the private sector also. A two-pronged approach is needed - a free supply of IFA tablets reaching through government health, education, and ICDS systems with intensive education and counselling and the second is social marketing of priced IFA tablets in the ANC services of private clinics, in private schools and among women of reproductive age who are in the university, in women's' cooperatives, employed in factories and so on. This marketing should follow the 4Ps of marketing – product, price, promotion and place, according to Dr Sheila Vir, a public health nutritionist.

Dr Sujeet Ranjan said that promotion of fortified foods is one of the simplest, cost-effective and sustainable public health strategies to address the challenge of micronutrient deficiencies. Ms Deepti Gulati also reiterated that fortification of staples like wheat, flour, rice, oil, milk and salt provides micronutrients to bridge the gap between need and consumption and they reduce dietary deficiencies across all population groups because everyone irrespective of their nutritional or economic status consumes these staples. It is a proven simple, low-cost technology which can be adopted across populations and also through systems like PDS, and ICDS.

### **Convergence of Policies, Inclusivity and Accountability**

For effective implementation of policies, all stakeholders including the government, industry, academia, NGOs, civil society and activists have to partner together. Multisectoral policies to combat anemia and malnutrition are the need, with proper coordination between various sectors. Policy implementers and policymakers should work closely together for the effective formulation of policies and their translation at ground level. Convergence between departments working in the area e.g. Women and Child Development, Health, Education is very essential and those states where such convergence has been successful have fared better in tackling anemia and malnutrition, according to Ms. Roli Singh.

- ✓ **Need a Multisectoral Approach**
- ✓ **Ensure Convergence between Stakeholders**
- ✓ **Define Convergence, Inclusivity & Accountability in Conceptual Frameworks**
- ✓ **Promote Policies & Legislation Empowering Women**

Dr Kapil Yadav further added that policies and programmes are not elastic and cannot be modified frequently, hence while planning, the issues of convergence, inclusivity and accountability should be deliberated and clearly defined in their conceptual frameworks.

Moreover, as far as science is concerned, countries like India may be at par with global developments, but the resources to apply science for the benefit of the community are often lacking.

To strengthen nutrition policies and programs, in line with POSHAN 2.0, the focus on nutrition education of mothers, sanitation and hygiene, and nutrition care of adolescents, and pregnant and lactating women must be continued. Further, bringing in better policies and legislation empowering women as key change agents, ensuring protection from early marriage, and unwanted pregnancies, granting better control of resources etc. would be supportive. There are several challenges to maternal and child nutrition, such as reaching the most vulnerable populations, inadequate health infrastructure, socio-economic disparities, access to resources and decision making, besides the nutrition-related ones of poor diets, poor breast-feeding practices etc which need to be addressed.

## **Social Behavior Change Communication (SBCC) – Making it People’s Movement**

Social Behavior Change Communication (SBCC) is complex to develop and not easy to scale up. Hence, designing SBCC needs careful planning and thought. It is imperative to get the right message across to the right people in the right way, according to Dr Komal Goswami.

A multi-pronged approach must be adopted through the use of both physical and digital tools to communicate about nutrition-specific and nutrition-sensitive interventions as suggested by Dr Amrita Misra. The selection of these tools will depend upon the profile of the target audience. One may have to use different social media platforms for different audiences. Various supportive measures may also need to be adopted to increase traction, like mega-events, prominence on search engines etc. Positive aspiration has greater traction and may be used as a strategy. Games can also be used as effective message tools. A combination of SBCC strategies usually is more effective than a single one e.g., group counseling and home visits together are better than only home visits.

- ✓ **Adopt a Multipronged Approach**
- ✓ **Use Both Physical & Digital Tools**
- ✓ **Engage Men in SBCC to Empower Women**
- ✓ **Engage Local Champions & Influencers from Women’s SHGs, PRIs, Teachers, Religious Leaders**

Community-based events for the mobilization of men to engage them in changing norms within families is another effective strategy. Hence, Dr Hemang Shah and Dr Rachel Abraham reported that intensifying social and behavior change communication especially by engaging men and family members and creating and engaging local champions and influencers from Women's SHGs, PRIs, teachers, and religious leaders would be effective in bringing about behavioral change. Dr Sudhir Maknikar said that the SBCC communication should be aspirational to be effective.

## **Food Systems, Leveraging Agri nutrition, Environmental and Health Investments for Nutrition Outcomes**

Dr Supreet Kaur stated that the food system has four major components which are namely the food supply chains, food environment, individual factors and consumer behavior. These all connect to influence the diet of a person. So, to improve a person's diet we need to work on each and every component of the food system. The promotion of millets by the Government at all levels is an example of the food systems approach to improve nutrition security.

Dr Dipa Sinha also emphasized that policymakers must adopt a food systems approach to improve nutrition security among communities i.e. from farm to fork approach. Welfare measures should be considered within mainstream solutions and not as an afterthought. One of the priorities would be the universalization of entitlements with quality and equity, and making these systems nutrition-sensitive by introducing foods like pulses or millets. The right to life and dignity includes the right to food that is not just to fill stomachs but it has to meet nutrition goals. There is a large scope in India for the Government

to intervene in making food choices and food availability nutrition-sensitive. We need Government intervention because markets do not always deliver.

Sustainable, healthy diet and eating practices can limit the developmental impact of nutritional deficits from early childhood. Attitudes and eating behaviors are shaped by numerous forces such as family, culture, religion, and society as well as by access and affordability of nutritious foods and their availability.

Dr Snigdha Mishra emphasized that it is therefore essential to identify the barriers to food availability, accessibility and affordability for ensuring food security and develop strategies to overcome them. Subsequently, provide education on sustainable nutrition leading to a positive behavior change.

According to Dr Seema Puri, a healthy diet provides sufficient macro and micronutrients but also limits the over-consumption of nutrient-poor foods which are high in calories, saturated and trans fats, sugars and salt commonly called HFSS Foods. Indian diets also have very low diet diversity with a low vegetable, fruit and milk intake. Affordability and access are major issues. Hence, the promotion of local and seasonal fruits and vegetables assumes great importance. Avenues of employment or value chain opportunities should be also promoted to improve access to nutritious food either through the PDS or the MDM scheme or programs like community gardens/kitchen gardens.

In view of the increased prevalence of overweight and obesity, it is also critical to address the influence of advertising nutritionally deficient foods. Advocacy campaigns are needed for front-of-package labelling and warning labels on junk foods together with promotion of and support for health-affirming behavior. Media campaigns, school-based interventions, public public-private partnerships could be channels to not only create awareness and improve diets but also include marketing and advertising for nutritious foods for the poor. Further, the importance of campaigns for the diversification of diets whether in the PDS or ICDS or the midday meal scheme cannot be undermined.

Planetary health and sustainable food are important considerations today while ensuring healthy eating practices in the community. Shri Yugal Kishore Joshi highlighted the large amount of food waste, plastic waste, used clothing as well as emissions through air-conditioning, cars etc. are harming planetary health. In turn our mental and physical health are affected. These should not be overlooked and suitable strategies developed.

- ✓ **Adopt a Food Systems Approach**
- ✓ **Promote Sustainable Healthy Diet and Eating Practices**
- ✓ **Ensure Welfare Measures to be Nutrition-sensitive**
- ✓ **Universalize Entitlements with Quality and Equity**
- ✓ **Develop Strategies to Overcome Barriers to Food Availability, Accessibility & Affordability**
- ✓ **Limit Over-Consumption of Nutrient-Poor Foods**
- ✓ **Advocate for Front of Package Labelling & Warning Labels on Junk Foods**
- ✓ **Promote Planetary Health**

## Adopting a Systems Strengthening Approach

A multi-pronged systems and SBCC strengthening approach is needed with continued strong and comprehensive prioritization of maternal nutrition in policy and programming. Dr Sebanti Ghosh stressed the importance of delivering an evidence-based package of maternal nutrition interventions integrated within the maternal health services, ANC and postnatal care. According to her, in India we have both the health and the ICDS system and we need a combination of system strengthening approaches and SBCC approaches. While we focus on improving coverage, the two main issues are that we cannot miss out on the quality and equity. Hence, multisectoral and interdepartmental coordination and cooperation are necessary to ensure the success of any program.

The government must provide adequate budgets for programs like ICDS as well as strengthen the social protection and food entitlements framework and back this with adequate budgets. The right to life and dignity includes the right to food. Food is not just meant to fill stomachs but needs to meet nutrition goals. Hence, PDS must be expanded to include pulses, millets, oil, etc. Universalize entitlements, with quality and equity. Welfare measures must be a part of the mainstream and not an add-on.

Creches and daycare centres can play a significant role in freeing the time of mothers and siblings. Community-run crèches provide care, supervised feeding, growth monitoring and referral. Under the PALNA Scheme, 17,000 crèches are planned to be established in states and union territories. Creches can play an important role in identifying children suffering from Severe Acute Malnutrition and moving them to the normal or moderate category.

Interventions must address individual, household/ community and system-related factors. A systems approach must be prioritized in integrating nutrition-specific and sensitive interventions for women and girls across sectors. Systems strengthening solutions such as skilling of FLWs & facility-based providers focusing on both technical content and counselling skills combined with supportive supervision including mentoring /coaching and problem-solving support can be adopted as suggested by Mr. Thomas Forissier.

- ✓ **Need a Multi-Pronged Systems & SBCC Strengthening Approach**
- ✓ **Strengthen the Social Protection and Food Entitlements Framework**
- ✓ **Strong & Comprehensive Prioritization of Maternal Nutrition in Policy and Programming**
- ✓ **Welfare Measures must be Part of the Mainstream**
- ✓ **Combine Systems Strengthening Solutions with Supportive Supervision**

## **Role of Data, Technology and Implementation Research in Maternal and Child Nutrition Interventions**

Today, technology is another very crucial element in the planning and execution of programs.

Integration of different sectors through technology linkages between frontline workers can help in faster and more coordinated action in tackling malnutrition.

Dr. Dinesh Baswal drew attention to some technology interventions which have successfully been integrated into antenatal care in India. He said that tele medicine and remote monitoring AI driven tele-platforms can expand access to health services in remote and underserved areas. Pregnant women and mothers can receive essential prenatal and postnatal care through virtual consultations and remote monitoring devices enhancing the chances of healthier outcomes. Health education and awareness powered chat Bots and virtual assistant can provide accurate and timely health information.

- ✓ **Integrate Different Sectors Through Technology Linkages**
- ✓ **Use Artificial Intelligence for Solutions**
- ✓ **Strengthen data-driven reviews**
- ✓ **Science, Policy & Programmes to Work Together**
- ✓ **Document Best Practices**

Using artificial intelligence for solutions to problems is successful, based on the availability of large sets of data. Dr. Suman Chakrabarti said that the role of accurate, correctly captured data for analysis cannot be undermined. One needs to focus on the geographies that one wants to capture. This should primarily be where actual decision-making is done e.g. at the district level or state level. A background review of the implementation of existing policies at this level would further help determine the effectiveness of the intervention. Such analyses would also help compare different geographies and AI models could help predict coverage, effectiveness, and sustainability of the intervention. Models wherein the use of technology is involved as a public-private partnership or research-business model need to be developed professionally and systematically.

Science, Policy and Programmes have to work together as their partnership is key and they cannot operate in silos. Hence, research and scientific rigour must back any policy or program to be implemented. Programs will also evolve as new research emerges as these new strategies get incorporated into the policies and programmes e.g., the debate whether IV iron administration is more effective than oral iron to combat anemia.

Learnings from the positive experiences of other countries, particularly neighbouring countries, and even different communities in India could provide great insights into program management. For example, Nepal's experience reveals that it is important to focus on the effective implementation of RH-related policies & programmes. Interventions should address multiple barriers to iron supplement use and the socio-ecological model. They must be tailored to a woman's reproductive life course stage –adolescence, non-pregnancy and pregnancy. Best practices must be documented and hence, investment in research, evaluation, documentation and sharing is of utmost importance.

## Addressing Multidimensional Issues related to Malnutrition

Nutrition is complex, and challenging and cross-cuts many domains. Therefore, while agriculture and food systems need to be strengthened, community issues like nutrition education, access to safe drinking water and WASH practices also have to be addressed, as reiterated by Dr Shobha Suri. Apart from increased production, transport, storage, availability, and access to nutritious food, improved methods of food preparation, processing and food safety are essential for a powerful concerted response to multiple forms of malnutrition.

Using an integrated approach to tackle malnutrition has brought about a positive impact which included a combination of health education and livelihoods intervention aimed at addressing the issue of undernutrition among children, as reported by Dr Kirk Tickell. Growth monitoring, home visits, making children school-ready, building mental health resilience skills among adolescents, and engagement of women and self-help groups are some interventions which could be addressed holistically.

The nutritional status of women and children is influenced by different social norms and practices like gender discrimination and early marriage. It thus becomes imperative to make communities aware of gender and nutrition, their rights and entitlements and issues about early marriage. Participatory learning and action have yielded results by providing a platform for discussing the benefits of institutional delivery and birth preparedness, take-home rations, the negative impacts of early marriage and the value of education for girls.

Anemia and mental health have been linked. Maternal depression in the perinatal period is linked to a wide range of adverse child outcomes including compromised physical and cognitive development, and behavioral difficulty. There exists a lack of social support around mental health issues and cultural and social norms that perpetuate women's suffering. Social as well as health system support to tackle the issue of mental health among women of reproductive age thus gains significance, as suggested by Dr Karen Mc Donnell.

Food safety is a big challenge in overcoming child malnutrition. Diarrhoea and other infectious diseases are major causes of infant mortality. Poor environmental hygiene and sanitation, and unsafe drinking water are the root cause of most foodborne diseases. Dr Pulkit Mathur suggested that health and nutrition promotion activities will be more effective if they consider these environmental factors alongside the nutritional interventions. Concurrently, we are also being affected by the emergence of newer infectious diseases like COVID along with the increasing prevalence of chronic diseases.

- ✓ Use a Multisectoral Integrated Approach
- ✓ Adopt participatory learning approaches
- ✓ Address Women's Mental Health Concerns
- ✓ Focus on Food Hygiene and Safety
- ✓ Consider Emergence of Newer Infectious Diseases



### **List of resource persons**

- Ms. Roli Singh, Additional Secretary Ministry of Health and Family Welfare, Government of India
- Dr. Kirk Tickell, MBBS PhD, Lead Epidemiologist for the Childhood Acute Illness and Nutrition (CHAIN) Network study, and lead of the Migori Hospital (Kenya) site, University of Washington
- Dr. Vandana Prasad, Founder Secretary, Public Health Resource Network and Advisor, Community Processes and CPHC, NHSRC, New Delhi
- Dr. Monica S. Ruiz, PhD, MPH, Associate Professor at the Department of Prevention and Community Health, at The George Washington University School of Public Health and Health Services, USA.
- Mr Basanta Kar, Nutrition Man of India and Global Nutrition Leadership Award Recipient, Bhubaneswar
- Dr. Sebanti Ghosh Sr. Technical Advisor Nutrition, Alive & Thrive South Asia, New Delhi
- Dr. Zoya Ali Rizvi, Deputy Commissioner Nutrition Division Ministry of Health and Family Welfare, Government of India
- Dr. Snigdha Misra, Associate Professor, International Medical University, Kuala Lumpur, Malaysia
- Dr Umesh S Charantimath, Associate Professor, Department of Community Medicine Jawaharlal Nehru Medical College, Belagavi, Karnataka
- Dr. Dipa Sinha – Assistant Professor at the School of Liberal Studies, Ambedkar University, Delhi
- Professor Uma Koirala Tribhuvan University, Kathmandu Nepal
- Dr. Kapil Yadav, Professor, Centre for Community Medicine, All India Institute of Medical Sciences (AIIMS), New Delhi and Lead NCEAR-A
- Dr. Sujeet Ranjan, Associate Director – Nutrition at Tata Trusts, New Delhi
- Dr. Shweta Khandelwal Senior Advisor, Nutrition, JHPIEGO, New Delhi
- Dr. Shoba Suri Senior Fellow, Health Initiative, Observer Research Foundation, New Delhi
- Dr. Komal Goswami, Chief of Party, RB Projects, PLAN INDIA, New Delhi
- Dr. Amrita Misra Director – Health and Nutrition Project Concern International (PCI), India, New Delhi
- Dr. Hemang Shah Director- Child Health and Development Children’s Investment Fund Foundation, Delhi
- Dr Richa S Pandey, Nutrition Specialist, UNICEF, New Delhi
- Dr. Sudhir Maknikar, Director- Family Health, South Asia, PATH, New Delhi
- Ms. Neha Rachel Abraham Consultant Advocacy, Knowledge Management at ROSHNI – Centre of Women Collectives led Social Action, New Delhi Reflections on the day
- Ms. Meera Satpathy Chairperson Sukarya
- Professor Aasha Kapur Mehta, Chairperson, Centre for Gender Studies, Institute for Human Development, New Delhi and Former Professor, Indian Institute of Public Administration

- Dr. Sheila C. Vir, Director, Public Health Nutrition and Development Centre, Delhi
- Dr. Karen McDonnell, Associate Professor, Department of Prevention and Community Health, The George Washington University School of Public Health and Health Services, USA
- Professor Praveen Kumar, Director Professor of Pediatrics Lady Hardinge Medical College & Associated Kalawati Saran Children's Hospital, New Delhi & Deputy Lead cum Coordinator, National Centre of Excellence for Management of Severe Acute Malnutrition Network (NcoE-SAM)
- Dr. Mahesh Srinivas, Director – Public Health, American India Foundation, Delhi
- Dr. Deepika Anand, Operations Officer Health, Nutrition & Population Global Practice, The World Bank, New Delhi
- Ms. Neha Bainsla, Engagement and Partnerships Manager at Sight and Life, New Delhi
- Mr. Sumanthra Rao, Managing Director India Dimagi, New Delhi
- Dr. Aparna Hegde, Urogynecologist, Researcher, Social Entrepreneur, Founder and Managing Trustee, ARMMAN, Mumbai
- Mr. Thomas Forissier, Director Programs South Asia Alive & Thrive / FHI Solutions, New Delhi
- Dr. Dinesh Baswal, Ex-Joint Commissioner, Maternal health at Ministry of Health and Family Welfare, Government of India
- Dr. Suman Chakrabarti Associate Research Fellow IFPRI, New Delhi
- Mr. Sanyam Kapur Head - M&E and Implementation Antara Foundation, New Delhi
- Dr Seema Puri, Professor (Retd.), Department of Nutrition Institute of Home Economics University of Delhi
- Ms. Deepti Gulati, Industry Chair Professor Nutraceuticals and Fortification, at NIFTEM
- Dr. Pierre P. M. Thomas, Ph.D. Assistant Professor, Public & Global Health Maastricht University, Maastricht, Limburg, Netherlands
- Dr. Pulkit Mathur, Professor and Head, Department of Food and Nutrition and Food Technology, Lady Irwin College, University of Delhi
- Dr. Supreet Kaur, Senior Policy Advisor, Global Alliance for Improved Nutrition (GAIN) India