International Conference
on
Maternal Child Health and Nutrition
Tackling anemia, malnutrition, and food systems affecting health in developing countries
22 - 23 September 2023
at
FICCI Federation House,
Tansen Marg, New Delhi

The Conference Note

1. Introduction

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

2. The purpose and associations for the Conference

As the sequel to the first conference held in September 2018 before COVID, attended by more than 200 subject-matter-experts, including those from Nepal, Bangladesh, Malaysia, and the United States, **Sukarya** planned its 2nd International Conference on Maternal Child Health & Nutrition to be held in New Delhi, September 22-23, 2023. The conference's theme will be "*Tackling anemia, malnutrition, and food systems affecting health in developing countries*."

Despite several efforts of the government, according to National Family Health Survey NFHS-5 (2019-21), 67.1% children below the age of 5 continue to grapple with anemia and 57% of women between the age of 15 and 49 are anemiaic.

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

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

The conference is being held in partnership with:

Knowledge Partners

- National Centre of Excellence and Advanced Research on Anaemia Control (NCEAR-A)

- International Food Policy Research Institute (IFPRI)
- Department of Global Health at University of Washington, Seattle WA.

Strategic Partner

- The Maternal & Child Health program at the Milken School Institute of Public Health at George Washington University, Washington D.C.

Global Community Partner

- Global Washington

By spotlighting how public health influences social and demographic progress and translating the insights to address the growing malnutrition and anemia burden of the country, ICMCHN2023 seeks to create a platform for dialogue and knowledge exchange towards a healthier future.

3. Inaugural Session

Speakers in the Inaugural Session

- Context Setting: Ms Meera Satpathy, Chairperson, Sukarya
- Voices from the grassroots: Panchayat Leaders and Community Members from villages and slums in Rajasthan, Haryana and Delhi introduced by Amita Pandey, Sukarya

Context Setting: Ms Meera Satpathy, Chairperson, Sukarya

Sukarya's journey began 25 years ago with a resolute vision – to create lasting impact at the grassroots level. Our approach has always been holistic, recognizing that true progress comes from addressing health challenges within the broader context of social, economic, and cultural factors. Our focus areas are closely integrated and aligned to address a range of important priorities like gender bias, adolescent empowerment, and financially empowering the women.

We have witnessed the transformational power of empowering local communities with knowledge, resources, and intervention. The stories of mothers, children, and adolescent girls who have overcome anemia and thrived despite adversity, and communities that have come together to foster change are the testament of our collective efforts.

Sukarya stands as a shining example of an effective change-making NGO that achieves remarkable results with minimalistic resources and a dedicated team of volunteers. Here's why it's so impactful: Focused Mission; Community-Centric Approach; Volunteers' Dedication; Efficient Resource Utilization; Innovative Solutions; Advocacy and Collaboration; And our emphasis on Sustainability, ensuring, that the positive changes we initiate continue long after our direct involvement. In essence, **Sukarya** demonstrates that dedication, a clear vision, and a heart-driven team of volunteers and staff can achieve significant change even with limited support and serve as an inspiration for other NGOs looking to make a meaningful impact on the world.

While initiatives of government continue to prioritize children's nutritional and health needs, today we need an accelerated investment efforts and resources to make India **Anemia-Free**! Which is why we need to empower non-profits working at the grassroots under the vision of **Anemia Mukt Bharat.**

We need to invest in building resilient communities,
We need to nurture local leadership,
We need to foster sustainable change that ripples through generations.

It is possible to push boundaries and, it is possible to champion CHANGE, when hearts and hands unite even with minimalistic resources. The challenges of anemia and malnutrition are formidable, but so is our collective resolve. Let us seize this moment to advocate for the empowerment of Sukarya and other grassroots-level NGOs across the globe, to demand a better future for those who deserve it the most.

Today, there is an urgent need to link maternal child health, nutrition, malnutrition, food system with human and economic progress; to strengthen nutrition interventions and ensure more efficient use of available resources. So, let us embark on this journey together, let us remember that our actions today will determine the health and wellbeing of generations yet to come. Let us leave a legacy of compassion, determination, and collaboration that inspires change far beyond the confines of this Conference Hall.

We must free women and children from the prevalence of anemia and malnutrition in our society. This is a dire need and foremost priority. So, the **Time is to act Now**.

Voices from the grassroots

Voices from the grassroots, including Sarpanch, frontline workers and beneficiaries receiving services, stressed the difference that **Sukarya** has made in the lives of women and children in the villages and slums through increased institutional delivery, implementation of breastfeeding practices, immunization, using iron kadhai for cooking greens and holding regular meetings and discussions regarding public health and nutrition, etc.

The monthly health clinic services has played a critical role in addressing the fundamental primary maternal and child health needs, ensuring that mothers and children in the community receive adequate health care at their doorstep. The clinic provides services such as antenatal and post-natal check-ups, which are essential in ensuring that the mother and child are healthy during and after pregnancy. Additionally, it provides medicines and food supplements that help improve the health of mothers and children. The clinic also offers counseling services, which are essential in addressing the mental health needs of mothers and children.

One of the critical roles of the clinic is identifying, detecting, and diagnosing anemia and malnutrition among mothers and children. The clinic helps to detect these conditions early and provide appropriate interventions to manage them. Trained community health workers visit the homes of pregnant and lactating mothers to ensure they take care of themselves and their children. Behavior Change Communication meetings with key community stakeholders help to improve maternal child health and nutrition status.

Adolescent girls and women often face discriminatory practices like early marriage, discontinuing education, and sexual harassment. **Sukarya** has been instrumental in educating and empowering adolescent girls on reproductive sexual health issues their rights, and building their knowledge and awareness on gender justice and family life, and helping to develop in them the qualities, capacities, and attitudes to have a successful life. The lead girls of **Sukarya** worked as "Corona Warriors." They did excellent work in the community by motivating people to get vaccinated and providing food and medical supplies to the poor.

4. The Chief Guests

- **The Chief Guest** was Honorable Shri Bandaru Dattatreya, Governor, Haryana and **Guest of Honour** was Shri Yugal Kishore Joshi Mission Director – LiFE, NITI Aayog

Shri Bandaru Dattatreya

Governor Shri Bandaru Dattatreya congratulated **Sukarya**, based in Haryana, for hosting the International Conference on Maternal Child Health and Nutrition. He also appreciated the partners National Centre of Excellence and Advanced Research on Anaemia Control (NCEAR-A), International Food Policy Research Institute (IFPRI), The Maternal & Child Health program at the Milken School Institute of Public Health at George Washington University, Washington D.C., the University of Washington, Seattle WA., and Global Washington to take this conference to a great level. He was proud that a nonprofit has given importance to anemia and malnutrition. He praised the Chairperson, Meera Satpathy, for organizing this conference and that she takes the lead to work in sync with government policies and schemes in all the programs to get the best results. He expressed special appreciation that most panelists were women in the final session. He also mentioned “National Anemia Day” being held on 21 March every year. He urged that more and more nonprofits should be involved with successful initiatives of government like Anemia Mukt Bharat, Ayushman Bharat, Shree Anna, Surakshith Matritva Abhiyan, Pradhan Mantri Matru Vandana Yojana. Moreover, he mentioned about the passing of the Women’s Reservation Bill in Parliament, as a big, bold and historic step for the country. In the end he congratulated team **Sukarya**, speakers and participants for the success of the conference.

Shri Yugal Kishore Joshi

Shri Jugal Kishore Joshi mentioned that the Swachh Bharat movement in India focused on making India open defecation-free by building roughly 110 million toilets and empowering women to lead the program. In 2014, 60% of India's population defecated in the open, resulting in 6% of the country's GDP loss. UNICEF did a study that Indian households in open defecation-free villages saved roughly 50,000 rupees per year on medical expenses because of safe sanitation. In 2018, there was a WHO study that three lakh deaths were averted because of the Swatch Bharat campaign.

Moreover, he added that in 2019, India launched a mission called Jal Jeevan to provide tap water supply, safe tap water, and appropriate quality to every household. The water supply program has gone from 17-18% to 63% in five years. A study by Professor Michael Kramer

found that providing safe drinking water supply would save 1.36 lakh lives of children under five.

The lifestyle we are adopting - health, food, water, and fashion impacts the world and climate. In China alone, 9 million tons of packaging materials were used in 2019, equivalent to 700 million trees. In the world today, 74 kilograms of food is wasted per capita, 20,000 plastic bottles are produced daily, and 60 bottles per capita are consumed. In Britain, roughly 50 billion US dollars of clothes are there which were never used. All these things are impacting our earth.

He reiterated that in 2021, Mission LiFE was announced to bring individual behaviors at the forefront of the global climate action narrative. The Prime Minister of India in COP 26 asked people to tweak their lifestyles to save the planet. Set the temperature of the air conditioner to 24 instead of 17. Use escalators public transport, and do other simple things that help to save our planet.

5. Topics covered in the Conference

In addition to the Inaugural Session and Reflections Session, six Technical Sessions were organized on the following subjects:

Technical Session 1 - Tackling Anemia and Malnutrition

Technical Session 2 – Convergence and Policies – inclusive and accountable

Technical Session 3 – Social Behaviour Change Communication (SBCC) – Making it a People's Movement

Technical Session 4 – Tackling Anemia and Malnutrition

Technical Session 5 – Role of data, technology and implementation research in maternal and child nutrition interventions

Technical Session 6 - Food Systems, Leveraging Agri nutrition, Environmental and Health Investments for Nutrition Outcomes

6. Session Chairs and Panelists are listed below:

Technical Sessions, Chairs and Panelists

Technical Session 1 - Tackling Anemia and Malnutrition
Chair and Co-Chair: Ms. Roli Singh and Dr. Kirk Tickell
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

Technical Session 2 – Convergence and Policies – inclusive and accountable
Chair and Co-Chair: Dr. Seema Puri and Dr. Karen McDonnell

- 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

Technical Session 3 – Social Behaviour Change Communication (SBCC) – Making it People's Movement
Chair and Co-Chair: Dr. Dinesh Baswal and Dr. Pierre P. M. Thomas

- 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

- Mr Basanta Kar Nutrition Man of India and Global Nutrition Leadership Award Recipient, Bhubaneswar
- Professor Aasha Kapur Mehta, Chairperson, Centre for Gender Studies, Institute for Human Development, New Delhi and Former Professor, Indian Institute of Public Administration, New Delhi

Technical Session 4 – Tackling Anemia and Malnutrition
Chair and Co-Chair: Mr Basanta Kar and Professor Uma Koirala

- 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. 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. 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

Technical Session 5 – Role of data, technology and implementation research in maternal and child nutrition interventions
Chair and Co-Chair: Dr. Sujeet Ranjan and Dr. Snigdha Misra

- 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

Technical Session 6 - Food Systems, Leveraging Agri nutrition, Environmental and Health Investments for Nutrition Outcomes
Chair and Co-Chair: Dr. Dipa Sinha and Dr. Monica S. Ruiz

- 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

7. Major Issues raised and Findings of the Conference

Technical Sessions

Technical Session 1 - Tackling Anemia and Malnutrition
Chair and Co-Chair: Ms. Roli Singh and Dr. Kirk Tickell

Dr. Vandana Prasad
Dr. Monica S. Ruiz
Mr Basanta Kar
Dr. Sebanti Ghosh
Dr. Zoya Ali Rizvi
Dr. Snigdha Misra
Dr Umesh S Charantimath

Key Issues and Suggestions

- Despite a favourable Policy landscape, we have a triple burden of maternal undernutrition, overnutrition & maternal anemia. Diets of women and girls remain poor. A multi pronged systems and SBCC strengthening approach is needed with continued strong and comprehensive prioritization of maternal nutrition in policy and programming.

- Between NFHS 4 and 5, anaemia among all women aged 15-49 years increased from 53.1% to 57.2%. The increase among tribal women was from 59.9% to 64.6%. Published evidence suggest that iron deficiency in infancy may cause cognitive and behavioural abnormalities which may persist for decades despite iron repletion.

- Anaemia among women aged 15-49 years decreased in the states and Union Territories like Arunachal Pradesh, Andaman and Nicobar Islands, Andhra Pradesh, Haryana, Chandigarh, Tamil Nadu, New Delhi, Dadra and Nagar Haveli and Daman and Diu, Lakshadweep, Himachal Pradesh, Meghalaya, Uttar Pradesh and Uttarakhand. Kerala demonstrated a reduction of anaemia among adolescent girls (aged 15-19 years).

- The highest reduction of anaemia was in Sikkim in a 10-year period between NFHS-3 (2005-06) and NFHS-4 (2015-16) from 59.5 to 34.9%.

- Under nourishment leads to stunting, wasting and micronutrient deficiency.
- 1% loss in adult height due to stunting leads to 1.4% loss in productivity. Stunting reduces IQ scores by 5-11 points**.** Eliminating anaemia can increase adult productivity by 5 to 17%.
- Addressing malnutrition and anaemia will address cognitive and other developmental deficits that affect lifetime growth and productivity through improved birth outcomes, growth and outputs.
- The Government of India has always been cognizant of the importance of tackling Anemia for a long time. Maximum women and children have either mild or moderate anemia. Government is implementing the Anemia Mukt 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.
- Issues of compliance, absorption, palatability, convergence, timely procurement, availability and last mile delivery and regular reporting need to be addressed. Ongoing capacity building is needed. Community involvement as well as Participatory Learning Action with local contextualization is important.
- We also need to address issues of absorption by creating awareness of reduction of absorption of iron due to certain practices such as consuming tea or coffee after food. Or phytates in foods. Motivated FLHW/AWW/ANM are pivotal to the success of the program
- It is important to build own capacities 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 food groups and dietary diversity, nutrition, understanding anaemia, etc. Choose your strategies and plan community interventions. Use MIS, Research and Documentation. Then bring learnings to government and use larger campaigns for intervening at policy level.
- Make communities aware of Gender and nutrition, their rights and entitlements and issues pertaining to 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, negative impacts of early marriage and the value of education for girls.
- Community-run crèches provide care, supervised feeding, growth monitoring and referral. Through philanthropic initiatives and WCD Department, Government of Odisha has covered 150 community based crèches in 13 blocks and 5 districts between May 2017 – April 2022. 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.

- Campaigns can play an important role in enabling diversity in diets and provisioning in programs such as PDS, MDM, ICDS. Any growth faltering needs attention at the ground level and this requires that we build the capacities of Frontline workers. 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 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 behaviour. Games can be used as messages tools.
- Adolescents are 20% of the total world's population. It is estimated that there will be 1.13 billion adolescents in the world by 2025. 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, society as well as by access to and affordability of nutritious foods and its availability.
- Iron deficiency anemia (IDA) is the major anemia during adolescence and may lead to both physical and cognitive impairments. Obesity and malnutrition: two sides of the same coin. Advertising deliberately targets youth.
- 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.
- Interventions must address individual, household/ community and system related factors. Optimize and strengthen existing contacts/platforms with all pregnant women during facility and community /outreach. 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.
- Strengthen data-driven reviews, including capacity building and guidance on use of routine data for program improvements.
- Intensify social and behavior change communication especially engaging men and family members and creating and engaging local champions & influencers from Women's SHGs, PRIs, teachers, religious leaders. Interventions must address individual, household/community and system factors to have maximum impact.
- Address drivers of food choices and improve access to affordable safe nutritious food for girls & women including pregnant women. Address socio-economic and cultural determinants of women's health & nutrition care seeking and behaviours such as girls' education, age at marriage, early pregnancy. Identify effective models of implementation at last mile including better understanding of enablers and barriers.

- The First 1000 days of Life or the period from conception through the age of 2 years impacts the child's long-term health outcomes. It affects biological and metabolic development and leads to several noncommunicable diseases. How well or how poorly mothers and children are nourished and cared for during this time has a profound impact on a child's ability to grow, learn and thrive. This is because the first 1,000 days are when a child's brain begins to grow and develop and when the foundations for their lifelong health are built. Optimal nutrition status during pregnancy is critical. Nutrient deficiency impacts early embryonic development, organogenesis and neural development. Nutrients such as the carotenoids (lutein + zeaxanthin), choline, folate, iodine, iron, omega-3 fatty acids and vitamin D play critical roles during fetal development. Nutrient deficiencies in infants and toddlers has long-term consequences for growth and development.
- 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.
- Provide education on sustainable nutrition leading to a positive behaviour change.
- Identify the barriers of food availability, accessibility & affordability for ensuring food security
- Anemia increases the risk of adverse maternal and fetal outcomes (maternal mortality, preterm and low birth weight (LBW), perinatal and neonatal deaths). Despite active transport via placenta, insufficient iron may be transmitted to the developing foetus leading to long term neuro-developmental sequelae. Studies have shown that, oral iron may not optimally reach the developing foetus.
- In this context, a study by J N Medical College in Karnataka is trying to determine ways of reducing anemia in pregnancy in India through administration of IV iron formulations. The study tries to establish whether singleton pregnant participants with moderate iron deficiency anemia who are randomly assigned to an IV iron arm and receive, early in the second trimester of pregnancy, a single dose of IV iron for treatment of anemia and the currently recommended daily dose of folic acid will have a higher conversion rate to non-anemic status in the last trimester of pregnancy or prior to delivery than pregnant women assigned to an oral iron control arm and provided iron and folic acid tablets for treatment. Also, whether pregnant participants assigned to an IV iron treatment group will have a lower rate of LBW deliveries compared to those in the oral iron group. In other words, will IV iron have a more favorable impact on other maternal and neonatal outcomes than oral iron under specific conditions. The results of the study will be available in July 2024.

Technical Session 2: Convergence and Policies – inclusive and accountable
Chair and Co-Chair: Dr. Seema Puri and Dr. Karen McDonnell

Dr. Dipa Sinha
Professor Uma Koirala
Dr. Kapil Yadav

Dr. Sujeet Ranjan,
Dr. Shweta Khandelwal
Dr. Shoba Suri

Key Issues and Suggestions

- There is a lot of scope in India for Government to intervene in making food nutrition sensitive. We need Government intervention because markets do not always deliver.
- 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, we must expand PDS to include pulses, millets, oil, etc. Universalize entitlements, with quality and equity.
- Government must provide adequate budgets for programs like ICDS. Strengthen the social protection and food entitlements framework and back this with adequate budgets. Creches and day care centres can play a significant role in freeing the time of mothers and of siblings. Welfare measures must be a part of the mainstream and not an add on.
- The learning from the experience of neighbouring countries like Nepal is that it is important to focus on 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 women's reproductive life course stage – adolescence, non pregnancy & pregnancy. Conscious investment is needed in human resources focusing on life cycle approach of nutrition sufficiency.
- Science, Policy and Programmes have to work together as their partnership is key and we cannot operate in silos.
- Both policy makers and policy implementors have a key role to play in making a dent on anaemia. We need to overcome the lack of recognition of the anaemia. We also need capacity building and decentralised planning. India is at par with global developments on science. However, resources are needed to apply this science for the benefit of all.
- In the critical window of growth, a high percentage of children are undernourished and are not consuming the necessary vitamins and minerals they need to thrive. One of the panelists argued that food fortification is one of the simplest and most sustainable public health strategies to address the challenge of micronutrient deficiencies.
- Nutrition is complex, challenging and cross cuts many domains. Therefore, an integrated multidisciplinary approach is needed to achieve Anemia Mukt Bharat because unless all sectors are aligned, success cannot be attained. On the one hand, Agriculture and food systems need to be strengthened. However, apart from increased production, transport, storage, availability, access as well as methods of food preparation and hygiene matter for a powerful concerted response to multiple forms of malnutrition.

- There are several interesting frameworks that can be used to identify the different factors that determine outcomes, such as the Multisectoral Nutrition Governance Framework.
- Anemia prevention and management requires that we work on three domains. These are (i) the Policy landscape in Public Health and Nutrition; (ii) Innovative, locally relevant solutions; and (iii) Nature, Nurture and Nourishment.
- Maternal undernutrition contributes to maternal mortality, and a life cycle of undernutrition for the child. In India, maternal undernutrition account for one-fifth of all incidence of childhood stunting. It is determined by socioeconomic factors, dietary practices, access to healthcare, cultural and societal norms as well as women's empowerment, education and control over household resources.
- Contributory risk factors to childhood stunting include maternal height, lack of maternal education, poor feeding practices and healthcare, low standard of living, and lack of access to a clean toilet.
- Hence, it is important to strengthen healthcare infrastructure by investing in healthcare facilities and skilled personnel; promote and support healthy nutrition practices and encourage community participation in nutrition programs.

Technical Session 3: Social Behaviour Change Communication (SBCC) – Making it a People's Movement
Chair and Co-Chair: Dr. Dinesh Baswal and Dr. Pierre P. M. Thomas

Dr. Komal Goswami
Dr. Amrita Misra
Dr. Hemang Shah
Dr Richa S Pandey
Dr. Sudhir Maknikar
Ms. Neha Rachel Abraham

Key Issues and Suggestions

- SBCC can play an important role in addressing barriers and challenges. For instance, if the problem is the low consumption of IFA dosage by adolescent girls and pregnant women, a formative assessment is needed to understand conscious and non-conscious behavior drivers of beneficiaries that inhibit/encourage IFA uptake.
- Leverage the insights from the formative assessment while developing targeted IEC for the program. Support the national Mass Media campaign under the ambit of Anemia Mukt Bharat by optimizing channel mix for the state. Develop scientifically backed designed collaterals to improve uptake and adherence to IFA.
- Equip the FLW and the beneficiary to improve uptake and adherence.

- The Deendayal Antodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM) of the Ministry of Rural Development is one the largest programs to create women's collectives or Self-Help Groups.
- These community institutions are primarily created with the aim to reduce poverty by access to gainful self-employment and skilled wage employment opportunities.
- Each state has a State Rural Livelihoods Mission (SRLM) to implement the four core components of DAY-NRLM: a) social mobilization for financially sustainable community institutions of rural poor women; (b) financial inclusion; (c) sustainable livelihoods; and (d) social inclusion, social development and access to entitlements through convergence.
- Integration of Health and Nutrition in the core components of DAY-NRLM finds a symbiotic fit with reduction of multidimensional poverty
- The SHG platform allows for leveraging multiple pathways that address malnutrition.
- Evidence is now available from multiple sources which proves the utility of the SHG platform for interventions related to improving dietary and nutrition practices.
- WhatsApp can be leveraged to build organic communication in-roads in the communities.
- Campaigns can be designed to shift men's attitudes towards collective responsibility. For instance, a 15-video series of real-life heroes was run as a campaign to foster a compassionate image for men and encourage them to take care of the health and nutrition of their wife and children.
- Around half of those who receive the content engaged with it by sharing, liking and giving comments.
- Digital Media helps amplify the reach on multiple platforms such as Facebook, Instagram, YouTube, Moj etc. The health and nutrition outcomes improved for women who's husbands were aware of the campaign communications.
- Use of a mascot of a girl child with stories about her achievements, digital hoardings of displayed at railway stations with massive footfall, comic stories imparting ECD principles in an attractive and fun way and live screening of the stories on TV are effective means of SBCC.
- An effective method is to engage a caregiver's friend who calls daily with tips, activities and encouragement to adopt responsive caregiving and to promote learning at home.
- An important intervention is to create an ecosystem of faster screening, diagnosis, and treatment initiation of anemia cases through using non-invasive Hb Meters to screen pregnant women visiting VHNDs and selected PHC/ CHC. Use this for opportunistic screening of all adult population visiting the facilities.
- Identify gaps in operational usage of the device, develop SOPs for use and develop referral pathways for diagnosis and treatment.

- Link the development of Nutri-gardens under SRLM to bring community awareness regarding nutrition and combat nutritional deficiencies such as anemia.
- It is important to foster multi-sectoral collaboration among government agencies, non-governmental organizations, healthcare providers, and the private sector to create a holistic approach to MNCH and nutrition.
- Establish platforms for knowledge sharing among stakeholders to ensure alignment and synergy.
- Strengthen Policy Frameworks through the development and implementation of policies that prioritize integrated MNCH and nutrition programs.
- Budget allocations that support these integrated initiatives are needed to ensure sustainability.
- Allocate resources for robust evidence collection and research to assess the impact of integrated MNCH innovations on nutrition outcomes
- Utilize evidence-based research to fine-tune strategies and address emerging challenges.
- Implement culturally sensitive and community-tailored interventions to maximize engagement and behavior change.

Technical Session 4 – Tackling Anemia and Malnutrition
Chair and Co-Chair: Mr Basanta Kar and Professor Uma Koirala

Dr. Sheila C. Vir
Dr. Karen McDonnell
Professor Praveen Kumar
Dr. Kirk Tickell
Dr. Mahesh Srinivas
Dr. Deepika Anand
Ms. Neha Bainsla

Key Issues and Suggestions

- Anaemia Mukt Bharat (AMB) uses a 6*6*6 approach to decrease the prevalence of anaemia. Regardless of wealth quartile, anaemia is high. Hence, all wealth quartiles to achieve Anaemia Mukt Bharat. Eliminating anaemia can increase productivity significantly.
- In India, around 60 to 80 % anemia is estimated to be due to Iron deficiency.
- Anemia is a universal severe public health problem in India across life cycle and wealth quintiles. Implementation remains largely weak and we need to reach the unreached, including among higher wealth groups and masses. Measures are not taken seriously for treatment of mild and moderate anemia.

- AMB is limited to public health system contacts. Reaching girls 15-19 years in Govt schools for prophylaxis Weekly Iron and Folic Acid Supplementation is well defined. However, guidelines on how to reach /improve coverage of 20 years and above need to be strengthened.
- ANC platform: opportunity for increased IFA coverage & compliance –doable and crucial-not used optimally. Role of Pvt Sector?
- IFA Supplementation could make a difference in Reducing Anemia prevalence.
- High coverage and Compliance of IFA makes a significant difference in anemia prevalence.
- IFA coverage and compliance must be intensified. If pregnant women are iron deficient, iron will not be available to the infant and this will have lifelong neurological effects. Hence, we must prioritise actions on the first 1000 days from the time of conception.
- A two-pronged approach will be useful with free supply of IFA with intensive education/counselling: reaching through Gov. health/Education /ICDS Systems
- Priced IFA –Social marketing of IFA tablets.
- Further, guidelines and protocols must not be based on the lowest common denominator. Guidelines for health care in hospitals must cater to the full range of complications and all ranges of hospital capacity.
- There is a relationship between anemia and perinatal mental health. Life altering changes such as pregnancy can lead to anxiety. Maternal depression is a global public health issue. Perinatal depression is linked to a wide range of adverse child outcomes. A growing body of evidence points to common mental disorders (such as depression, anxiety, and stress) during pregnancy as conferring a specific risk to the developing fetus and affecting later child development. It is important to focus on postpartum depression. This is often ignored. It is important to talk about perinatal depression, destigmatize mental health and prioritize prevention. Systematic training of workforce is needed to understand mental health.
- Approximately 4.7 million under six months old infants worldwide are moderately wasted and 3.8 million are severely wasted. In India, analysis of the NFHS-5 data shows that severe wasting is 13%, wasting is 27%. Further, wasting is highest at birth (37%).
- In the absence of adequate support, infants with growth failure are at higher risk of mortality and developmental delay.
- All infants should be checked for signs of serious illness (general danger signs) and assessed for medical complications/illnesses as per IMNCI guidelines
- Anthropometry of all under 6-month infants should be done to assess nutritional risk.
- To identify infants with growth failure/ nutritional risk, all health workers should record weight at each visit and compare it with previous recorded weight. Also assess

and correct breastfeeding and feeding practices and assess nutritional status of the mother and child.

- In Kenya, 1/3rd of wasting was prevented by Family MUAC and mHealth support.
- We must expand coverage of highly effective nutrition services.
- Children who die in hospitals are often complicated cases, but international guidelines prefer to address simple syndromes.
- With community participation and using existing platforms, it is feasible to provide hot cooked meals to children under 3 years.
- There is evidence of how small changes in the existing menu and recipes can improve meal acceptability among children 3 – 6 yrs.
- Early trends indicate a decline in cases of severe and moderate wasting.
- Although undernutrition rates are declining in India, one third of children below 5 years of age in India are still either stunted or underweight. Rural-urban differences persist, with higher prevalence in rural than in urban areas. The estimates are slightly higher in males than females, are higher in lower income quintiles and are dependent on the mother's educational status
- More than 50% of women and ~70% of children in the country are anaemic and the levels are rising. Rural-urban differences persist here too with higher prevalence in rural than in urban areas and high prevalence across all income quintiles.
- In addition to high undernutrition levels, the country is also facing the rising burden of overweight and obesity among children, adolescents and adults.
- Unsafe Food contributes substantially to India's Public Health Burden. Approximately 50% of malnutrition is caused not by a lack of food or poor diet, but due to poor water and sanitation facilities, and unhygienic practices leading to life-threatening disease and infections such as diarrhea.
- Multiple determinants across sectors contributed to changes in stunting. These include nutrition and health interventions such as focusing on Infant & Young child nutrition, supplementary nutrition, maternal nutrition, maternal & child health; maternal factors such as age at marriage, maternal education, maternal BMI; and household living conditions such as socio-economic status, food security and sanitation.
- India's policy and program environment is conducive to improve nutritional outcomes. However, adoption of a food systems approach is important for tackling the issues across the spectrum of malnutrition. This includes food production systems, storage and distribution, processing and packaging, food availability, affordability, messaging, as well as food acquisition, preparation practices and diets.
- Many plant-based foods such as cereals, legumes, and nuts contain high levels of phytate. Phytate is anti-nutritional as it prevents absorption of minerals like calcium, zinc, and iron and hampers protein digestibility.

- It was suggested that adding phytase, an enzyme, to foods can increase quality and digestibility of plant protein and the absorption of calcium, zinc, iron, and other minerals in our body.

Technical Session 5: Role of data, technology and implementation research in maternal and child nutrition interventions
Chair and Co-Chair: Dr. Sujeet Ranjan and Dr. Snigdha Misra

Mr. Sumanthra Rao
Dr. Aparna Hegde
Mr. Thomas Forissier,
Dr. Dinesh Baswal,
Dr. Suman Chakrabarti
Mr. Sanyam Kapur

Key Issues and Suggestions

- Artificial Intelligence is a paradigm shift in programming but it can only predict based on data that is provided. The objective is to use the data collected by health workers to create a predictive model using Machine Learning and existing data to generate risk scores about, for instance, the nutrition status of children. These risk scores can be used to design program interventions based on identification of children at risk for malnutrition. The information can be used to educate Anganwadi workers about the need to give more attention to the identified children as well as provide additional meals for these children.
- AI enabled apps can be usefully applied to determine malnutrition among the elderly. It can also be used for Non Invasive Protein Energy Malnutrition using saliva on paper.
- However, data and accuracy of data are critical if Artificial Intelligence is to be useful for the country. There are significant challenges of diagnostic errors, privacy and security, quality, bias, interoperability, regulation and governance and these must be addressed.
- India has 30 million pregnancies and 27 million births. As a thumb rule 15% of the pregnancies are going to face complications. Since comorbidities exist, so it may be higher 25-30%.
- If quality care, supported by technology, is provided at the antenatal, intranatal, postnatal stages till the child is 2 years of age this will accelerate the decline in maternal, newborn & child mortality.
- Technology can help in screening, early detection & diagnosis**,** predicting potential complications during pregnancy & child birth based on various factors like maternal health history, demographic data, and environmental factors; enable health care

providers to take proactive measures to prevent adverse outcomes & ensure safer deliveries.

- AI driven telemedicine platforms can expand access to healthcare services in remote or underserved areas so that pregnant women and new mothers can receive essential prenatal & postnatal care through virtual consultations and remote monitoring devices, enhancing the chances of healthier outcomes.
- Two major factors that influence poor maternal and child health are: (a) the lack of access to preventive care information and services during pregnancy and infancy leading to poor understanding of the danger signs and delayed care seeking; and (b) inadequately trained and supported health workers who are unable to detect and manage high-risk conditions in time.
- ARMMAN tries to combine deep mobile penetration with existing health worker network and infrastructure to provide prevention care information so that they can seek care in time. It also trains and supports health workers for timely detection and management of high risk conditions. The effort is to empower women to seek care in time while training health workers to provide timely management of high risk conditions. The objective is to reduce late stage and complicated high risk referrals to tertiary centres in order to improve maternal and child mortality.
- A free voice call service is usedto call women during pregnancy and child infancy to send critical targeted preventive care information in the local language every week. Call centre support is provided. So that women do not come to the hospital too late, 7500 mMitra Sakhis or health workers enrolled pregnant women at the early stages of pregnancy so that they reached 2.9 million women in 9 states of India, of whom 250,000 are presently enrolled.
- Since the programme was successful, Government of India asked them to scale up through the Kilkari programme. Pan India scale up is planned by 2025.
- They are now trying to use a more nuanced reach out approach with personalised handholding for nutrition. They are also trying to develop simple protocols for nursing staff and other functionaries.
- Digitally enabled supportive supervision can help achieve coverage and quality of nutrition interventions.
- A large proportion of actions to improve quality need to be taken at the local level.
- Supportive supervision is key and balances top-down & bottom-up supervisory interactions.
- Observing service quality and jointly identifying and resolving issues is the way forward so that the supervisor & supervisee collaborate on issue resolution.
- Innovators face challenges due to dependence on venture capitalist funding for scale up. Frameworks need to be in place so that the innovator is clear regarding how they

need to progress. Support in identifying promising innovations and enabling them to develop is needed.

- Anthropometric outcomes show slow improvements, but anemia prevalence worsened between 2016 & 2021.
- It is important to understand what factors drive outcomes and what factors drive change over time but this needs data that tracks the same children and the same population over time. We do not have that kind of data. It has been argued that children of short statured mothers will be stunted regardless of optimal nutrition and health interventions. We cannot substantiate this in India due to absence of the data needed for this analysis.
- With NFHS 4, for the first time anthropometric data was available that enabled us to focus on geographies that we want to capture. It gave us data on stunting for the first time across districts. Prior to this we had fragmented data
- Need to focus on the geographies that we want to capture and where actual decision making is done.
- How do you find out which policies can cause change in undernutrition or drive it. You usually do not have data on the variables that you need. So, you try and do a desk review or find out what policies were introduced in different states of India. You can connect some dots but you cannot predict causes due to lack of adequate data. But it is a big challenge to
- Anaemia is a multisectoral problem and there are various factors that cause anaemia. Tracing the level of growth faltering over different age groups, you can see the patterning of growth faltering by the age of the mother. If the mother is an adolescent, this affects the growth of the child and not only does the child have low height for age but that deficit continues till the child is 60 months of age.
- Based on data for India, the optimum age for a woman to have a child is 25 years. Early marriage is one of the key factors that drives adolescent pregnancies in India.
- If you want to study the intergenerational effects of MDM then you need to know if the mother received MDM when she was a child in order to determine whether that affects the nutritional status of her children. This data is not readily available. In order to establish these relationships, data is needed.
- Addressing undernutrition optimally requires intergenerational datasets.
- Interventions (like MDM) should target adolescents to keep them in school and delay marriage age. The coverage and equity of essential health and nutrition interventions has continued to increase in India, albeit with heterogeneity across states.

- With programmes like ICDS, we have made strides in increasing coverage across the continuum of care but some of the households that need ICDS did not get access. So it is important to increase equity in delivery.
- Integrating complex datasets is important because if most providers maintain their own records, it creates several silos of data.
- This wouldn't have been a problem if the all individuals diligently maintained and carried a logbook of their lifetime medical records on every visit to a healthcare provider.
- Since that doesn't happen and there is no formal mechanism that facilitates sharing of this data so the health providers are left to make decision based on an incomplete health picture of patient and this increases the likelihood of errors in diagnosis and treatment.
- ANMs, ASHAs and AWWs (or AAAs), provide health and nutrition services to the same community. However, they don't always team up because of different supervisory systems, databases and work culture.
- If the ANM and AWW have different number of pregnant women registered as per the submitted records this implies that some pregnant women are missing either antenatal or nutrition services.
- If the AAA worked together and shared information and integrated their records, coverage would increase significantly.

Technical Session 6: Food Systems, Leveraging Agri nutrition, Environmental and Health Investments for Nutrition Outcomes
Chair and Co-Chair: Dr. Dipa Sinha and Dr. Monica S. Ruiz

Dr Seema Puri
Ms. Deepti Gulati
Dr. Pierre P. M. Thomas
Dr. Pulkit Mathur
Dr. Supreet Kaur

Key Issues and Suggestions

- Good nutrition has the power to transform the lives of present and future generations and address malnutrition. Diets in India lack diversity and essential nutrients. A balanced and diverse mix of vegetables, fruits, pulses, nuts, seeds, etc is needed. However, nutritious foods are not always affordable.

- Low-income households find it difficult to get healthy and nutritious food. Affordable foods are not always healthy. Access and availability of ultra processed foods, that have high fat, sugar and salt is easy and affordable. There is poor awareness of healthy foods, misinformation on social media and less focus on seasonal, local foods.

- Food control systems need to be strengthened. Eating behaviour is shaped by various forces such as family, culture, religion, social influences, economic influences and access.

- Socioeconomic drivers of poor nutrition and health need to be addressed, i.e., poverty, lack of access to education, lack of access to health care. A large proportion of our population cannot afford a healthy diet. Stunting, underweight are far higher in the poorest quintile. Poverty is the most important factor that underlies lack of access to maternal and child health and nutrition as well as gender gaps in access to them.
- For the poor, the binding constraint is more likely to be inadequate resources. While information has a value here as well, it must be combined with measures that either enhance incomes or reduce the cost of nutritious foods
- Policies that improve employment, especially among rural women, are key to raising incomes: these include investing in workfare programmes, as well as expanding farm and off-farm value-chain opportunities.
- Improved access to nutritious foods through existing in-kind transfer programmes, like the PDS or MDM scheme in schools, can significantly lower the cost of provisioning household diets.
- These transfer programmes kept many vulnerable families from starvation during the pandemic.
- Initiatives like community gardens, kitchen gardens will help improve diet diversity
- Food fortification is a scientifically proven, cost-effective, scalable and sustainable intervention that addresses the issue of micronutrient deficiencies
- It is important to realise that today's affordable foods are not always nutritious, and today's nutritious foods are not always affordable"
- An estimated 1 in 10 people in the world fall ill after eating contaminated food.
- Children under 5 years of age carry 40% of the foodborne disease burden.
- Poor water and sanitation facilities, and unhygienic practices lead to diseases and infections such as diarrhea. These also need to be addressed.
- Foodborne illnesses can disrupt nutrient absorption, impair growth, and delay developmental milestones, leading to stunting, wasting, or other growth-related issues.
- Limited access to safe, diverse, and nutrient-rich foods can contribute to malnutrition.
- Persistent gastrointestinal issues can impair nutrient absorption over time, leading to chronic malnutrition.
- A safe food system can ensure that the food supply is of high nutritional quality. This requires **e**nforcement of regulations that promote nutritious food and accurate labelling and effective communication with and empowering consumers to make informed choices about their diet while practising safe food handling.

- The following are strongly associated with an increased risk of childhood stunting: foodborne mycotoxins, a lack of adequate sanitation, dirt floors in the home, poor quality cooking fuels, and inadequate local waste disposal. Food safety needs to become a public health priority.

- It is therefore important to strengthen national food control systems, develop policies and regulatory frameworks and establish and implement effective food safety systems.

- Include safe water, sanitation and hygiene programmes in Child and Maternal Nutrition and strengthen implementation and monitoring at all levels.

- Increase focus on BCC campaigns and activities.

- Develop a joint planning and investment framework with health sector to scale-up evidence-based nutrition interventions.

- Agree on key indicators and establish a Multisectoral Monitoring and Evaluation System to track progress in child and maternal nutrition, with a feedback loop to improve implementation and outcomes.

- Strengthen implementation and monitoring through local self- government.
- The Anthropocene is "a new planetary era: one in which **humans** have become the dominant force shaping Earth's bio-geophysical composition and processes. It is a geological term that acknowledges the role of mankind in the impacts on climate, ecosystems and health. The direct effects can be seen on weather patterns and extreme weather events. Indirect effects include globesity, lifestyle diseases epidemic.
- Hence, in public health and nutrition we must realize the role of humans in problems. New thinking is required for new solutions
- The Anthropocene has affected food systems as yield and production of crops are affected by climate change. The effect is disproportionate in the Global South and on vulnerable populations.
- We must realise that we are not the only beings on the planet. We need sustainable food systems. Investing in public health and nutrition is investing in the future. We must avoid silos and promote a cross sectoral holistic approach. We have to see the world as an interconnected system and it is important to adopt planetary health approaches.

8. Next course of action (for Sukarya)

- How to collectively move forward to achieve optimal nutritional status during first 1000 days

- Strategies to improve maternal, child and adolescent health with nutrition specific interventions
- Micronutrient supplementation and fortification programs
- Methods of improving maternal and child health services in particular areas
- Adolescent girls are a catalytic force for change at scale and can transform the future of India. So Sukarya wants to play the role of a leading agency in collaboration with other partners in this area.