DAKSHIN Workshop

Advancing UHC: Leveraging Technology for Maternal Care and Vaccine Delivery

Outcome Report

DAKSHIN
Development and Knowledge Sharing Initiative
GLOBAL SOUTH CENTRE OF EXCELLENCE

RIS
Research and Information System for Developing Countries
विकासशील देशों की अनुसंधान एवं सूचना प्रणाली

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CONCEPT NOTE

Inspired by discussions among Global South leaders during the Voice of Global South Summits, the Hon'ble Prime Minister of India inaugurated DAKSHIN – Global South Centre of Excellence. Hosted at the Research and Information System for Developing Countries (RIS), DAKSHIN aims to identify development solutions from any developing country and scale them for implementation across the Global South. As health is one of the key areas of cooperation identified by DAKSHIN, it is committed to foster equitable healthcare systems across countries of the Global South.

Achieving Universal Health Coverage (UHC) is a cornerstone of the global health agenda, directly aligned with Sustainable Development Goals (SDGs) 3.8 (access to quality essential health services) and 3.1 (reducing maternal mortality). However, progress towards UHC faces significant challenges, particularly in resource-constrained settings where health disparities are prevalent. Key components of UHC, such as maternal care and vaccine delivery, often remain underutilized or inaccessible to vulnerable populations, hindering efforts to ensure equitable and inclusive healthcare.

Technological advancements present unprecedented opportunities to bridge these gaps. From Artificial Intelligence (AI) predicting maternal complications and IoT-based cold chain systems for vaccine distribution, technology has the potential to transform healthcare delivery. However, the successful implementation of these innovations demands a coordinated effort among policymakers, healthcare providers, technologists, and development partners.

The proposed workshop seeks to bring together stakeholders from diverse sectors from the Global South including government policymakers, healthcare providers, technology innovators, academic researchers, international organizations, and development partners to explore, discuss, and strategize the integration of technology-driven solutions into UHC initiatives.

The workshop will concentrate on two pivotal domains integral to achieve UHC:

- **Maternal Care:** Harnessing digital health tools such as AI-powered predictive analytics and mobile health solutions to enhance antenatal and postnatal care, reduce maternal mortality, and improve outcomes in underserved communities.

- **Vaccines:** Driving innovations in vaccine logistics through IoT-enabled cold chain systems, digital tracking mechanisms to ensure timely immunization, and equitable distribution strategies for underserved regions.

The workshop will emphasize the synergies between these focus areas, showcasing how technology can be a game-changer in addressing systemic challenges and creating scalable solutions in the Global South.

The workshop aims to foster a collaborative environment that inspires innovation and accelerates the adoption of technology-driven solutions to advance UHC. It aims to answer key questions like:

- How is India, as the world's most populous country, leveraging technology for maternal care and vaccine delivery?
- How can emerging technologies, such as AI and mobile health applications, improve the quality and accessibility of maternal healthcare, particularly in resource-limited settings?
- What strategies can be adopted to ensure equitable access to maternal care services for marginalized populations?
- How can technology be used to monitor, predict, and prevent maternal health complications in real-time?
- How can IoT-enabled cold chain systems ensure vaccine potency during distribution?
- What digital tools can be implemented to track vaccine delivery and improve immunization rates?
- How can data analytics be used to address vaccine hesitancy and enhance equity in immunization programs?

The workshop aims to contribute meaningfully to healthcare improvements, particularly in the Global South, by promoting knowledge exchange and fostering collaboration across sectors. It will focus identifying practical policy recommendations, and encouraging partnerships to support the adoption of innovative solutions. By doing so, the workshop seeks to enhance healthcare accessibility, equity, and system resilience in addressing current and emerging challenges.

AGENDA

5:00 PM – 5:05 PM: Welcome Remarks

- **Professor Sachin Chaturvedi** – Director General, RIS

5:05 PM – 5:10 PM: Achieving the unachievable: Reaching the unimmunized through Mission Indradhanush

- **Dr. Rakesh Kumar** – Former Joint Secretary, RMNCHA+N, Ministry of Health & Family Welfare, Govt. of India

5:10 PM – 5:15 PM: Harnessing AI and Digital Health Tools for Equitable Maternal Care and Efficient Vaccine Delivery

- **Dr. Ajay Khera** – Former Commissioner, RMNCHA+N, Ministry of Health & Family Welfare, Govt. of India; Country Representative, EngenderHealth, India

5:15 PM – 5:20 PM: Thinking Beyond Needles: Towards Painless Vaccination

- **Dr. Rajib Dasgupta** – Chairperson & Professor, Centre of Social Medicine & Community Health, Jawaharlal Nehru University, India

Perspectives from Think Tanks of the Global South Countries

5:20 PM – 5:25 PM

- **Dr. Kim Hekimian** – Visiting Policy Fellow, Applied Policy Research Institute of Armenia (APRI); Associate Professor of Nutrition (in Pediatrics and the Institute of Human Nutrition), Columbia University, USA

5:25 PM – 5:30 PM

- **Professor Rachida Boukari** – Professor Pediatrics; Vice President, Algerian Society of Pediatrics (SAP); Expert at Institut National d'Etudes de Stratégie Globale (INESG), Algeria

5:30 PM – 5:35 PM

- **Dr. Titipol Phakdeewanich** – Director, Regional Center for Human Rights, Faculty of Political Science, Ubon Ratchathani University, Thailand

5:35 PM – 5:40 PM

- **Mrs. Ximena Coronado** – President of the Board of Directors, Instituto de Estudios Avanzados en Desarrollo - INESAD, Bolivia

5:40 PM – 5:45 PM

- **Dr. Rian'aina Razafimandimby Rabarihoela** – Founder, Institute of Governance of Madagascar (IGM), Madagascar

5:45 PM – 5:50 PM

- **Mr. Patrick Rakotomalala** – Founder, Institute of Governance of Madagascar (IGM), Madagascar

5:50 PM – 5:55 PM

- **Ms Safaath Ahmed Zahir** – Founder & President, Women & Democracy, Maldives

5:55 PM – 6:00 PM

- **Ms Déborah Itriago** – Research Fellow, Central America Academy, Costa Rica

6:00 PM – 6:05 PM

- **Dr. Adesh Sirjusingh** – Director, Directorate of Women's Health, Ministry of Health, Trinidad and Tobago

6:05 PM – 6:10 PM

- **Mrs. Grace Sookchand** – Expanded Programme on Immunization (EPI) Manager, Ministry of Health, Trinidad and Tobago

6:10 PM – 6:25 PM: Open Discussion

6:25 PM – 6:30 PM: Concluding Remarks

SUMMARY REPORT

DAKSHIN, RIS organized an online workshop on "Advancing UHC: Leveraging Technology for Maternal Care and Vaccine Delivery" on February 19, 2025. The discussions emphasized the role of digital technologies, artificial intelligence (AI), and inclusive strategies in addressing healthcare disparities. As the third health workshop, it brought together experts, policymakers, and practitioners from across the Global South to discuss innovative technological solutions to improve maternal health and vaccine delivery systems.

Professor Gulshan Sachdeva

Chief Coordinator, DAKSHIN

The seminar commenced with introductory remarks by the Chief Coordinator, Prof. Gulshan Sachdeva, who highlighted the significance of digital interventions in achieving Universal Health Coverage (UHC). The event aimed to explore emerging technological advancements and their role in improving maternal health outcomes and vaccine accessibility.

Dr. Ajay Khera

Former Commissioner, RMNCHA+N, Ministry of Health & Family Welfare, Govt. of India; Country Representative, EngenderHealth, India

Dr. Ajay Khera, Country Representative, EngenderHealth, India discussed the significance of Universal Health Coverage (UHC) in achieving Sustainable Development Goals (SDGs), particularly in maternal health and immunization. He outlined three fundamental pillars of UHC: equity, quality, and affordability, emphasizing that any innovative solution addressing these aspects can drive better healthcare outcomes.

To improve equity, he highlighted the role of digital platforms such as India's Reproductive and Child Health (RCH) portal and the Ayushman Bharat Digital Mission in tracking pregnancies and ensuring outreach to underserved areas. Similarly, the Universal Vaccine Intelligence Network has significantly improved immunization coverage, helping raise vaccination rates from 48% to over 75% in the past decade.

Regarding quality, he stressed the importance of AI-driven tools in detecting high-risk pregnancies, enabling early interventions, and supporting clinical decision-making.

Telemedicine was cited as an effective means of expanding access to maternal healthcare, particularly in remote areas.

On affordability, he emphasized that telemedicine reduces the financial burden on families by minimizing the need for travel to healthcare facilities. He also discussed how digital tools and mobile platforms play a vital role in behavioral change communication, increasing awareness and adherence to maternal and child healthcare services.

Dr. Khera further highlighted two technological innovations: drone-based vaccine transportation to remote regions and the development of heat-resistant vaccines, which enhance stability in areas with weak cold-chain infrastructure. He concluded by stressing that India's digital advancements in healthcare serve as valuable models for the Global South, offering key lessons in strengthening maternal health and immunization programs.

Dr. Rakesh Kumar

Former Joint Secretary, RMNCHA+N, Ministry of Health & Family Welfare, Government of India

Dr. Rakesh Kumar, provided a historical overview of India's health indicators, highlighting past challenges and significant improvements. In 1947, under-five mortality exceeded 200 per 1,000 live births, with communicable diseases like TB and malaria being leading causes of death. Over time, India's health landscape transformed, with maternal mortality dropping to 97 per 100,000 live births, under-five mortality decreasing to 32, and total fertility rate (TFR) declining from 6 to 2.1.

A key milestone in India's public health journey was the eradication of polio in 2014 and the elimination of maternal and neonatal tetanus in 2015. However, immunization coverage remained a challenge—between 2009 and 2013, it increased by just one percentage point per year, meaning it would take 25 years to reach 90% coverage at this rate. Identifying major bottlenecks like low coverage, quality issues, and a limited vaccine basket, India launched Mission Indradhanush in 2014 to accelerate immunization efforts.

The program targeted 201 high-priority districts, conducting intensive monthly immunization rounds over four months. This approach boosted coverage by seven percentage points in the first year alone, a stark contrast to the previous slow progress. A WHO study found that 33% of parents were unaware of vaccines, and 30% knew only about side effects, necessitating a strong behavioral change communication strategy.

To tackle vaccine storage and distribution challenges, temperature loggers were introduced in cold storage units and implemented the Electronic Vaccine Intelligence Network (eVIN), ensuring real-time tracking of vaccine stocks. This increased vaccine supply accuracy from 90% to 99%, preventing outreach session cancellations due to shortages.Under Mission

Indradhanush, India expanded its vaccine basket from seven to 13 vaccines. These additions significantly strengthened disease prevention efforts.

Despite setbacks during the COVID-19 pandemic, India's immunization strategies remain robust, with full immunization coverage reaching 76% in recent years. Dr. Kumar concluded by reaffirming India's commitment to universal health coverage and sustained immunization efforts, highlighting Mission Indradhanush as a global health success story.

Dr. Rajib Dasgupta

Chairperson & Professor, Centre of Social Medicine & Community Health, Jawaharlal Nehru University, India

Dr. Rajib Dasgupta, emphasized the importance of Immunization Agenda 2030, which integrates vaccination into primary healthcare services and strengthens universal health coverage. While previous discussions focused on coverage, equity, and demand generation, he highlighted two key areas: supply chain challenges and research & innovation in vaccine delivery.

One major concern is vaccine hesitancy, partly due to Adverse Events Following Immunization (AEFI), such as minor post-injection reactions. To address this, research is advancing non-invasive vaccine delivery methods, which could enhance acceptance and accessibility. Several innovative approaches are under development, including oral vaccines, nasal sprays, aerosols, dry powder inhalations. These technologies, particularly crucial for low-resource settings in the Global South, are at various stages of clinical trials and could transform immunization programs.

Among the most promising innovations, he highlighted edible vaccines, sublingual vaccines, and melting mouth strips for rotavirus, as well as the successful integration of nasal vaccines during COVID-19. One groundbreaking advancement is the "bubble gun", a laser-based intradermal vaccine delivery system that eliminates needles, offering a virtually painless alternative while using smaller, cost-effective doses. Another notable development is the hybrid micro needle array (MNA), which has been explored for COVID-19 vaccines and can reduce vaccine doses by up to 90%, potentially addressing global shortages. Additionally, 3D printing could enhance the scalability and accessibility of these technologies, an area where India could play a vital role.

Another critical advantage of these novel delivery mechanisms is their reduced reliance on cold chain logistics. Many emerging vaccine formulations are designed for greater thermostability, making storage and distribution easier in regions with limited infrastructure, particularly in the Global South.

As the world reaches the midpoint of Immunization Agenda 2030 in 2025, Dr. Dasgupta called for global collaboration to accelerate vaccine coverage and innovation. He highlighted

the upcoming World Immunization Week in April 2025 as a moment to reflect on achievements and push for broader vaccine access. The 2025 slogan, "Let's show the world that immunization for all is humanly possible," encapsulates this vision.

He concluded by reaffirming immunization as a key driver of universal health coverage and expressed optimism that continued innovation and global cooperation would transform the immunization landscape in the coming years.

Dr. Kim Hekimian

Visiting Policy Fellow, Applied Policy Research Institute of Armenia (APRI); Associate Professor of Nutrition (in Pediatrics and the Institute of Human Nutrition), Columbia University, USA

Dr. Kim Hekimian, shared a she was case study from Armenia on reforming Cesarean section (C-section) practices. Initially invited to promote exclusive breastfeeding, she discovered that rising C-section rates were negatively affecting breastfeeding at discharge. While the Armenian Ministry of Health was aware of the trend, it had not visualized the data to assess the full impact. Using graphical presentations, she demonstrated the exponential rise in C-sections, showing that 78% of hospitals exceeded the recommended 25% rate for low-risk pregnancies. This visualization helped policymakers and hospital administrators grasp the urgency of the problem.

By comparing Armenia's C-section rates with global trends (e.g., Turkey, Brazil, India, and the U.S.), she highlighted a key turning point in Armenia: a 2008 policy that increased C-section reimbursement rates, inadvertently incentivizing the procedure. When this data was visualized alongside rising C-section rates, the correlation became clear.

As a result, the Armenian government accepted a new policy strategy in December 2023, set for implementation in August 2024. Key reforms included:

1. Equalizing insurance reimbursement rates for vaginal and C-section births.
2. Increasing incentives for vaginal birth after Cesarean (VBAC).
3. Including epidural anesthesia in maternity benefits.
4. Implementing an electronic health record (EHR) system to track primary C-sections.
5. Launching training programs and a social media campaign to raise awareness.

A major milestone was the introduction of real-time data tracking for C-sections, replacing the previous aggregated annual reports. Preliminary data showed a 4% reduction in primary C-sections in the last five months of 2023 compared to 2024.

Dr. Hekimian concluded by stressing the power of data storytelling in driving policy change. She encouraged the continued use of data visualization to help policymakers recognize challenges and take informed action.

Professor Rachida Boukari

Professor Pediatrics; Vice President, Algerian Society of Pediatrics (SAP); Expert at Institut National d'Etudes de Stratégie Globale (INESG), Algeria

Professor Rachida Boukari, began by providing context on Algeria's geography and healthcare system, highlighting key indicators such as infant mortality rates and life expectancy.

Algeria's immunization program, established in 1969, offers free and mandatory vaccinations, covering approximately one million children annually. The program includes vaccines against measles, polio, hepatitis B, and rubella, aiming for over 95% coverage. Immunization services are provided through primary healthcare centers, hospitals, and mobile units, ensuring outreach to remote areas. The COVID-19 pandemic temporarily disrupted vaccination rates due to healthcare service interruptions and parental hesitancy. However, strong directives from the Ministry of Health ensured that routine immunization efforts continued.

Algeria's program has been successful in reducing mortality rates and eliminating certain vaccine-preventable diseases, with polio eradicated since 2016.

A major highlight was Algeria's commitment to digital health, with electronic vaccination records set to launch in June 2025, replacing paper-based systems. This transition will enable real-time tracking, better monitoring, and improved accessibility. Other digital advancements include:

- Vaccine inventory and cold chain management platforms.
- Mobile applications for appointment reminders and professional support.
- A national agency for digital health, developed in collaboration with WHO.

Boukari emphasized the need for tailored digital solutions, adequate training for healthcare personnel, and sufficient financial support to sustain these initiatives. She expressed optimism that digital innovations will enhance the efficiency, transparency, and reach of Algeria's immunization efforts.

Dr. Titipol Phakdeewanich

Director, Regional Center for Human Rights, Faculty of Political Science, Ubon Ratchathani University, Thailand

Dr. Titipol Phakdeewanich, discussed his project on leveraging AI technology to enhance healthcare access. He highlighted Thailand's universal healthcare system, the "30 Baht Healthcare Scheme," which reduces financial barriers but does not fully address geographical and logistical challenges, particularly for rural populations. Many rural residents struggle

to reach hospitals due to long distances and opportunity costs. While telemedicine has been promoted for nearly two decades, its adoption remains uneven, benefiting urban areas like Bangkok more than remote provinces. AI and robotic-assisted healthcare services are also concentrated in cities, limiting their impact on underserved regions.

Village Health Volunteers (VHVs) play a crucial role in community health awareness but often lack access to reliable, real-time information. During COVID-19, they were instrumental in vaccination campaigns but faced challenges due to limited digital resources. To address this, Thailand's National AI Strategy (2022-2027) aims to integrate AI into healthcare services. Dr. Titipol's organization is collaborating with Thailand's National Human Rights Commission to enhance healthcare access through AI-driven initiatives. A partnership with Microsoft Thailand has launched the "AI for All Thais" program, providing free AI training to improve digital skills. This initiative seeks to equip VHVs with AI tools to enhance local healthcare planning and provide better data for policy decisions.

Dr. Titipol expressed optimism that AI-driven solutions will improve rural healthcare access, empower community health workers, and strengthen collaboration between local governments and healthcare providers.

Mrs. Ximena Coronado

President of the Board of Directors, Instituto de Estudios Avanzados en Desarrollo - INESAD, Bolivia

Mrs. Ximena Coronado, presented an overview of Bolivia's healthcare landscape, focusing on public health improvements, digital transformation challenges, and vaccination accessibility. She began by providing geographical and demographic context. She noted that Bolivia has a longstanding tradition of offering free maternal healthcare services. However, despite advancements, gaps remain in public healthcare accessibility, particularly in vaccine coverage. Professionals with over 30 years of experience in immunization efforts have played a significant role in expanding vaccine availability, especially post-COVID-19. She emphasized that vaccination programs targeted women aged 13 to 50, but there were disparities between urban and rural access; 84% of urban women received vaccines, whereas only 63% in rural areas had access.

She highlighted the key barriers to vaccine uptake, including cultural resistance, lack of awareness, and distrust in the healthcare system. Among women aged 32 and above, about 80% faced obstacles in accessing vaccines due to misinformation and technological limitations. She stressed that two primary factors: insufficient digital infrastructure and a lack of education—hindered equitable vaccine distribution.

She then explored how digital transformation could address these challenges. While 84% of Bolivia's population has internet access, 88% of women primarily use mobile phones for connectivity. However, the absence of a structured digital healthcare system and

weak strategic implementation remain significant obstacles. Additionally, she discussed a specialized maternal healthcare program developed in collaboration with private institutions. This initiative introduced technology-driven pre- and postnatal care services, but it only benefited 200–300 women, highlighting the need for greater scalability. She suggested that similar models could be scaled in countries like India to enhance cooperation and leverage digital health solutions.

Dr. Rian'aina Razafimandimby Rabarihoela

Founder, Institute of Governance of Madagascar (IGM), Madagascar

Dr. Rian'aina Razafimandimby Rabarihoela, discussed the importance of understanding cultural perceptions of vaccination in Madagascar. Drawing from research on maternal and child health conducted with organizations like UNICEF, he highlighted how historical experiences and traditional beliefs influence vaccine hesitancy. Many rural and urban populations in Madagascar perceive vaccination, particularly COVID-19 vaccines, as ineffective or even harmful, associating them with religious and apocalyptic fears. This distrust stems from colonial and royal-era vaccination programs that were met with resistance. Razafimandimby explained that in Malagasy culture, illness is often seen as not just a physical ailment but also a social, cosmological, or spiritual issue. Biomedical interventions, such as syringes, are sometimes viewed with suspicion, especially if the illness is considered spiritual. However, paradoxically, injections may also be seen as more effective depending on the perceived origin of the illness. He emphasized that successful vaccination campaigns must align with local beliefs and cultural perceptions. Innovative approaches, such as engaging community leaders and exploring alternative delivery methods, could enhance vaccine acceptance and contribute to achieve global health goals.

Ms. Déborah Itriago

Research Fellow, Central America Academy, Costa Rica

Ms. Débora Itriago, discussed the role of digital health in Latin America and the Caribbean. She emphasized that while digital health presents an opportunity to improve healthcare access and outcomes, it is essential to consider who benefits from it and how. Assuming that technology will automatically be beneficial for everyone is a mistake, especially in a region marked by deep socio-economic inequalities. Without a suitable approach, digital health measures could unintentionally widen existing health gaps rather than reduce them.

Several factors constrain digital health adoption in Latin America and the Caribbean, including unequal access to digital infrastructure, affordability issues regarding devices and internet services, varying levels of digital literacy, and significant language barriers. The region has over 550 indigenous languages, yet most health platforms lack native language support. Additionally, gender-diverse and migrant populations often face discrimination

in healthcare services, raising concerns about data privacy and trust in digital platforms. Economic, social, and decision-making constraints also disproportionately affect women and children, making it more difficult for them to access healthcare.

Itriago stressed that addressing social determinants of health is crucial for ensuring equitable digital health implementation. The conditions in which people live significantly influence how they benefit from digital technologies. A recent review of epidemiological theories highlights a continued dominance of biomedical and lifestyle-based approaches, despite the growing importance of social epidemiology. However, these social determinants are still underrepresented in public health training and research, limiting the effectiveness of digital health interventions. She argued that digital health should be reframed as inclusive digital health, which prioritizes equitable access to healthcare information and services for marginalized populations. This approach must consider socio-economic, geographical, and cultural vulnerabilities while respecting individual autonomy, ensuring that no one is excluded. Lastly, she underscored the critical role of primary healthcare in implementing an inclusive digital health approach.

Dr. Adesh Sirjusingh

Director, Directorate of Women's Health, Ministry of Health, Trinidad and Tobago

Dr. Adesh Sirjusingh, highlighted the country's progress in addressing maternal and newborn health challenges. His unit, established in 2017, was created in response to rise maternal and newborn mortality rates, despite the absence of comprehensive data systems at the time. Trinidad and Tobago, a small twin-island nation with a population of 1.3 million, has a universal healthcare system funded primarily through direct taxation. However, the country faces a high burden of non-communicable diseases, including some of the world's highest rates of diabetes and hypertension.

Despite a declining fertility rate and birth numbers, maternal and newborn healthcare coverage remains strong, with 99% antenatal care coverage and institutional deliveries attended by trained professionals. A significant challenge lies in the lack of healthcare access for the growing migrant and unregistered population, primarily from Venezuela. Since 2018, Trinidad and Tobago has leveraged technology to enhance policy-making and data-driven interventions, achieving the 2030 Sustainable Development Goals (SDGs) for maternal and newborn health. The maternal mortality ratio has declined to under 27 per 100,000 live births, with indirect medical conditions such as cardiovascular disease and complications from sickle cell disease, now being the leading causes.

The introduction of an electronic data system, specifically the Perinatal Information System, has enabled the country to transition from zero to 90% digital capture of antenatal client data, allowing for improved monitoring and targeted interventions. Additionally, the establishment of a maternal near-miss surveillance system has strengthened healthcare

responses. The Ministry of Digital Transformation now oversees national digital health strategies, and by January 2025, all maternal and newborn health systems will be fully digital. These advancements rely on a combination of simple digital tools, and regional healthcare champions to drive success. Looking ahead, Trinidad and Tobago aims to further enhance its digital health infrastructure to improve maternal and child health outcomes.

Mrs. Grace Sookchand

Expanded Programme on Immunization (EPI) Manager, Ministry of Health, Trinidad and Tobago

Grace Sookchand, provided an overview of Trinidad and Tobago's Expanded Program on Immunization (EPI), a free, comprehensive public health initiative aimed at eliminating or reducing vaccine-preventable diseases. The program has successfully controlled diseases like polio, which was eradicated in 1972, and measles, with the last reported case in 1991. EPI ensures lifelong protection by offering vaccines for all age groups, from infancy to adulthood, following a national immunization schedule.

Vaccines are delivered through public health centers nationwide, ensuring equitable access, including for the growing migrant population. The program maintains high vaccination coverage through outreach initiatives and public education campaigns. It offers a broad range of vaccines free of charge, covering diseases such as measles, mumps, rubella, polio, tetanus, diphtheria, pertussis, hepatitis B, influenza, and pneumococcal infections.

A strong cold chain system supports the program, including solar-powered direct refrigeration units that have enhanced vaccine storage and distribution. Capacity building is a key component, with healthcare workers receiving annual training, including recent support from the CDC. The program also conducts rigorous surveillance and monitoring to track vaccine-preventable diseases, assess vaccination coverage, and detect potential outbreaks.

Currently, EPI is implementing an electronic immunization registry to further strengthen data collection and tracking, ensuring more effective monitoring of vaccination rates and coverage across the country. This digital advancement is expected to enhance the program's ability to protect individuals and communities from preventable diseases.

Dr. Monika Kochar

Advisor Health with DAKSHIN- Global South Centre

Following the presentations, the session transitioned into the Q&A segment. A representative from the University of Fiji inquired about effective and culturally sensitive methods for campaigning vaccination and healthcare using technology. Dr. Monika responded by stressing the importance of respecting indigenous traditions while incorporating digital

tools, such as SMS reminders for pregnant women and mothers, a strategy proven effective in India. She also noted that technological interventions improve healthcare efficiency but must be implemented inclusively to prevent widening the digital divide.

Another key question addressed maternal anemia, particularly in rural and remote areas, where iron supplementation alone has not resolved the issue. Dr. Monika explained that understanding the root causes of anemia is essential for effective intervention. She emphasized the need for targeted strategies depending on the type of anemia, along with promoting diverse, iron-rich diets and incorporating traditional practices like cooking in iron pots to enhance iron intake naturally.

She further thanked all the speakers and online participants. The key takeaways from the session underscored the necessity of a multi-faceted approach to Universal Health Coverage (UHC), including health system strengthening, capacity building, and addressing social determinants of health. Data-driven policy-making was recognized as a crucial factor in ensuring the success of UHC initiatives. The workshop also emphasized knowledge exchange among Global South nations, with India's successful maternal healthcare incentives serving as a valuable model.

Dr. Monika raised concerns about the rising cesarean section rates in developing countries and stressed that data analysis could help identify trends and inform policy decisions to improve postpartum health outcomes. Additionally, Bolivia shared its success in maternal healthcare, reporting that maternal assistance had doubled over the past three years, leading to substantial improvements in prenatal and postnatal care.

In conclusion, the workshop provided valuable insights into leveraging technology for healthcare advancement while ensuring inclusivity. Participants recognized the importance of integrating digital innovations with culturally sensitive approaches to strengthen healthcare systems globally. The exchange of best practices across Global South nations was highlighted as a key driver of progress, emphasizing the need for continued collaboration and policy-driven solutions to enhance maternal and child health.

KEY OUTCOMES

1. **Reinforcement of Digital Health as a Catalyst for UHC**
    - Participants collectively acknowledged that digital innovations—such as electronic health records, telemedicine, and AI-driven health solutions—are pivotal in achieving equitable, affordable, and quality healthcare. India's digital health architecture, including the Ayushman Bharat Digital Mission and the Universal Vaccine Intelligence Network (UVIN), was recognized as a leading model for integrating technology with public health delivery.

2. **Enhanced Focus on Maternal Health and Safe Delivery Systems**
    - Discussions emphasized the need for data-driven strategies to improve maternal health outcomes, including the use of AI and telehealth tools for early detection of high-risk pregnancies and ensuring safe childbirth. The Armenian case study demonstrated the power of data visualization and policy reform in reducing unnecessary Cesarean sections and promoting evidence-based maternity care.

3. **Innovation in Vaccine Delivery and Storage**
    - Technological innovations such as drone-based vaccine delivery, heat-resistant vaccines, and electronic vaccine intelligence networks were highlighted as game-changers in overcoming logistical challenges, especially in remote areas. Emerging vaccine delivery technologies - such as microneedle patches, nasal vaccines, and oral or edible formulations - were recognized for their potential to expand vaccine access and reduce dependence on cold-chain systems.

4. **Knowledge Exchange and South-South Cooperation**
    - Representatives from Algeria, Thailand, Madagascar, Bolivia, Costa Rica, and Trinidad & Tobago shared valuable experiences, underscoring the importance of contextual and culturally adaptive healthcare solutions. The workshop reaffirmed DAKSHIN's role as a platform for South-South knowledge sharing and capacity building in digital health and maternal care.

5. **Addressing Socio-Cultural and Digital Gaps**

   - Participants stressed that technological interventions must be inclusive and sensitive to socio-cultural contexts. Speakers from Latin America and Africa emphasized that digital health must not widen existing inequalities. Strategies such as SMS-based maternal health campaigns, community engagement, and local language interfaces were highlighted to promote inclusivity and trust in digital health systems.

6. **Integration of Artificial Intelligence in Public Health**

   - AI's potential to strengthen maternal care, health planning, and vaccine logistics was widely discussed. Examples from Thailand's AI for All Thais initiative illustrated how training community health workers in AI tools can enhance rural healthcare delivery and data-driven decision-making.

7. **Commitment to Data-Driven Policy and Accountability**

   - The workshop underscored the value of real-time data systems for monitoring maternal health and immunization programs. Trinidad & Tobago's success in digitizing perinatal information systems and implementing near-miss surveillance models was cited as a best practice. Participants agreed that data transparency and evidence-based policymaking are essential to improve accountability and resource allocation.

8. **Holistic Approach to UHC and Health Equity**

   - The concluding session emphasized that achieving UHC requires a multi-dimensional approach - integrating health system strengthening, social determinants of health, and community empowerment. Participants agreed that digital innovation must go hand-in-hand with capacity building, equity-driven policies, and behavioral change communication.

RIS
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RIS specialises in issues related to international economic development, trade, investment and technology. It is envisioned as a forum for fostering effective policy dialogue and capacity-building among developing countries on global and regional economic issues. The focus of the work programme of RIS is to promote South-South Cooperation and collaborate with developing countries in multilateral negotiations in various forums. Through its following centres/forums, RIS promotes policy dialogue and coherence on regional and international economic issues.

The word "DAKSHIN" (दक्षिण) is of Sanskrit origin, meaning "South." The Hon'ble Prime Minister of India, Shri Narendra Modi, inaugurated DAKSHIN – Global South Centre of Excellence in November 2023. The initiative was inspired by the deliberations of Global South leaders during the Voice of the Global South Summits. DAKSHIN stands for Development and Knowledge Sharing Initiative. Hosted at the RIS, DAKSHIN has established linkages with leading think tanks and universities across the Global South and is building a dynamic network of scholars working on Global South issues.

AIC at RIS has been working to strengthen India's strategic partnership with ASEAN in its realisation of the ASEAN Community. AIC at RIS undertakes research, policy advocacy and regular networking activities with relevant organisations and think-tanks in India and ASEAN countries, with the aim of providing policy inputs, up-to-date information, data resources and sustained interaction, for strengthening ASEAN-India partnership.

CMEC has been established at RIS under the aegis of the Ministry of Ports, Shipping and Waterways (MoPS&W), Government of India. CMEC is a collaboration between RIS and Indian Ports Association (IPA). It has been mandated to act as an advisory/technological arm of MoPSW to provide the analytical support on policies and their implementation.

FITM is a joint initiative by the Ministry of Ayush and RIS. It has been established with the objective of undertaking policy research on economy, intellectual property rights (IPRs) trade, sustainability and international cooperation in traditional medicines. FITM provides analytical support to the Ministry of Ayush on policy and strategy responses on emerging national and global developments.

BEF aims to serve as a dedicated platform for fostering dialogue on promoting the concept in the Indian Ocean and other regions. The forum focuses on conducting studies on the potential, prospects and challenges of blue economy; providing regular inputs to practitioners in the government and the private sectors; and promoting advocacy for its smooth adoption in national economic policies.

FIDC, has been engaged in exploring nuances of India's development cooperation programme, keeping in view the wider perspective of South-South Cooperation in the backdrop of international development cooperation scenario. It is a tripartite initiative of the Development Partnership Administration (DPA) of the Ministry of External Affairs, Government of India, academia and civil society organisations.

FISD aims to harness the full potential and synergy between science and technology, diplomacy, foreign policy and development cooperation in order to meet India's development and security needs. It is also engaged in strengthening India's engagement with the international system and on key global issues involving science and technology.

As part of its work programme, RIS has been deeply involved in strengthening economic integration in the South Asia region. In this context, the role of the South Asia Centre for Policy Studies (SACEPS) is very important. SACEPS is a network organisation engaged in addressing regional issues of common concerns in South Asia.

Knowledge generated endogenously among the Southern partners can help in consolidation of stronger common issues at different global policy fora. The purpose of NeST is to provide a global platform for Southern Think-Tanks for collaboratively generating, systematising, consolidating and sharing knowledge on South South Cooperation approaches for international development.

DST-Satellite Centre for Policy Research on STI Diplomacy at RIS aims to advance policy research at the intersection of science, technology, innovation (STI) and diplomacy, in alignment with India's developmental priorities and foreign policy objectives.

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