

Contents

IMMUNIZATION SUPPLY CHAIN HUB





PLANNING PARTNERS













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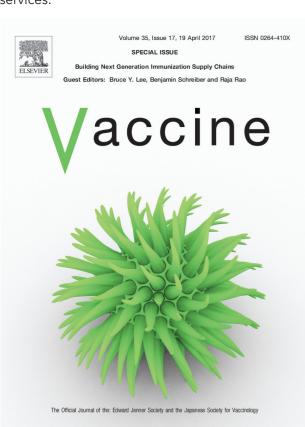
Welcome

On behalf of the WHO-UNICEF Immunization Supply Chain Hub and the TechNet Conference Planning Committee, we are delighted to welcome you to Cascais, Portugal for the 15th edition of the TechNet Conference.

The overall theme of the conference is: "Building the next generation of immunization supply chains". It builds on the theme of the previous conference in Bangkok, Thailand (May 11-15, 2015) on "Immunization supply chains – current challenges, innovations, and future prospects" and will emphasise three recent developments:

1. New evidence published in a Special Issue Vaccine (Elsevier): Building the next generation of immunization supply chains¹

This issue includes evidence-based information on innovative interventions to strengthen and improve immunization supply chains, and thereby allow immunization systems to achieve vaccination coverage goals and reduce inequities in access to services.



2. New strategies aimed at strengthening immunization supply chains by 2020² across countries according to an endorsed theory of change

If all countries prioritize strengthening five fundamentals (Supply chain leadership, Continuous improvement & planning, Supply chain data for management, Cold chain equipment, and Supply chain system design), immunization supply chains will contribute sustainably to improving the coverage and equity of immunization. Interventions focusing on these five fundamentals will:

- Ensure vaccine availability up to the service delivery point with better products and use of accurate data;
- Safeguard vaccine potency with optimized cold chain and temperature management systems;
- Improve supply chain efficiency with system design interventions and improved equipment;
- Enable supply chain improvements and change through leadership, management and coordination

3. A movement at global level to collectively accelerate progress towards achieving 2020 goals

This was initiated in Seattle in November 2016 at a meeting of 72 participants from 20 international organizations. The movement was triggered by the recognition that there is a growing number of stakeholders vested in strengthening immunization supply chains, and that enhanced efforts are needed for organizations to work more interdependently and collectively across technical areas and countries. The organizations represented have committed to work together around a common agenda for change. How to galvanize a wider set of stakeholders—and more importantly, countries—and using the TechNet community, will be an ambition of this conference.



Participants at the 14th TechNet Conference, held in Bangkok, Thailand in 2015. Photo: WHO.

Conference format

To reflect the overall theme of the conference, the conference format has been organized into four themes and five daily perspectives.

Themes

- Availability topics related to vaccine products/ technologies and data systems (LMIS)
- **Potency** topics related to cold chain and temperature management
- Efficiency topics related to system design, integration and private sector engagement
- **Enablers** topics related to leadership, management and coordination

Daily perspectives

- Monday Setting the stage
- Tuesday Challenges, successes and lessons learnt
- Wednesday Innovative solutions and approaches to address challenges
- Thursday Getting practical on how to implement solutions
- Friday Building a future coalition for collaborative action

Throughout the week, the intensity of technical discussions around Availability, Potency and Efficiency themes will gradually make way for more time to discuss the Enablers theme.

Whereas the format for Tuesday, Wednesday, and Thursday will be similar, the format for Friday will focus on the Enablers theme as a means to move the conversation forward as a broad TechNet Community globally, but especially at country level, that can be a coalition for immunization supply chain change and action

We hope you enjoy the conference and look forward to interacting with you throughout the week. To help you get the most out of the conference, this guide is your key resource.

TechNetfully yours,

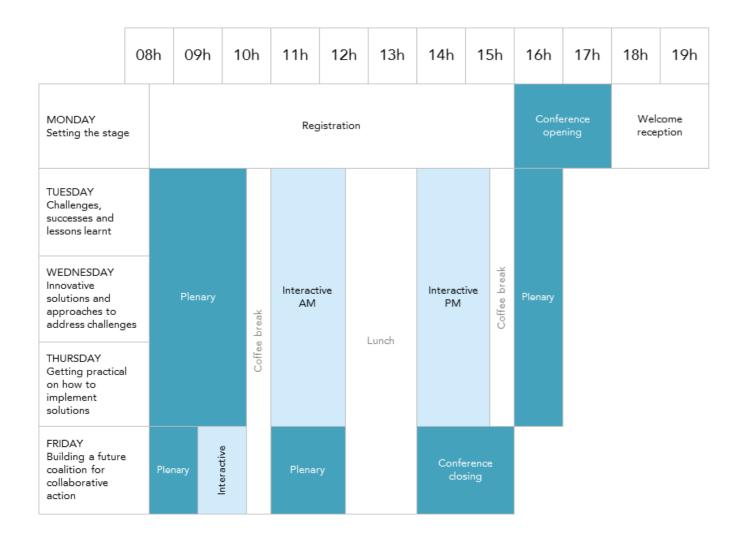
Patrick Lydon

Supply, Technologies and Financing, Expanded Programme on Immunization, World Health Organization

On behalf of the WHO-UNICEF Immunization Supply Chain Hub and the TechNet Conference Planning Committee

Conference structure

Each day, the conference events will be organized into plenary sessions for all delegates, and smaller, interactive sessions.



Watch online

All plenary presentations, as well as the fornal opening ceremony, will be streamed live on YouTube. Once presentations have finished, they can be played back at any point.

www.youtube.com/user/TechNet21

#TechNetConference

Do you tweet? Join the conference conversation on Twitter. Use our hashtag for all conference-related tweets.

www.twitter.com/TechNet21Mod

Side events

Complementing the plenary and interactive sessions, the conference will host many side events. Opening hours and locations are given below. Refer to side event chapters for more details.

Innovations Café

softwares and data systems for present to demonstrate and

Tue-Thu: 17:30-18:30 Find out more: p26

Project Gallery

This space is dedicated to displaying posters on a wide research, lessons-learned and

Poster presentations will also for more details.

Tue-Thu: 08:30-18:30 Fri: 09:30-14:00

Find out more: p30

Manufacturers Marketplace

Sala III

This space is for commercial companies to showcase their latest innovations in cold chain and temperature monitoring technologies, enabling participants to interact directly with companies, innovators, and their products.

Tue-Thu: 10:30-18:30 Fri:10:30-14:00

Find out more: p32

TechNet Clinic

Sala V

A dedicated help-desk will be available to help conference participants get the most out of the TechNet-21.org website, resolve problems, and discuss

Tue-Thu: Coffee breaks, lunch, 17:00-18:30 Fri: Coffee break, lunch

Find out more: p34

Resource Library

Fri: 09:30-14:00

Find out more: p35

+ lots more!

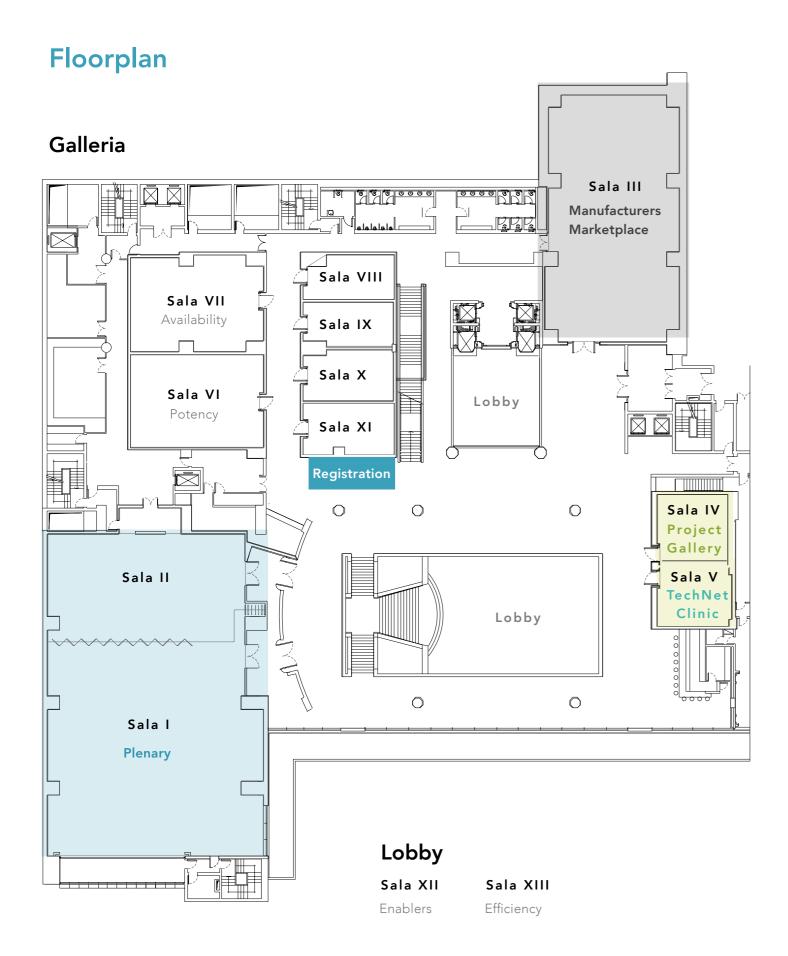
In addition, keep an eye out for other interesting areas on the sidelines of the conference.

¹ Vaccine. Volume 35, Issue 17, Pages 2101-2278 (19 April 2017). Building the Next Generation of Immunization Supply Chains.

² Gavi Immunization Supply Chain Strategy – 2016-2020. http://www.gavi.org/support/hss/immunisation-supply-chain

http://www.sciencedirect.com/science/journal/0264410X/35/17

¹⁵th TechNet Conference October 16-20, 2017 Cascais, Portugal



Acknowledgements

More people than can be mentioned here have generously dedicated their time to support the planning, organization and funding of this Conference. We list below the people and groups who have made this event possible – even at the risk of forgetting some.

Secretariat

- Carmen Au (WHO)
- Dan Brigden (WHO)
- Jacqueline Lashley (WHO)
- Patrick Lydon (WHO)

Planning Committee

- Mike Brison (CHAI)
- Alan Brooks (Gavi Secretariat)
- Kaleb Brownlow (Bill & Melinda Gates Foundation)
- Dmitri Davydov (UNICEF)
- Olivier Defawe (VillageReach)
- Steve DeSandis (CHAI)
- Debra Kristensen (PATH)
- Ryan McWhorter (UNICEF)
- Wendy Prosser (JSI)
- Chris Wright (JSI)

Agenda working groups

Availability

- Kaleb Brownlow* (Bill & Melinda Gates Foundation)
- Debbie Kristensen (PATH)
- Gemma Orta-Martinez (UNICEF)
- Amy Roberts (CHAI)
- Laurie Werner (PATH)
- Chris Wright (JSI)

Potency

- Steven DeSandis* (CHAI)
- Michelle Arnot (UNICEF)
- Mike Brison (CHAI)
- Pat Lennon (PATH)
- Joanie Robertson (PATH)

Efficiency

- Ryan McWhorter* (UNICEF)
- Olivier Defawe (VillageReach)
- Mercy Mvundura (PATH)
- Wendy Prosser (JSI)

Enablers

- Dmitri Davydov* (UNICEF)
- Emma Stewart (PATH)
- Melissa West (VillageReach)

Collaborative action for impact

- Emma Stewart* (PATH)
- Kristen Gagnaire (FSG)
- Melissa West (VillageReach)
- * Lead

Side events

- Innovations Café: Carmen Au (WHO)
- Project Gallery: Carmen Au (WHO)
- Manufacturers Marketplace: Carmen Au (WHO)
- TechNet-21 Clinic: Padmini Menon (consultant)
- Resource Library: Dan Brigden (WHO)
- Live streaming: Alex Lee (Storytelling Media)
- Conference Guide: Dan Brigden (WHO)

Special mentions

- Sana Kisoso (WHO)
- John Lloyd (consultant)
- Diane Masket (JSI)

Funding

Leaving this acknowledgement to the end should by no means diminish its importance. The 15th TechNet Conference would not have been possible without the generous funding of the Bill & Melinda Gates Foundation and other sponsors of this event.

We would also like to acknowledge support from:

- Berlinger & Co
- Haier Medical
- John Snow, Inc. (JSI)
- GCS Mobile Solutions

Monday



REGISTRATION CONFERENCE OPENING

Please register for the TechNet Conference when you arrive at the Hotel Cascais Miragem to collect your conference badge, guide, and Welcome Pack. Registration opens at 08:30.



PLENARYChair: Oleg Benes (WHO EURO)

SALA I+II

Welcome remarks

Patrick Lydon (WHO), Oleg Benes (WHO EURO)

Next-generation of immunization supply chains are needed to achieve immunization and health systems goals

Moderator: Ousmane Dia (UNICEF). Chris Wright (JSI), Alan Brooks (Gavi)

This keynote presentation will focus on introducing the theme of the 15th TechNet Conference. Next-generation immunization supply chains need to fundamentally shift the way they are designed including with optimized cold chain technologies and temperature management systems; the way they are managed in order to be led by competent, professionally trained supply chain managers that use data from all levels of the supply chain to monitor day to-day performance; and should be continuously strengthened based on regular system-wide assessments and improvement strategies.

Building a movement for advancing towards the next generation of immunization supply chains

Moderator: Kaleb Brownlow (Gates Foundation). Emma Stewart (PATH), Melissa West (VillageReach), Laura Herman (FSG)

Creating an enabling environment for upgrading immunization supply chains in countries to the next generation will require a critical mass of people and a movement at all levels (country, regional and international) so to create the right momentum for transformational change. This session will be the start of a discussion that will continue throughout the entire week around exploring the opportunity and power of collaboration in building the Next-Generation of Immunization Supply Chains in countries together.

Making the most out of the conference - the agenda for dummies

Patrick Lydon (WHO)

The TechNet Conference Planning Committee has designed the week according to immunization supply chain sub-themes with a difference focus each day. In addition, a diverse set of interactive sessions and sides events will be hosted throughout the week. While the Conference Guide will be your main companion, this presentation will give you a high-level overview of the formal agenda structure, its flow and main side events.

18:30 - 20:00 Welcome reception

PLENARY
Chair: Pradeep Haldar (Ministry of Health, India) TBC

SALA I+II

08:30 - 08:35 **Opening remarks**

08:35 - 09:00 Availability

India's experience in putting the building blocks together to attain high vaccine availability

Pradeep Haldar (Ministry of Health, India)

This session will describe the building blocks—vaccine products, data visibility, people, supply chain processes—and explore why we need to think holistically and identify the appropriate sequence of interventions, and begs the question, what do we start with first? Data visibility? Change management and process improvement? We will learn from India on how it has approached improving vaccine availability.

09:05 - 09:30

Potency

New technologies and management interventions that are enabling potent vaccine availability in Nigeria

Palman Usman Mduruwa (Ministry of Health, Nigeria)

New technologies enable new ways of addressing challenges in ensuring vaccine potency. In Nigeria, this has meant a new strategy to equip primary health facilities without reliable power with solar direct-drive (SDD) vaccine refrigerators. An overview will be provided on how Nigeria is using this new technology as a solution for ensuring vaccine potency at facilities without reliable power.

09:35 - 10:00 Efficiency

Directing expertise toward redesigning Pakistan's immunization supply chain

Arshad Chandio (Ministry of Health, Pakistan)

The Deputy National Program Manager of Pakistan's Federal EPI will share experiences gathering evidence, marshalling expertise, and working with stakeholders to chart a path toward redesigning Pakistan's immunization supply chain with inputs from the federal level, provinces, partners, and the private sector.

10:05 - 10:30

Creating an enabling environment: from local to global

Enablers

12

This presentation introduces approaches to enabling strong immunization supply chain systems, and reviews notable country and regional initiatives in enabling sustainable immunization supply chain fundamentals (communities of practitioners, ADI roadmap, Centres of Excellence), highlighting the remaining challenges to create environments that

affect country-level outcomes.

10:30 - 11:00 **C**

Coffee break

Alan Brooks (Gavi)

INTERACTIVE

Sala VII Availability

Bridging the paper-digital divide: holistically addressing data quality and use challenges at all levels of a health system

Moderator: Laurie Werner (PATH). Guylain Kaya (Ministry of Health, Democratic Republic of the Congo), Jonathan Mollel (Ministry of Health, Tanzania), Samuel Mutasha (Ministry of Health, Zambia), Aung Naing Oo (Ministry of Health, Myanmar)

This session will explore the availability building blocks and how they weave together to address the challenges across data quality and use to improve vaccine availability and immunization service provision. Four country representatives will share their experiences, highlighting challenges they have worked to address, and what success they've had to date. They will focus on transitioning to new tools (at times from paper to electronic products) and challenges associated with that, including key practices and policies to consider to have a smooth transition and ensure quality data in the process.

Sala VI

Sharing field experience with new cold chain equipment

Potency

Moderator: Sandeep Kumar (PATH India). Liya Wondwossen (FMOH, Ethiopia), Guylain Kaya (Ministry of Health, Democratic Republic of the Congo), Pritu Dhalaria (ITSU, India)

Many cold chain equipment innovations have emerged in recent years, with EPI programs gaining valuable experience via field studies and program implementation. In this session, representatives from Ethiopia, Democratic Republic of Congo and India will share experiences related to some of the technologies, including long-term passive devices, solar-powered cold rooms and new refrigerator types.

Sala XIII

System design as a holistic view of your supply chain

Efficiency

Moderator: Melissa West (VillageReach). Ahmet Afsar (UNICEF), Francis Mwansa (Ministry of Health, Zambia), Abdissa Mengesha (PFSA, Ethiopia), Ryan McWhorter (UNICEF)

Find out what the buzz is all about with system design. Hear from different countries that are taking a holistic approach to see how all components of the immunization supply chain fit together and complement each other to support a better performing supply chain.

Sala XII Enablers

Know the way, show the way: immunisation supply chain leadership in practice

Moderator: Musonda Kasonde (UNICEF). Kubura Iyabo Daradara (Ministry of Health, Nigeria), Kyaw Kan Kaung (Ministry of Health, Myanmar), Gamal Khalafalla Mohammed (NMSF, Sudan), Paul Lalvani (Empower School of Health, India), Hamed Idrissa Traore (Logivac Benin), Jean d'Amour Habagusenga (East African Community Regional Centre of Excellence for Vaccines, Rwanda)

How do countries strengthen supply chain leadership and enable change agents to build sustainable local capacity? In this panel, country representatives discuss what supply chain leadership means to them, their preferred strategies and interventions to build sustainable capacity and identify change leaders, and the challenges they are facing with their current architecture of leadership support.

12:30 - 14:00 Lunch

INTERACTIVE

Sala VII Availability

Design the future of your vaccine product choices: how can we weigh the trade-offs to make informed decisions?

Moderator: Wendy Prosser (JSI). Patrick Lydon (WHO), Kirstin Krudwig (JSI), Guissimon Phiri (Ministry of Health, Zambia)

As new vaccines and improved technology and product packaging options become available, countries must now make multi-layered decisions related to optimizing product presentations and considering the trade-offs involved. Will a single dose or small multidose vial help improve overall and timely coverage more than a large multi-dose vial? What do I prioritize safety risk reductions, wastage, cold chain constraints, or costs? Or what if we use multiple presentations of the same vaccine for different targeted populations? Can new technologies and packaging address coverage and address equity issues?

Sala VI Potency

Seeing the invisible: how continuous temperature monitoring aids cold chain

Moderator: Brian Atuhaire (PATH Uganda). Balbina Khanlawia (Ministry of Health, Mozambique), Catherine Weyanga Silali (Ministry of Health, Kenya), Md. Shamsuzzaman (Ministry of Health, Bangladesh), Mohammed Hamidul Islam (consultant, UNICEF Bangladesh)

Alone, temperature monitors and the data generated will not bring about improvements to cold chain equipment management and performance -- committed personnel and clear protocols for collecting, reviewing, acting on and reporting the data are needed. This session will provide the opportunity to discuss key successes and challenges in this area, informed by the experience of EPI managers who have introduced 30-day temperature recorders into their cold chain management systems.

Sala XIII Efficiency

Uncovering efficiencies in the supply chain by sharing resources

Moderator: Marasi Mwencha (JSI). Hailu Kenea (UNICEF ESARO), Ida Molina, (Ministry of Health, Honduras), Aida Coelho (VillageReach)

These country presentations will describe their experience in finding efficiencies by analysing, segmenting, and combining like products in the supply chain to better capitalize on existing resources. Presenters will focus on the impetus for change, the challenges and costs, as well as the resulting improvements in performance and cost.

Sala XII Enablers

How can national programmes work with donors and industry more effectively?

Moderator: Hitesh Hurkchand (UNICEF)

This panel comprises country, industry and donor representatives trying to see themselves in the shoes of others. While the challenge of country-level donor coordination has been on the agenda for some time, the role of country stakeholders in working with industry and donors to identify appropriate approaches and innovations for scale has been assumed but not explicitly examined. The panel will attempt to explore how countries, industry and partners can learn together.

15:30 - 16:00 **Coffee break**

PLENARY SALA I+II

16:00 - 17:00 Exploring the opportunity for collaboration in a country context

Laura Herman, Flynn Lebus (FSG)

Building on the themes of collaboration introduced during the opening ceremony, this will be a working session that aims to provide an opportunity for country-specific stakeholders to come together and identify ways for strengthening collaboration in their country moving forward. During this session, global and regional partners will join these country conversations and explore how they can also support collaboration in country, across countries, and between countries, regional and global stakeholders.

INNOVATIONS CAFÉ

17:30 - 18:30 Sala VII	Electronic Immunization Registry (EIR) in Tanzania and Zambia Paul Nindi (PATH Zambia); John Richard (PATH Tanzania)
17:30 - 18:30 Sala VI	Visibility and analytics dashboards in the private sector - key challenges, approaches, and outcomes Sid Rupani (LLamasoft)
17:30 - 18:30 Sala X	Vietnam National Immunization Information System (NIIS) Vu Minh Huong (PATH Vietnam)
17:30 - 18:30 Sala XII	New vaccine delivery technologies Sarah McGray (PATH)
17:30 - 18:30 Sala XIII	Using advanced analytics to improve resource allocation, program delivery and supply chain performance Jonathan Stambolis (Zenysis Technologies)

SALA I PROJECT GALLERY

17:15 - 17:30	Implementation of home-based record redesign Lora Shimp (JSI), Kirstin Krudwig (JSI)
17:30 - 17:45	Dose Per Container Partnership: insights from preliminary research Diane Masket (JSI)
17:45 - 18:00	Introduction of five-dose MR vials in Zambia Kirstin Krudwig (JSI)
18:00 - 18:15	ViVa: Visibility for Vaccines

Ryan McWhorter (UNICEF)

Wednesday AM

08:30-10:30

Wednesday AM 11:00-12:30

INNOVATIVE SOLUTIONS AND APPROACHES

PLENARY

Chair: Suleiman Abusrewil (Ministry of Health, Libya)

SALA I+II

08:30 - 08:35

Opening remarks

CTC myth-busters

08:35 - 09:00 Availability

Moderator: Anna-Lea Kahn (WHO). Sople Ruth Coulibaly (Ministry of Health, Côte

d'Ivoire), Joe Woodring (WHO WPRO)

Nearly 4 million individuals have received MenAfriVac® delivered in a controlled temperature chain (CTC) in six countries. Other vaccines have been or will be pre-qualified for use in a CTC. This is a pivotal time for countries to explore and assess the potential for CTC use of vaccines to lessen the burden on health workers, improve immunization efficiencies, and increase immunization coverage and equity. We will explore and dispel some misperceptions/myths about CTC.

09:05 - 09:30

Introducing new technology standards to solve immunization potency challenges

Isaac Gobina (WHO) Potency

> Since the TechNet Conference in 2015, WHO Performance, Quality and Safety (PQS) has introduced new standards for refrigerators and transport devices to eliminate potency loss due to vaccine freezing. These developments include refrigerators with Grade A freezeprotection and freeze-free cold boxes and vaccine carriers. WHO PQS will provide an overview of these developments and other topics related to equipment standards.

09:35 - 10:00

Interested in Drones? Consider this

Judith Sherman (UNICEF Malawi) Efficiency

> UNICEF Malawi will share their experiences in implementing a drone/UAV operation to ship biologicals in the country's HIV programme. This presentation will focus on the key success factors, challenges, and lessons learned.

10:05 - 10:30

The journey of continuous immunization supply chain improvement

Enablers Patrick Lydon (WHO)

> One of the five fundamentals that the global community is recommending is for countries to develop a national vision and strategy for their own next-generation immunization supply chains. Yet the journey to get there and to sustain a national process for continuous improvements is one that has many twists and turns. This presentation will provide a high level overview of this journey and take the audience through the principles of continuous immunization supply chain improvement, quality management, optimization and innovation.

16

10:30 - 11:00 **Coffee break**

INTERACTIVE

Sala VII Availability Innovations to overcome data visibility and use challenges - fact versus fiction

Moderator: Kaleb Brownlow (Gates Foundation)

This session will highlight experiences from India, Mozambique, Pakistan, Tanzania, and Vietnam on how each responded to problems and challenges and the role technology and transformative innovations to improve availability. Each country will present its unique challenges and approaches while dispelling the myth that technology alone solved the problem.

Sala VI Potency Potency in motion for the protection of vaccines from freezing in transport

Moderator: Ousmane Dia (UNICEF). Pat Lennon (PATH), Anna-Lea Kahn (WHO), Jaco

Schoevers (CHAI)

What are the ways I can protect vaccines from being exposed to freezing temperatures? How do the new freeze-free carriers and cold boxes work? Should I consider using cool water packs for transport? Can I incorporate controlled temperature chain approved vaccines into my program? To help answer these questions, program and partner staff will discuss the latest research and developments in freeze-prevention products and approaches, and how these can drive improved vaccine safety.

Sala XIII Efficiency Drones, Drones, Drones and UAVs or UASs

Moderator: Ryan McWhorter (UNICEF). George Taleo (Ministry of Health, Vanuatu), Ridwan Gustiana (UNICEF Vanuatu), Judith Sherman (UNICEF Malawi), Sidharth Rupani (Llamasoft)

Curious about using drones in your supply chain? Hear from the experts in the field who will share their experiences working with regulatory agencies, militaries, and technologists to enhance the reach of their supply chains in health programmes.

Sala XII Enablers

Built to last: design approaches and institutional governance for sustainable, resilient immunization supply chain systems

Moderator: Hailu Kenea (UNICEF). Suleiman Abusrewil (Ministry of Health, Libya), Guylain Kaya Mutenda Sheria (Ministry of Health, Democratic Republic of the Congo), Ida Molina (Ministry of Health, Honduras)

A panel discussion to examine how countries in different capacity contexts are pursuing a range of approaches to improve ISC governance and ensure improvements are implemented. The session will examine characteristics of sustainable national systems (ISC and across health) in different capacity (fragile, low-, middle-, high-capacity) and programme design contexts (centralised, integrated, etc.). The roles and experiences of bodies such as NRAs, ICCs, NITAGs and NLWGs, national programmes, parliamentarians, civil society and private sector will be explored.

12:30 - 14:00 Lunch

Wednesday PM

14:00-15:30

Wednesday PM

16:00-18:30

INTERACTIVE

Sala VII Availability

Novel packaging, delivery, and storage options for vaccines - how can innovations support coverage and equity goals?

Moderator: Brian Atuhaire (PATH Uganda). Anna-Lea Kahn (WHO), Sarah McGray (PATH), Patrobas Mufubenga (MACIS)

Come find out about the latest approaches to vaccine packaging and delivery, and how they can impact cold chain capacity, supply chain systems and program strategies. Learn about novel primary containers to existing vaccines, such as blow-fill-seal containers using the new multi-mono-dose format, microarray patches for dermal delivery, and integrated reconstitution containers as well as controlled temperature chain and their implications to your program. Be prepared to participate!

Sala VI

Powering the cold chain and beyond

Potency

Moderator: Souleymane Kone (WHO). Steve McCarney (SELF), Brian Pal (New Horizons), Jo Gwillim (Dulas)

Do I have the electrical power required to ensure vaccine potency at a given location? This is a critical question to answer when designing and selecting CCE, informed by an understanding of the quality and quantity of electricity available at a cold chain point. In this session, panelists will present the latest developments in this area, including power data capture technology, guidance on solar panel sizing, and an overview of solar energy harvesting.

Sala XIII Efficiency

Do what you do best and outsource the rest

Moderator: Olivier Defawe (VillageReach). Arshad Chandio (Ministry of Health, Pakistan), Kubura Daradara (Ministry of Health, Nigeria), Aida Coelho (VillageReach Mozambique), Mozammil Siddiqui (Gavi)

This panel will illustrate the different ways private sector engagement can improve analysis and operations in the supply chain, from providing direct technical assistance to outsourcing services.

Sala XII Enablers

18

Interactive workshop: human-centred design for immunization supply chains

Human-centered design (HCD) is widely used in immunisation demand creation and by industry, and can provide transformative insights into definition of problems and design of solutions for ISC and HR empowerment. The session aims to equip the participants with skills and tools necessary to deploy HCD insights to ISC planning, and to inspire application of these tools to ISC decision-making and planning processes.

15:30 - 16:00 **Coffee break**

PLENARY SALA I+II

16:00 - 17:00 Pitch Fest on innovations in data use and visibility

Moderator: Maeve Magner (SCM Advisory Services)

Come see new solutions and approaches to improving visibility and data use for the immunization program and/or supply chain where you are the judge on the solution, approach and usefulness. A variety of technologies will be highlighted in short (5 minutes max) highenergy pitches. We plan to use electronic audience voting to score the pitches; the highest rated will likely be prioritized in terms of demo space and time.

INNOVATIONS CAFÉ

17:30 - 18:30 Sala VII	Passive vaccine storage devices in Ethiopia Tariku Berhanu (UNICEF Ethiopia)	
17:30 - 18:30 Sala VI	Designing a system to improve maintenance information flow Shahrzad Yavari (Nexleaf Analytics)	
17:30 - 18:30 Sala X	Cold room temperature mapping tool Souleymane Koné (WHO); Mojtaba Haghgou (consultant)	
17:30 - 18:30 Sala XII	Electronic Vaccine Intelligence Network (eVIN) Manish Pant (Logistimo)	
17:30 - 18:30 Sala XIII		

Chris Wright (JSI)

PROJECT GALLERY SALA IV

17:15 - 17:30	Kenya Visibility and Analytics Network for Vaccines Yasmin Chandani (JSI)
17:30 - 17:45	Electronic Vaccine Intelligence network (eVIN): Transforming India's Supply Chain Manish Pant (United Nations Development Program, India)
17:45 - 18:00	OpenLMIS: Data visibility for improved vaccine supply chains Vidya Sampath (VillageReach)
18:00 - 18:15	Pakistan Quality Improvement Teams for improving immunization supply chains

Thursday AM

08:30-10:30

Thursday AM

LET'S GET PRACTICAL

PLENARY Chair: Francis Mwansa (Ministry of Health, Zambia)

SALA I+II

08:30 - 08:35 Opening remarks

08:35 - 09:00 Availability

Technical solutions alone will not solve vaccine availability: the need to create a data-

Arshad Chandio (Ministry of Health, Pakistan)

Adaptive change (i.e., behavior and culture change) is necessary to achieve full stock availability and requires components such as a data-driven culture, optimizing processes to local context, and changing staff roles and responsibilities. This plenary will explore what we mean by a data use culture: What does it look like? How do we build it? How can this ensure vaccine availability? We will describe how to operationalize data review meetings, how to link staff roles to core KPIs, and how one builds these elements from scratch.

09:05 - 09:30 Potency

Uganda's successes in improving cold chain maintenance and management

Opar Bernard Toliva (Ministry of Health, Uganda)

Cold chain management and maintenance is essential to ensure that equipment is properly functioning and protecting vaccine potency, but it is often overlooked or neglected. In Uganda, a new maintenance system has been adopted by the Ministry of Health that is designed to resolve past system issues and leverage available resources to maximize equipment uptime and vaccine potency.

09:35 - 10:00 Efficiency

Convincing my boss to say "Yes": How to advocate, engage, and get stakeholder buy-

Eomba Motomoke (VillageReach, Democratic Republic of the Congo), Guylain Kaya (Ministry of Health, Democratic Republic of the Congo)

This plenary will illustrate the steps that the government of Democratic Republic of the Congo and its partners have taken to implement their next-generation immunization supply chain, moving from advocacy and modelling to a successful implementation.

10:05 - 10:30 Enablers

20

Reframing the narrative: sustainable energy for immunization supply chain and health Kyaw Kan Kaung (Ministry of Health, Myanmar)

Access to sustainable energy contributes to improved health and development outcomes. Can immunization supply chains be supported holistically while benefitting the broader health system? Which pathways and partnerships are most effective in advancing the agenda in the Sustainable Development Goals (SDG) era?

10:30 - 11:00 **Coffee break**

INTERACTIVE

Sala VII Availability

Data visibility and use in practice: the What and How

Moderator: Yasmin Chandani (JSI Kenya). Alice Muga (Ministry of Health, Kenya), Francis Michael Ibama (Ministry of Health, Nigeria), Abdissa Mengesha (PFSA, Ethiopia)

This session explores how one can build a data driven culture and use data to drive supply chain improvements. Participants will engage with case examples of national and sub-national supply chain data use from Ethiopia, Kenya, and Nigeria. Themes that will be explored during the session include: how to operationalize the visibility analytics network approach and make data review meetings real; tactics for building a data driven culture; making decisions when looking at programmatic data and supply chain data side-by-side; product selection and decision-making; and user needs and engagement.

Sala VI Potency

Delivering Potency: Implementation of the Cold Chain Equipment Optimization Platform

Moderator: Thomas Sorenson (UNICEF). Mike Brison (CHAI), Dereje Haile (UNICEF), Joanie Robertson (PATH)

The Gavi Cold Chain Equipment Optimization Platform (CCEOP) requires the bundled procurement of equipment and deployment services from a supplier. What are the challenges in this process? How can a smooth deployment of equipment be assured? This session will include an overview of the procurement process, practical steps for managing service delivery bundles and insights from a post-deployment survey conducted by PATH in Democratic Republic of the Congo.

Sala XIII

Money matters, but it is more than just about money

Efficiency

Moderator: Mercy Mvundura (PATH). Cheryl Rudd Mallaghan (Centre for Infectious Disease Research in Zambia), Balbina Khanlawia Mario (Ministry of Health, Mozambique), Michael Krautmann (University of Michigan), Guylain Kaya (Ministry of Health, Democratic Republic of the Congo)

This panel will explore the metrics and factors which stakeholders have considered when making decisions to redesign their supply chain, including costs, product availability, data quality, as well as the qualitative factors, such as political will.

Sala XII

EVM: Past, Present and Future

Enablers

Moderator: Dmitri Davydov (UNICEF). Dan Brigden (WHO), Paul Colrain (consultant, UNICEF)

A discussion of Effective Vaccine Management (EVM) lessons learned, how the comprehensive approach to EVM strengthens investment cases for immunization supply chains, routine immunisation and health system strengthening; followed by a demonstration of the new EVM assessment tool.

12:30 - 14:00 Lunch

INTERACTIVE

Sala VII Availability

You've got data... now what? A hands-on, user-centric data and action session Chris Wright (JSI)

Data visibility is only the first step. Participants in this session will be split into teams and led through guided simulations of a national VAN-type meeting and a district review (or IMPACT Team) meeting. Data will be provided based on real-world scenarios and roles defined for each team. Facilitators will introduce participants to the quality improvement process (described in Session 4a) as used by a VAN team at the national level and by an IMPACT team at district level. There will be one or two VAN teams, and multiple IMPACT teams. Each team will be presented with the same data (appropriate to national level for VAN or district level for IMPACT Team) and asked to analyze the data, identify problems, and determine appropriate actions.

Sala VI Potency

Maintaining Potency: CCEM tools for inventory management in Iraq and the investment case for temperature monitoring studies

Moderator: Hamadou Dicko (Gavi). Arshard Chandio (Ministry of Health, Pakistan), Chandrasegarar Soloman (UNICEF), Mudher Subhey (Ministry of Health, Iraq)

Maintaining vaccine potency can only be done through a robust, well-maintained cold chain system. Pakistan recently undertook a temperature monitoring study to target system improvements. South Sudan utilized geospatial analysis to map cold chain inventory data. Uganda used the CCEM tool to support regional maintenance structures. How do we apply these lessons learned to improve other CCE maintenance systems?

Sala XII Efficiency

Finding the right tool for your tool kit for system design

Moderator: Wendy Prosser (JSI), Mercy Mvundura (PATH). Paul Colrain (consultant, UNICEF), Matt Morio (PATH), Leila Haidari (HERMES Logistics Team), Sidharth Rupani (Llamasoft), Michael Krautman (University of Michigan)

Touch, watch, and learn about the many tools that can help a country analyze the efficiency and performance of their supply chain and how to support decisions toward reaching more children equitably.

Sala XIII Enablers

Interconnected reality: The pain and the gains of cross-sectoral planning, resource sharing, and health systems strengthening

Moderator: SM Moazzem Hossain (UNICEF Iraq)

When does ISC planning stop and HSS programming begin? Unblocking systems-level bottlenecks to ISC often requires planning at a level above EPI. Cross-sectoral programming can bring about effective innovative solutions to persistent problems, but it requires political skilfulness and space, as ISC managers often do not control prioritisation of resources beyond their technical area. Options may vary based on capacity and programme design settings. The panel will discuss interdependencies and prerequisites for successful cross-sectoral planning and financing, including opportunities of GAVI CEF.

15:30 - 16:00

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Coffee break

PLENARY SALA I+II

16:00 - 17:00 Gaming App – How to improve your supply chain management skills

Yasmin Chandani (JSI)

Building supply chain skills amongst health workers continues to be a challenge in public health programs, often relying on in-person workshops that require facility staff to leave their posts. In response, HealthGames Kenya launched a digital competitive knowledge game in May 2017, focused on Health Care Supply Chain Management to help health workers acquire or update their supply chain management skills remotely and without costly group training sessions.

INNOVATIONS CAFÉ

17:30 - 18:30 Sala VII	Mobile supply chain management in Zambia Pratik Shetty (Logistimo); Francis Mwansa, Guissimon Phiri, Abrahams Mwanamwengea (Ministry of Health, Zambia)
17:30 - 18:30 Sala VI	A new way to conduct Effective Vaccine Management (EVM) assessments Dan Brigden (WHO); Paul Colrain (consultant)
17:30 - 18:30 Sala X	M-Dagu – mobile-based application for LMIS Carmit Keddem (JSI)
17:30 - 18:30 Sala XII	Field Supply - user-centric integrated health supply chain management Michael Moreland (Field Intelligence)
17:30 - 18:30 Sala XIII	OpenLMIS for immunization supply chains Vidya Sampath (VillageReach)

PROJECT GALLERY SALA IV

17:15 - 17:30	Coordinating informal transport workers for routine immunization distribution Thomas Keen (Field Intelligence)
17:30 - 17:45	Arktek passive vaccine device field experience and use cases in Ethiopia Tariku Berhanu (UNICEF Ethiopia)
17:45 - 18:00	Development and field testing of a long-term passive vaccine storage device Sarah Kersley (Sure Chill)
18:00 - 18:15	Immunization Academy Nathan Pienkowski (Bull City Learning)

11.00 15.20

COLLABORATIVE ACTION FOR IMPACT

PLENARY

Chair: Kyaw Kan Kaung (Ministry of Health, Myanmar)

SALA I+II

08:30 - 09:30

From ideas to action: the way forward, together

Dmitri Davydov (UNICEF)

This presentation will summarize the main conference themes and orient us toward taking future actions. A brief presentation will highlight key ideas from across the four tracks of the conference—availability, potency, efficiency, and enablers. In addition to the technical knowledge shared during the conference tracks, we will revisit the principles of and opportunities for collaboration. The presentation will be followed by a discussion.

INTERACTIVE

09:30-10:30

Sala VII Availability Putting together the puzzle pieces of immunization data systems: who can help, what piece to start with, and how?

Moderator: Kaleb Brownlow (Gates Foundation), Laurie Werner (PATH).

Countries will be increasingly presented with more solutions and platforms for data collection, data transformation, and use, and this session builds on the challenges and success, transformative solutions and practices and how to get practical to help countries think through the short- to long-term needs for their immunization data systems and how to ensure users (bottom-up/top-down) drive and inform the design.

Sala VI Potency Roadmaps to new technology adoption for freeze-free vaccine transport & solar energy harvesting

Moderator: Hamadou Dicko (Gavi). Ashvin Ashok (CHAI), Dereje Haile (UNICEF), Steve McCarney (SELF), Matt Morio (PATH)

In this session, the panelists will discuss key questions surround two promising new technologies. First, freeze-free vaccine carriers and cold boxes. These are now an option for minimizing vaccine freezing risks during transport, but what is required to affordably adopt and scale these devices? How would a "switch" to these devices unfold in a country? Second, SDD energy harvesting. The technology holds great potential for enabling facility-level services, but how can it gain traction?

Sala XIII

The reality on the ground: iSC challenges and solutions to take home

Efficiency

Wendy Prosser (JSI), Olivier Defawe (VillageReach), Mercy Mvundura (PATH), Ryan McWhorter (UNICEF)

This is your opportunity to share your unique challenges and work with peers to plan a path forward for taking back the lessons learned at TechNet and applying them in your country.

Sala XII Enablers ISC common agenda: advancing availability, quality and efficiency in the vaccine supply chain

Moderator: Hamadou Dicko (GAVI Secretariat)

While immunization services expand to reach the remaining 20 per cent of unvaccinated children, and more vaccines are introduced, pressure is mounting to achieve higher performance of the vaccine supply chain. The session will take forward the highlights from the conference, examining implications for scaling best practices in various country contexts, and exploring opportunities for collaboration and partnerships.

10:30 - 11:00 Coffee break

PLENARY

SALA I+II

11:00 - 12:30 Connecting the dots – what do individuals and communities need to achieve impact?

Gobee Group

This session digs deeper on topics from the plenary on the way forward together by exploring with users (individuals, countries, sectors, and communities) how to attain collaborative action at a local level by connecting dots between country to global and across sector, individuals and communities. Interactive, human-centered design approach breakouts will enable smaller groups to identify and synthesize needs and identified challenges from throughout the workshop with an eye to the future. Each breakout will engage users to understand needs, types of support, and the mechanisms to support individuals, communities, sector and countries to attain impact.

12:30 - 14:00 Lunch

PLENARY

SALA I+II

14:00 - 15:15 A Call to Action for the next generation of immunization supply chains

Moderator: Emma Stewart (PATH)

Each of us has a role to play in advancing our common agenda to improve supply chains so that every child has access to vaccines. This plenary will provide a summary of individual commitments and potential collaborators gathered throughout the week. The presentation will be followed by a panel discussion on how these commitments feed into collective action on supply chains.

15:15 - 15:30 **Closing remarks**

Ousmane Dia (UNICEF), Patrick Lydon (WHO)

Innovations Café

Tue-Thu: 17:30-18:30

The Innovations Café provides a one-hour slot for experts to showcase innovative solutions for strengthening immunization supply chains.

Cold room temperature mapping tool

Souleymane Koné (WHO); Mojtaba Haghgou (consultant)

This hands-on session will demonstrate how to use a tool developed by WHO to conduct a systematic temperature mapping exercise in an example cold room.

Wednesday 17:30-18:30, Sala X

A new way to conduct Effective Vaccine Management (EVM) assessments

Dan Brigden (WHO); Paul Colrain (consultant)

This session will provide an update on the EVMA upgrade project, which will transform the way that immunization supply chain performance is assessed. The new EVM improves the quality and quantity of supply chain performance data that is collected during an EVM assessment; simplifies the way in which data is collected; and increases the visibility and usefulness of assessment data at all levels. A hands-on demonstration of the new software will be given, along with a discussion of pilot country assessment planning and timelines.

Wednesday 17:30-18:30, Sala XII

Electronic Immunization Registry (EIR) in Tanzania and Zambia

Paul Nindi (PATH Zambia); John Richard (PATH Tanzania)

To address data-related challenges facing immunisation programmes, Tanzania and Zambia have deployed national electonic immunisation registries to ensure all children registered from birth do not miss a potential life-saving vaccine. Developed on different open source platforms, each EIR provides visibility into immunsation service deliery, including stock management via an android app at the facility and web based apps from district and above. Performance can be reviewed in real-time at all levels through intuitive dashboards and reports.

Tuesday 17:30-18:30, Sala VII

Electronic Vaccine Intelligence Network (eVIN)

Manish Pant, Pratik Shetty (Logistimo)

eVIN is a model for managing immunization program logistics at massive scale, currently applied across India. It is composed of supply chain management software, remote temperature monitoring, a network of vaccine and cold chain handlers, and other state-level and national-level supervisory. This system has successfully taken root across India (currently supporting 12 whole states, serving a 17.5 million birth cohort, 12K users, >2 million logistics transactions per month, ~50 million temperature readings per month, and terabytes of data), and has achieved strong performance measures (99.26% reporting rate, 99.51% availability of vaccines, and 89% cold chain equipment uptime). eVIN has strengthened last-mile vaccine stock management and decision-making through online monitoring dashboards which brings greater transparency and accountability in the system at all levels. This case study can help other nations, agencies, and consultants understand how to move programs from pilots to scale, and inform EPI programs on considerations after achieving high performance. Hint: Doing it with less money.

Wednesday 17:30-18:30, Sala XII

Field Supply - user-centric integrated health supply chain management

Michael Moreland (Field Intelligence)

Field Supply is a process- and user-centric integrated health supply chain management service, currently deployed at national scale in Nigeria's immunization program. Drawing on private sector control tower models, it fills critical gaps commonly seen in country SCM and LMIS deployments by providing (1) Turnkey data driven support for decision-makers: "program intelligence" analytics and dashboards on top of existing SCM and ERP systems, driven by an infinitely nestable indicator framework and an opinionated, field-developed management framework, and (2) Better solutions for workflow-integrated data collection: offline-first, workflow-supportive data entry tools for mobile and web to fill data collection gaps and support pragmatic SOPs. It is the product of years of design at country-level, development of offline-tolerant and analytics technologies, and new thinking on how LMIS use can ultimately sustain in government-led supply chains.

Thursday 17:30-18:30, Sala XII

Indigo - temperature-controlled vaccine carrier technology

Fridrik Larusson (New Horizons); Nels Peterson (Global Good)

Indigo is a new portable vaccine carrier technology that maintains vaccines at a safe range of 2-8 °C for at least five days at ambient temperatures as high as 43 °C without batteries, ice, or electricity. Indigo enables safe delivery of vaccines across the last mile of the cold chain to remote locations where external power is unavailable and motorized transportation may be difficult or impossible.

Wednesday 17:30-18:30, Sala XIII

Visibility and analytics dashboards in the private sector - key challenges, approaches, and outcomes

Sid Rupani (Llamasoft)

VAN is currently a hot topic of discussion and investment. LLamasoft's investments in new products (beyond its design core) in Visibility (ESP) and Planning (SupplyChainPlanning.com) are being used by leading private sector companies and we can share updates and insights from private sector use in these areas.

Tuesday 17:30-18:30, Sala VI

Mobile supply chain management in Zambia

Pratik Shetty (Logistimo); Francis Mwansa, Guissimon Phiri, Abrahams Mwanamwengea (Ministry of Health, Zambia)

Logistimo supply chain technology ensures stock availability and logistics coordination for Zambia EPI; currently supporting 115 users, at all national, regional, and district stores. In these locations, reporting rates were as high as 88%, but have recently dipped to 63%. Stock availability has remained above 94%. This program is poised to scale across all health centers. We would like to share experiences on "achieving escape velocity from pilots, and reaching national scale" and "modifying technologies and methodologies to adapt to new antigens, new processes, growing birth cohorts, and other changing conditions". We aim to demonstrate that supply chain targets can be achieved with radically lower implementation effort, and at lower unit economic costs than previously seen, and can also share analytical insights around value chain responsiveness, human engagement, and other opportunities.

Thursday 17:30-18:30, Sala VII

Innovations Café Tue-Thu: 17:30-18:30

M-Dagu – mobile-based application for LMIS

Carmit Keddem (JSI)

M-Dagu is a locally developed, open source, mobile-based software application, curently deployed in about 100 districts in Ethiopia, as part of nationwide rollout (system will be in 600 districts within 12 months). There are plans to extend it to health center level. Participants will learn about the application, the deployment model, and how it interfaces (exchanges data) with the HCMIS inventory management system (used in center and regions) - dashbaords allow data from both systems to be visualized and accessed at one page.

Thursday 17:30-18:30, Sala X

New vaccine delivery technologies

Sarah McGray (PATH)

EPI managers considering novel approaches to vaccine delivery, whether through the introduction of new technologies like blow-fill-seal containers or alternative methods of delivery like fIPV, must balance their impacts on cost, ease of use, logistics, immunogenicity outcomes, cold chain requirements, and supply availability and frequency. We will answer questions about different delivery technologies and approaches and provide EPI representatives with the latest information available. We also hope to hear from country-level stakeholders on the issues of concern to them and their priorities for their countries' immunization programs.

Tuesday 17:30-18:30, Sala XII

Designing a system to improve maintenance information flow

Shahrzad Yavari (Nexleaf Analytics)

Nexleaf is developing a maintenance and issue tracking application that is designed to be used alongside temperature monitoring systems. Temperature monitoring can provide useful insight on the functional status of refrigerators and real time alerts to drive action, but complementing the data with human-collected information about the root causes of failures, resolutions, and the resources used can lead to better performance of fridges (higher uptime) and better planning and procurement practices. This application will help strengthen the information flow among logisticians, technicians and managers. Nexleaf will showcase the initial version of the application followed by a discussion with the audience around how such a system can be implemented, adopted, and sustained in the country to strengthen cold chain management.

Wednesday 17:30-18:30, Sala VI

OpenLMIS for immunization supply chains

Vidya Sampath (VillageReach)

OpenLMIS is an open-source electronic logistics management information system (LMIS) built to manage health commodity supply chains in low- and middle-income countries. In this session, OpenLMIS will present the functionality available in the software to manage key supply chain management workflows, including the requisitioning (pull-based) of stock, as well as managing stock levels at a facility by conducting stock counts, transfers (issue/receive) and adjustments functionality. These workflows are essential to understanding where stock/vaccines are in the supply chain. OpenLMIS is collaborating with wide variety of stakeholders to build out features specific to managing the movements of vaccines throughout a supply chain. This work will inform the development of a vaccine module in OpenLMIS, set to be released at the end of 2017. The presenter will provide an overview of the development process for the vaccine module being undertaken and the key features currently available and soon to be developed. The presentation will take the format of a hands-on demonstration of the stock management workflows in OpenLMIS, specifically relating to vaccine logistics considerations and priorities.

Thursday 17:30-18:30, Sala XIII

Passive vaccine storage devices in Ethiopia

Tariku Berhanu (UNICEF Ethiopia)

This session will aim to share experiences in the use of passive vaccine storage devices with long holdover time in the immunization supply chain, and how they enable health workers to increase immunization sessions and vaccinate children in difficult and hard to reach areas in agrarian and pastoralist communities in Ethiopia.

Wednesday 17:30-18:30, Sala VII

Vietnam National Immunization Information System (NIIS)

Vu Minh Huong (PATH Vietnam)

On March 24, Vietnam's Deputy Prime Minister officially launched the National Immunization Information System (NIIS) in Vietnam. This system has been evolving in Vietnam since 2012. It allows health workers to use computers, smartphones, and tablets to enter and search for immunization records, and send short message service (SMS) reminders to those due for vaccination. In pilots it has shown to increase the on-time vaccination rates for essential vaccines for children, as well as reduce the time and costs associated with local routine immunization programs. The vaccine tracking function has been shown to decrease the likelihood of stock-outs and reduce vaccine waste. The NIIS is an ambitious system that positions Vietnam as a global leader in digital health. A demonstration of this system in the innovations Cafe will provide a chance for TechNet participants to discuss one-on-one with PATH staff how this system has evolved and what has contributed to reaching the milestone of national roll-out.

Tuesday 17:30-18:30, Sala X

Using advanced analytics to improve resource allocation, program delivery and supply chain performance

Jonathan Stambolis (Zenysis Technologies)

Come learn how you can pull together HMIS, LMIS, DHIS, survey data including weather into a single unified view and use advanced analytics to help improve program delivery and supply chain performance as well as resource allocation.

Tuesday 17:30-18:30, Sala XIII

Project Gallery

3D temperature mapping for cold chain management on the cloud	Sharif Tarasheh Research Center
Arktek passive vaccine device field experience and use cases in Ethiopia	Federal Ministry of Ethiopia
Liya Wondwossen (Federal Ministry of Ethiopia) Thursday, 17:30-17:45	
Autonomously track, monitor and power medical supplies, by solar	Hunter Global Tracking
Cost, health impacts and cost effectiveness of iceless refrigeration in India's vaccine cold chain	Mahidol Oxford Tropical Medicine Research Unit
Data for action: coordination and implementation of home-based record (HBR) redesigns and improved use Lora Shimp (JSI), Kirstin Krudwig (JSI)	JSI
Tuesday, 17:15-17:30	
Development and field testing of a long-term passive vaccine storage device	Sure Chill
Duncan Kerridge (Sure Chill) Thursday, 17:45-18:00	
Dose Per Container Partnership: insights from preliminary research	JSI
Wendy Prosser, Kirstin Krudwig, Diane Masket (JSI) Tuesday, 17:30-17:45	
Electronic Vaccine Intelligence network (eVIN): Transforming India's Supply Chain	United Nations Development Programme
Manish Pant, Shachi Adyanthaya, Abhimanyu Saxena (United Nations Development Programme) Wednesday, 17:30-17:45	
Freeze-free cold boxes and vaccine carriers: technology introduction and key considerations	CHAI
Freeze-safe vaccine carrier	AOV International
Going forth: coordinating informal transport workers to fulfill routine immunization distribution at scale	Field Intelligence
Thomas Keen (Field Intelligence) Thursday, 17:15-17:30	
Guaranteeing last-mile data visibility and reliable vaccine availability at scale	Logistimo

Immunization Academy Nathan Pienkowski (Bull City Learning) Thursday, 18:00-18:15	Bull City Learning
Integrated and responsive vaccines information management systeModerator: the case of VIMS in Tanzania	JSI
Introduction of five-dose vials of measles-rubella vaccine in Zambia to understand the effect of dose per container on systems and cost	JSI
Kirstin Krudwig (JSI), Diane Masket (JSI) and Wendy Prosser (JSI) Tuesday, 17:45-18:00	
Kenya Visibility and Analytics Network for Vaccines Yasmin Chandani (JSI) Wednesday, 17:15-17:30	JSI
Key considerations for Gavi CCEOP service delivery execution	CHAI
OpenLMIS: data visibility for improved vaccine supply chains Vidya Sampath (VillageReach) Wednesday, 17:45-18:00	VillageReach
Pakistan Quality Improvement Teams for improving immunization supply chains Chris Wright (JSI) Wednesday, 18:00-18:15	JSI
Planning and monitoring vaccine deliveries with ViVa Ryan McWhorter (UNICEF) Tuesday, 18:00-18:15	UNICEF
Primary packaging design innovation to improve supply chain efficiency	GlaxoSmithKline
Supply chain strategy to support primary health care revitalization in Nigeria	UNICEF
The Human Control Tower: Visibility and Analytics Network (VAN) in Mozambique	VillageReach
Vaccine LMIS in Ethiopia	JSI
Zambia Electronic Immunization Supply Chain Management System Initiative	Logistimo

Manufacturers Marketplace

The following companies will be represented at the Manufacturers Marketplace.

• 3rd Stone Design Inc.	3rd Stone Design, Inc. Refrigerators and freezers
AOV	AOV INTERNATIONAL LLP Cold boxes and vaccine carriers
AUCMA 澳柯玛	AUCMA CO.,LTD Refrigerators and freezers, cold boxes and vaccine carriers
medical systems	B Medical Systems Refrigerators and freezers, cold boxes and vaccine carriers
berlinger feel safe	Berlinger & Co. AG Temperature monitoring devices
bey nd wireless	Beyond IoT Temperature monitoring devices
	Blowkings Cold boxes and vaccine carriers
controlant	Controlant Temperature monitoring devices
dulas solar for life	Dulas Ltd Refrigerators and freezers, temperature monitoring devices
ELPRG	ELPRO Temperature monitoring devices
FRIDGE TENT eco-sensitive	GCS mobile solutions GmbH Cold rooms and freezer rooms
Godrej	Godrej & Boyce Mfg Co Ltd Refrigerators and freezers
Haier Inspired Living	Haier Medical and Laboratory Products Co., Ltd Refrigerators and freezers, temperature monitoring devices

HUNTER	Hunter Global Tracking Ltd. Solar power tracking
LIFOAM®	Lifoam Industries, LLC Cold boxes and vaccine carriers
NEXLEAF ANALYTICS	Nexleaf Analytics Temperature monitoring devices
Nilkamal	Nilkamal limited Cold boxes and vaccine carriers
Oceasoft	Oceasoft Temperature monitoring devices
Polestar Cooling	Polestar Cooling Ltd Refrigerators and freezers
POLYNOR	Polynor Safety Boxes
Smurfit Kappa Open the future	Smurfit Kappa Lagamill AB Safety boxes and slip sheets
SURECHILL COOLING TECHNOLOGY	Sure Chill Refrigerators and freezers, cold boxes and vaccine carriers
Temptime* Improving Global Health	Temptime Temperature monitoring devices
VESTFR#ST SOLUTIONS	A/S Vestfrost Refrigerators and freezers
ERO APPLIANCES	Zero Refrigerators and freezers
ZHENDRE SOLUTIONS AUX CONDITIONS EXTRÊMES	Zhendre Cold rooms and freezer rooms

TechNet Clinic

Resource Library

At this year's TechNet Conference, a dedicated TechNet-21 Clinic will be available to help conference participants get the most out of the TechNet-21.org website.

Opening hours:

- Tue-Thu: Coffee breaks, lunch, 17:00-18:30
- Fri: Coffee break, lunch

Stop by the TechNet-21 Clinic:

- If you have never visited the website and want to find out more.
- If you have a problem with your TechNet account, or need help setting one up.
- If you want to discuss collaborating or partnering with TechNet.
- If you have any feedback on the website that you want to share with us.

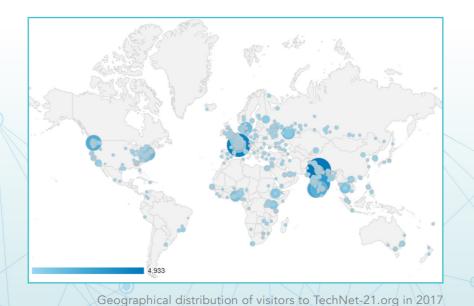
Ever since the original listserv mailing list was initiated in 1998, TechNet's online presence has continued to evolve to meet the changing needs of its members. In 2001, the first TechNet website was published; in 2010, 2013, and 2017 major website upgrades helped to ensure the network's online presence kept pace with changing web technologies.

The TechNet community has grown significantly since the last face-to-face gathering in Bangkok, Thailand in May 2015. At that time, the community counted 1,198 members. Two years later, the community has doubled in membership – now representing a total of 2,150 members.

Not only has membership increased, but we have noticed a boost in engagement on the website forum. The volume of posts has increased, and replies from members to posts has also increased. This is indicative of improved website engagement between conferences. Today, the TechNet-21website is more useful, easy-to-use, more reliable and more popular than ever.

We look forward to welcoming you!

The TechNet-21 Team

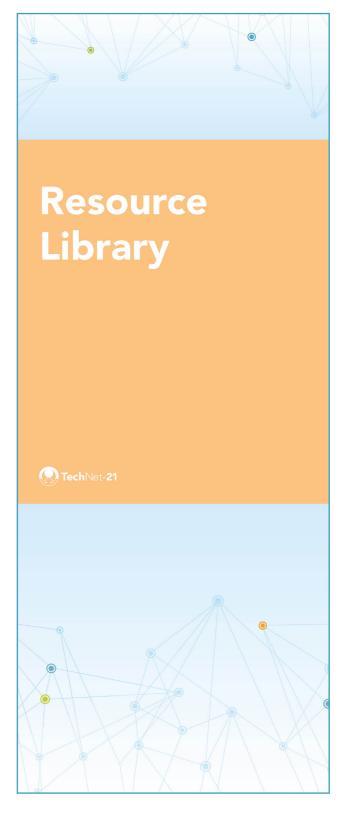


This area will enable organizations represented at the conference to showcase recently published immunization-related publications.

Opening hours:

• Tue-Thu: 08:30-18:30

• Fri: 09:30-14:00



List of participants

A

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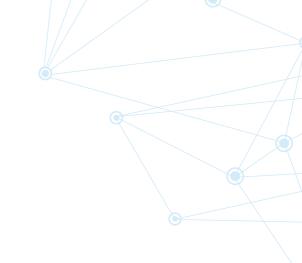
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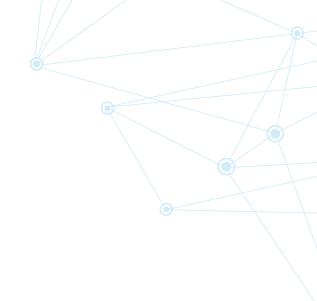
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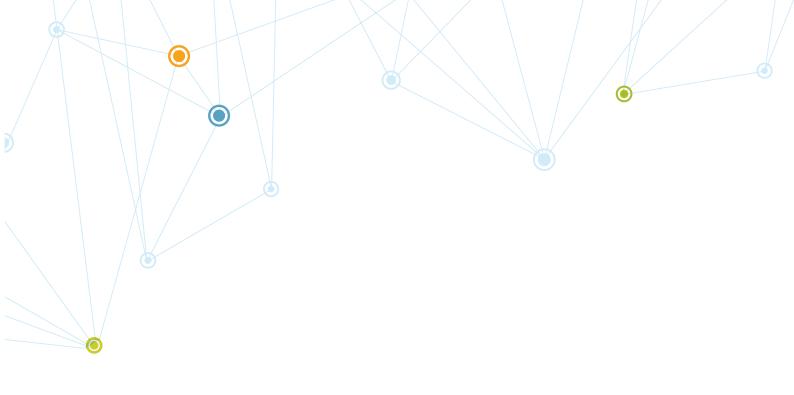
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