



14th TechNet Conference

Immunization Supply Chain and Logistics:
Current Challenges, Innovations,
Future Prospects

**MAY 11-15, 2015
BANGKOK, THAILAND**

**Conference
Guide**

IMMUNIZATION
SUPPLY CHAIN HUB



PLANNING PARTNERS



FUNDING





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Welcome

On behalf of the WHO and UNICEF Immunization Supply Chain and Logistics Hub and the TechNet Planning Committee, we are delighted to welcome you to Bangkok, Thailand for the 14th TechNet Conference.

Indeed, these TechNet meetings have a long history dating back to 1990, when the inaugural meeting (or Consultation as it was then known) was held in Nicosia, Cyprus.

This first meeting was attended by 32 participants, who represented the four main partners working on cold chain and logistics at the time – namely, WHO, UNICEF, PATH, and USAID (REACH/BASICS). During the meeting, topics like performance standards for the cold chain, solar options for cold chain equipment, temperature indicators and transport management were discussed.

Fourteen meetings later, and with over 250 participants representing 75 partners from the public and private sectors, the TechNet Conference has evolved from a small-scale consultation with key stakeholders to a much larger event with many more partner organizations working in this space. Another big change since earlier TechNet gatherings is the shift towards the immunization supply chain – a more encompassing term than the specific elements of a cold chain.

Twenty-five years on, many of the challenges discussed in Cyprus in 1990 remain relevant. A continuous flow of evidence shows that immunization supply chains designed and developed over three decades ago have outgrown their ability to manage this decade's priorities: introducing new vaccines, vaccinating age groups beyond infancy, and addressing the equity gaps in access to all vaccines at the last mile.

While these systems have shown extreme resilience in dealing with the growing challenges with limited funding, they have done so by resorting to ad-hoc solutions and unsustainable coping strategies.

The limitations of such approaches have now been reached, to the point where in-country immunization supply chains remain crippled by inefficiencies in vaccine storage, distribution, vaccine management and stock control, and are becoming a serious bottleneck to addressing the equity gaps in vaccination and achieving future immunization goals.



Report of the 1990 TechNet Consultation, attended by 32 participants. All TechNet Consultation reports are available on the TechNet-21.org website.



Participants at the 13th TechNet Consultation, held in Dakar, Senegal in 2013. Photo: WHO.

Ignoring these challenges is no longer possible. Piecemeal and fragmented approaches to alleviate immediate pressures will not solve perennial problems.

Faced with mounting concerns and the need to prioritize immunization supply chains as a pillar of immunization and health systems strengthening, WHO and UNICEF, under the umbrella of the Immunization Supply Chain and Logistics Hub, have selected the theme of the 14th TechNet Conference to be:

“Immunization Supply Chain and Logistics: Current Challenges, Innovations, Future Prospects”

Given the challenges of trying to cover every area of interest, the conference agenda has been organized into the following topics.

View presentations online

All plenary presentations, as well as the formal opening ceremony, will be streamed live on the TechNet channel of the USTREAM website. Once presentations have finished, they can be watched on the USTREAM website at any point.

www.ustream.tv/channel/technet-21



DAY	THEME	FOCUS TOPICS
Tuesday	Designing the supply chain	<ul style="list-style-type: none"> • Network redesign for the future and rethinking more fundamental supply chain design elements, such as integration and private sector engagement. • Ensuring that supply chain design addresses the basics in vaccine management best policies and practices.
Wednesday	Equipping the supply chain	<ul style="list-style-type: none"> • Equipping supply chains with new cold chain technologies and approaches that can extend the reach of vaccines to the last mile. • Protecting vaccine potency during storage and transport by equipping supply chains with continuous temperature monitoring systems and technologies.
Thursday	Managing the supply chain	<ul style="list-style-type: none"> • Improving supply chain management by implementing new approaches to strengthen human resources for logistics. • Managing the supply chain with improved approaches in Logistics Management Information Systems (LMIS).
Friday	Enabling the supply chain	<ul style="list-style-type: none"> • Enabling country-driven improvements to supply chains with global strategies, policies, and advocacy.

Morning sessions will be in plenary (all participants), and will focus on global updates and country-specific innovations related to the daily themes.

Afternoon sessions will be interactive, and will focus on the topics presented during the morning, including expert panel discussions and interactive breakout groups.

In addition, time on the agenda is included for participants to browse the many and various side events running alongside the formal agenda:

- Manufacturers Marketplace
- Innovations Café
- Project Gallery
- Video Gallery
- Resource Library
- TechNet-21 Clinic

This brochure will be your guide and resource to help you navigate through the conference.

Enjoy the conference and we look forward to interacting with you throughout the week.

With fond regards,

Patrick Lydon

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



Do you tweet?

Join the conference conversation on Twitter. Use the following hashtag for all TechNet Conference-related tweets.

#TechNetConference

Acknowledgements

Such an event cannot be organized singlehandedly. It's important to acknowledge the people and groups who have made the 14th TechNet Conference possible – even at the risk of forgetting to mention some.

Secretariat

Patrick Lydon (WHO)

Dan Brigden (WHO)

Planning Committee

Andrew Brown (People that Deliver)

Diana Chang-Blanc (WHO)

Dmitri Davydov (UNICEF)

Ousmane Dia (JSI)

Ann Hasselbalch (UNICEF)

Musonda Kasonde (UNICEF)

Debbie Kristensen (PATH)

Pat Lennon (PATH)

Ryan McWhorter (UNICEF)

Jeff Sanderson (JSI)

Benjamin Schreiber (UNICEF)

Brian Taliesin (PATH)

Chris Wright (JSI)

Organization

Eakkapol Chatpreechakul (Conrad Hotel Bangkok)

Dawadee Charnpanichkarn (KDC)

Special mentions

Sana Kisoso, Nathalie Chenavard, and Corinne Desfarges (WHO Headquarters)

Stephane Guichard (WHO South-East Asia Regional Office)

Aree Mounsookjareoun (WHO Thailand Country Office)

Agenda

Tuesday

- Dmitri Davydov (UNICEF)
- Ousmane Dia (JSI)
- Patrick Lydon (WHO)
- Ryan McWhorter (UNICEF)
- Jeff Sanderson (JSI)

Wednesday

- Pat Lennon (PATH)
- Sophie Newland (PATH)
- Benjamin Schreiber (UNICEF)

Thursday

- Andrew Brown (People that Deliver)
- Musonda Kasonde (UNICEF)
- Brian Taliesin (PATH)
- Chris Wright (JSI)

Friday

- Patrick Lydon (WHO)

Side events

Manufacturers Marketplace: Alex Pascutto (WHO consultant)

Innovations Café: Dan Brigden (WHO)

Project Gallery: Denise Habimana (Gavi)

TechNet-21 Clinic: Padmini Menon (WHO consultant)

Resource Library: Denise Habimana (Gavi)

Video Gallery: Denise Habimana (Gavi)

Live streaming: Alex Lee (Storytelling Media)

Conference Guide: Rebecca Richards-Diop (RRD Design) and Dan Brigden (WHO)

And finally...

Leaving this acknowledgement to the end should by no means diminish its importance. The 14th TechNet Conference would not have been possible without the generous funding of the Bill & Melinda Gates Foundation.

Conference events

Events at this year's TechNet Conference are divided into the formal agenda (plenary and interactive presentations) and side events (Manufacturers Marketplace, Innovations Cafe, Project Gallery, Video Gallery, TechNet-21 Clinic, and Resource Library).

FORMAL AGENDA

● Plenary sessions (AM)

BALLROOM 1+2

Formal plenary presentations will take place during the mornings of Tuesday to Friday. Plenary presentations will begin at 8:30 and finish at 12:00, with a 30-minute coffeebreak from 10:00 to 10:30.

● Interactive sessions (PM)

BALLROOM 1+2

NEW YORK ROOM

BEVERLY HILLS ROOM

Interactive sessions will take place during the afternoons of Tuesday to Friday. Two sets of three interactive sessions will take place at the same time each afternoon. The first set of three will be held from 14:00 to 15:00. The second set of three will be held from 16:00 to 17:00. In addition, lunchtime roundtable discussion will take place each day between 13:00 to 14:00.

SIDE EVENTS

● Innovations Café

BALLROOM FOYER

Innovations in data systems, temperature monitoring technologies and modelling tools will be demonstrated in the Innovations Café, enabling participants to learn about a particular technology innovation for the supply chain. Experts in each technology will host an informal discussion and hands-on demonstration of the technology.

● Project Gallery

LONDON ROOM

Learn about a wide variety of immunization projects and initiatives by browsing more than 40 posters from over 20 different organizations. Short presentations on selected posters will be given at scheduled times.

● Video Gallery

LONDON ROOM

Watch a selection of recently-released immunization-related videos and take part in Q&A sessions with the video-makers.

● Manufacturers Marketplace

BALLROOM 3

Visit the Manufacturers Marketplace, where vaccine and equipment manufacturers will showcase their latest devices, products and cold chain technologies, including temperature monitoring devices.

● TechNet-21 Clinic

LONDON ROOM

Want to learn more about the TechNet-21 website, what it does, and how it works? Can't log in, forgot your password, or have another website problem you can't resolve? Visit the TechNet-21 Clinic and we will answer your questions and fix your problem.

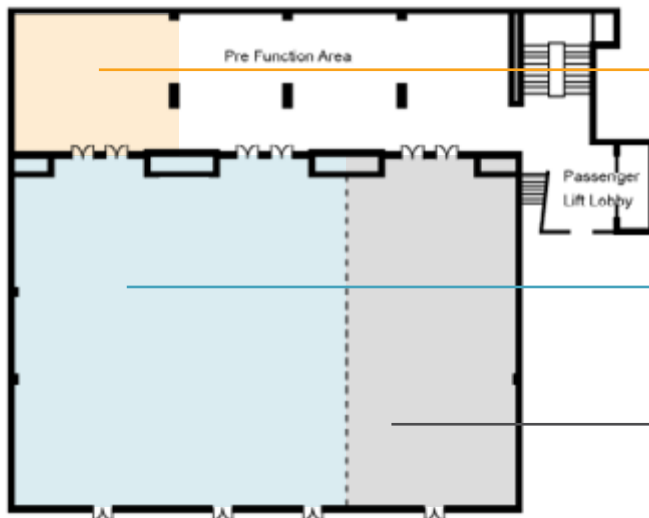
● Resource Library

LONDON ROOM

Drop by the Resource Library to browse a collection of useful immunization resources submitted by conference participants. Or submit your own!

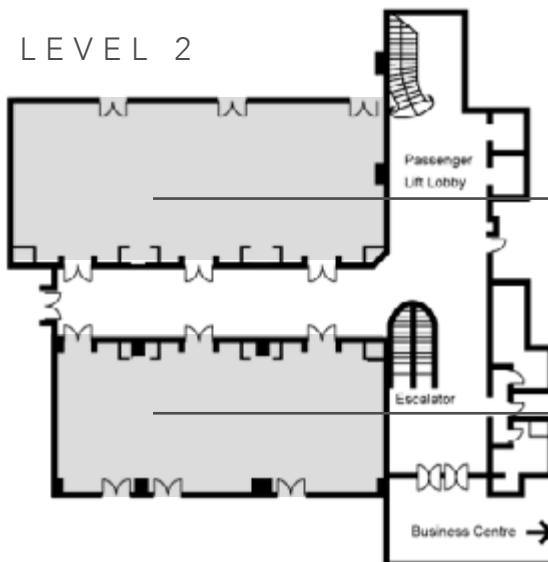
Hotel Map

LEVEL 4



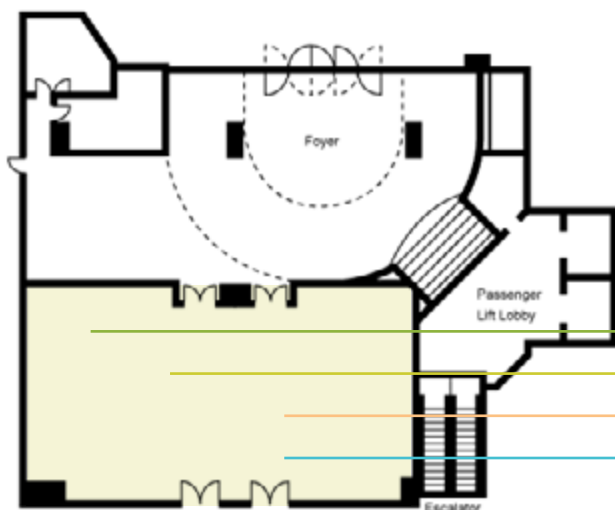
- **Innovations Café**
BALLROOM FOYER
- **Plenary sessions (AM)**
BALLROOM 1+2
- **Manufacturers Marketplace**
BALLROOM 3

LEVEL 2



- **Interactive sessions (PM)**
NEW YORK ROOM
- **Interactive sessions (PM)**
BEVERLY HILLS ROOM

LEVEL 1



- **Project Gallery**
- **Video Gallery**
- **Resource Library**
- **TechNet-21 Clinic**
LONDON ROOM

Formal agenda: Monday, 11 May

The opening of the 14th TechNet Conference will be made by senior officials from WHO, UNICEF and the Ministry of Health of Thailand.

Following a welcome message to participants, a historical review of TechNet from its inception in 1990 to today will be presented, including a special tribute to Andrew Garnett who tragically passed away on 22 February 2015 after dedicating more than 30 years working on cold chain and vaccine management strengthening.

The opening ceremony will then shift to keynote speeches related to the conference theme: “Immunization Supply Chain and Logistics: Current Challenges, Innovations and Future Prospects”.

The first keynote will be from the WHO Immunization Practices Advisory Committee (IPAC) that called-out the inattention being paid to immunization supply chains in 2013.

This committee raised the alarm bells at the highest levels within WHO through a “Call to Action” that was endorsed by WHO’s Strategic Advisory Group of Experts (SAGE) in April 2014.

Two others keynote presentations illustrating the challenges that developing countries face today will follow.

One will focus on the visual evidence through photos while the other will present quantitative evidence from recent assessments in 70 countries.

Finally, we will share some insights on future prospects and opportunities to improve supply chain systems.

A moderated discussion will then ensue immersing participants in the main topics presented in more detail over the following days.

The opening ceremony will then transition into a welcome cocktail reception.

Plenary sessions

Monday May 11

Chair: Patrick Lydon (WHO); rapporteur: Zainab Berry (consultant)

PLENARY SESSIONS

All day Ballroom foyer	Registration for participants Please register with KDC representatives at the Conrad Hotel to collect your TechNet Conference Welcome Pack.
16:00 - 18:00 Ballroom 1+2	Formal opening and key note presentations <ul style="list-style-type: none">• Formal opening of the TechNet Conference, Richard Brown (WHO) and Basil Rodriques (UNICEF)• Opening remarks, Piyanit Tharmaphornpilas (Ministry of Public Health of Thailand)• History of TechNet and a moment of silence in tribute to Andrew Garnett, John Lloyd (consultant) and James Cheyne (consultant)• A "Call to Action" for strengthening immunization supply chains - perspectives from IPAC, Robert Steinglass (JSI)• Key immunization supply chain challenges in developing countries - a photo safari, Benjamin Schreiber (UNICEF)• Key immunization supply chain challenges in developing countries - evidence from EVM assessments in 70 countries, Paul Colrain (WHO)• A global perspective on immunization supply chain prospects and opportunities for the future, Raja Rao (Gates Foundation)• Moderated discussion: Immunization supply chain challenges, innovations and future prospects - let's get in the TechNet mood!, Diana Chang-Blanc (WHO)• Introduction to the agenda and format of the 14th TechNet Conference, Patrick Lydon (WHO)• Formal group photograph
18:00 - 20:00 Ballroom foyer	Cocktail reception Please join us and raise a glass to celebrate the opening of the conference.



Formal agenda: Tuesday, May 12

Tuesday morning sessions will focus on the components to consider when **designing the supply chain**. These can range from network design optimization to other system design elements such as private sector engagement and integration with other health commodity supply chain systems.

We will begin with a global update on new efforts to frame supply chain system design within an informed, evidence-based decision-making process.

The process brings together agencies, industry partners, and local experts to define guidance, mechanisms, and metrics in support of activities that can improve availability, potency and efficiency of in-country distribution systems.

This will be followed by the presentation of a series of selected country experiences in Mozambique, Ethiopia, Benin and Thailand.

Each country will illustrate the approach they took to supply chain design and redesign including level-jumping, informed-push distribution, optimizing transport routes, implementing a moving warehouse, and outsourcing distribution to the private sector.

Irrespective of some of these supply chain design elements to consider, it's important to ensure that fundamental vaccine management best practices are adhered to and complied with.

This second topic will be a general update on global efforts to strengthen vaccine management best practice and will be followed by presentations from Myanmar and Uganda that illustrate some challenges with immunization supply chain fundamentals and how fixing some of the basics in vaccine management may have as much impact as redesigning the supply chain.

Afternoon sessions will allow participants to go deeper into these topics through interactive panel discussions and focused breakouts.

Tuesday 08:30 - 12:00

Chair: Ousmane Dia (JSI); rapporteur: Modibo Dicko (consultant)

PLENARY SESSIONS

08:30 - 09:00 **Global updates: Network design, system optimization and vaccine management best practice**

- Ensuring the basics are fixed: Vaccine management best practice, Diana Chang-Blanc (WHO)
- Network design and optimization, Ryan McWhorter (UNICEF)
- Introduction to country case studies, Ousmane Dia (JSI)

09:00 - 10:00 **Country innovations: Designing for the future and rethinking more fundamental design elements**

- **Mozambique** - Network optimization modelling to prepare for new vaccine introduction, Graca Matsinhe (Ministry of Health)
- **Ethiopia** - Network optimization for transport to determine resource requirements and shorten distribution pipeline, Henok Benti (JSI)
- **Benin** - Modelling and moving warehouse, Philippe Jaillard (AMP)
- Moderated Q&A: Designing the system, Jeff Sanderson (JSI)

COFFEE BREAK

10:00 - 10:30

PLENARY SESSIONS

10:30 - 12:00 **Country innovations: Fixing the basics by strengthening vaccine management policies and practices**

- **Thailand** - Experience from streamlining the network design for vaccines by outsourcing to the private sector, Netnapi Suchonwanich (Ministry of Health)
- **Myanmar** - Immunization supply chain challenges in a resource constraint country and during a mass MR campaign, Kyaw Kan Kaung (Ministry of Health)
- **Uganda** - Lessons learned from supply chain integration and improving vaccine management using the EVM approach, William Musubire (Ministry of Health)
- **Somalia** - Immunization supply chain challenges in a fragile state and lessons learned, Douglas Mukwaya (UNICEF Somalia)
- Moderated Q&A: Designing the system, Jeff Sanderson (JSI)
- Afternoon session teasers, Ryan McWhorter (UNICEF)

LUNCH BREAK

12:00 - 14:00

ROUNDTABLE DISCUSSION

Immunization Supply Chain – driving coverage and equity improvements

New York room (level 2)

Moderator: Xiaojun Wang. Co-facilitator: Dmitri Davydov (UNICEF).

In recent years, many national immunization programmes have been increasingly engaged in improving immunization supply chain management and improving immunization coverage and equity. However it is also observed that often two programmatic areas are planned and managed separately, leading to missed opportunities or reduced programme efficiency.

This section aims to increase recognition on close linkages between those two areas, particularly in line with reaching the most hard-to-reach populations; and to identify synergies potentially required in order to overcome the last mile and protect the last child. The session will include a short presentation sharing country experiences, followed by open discussions on challenges, opportunities, innovations and potential solutions.

Interactive sessions

Tuesday 14:00 - 15:00

EXPERT PANEL DISCUSSION

Supply Chain Integration - the good, the bad and the ugly

Ballroom 1+2 (level 4)

Moderator: Modibo Dicko (consultant). Panellists: William Musubire (MoH Uganda), Phionah Atuhebwe (PATH Uganda), Henok Benti Hailemariam (JSI Ethiopia), Tariku Berhanu Desalegn (UNICEF Ethiopia), and Mukunda Gautam (MoH Nepal).

Although there has been a significant degree of integration of the supply chain for health commodities in many countries, a number of programme commodities such as immunization continue to run vertical supply chain systems. The reasons given are often due to the specificities of the specific products it manages (temperature sensitive vs. non-temperature sensitive health commodities). In addition, in immunization more than any other health programme, standards and practices should be maintained but not at the expense of compromising coverage and timeliness of immunization. Supply chain integration has been initiated in several countries but frequently the national immunization programme was not part of the process or integration was at limited scale. The session will focus on learning from countries that have successfully integrated vaccine supply systems with pharmaceutical supply chains from the national level to the service delivery points.

BREAKOUT SESSIONS

Network modelling - what tools and approaches exist?

Beverly Hills room (level 2)

Moderator: Ryan McWhorter (UNICEF). Panellists: Shawn Brown (Carnegie Mellon University) and Sidharth Rupani (Llama-soft).

What is the change in operating costs if I double transportation frequency and reduce storage capacity? Can my cold chain capacity support a new vaccine introduction? Do I need a central medical store? It is possible to use software tools to help you understand and advocate for changes in your supply chain structure. This is your chance to talk to experts about your unique challenges, hear how two tools (HERMES and Supply Chain Guru) have been used in similar contexts, and see the tools in action as an expert panel of technologists will be on-hand to answer your questions and demonstrate the applicability of their tools to modelling the immunization supply chain.

Setting up network redesign for success - the US CDC example

New York room (level 2)

Moderator: Raja Rao (Gates Foundation). Presenter: Anjella Johnson-Hooker (CDC).

No visibility to vaccines once they left the National Store (National Distribution Center). Reports of expired vaccines. A reliance on expensive, emergency shipments. Inability to respond to health crises efficiently and effectively. This was the United States immunization supply chain system less than 10 years ago. The National Center for Immunization and Respiratory Diseases (NCIRD) at the United States Centers for Disease Control (CDC), has reshaped their network to deliver a stable, high-performing supply chain. Anjella Johnson-Hooker, NCIRD, Associate Director for Management and Operations, will share with you how the US CDC managed the "project before the project", aligned stakeholders to new initiatives, and managed the network redesign implementations to success.

COFFEE BREAK

15:00 - 16:00

TIME TO BROWSE SIDE EVENTS

EXPERT PANEL DISCUSSION

Outsourcing logistics - view from both sides

Ballroom 1+2 (level 4)

Moderator: Walter Proper (JSI). Panellists: Netnapis Suchonwanich (National Health Security Office, Thailand) and Kameko Nichols (Riders for Health).

Outsourcing logistics is becoming more prevalent as a network design strategy, enabling the immunization programme to focus on health while positioning an expert to manage the supply chain according to their experience. While this is a clear strategy at a high level, how do country programmes decide on what segments of the supply chain to outsource? Should a logistics officer outsource by region, function (warehousing, transportation), commodity, or all? Further, what measures are there to ensure high performance by the logistics provider? This expert panel will present outsourcing from both sides of the equation, so you can learn about how a country programme arrived at an outsourcing decision and is managing the on-going relationship. Likewise, you can learn about what a third-party logistics provider is looking for in a potential customer and how they see themselves as well-placed to manage your important commodities.

BREAKOUT SESSIONS

Informed-push distribution - is this the magic bullet to vaccine transportation?

New York room (level 2)

Moderator: Emily Bancroft (VillageReach). Presentations: Graça Matsinhe (MoH Mozambique), Philippe Jaillard (AMP), Ruth Bechtel (Village Reach), Michael Moreland (eHealth Africa) and Rabi Muhammad Fagge (MoH Nigeria).

A number of countries have implemented new immunization supply chain designs to improve responsiveness, efficiency, and efficacy in recent years. In this panel, representatives from Mozambique, Benin, and Nigeria will discuss the use of "informed push" supply chain designs and their effect on vaccine availability and potency, as well as on supply chain costs. Through a moderated discussion, the panel will explain the critical components of an informed push system and the impact on immunization supply chains at the country level. The panellists will also provide an honest assessment of the benefits and challenges of implementation, and advice for countries considering the implementation of similar system changes.

Effective Vaccine Management - let's get comprehensive!

Beverly Hills room (level 2)

Moderator: Dmitri Davydov (UNICEF). Presentations: Joe Pett (UNICEF Nepal); Douglas Mukwaya (UNICEF Somalia); Kyaw Kan Kaung (MoH Myanmar); Onei Uetela (UNICEF Mozambique).

Since 2010, WHO and UNICEF have supported more than 70 developing countries assess their immunization supply chains using the Effective Vaccine Management (EVM) assessment tool. A recent global analysis of these assessments highlight a number of shortcomings: (a) No countries meet the basic standards for vaccine management best-practice, (b) weak supply chain systems are a bottleneck to new vaccine introductions and coverage improvements, (c) available solutions are being tackled in a fragmented way or not being implemented, and (d) funding opportunities to address the bottlenecks are being missed. In response to these shortcoming, the WHO and UNICEF immunization supply chain and logistics Hub is spearheading the 4 step comprehensive EVM approach to prepare, assess, plan and implement change at country level while contributing to broader programmatic immunization and health systems strengthening outcomes. The session will examine country experiences of cEVM interventions from preparation to implementation.

END OF DAY



Formal agenda: Wednesday, May 13

Wednesday morning sessions will focus on **equipping the supply chain** with new technologies and approaches to extend the reach of the cold chain into the last mile and innovative temperature monitoring systems to safeguard the potency of vaccines up to service levels.

A series of global presentations will set the stage for the latest innovations in cold chain and temperature monitoring technologies.

In addition, new guidance and support packages available to countries for procuring, installing and managing these new technologies will be presented.

This will be followed by a set of country-specific presentations from Senegal and Vietnam that will showcase how long-term passive cooling containers or solar direct-drive technologies allow the possibility to have cold chain for vaccine storage in areas where cold chain infrastructure was previously impossible to have.

We will also hear from the experience from Togo who successfully implemented a controlled temperature chain (CTC) approach during a Meningitis A campaign whereby vaccines were kept outside of the standard cold chain system in a CTC up to 4 days at ambient temperature not exceeding 40°C in areas where cold chain infrastructure is weak.

Continuing with novel approaches to

temperature monitoring, the recent experience from Lao PDR, Mozambique and Turkey will be presented.

Each country will show a variety of different approaches ranging from implementing 30-day temperature recorders to sophisticated remote systems for temperature monitoring across the entire end-to-end supply chain.

Afternoon sessions will allow participants to go deeper into these topics through interactive panel discussions and focused breakout sessions.

Wednesday 08:30 - 12:00

Chair: Diana Chang-Blanc (WHO); rapporteur: Ticky Raubenheimer (consultant)

PLENARY SESSIONS

- 08:30 - 09:00 **Global updates: Cold chain equipment, maintenance and temperature monitoring systems**
- Latest on WHO PQS and prequalification of cold chain equipment, technologies and devices for immunization, Denis Maire (WHO)
 - Latest from UNICEF SD on cold chain equipment, technologies and support package, Dereje Haile (UNICEF)
 - Temperature monitoring evidence, strategies, technologies and practices - Where do we go from here?, Benjamin Schreiber (UNICEF)
 - Introduction to Country Case Studies, Debra Kristensen (PATH)

- 09:00 - 10:00 **Country innovations: Extending the reach of vaccines with CCE and other innovations**
- **Senegal** - Using long holdover passive storage devices at the last mile, Khadidiatou Gomis (Ministry of Health)
 - **Vietnam** - Using solar direct drive CCE: the needs, success and challenges, Nguyen Van Cuong (Ministry of Health)
 - **Togo** - Implementing a controlled temperature chain (CTC) approach during a Meningitis A vaccine campaign, Dadja Essoya Landoh (Ministry of Health)
 - Moderated Q&A: Equipping the system, Pat Lennon (PATH)

COFFEE BREAK

10:00 - 10:30

PLENARY SESSIONS

- 10:30 - 12:00 **Country innovations: Protecting vaccines with continuous temperature monitoring during storage and transport**
- **Lao PDR** - Implementing a temperature monitoring strategy with 30 day temperature recorders (30 DTR) - opportunities and challenges, Kongxay Phounphenghack (Ministry of Health)
 - **Mozambique** - Innovations in cold chain temperature monitoring, Graca Matsinhe (Ministry of Health)
 - **Turkey** - Innovative approach for end-to-end temperature monitoring of the vaccine cold chain, Osman Topaç (Ministry of Health)
 - Moderated Q&A: Equipping the system, Benjamin Schreiber (UNICEF)
 - Afternoon session teasers, Benjamin Schreiber (UNICEF)

LUNCH BREAK

12:00 - 14:00

ROUNDTABLE DISCUSSION

What is the optimal number of doses per vaccine vial size?

New York room

Moderator: Robert Steinglass (JSI). Co-facilitator: Alexis Heaton (JSI).

The global effort to protect all children from vaccine preventable disease has historically used multi-dose vials (MDVs) in developing countries in order to offer lower prices per dose and promote higher purchase volumes. However, the selection of number of doses per vial involves inherent trade-offs between wastage, timely coverage, cold chain requirements, safety, efficiency, and vaccine and total system costs, particularly in lower- and middle-income countries where resources are limited.

A group of global stakeholders is now being engaged to discuss these trade-offs, compile the evidence to inform decision making, and identify critical gaps in knowledge and tools needed to improve the availability and promote the selection of appropriate options for doses per vial. This facilitated roundtable discussion will bring together stakeholders with global and field perspectives to share insights on priorities and preferences for vaccine vial sizes.

Interactive sessions

Wednesday 14:00 - 15:00

EXPERT PANEL DISCUSSION

Cold chain equipment optimization platform – how can we refresh and extend country cold chain systems to reach our coverage and equity goals?

Ballroom 1+2 (level 4)

Moderator: Lauren Franzel (Gavi).

The Gavi Supply Chain Strategy recognises the cold chain as a pre-requisite to achieving the Alliance's coverage and equity goals. High-performing and well-maintained cold chain equipment is a critical component of the supply chain, and vital to ensure that vaccines are available and potent to protect all children reliably, efficiently and sustainably. Overcoming this bottleneck will be an important driver of success for Gavi's 2016-2020 strategy. Partners have been developing an innovative mechanism - the Cold Chain Equipment Optimisation Platform - to get equipment that is more efficient and sustainable, and better performing, deployed to every health facility where it is required at an affordable price, as a means to make progress towards Gavi's strategic goals.

BREAKOUT SESSIONS

Solar cold chain equipment versus solar systems: where should we be going?

New York room (level 2)

Moderator: Steve McCarney (SELF). Presentations: Steve McCarney (SELF), Modibo Dicko (consultant), and Joanie Robertson (Gavi).

Thousands of health facilities in developing countries lack reliable electricity yet immunization programmes have long recognized the importance of a reliable power source for WHO-prequalified cold chain equipment (CCE) to keep vaccines potent. Solar panels matched with appropriate refrigerators have been in use for over three decades. Now the second generation of solar direct-drive (SDD) equipment have been improved by eliminating the need for a large industrial battery. In this session we will probe the idea of expanding solar beyond just powering CCE with the following questions: What other basic needs are not being provided for? So why have basic needs not also been powered with solar electricity?, Are these basic needs not so important or is this for other programmes to solve? Are there any new developments to help these facilities obtain basic needs?, What are the drawbacks of expanding solar power beyond CCE? How can larger facilities with much larger needs be addressed? Who should be addressing larger facilities with unreliable electricity and how? This discussion will bring together global and field perspectives to share insights on these questions.

Data standards for temperature monitoring and cold chain equipment inventories: developing frameworks for interoperability

Beverly Hills room (level 2)

Moderator: Richard Anderson (University of Washington).

Temperature monitoring is recognized as an important tool to ensure a quality vaccine cold chain. Multiple approaches are used for tracking refrigerator temperatures, including manual daily recording, logging devices which record a month's temperatures, and real-time devices which send regular reports of temperature to a centralized server. To allow these different approaches to collect compatible data, and to allow different types of temperature monitoring devices to be combined into unified systems, it is necessary to have data standards to support interoperability. This breakout session will provide an introduction to data standards in the context of ongoing efforts by WHO, UNICEF, and PATH to increase the use of accurate equipment inventory and continuous temperature monitoring data to improve equipment management and planning. We hope to advance the process of developing an open data standards for immunization logistics, including standards for temperature monitoring of vaccine refrigerators and standards for cold chain equipment inventories.

COFFEE BREAK

15:00 - 16:00

EXPERT PANEL DISCUSSION

The innovation of the Controlled Temperature Chain - where do we go from here?

Ballroom 1+2 (level 4)

Moderator: Anna-Lea Kahn (WHO). Panellists: Olga Popova (Janssen), Lauren Franzel (Gavi), Florence Fermon (MSF), Dadja Landoh (WHO Togo) and Patrick Lydon (WHO).

Many vaccines are more heat stable than their labelling suggests. Leveraging the true thermostability of vaccines opens the possibility to be used outside of the traditional 2 to 8°C cold chain in a Controlled Temperature Chain (CTC). Yet, translating this into a safe and effective practice in countries remains a challenge. A key component of the CTC agenda is the definition of the conditions allowing a CTC to be adopted, which includes documented thermostability and regulatory approval. To date, only one vaccine product has successfully met the criteria to be licensed and prequalified for use in a CTC. How can this be done for other existing heat stable vaccines? What is preventing future vaccines to be licenced with a CTC label? What are the main challenges both upstream in the vaccine development and manufacturing stage and downstream- at country-level implementation? These questions will be addressed by a variety of experts representing a cross-section of CTC stakeholders and perspectives.

BREAKOUT SESSIONS

Cold chain equipment management and maintenance systems in countries - how to solve this conundrum?

New York room (level 2)

Moderator: Modibo Dicko (consultant). Presentations: Ousmane Dia (JSI), Tory Hart (UNICEF Mali) and Nguyen Cuong (MoH Vietnam).

Effective Vaccine Management (EVM) results show that equipment maintenance, particularly at the lower levels of the vaccine supply chain, is one of the weakest areas of vaccine management systems. Yet, effective equipment maintenance systems directly impacts on the availability and potency of vaccines, as well as the overall efficiency of the supply chain. But what are effective strategies to ensure maintenance services are available where and when they are required? How do we help national immunization programmes advocate for why maintenance systems need to be prioritized and funded? This breakout session will provide participants with an opportunity to learn from the equipment maintenance experience of countries, from engineers and from equipment manufacturers. An interactive discussion will follow to solve the conundrum of equipment management and maintenance.

How can we design effective temperature monitoring systems in developing countries?

Beverly Hills room (level 2)

Moderator: Adama Sawadogo (UNICEF). Panellists: Claire Frijs-Madsen (UNICEF Consultant), Mercy Mvundura (PATH), Gopal Nadadur (CHAI), Tara Banani (CHAI), and Andrew Meyers (Cold Chain Consultants).

Vaccines are temperature sensitive products and can get damaged by excessive exposure to heat or freezing temperature. While heat exposure can be detected through Vaccine Vial Monitors (VVMs), freezing remains largely undetected. Evidence has shown that up to 35% of vaccines are exposed to extended periods of freezing. Today, many temperature monitoring technologies to address this problem but technologies are only a part of the solution. The most important and challenging elements of these technologies is to establish management processes that ensure their use, compliance and the corrective actions are taken in case of temperature excursion alarms. This session will discuss how to design an effective temperature monitoring systems that includes both the technology and the management of the technology.

END OF DAY



Formal agenda: Thursday, May 14

Thursday morning sessions will focus on **managing the supply chain** with a skilled, competent and motivated supply chain workforce who have access to reliable and timely data for managing the supply chain.

The session will first provide updates on global initiatives and efforts to strengthen human resources (HR) for supply chain management (SCM), including an introduction to resources that have been developed to support countries to plan for and implement HR for SCM strengthening activities.

Similarly, updates on global initiatives and efforts to strengthen data for management and logistics management information systems (LMIS) will be introduced.

Following these global updates, representatives from country Ministries of Health will discuss innovative and effective broad-based approaches to improving human resources for supply chain management, as well as those more specific to the needs of cold chain and vaccine management.

The session will explore implementation challenges and lessons learned, highlighting opportunities that can be leveraged from the wider array of human resources for health initiatives.

On the data and LMIS side of managing the supply chain, we will hear from Pakistan which has implemented a networked vaccine logistics information system; Tanzania which is tracking and tracing vaccines with barcodes; and Sri-Lanka which is implementing the Web Based Immunization Information System (WEBIIS) with a national immunization registry allowing to track every vaccine encounter at the place of occurrence while maintaining real time stock balances of vaccines.

Afternoon sessions will allow participants to go deeper into these topics through interactive panel discussions and focused breakout sessions.

Thursday 08:30 - 12:00

Chair: Chris Wright (JSI); rapporteur: James Cheyne (consultant)

PLENARY SESSIONS

- 08:30 - 09:00 **Global updates: Human resources for logistics**
- Global activities influencing HR for supply chain management (SCM), Musonda Kasonde (UNICEF) and Andrew Brown (People that Deliver)
 - Introduction to the country presentations on approaches to strengthening HR for SCM and panel discussion, Musonda Kasonde (UNICEF)

- 09:00 - 10:00 **Country innovations: Approaches to strengthening human resources for logistics**
- **Vietnam** - Innovative approaches to managing and strengthening HR for supply chain management, Dorothy Leab (AMP)
 - **Myanmar** - Developing leaders and HR capacity for effective supply chain management: challenges and opportunities, Kyaw Kan Kaung (Ministry of Health)
 - **Laos PDR** - Developing leaders and HR capacity for effective supply chain management - challenges and opportunities, Aatur Rahman (UNICEF Laos PDR)
 - **India** - Building institutions for HSS –Experience of a National Cold Chain and Vaccine Management Resource Center, Srihari Dutta (UNICEF India)
 - Moderated discussion: "How do we achieve country based change to improve immunization and health supply chains?", Andrew Brown (People that Deliver)

COFFEE BREAK

10:00 - 10:30

PLENARY SESSIONS

- 10:30 - 11:00 **Global updates: Data for management**
- Global report from the data for management working group on challenges/priorities, Gemma Orta-Martinez (UNICEF)
 - Introduction to the country presentations on approaches to strengthening data for management and panel discussion, Brian Taliesin (PATH)

- 11:00 - 12:00 **Country innovations: Approaches for strengthening data for management**
- **Pakistan** - Networked information systems for vaccine logistics: the vLMIS, Nabeel Maqbool (USAID DELIVER)
 - **India** - Engaging end users to increase mobile LMIS adoption, Bhriagu Kapuria (Ministry of Health)
 - **Sri Lanka** - Web Based Immunization Information System (WEBIIS) , Chathura Edirisuriya (Ministry of Health)
 - Moderated Q&A: Managing the system with data, Jan Grevendonk (WHO)
 - Afternoon session teasers, Brian Taliesin (PATH)

LUNCH BREAK

12:00 - 14:00

ROUNDTABLE DISCUSSION

Immunization session sizes are Binomial! Implications for forecasting, vaccine wastage and stock management

New York room (level 2)

Moderator: Paul Colrain (WHO).

Accurately forecasting vaccine needs requires accurate estimates of vaccine wastage in the supply chain. In the absence of reliable data on wastage, most countries resort to WHO indicative wastage rates for closed vials and opened multi-dose vials. However, these indicative rates are often different from national values, and when used distort forecasts that can potentially result in stock-outs or over-stocking.

The expected opened vial wastage rate of a health facility depends on the vial size and the expected distribution of session sizes. In the absence of clear guidance, many health workers are put under pressure to keep wastage rates below acceptable levels, potentially resulting in missed opportunities and reduced coverage. Decreasing the number of immunization sessions per week will increase the mean session size and so reduce opened vial wastage. However, limiting the number of immunization opportunities may have a negative impact on coverage.

It is difficult for a national or district manager to determine the optimal session frequency (or vial size) for different immunization facilities without knowing the impact his/her choices will have on the expected opened vial wastage rate. The solution – Binomial statistics.

Interested? Join the session to hear more.

Interactive sessions

Thursday 14:00 - 15:00

EXPERT PANEL DISCUSSION

Country blueprints for supply chain Visibility and Analytics Networks

Ballroom 1+2 (level 4)

Moderator: Maeve Magner (Gates Foundation).

Why do mothers and their children not receive the vaccinations they need? Often it is because the right stock is not in the right place when it is needed (not because of national stockouts). Knowing this, the Bill & Melinda Gates Foundation has funded the development of a Visibility and Analytics Network (VAN) blueprint to leverage private-sector design approaches and leading practices to improve end-to-end visibility of public health supply chain information. Hear how Ethiopia, Tanzania, and Mozambique are applying the blueprint to existing country data systems, strengthening people, policies, and processes to help achieve better patient outcomes.

BREAKOUT SESSIONS

How do we strengthen supply chain leadership in countries?

New York room (level 2)

Moderator: Chris Wright (JSI). Co-Facilitators: Musonda Kasonde (UNICEF) and Andrew Brown (People that Deliver). Presentations: William Musubire (MoH Uganda), Douglas Mukwaya (UNICEF Somalia), and Moussa Valle (MoH Malawi).

The public health community recognizes that functional supply chains are essential to health service delivery and achieving programme outcomes and global targets like the MDGs. An effective supply chain requires effective leaders who are able not only to manage day-to-day operations, but also to understand and embrace supply chain best practices, to collaborate with a broad array of stakeholders, and to advocate for financial and human resources. Supply chain leadership is on the international agenda, with development partners including Gavi, UNICEF, and USAID leading a global initiative to strengthen in-country health supply chain leadership and management. This session will explore practical examples of leadership, identify enablers of and barriers to effective leadership, and propose interventions to help find and empower capable supply chain leaders.

How should we use immunization supply chain data for continuous improvement?

Beverly Hills room (level 2)

Moderator: Jan Grevendonk (WHO). Co-facilitator: Gemma Orta-Martinez (UNICEF).

Increasingly countries invest in Logistics Management Information Systems and Visibility (LMIS) and Analytics systems, which track vaccine stocks, consumption, orders, cold chain status, and more. But are the data these systems produce also used for identifying potential bottlenecks and overall better management of the supply chain? Are managers paying attention to supply chain indicators and do they act upon them? How can data be best presented and what key indicators and dashboard elements can make a difference? Are these systems contributing to continuously improve the immunization supply chain? Are there positive stories in which better data has led to improved outcomes?

COFFEE BREAK

15:00 - 16:00

TIME TO BROWSE SIDE EVENTS

EXPERT PANEL DISCUSSION

Using mobile technologies to strengthen vaccine LMIS in Uttar Pradesh

Ballroom 1+2 (level 4)

Moderator: Brian Taliesin (PATH).

Uttar Pradesh in northern India is one of the more difficult regions of the world for health service delivery. In 2011, only 16 per cent of all children were fully vaccinated, and neonatal, infant and child mortality rates are some of the highest in the country. However, things are improving with the government-supported deployment and use of a mobile LMIS covering over 8 million citizens in the western part of the state. This presentation will cover the quantitative and qualitative health impacts that have been achieved through the LMIS deployment and how data is now being used for management. Also hear how the use of mobile technologies fits into the broader universal immunization programme and plans for national scale.

BREAKOUT SESSIONS

The role of national logistics and supply chain working groups

New York room (level 2)

Moderator: Andrew Brown (People that Deliver). Co-facilitator: Wendy Prosser (Village Reach). Panellists: Joyce Charo (MoH Kenya), Onei Uetela (UNICEF Mozambique), Graça Matsinhe (MoH Mozambique), Kenny Peetosutan (UNICEF Indonesia), Chinenye Ekpemauzor (MoH Nigeria) and Rabi Muhammad Fagge (MoH Nigeria).

One of the key mechanisms for decision making in health supply chains are national logistics and supply chain working groups. These groups vary in name between countries and may be commodity specific or broad in their mandate. Engaging the correct stakeholders, taking consensus decisions and making meaningful system changes can be difficult. In this working session different styles of national supply chain working groups will be presented and the experience of countries shared. Further, participants will be engaged in an interactive process to determine how national supply chain working groups can be more effective and provided with tools that may aid them in country application.

Effective Vaccine Management (EVM) as a tool for human resource capacity building

Beverly Hills room (level 2)

Moderator: Souleymane Kone (UNICEF). Co-facilitator: Musonda Kasonde (UNICEF).

With the rising cost of vaccines and the greater storage capacity now required at every level of the cold chain, countries must maintain lower stock levels, reduce wastage, accurately forecast vaccine requirements, and prevent equipment break-downs. This requires a consistently high standard of supply chain management, which can only be achieved if all the links in the supply chain comply with current standards. The EVM initiative provides materials and tools needed to monitor and assess vaccine supply chains and help countries to improve their supply chain performance. It is therefore a strong tool to leverage for HR capacity building. With this in mind, there is a move to incorporate an increased focus on HR into the EVM assessment in order to ensure that HR considerations are adequately covered within the country comprehensive immunization supply chain plan or EVM improvement plan, and integrated into the overall continuous improvement approach in countries. This session will discuss where the current gaps are and how the EVM process can be strengthened to support HR capacity development.

END OF DAY



Formal agenda: Friday, May 15

Friday morning sessions will focus on global strategies in motion and enable supply chain change at country level.

The Vaccine Products and Packaging Advisory Group (VPPAG) – a forum for industry and public sectors to optimize vaccine presentation and packaging will provide a global update on the upstream work being done that has important downstream impacts on vaccine volumes and throughput for national supply chain systems in developing countries.

This will be followed by a presentation on the recently endorsed Gavi Immunization Supply Chain Strategy – a Vaccine Alliance-wide strategy to leverage resources and prioritize transformational actions to enable supply chain change in countries.

The next two presentations will describe the WHO and UNICEF Immunization Supply Chain Hub as a key mechanism to support countries to implement change, raise awareness, and advocate for supply chain change.

A final presentation will cover similar initiatives within the much broader health supply chain community.

The morning agenda will close with a moderated panel discussion where invited panelists will share their perspectives on these global enablers for supply chain strengthening, and share their views on how to achieve country-driven change.

Plenary sessions BALLROOM 1+2

Friday 08:30 - 12:00

Chair: Andrew Brown (People that Deliver); rapporteur: Mojtaba Hahghou (consultant)

PLENARY SESSIONS

- 08:30 - 10:00 **Global visions and strategies to enable supply chain strengthening**
- Update from the Vaccine Products and Packaging Advisory Group (VPPAG), Debra Kristensen (PATH)
 - Update on the Gavi Immunization Supply Chain Strategy, Alan Brooks (Gavi)
 - Update on the joint WHO & UNICEF Immunization Supply Chain Hub, Benjamin Schreiber, (UNICEF)
 - Global update on the PATH Immunization Supply Chain Advocacy Project, Heidi Lasher (PATH)
 - Global update on the Inter-Agency Supply Chain Group (ISG), Lisa Hedman (WHO)
 - Moderated Q&A: Enabling the system, Andrew Brown (People that Deliver)

COFFEE BREAK
10:00 - 10:30

PLENARY SESSIONS

- 10:30 - 12:00 **Panel discussion: What are global enablers for supply chain strengthening and how to achieve country-driven change?**
- Moderator: Patrick Lydon (WHO).

LUNCH BREAK
12:00 - 14:00

Lunchtime and interactive sessions

Friday 13:00 - 14:00 and 14:15 - 15:00

ROUNDTABLE DISCUSSION

Generating political will for supply chain improvements—from cEVM to cMYP

New York room

Moderator: Heidi Lasher (PATH).

TechNet participants are already convinced, but how do we secure critical policymaker support to strengthen supply chain and logistics systems?

In this lunchtime roundtable session, we will discuss the challenges that regional and country-level participants face when trying to achieve political commitments for supply chain improvements.

We will then discuss ideas and experiences used to overcome those challenges, including: mapping decision-makers, identifying champions, establishing appropriate supply chain oversight bodies, and using Effective Vaccine Management (EVM) findings to generate a compelling case for investment.

Participants who have faced the challenge of generating political support for supply chain improvements and have met with success or utter failure are encouraged to come share their experiences, reveal insights, and learn from one another.

EXPERT PANEL DISCUSSION

TechNet Conference closing ceremony

Ballroom I (level 4)

- Interactive kinetic survey, Patrick Lydon (WHO).
- Closing remarks by the TechNet Organizing Committee, Patrick Lydon (WHO).

END OF CONFERENCE







Manufacturers Marketplace BALLROOM 1+2

COLD CHAIN EQUIPMENT AND MAINTENANCE SYSTEMS

Global Good - Aucma	Passive vaccine storage devices	
Blowkings	Cold boxes / vaccine carriers	
Cold & Co	Vaccine containers	
Dometic Medical Systems	Vaccine refrigerators	
Dulas Limited	Vaccine refrigerators and remote temperature monitoring devices	
Colombo Smart Plastic Gio'Style	Vaccine carriers	
Haier Medical and Laboratory Products	Vaccine refrigerators / cold rooms	
Nilkamal Limited / India	Cold boxes / vaccine carriers	
Savsu Technologies	Passive vaccine storage devices	
Godrej with Sure Chill technology	Vaccine refrigerators	
Tayio Kogyo Corporation	Reefer cargo containers	
Vestfrost Solutions	Vaccine refrigerators	
Zero Appliances	Vaccine refrigerators	
Zhendre	Vaccine refrigerators	

BALLROOM 1+2 **Manufacturers Marketplace**

TEMPERATURE MONITORING IN THE COLD CHAIN

Berlinger	Temperature monitoring devices	
Beyond Wireless	Remote temperature monitoring devices	
Controlant	Temperature monitoring devices	
Elpro-Buchs AG	Temperature monitoring devices	
Remonsys Ltd, U.K.	Temperature monitoring devices	
Temptime	Temperature indicators	

VACCINE PRODUCTS AND DELIVERY TECHNOLOGIES

Janssen, Pharmaceutical Companies of Johnson & Johnson	Vaccine products	
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Tuesday May 12

NETWORK DESIGN AND SUPPLY CHAIN OPTIMIZATION

HERMES: A computational tool to design, plan, and manage global health supply chains

13:00 - 14:00

Shawn Brown (Carnegie Mellon University)

HERMES is a software platform that allows users to generate a detailed discrete event simulation model of any global health supply chain. This simulation model can serve as a “virtual laboratory” for decision makers to address a variety of questions, such as:

- What will be the impact of introducing new technologies?
- What are the effects of altering the characteristics of health products?
- How does the configuration and the operations of the supply chain affect performance and cost?
- What may be the effects of differing conditions and circumstances?
- How should one invest / allocate resources most effectively?
- How can product delivery be optimized?

Supply chain design and optimization: Applications for global health and vaccine supply chains

13:00 - 14:00

Sid Rupani (Llamasoft)

There are many crucial questions to answer when designing a vaccine supply chain:

- How many storage hubs are needed, in what locations, and with what capacities?
- How many refrigerated vehicles are needed for last mile distribution?
- How much stock should be held at which level in the supply chain to reduce stock-outs, but also reduce expiry and wastage?
- How can technology for network optimization, vehicle route optimization, inventory optimization, and simulation assist you in answering these critical questions?

Supply Chain Guru is a supply chain design technology from Llamasoft, Inc. that has been actively used to answer these questions in countries including Tanzania, Ethiopia, Cote d’Ivoire, Mozambique, Haiti, Swaziland, Zambia, Kenya, Nigeria, and Burkina Faso. The technology is extensively used in the private sector around the world, including for cold-chain design by the food and beverage industry.

VACCINE MANAGEMENT POLICIES AND PRACTICE

Using mobile phones to collect EVM assessment data in India

15:00 - 16:00

Srihari Duta, Ghanashyam Sethy, Ajit Sudke (UNICEF)

UNICEF Field Office Bihar recently launched an Android mobile phone-based Effective Vaccine Management (EVM) tool to measure and improve the performance of the immunization supply chain. The tool is used to collect data in real-time from different levels of vaccine storage sites, and provides information on all nine EVM indicators.

Wednesday May 13

LMIS AND DATA FOR MANAGEMENT

Real time temperature monitoring of the vaccine cold chain in Turkey

13:00 - 14:00

Osman Topac (Ministry of Health Turkey)

A web-based real time temperature monitoring system in the vaccine cold chain was established in Turkey. It covers about 10,300 vaccine stores and immunization service providers across the entire country. The system is integrated with the national immunization registry and the vaccine stock management module. It includes a call center that monitors temperature alerts, conducts risk assessment and informs decision makers. A project management team based on a public-private partnership monitors progress and reviews areas requiring further improvement. Data can be visualized on maps and graphs by each level and facility.

Remote temperature monitoring: alerts & analytics for a smarter vaccine cold chain

13:00 - 14:00

Martin Lukac & Shahrzad Yavari (Nexleaf Analytics)

ColdTrace is a wireless, internet-enabled remote temperature monitoring solution for refrigerators used to store vaccines and other temperature-sensitive products. The system collects a variety of critical data and provides customizable analytics and report-generating tools to empower health workers, inform ministries, and improve overall cold chain performance. It is designed for robust, interrupted performance in remote areas to deliver temperature alerts and analytic capacity through the "last mile" of the cold chain. ColdTrace has been deployed in 8 countries at several levels of the health system. In Mozambique, ColdTrace is currently installed in 83 refrigerators in health facilities across 8 districts. Continuous temperature and power monitoring data are provided to health facility staff and managers so they can take action to remedy temperature excursions promptly and to communicate recurring issues to the maintenance technician.

COLD CHAIN EQUIPMENT AND MAINTENANCE SYSTEMS

Rapid development of mobile applications for the cold chain

15:00 - 16:00

Tory Hart (UNICEF)

Instantly build an app and deploy it on any mobile device to collect GIS tagged data, online or offline. Records automatically sync across devices and data can include photos, videos, audio, barcodes, and even documents. In Mali, technicians use tablets to inventory cold chain equipment, log maintenance / repairs, generate installation reports for remote M&E, recover Fridge-Tag data and more. In this session, the group will develop a feature-rich application, collect data, review it on the web, and export it. The presenter will then showcase some of the applications implemented in Mali and touch on more advanced concepts.

Thursday May 14

LMIS AND DATA FOR MANAGEMENT

Improving vaccine logistics in Uttar Pradesh, India using mobile phones

13:00 - 14:00

Bhriku Kapuria (Ministry of Health India) & Arun Ramanujapuram (Logistimo)

Uttar Pradesh is the most populous state in India, with low immunization coverage and relatively few primary healthcare centers, each covering a wide geographic and demographic area. Cold chain handlers have lacked capacity to effectively record data or manage inventory, both being done in non-standard ways. Timely visibility into inventory at the last-mile is nonexistent, making it difficult to manage the supply chain and ensure availability. To address these challenges, the Ministry of Health & Family Welfare of India deployed a novel model called the electronic vaccine intelligence network (eVIN), using a mobile phone based supply chain software called Logistimo. This included digital data entry and inventory management using a mobile application, along with standardized procedures for data recording and management. The simple and highly robust application can run on even basic phones and enables collection of quality data in low resource environments. Using this system, eVIN achieved stellar reporting rates of 90%, and has virtually eliminated stock outs on immunization days.

How do 47 countries and 23 organizations use DHIS 2 to collect, manage, visualize and explore their health program data?

13:00 - 14:00

Jason Pickering, Nick Dutta, Prosper Behumbiize (HISP, University of Oslo)

Over the last 15 years, this open-source software platform has evolved in collaboration with Ministries of Health to meet user-defined requirements for the management and use of health data. DHIS 2 supports flexible data management and analysis functions; program monitoring and evaluation; health facility registries and mapping of health services; logistics management; and, mobile tracking of pregnant mothers in rural communities. DHIS 2 also supports transactional, case-based data records, letting you store information about individuals and fixed-assets and to track these persons and assets over time using a flexible set of identifiers. You can configure SMS reminders, track missed appointments, generate visit schedules and more.

Country introduction and use of barcodes on vaccine packaging

15:00 - 16:00

**Brian Taliesin (PATH), Nabell Ahmed Magbool (USAID | DELIVER Project),
Wasif Raza Mirza (USAID | DELIVER Project)**

WHO has recently published updated guidelines for vaccines that include the preferred characteristic of GS1 barcodes on packaging. However, most countries do not yet have systems that automate the identification and data capture the barcodes provide. This session will demonstrate how countries are using barcodes to track and trace the lot number and expiry date on all of their vaccine commodities throughout the supply chain, reducing the amount of closed vial waste and ability to respond to adverse events.

Friday May 15

LMIS AND DATA FOR MANAGEMENT

Vial to Child system for Nepal

13:00 - 14:00

Mark Thomas (VaxTrac)

Vial to Child is a collaboration between UNICEF, WHO, CDC and VaxTrac. Launched in September 2014, the system aims to build and implement a core suite of vaccine management tools for Nepal. VaxTrac is a US-based NGO that works to provide developing countries with the technologies and support they need to maximize the effectiveness of their vaccination programs.

The Vial to Child system is comprised of two parts: a fingerprint scanner plus an Android-based tablet or smartphone loaded with software customized for local needs. Data collected on Vial to Child units is uploaded to a cloud-based server allowing clinic level information to be available to district and central level decision makers in a more actionable and timely manner.

The system enables health centers to digitize their vaccination management processes with the goals of improved frontline health worker efficiency, increased data accuracy, decreased data latency, and streamlined delivery of health services, particularly for children under the age of five.

PIPDEPLOY: Influenza vaccine demand planning

13:00 - 14:00

Sophie Laroche & Liliana Pievaroli (WHO)

A simulation tool to support planning and allocations of influenza vaccines during a pandemic has been developed and a prototype will be presented at the Innovations Café, during the Tech Net in Bangkok. The idea of the tool is to be able to run a simulation once per year in order to improve stakeholder response for the deployment of influenza vaccines during a pandemic. The WHO team involved in the development of that tool will be present at the Innovation Café and would welcome your feedback on it. The tool, called "PIPDEPLOY", has an interface dedicated to each stakeholder.

VACCINE PRODUCTS AND DELIVERY TECHNOLOGIES

JSI	What is the optimal number of doses per vaccine vial?	Alexis Heaton Tuesday, 12:15
MSF	A cluster randomized non-inferiority field trial on the immunogenicity and safety of tetanus toxoid vaccine kept in controlled temperature chain compared to cold chain	
WHO	What is a controlled temperature chain?	

VACCINE MANAGEMENT POLICIES AND PRACTICE

JSI	Mixed presentation study on Pentavalent 1- and 10-dose vials in Kenya	Ousmane Dia & Andrew Cunningham Tuesday, 12:30
CHAI	Cold chain planning: Beyond cold chain inventories	Anita Kishore Tuesday, 12:45

NETWORK DESIGN AND SUPPLY CHAIN OPTIMIZATION

eHealth Africa	Building a third-party vaccine logistics system: A case study from Nigeria	Michael Moreland Tuesday, 13:00
AMP	The role of a mobile laboratory in the vaccine response to meningitis epidemic	Philippe Jaillard Tuesday, 13:15

DISTRIBUTION AND TRANSPORTATION SYSTEMS

USAID I DELIVER PROJECT	Nigeria: Bauchi & Ebonyi DDIC pilot	
USAID I DELIVER PROJECT	VMI-based distribution system helps Zimbabwe achieve public health goals	

COLD CHAIN EQUIPMENT AND MAINTENANCE SYSTEMS

WHO	Freeze protection for vaccine cold chain equipment	Denis Maire & Gopal Nadadur Wednesday, 12:15
UNICEF	Cold Chain Support Package	Dereje Haile Wednesday, 12:30
AMP	Lessons learned from the deployment of a solar powered cold chain in Benin	Philippe Jaillard Wednesday, 12:45
CHAI	Building a cold chain maintenance system in Ethiopia	Tahir Wolye Wednesday, 13:00

TEMPERATURE MONITORING IN THE COLD CHAIN

CHAI	Key considerations for the selection of temperature monitoring systems	Tara Banani Wednesday, 13:15
CHAI	Implementing remote temperature monitoring devices (RTMDs) at upper-level stores	Mike Brison Wednesday, 13:30
CHAI	Maximizing the impact of temperature monitoring studies	Mike Brison Wednesday, 15:15
Nexleaf Analytics	Evaluating the benefits and costs of remote temperature monitoring: Evidence from Mozambique	Nithya Ramanathan Wednesday, 15:30
eHealth Africa	End-to-end vaccine cold-chain evaluation: A new methodology & findings from Nigeria	

HUMAN RESOURCES FOR LOGISTICS

AMP	A Center of Excellence in health supply chain management for East Africa	Philippe Jaillard Thursday, 12:15
USAID I DELIVER PROJECT	Pre-Service training: An innovative workforce development intervention to improve contraceptive service delivery	
UNICEF	Developing supply chain leaders	Musonda Kasonde Thursday, 12:30
Gavi	HR leadership for supply chain managers	Kevin Etter Thursday, 12:45
People that Deliver	The People that Deliver Initiative - Addressing the health supply chain capacity development gap	Andrew Brown Thursday, 13:00
USAID I DELIVER PROJECT	Systematic assessment & planning of the supply chain workforce	Walter Proper Thursday, 13:15
AMP	Vietnam: Empowering supply chain managers for saving more lives in hard-to-reach villages	Dorothy Leab Thursday, 13:30
JSI	IAPHL: Powering the spread of supply chain knowledge to health professionals around the world	Chris Wright Thursday, 13:30

LMIS AND DATA FOR MANAGEMENT

UNICEF	ViVa: Visibility for Vaccines	Gemma Orta-Martinez Thursday, 15:15
Auto-ID Labs	Connecting vaccine-related logistical and healthcare information systems using linked data	Partha S Bhattacharjee Thursday, 15:15
USAID I DELIVER PROJECT	Improving Pakistan's vaccine supply chain for better health outcomes	Nabeel Ahmed Maqbool Thursday, 15:30
UNICEF	Vaccine Arrival Report – Mobile application	Musonda Kasonde Thursday, 15:30
PATH	Standards-based equipment inventory and temperature monitoring data: Principles, challenges & opportunities	Richard Anderson Thursday, 15:45
JSI	Using mobile phones to improve supply chain management of public health commodities	Kirstin Krudwig Thursday, 15:45
eHealth Africa	Vaccine information management in Nigeria's last mile	
eHealth Africa	Networking a state immunization system: Implementation and lessons from Nigeria	

VACCINE AND EQUIPMENT PROCUREMENT AND FORECASTING

Village Reach	Unveiling the hidden costs of the vaccine supply chain	Wendy Prosser Friday, 12:15
Gavi	Forecasting as a foundation: Gavi's Strategic Demand Forecast	Lauren Franzel Friday, 12:30
CHAI	Beyond procurement: Ensuring successful rollout of cold chain equipment	Steve DeSandis Friday, 12:45

VACCINE PRODUCTS AND DELIVERY TECHNOLOGIES

Gavi	<p>Immunisation workers in India prepare for 5-in-1 pentavalent vaccine</p> <p>Year: 2014 Duration: 4:08m www.youtube.com/watch?v=5S72rO_1m3c</p>	<p>Abhimanyu Saxena Tuesday, 13:30</p>
WHO	<p>Delivering vaccines in a controlled temperature chain (CTC): Reaching more people, saving more lives</p> <p>Year: 2015 Duration: 5:26m</p>	
WHO	<p>Implementing the controlled temperature chain (CTC) in the field: A case study from Côte d'Ivoire</p> <p>Year: 2015 Duration: 5:30m</p>	<p>Anna-Lea Kahn Thursday, 13:15</p>
WHO	<p>Controlled temperature chain (CTC): Future developments</p> <p>Year: 2015 Duration: 4:36m</p>	
AMP, PATH, WHO	<p>MenAfriVac use in CTC in Benin</p> <p>Year: 2013 Duration: 5:55m www.youtube.com/watch?v=8BExyEJG5r0</p>	

NETWORK DESIGN AND SUPPLY CHAIN OPTIMIZATION

AMP	<p>Supply chain optimization for an effective immunization</p> <p>Year: 2015 Duration: 8:18m www.youtube.com/watch?v=HqH11Zgra0g</p>	<p>Philippe Jaillard Friday, 12:30</p>
JSI	<p>Saving the lives of children under five through supply chain innovations</p> <p>Year: 2013 Duration: 3:51m www.youtube.com/watch?v=f_MDagX0Vuo</p>	

VACCINE MANAGEMENT POLICIES AND PRACTICE

JSI	<p>Supportive supervision of supply chain personnel</p> <p>Year: 2014 Duration: 8:59m www.youtube.com/watch?v=R-ryMiwHivA</p>	Walter Proper Wednesday, 15:15
Gavi	<p>The story of what Gavi, the Vaccine Alliance does and how it works</p> <p>Year: 2014 Duration: 2:45m www.youtube.com/watch?v=v__voxpPqTI</p>	

HUMAN RESOURCES FOR LOGISTICS

AMP	<p>Bachelor degree in health logistics</p> <p>Year: 2013 Duration: 7:07m www.youtube.com/watch?v=nJbKcU1YfK8</p>	
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DISTRIBUTION AND TRANSPORTATION SYSTEMS

JSI	<p>Getting products to people: How integration can transform public health supply chains</p> <p>Year: 2013 Duration: 3:29m www.youtube.com/watch?v=jpE6SkutdWU</p>	
Gavi	<p>Reaching every child in Cameroon</p> <p>Year: 2014 Duration: 1:28m</p>	

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.

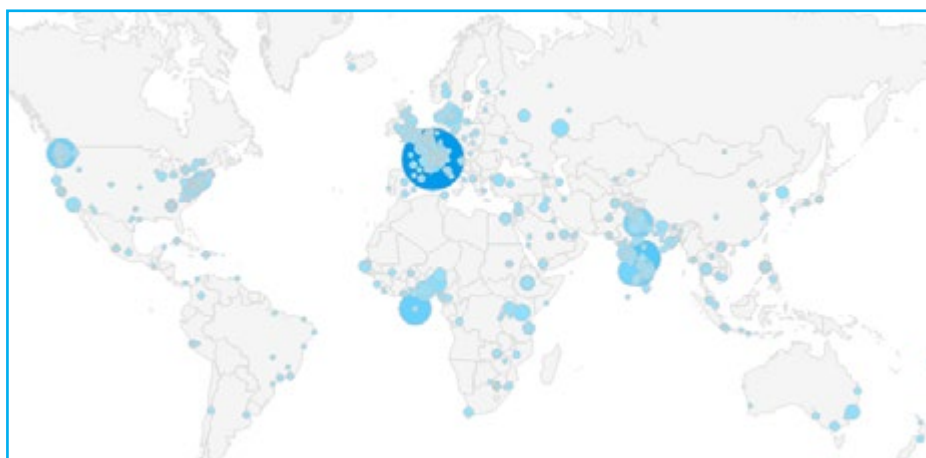
Ever since the original listserv mailing list was initiated in 1998, TechNet's online presence has continued to evolve to meet the changing needs of its members. In 2001, the first TechNet website was published; in 2010 and 2013, major website upgrades helped to ensure the network's online presence kept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

Today, the TechNet-21 website is more useful, easy-to-use, more reliable and more popular than ever.

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 learn more about new features such as groups, equipment reviews, GVAP indicators, or about how to use more advanced features on the forum such as categories and tags.
- If you have any feedback on the website that you want to share with us.

We look forward to welcoming you!



Geographical distribution of visitors to TechNet-21.org in 2014.

What is the website for?

The TechNet-21.org website provides immunization professionals with an online resource for learning about and discussing the latest developments in immunization.

Our members come from every corner of the world and since 2010 more than 3,000 people have registered on our website.

The website is composed of four main areas:



The TechNet-21.org homepage

● FORUM

A place for members to share experiences, coordinate activities, ask questions, and discuss recent developments in immunization.

● NEWS

Information on the latest immunization news, as well as new jobs and requests for proposals, and an events diary.

● RESOURCES

A library of immunization resources, including journal articles, photographs, documents, videos, useful links and tools.

● REVIEWS

Reviews of WHO-prequalified immunization products submitted by members.

www.TechNet-21.org

List of participants

A

Adagadzu, Julie
EPI Logistics Advisor
WHO Nigeria
adagadzju@who.int

Afsar, Ahmet
Freelance public health consultant
UNICEF
ahmetafsar@gmail.com

Anderson, Richard
Professor of Computer Science and
Engineering
University of Washington
randerson@path.org

Attemene, Godiskine
EPI Logistics Advisor
WHO Côte d'Ivoire
attemenego@who.int

Atuhebwe, Phionah Lynn
Senior Program Officer, Vaccine Ac-
cess and Delivery
PATH
patuhebwe@path.org

Azimi, Tara
Associate Principal
McKinsey & Company
tara_azimi@mckinsey.com

B

Bafei, Toï
Logistic and Transport Manager
MoH-EPI Togo
justinbt2001@yahoo.fr

Baker, Daniel
Child Health & Immunization Advisor
USAID
tbaker@usaid.gov

Balik, Hasan Hüseyin
Consultant
MoH-EPI Turkey
hasanbalik@gmail.com

Bamert, Christoph
International Sales
ELPRO-BUCHS
christoph.bamert@elpro.com

Bamiali, Hugo Ekwanzala
Health Logistician
MoH-EPI DR Congo
hugoekwanzala@yahoo.fr

Banani, Tara
Cold Chain Technology Analyst
CHAI
tbanani@clintonhealthaccess.org

Bancroft, Emily
Vice President
VillageReach
emily.bancroft@villagereach.org

Bartlett, Keith
Senior Consultant
Sure Chill
keith.bartlett@surechill.com

Bechtel, Ruth
Country Director
VillageReach
ruth.bechtelt@villagereach.org

Bejemino, Alejo
Cold chain & logistics
WHO
albejemino2001@yahoo.com

Bell, David
Program Lead
Global Good/Intellectual Ventures Lab
dbell@intven.com

Benes, Oleg
Technical Officer
WHO Regional Office (EURO)
beneso@who.int

Benti, Henok Hailemariam
EPI Supply Chain Advisor
JSI Ethiopia
hhailemariam@et.jsi.com

Bergeron, David
President
SunDanzer
david@sundanzer.com

Berlinger Schwyter, Andrea
President
Berlinger & Co. AG
andrea.berlinger@berlinger.ch

Berry, Zainab
District coordinator/PHC and EPI de-
partment/ MoPH Lebanon
Independent
zainab-berry@hotmail.com

Bersola, Bernardo
Cold Chain Specialist
UNICEF Philippines
bbersola@unicef.org

Bessat, Olivia
Consultant
Gavi
obessat-external-consultant@gavi.org

Bhattacharjee, Partha Sarathi
Research Associate
MIT
parthasb@mit.edu

Bogale, Beza
MIS Manager
JSI Ethiopia
bbogale@et.jsi.com

Brigden, Daniel
Technical Officer
WHO Headquarters
brigdend@who.int

Brison, Mike
Senior Associate, Cold Chain Logistics
CHAI
mbrison@clintonhealthaccess.org

Brooks, Alan
Director HSIS
Gavi
abrooks@gavi.org

Brown, Andrew
Executive Manager
People That Deliver
executivemanagerptd@unicef.org

Brown, Shawn
HERMES Logistics Modeling Team
Technical Lead
Carnegie Mellon University
stbrown@psc.edu



List of participants

Brownlow, Kaleb
Supply Chain Specialist
Gavi
kbrownlow@gavi.org

Bulula, Ngwegwe
National Logistician
MoH-EPI Tanzania

Burzin, Wadia
Ex Vice President, Head Innovation
and Technology
Godrej
bjw@godrej.com

C

Canevari, Andrea
International Sales Director
Colombo Smart Plastic
andrea.canevari@giostyle.com

Carten, David Anthony
Managing Director
South East Solar Co.
davidcarten@gmail.com

Chang-Blanc, Diana
Manager Programme Operations
Team, EPI
WHO Headquarters
changblancd@who.int

Charo, Joyce
National EPI Logistician
MoH-EPI Kenya
joycharo13@gmail.com

Chawaguta, Berverly
Supply and Logistics Specialist
UNICEF Nigeria
bchawaguta@unicef.org

Chawla, Umesh
Programme Analyst
UNDP
umesh.chawla@undp.org

Cheok, Xin Yin
Regulatory Officer
BPFK
cheok@bpfk.gov.my

Cheyne, James
Health Service Logistics
Independent
james@cheyne.net

Chitkara, Prashant
Advisor - Vaccines Informatics
Public Health Foundation India
prashant.chitkara@phfi.org

Chivale, Jose Alexandre Lifande
EPI Logistics Advisor
WHO Mozambique
chivalejo@who.int

Chowdhry, Raja
Senior Technical Advisor
Lux Development Vietnam
raja.chowdhry@luxdev.lu

Chum, Aun
Health Officer
UNICEF Cambodia
achum@unicef.org

Colrain, Paul
EVM Consultant
WHO
pcolrain@yahoo.com

Cunningham, Andrew
Program Coordinator
JSI
andrew_cunningham@jsi.com

D

Davydov, Dmitri
Coordinator, Vaccine Delivery Systems
UNICEF Headquarters
ddavydov@unicef.org

Desalegn, Tariku Berhanu
Public Health Specialist
UNICEF Ethiopia
taberhanu@unicef.org

DeSandis, Steve
Cold Chain Technology Analyst
CHAI
sdesandis@clintonhealthaccess.org

Dhiman, Ranjit
Supply Chain Consultant
UNICEF
ranjitdhiman@gmail.com

Dia, Ousmane
Senior Technical Advisor
JSI
ousmane_dia@jsi.com

Diaw, Ibnou
Supply Chain Consultant
Independent
ibnkhadim@icloud.com

Dicko, Hamadou
Project Manager
Gavi
hdicko@gavi.org

Dicko, Modibo
Cold chain & logistics specialist
Independent
dickomod@gmail.com

Drury, Peter
eHealth Consultant
UNICEF
druryconsultingltd@gmail.com

Dutta, Srihari
Immunization Specialist
UNICEF India
sdutta@unicef.org

E

Ebong, Akaninyene Dixon
Zonal Cold Chain Officer
MoH-EPI Nigeria
ndifreke633@gmail.com

Edirisuriya, Chathura
Senior Registrar (Community Medi-
cine)
MoH-EPI Sri Lanka
chathura.cse@gmail.com

Ekpemauzor, Chinenye
Head QA & Strategic Planning (NPH-
CDA)
MoH-EPI Nigeria
cnekpemauzor@yahoo.com

List of participants

Elliot, David
Senior Engineer
Dulas Limited
david.elliott@dulas.org.uk

Etter, Kevin
Senior Supply Chain Consultant
UPS
ketter@ups.com

F

Fagge, Muhammad Rabiu
State Logistics Officer/Pharmacist
MoH-EPI Nigeria
mrfagge@yahoo.com

Feilden, Rachel
Independent Consultant
JSI
fba@fbatm.biz

Fermon, Florence
Leader vaccination working group
MSF
florence.fermon@msf.org

Fidan, Gokhan
Technical Consultant
MoH-EPI Turkey
gokhan.fidan@ankaref.com

Franzel, Lauren
Senior Specialist, P&MS
Gavi
lfranzel@gavi.org

Friedman, Zach
Director
LIGTT
zfriedman@ligtt.org

Friend, Mike
Technical Project Manager
Global Good
mfriender@intven.com

Frijs-Madsen, Claire
Health Systems Consultant
UNICEF
cfrijsmadsen@hotmail.com

Fujihara, Yuta
FCT Sales Manager
Taiyo Kogyo Corporation
fy003507@mb.taiyokogyo.co.jp

G

Ganivet, Serge
Regional ISCM Specialist
UNICEF Regional Office (WCARO)
sganivet@unicef.org

Gebrekidan, Sy
Director
Merck
sy.gebrekidan@merck.com

Ginige, Samitha
Cold chain consultant
WHO Regional Office (WPRO)
ginigep@wpro.who.int

Glass, Saul
Electrical Engineer
Beyond Wireless
saul@beyondwireless.co.za

Gobina, Isaac
Technical Officer
WHO Headquarters
gobinai@who.int

Gomis, Khadiatou
National EPI Logistics Officer
MoH-EPI Senegal
dijatou68@gmail.com

Gorzalak, Lars
Head of Innovation & Development
Vestfrost Solutions
LG@vestfrostolutions.com

Grevendonk, Jan
Technical Officer
WHO Headquarters
grevendonkj@who.int

Guo, Zihong
Director of Alliance Management
Global Good
zguo@intven.com

H

Habimana, Denise
Project Management Consultant
Gavi
dhabimana-external-consultant@gavi.org

Hahghou, Mojtaba
Cold chain & logistics consultant
Independent
mojtaba05@hotmail.com

Haig, Randal
Sales Manager
Controlant
randald@controlant.com

Haile, Dereje Ayalew
Technical Specialist
UNICEF Supply Division
dhaile@unicef.org

Harima, Takuro
Chief
Japan BCG Laboratory
harima@bcg.gr.jp

Harou, Moussa
Technical Officer (Cold Chain)
WHO AFRO
moussah@who.int

Harrigan, Michael
General Manager Quality Management
Public Health
Imperial Health Sciences USA
mharrigan@ihs.za.com

Hart, Toryalai
Cold Chain Logistics Specialist
UNICEF Mali
toryalahart@gmail.com

Heaton, Alexis
Technical Advisor
JSI
aheaton@jsi.com

Hedman, Lisa
Technical Officer
WHO Headquarters
hedmanl@who.int



List of participants

Heimann, Peter
Chief Technical Advisor
Lux Development Lao PRD
peter.heimann@luxdev.lu

Holla, Voderhobli Narayana
Professor, Dept of Community Medicine
KVG Medical College, India
narayana_holla@yahoo.co.in

Holt, Tania
Associate Principal
McKinsey & Company
tania_holt@mckinsey.com

Htut, Tin
Health Specialist
UNICEF China
thtut@unicef.org

Hulst, Rumi
Health Administrator/Nurse
JICA
hulst.rumi@jica.go.jp

Husainkhil, Abdul Mateen
National EPI Logistics Officer
MoH-EPI Afghanistan
vsfmateen@yahoo.com

I

Isfan, Reza
National EPI Officer
MoH-EPI Indonesia
rezaisfan@yahoo.com

J

Jackson, Sarah
Technology Manager
VillageReach
sarah.jackson@villagereach.org

Jaillard, Philippe
Program Leader "Health technologies and logistics"
AMP
pjaillard@aamp.org

Ji, Hyungoo
Emergency Supply Officer
UNICEF DR Congo
hji@unicef.org

Johnson-Hooker, Anjella
Logistics Management Coordinator
CDC
DLester@CDC.gov

Juchemes, Pierre
Senior Technical Advisor Medical Division
Dometic
pierre.juchemes@dometic.com

K

Kadyrov, Nurdin
Consultant iSCL
Nepal
nurdin_k@hotmail.com

Kahn, Anna-Lea
Technical Officer, WHO-IVB-EPI
WHO Headquarters
kahna@who.int

Kapuria, Bhriugu
Team Lead-Vaccine Logistics & Cold Chain Management
ITSU, MoHFW-PHFI India
bhriugu.kapuria@phfi.org

Kasonde, Musonda
Capacity Development Manager
UNICEF Supply Division
mkasonde@unicef.org

Kaung, Kyaw Kan
National EPI Manager
MoH-EPI Myanmar
kyawkankaungmo@gmail.com

Kelani, Abdulrahman
Polio Operation Manager
WHO Somalia
rahmanokelani@yahoo.com

Kenea, Hailu
Regional ISCM Specialist
UNICEF Regional Office (ESARO)
hkenea@unicef.org

Khalil, Noorzad Abdul
Immunization Officer
UNICEF Afghanistan
aknoorzad@unicef.org

Kirakosyan, Marine
National Center of Prevention and Control of Diseases
MoH-EPI Armenia
kirakosyan.marine@mail.ru

Kishore, Anita
Manager, Cold Chain Logistics
CHAI
akishore@clintonhealthaccess.org

Kisoso, Sana
Administrative Assistant
WHO Headquarters
kisosos@who.int

Kone, Souleymane
Technical Officer
WHO Headquarters
kones@who.int

Koné, Ibrahima
Technical Officer Polio
WHO Headquarters
koneib@who.int

Koneti, Ashwin
Business Development Manager
Logistimo
ashwin@logistimo.com

Kothari, Munjal
Director
Blowkings
munjal@blowkings.co.in

Kothari, Pooja
Executive Sales Assistant
Blowkings
pooja.kothari@blowkings.co.in

Kothari, Priyanka
Sales Executive
Blowkings
priyanka.kothari@blowkings.co.in

Kothurwar, Vinayak
Customer Success Manager
Logistimo
vinayak@logistimo.com

List of participants

Kristensen, Debra
Director, Vaccine and Pharmaceutical
Technologies
PATH
dkristensen@path.org

Krudwig, Kirstin
Program Manager
JSI
kirstin_krudwig@jsi.com

Kry, Kong Heang
Cold Chain and Vaccine Officer
MoH EPI Cambodia
kongheangkry@gmail.com

Kushida, Kei
Taiyo Kogyo Corporation
kk003173@mb.taiyokogyo.co.jp

Kusunoki, Yusuke
International Dept.
Japan BCG Laboratory
kusunoki@bcg.jp

L

Landoh, Dadjia Essoya
Medical officer - EPI
WHO Togo
landohd@who.int

Laroche, Sophie
Technical Officer
WHO Headquarters
laroches@who.int

Lasher, Heidi
Coordinator, Supply Chain Advocacy
Project
PATH
hlasher@path.org

Lava, Aurelie
Cold Chain Referent
MSF
aurelie.lava@paris.msf.org

Leab, Dorothy
Country Director
AMP
dleab@aamp.org

Lee, Alex
CEO
Storytelling Media
alex@storytelling-media.com

Lee, Carla
Public Health Advisor
CDC
cel1@cdc.gov

Lehideux, Adrien
CEO
Cold & Co
alehideux@coldandco.com

Lennon, Pat
Portfolio Leader
PATH
plennon@path.org

Lester, Darrell
Logistics Manager/Haiti Coordinator
CDC
grn8@cdc.gov

Lester, Ian
CEO
Beyond Wireless
ian@beyondwireless.co.za

Lewis, Tom
Managing Director Remonsys Ltd
Remonsys Ltd
info@remonsys.com

Limwattanayingyong, Attaya
National EPI Manager
MoH-EPI Thailand
attaya@gmail.com

Lloyd, John
Cold chain & logistics specialist
Consultant
john.lloyd1945@gmail.com

Lobo, Vishal
Manager - Exports
Serum Institute of India Ltd
vishal.lobo@seruminstitute.com

Lorenson, Tina
Program Officer, Vaccine Delivery
Gates Foundation
Tina.Lorenson@gatesfoundation.org

Lubwama, Humphrey
Senior Cold Chain Logistician
MoH-EPI Uganda

Lukac, Martin
Chief Technology Officer and
Co-Founder
Nexleaf Analytics
martin@nexleaf.org

Lydon, Patrick
Immunization supply chain and eco-
nomics
WHO Headquarters
lydonp@who.int

Lyimo, Dafrossa
National EPI Manager
MoH-EPI Tanzania
dafrossac@gmail.com

M

Magner, Maeve
Advisor - Health Supply Chain
Gates Foundation
maeve.magner@gmail.com

Maire, Denis
Scientist, WHO PQS
WHO Headquarters
maired@who.int

Malhotra, Vivek
Asia-Pacific Strategic Business Advisor
Stevanato Group
vivek.malhotra@stevanatogroup.com

Manders, Maarten
Director Global Marketing, Paediatric
Vaccines
Janssen
mmander1@its.jnj.com

Mangenot, Laurent
Health Technology Advisor
Lux Development Lao PDR
laurent.mangenot@luxdev.lu

Matsinhe, Graça
National EPI Manager
MoH-EPI Mozambique
gmatsinhe@gmail.com

List of participants

N

Natarajan, Jaishankar
Sr GM , Head New Business Development
Godrej
jai@godrej.com

Nelaj, Erida
National Immunization Program
Manager
MoH-EPI Albania
enelaj@yahoo.com

Newland, Sophie
Program Officer
PATH
snewland@path.org

Nichols, Kameko
Partnership Director
Riders for Health
knichols@riders.org

Nielsen, Bjarne
Key Account Manager
Vestfrost
bjn@vestfrostolutions.com

O

Orta-Martinez, Gemma
Supply Chain Monitoring Specialist
UNICEF Supply Division
gortamartinez@unicef.org

P

Pahl, Michelle
Deputy Director, Public-Private Partnerships
US Fund for UNICEF
mpahl@unicefusa.org

Pascutto, Alexandre
Consultant
TechNet-21
alexandre.pascutto@gmail.com

Patwardhan, Rajesh
Sr. Exports Manager
Nilkamal
rajesh.patwardhan@nilkamal.com

McCarney, Steve
Director - Cold Chain Solutions and
Project Manager
Solar Electric Light Fund
steve@self.org

McCormick, Bruce
President SAVSU Technologies
Savsu Technologies
b.mccormick@savsu.com

McWhorter, Ryan
Immunization Supply Chain Specialist
UNICEF Supply Division
rmcwhorter@unicef.org

Menon, Padmini
Moderator
TechNet-21
padmini.menon@gmail.com

Meyers, Andrew
Director
Cold Chain Consultants
andrew@coldchainconsultants.com

Mihigo, Richard
Programme Coordinator EPI/WHO-AF-RO
WHO Regional Office (AFRO)
mihigor@who.int

Miros, Robert
CEO
3rd Stone Design
robert@3rdstonedesign.com

Mohamed, Nassor
Immunization Technical Officer
JSI Tanzania
nmohamed@tz.jsi.com

Moniruzzaman, Md.
Research Investigator-Team Leader,
Process Evaluation & Implementation
ICDDR Bangladesh
mdmunir@icddr.org

Moorthy, Ravi
President
Easy Solutions
ravi@easysolutions.in

Moothy, Narayani
Vice President
Quascenta
narayani@quascenta.com

Moreland, Michael
Program Director
eHealth Africa
michael.moreland@ehealthafrica.org

Moungsookjareoun, Aree
National Professional Officer and EPI
Focal Point
WHO Thailand
aree@who.int

Mukwaya, Douglas
Cold Chain Specialist
UNICEF Somalia
dmukwaya@unicef.org

Musa, Nasreen
Technical Officer
WHO Regional Office (EMRO)
musan@who.int

Musubire, William
Vaccine Store Management Officer
MoH-EPI Uganda
wmusubire@nms.go.ug

Mvundura, Mercy
Senior Health Economist
PATH
mmvundura@path.org

Mwanamwenge, Abrahams
EPI Logistics Advisor
WHO Zambia
amwenge@yahoo.com

Mwencha, Marasi
Deputy Country Director
JSI Tanzania
mmwencha@jsi.com

Myeong, NohKyeong (Hubert)
Regional Sales Manager, AP
Janssen
nmyeong@its.jnj.com

Nadadur, Gopal
Senior Associate, Global Vaccine Markets, CHAI
CHAI
gnadadur@clintonhealthaccess.org

List of participants

Peetosutan, Kenny
Health Specialist - EPI
UNICEF Indonesia
kpeetosutan@unicef.org

Pensuk, Pannarat
Vaccine Preventable Diseases, Department of Disease Control
MoH-EPI Thailand
kuenchai@hotmail.com

Perevoščikovs, Jurijs
Head of Department of Infectious Diseases Risk Analysis And Prevention
MoH-EPI Latvia
Jurijs.Perevoscikovs@spkc.gov.lv

Peterson, Nels
Group Lead / Engineer
Global Good
npeterson@intven.com

Phounphenghack, Kongxay
Deputy NEPI Manager
MoH-EPI Lao PDR
kongxay123@yahoo.com

Pievaroli, Liliana
IT Project Manager
WHO Headquarters
pievarolil@who.int

Piyacharoen, Wanee
Specialist Operational Quality
MoH-EPI Thailand
wanee.piyacharoen@gpo-mbp.com

Pojlertaroon, Apichai
National EPI Manager
MoH-EPI Thailand
idol_99_2000@yahoo.com

Polack, Philip
Director
Polestar Cooling
phil@polestarcooling.com

Popova, Olga
VP Global Vaccine Policy & Partnerships
Janssen
opopova@its.jnj.com

Prasad, Kshem
iSCL Consultant
India
kshem@apt-progress.org

Proper, Walter
Director, Task Order Public Health
JSI
wproper@jsi.com

Prosser, Wendy
Program Manager
VillageReach
wendy.prosser@villagereach.org

Provost, Luc
CEO
Dometic
luc.provost@dometic.com

Prusik, Thaddeus
Sr. Vice President
Temptime
tedp@temptimecorp.com

Puengsaitdee, Somsak
MoH-EPI Thailand
somsakzp@gmail.com

Puspadewi, Fitri
Private Sector Sales Manager
Bio Farma
fitri.puspadewi@biofarma.co.id

Q

Queyras, Guillaume
Logistics & Supply Chain Emergency
WHO Headquarters
queyrasg@who.int

R

Rachelson, Dion
Director
Beyond Wireless
dion@beyondwireless.co.za

Rahman, Aatur
Immunization Specialist
UNICEF Cambodia
atrahman@unicef.org

Ramanathan, Nithya
President and Co-Founder
Nexleaf Analytics
nithya@nexleaf.org

Ramanujapuram, Arun
CTO
Logistimo
arun@logistimo.com

Rao, Raja
Senior Program Officer, Vaccine Delivery
Gates Foundation
Raja.Rao@gatesfoundation.org

Raubenheimer, Ticky
Cold Chain and Logistics Consultant
South Africa
htr@telkomsa.net

Raza Mirza, Wasif
IT Systems Analyst
JSI Pakistan
wasif@deliver-pk.org

Ren, Yizhao
Integration Managing Director
Aucma
subzeroren@hotmail.com

Ries, Gilles
Technical Manager
Dometic
gilles.ries@dometic.com

Robertson, Joanie
Senior Manager, Supply Chain
Gavi
jrobertson@gavi.org

Rodriguez, Nora Lucia
Technical Officer
WHO Regional Office (AMRO)
rodrigno@who.int

Rodrigues, Basil
Regional Health Advisor
UNICEF Regional Office (EAPRO)
brodrigues@unicef.org

Rudd, Cheryl
Unit Head, Primary Health and Health Systems Strengthening
CIDRZ
cheryl.rudd@cidrz.org



List of participants

Rupani, Sidharth
Regional Direction - Africa, ME, India,
LLamasoft, Inc.
LLamasoft
sidrup@gmail.com

Rush, Michael
Executive Director - Global Health
Policy
Temptime
michaelr@temptimecorp.com

S

Sabat, Roger
Senior Manager Sales
Berlinger & Co. AG
roger.sabat@berlinger.ch

Sadiqi, Mohammad Wazir
Cold Chain Management Officer
UNICEF Afghanistan
mwsadiqi@unicef.org

Saif Al Rawahi, Bader
Cold chain & logistics consultant
Independent
baderoman@hotmail.com

Samuel, Gareth
Commercial sales manager
Zero Appliances
gareth@zeroappliances.co.za

Sanderson, Jeffrey
Senior Technical Advisor
JSI
jeff_sanderson@jsi.com

Saunders, Nigel
Business Development Director
Sure Chill
nigel.saunders@surechill.com

Sawadogo, Adama
Immunization Supply Chain Specialist
UNICEF Headquarters
asawadogo@unicef.org

Saxena, Abhimanyu
Project Officer- Cold-Chain
UNDP
abhimanyu.saxena@undp.org

Schreiber, Benjamin
Senior Immunization Advisor
UNICEF Headquarters
bschreiber@unicef.org

Shongwe, Angel
EPI Logistics Officer
MoH-EPI Swaziland
dlamini_angel@yahoo.com

Siddiqui, Mozammil
Private Sector Partnerships Manager
Gavi
msiddiqui@gavi.org

da Silva, Alfred
Executive Director
AMP
ads@aamp.org

Singh, Vikram
Procurement Specialist
UNOPS
VikramS@unops.org

Sirinipawongsa, Poontawee
Sr. Specialist , Warehouse and Pro-
curement
MoH-EPI
poontawee.sirinipawongsa@gpo-mbp.
com

Spanner, Soren
Cold chain expert
Independent
sorensanner@gmail.com

Steinglass, Robert
Director, Immunization Center
JSI
robert_steinglass@jsi.com

Suchonwanich, Netnapis
Deputy Secretary-General
National Health Security Office
netnapis.s@nhso.go.th

Suwitruengrit, Ladda
Material Management Manager
GPO-MBP
Ladda.Suwitruengrit@gpo-mbp.com

T

Taliesin, Brian
Systems Analyst
PATH
btaliesin@path.org

Tharmaphornpilas, Piyanit
Head of Unit
MoH-EPI Thailand
piyanit@yahoo.com

Thiercelin, Fabienne
Export Manager
Zhendre
fthiercelin@zhendre.com

Thomas, Mark
Executive Director
VaxTrac
mark.thomas@vaxtrac.com

Thorell, Lori
Regional ICT Consultant
UNICEF Regional Office (EAPRO)
lthorell@unicef.org

Tobescu, Corneliu
innovation and production manager
Berlinger & Co. AG
corneliu.tobescu@berlinger.ch

Tonami, Kunio
General Manager
Taiyo Kogyo Corporation
tk000637@mb.taiyokogyo.co.jp

Topaç, Osman
National EPI Manager
MoH-EPI Turkey
Osman.TOPAC@saglik.gov.tr

Tung, Ho Thanh
National EPI Officer
MoH-EPI Vietnam
heotau@yahoo.com.vn

U

Uetela, Onei
Immunization Specialist
UNICEF Mozambique
ouetela@unicef.org



List of participants

V

Valle, Moussa
National EPI Logistics Officer
MoH-EPI Malawi
vallemjm@yahoo.co.uk

Van Cuong, Nguyen
Deputy NEPI Manager
MoH-EPI Vietnam
cuongepi@yahoo.com

Van den Hooff, Renaat
President Temptime Corporation
Temptime
renaatv@temptimecorp.com

W

Wang, Guangsheng
UN Project Director
Haier
wanggs@haier.com

Wang, Xiaojun
Regional Immunization Specialist
UNICEF Regional Office (EAPRO)
xwang@unicef.org

Watson, Guy
Head International Operations
Dulas Limited
guywatson@dulas.org.uk

Wei, Luo
Marketing and Sales Director
Aucma
rodaucma@gmail.com

Woly, Tahir Mohammed
Cold chain/Logistics officer
CHAI
tmohammed@clintonHealthaccess.org

Wright, Chris
Senior Technical Advisor
JSI
chris_wright@jsi.com

Y

Yamanoğlu, Tarkan Mustafa
Vaccine Storage and Distribution
Manager
MoH-EPI Turkey
tmyamanoglu@gmail.com

Yavari, Shahrzad
Project Manager
Nexleaf Analytics
shahrzad@nexleaf.org

Young, Paul
CEO
Haier
paul.young@haier.com

Yuan, Ping
Assistant Researcher
MoH-EPI China
yuanping_632@163.com

Z

Zahraei, Seyed Mohsen
National EPI Manager
MoH-EPI Iran
zahraeicdc@yahoo.com

Zamani, Gholamabbas
National Cold Chain Manager
MoH-EPI Iran
zahraeicdc@yahoo.com

Zhu, Xu
Health Specialist
UNICEF China
xzhu@unicef.org



Notes



Notes

A large grid of small dots, intended for taking notes.



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